AUTOMATIONBOOK

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Your ifm customer no.

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ifm – the company matching your requirements

close to you:

Our worldwide sales and service team is here to help you at any time.

Engineering „Made in Germany“:

German engineering available worldwide.

Flexible:

Not only our service but our broad product portfolio perfectly suit the most varying requirements.

Innovative:

More than 750 patents and in 2016 about 60 patent applications.

Reliable:

5-year warranty on ifm products.

System instead of just components

ifm provides you with a broad portfolio for flexible automation of your production.

Our range of more than 7,800 articles guarantees flexibility and compatibility.

Quality as part of our philosophy

Quality is an inherent part of our philosophy.

We use our customers’ feedback to continuously improve the quality of our products.

Our sensors are tested with values far beyond the indicated limits using special procedures.

We are there for you

Close contact with our customers is part of our success. We have consistently developed our sales network right from the start.

Today the ifm group of companies is represented in more than 70 countries – according to the motto "ifm – close to you!" Your personal application support and service are at the heart of our operation.

For the introduction of new products and technologies we support you with workshops and seminars in our training centres or in your plant.

Security by success

Since its foundation in 1969 ifm electronic has constantly grown, now having more than 6500 employees worldwide, and achieved a turnover of over EUR 810 million in 2016. This success gives you the security of having a reliable partner for the implementation of your automation projects. Comprehensive service and a warranty of up to 5 years on standard units are just two examples in this context.

Product availability

Your deadlines matter to us.

That is why we are constantly optimising our production processes.

In order to be able to quickly and flexibly produce large quantities at a constantly high quality – and to continue to shorten delivery times.

See the current ifm company film to get to know us better:

www.ifm.com/gb/close-to-you

The ifm sales platform

Overview:

The ifm product range is clearly structured and the individual product platforms ensure quick orientation.

Selectors:

Choose between the most important technical data and you will get the product selection suitable for your requirements.

Compare:

You can compare the technical data of up to 3 products. Differences are marked in colour.

Search and find:

Enter the search term in the full text search and get suggestions for products, topics and product groups.

Order:

We provide a quick-order and csv import function for the shopping basket on the product pages.

More clarity

For each product group you can make a first selection via the platforms.

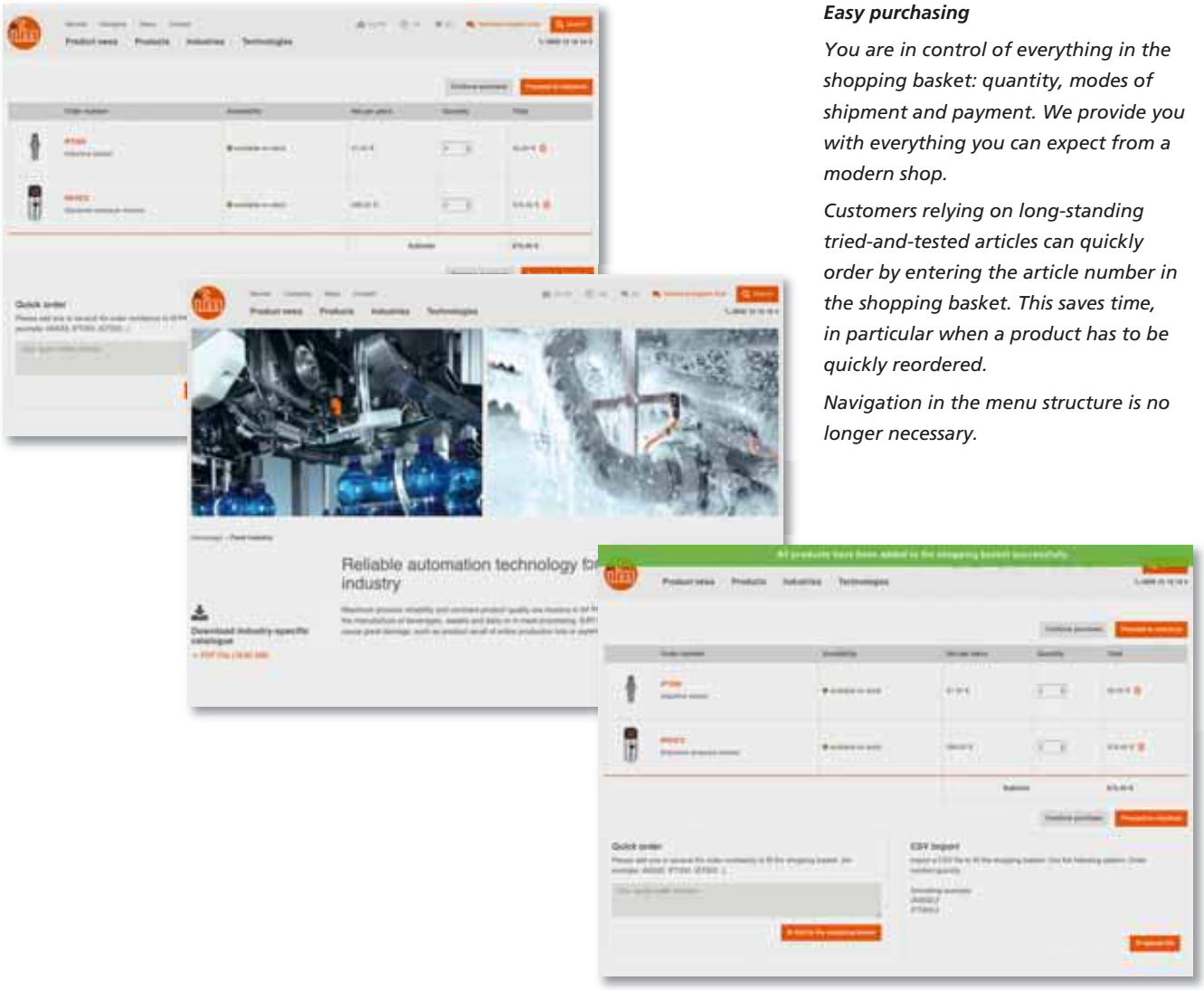
A clear visual language and explanatory texts give you a first impression of the products.

Compare products with each other

The selectors are the heart of the product search.

The displayed selection criteria are adapted to each product range and the technical features of the products.

The results can be displayed as tiles or lists.



Easy purchasing

You are in control of everything in the shopping basket: quantity, modes of shipment and payment. We provide you with everything you can expect from a modern shop.

Customers relying on long-standing tried-and-tested articles can quickly order by entering the article number in the shopping basket. This saves time, in particular when a product has to be quickly reordered.

Navigation in the menu structure is no longer necessary.

For all types of display

Whether PC, laptop, tablet or smartphone – the design of the sales platform adapts to any screen size thus increasing user-friendliness. This also makes it possible to buy products using mobile equipment such as a smartphone.

Try us. Click here to directly get to our homepage:

www.ifm.com

Your start into the industrial revolution. IO-Link solutions from ifm.

Simple:

The sensor parameters can be set from the controller or the master. No crawling or climbing required to set the sensor.

Transparent:

Many sensors supply measured values to the switching signals via IO-Link. The goal is a constant product quality with less energy and raw material consumption.

Reliable:

Transmission that is prone to errors and conversion of analogue signals is replaced with digital measured value transmission.

Low-cost:

Process information, switching status, diagnostic functions are transmitted without loss via a single port to the controller. Expensive analogue signal processing is no longer needed.

Fascination **IO**-Link

In the past binary switches usually provided simple switching signals or analogue values. Today the data from intelligent sensors is the basis for the next industrial revolution.

Sensors that extract all the information from your machines and equipment using the key technology IO-Link.

Leading manufacturers from the fields of sensors, actuators and control technology have developed IO-Link.

Together they developed a standardised and field-bus independent interface for automation providing the user with a point-to-point connection without complex addressing.

Benefit from the appeal of IO-Link, talk to us and stay as productive and competitive for your manufacturing processes of tomorrow.

Head start with **IO**-Link

Use the advantages! Today IO-Link sensors from ifm give the user completely new options.

Additional sensor data, for example, is generated to achieve maximum efficiency and cost saving.

This allows process transparency from the machine to ERP to optimise your existing automation. Furthermore IO-Link has a lot more to offer:

No external influence of the signal

Data transfer is based on a 24 V signal. Screened cables and associated grounding are no longer necessary.

Tamper free

No wrong settings by operators.

No measured value losses

The entire measured value transmission is digital. Transmission that is prone to errors and conversion of analogue signals is replaced.

Identification

Only like for like replacement.

No wrong sensors accepted.

Easy sensor replacement

All sensor parameters are stored in the master and transferred to the replaced unit.

Wire-break detection / diagnostics

Wire-break or short-circuit is immediately detected.

Point-to-point communication: more details in our IO-Link video:

www.io-link.ifm

3A

3A Sanitary Standards, Inc. (3-A SSI) is an independent, not-for-profit corporation dedicated to advancing hygienic equipment design for the food, beverage, and pharmaceutical industries.

AS-i

Actuator-Sensor Interface. Bus system for the first binary field level.

ATEX

Atmosphère Explosible. ATEX comprises the directives of the European Union in the field of explosion protection. On the one hand there is the 94/9/EC ATEX product directive and on the other hand the 1999/92/EC ATEX operation directive.

CCC

CCC (China Compulsory Certification) is a compulsory Chinese certification for certain products put on the market in China. Which products are concerned is specified in a catalogue created by the Chinese authorities.

cCSAus

Testing of a product by CSA according to the safety standards applicable in Canada and the USA.

CE

Conformité Européenne. By affixing the CE marking to a product, the manufacturer declares that it meets EU safety, health and environmental requirements.

cRUus

Testing of components by UL according to the safety standards applicable in Canada and the USA. Components can be used when the "condition of acceptability" is complied with for the final product.

CSA

Canadian Standards Association. A non-governmental Canadian organisation that sets standards and tests and certifies products for their reliability. By now it is active worldwide.

cULus

Testing of components by UL according to the safety standards applicable in Canada and the USA.

DIBt (WHG)

Deutsches Institut für Bautechnik (Federal Water Act). The Federal Water Act (WHG) is the essential part of the German law relating to water. It contains provisions for the protection and use of surface water and ground water and also regulations about the expansion of waters, water planning and flood protection.

DKD

The Deutscher Kalibrierdienst (DKD) is an association of calibration laboratories of industrial firms, research institutes, technical authorities, inspection and testing institutes. The DKD calibration certificates prove traceability to national standards as required in ISO 9000 and ISO / IEC 17025. They also serve as a metrological basis for the control of measurement and test equipment within the framework of quality management.

E1

Approval by the Kraftfahrt-Bundesamt (German Federal Motor Transport Authority). The E1 type approval by the German Federal Motor Transport Authority certifies that the units comply with the automotive standards. Units with this marking are allowed to be mounted on vehicles without expiry of their operating permit.

EG 1935/2004

The Regulation EC 1935/2004 has been taken into account for process sensors from ifm which are intended for use in contact with food. You can obtain a list of the corresponding products and detailed information on request.

EHEDG

European Hygienic Engineering & Design Group. European supervisory authority for food and drugs. This authority grants approvals for products and materials used in the food and pharmaceutical industries.

FDA

Food and Drug Administration. US-American supervisory authority for food and drugs. This authority grants approvals for products and materials used in the food and pharmaceutical industries.

FM

Factory Mutual Research. A US-based insurance company that specializes in loss prevention services in the property insurance market sector.
They provide material research, material testing and certifications in the field of fire and explosion protection.

PROFIBUS

Process Field Bus. Fieldbus system for important data quantities. It is available in several versions such as Profibus FMS, DP or PA. Profibus DP can be used over longer distances, e.g. as fieldbus for AS-i.

TÜV

Technischer Überwachungs Verein (technical inspection association). The German TÜV is a private-sector body carrying out technical safety tests that are stipulated by government laws or instructions.

UL

Underwriters Laboratories. An organisation founded in the USA for testing and certifying products and their safety.

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AC0017	CE	330, 591
AC0019	CE	330, 591
AC001S	CE, CUL	440, 644
AC0020	CE	330, 591
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AC0023	CE	330, 592
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AC003S	CE, CUL	440, 644
AC004S	CE, CUL	440, 644
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AC011S	CE, CUL	441, 645
AC012S	CE, CUL	441, 645
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AC041S	CE, CUL, TÜV Nord	440, 644
AC1145	CE	642
AC1146	CE, CUL	642
AC1147	CE, CUL	642
AC1154	CE	622
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AC1250	CE, CRUUS, EAC	603
AC1253	CE, CRUUS, CUL	608, 871
AC1254	CE, CRUUS, CUL	608, 870
AC1256	CE, CRUUS, CUL	608, 870
AC1257	CE, CUL	608, 871
AC1258	CE, CRUUS, CUL	608, 870
AC1318	CE, CUL, EAC	602
AC1324	CE, CUL, EAC	602
AC1331	CE, CUL, EAC	602
AC1332	CE, CUL, EAC	602
AC1355	CE, CUL, EAC	602
AC1356	CE, CUL, EAC	602
AC1357	CE, CUL, EAC	602
AC1358	CE, CUL, EAC	603
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AC1366	CE, CUL, EAC	602
AC1375	CE, CUL, EAC	603
AC1376	CE, CUL, EAC	603
AC1401	CE, CUL, Profinet, EAC	603
AC1402	CE, CUL, Profinet, EAC	603
AC1403	CE, CUL, Profinet	604
AC1404	CE, CUL, Profinet	604
AC1411	CE, CUL, EAC, PI	603
AC1412	CE, CUL, EAC, PI	603
AC1421	CE, CUL, EAC	603

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AC1423	CE, CUL	604
AC1424	CE, CUL	604
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AC1434	CE, CUL	604
AC2032	CE	618
AC2035	CE, CUL, EAC	618
AC2055	CE, CUL	632
AC2057	CE	632
AC2086	CE	614
AC2088	CE	614
AC2211	CE	608
AC2212	CE	608
AC2250	CE, CRUUS, EAC	610
AC2251	CE, CRUUS, EAC	611
AC2252	CE, CRUUS, EAC	610
AC2254	CE, CRUUS, EAC	610
AC2255	CE, CRUUS, EAC	610
AC2256	CE, CRUUS, EAC	610
AC2257	CE, CRUUS, EAC	611
AC2258	CE, CRUUS, EAC	611
AC2259	CE, CRUUS, EAC	611
AC2264	CE, CRUUS, EAC	611
AC2267	CE, CRUUS, EAC	611
AC2310	CE, CUL	638
AC2315	CE, CUL	327, 589
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AC2317	CE, CUL	327, 589
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AC2466	CE, CUL	617
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AC2484	CE, CUL	617
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AC2486	CE, CUL	618
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AC2488	CE, CUL	617
AC2516	CE, CUL	614
AC2517	CE, CUL	614
AC2616	CE	618
AC2617	CE	618
AC2618	CE	618
AC2619	CE	618
AC2620	CE	618
AC2709	CE, CRUUS, EAC	611
AC2729	CE, CRUUS, EAC	611
AC2731	CE	611
AC2739	CE, CRUUS	611
AC2750	CE, CRUUS, EAC	611
AC2751	CE, CRUUS, EAC	611
AC2752	CE, CRUUS, EAC	611
AC2753	CE, CRUUS, EAC	611
AC2900	CE, CUL, EAC	619
AC2904	CE, CUL, EAC	618
AC2910	CE, CUL, EAC	619
AC2916	CE, CUL, EAC	619
AC2923	CE, CUL	619
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AC3200	CE, CUL, EAC	611
AC3201	CE, CUL, EAC	611
AC3202	CE, CUL, EAC	611
AC3203	CE, CUL, EAC	612
AC3204	CE, CUL, EAC	612
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AC3218	CE	612
AC3219	CE	612
AC3220	CE, CUL, EAC	612
AC3221	CE, CUL, EAC	612
AC3222	CE	612
AC3225	CE	642
AC326A	CE, (CCC)	329, 590
AC327A	CE	328, 638
AC336A	CE	328, 638
AC402S	CE, CUL, EAC, Profinet	645
AC412S	CE, CUL, EAC, PI	645
AC422S	CE, CUL	645
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AC5005	CUL	621
AC5007		623
AC5010	CUL	619

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AC507A	CE	615
AC507S	CE, CUL, EAC	441, 645
AC508A	CE	615
AC509S	CE, CUL, EAC	441, 645
AC514A	CE	615
AC515A	CE	615
AC5200	CE, CUL, EAC	612
AC5203	CE, CUL, EAC	613
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AC5205	CE, CUL, EAC	612
AC5208	CE, CUL, EAC	613
AC5209	CE, CUL, EAC	613
AC5210	CE, CUL, EAC	613
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AC5212	CE, CUL, EAC	613
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AC5215	CE, CUL, EAC	612
AC5216	CE, CUL, EAC	612
AC5218	CE, CUL, EAC	614
AC5222	CE, CUL, EAC	614
AC5223	CE, CUL, EAC	614
AC5224	CE, CUL, EAC	613
AC5225	CE, CUL, EAC	615
AC5226	CE, CUL, EAC	615
AC5227	CE, CUL, EAC	630
AC5228	CE, CUL, EAC	630
AC522A	CE	615
AC5230	CE, CUL, EAC	615
AC5234	CE, CUL, EAC	614
AC5235	CE, CUL, EAC	613
AC5236	CE, CUL, EAC	614
AC5243	CE, CUL, EAC	630
AC5245	CE, CUL, EAC	614
AC5246	CE, CUL, EAC	630
AC5249	CE, CUL, EAC	630
AC5251	CE, CUL, EAC	630
AC5253	CE, CUL, EAC	631
AC5270	CE, CUL, EAC	631
AC5271	CE, CUL, EAC	631
AC5275	CE, CUL, EAC	614
AC528A	CE	631
AC5292	CE, CUL, EAC	613
AC5293	CE, CUL, EAC	614

(CCC) = CCC approval is not required

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AC535A	CE	615
AC542A	CE	631
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AC551A	CE	631
AC570A	CE	631
AC901S	CE, CUL	441, 645
AC902S	CE, CUL	441, 646
AC903S	CE, CUL	441, 646
AC904S	CE, CUL	441, 646
AL1000	CE, CUL	653
AL1010	CE, CUL, PI	653
AL1020	CE, CUL	653
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AL1100	CE, CUL, Profinet	652
AL1101	CE, Profinet	652
AL1102	CE, Profinet	653
AL1103	CE, Profinet	652
AL1120	CE	652
AL1121	CE	652
AL1122	CE	653
AL1123	CE	652
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AL1202	CE, Profinet	653
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AL1222	CE	653
AL2230	CE	652
AL2330	CE	653
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ANT411	CE, CUL	668
ANT420	CE, CUL	668
ANT421	CE, CUL	668
ANT430	CE, CUL	668
ANT431	CE, CUL	668
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ANT820		675
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CR0032	CE, E1R	705
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CR0133	CE, E1R, EAC	705
CR0153	E1R	705
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CR0234	CE, E1R	705
CR0235	CE, E1R	705
CR0253	E1R	706
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CR0303	CE, E1R, EAC	706
CR0401	CE, E1R, EAC	698
CR0403	CE, CUL, E1R, EAC	698
CR0411	CE, E1R, EAC	698
CR0421	CE, EAC	699
CR0431	CE, E1R, EAC	698
CR0451	CE, E1R, EAC	693, 699
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CR2520	CE, E1R, EAC	713
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CR3003	CE	732
CR3004	CE	732
CR3008	CE	732
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CR9224	CE, E1R	719
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CR9226	CE, E1R	719
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DA102S	CE, CUL	375
DD0203	CE, CUL, EAC	373
DD0296	CE, CUL, EAC	373
DD110S	CE, CUL	375
DD111S	CE, CUL	375
DD2503	CE, CUL, EAC	372
DD2505	CE, CUL, EAC	372
DD2603	CE, CUL, EAC	372
DD2605	CE, CUL, EAC	372
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DF1216	CE, CUL	866
DF2100	CE, CUL	866
DF2208	CE, CUL	867
DF2210	CE, CUL	867
DF2212	CE, CUL	866
DF2214	CE, CUL	866
DF2216	CE, CUL	867
DI0101	CE	360
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DI6001	CE, CUL, EAC	360
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DL0201	CE, CUL	373
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DL2503	CE, CUL, EAC	375
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DN0220	CE, CUL, EAC	864
DN1022	CE, CUL	865
DN1030	CE, CRUUS, CUL	865
DN1031	CE, CRUUS, CUL	865
DN2036	CE, CUL	866
DN4011	CE, CRUUS, CUL	865
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DN4013	CE, CRUUS, CUL	865
DN4014	CE, CRUUS, CUL	865
DN4032	CE, CRUUS, CUL	865
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DTE910	CUL	674
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DTM434	CE, CUL, E1R	669, 735
DTM435	CE, CUL, E1R	669, 735
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(CCC) = CCC approval is not required

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DW2503	CE, CUL, EAC	375
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IFS261	CE, CUL, EAC	101
IFS262	CE, CUL, EAC	100
IFS263	CE, CUL, EAC	100
IFS280	CE, UL, EAC, (CCC)	96
IFS281	CE, UL, EAC, (CCC)	96
IFS282	CE, UL, EAC, (CCC)	96
IFS283	CE, UL, EAC, (CCC)	96
IFS285	CE, CUL	110
IFS286	CE, CUL	110
IFS289	CE, CUL	109
IFS290	CE, CUL, EAC	109
IFS297	CE, CUL, EC19352004, (CCC)	110
IFS298	CE, CUL, EC19352004, EAC, (CCC)	110
IFS299	CE, CUL, EC19352004, EAC, (CCC)	110
IFS304	CE, CUL, EC19352004, (CCC)	110
IFS305	CE, CUL, EC19352004, EAC, (CCC)	110
IFS306	CE, CUL, EC19352004, EAC, (CCC)	110
IFT200	CE, CUL, EC19352004, FDA, (CCC)	120
IFT201	CE, CUL, EC19352004, FDA, (CCC)	121
IFT202	CE, CUL, EC19352004, FDA, (CCC)	120
IFT203	CE, CUL, EAC, EC19352004, FDA, (CCC)	120
IFT204	CE, CUL, EAC, EC19352004, FDA, (CCC)	121
IFT205	CE, CUL, EAC, EC19352004, FDA, (CCC)	120
IFT206	CE, CUL, EC19352004, FDA, (CCC)	119
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IFT208	CE, CUL, EC19352004, FDA, (CCC)	119
IFT209	CE, CUL, EC19352004, FDA, (CCC)	119
IFT210	CE, CUL, EC19352004, FDA, (CCC)	120
IFT216	CE, CUL, EAC, EC19352004, FDA, (CCC)	120
IFT217	CE, CUL, EC19352004, FDA, (CCC)	120
IFT240	CE, CUL, EAC, EC19352004, FDA, (CCC)	118
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IG0006	CCC, CE, CUL, EAC	90
IG0011	CCC, CE, CUL, EAC	90
IG0012	CCC, CE, EAC	90
IG001A	CE, EAC	126
IG510A	CE	125
IG511A	CE	125
IG512A	CE	126
IG513A	CE, EAC	126
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IG5285	CE, EAC, (CCC)	78
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IG5594	CCC, CE, EAC	80
IG5595	CCC, CE, CUL, EAC	81
IG5596	CCC, CE, EAC	80
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IG5647	CE, CUL, (CCC)	113
IG5667	CE, CUL, (CCC)	113
IG5682	CCC, CE, EAC	106
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IGC224	CE, CUL, EAC, (CCC)	104
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IGC250	CE, CUL, (CCC)	115
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IGS235	CE, CUL, EAC, (CCC)	99
IGS236	CE, CUL	100
IGS237	CE, CUL, EAC	100
IGS238	CE, CUL, EAC	99
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IIC221	CE, CUL, (CCC)	109, 634
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IIC226	CE, CUL, (CCC)	114
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IIM200	CE, CUL, E1, E1R, (CCC)	738
IIM201	CE, CUL, E1, E1R, (CCC)	738
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IIM203	CE, CUL, E1, E1R, (CCC)	737
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IIM210	CE, CUL, E1, E1R, CCC	737
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IIR205	CE, CUL, (CCC)	116
IIR206	CE, (CCC)	116
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IIS205	CE, CUL, EAC, (CCC)	75
IIS206	CE, CUL, (CCC)	74
IIS207	CE, CUL, (CCC)	74
IIS208	CE, CUL, EAC, (CCC)	75
IIS209	CE, CUL, EAC, (CCC)	75
IIS210	CE, CUL, (CCC)	75
IIS211	CE, CUL, (CCC)	75
IIS226	CE, CUL, (CCC)	100
IIS227	CE, CUL, EAC, (CCC)	100
IIS228	CE, CUL, EAC, (CCC)	99
IIS229	CE, CUL, EAC, (CCC)	99
IIS230	CE, CUL, EAC	100
IIS231	CE, CUL, EAC	100
IIS232	CE, CUL, EAC	99
IIS233	CE, CUL, EAC	99
IIS234	CE, CUL	102
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IIS249	CE, CUL, EAC	101
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IIS282	CE, CUL, EC19352004, (CCC)	111
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IIT200	CE, CUL, EC19352004, FDA, (CCC)	121
IIT202	CE, CUL, EC19352004, FDA, (CCC)	120
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(CCC) = CCC approval is not required

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(CCC) = CCC approval is not required

AS-Interface	AS-Interface (actuator sensor interface) is a worldwide manufacturer-independent standard for the connection of actuators and sensors of the first field level. Data and power supply are jointly transmitted via a two-wire cable. Wiring complexity, documentation and set-up times are reduced.
ATEX	ATEX (Atmosphère explosible) is a brief description of the uniform EU directives 94/9/EC (for manufactures of units for hazardous areas) and 1999/92/EC (for operators of plants for hazardous areas) governing the safety requirements for explosion-hazardous areas. Since 30 June 2003, units for hazardous areas have to be approved to 94/9/EU regulations. For further information about international directives see the "Approvals" chapter.
e1 type approval	The e1 type approval by the German Federal Motor Transport Authority certifies that the units comply with the automotive standards.
IO-Link	IO-Link is a field-bus independent and open point-to-point communication interface. It is a low-cost possibility to transmit parameter, diagnosis and process data from a sensor or an actuator via an I/O module.
Safety	The EC Machinery Directive stipulates machinery should not present a risk. If safety is dependent on control systems, these must be designed so as to minimise malfunction. The IEC 62061 und ISO 13849-1 standards apply. Classification is made either in the Safety Integrity Level (SIL 1-3 in IEC 62061) or in the Performance Level (PL a-e in ISO 13849-1).

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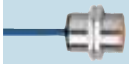 **Inductive sensors**	*123 - 128*
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Short-range and long-range object detection

Different measurement techniques

ifm offers a wide range of position sensors. Inductive, capacitive and magnetic sensors detect targets or objects in the range of a few millimetres up to several centimetres. For greater distances there are photoelectric sensors with ranges up to tens of metres.

Moreover, special types such as optical fork and angle sensors, fibre optics, colour and contrast sensors or cylinder sensors are used for position detection in special applications. ifm also offers suitable solutions for the detection of valve positions.

All sensors are fully electronic, i.e. they work without mechanical components. Advantage: they are wear-free and provide high switching frequencies.

Microprocessor technology makes it possible

The applied microprocessor technology allows fast and easy switch point setting via pushbuttons and potentiometer. Clearly visible LEDs indicate the switching status. In addition to the 3-wire output stage, many position sensors can also be supplied in a 2-wire version. ifm also offers sensors with a built-in AS-Interface (AS-i).

Special applications

Sensors are used in many different areas. These include machine and plant construction as well as applications in factory automation and process technology. Special solutions are, for example, provided for food applications or mobile machines.

Besides constructional measures such as high-quality housing materials and coatings, the sensors also comply with applicable approvals (e.g. ATEX or e1).

Regular and thorough testing in production to the highest standards combined with equally high standards at the development stage ensure a consistently high quality.

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Inductive sensors for all application areas

Inductive sensors

Sensors for all application areas

Wide choice of housing types and operating voltages

High-quality housing materials

Vast selection of assembly and connection technology

IO-Link

Kplus same sensing range for all metals

IP 67 IP 68 IP 69 K

Temperature range –40...+85°C

High-grade stainless steel

c UL us LISTED

Inductive sensors

Inductive sensors offer ideal characteristics compared to mechanical switches: non-contact operation free from any wear and tear, high switching frequencies and accuracy. In addition, they are insensitive to vibration, dust and moisture. Inductive sensors detect all metals without contact.

Application sensors

Temperature shocks, mechanical influences or aggressive cleaning agents are just a few of the possible environmental influences to which sensors are subjected. ifm therefore offers inductive sensors which have been developed for special applications. The use of selected housing materials such as stainless steel, LCP, PEEK, PBT or Duroplast and an innovative, consistent sealing concept from the sensor to the connector ensure ideal protection against penetrating media.

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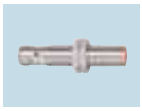
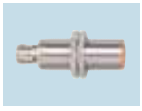
Sensors with IO-Link

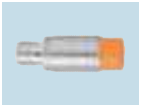
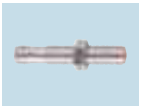
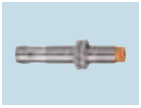
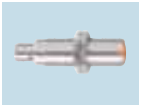
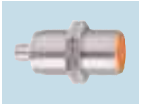
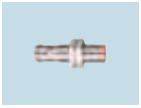
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC PNP/NPN · Wiring diagram no. 36 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	0.375...3.75 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	600	100	1	**IF6123**
	M12 / L = 60	0.7...7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	600	100	2	**IF6124**
	M18 / L = 60	0.75...7.5 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	3	**IG6615**
	M18 / L = 60	1.3...13 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	4	**IG6616**
	M30 / L = 65	1.3...13 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	5	**II5973**
	M30 / L = 65	2.3...23 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	6	**II5974**
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC PNP/NPN · Wiring diagram no. 37 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 54	2.1...21 f	PA (polyamide)	10...30	IP 67	100	100	7	**IM5172**
	40 x 40 x 54	2.6...26 nf	PA (polyamide)	10...30	IP 67	100	100	7	**IM5173**

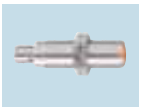
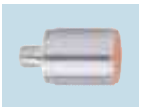
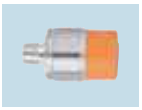
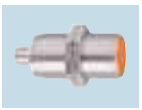
f = flush / nf = non flush / qf = quasi-flush

Sensors for industrial applications with increased sensing range

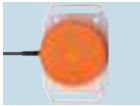
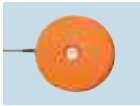
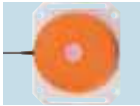
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 67	700	100	8	**IFS200**
	M12 / L = 50	7 nf	Brass	10...30	IP 67	700	100	9	**IFS201**
M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 38 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 46	8 f	Brass	10...30	IP 67	300	100	10	**IGS200**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 38 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 51	12 nf	Brass	10...30	IP 67	250	100	11	**IGS201**
M12 connector · Output function ⎍ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 70	4 f	Brass	10...30	IP 67	500	100	12	**IFS208**
	M12 / L = 70	7 nf	Brass	10...30	IP 67	500	100	13	**IFS209**
	M18 / L = 70	8 f	Brass	10...30	IP 67	400	100	14	**IGS208**
	M18 / L = 70	12 nf	Brass	10...30	IP 67	300	100	15	**IGS209**
	M30 / L = 70	15 f	Brass	10...36	IP 67	100	100	16	**IIS206**
	M30 / L = 70	22 nf	Brass	10...36	IP 67	100	100	17	**IIS207**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 67	700	100	18	**IFS204**
	M12 / L = 50	7 nf	Brass	10...30	IP 67	700	100	19	**IFS205**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 70	4 f	Brass	10...30	IP 67	700	100	20	**IFS212**
	M12 / L = 70	7 nf	Brass	10...30	IP 67	700	100	21	**IFS213**
	M18 / L = 45	8 f	Brass	10...30	IP 67	400	100	22	**IGS204**
	M18 / L = 50	12 nf	Brass	10...30	IP 67	300	100	23	**IGS205**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M18 / L = 70	8 f	Brass	10...36	IP 67	400	100	14	**IGS212**
	M18 / L = 70	12 nf	Brass	10...36	IP 67	300	100	15	**IGS213**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202									
	M30 / L = 50	15 f	Brass	10...30	IP 67	100	100	24	**IIS204**
	M30 / L = 50	22 nf	Brass	10...30	IP 67	100	100	25	**IIS205**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M30 / L = 70	15 f	High-grade st. steel	10...36	IP 67	100	100	16	**IIS210**
	M30 / L = 70	22 nf	High-grade st. steel	10...36	IP 67	100	100	17	**IIS211**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 67	700	100	18	**IFS206**
	M12 / L = 50	7 nf	Brass	10...30	IP 67	700	100	19	**IFS207**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 3									
	M18 / L = 45	8 f	Brass	10...30	IP 67	400	100	22	**IGS206**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 50	12 nf	Brass	10...30	IP 67	300	100	23	**IGS207**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 202									
	M30 / L = 50	15 f	Brass	10...30	IP 67	100	100	24	**IIS208**
	M30 / L = 50	22 nf	Brass	10...30	IP 67	100	100	25	**IIS209**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍/⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 70	8 f	Brass	10...36	IP 68	400	100	26	**IG5953**
	M18 / L = 72	12 nf	Brass	10...36	IP 68	250	100	27	**IG5954**
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	M12 / L = 46	4 f	Brass	10...36	IP 67	700	100	28	**IFS210**
	M12 / L = 51	7 nf	Brass	10...36	IP 67	700	100	29	**IFS211**
	M18 / L = 46	8 f	Brass	10...36	IP 67	400	100	30	**IGS210**
Cable 2 m · Output function ⎍ · 2-wire · AC · Wiring diagram no. 4									
	Ø 100	70 nf	PBT	90...250	IP 65	5	200	31	**I12001***
	Ø 100	70 nf	PBT	90...250	IP 65	5	200	32	**I12003***
	Ø 164	120 nf	PBT	90...250	IP 65	3	200	33	**I22001***
	Ø 164	120 nf	PBT	90...250	IP 65	3	200	34	**I22003***
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 5									
	Ø 100	70 nf	PBT	10...36	IP 65	5	250	31	**I17001**
	Ø 100	70 nf	PBT	10...36	IP 65	5	250	32	**I17003**
	Ø 164	120 nf	PBT	10...36	IP 65	3	250	33	**I27001**

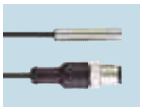
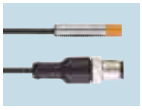
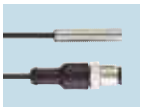
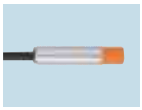
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
7/8" connector · Output function ⎓ · 2-wire · AC · Wiring diagram no. 6 · Connector groups 35, 36									
	Ø 164	120 nf	PBT	90...250	IP 65	3	200	35	**I22006***

f = flush / nf = non flush / qf = quasi-flush

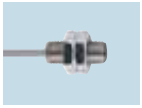
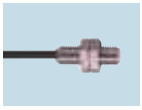
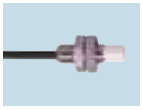
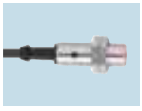
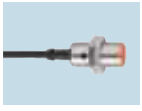
*** Note on use of miniature fuses for electrical connection**

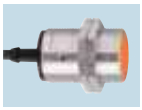
Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Sensors for industrial applications, threaded housings

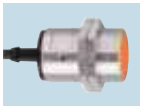
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 0.3 m · with M12 connector · Output function ⎓ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M8 / L = 37	3 f	Brass	10...30	IP 67	1000	100	36	**IE5351**
	M8 / L = 37	5 nf	Brass	10...30	IP 67	700	100	37	**IE5352**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎓ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 1, 2, 3									
	M8 / L = 37	3 f	Brass	10...30	IP 67	1000	100	38	**IE5344**
	M8 / L = 37	5 nf	Brass	10...30	IP 67	700	100	39	**IE5346**
Cable 2 m · Output function ⎓ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 41									
	M8 / L = 37	3 f	Brass	10...30	IP 67	1000	100	40	**IE5343**
	M8 / L = 37	5 nf	Brass	10...30	IP 67	700	100	39	**IE5345**
Cable 2 m · Output function ⎓ · 3-wire · DC PNP · Wiring diagram no. 5									
	M8 / L = 35	1 f	Brass	10...36	IP 67	750	200	41	**IE5072**
	M8 / L = 35	2 nf	PBT	10...36	IP 67	800	200	41	**IE5099**
	M8 / L = 50	1 f	Brass	10...36	IP 67	750	200	42	**IE5121**

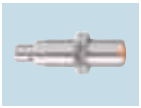
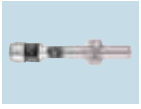
You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 5									
	M8 / L = 50	1 f	PBT	10...36	IP 67	1000	200	42	**IE5129**
	M8 / L = 20	1.5 f	stainless steel	10...30	IP 67	4000	200	43	**IE5348**
	M8 / L = 27	2 f	High-grade st. steel	10...30	IP 67	1500	100	44	**IE5368**
	M8 / L = 27	4 nf	High-grade st. steel	10...30	IP 67	500	100	45	**IE5369**
	M12 / L = 35	2 f	Brass	10...36	IP 67	1500	150	46	**IF5188**
	M12 / L = 35	4 nf	Brass	10...36	IP 67	1500	150	47	**IF5249**
	M12 / L = 71	2 f	Brass	10...55	IP 67	800	250	48	**IF5297**
	M12 / L = 71	2 f	PBT	10...55	IP 67	800	250	48	**IF5313**
	M12 / L = 71	4 nf	Brass	10...36	IP 67	1500	250	49	**IF5329**
	M12 / L = 71	4 nf	PBT	10...36	IP 67	400	250	48	**IF5345**
	M18 / L = 38	5 f	Brass	18...36	IP 67	500	125	50	**IG5221**
	M18 / L = 38	8 nf	Brass	18...36	IP 67	200	125	51	**IG5285**
	M18 / L = 80	5 f	Brass	10...36	IP 67	500	250	52	**IG5397**
	M18 / L = 80	8 nf	Brass	10...36	IP 67	300	250	53	**IG5398**
	M18 / L = 80	5 f	PBT	10...36	IP 67	500	250	52	**IG5399**
	M18 / L = 80	8 nf	PBT	10...36	IP 67	300	250	52	**IG5401**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 5									
	M30 / L = 45	10 f	Brass	18...36	IP 67	300	125	54	**II5166**
	M30 / L = 81	10 f	Brass	10...36	IP 67	250	250	55	**II5256**
	M30 / L = 81	15 nf	Brass	10...36	IP 67	250	250	56	**II5284**
	M30 / L = 81	15 nf	PBT	10...36	IP 67	250	250	55	**II5300**
	M30 / L = 45	15 nf	Brass	18...36	IP 67	250	125	57	**II5346**
	M30 / L = 81	10 f	PBT	10...36	IP 67	250	250	55	**II5369**
	M5 / L = 30	0.8 f	stainless steel	10...36	IP 65	2000	100	58	**IY5029**
	M5 / L = 27	1.5 nf	stainless steel	10...30	IP 67	1800	100	59	**IY5049**
	M5 / L = 23	0.8 f	stainless steel	10...30	IP 65	2000	100	60	**IY5051**
	M5 / L = 23	1.2 f	stainless steel	10...30	IP 65	2000	100	60	**IY5052**
Cable 2 m · Output function ⎍ / ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 42									
	M8 / L = 50	2 nf	PBT (Pocan)	5...36	IP 67	2000	200	42	**IE5202**
	M8 / L = 50	1 f	Brass	5...36	IP 67	2000	200	42	**IE5222**
	M8 / L = 50	2 nf	Brass	5...36	IP 67	2700	200	61	**IE5238**
	M12 / L = 71	4 nf	PBT	10...55	IP 67	1500	400	48	**IF5597**
	M12 / L = 71	2 f	PBT	10...55	IP 67	1100	400	48	**IF5644**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ / ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 42									
	M12 / L = 71	2 f	Brass	10...55	IP 67	1100	400	48	**IF5645**
	M12 / L = 71	4 nf	Brass	10...55	IP 67	1500	400	49	**IF5646**
	M18 / L = 80	8 nf	PBT	10...55	IP 67	300	400	52	**IG5533**
	M18 / L = 80	5 f	PBT	10...55	IP 67	700	400	52	**IG5593**
	M18 / L = 80	5 f	Brass	10...55	IP 67	700	400	52	**IG5594**
	M18 / L = 80	8 nf	Brass	10...55	IP 67	300	400	53	**IG5596**
	M30 / L = 81	15 nf	PBT	10...55	IP 67	200	400	55	**II5436**
	M30 / L = 81	10 f	PBT	10...55	IP 67	450	400	55	**II5488**
	M30 / L = 81	10 f	Brass	10...55	IP 67	450	400	55	**II5489**
	M30 / L = 81	15 nf	Brass	10...55	IP 67	200	400	56	**II5491**
	M30 / L = 45	10 f	Brass	10...55	IP 67	450	400	54	**II5493**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 45	2 f	Brass	10...30	IP 67	700	100	18	**IFS214**
	M12 / L = 50	4 nf	Brass	10...30	IP 67	700	100	19	**IFS215**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 70	2 f	Brass	10...36	IP 67	700	100	12	**IFS216**
	M12 / L = 70	4 nf	Brass	10...36	IP 67	700	100	13	**IFS217**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 45	5 f	Brass	10...30	IP 67	400	100	22	**IGS214**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M18 / L = 70	5 f	Brass	10...36	IP 67	400	100	14	**IGS216**
	M18 / L = 70	8 nf	Brass	10...36	IP 67	300	100	15	**IGS217**
	M8 / L = 53	1 f	Brass	10...36	IP 67	750	200	62	**IE5090**
	M8 / L = 62	4 nf	Brass	10...36	IP 67	300	200	63	**IE5288**
	M8 / L = 62	2 f	Brass	10...36	IP 67	1000	250	64	**IE5312**
	M8 / L = 50	2 f	High-grade st. steel	10...36	IP 68 / IP 69K	1000	100	65	**IE5379**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23									
	M8 / L = 62	2 f	Brass	10...36	IP 67	800	250	66	**IE5327**
M12 connector · Output function ⎍ / ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 8, 10, 19, 21, 23									
	M8 / L = 69	1 f	Brass	5...36	IP 67	2700	200	67	**IE5203**
	M12 / L = 83	2 f	Brass	10...55	IP 67	1100	300	68	**IF5598**
	M12 / L = 83	4 nf	Brass	10...55	IP 67	1500	300	69	**IF5647**
	M18 / L = 70	5 f	Brass	10...55	IP 67	700	400	70	**IG5595**
	M18 / L = 76	8 nf	Brass	10...55	IP 67	300	400	71	**IG5597**
	M30 / L = 78	10 f	Brass	10...55	IP 67	450	400	72	**II5490**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍/⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 8, 10, 19, 21, 23									
	M30 / L = 78	15 nf	Brass	10...55	IP 67	200	400	73	**II5492**
M8 connector · Output function ⎍ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 1, 2, 3									
	M8 / L = 40	3 f	Brass	10...30	IP 65 / IP 67	800	100	74	**IE5338**
	M8 / L = 40	5 nf	High-grade st. steel	10...30	IP 65 / IP 67	600	100	75	**IE5340**
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	M8 / L = 50	2 f	Brass	10...36	IP 65 / IP 67	1300	200	76	**IE5287**
	M8 / L = 30.5	2 f	High-grade st. steel	10...30	IP 65 / IP 67	800	100	77	**IE5366**
	M8 / L = 30.5	4 nf	High-grade st. steel	10...30	IP 65 / IP 67	800	100	78	**IE5367**
	M5 / L = 45	0.8 f	stainless steel	10...36	IP 65	2000	100	79	**IY5036**
	M5 / L = 41	1.5 nf	stainless steel	10...30	IP 67	1800	100	80	**IY5048**
M8 connector · Output function ⎍ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 43 · Connector groups 1, 2, 3									
	M8 / L = 40	3 f	Brass	10...30	IP 65 / IP 67	800	100	74	**IE5349**
	M8 / L = 40	5 nf	High-grade st. steel	10...30	IP 65 / IP 67	600	100	75	**IE5350**
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 7 · Connector groups 1, 2, 3									
	M8 / L = 50	1 f	Brass	10...36	IP 65 / IP 67	2000	200	76	**IE5258**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Terminals · Output function ⎓ / ⎓ · 2-wire · DC PNP/NPN · Wiring diagram no. 44									
	M18 / L = 110	5 f	PBT	10...55	IP 65	800	400	81	**IG5718**
	M18 / L = 110	8 nf	PBT	10...55	IP 65	300	400	81	**IG5719**

f = flush / nf = non flush / qf = quasi-flush

Sensors for industrial applications with smooth sleeve

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎓ · 3-wire · DC PNP · Wiring diagram no. 5									
	Ø 20 / L = 77	10 nf	PBT	10...36	IP 67	300	250	82	**IA5082**
	Ø 34 / L = 82	20 nf	PBT	10...36	IP 67	60	250	83	**IB5096**
	Ø 6.5 / L = 35	1 f	Brass	10...36	IP 67	900	200	84	**IT5001**
	Ø 6.5 / L = 19	2 f	stainless steel	10...30	IP 67	1000	200	85	**IT5039**
	Ø 6.5 / L = 27	2 f	High-grade st. steel	10...30	IP 67	1500	100	86	**IT5042**
	Ø 4 / L = 30	0.8 f	stainless steel	10...36	IP 65	2000	100	87	**IZ5026**
	Ø 4 / L = 27	1.5 nf	stainless steel	10...30	IP 67	1800	100	88	**IZ5047**
	Ø 3 / L = 27	1 nf	stainless steel	10...30	IP 67	5000	100	89	**IZ5048**
	Ø 4 / L = 23	0.8 f	stainless steel	10...30	IP 65	2000	100	90	**IZ5051**
	Ø 4 / L = 23	1.2 f	stainless steel	10...30	IP 65	2000	100	90	**IZ5052**

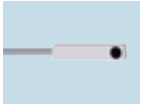
You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ / ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 42									
	Ø 20 / L = 77	10 nf	PBT	10...55	IP 67	300	400	82	**IA5108**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	Ø 20 / L = 93	10 nf	PBT	10...36	IP 67	300	250	91	**IA5127**
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	Ø 4 / L = 41	1.5 nf	stainless steel	10...30	IP 67	1800	100	92	**IZ5046**
	Ø 6.5 / L = 50	1 f	Brass	10...36	IP 65 / IP 67	2000	200	93	**IT5021**
	Ø 6.5 / L = 50	1.5 f	Brass	10...36	IP 65 / IP 67	1700	200	93	**IT5034**
	Ø 6.5 / L = 30.5	2 f	High-grade st. steel	10...30	IP 65 / IP 67	800	100	94	**IT5040**
	Ø 6.5 / L = 50	4 nf	High-grade st. steel	10...30	IP 67	300	100	95	**IT5044**
	Ø 4 / L = 45	0.8 f	stainless steel	10...36	IP 65	2000	100	96	**IZ5035**
Terminals · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 8									
	Ø 20 / L = 92	10 nf	PBT	10...36	IP 65	300	250	97	**IA5062**
Terminals · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 8									
	Ø 20 / L = 92	10 nf	PBT	10...36	IP 65	300	250	97	**IA5063**
Terminals · Output function ⎍ / ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 44									
	Ø 20 / L = 92	10 nf	PBT	10...55	IP 65	300	300	97	**IA5122**
	Ø 34 / L = 98	20 nf	PBT	10...55	IP 65	300	300	98	**IB5124**

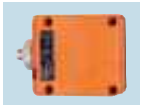
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Terminals · Output function ⎓ / ⎓ · 3-wire · DC PNP · Wiring diagram no. 8									
	Ø 34 / L = 98	20 nf	PBT	10...36	IP 65	350	250	98	**IB5063**
	Ø 34 / L = 98	30 nf	PBT	10...36	IP 65	350	200	98	**IB5133**

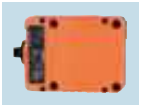
f = flush / nf = non flush / qf = quasi-flush

Sensors for industrial applications, rectangular housings

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎓ · 3-wire · DC PNP · Wiring diagram no. 5									
	120 x 80 x 30	50 nf	PPE	10...36	IP 67	100	250	99	**ID5026**
	40 x 8 x 8	2 f	Brass	10...36	IP 65	2000	250	100	**IL5002**
	40 x 8 x 8	2 f	Brass	10...36	IP 65	2000	250	101	**IL5003**
	40 x 8 x 8	2.5 f	Brass	10...36	IP 65	2000	250	100	**IL5020**
	25 x 5 x 5	0.8 f	aluminium	10...30	IP 67	1000	100	102	**IL5022**
	40 x 12 x 26	2 f	PBT	10...36	IP 67	1400	250	103	**IN5121**
	40 x 12 x 26	4 nf	PBT	10...36	IP 67	1300	250	103	**IN5129**
	28 x 10 x 16	2 f	PBT	10...30	IP 67	800	200	104	**IS5001**
	28 x 10 x 16	3 nf	PBT	10...30	IP 67	100	200	104	**IS5031**
	28 x 10 x 16	4 nf	PBT	10...36	IP 67	2000	250	105	**IS5070**
	60 x 36 x 10	5 f	PBT	10...36	IP 67	400	250	106	**IW5051**

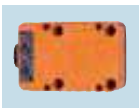
You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 5									
	60 x 36 x 10	8 nf	PBT	10...36	IP 67	300	250	106	**IW5058**
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 9									
	40 x 12 x 26	2 f	PBT	10...36	IP 67	1400	250	103	**IN5186**
	40 x 12 x 26	4 nf	PBT	10...36	IP 67	1300	250	103	**IN5188**
	60 x 36 x 10	8 nf	PBT	10...36	IP 67	300	250	107	**IW5053**
Cable 2 m · Output function ⎍ / ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 42									
	40 x 12 x 26	2 f	PBT	10...55	IP 67	1300	400	103	**IN5207**
	40 x 12 x 26	4 nf	PBT	10...55	IP 67	1200	300	103	**IN5208**
	28 x 10 x 16	2 f	PBT	5...36	IP 67	2000	200	104	**IS5026**
M12 connector · 2-wire · AS-i · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23									
	40 x 40 x 54	15 f	PBT	26.5...31.6	IP 67	100	–	7	**IM5118**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	92 x 80 x 40	50 f	PPE	10...36	IP 67	70	250	108	**ID5055**
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	100	200	7	**IM5115**
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	80	200	7	**IM5116**
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	60	200	7	**IM5117**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	109	**IM5119**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	109	**IM5120**
M12 connector · Output function ⎍⎽ · 2-wire · DC PNP/NPN · Wiring diagram no. 48 · Connector groups 8, 10, 19, 21, 23									
	40 x 40 x 54	15 f	PA (polyamide)	10...36	IP 67	200	100	174	**IM5127**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	7	**IM5128**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	109	**IM5129**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	7	**IM5130**
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	7	**IM5131**
M12 connector · Output function ⎍⎽ / ⎍⏚ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	105 x 80 x 40	60 nf	PPE	10...36	IP 67	100	250	110	**ID5046**
M12 connector · Output function ⎍⎽+⎍⏚ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	109	**IM5124**
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	109	**IM5125**
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	109	**IM5126**
M12 connector · Output function ⎍⎽+⎍⏚ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	92 x 80 x 40	50 f	PPE	10...36	IP 67	70	250	108	**ID5058**

You can find wiring diagrams and scale drawings from page 134

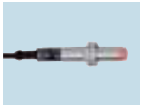
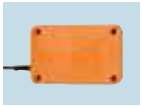
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍⎍+⎍⎍ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	7	**IM5132**
M12 connector · Output function ⎍⎍+⎍⎍ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	7	**IM5133**
M12 connector · Output function ⎍⎍+⎍⎍ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	80	200	7	**IM5134**
M12 connector · Output function ⎍⎍+⎍⎍ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67 / IP 69K	200	200	7	**IM5135**
M12 connector · Output function ⎍⎍+⎍⎍ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	60	200	7	**IM5136**
M12 connector · Output function ⎍⎍+⎍⎍ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 19, 21, 23									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	100	200	7	**IM5123**
M8 connector · Output function ⎍⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	40 x 8 x 8	2 f	Brass	10...36	IP 65	2000	250	111	**IL5004**
	40 x 8 x 8	2 f	Brass	10...36	IP 65	2000	250	112	**IL5005**
	40 x 12 x 26	4 nf	PBT	10...36	IP 65	1300	250	113	**IN5212**
	40 x 12 x 26	2 f	PBT	10...36	IP 67	1400	250	113	**IN5230**
	28 x 10 x 16	2 f	PBT	10...36	IP 67	800	200	114	**IS5035**
	28 x 10 x 16	4 nf	PBT	10...36	IP 67	2000	250	114	**IS5071**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	60 x 36 x 10	8 nf	PBT	10...36	IP 65	300	250	115	**IW5064**
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 7 · Connector groups 1, 2, 3									
	60 x 36 x 10	8 nf	PBT	10...36	IP 67	300	250	115	**IW5062**
Terminals · Output function ⎍ / ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 44									
	40 x 40 x 120	15 f	PPE	10...55	IP 65	350	400	116	**IM5037**
	40 x 40 x 120	20 nf	PPE	10...55	IP 65	300	400	116	**IM5038**
Terminals · Output function ⎍ / ⎍ · 3-wire · DC PNP · Wiring diagram no. 8									
	40 x 40 x 120	20 nf	PPE	10...36	IP 65	350	250	116	**IM5019**
	40 x 40 x 120	15 f	PPE	10...36	IP 65	350	250	116	**IM5020**
	40 x 40 x 120	30 nf	PPE	10...36	IP 65	100	250	116	**IM5046**
Terminals · Output function ⎍ / ⎍ · 3-wire · DC PNP · Wiring diagram no. 45									
	90 x 60 x 40	40 nf	PPE	10...36	IP 65	15	250	117	**IC5005**
	105 x 80 x 40	60 nf	PPE	10...36	IP 65	100	250	118	**ID5005**
Terminals · Output function ⎍+⎍ · 3-wire · DC PNP · Wiring diagram no. 12									
	40 x 40 x 118	20 f	PA 6.6	10...30	IP 68 / IP 69K	400	200	119	**IV5004**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 118	20 f	PA 6.6	10...30	IP 68 / IP 69K	5	200	120	**IV5060**

f = flush / nf = non flush / qf = quasi-flush

You can find wiring diagrams and scale drawings from page 134

Sensors for industrial applications, AC and AC/DC

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
1/2" connector · Output function ⎍ · 2-wire · AC/DC · Wiring diagram no. 13 · Connector group 33									
	40 x 40 x 66	35 nf	PPE	20...250	IP 67	20 / 50	250 / 100	121	**IM0049***
Cable 2 m · Output function ⎍ · 2-wire · AC · Wiring diagram no. 4									
	M12 / L = 71.5	2 f	PBT	20...250	IP 67	25	200	122	**IF0001***
	M12 / L = 71.5	4 nf	PBT	20...250	IP 67	25	200	122	**IF0003***
	M12 / L = 71.5	2 f	Brass	20...250	IP 67	25	200	122	**IF0005***
	M12 / L = 71	4 nf	Brass	20...250	IP 67	25	200	123	**IF0007***
Cable 2 m · Output function ⎍ · 2-wire · AC/DC · Wiring diagram no. 14									
	Ø 20 / L = 77	10 nf	PBT	20...250	IP 67	25 / 70	250 / 100	82	**IA0004***
	Ø 34 / L = 82	20 nf	PBT	20...250	IP 67	25 / 50	250 / 100	83	**IB0004***
	Ø 34 / L = 82	30 nf	PBT	20...250	IP 67	25 / 50	250 / 100	83	**IB0026***
	120 x 80 x 30	50 nf	modified PPE	20...250	IP 65	25 / 35	250 / 100	99	**ID0014***
	M18 / L = 80	5 f	PBT	20...250	IP 67	25 / 50	250 / 100	52	**IG0005***
	M18 / L = 80	8 nf	PBT	20...250	IP 67	25 / 50	250 / 100	52	**IG0006***
	M18 / L = 80	5 f	Brass	20...250	IP 67	25 / 50	250 / 100	52	**IG0011***
	M18 / L = 80	8 nf	Brass	20...250	IP 67	25 / 50	250 / 100	53	**IG0012***
	M30 / L = 81	10 f	PBT	20...250	IP 67	25 / 50	250 / 100	55	**II0005***

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎓ · 2-wire · AC/DC · Wiring diagram no. 14									
	M30 / L = 81	15 nf	PBT	20...250	IP 67	25 / 50	250 / 100	55	**II0006***
	M30 / L = 81	10 f	Brass	20...250	IP 67	25 / 50	250 / 100	55	**II0011***
	M30 / L = 81	15 nf	Brass	20...250	IP 67	25 / 50	250 / 100	56	**II0012***
	40 x 12 x 26	2 f	PBT	20...250	IP 67	25 / 50	250 / 100	103	**IN0073***
	40 x 12 x 26	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	103	**IN0081***
Cable 2 m · Output function ⎓ · 2-wire · AC/DC · Wiring diagram no. 15									
	Ø 20 / L = 77	10 nf	PBT	20...250	IP 67	25 / 70	250 / 100	82	**IA0027***
	Ø 34 / L = 82	20 nf	PBT	20...250	IP 67	25 / 50	250 / 100	83	**IB0017***
	Ø 34 / L = 82	30 nf	PBT	20...250	IP 67	25 / 50	250 / 100	83	**IB0027***
	40 x 12 x 26	2 f	PBT	20...250	IP 67	25 / 50	250 / 100	103	**IN0077***
	40 x 12 x 26	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	103	**IN0085***
M12 connector · Output function ⎓ · 2-wire · AC/DC · Wiring diagram no. 13 · Connector group 7									
	40 x 40 x 66	35 nf	PPE	20...250	IP 67	20 / 50	250 / 100	124	**IM0053***
	92 x 80 x 40	50 f	modified PPE	20...250	IP 67	25	250 / 100	108	**ID0049***
	40 x 40 x 66	20 f	PPE	20...250	IP 67	25 / 140	250 / 100	124	**IM0054***
Terminals · Output function ⎓ / ⎓ · 2-wire · AC/DC · Wiring diagram no. 46									
	90 x 60 x 40	40 nf	PPE	20...250	IP 65	10	250 / 100	117	**IC0003***

You can find wiring diagrams and scale drawings from page 134

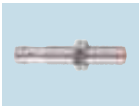
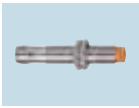
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Terminals · Output function ⎓ / ⏦ · 2-wire · AC/DC · Wiring diagram no. 46									
	105 x 80 x 40	60 nf	modified PPE	20...250	IP 65	4	250 / 100	118	**ID0013***
Terminals · Output function ⎓ / ⏦ · 2-wire · AC/DC · Wiring diagram no. 16									
	Ø 20 / L = 92	10 nf	PBT	20...250	IP 65	25 / 70	250 / 100	97	**IA0032***
	Ø 34 / L = 98	20 nf	PBT	20...250	IP 65	25 / 50	250 / 100	98	**IB0016***
	40 x 40 x 120	20 nf	PPE	20...250	IP 65	20 / 55	250 / 100	116	**IM0010***
	40 x 40 x 120	15 f	PPE	20...250	IP 65	20 / 55	250 / 100	116	**IM0011***

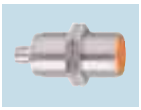
f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

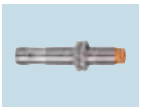
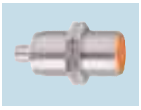
Sensors for industrial applications with analogue output 4...20 mA

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · 3-wire · DC analogue · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 70	0.2...2 f	Brass	15...30	IP 67	–	–	12	**IF6028**
	M12 / L = 70	0.4...4 nf	Brass	15...30	IP 67	–	–	13	**IF6030**
	M18 / L = 60	0.8...8 nf	Brass	15...30	IP 67	–	–	125	**IG6083**
	M18 / L = 60	0.5...5 f	Brass	15...30	IP 67	–	–	126	**IG6086**
	M30 / L = 70	1.0...15 nf	Brass	15...30	IP 67	–	–	17	**II5913**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · 3-wire · DC analogue · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23									
	M30 / L = 70	1.0...10 f	Brass	15...30	IP 67	–	–	16	**II5916**
	40 x 40 x 54	1...15 f	PA (polyamide)	15...30	IP 67	–	–	7	**IM5139**
	40 x 40 x 54	1...26 nf	PA (polyamide)	15...30	IP 67	–	–	7	**IM5141**

f = flush / nf = non flush / qf = quasi-flush

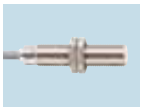
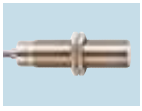
Sensors for industrial applications with analogue output 0...10 V

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 0...10 V analogue · 3-wire · DC analogue · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 70	0.2...2 f	Brass	15...30	IP 67	–	–	12	**IF6029**
	M12 / L = 70	0.4...4 nf	Brass	15...30	IP 67	–	–	13	**IF6031**
	M18 / L = 60	0.8...8 nf	Brass	15...30	IP 67	–	–	125	**IG6084**
	M18 / L = 60	0.5...5 f	Brass	15...30	IP 67	–	–	126	**IG6087**
	M30 / L = 70	1.0...15 nf	Brass	15...30	IP 67	–	–	17	**II5914**
	M30 / L = 70	1.0...10 f	Brass	15...30	IP 67	–	–	16	**II5917**
	40 x 40 x 54	1...15 f	PA (polyamide)	15...30	IP 67	–	–	7	**IM5140**
	40 x 40 x 54	1...26 nf	PA (polyamide)	15...30	IP 67	–	–	7	**IM5142**

f = flush / nf = non flush / qf = quasi-flush

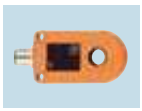
You can find wiring diagrams and scale drawings from page 134

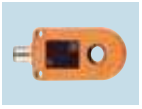
Sensors for industrial high temperature applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 5 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 5									
	M12 / L = 56	3 f	stainless steel	10...35	IP 65	500	120	127	**IF6074**
	M18 / L = 77	8 nf	stainless steel	10...35	IP 65	400	150	128	**IG6119**
	M18 / L = 70	5 f	stainless steel	10...35	IP 65	400	150	129	**IG6614**
	M30 / L = 79	15 nf	stainless steel	10...35	IP 65	200	150	130	**II5930**
	M30 / L = 70	10 f	High-grade st. steel	10...35	IP 65	200	150	131	**II5961**
	M50 / L = 70	20 f	stainless steel	10...35	IP 65	100	150	132	**I95045**

f = flush / nf = non flush / qf = quasi-flush

Sensors for industrial applications on pipes and tubes

Type	Inside diameter [mm]	Operating principle	Minimum diameter of the steel ball [Ø mm]	Part speed max. [m/s]	Pulse stretching [ms]	Response time / break time [ms]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍⊥ · 3-wire · DC NPN · Wiring diagram no. 18 · Connector groups 8, 10, 19, 21, 23								
	10.1	static	1.5	35	10...150	0.5 / 10	133	**I7R202**
	10.1	dynamic	0.6	35	0.1...150	0.2 / 0.2	133	**I7R204**
	15.1	static	2	35	10...150	0.5 / 10	134	**I7R206**
	15.1	dynamic	0.8	35	0.1...150	0.2 / 0.2	134	**I7R208**
	20.1	static	2.5	35	10...150	0.5 / 10	135	**I7R210**
	20.1	dynamic	1.0	35	0.1...150	0.2 / 0.2	135	**I7R212**

Type	Inside diameter [mm]	Operating principle	Minimum diameter of the steel ball [Ø mm]	Part speed max. [m/s]	Pulse stretching [ms]	Response time / break time [ms]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC NPN · Wiring diagram no. 18 · Connector groups 8, 10, 19, 21, 23								
	25.1	static	3.0	35	10...150	0.5 / 10	136	**I7R214**
	25.1	dynamic	1.2	35	0.1...150	0.2 / 0.2	136	**I7R216**
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC PNP · Wiring diagram no. 19 · Connector groups 8, 10, 11, 18, 19, 21, 23								
	10.1	static	1.5	35	10...150	0.5 / 10	133	**I7R201**
	10.1	dynamic	0.6	35	0.1...150	0.2 / 0.2	133	**I7R203**
	15.1	static	2	35	10...150	0.5 / 10	134	**I7R205**
	15.1	dynamic	0.8	35	0.1...150	0.2 / 0.2	134	**I7R207**
	20.1	static	2.5	35	10...150	0.5 / 10	135	**I7R209**
	20.1	dynamic	1.0	35	0.1...150	0.2 / 0.2	135	**I7R211**
	25.1	static	3.0	35	10...150	0.5 / 10	136	**I7R213**
	25.1	dynamic	1.2	35	0.1...150	0.2 / 0.2	136	**I7R215**
	51	static	6	35	10...150	0.5 / 10	137	**I7R217**

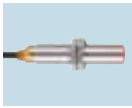
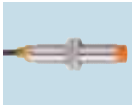
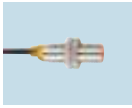
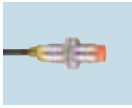
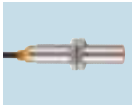
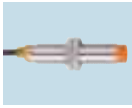
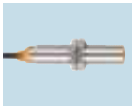
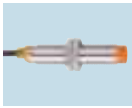
Tube sensors for industrial applications

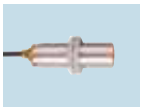
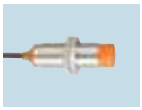
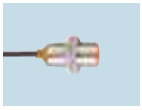
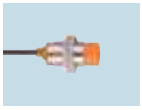
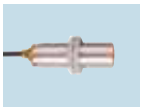
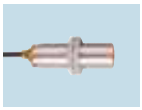
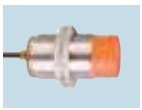
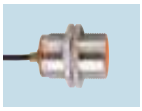
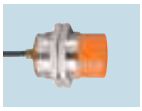
Type	Sensing range [mm]	Operating principle	Minimum diameter of the steel ball [Ø mm]	Part speed max. [m/s]	Pulse stretching [ms]	Response time / break time [ms]	Drawing no.	Order no.
Cable 0.09 m · with M12 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 18 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	≤ 14	static	3.0	35	100	0.5 / 100	138	**I85003**

You can find wiring diagrams and scale drawings from page 134

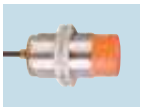
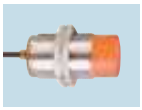
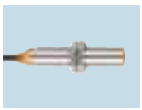
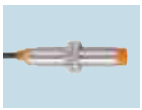
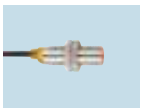
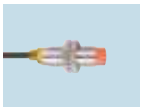
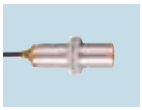
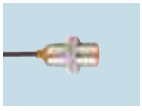
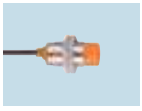
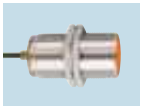
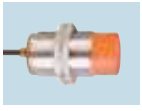
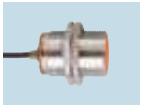
Type	Sensing range [mm]	Operating principle	Minimum diameter of the steel ball [Ø mm]	Part speed max. [m/s]	Pulse stretching [ms]	Response time / break time [ms]	Draw-ing no.	Order no.
Cable 0.09 m · with M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 19 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	≤ 14	static	3.0	35	100	0.5 / 100	138	**I85002**
M8 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 18 · Connector groups 1, 3, 78, 84, 145								
	≤ 14	static	3.0	35	100	0.5 / 100	139	**I85001**
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 19 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	≤ 14	static	3.0	35	100	0.5 / 100	139	**I85000**

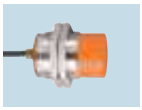
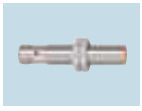
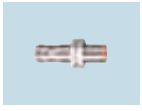
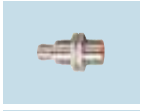
Sensors for industrial applications, oils and coolants and mobile applications with increased sensing range

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Draw-ing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 20									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	140	**IFS254**
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	141	**IFS255**
	M12 / L = 40	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	142	**IFS258**
	M12 / L = 40	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	143	**IFS259**
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 9									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	140	**IFS280**
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	141	**IFS282**
Cable 2 m · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 21									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	140	**IFS281**
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	141	**IFS283**

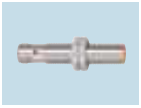
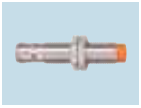
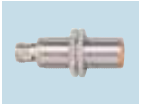
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Draw-ing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 20									
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	144	**IGS246**
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	145	**IGS247**
	M18 / L = 40	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	146	**IGS250**
	M18 / L = 40	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	147	**IGS251**
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 9									
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	144	**IGS269**
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	145	**IGS270**
Cable 2 m · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 21									
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	144	**IGS271**
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	145	**IGS272**
Cable 2 m · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 20									
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	148	**IIS240**
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	149	**IIS241**
	M30 / L = 45	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	150	**IIS244**
	M30 / L = 45	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	151	**IIS245**
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 9									
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	148	**IIS264**

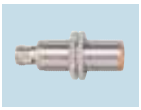
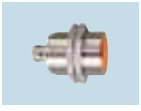
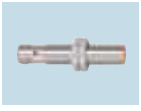
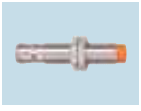
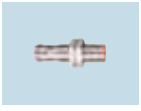
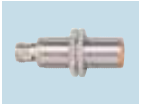
You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 9									
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	149	**IIS263**
Cable 2 m · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 21									
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	148	**IIS265**
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	149	**IIS266**
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 5									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	140	**IFS252**
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	141	**IFS253**
	M12 / L = 40	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	142	**IFS256**
	M12 / L = 40	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	143	**IFS257**
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	144	**IGS244**
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	145	**IGS245**
	M18 / L = 40	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	146	**IGS248**
	M18 / L = 40	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	147	**IGS249**
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	148	**IIS238**
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	149	**IIS239**
	M30 / L = 45	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	150	**IIS242**

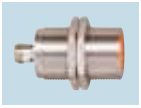
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 5									
	M30 / L = 45	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	151	**IIS243**
M12 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 8, 10, 19, 21, 23, 202									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	1	**IFS242**
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	2	**IFS243**
	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	18	**IFS246**
	M12 / L = 45	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	152	**IFS247**
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	3	**IGS234**
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	4	**IGS235**
	M18 / L = 45	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	22	**IGS238**
	M18 / L = 45	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	153	**IGS239**
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	154	**IIS228**
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	155	**IIS229**
	M30 / L = 50	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	156	**IIS232**
	M30 / L = 50	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	157	**IIS233**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202									
	M12 / L = 45	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	152	**IFS245**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	1	**IFS240**
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	2	**IFS241**
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	3	**IGS232**
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	4	**IGS233**
	M18 / L = 45	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	22	**IGS236**
	M18 / L = 45	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	153	**IGS237**
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	154	**IIS226**
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	155	**IIS227**
	M30 / L = 50	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	156	**IIS230**
	M30 / L = 50	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	157	**IIS231**
	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	18	**IFS244**
M12 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 23 · Connector groups 8, 10, 19, 21, 23, 202									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	1	**IFS249**
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	2	**IFS251**
	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	18	**IFS262**
	M12 / L = 45	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	152	**IFS263**

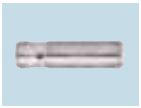
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 23 · Connector groups 8, 10, 19, 21, 23, 202									
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	3	**IGS241**
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	4	**IGS243**
	M18 / L = 45	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	22	**IGS254**
	M18 / L = 45	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	153	**IGS255**
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	154	**IIS235**
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	155	**IIS237**
	M30 / L = 50	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	156	**IIS248**
	M30 / L = 50	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	157	**IIS249**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 202									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	1	**IFS248**
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	2	**IFS250**
	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	18	**IFS260**
	M12 / L = 45	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	152	**IFS261**
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	3	**IGS240**
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	4	**IGS242**
	M18 / L = 45	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	22	**IGS252**

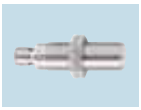
You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 202									
	M18 / L = 45	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	153	**IGS253**
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	154	**IIS234**
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	155	**IIS236**
	M30 / L = 50	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	156	**IIS246**
	M30 / L = 50	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	157	**IIS247**

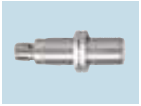
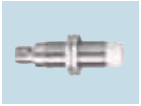
f = flush / nf = non flush / qf = quasi-flush

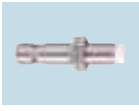
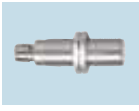
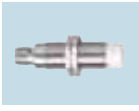
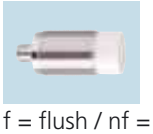
Sensors for oils and coolants with increased sensing range

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 24 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 68	700	100	8	**IFC202**
M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 47 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 46	8 f	Brass	10...30	IP 68	300	100	10	**IGC202**
	M18 / L = 51	12 nf	Brass	10...30	IP 68	250	100	11	**IGC203**
M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 68	700	100	8	**IFC200**
	M12 / L = 50	7 nf	Brass	10...30	IP 68	700	100	9	**IFC201**
M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 38 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 46	8 f	Brass	10...30	IP 68	400	100	10	**IGC200**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍⎽ · 2-wire · DC PNP/NPN · Wiring diagram no. 38 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 51	12 nf	Brass	10...30	IP 68	250	100	11	**IGC201**
M12 connector · Output function ⎍⎽ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 70	4 f	Brass	10...30	IP 68	500	100	12	**IFC210**
	M18 / L = 70	8 f	Brass	10...30	IP 68	400	100	14	**IGC210**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 68	700	100	18	**IFC204**
	M12 / L = 50	7 nf	Brass	10...30	IP 68	700	100	158	**IFC205**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...36	IP 68	700	100	8	**IFC206**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 60	4 f	Brass	10...30	IP 68	700	200	1	**IFC229**
	M12 / L = 60	7 nf	Brass	10...30	IP 68	700	200	2	**IFC230**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 70	4 f	Brass	10...30	IP 68	700	100	20	**IFC237**
	M12 / L = 70	7 nf	Brass	10...30	IP 68	700	100	21	**IFC238**
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	**IGC204**
	M18 / L = 51	12 nf	Brass	10...36	IP 68	300	100	11	**IGC205**

You can find wiring diagrams and scale drawings from page 134

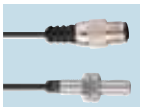
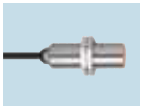
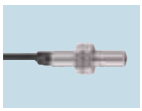
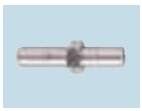
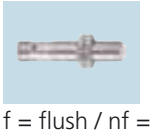
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	**IGC206**
	M18 / L = 60	12 nf	Brass	10...36	IP 68	300	200	125	**IGC220**
	M18 / L = 60	8 f	Brass	10...36	IP 68	400	200	126	**IGC221**
	M18 / L = 70	8 f	Brass	10...36	IP 68	400	100	14	**IGC224**
	M18 / L = 70	12 nf	Brass	10...36	IP 68	300	100	15	**IGC225**
	M30 / L = 50	15 f	Brass	10...36	IP 68	100	100	159	**IIC200**
	M30 / L = 50	22 nf	Brass	10...36	IP 68	100	100	160	**IIC201**
	M30 / L = 60	15 f	Brass	10...36	IP 68	100	200	161	**IIC206**
	M30 / L = 60	22 nf	Brass	10...36	IP 68	100	200	162	**IIC207**
	M30 / L = 70	15 f	High-grade st. steel	10...36	IP 68	100	100	16	**IIC210**
	M30 / L = 70	22 nf	High-grade st. steel	10...36	IP 68	100	100	17	**IIC211**
	M8 / L = 50	2 f	High-grade st. steel	10...36	IP 67	1000	200	65	**IE5381**
	M8 / L = 50	4 nf	High-grade st. steel	10...36	IP 67	700	200	163	**IE5382**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 50	7 nf	Brass	10...30	IP 68	700	100	158	**IFC208**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 3									
	M12 / L = 45	4 f	Brass	10...30	IP 68	700	100	18	**IFC207**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...36	IP 68	700	100	8	**IFC209**
	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	**IGC207**
	M18 / L = 51	12 nf	Brass	10...36	IP 68	300	100	11	**IGC208**
	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	**IGC209**
M12 connector · Output function ⎍/⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 60	4 f	Brass	10...36	IP 68	700	100	164	**IFC234**
	M12 / L = 60	7 nf	Brass	10...36	IP 68	500	100	165	**IFC235**
	M18 / L = 70	8 f	Brass	10...36	IP 68	400	100	14	**IGC222**
	M18 / L = 70	12 nf	Brass	10...36	IP 68	300	100	15	**IGC223**
	M30 / L = 70	15 f	Brass	10...30	IP 68	100	100	16	**IIC208**
	M30 / L = 70	22 nf	Brass	10...30	IP 68	100	100	17	**IIC209**

f = flush / nf = non flush / qf = quasi-flush

You can find wiring diagrams and scale drawings from page 134

Sensors for oils and coolants, threaded housings

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 0.8 m · with M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23									
	M8 / L = 42	2 f	Brass	10...55	IP 67	1000	100	166	**IE9902**
Cable 0.8 m · with M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 48 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 54	2 f	Brass	10...55	IP 67	800	100	167	**IF9920**
Cable 2 m · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 25									
	M18 / L = 54	5 f	Brass	10...55	IP 67	700	400	168	**IG5682**
Cable 2 m · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 49									
	M8 / L = 42	2 f	Brass	10...55	IP 67	1000	100	169	**IE9203**
	M12 / L = 54	2 f	Brass	10...55	IP 67	800	100	170	**IF9222**
M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 60	2 f	Brass	10...55	IP 67	800	100	171	**IF9924**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 45	2 f	Brass	10...36	IP 68	700	200	8	**IFC239**
	M12 / L = 70	2 f	Brass	10...36	IP 68	700	200	12	**IFC241**
	M12 / L = 60	2 f	Brass	10...36	IP 68	700	200	164	**IFC243**

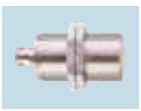
f = flush / nf = non flush / qf = quasi-flush

Sensors for oils and coolants, rectangular housings

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 0.15 m · with M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23									
	26 x 26 x 26	10 f	polyamide	10...36	IP 67	250	100	172	**IO5018**
Cable 0.8 m · with M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23									
	26 x 26 x 26	10 f	polyamide	10...36	IP 67	250	100	172	**IO5017**
M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23									
	26 x 26 x 43	10 f	polyamide	10...36	IP 67	250	100	173	**IO5016**

f = flush / nf = non flush / qf = quasi-flush

Sensors for oils and coolants with correction factor 1

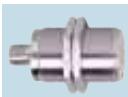
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2									
	M12 / L = 65	8 nf	High-grade st. steel	10...30	IP 68	2000	100	175	**IFC246**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 65	5 f	High-grade st. steel	10...30	IP 68	2000	100	176	**IGC232**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M18 / L = 65	12 nf	High-grade st. steel	10...30	IP 68	2000	200	177	**IGC233**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector group --									
	M30 / L = 65	10 f	High-grade st. steel	10...30	IP 68	2000	100	178	**IIC218**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M30 / L = 65	22 nf	High-grade st. steel	10...30	IP 68	1000	200	179	**IIC219**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2									
	M12 / L = 65	3 f	stainless steel (316L)	10...30	IP 68	2000	100	180	**IFC259**
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	M8 / L = 65	1.5 f	High-grade st. steel	10...30	IP 67	1000	200	181	**IE5390**
	M8 / L = 65	4 nf	High-grade st. steel	10...30	IP 67	1000	200	182	**IE5391**

f = flush / nf = non flush / qf = quasi-flush

Sensors for oils and coolants with ceramic sensing face

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 70	4 f	Brass	10...30	IP 68	500	100	12	**IFC210**
	M18 / L = 70	8 f	Brass	10...30	IP 68	400	100	14	**IGC210**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...36	IP 68	700	100	8	**IFC206**
	M30 / L = 60	15 f	Brass	10...36	IP 68	100	200	161	**IIC206**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...36	IP 68	700	100	8	**IFC209**
	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	**IGC209**

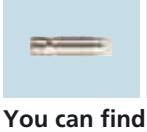
f = flush / nf = non flush / qf = quasi-flush

Sensors for oils and coolants, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · 2-wire · AS-i · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 60	4 f	High-grade st. steel	26.5...31.6	IP 68	100	–	164	**IFC247**
	M18 / L = 60	8 f	High-grade st. steel	26.5...31.6	IP 68	100	–	126	**IGC234**
	M18 / L = 60	12 nf	High-grade st. steel	26.5...31.6	IP 68	100	–	125	**IGC235**
	M30 / L = 60	14 f	High-grade st. steel	26.5...31.6	IP 68	100	–	161	**IIC220**
	M30 / L = 60	22 nf	High-grade st. steel	26.5...31.6	IP 68	100	–	162	**IIC221**

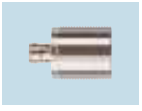
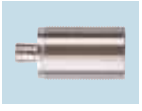
f = flush / nf = non flush / qf = quasi-flush

Electromagnetic field immune Kplus sensors with correction factor 1

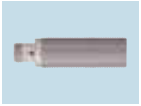
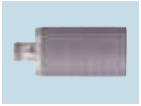
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 145, 146									
	M8 / L = 40	3 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	183	**IES200**
	M8 / L = 40	6 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	184	**IES201**
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2									
	M8 / L = 40	3 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	183	**IEW200**
	M8 / L = 40	6 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	184	**IEW201**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202									
	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	18	**IFS289**
	M12 / L = 45	10 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	185	**IFS290**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	1	**IFS285**
	M12 / L = 60	10 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	186	**IFS286**
	M18 / L = 45	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	22	**IGS279**
	M18 / L = 45	15 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	187	**IGS280**
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	3	**IGS277**
	M18 / L = 60	15 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	188	**IGS278**
	M30 / L = 45	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	189	**IIS269**
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	154	**IIS267**
	M30 / L = 60	30 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	190	**IIS268**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 148, 153, 184, 188, 193									
	M12 / L = 45	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	18	**IFS297**
	M12 / L = 45	8 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	185	**IFS298**
	M12 / L = 45	10 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	185	**IFS299**
	M12 / L = 60	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	1	**IFS304**
	M12 / L = 60	8 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	186	**IFS305**
	M12 / L = 60	10 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	186	**IFS306**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 148, 153, 184, 188, 193									
	M18 / L = 45	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	22	**IGS287**
	M18 / L = 45	12 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	187	**IGS288**
	M18 / L = 45	15 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	187	**IGS289**
	M18 / L = 60	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	3	**IGS290**
	M18 / L = 60	12 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	188	**IGS291**
	M18 / L = 60	15 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	188	**IGS292**
	M30 / L = 45	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	189	**IIS281**
	M30 / L = 60	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	154	**IIS282**
	M30 / L = 60	22 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	190	**IIS283**
	M30 / L = 60	30 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	190	**IIS284**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 140, 141									
	M12 / L = 65	3 f	Brass	10...30	IP 67	2000	100	180	**IFW200**
	M12 / L = 65	8 nf	Brass	10...30	IP 67	2000	100	191	**IFW201**
	M18 / L = 65	5 f	Brass	10...30	IP 67	2000	100	176	**IGW200**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	M18 / L = 65	12 nf	Brass	10...30	IP 67	2000	200	177	**IGW201**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 140, 141									
	M30 / L = 65	10 f	Brass	10...30	IP 67	2000	100	178	**IIW200**
	M30 / L = 65	22 nf	Brass	10...30	IP 67	2000	100	192	**IIW201**
	M12 / L = 65	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	180	**IFW204**
	M18 / L = 65	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	176	**IGW202**
	M30 / L = 65	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	178	**IIW202**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	109	**IM5119**
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	109	**IM5120**
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	109	**IM5129**
M12 connector · Output function ⎍+⎍ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	109	**IM5124**
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	109	**IM5125**
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	109	**IM5126**
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	7	**IM5132**
M12 connector · Output function ⎍+⎍ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	7	**IM5133**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎓+⏚ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67 / IP 69K	200	200	7	**IM5135**

f = flush / nf = non flush / qf = quasi-flush

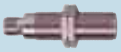
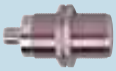
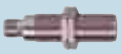
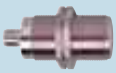
Electromagnetic field immune sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎓ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	M12 / L = 60	4 nf	Brass	10...36	IP 67	1000	250	193	**IF5675**
	M18 / L = 60	5 f	Brass	10...36	IP 67	700	250	126	**IG5647**
	M12 / L = 60	2 f	Brass	10...36	IP 67	1000	250	194	**IF5670**
	M12 / L = 60	2 f	Brass	10...36	IP 67	1000	250	194	**IF5750**
	M12 / L = 60	4 nf	Brass	10...36	IP 67	1000	250	193	**IF5751**
	M18 / L = 60	5 f	Brass	10...36	IP 67	700	250	126	**IG5667**
	M30 / L = 60	10 f	Brass	10...36	IP 67	250	250	195	**II5503**
M12 connector · Output function ⎓+⏚ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 137, 138, 139, 140, 141									
	92 x 80 x 40	50 f	PPE	10...36	IP 67	70	250	108	**ID5059**

f = flush / nf = non flush / qf = quasi-flush

You can find wiring diagrams and scale drawings from page 134

Full metal sensors for oils and coolants

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	18	**IFC275**
	M18 / L = 45	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	22	**IGC258**
	M30 / L = 50	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	50	100	156	**IIC233**
M12 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 8, 10, 19, 21, 23									
	M8 / L = 60	2 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	196	**IEC203**
	M12 / L = 60	3 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	164	**IFC266**
	M18 / L = 70	5 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	70	**IGC252**
	M30 / L = 70	10 f	High-grade st. steel	10...36	IP 67 / IP 68	50	100	197	**IIC226**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M8 / L = 60	2 f	High-grade st. steel	10...36	IP 67 / IP 68 / IP 69K	100	100	196	**IEC200**
	M12 / L = 60	3 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	164	**IFC258**
	M18 / L = 70	5 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	70	**IGC248**
	M30 / L = 70	10 f	High-grade st. steel	10...36	IP 67 / IP 68	50	100	197	**IIC224**
M8 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 1, 3									
	M8 / L = 50	2 f	High-grade st. steel	10...36	IP 67	100	100	198	**IEC202**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Draw-ing no.	Order no.
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	M8 / L = 50	2 f	High-grade st. steel	10...36	IP 67	100	100	198	**IEC201**

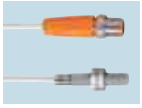
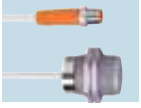
f = flush / nf = non flush / qf = quasi-flush

Full metal sensors for oils and coolants with correction factor 0

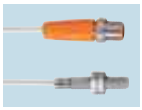
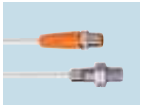
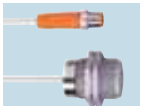
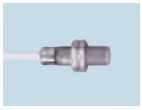
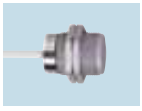
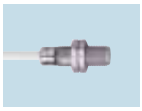
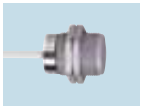
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Draw-ing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 60	2.5 f	High-grade st. steel	10...36	IP 68	100	100	164	**IFC263**
	M18 / L = 70	4.5 f	High-grade st. steel	10...36	IP 68	100	100	199	**IGC249**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 60	2.5 f	High-grade st. steel	10...36	IP 68	100	100	164	**IFC264**
	M18 / L = 70	4.5 f	High-grade st. steel	10...36	IP 68	100	100	199	**IGC250**

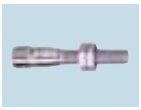
f = flush / nf = non flush / qf = quasi-flush

Full metal sensors with non-stick coating against weld spatter

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Draw-ing no.	Order no.
Cable 0.3 m · with M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 137, 140, 141									
	M8 / L = 45	2 f	High-grade st. steel	10...36	IP 67	150	100	200	**IER203**
	M12 / L = 40	4 f	High-grade st. steel	10...36	IP 67	75	100	201	**IFR203**
	M18 / L = 40	6 f	High-grade st. steel	10...36	IP 67	50	100	202	**IGR203**
	M30 / L = 40	12 f	High-grade st. steel	10...36	IP 67	25	100	203	**IIR203**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 0.3 m · with M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 26 · Connector groups 137, 140, 141									
	M8 / L = 45	2 f	High-grade st. steel	10...36	IP 67	150	100	200	**IER206**
	M12 / L = 40	4 f	High-grade st. steel	10...36	IP 67	75	100	201	**IFR206**
	M18 / L = 40	6 f	High-grade st. steel	10...36	IP 67	50	100	202	**IGR206**
	M30 / L = 40	12 f	High-grade st. steel	10...36	IP 67	25	100	203	**IIR206**
Cable 3 m · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 27									
	M8 / L = 45	2 f	High-grade st. steel	10...36	IP 67	150	100	204	**IER204**
	M12 / L = 40	4 f	High-grade st. steel	10...36	IP 67	75	100	205	**IFR204**
	M18 / L = 40	6 f	High-grade st. steel	10...36	IP 67	50	100	206	**IGR204**
	M30 / L = 40	12 f	High-grade st. steel	10...36	IP 67	25	100	207	**IIR204**
Cable 5 m · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 27									
	M12 / L = 40	4 f	High-grade st. steel	10...36	IP 67	75	100	205	**IFR205**
	M18 / L = 40	6 f	High-grade st. steel	10...36	IP 67	50	100	206	**IGR205**
	M30 / L = 40	12 f	High-grade st. steel	10...36	IP 67	25	100	207	**IIR205**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 140, 141									
	M12 / L = 45	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2	100	18	**IFR207**
	M18 / L = 45	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2	100	22	**IGR207**
	M30 / L = 50	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2	100	156	**IIR207**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 137, 140, 141									
	M8 / L = 60	2 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	196	**IER201**
	M12 / L = 60	4 f	High-grade st. steel	10...36	IP 67	2	100	164	**IFR202**
	M18 / L = 70	6 f	High-grade st. steel	10...36	IP 67	2	100	70	**IGR202**
	M30 / L = 70	12 f	High-grade st. steel	10...36	IP 67	2	100	197	**IIR202**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	M8 / L = 60	2 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	196	**IER200**
	M12 / L = 60	4 f	High-grade st. steel	10...36	IP 67	2	100	164	**IFR200**
	M18 / L = 70	6 f	High-grade st. steel	10...36	IP 67	2	100	70	**IGR200**
	M30 / L = 70	12 f	High-grade st. steel	10...36	IP 67	2	100	197	**IIR200**

f = flush / nf = non flush / qf = quasi-flush

Full metal sensors for hygienic and wet areas

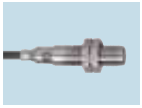
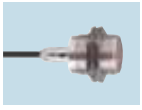
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 153, 184, 188, 193									
	M12 / L = 45	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	18	**IFT257**
	M18 / L = 45	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	22	**IGT258**
	M30 / L = 50	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	50	100	156	**IIT243**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 148, 152, 153, 155, 184, 186, 188, 192, 193									
	M12 / L = 70	6 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	500	100	208	**IFT246**
	M18 / L = 70	12 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	500	100	209	**IGT250**
	M30 / L = 70	25 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	250	100	210	**IIT232**
M12 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 148, 153, 184, 188, 193									
	M18 / L = 70	5 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	70	**IGT248**
	M12 / L = 60	3 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	164	**IFT244**
	M30 / L = 70	10 f	High-grade st. steel	10...36	IP 68 / IP 69K	50	100	197	**IIT230**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193									
	M12 / L = 70	6 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	500	100	208	**IFT245**
	M18 / L = 70	12 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	500	100	209	**IGT249**
	M30 / L = 70	25 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	250	100	210	**IIT231**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M18 / L = 70	5 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	70	**IGT247**
	M30 / L = 70	10 f	High-grade st. steel	10...36	IP 68 / IP 69K	50	100	197	**IIT228**
	M12 / L = 60	3 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	164	**IFT240**
	Ø 12 / L = 60	3 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	211	**IFT243**

f = flush / nf = non flush / qf = quasi-flush

Sensors for hygienic and wet areas with increased sensing range

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
1/2" UNF-Connector · Output function ⎍ · 2-wire · AC/DC · Wiring diagram no. 28 · Connector group 33									
	M30 / L = 70	22 nf	High-grade st. steel	20...140	IP 68 / IP 69K	25 / 100	80	212	**IIT002**
Cable 10 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 5									
	M12 / L = 50	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	213	**IFT207**
	M12 / L = 61	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	214	**IFT209**
	M18 / L = 57	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	600	100	215	**IGT207**
	M18 / L = 62	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	216	**IGT209**
	M30 / L = 59	14 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	217	**IIT206**
	M30 / L = 59	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	218	**IIT208**
Cable 6 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 5									
	M12 / L = 50	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	213	**IFT206**
	M12 / L = 61	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	214	**IFT208**
	M18 / L = 57	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	600	100	215	**IGT206**
	M18 / L = 62	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	216	**IGT208**
	M30 / L = 59	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	218	**IIT207**
	M30 / L = 59	14 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	217	**IIT209**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M12 / L = 70	7 nf	High-grade st. steel	10...30	IP 68 / IP 69K	700	100	219	**IFT202**
	M12 / L = 70	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	500	100	12	**IFT205**
	Ø 12 / L = 70	7 nf	High-grade st. steel	10...30	IP 68 / IP 69K	700	100	220	**IFT210**
	M18 / L = 70	12 nf	High-grade st. steel	10...30	IP 68 / IP 69K	300	100	221	**IGT202**
	M18 / L = 70	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	400	100	14	**IGT205**
	M30 / L = 70	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	17	**IIT202**
	M30 / L = 70	14 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	16	**IIT204**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M12 / L = 50	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	222	**IFT200**
	M12 / L = 45	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	8	**IFT203**
	M12 / L = 70	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	700	100	12	**IFT216**
	M12 / L = 70	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	13	**IFT217**
	M18 / L = 51	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	223	**IGT200**
	M18 / L = 46	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	600	100	10	**IGT203**
	M18 / L = 70	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	400	100	14	**IGT219**
	M18 / L = 70	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	15	**IGT220**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M30 / L = 50	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	224	**IIT200**
	M30 / L = 50	14 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	159	**IIT205**
	M30 / L = 70	15 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	16	**IIT212**
	M30 / L = 70	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	17	**IIT213**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 148, 153, 184, 188, 193									
	M18 / L = 46	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	600	100	10	**IGT204**
	M12 / L = 50	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	222	**IFT201**
	M12 / L = 45	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	8	**IFT204**
	M18 / L = 51	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	223	**IGT201**

f = flush / nf = non flush / qf = quasi-flush

Sensors for hygienic and wet areas

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍+⎍ · 4-wire · DC PNP · Wiring diagram no. 29									
	M18 / L = 80	8 nf	High-grade st. steel	10...36	IP 67	320	250	53	**IG5202**
M12 connector · Output function ⎍ · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M18 / L = 70	8 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	221	**IGT240**
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M8 / L = 70	1 f	High-grade st. steel	10...36	IP 67	2000	200	225	**IE5215**

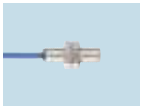
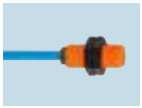
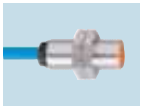
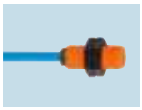
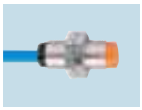
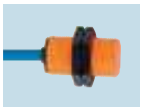
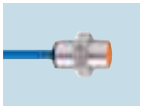
You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M8 / L = 55	2 nf	High-grade st. steel	10...36	IP 67	2000	200	226	**IE5295**
	M12 / L = 59	2 f	High-grade st. steel	10...36	IP 67	1100	200	227	**IF5514**
	M12 / L = 83	4 nf	High-grade st. steel	10...36	IP 67	400	250	69	**IF5594**
	M12 / L = 44	4 nf	High-grade st. steel	10...36	IP 67	1400	125	228	**IF5796**
	M12 / L = 59	4 nf	High-grade st. steel	10...36	IP 67	1400	250	229	**IF5813**
	M12 / L = 44	2 f	High-grade st. steel	10...36	IP 67	1200	250	230	**IF5815**
	M12 / L = 83	2 f	High-grade st. steel	10...36	IP 67	800	250	68	**IF5851**
	M18 / L = 90	8 nf	High-grade st. steel	10...36	IP 67	300	250	231	**IG5602**
	M18 / L = 76	5 f	High-grade st. steel	10...36	IP 67	500	250	232	**IG5813**
	M30 / L = 92	10 f	High-grade st. steel	10...36	IP 67	250	250	233	**II5689**
	M30 / L = 92	15 nf	High-grade st. steel	10...36	IP 67	200	250	234	**II5776**
M12 connector · Output function ⎍ / ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 148, 153, 184, 188, 193									
	M12 / L = 83	2 f	High-grade st. steel	10...55	IP 67	1100	400	68	**IF5759**
	M12 / L = 83	4 nf	High-grade st. steel	10...55	IP 67	1500	300	69	**IF5760**
	M18 / L = 77	8 nf	High-grade st. steel	10...55	IP 67	300	300	235	**IG5772**

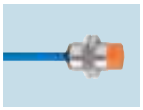
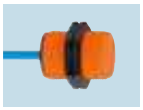
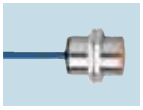
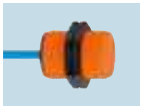
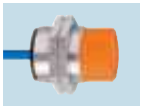
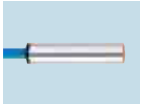
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍/⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 148, 153, 184, 188, 193									
	M18 / L = 90	5 f	High-grade st. steel	10...55	IP 67	700	400	236	**IG5806**
	M30 / L = 78	15 nf	High-grade st. steel	10...55	IP 67	200	400	73	**II5733**
	M30 / L = 92	10 f	High-grade st. steel	10...55	IP 67	450	400	233	**II5751**
M12 connector · Output function ⎍+⎍ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M18 / L = 45	10 nf	High-grade st. steel	10...36	IP 67	300	250	237	**IG5846**

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 1D / 2G

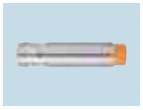
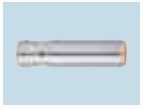
Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 30										
	M8 / L = 30	1 f	Brass	8.2 DC	7.5...30	80	70	2000	238	**NE5001**
	M12 / L = 30	2 f	PBT	8.2 DC	7.5...30	140	340	1200	239	**NF5001**
	M12 / L = 30	2 f	Brass	8.2 DC	7.5...30	140	340	1200	239	**NF5002**
	M12 / L = 30	4 nf	PBT	8.2 DC	7.5...30	140	130	1500	239	**NF5003**
	M12 / L = 30	4 nf	Brass	8.2 DC	7.5...30	140	130	1500	240	**NF5004**
	M18 / L = 33	5 f	PBT	8.2 DC	7.5...30	145	45	720	241	**NG5001**
	M18 / L = 33	5 f	Brass	8.2 DC	7.5...30	145	45	720	241	**NG5002**
	M18 / L = 33	8 nf	PBT	8.2 DC	7.5...30	155	50	300	241	**NG5003**

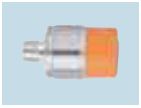
You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
Cable 2 m · Output function ⏦ · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 30										
	M18 / L = 33	8 nf	Brass	8.2 DC	7.5...30	155	50	300	242	**NG5004**
	M30 / L = 41	10 f	PBT	8.2 DC	7.5...30	145	140	450	243	**NI5001**
	M30 / L = 41	10 f	Brass	8.2 DC	7.5...30	145	140	450	243	**NI5002**
	M30 / L = 41	15 nf	PBT	8.2 DC	7.5...30	145	110	200	243	**NI5003**
	M30 / L = 41	15 nf	Brass	8.2 DC	7.5...30	145	110	200	244	**NI5004**
	40 x 12 x 26	4 nf	PBT	8.2 DC	7.5...30	110	135	400	245	**NN5002**
	28 x 10 x 16	2 f	PBT	8.2 DC	7.5...30	80	110	800	246	**NS5002**
	Ø 6.5 / L = 30	1 f	Brass	8.2 DC	7.5...30	80	70	2000	247	**NT5001**

f = flush / nf = non flush / qf = quasi-flush

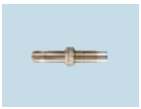
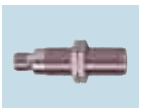
Sensors with ATEX approval 1D / 1G / 2G

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
M12 connector · Output function ⏦ · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 31 · Connector groups 195, 197										
	M12 / L = 50	7 nf	Brass	8.2 DC	7.5...30	210	145	700	9	**NF500A**
	M12 / L = 45	4 f	Brass	8.2 DC	7.5...30	210	115	700	8	**NF501A**
	M18 / L = 51	12 nf	Brass	8.2 DC	7.5...30	200	85	300	11	**NG500A**
	M18 / L = 46	8 f	Brass	8.2 DC	7.5...30	200	190	400	10	**NG501A**

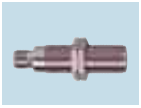
Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
M12 connector · Output function ⏚ · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 31 · Connector groups 195, 197										
	M30 / L = 50	22 nf	Brass	8.2 DC	7.5...30	250	120	100	160	**NI500A**
	M30 / L = 50	15 f	Brass	8.2 DC	7.5...30	230	210	100	159	**NI501A**
M12 connector · Output function ⏚ · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 32 · Connector group 197										
	40 x 40 x 66	20 f	PPE	8.2 DC	7.5...30	250	450	200	124	**NM500A**
	40 x 40 x 66	35 nf	PPE	8.2 DC	7.5...30	220	710	100	124	**NM501A**

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 3D/3G

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
M12 connector · Output function ⏚+⏚ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 196, 198										
	40 x 40 x 54	40 nf	PC	10...30 DC	–	–	–	60	248	**IM511A**
	40 x 40 x 54	20 f	PC	10...30 DC	–	–	–	100	248	**IM512A**
	40 x 40 x 54	30 nf	PC	10...30 DC	–	–	–	100	248	**IM513A**
M12 connector · Output function ⏚ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 196, 198										
	M12 / L = 70.2	6 nf	High-grade st. steel	10...36 DC	–	–	–	500	249	**IF505A**
	M18 / L = 70	12 nf	High-grade st. steel	10...36 DC	–	–	–	500	209	**IG511A**
	M30 / L = 70	25 nf	High-grade st. steel	10...36 DC	–	–	–	250	210	**II503A**
	M18 / L = 70	5 f	High-grade st. steel	10...36 DC	–	–	–	100	70	**IG510A**

You can find wiring diagrams and scale drawings from page 134

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 196, 198										
	M30 / L = 70	10 f	High-grade st. steel	10...36 DC	–	–	–	50	250	**II502A**
	M12 / L = 60	3 f	High-grade st. steel	10...36 DC	–	–	–	100	251	**IF503A**
M12 connector · Output function ⎍⎿ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 196, 198										
	M18 / L = 70	5 f	High-grade st. steel	10...36 DC	–	–	–	100	70	**IG512A**
	M12 / L = 60	3 f	High-grade st. steel	10...36 DC	–	–	–	100	251	**IF504A**

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 3D

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
Cable 2 m · Output function ⎍⎽ · 2-wire · AC/DC · Wiring diagram no. 14										
	M18 / L = 80	8 nf	Brass	20...250 AC/DC	–	–	–	25 / 50	252	**IG001A***
Cable 2 m · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 5										
	M18 / L = 80	8 nf	Brass	10...30 DC	–	–	–	300	252	**IG513A**
Cable 2 m · Output function ⎍⎽ / ⎍⎿ · 2-wire · DC PNP/NPN · Wiring diagram no. 42										
	M18 / L = 80	8 nf	Brass	10...30 DC	–	–	–	300	252	**IG515A**
Cable 6 m · Output function ⎍⎽ · 2-wire · AC/DC · Wiring diagram no. 14										
	M30 / L = 81	15 nf	Brass	20...250 AC/DC	–	–	–	25 / 50	253	**II001A***
M12 connector · Output function ⎍⎽+⎍⎿ · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 196, 198										
	M18 / L = 80	10 nf	High-grade st. steel	10...30 DC	–	–	–	300	254	**IG514A**

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
Terminals · Output function ⎓+⏚ · 4-wire · DC · Wiring diagram no. 33										
	40 x 40 x 105	20 f	PC	10...30 DC	–	–	–	100	255	**IM510A**
Terminals · Output function ⎓ · 4-wire · DC · Wiring diagram no. 34										
	40 x 40 x 105	20 f	PC	10...30 DC	–	–	–	100	255	**IM509A**
Terminals · Output function ⎓/⏚ · 2-wire · AC/DC · Wiring diagram no. 46										
	105 x 80 x 42	60 nf	PPE	20...250 AC/DC	–	–	–	4	256	**ID002A***
Terminals · Output function ⎓/⏚ · 2-wire · AC/DC · Wiring diagram no. 50										
	40 x 40 x 105	40 nf	PC	20...250 AC/DC	–	–	–	10	255	**IM002A***
Terminals · Output function ⎓/⏚ · 2-wire · DC · Wiring diagram no. 51										
	40 x 40 x 105	20 f	PC	10...55 DC	–	–	–	100	255	**IM508A**
Terminals · Output function ⎓/⏚ · 3-wire · AC/DC · Wiring diagram no. 50										
	40 x 40 x 105	20 f	PC	20...250 AC/DC	–	–	–	10	255	**IM001A***
Terminals · Output function ⎓/⏚ · 3-wire · DC PNP · Wiring diagram no. 45										
	105 x 80 x 42	60 nf	PPE	10...30 DC	–	–	–	100	256	**ID502A**
Terminals · Output function ⎓/⏚ · 4-wire · DC · Wiring diagram no. 52										
	40 x 40 x 105	20 f	PC	10...30 DC	–	–	–	100	255	**IM506A**
	40 x 40 x 105	40 nf	PC	10...30 DC	–	–	–	100	255	**IM507A**

f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

You can find wiring diagrams and scale drawings from page 134

Sensors with ATEX approval 2D / 3G

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 35 · Connector groups 196, 198										
	M30 / L = 70	10 f	High-grade st. steel	10...36 DC	–	–	–	50	250	**II504A**
Terminals · Output function ⎍ / ⎍ · 3-wire · DC PNP · Wiring diagram no. 53										
	105 x 80 x 42	60 nf	modified PPE	10...30 DC	–	–	–	100	256	**ID503A**

f = flush / nf = non flush / qf = quasi-flush

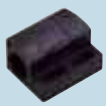
Switching amplifiers with ATEX approval

Type	Description	Order no.
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 1-channel · Relay output · Programmable output function · Short-circuit and wire monitoring	**N0031A**
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Relay outputs · Programmable output function · Short-circuit and wire monitoring	**N0032A**
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Relay outputs · Programmable output function · Short-circuit and wire monitoring	**N0033A**
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 1-channel · Relay output · Programmable output function · Short-circuit and wire monitoring	**N0530A**
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 1-channel · Transistor outputs · Programmable output function · Short-circuit and wire monitoring	**N0531A**
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Optocoupler output · Programmable output function · Short-circuit and wire monitoring	**N0532A**
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Relay outputs · Programmable output function · Short-circuit and wire monitoring	**N0533A**
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Transistor outputs · Programmable output function · Short-circuit and wire monitoring	**N0534A**

Accessories for sensors with smooth sleeve

Type	Description	Order no.
	Mounting clip · Ø 12 mm · for smooth body switches - Ø 12 mm · Form V · Housing materials: stainless steel	**E11530**
	Mounting clip · Ø 18 mm · for smooth body switches - Ø 18 mm · Form V · Housing materials: stainless steel	**E11531**
	Mounting clamp · Ø 4 mm · Housing materials: TPE	**E10204**
	Mounting clamp · Ø 6.5 mm · Housing materials: PPE	**E10014**
	Mounting clamp · Ø 20 mm · Housing materials: PA	**E10192**
	Mounting clamp · Ø 34 mm · Housing materials: PA	**E10193**
	Mounting clamp · Ø 20 mm · Housing materials: Mounting clamp: PBT / socket screw: steel galvanised	**E10016**
	Mounting clamp · Ø 34 mm · Housing materials: PBT	**E10017**
	Limit plungers · for type Ø 6.5 mm · with Sn = 1 mm f · Housing materials: Limit plungers: free cutting steel / plunger: C45K hardened on front / nut: Brass nickel-plated	**E10155**

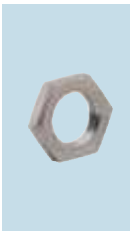
Accessories for threaded M8 housings

Type	Description	Order no.
	Angle bracket · for type M8 · Housing materials: stainless steel	**E10734**
	Mounting clamp · Ø 8 mm · Housing materials: aluminium black anodised	**E10221**
	Mounting clamp · Ø 8 mm · with end stop · for type M8 · Housing materials: PC	**E11521**
	Mounting sleeve · M12 x 1 - Ø 8 mm · 32 mm · with end stop · for type M8 · Housing materials: Brass special coating	**E10848**

You can find wiring diagrams and scale drawings from page 134

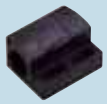
Type	Description	Order no.
	Mounting sleeve · M12 x 1 - Ø 8 mm · 42 mm · with end stop · for type M8 · Housing materials: Brass special coating	**E10849**
	Limit plungers · for types M8 x 1 · with Sn = 1 mm f, 2 mm f and 3 mm f · Housing materials: Limit plungers: free cutting steel / plunger: C45K hardened on front / nut: Brass nickel-plated	**E10154**

Accessories for threaded M12 housings

Type	Description	Order no.
	Angle bracket · for type M12 · Housing materials: stainless steel	**E10735**
	Mounting clip · O-shaped · for type M12 · Housing materials: stainless steel	**E11533**
	Mounting clamp · Ø 12 mm · Housing materials: PBT	**E10015**
	Mounting clamp · Ø 12 mm · with end stop · for type M12 · Housing materials: PC	**E11047**
	Mounting clamp · Ø 12 mm · with end stop · For sensors with 45° chamfer · for type M12 · Housing materials: PC	**E11994**
	Mounting sleeve · M16 x 1 - Ø 12 mm · 45 mm · with end stop · for type M12 · Housing materials: Brass nickel-plated	**E10741**
	Mounting sleeve · M16 x 1 - Ø 12 mm · 34 mm · with end stop · for type M12 · Housing materials: Brass nickel-plated	**E10806**
	Mounting sleeve · M16 x 1 - Ø 12 mm · with end stop · for type M12 · Housing materials: Brass nickel-plated	**E11114**
	Mounting sleeve · M16 x 1 - Ø 12 mm · 33.5 mm · with end stop · for type M12 · Housing materials: Brass anti-spatter / nut: Brass anti-spatter	**E12452**
	Lock nuts metal · M12 x 1 · Housing materials: Brass nickel-plated	**E10024**
	Lock nuts metal · M12 x 1 · Housing materials: stainless steel 316Ti / 1.4571	**E10025**

Type	Description	Order no.
	serrated washer · Ø 13 mm / Ø 18 mm · for type M12 · Housing materials: steel anti-spatter	**E12412**

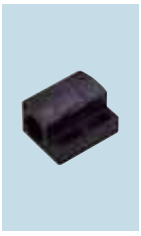
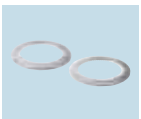
Accessories for threaded M18 housings

Type	Description	Order no.
	Angle bracket · for type M18 · Housing materials: stainless steel	**E10736**
	Mounting clip · O-shaped · for type M18 · Housing materials: stainless steel	**E11534**
	Mounting clamp · Ø 20 mm - Ø 18 mm · with reducing bush · for type M18 · Housing materials: PBT	**E10076**
	Mounting clamp · Ø 18 mm · with end stop · for type M18 · Housing materials: PC	**E11048**
	Mounting clamp · Ø 18 mm · with end stop · For sensors with 45° chamfer · for type M18 · Housing materials: PC	**E11995**
	Mounting sleeve · M24 x 1.5 - Ø 18 mm · 58 mm · with end stop · for type M18 · Housing materials: Brass nickel-plated	**E10742**
	Mounting sleeve · M24 x 1.5 - Ø 18 mm · 36 mm · with end stop · for type M18 · Housing materials: Brass nickel-plated	**E10807**
	Mounting sleeve · M22 x 1 - Ø 18 mm · with end stop · for type M18 · Housing materials: Brass white bronze coated	**E11115**
	Mounting sleeve · M22 x 1 - Ø 18 mm · 33.5 mm · with end stop · for type M18 · Housing materials: Brass anti-spatter / nut: Brass anti-spatter	**E12453**
	Plastic nut for flow plate · M18 x 1 · Housing materials: POM	**E19503**
	Lock nuts metal · M18 x 1 · Housing materials: Brass nickel-plated	**E10027**
	Lock nuts metal · M18 x 1 · Housing materials: stainless steel 316Ti / 1.4571	**E10028**

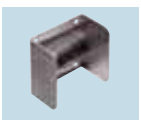
You can find wiring diagrams and scale drawings from page 134

Type	Description	Order no.
	serrated washer · Ø 19 mm / Ø 27 mm · for type M18 · Housing materials: steel anti-spatter	**E12413**

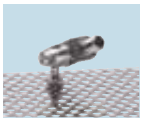
Accessories for threaded M30 housings

Type	Description	Order no.
	Angle bracket · for type M30 · Housing materials: stainless steel	**E10737**
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	**E10077**
	Mounting clamp · Ø 30 mm · with end stop · for type M30 · Housing materials: PC	**E11049**
	Mounting clamp · Ø 30 mm · with end stop · For sensors with 45° chamfer · for type M30 · Housing materials: PC	**E11996**
	Mounting sleeve · M36 x 1.5 - Ø 30 mm · 58 mm · with end stop · for type M30 · Housing materials: Brass nickel-plated	**E10743**
	Mounting sleeve · M36 x 1.5 - Ø 30 mm · 36 mm · with end stop · for type M30 · Housing materials: Brass nickel-plated	**E10808**
	Mounting sleeve · M36 x 1.5 - Ø 30 mm · 33.5 mm · with end stop · for type M30 · Housing materials: Brass anti-spatter / nut: Brass anti-spatter	**E12454**
	Lock nuts metal · M30 x 1.5 · Housing materials: Brass nickel-plated	**E10030**
	Lock nuts metal · M30 x 1.5 · Housing materials: stainless steel 316Ti / 1.4571	**E10031**
	serrated washer · Ø 31.6 mm / Ø 45 mm · for type M30 · Housing materials: steel anti-spatter	**E12414**

Accessories for rectangular housings

Type	Description	Order no.
	Mounting bracket · with integrated snap-on rail · for type IDC · Housing materials: stainless steel	**E10730**

System components

Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20718**
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20719**
	Mounting set · Ø 12.2 mm · Clamp mounting · free-standing M8 · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E20856**
	Mounting set · Ø 12.2 mm · Clamp mounting · free-standing M8 · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20857**
	Mounting set · Ø 12.2 mm · Clamp mounting · free-standing M8 · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E20860**
	Mounting set · Ø 12.2 mm · Clamp mounting · free-standing M8 · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20861**
	Mounting set · Ø 12.2 mm · Clamp mounting · aluminium profile · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20864**
	Mounting set · Ø 12.2 mm · Clamp mounting · aluminium profile · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20865**
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20866**
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20867**
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20869**
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20870**
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E20873**
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20874**

You can find wiring diagrams and scale drawings from page 134

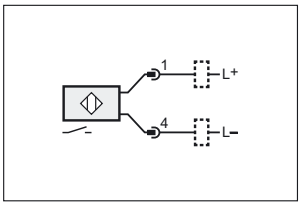
Type	Description	Order no.
	Mounting set · Ø 30.2 mm · Clamp mounting · aluminium profile · for type II, KI, OID, OI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20875

Wiring diagrams

Core colours

BN	brown
BU	blue
BK	black
WH	white

1



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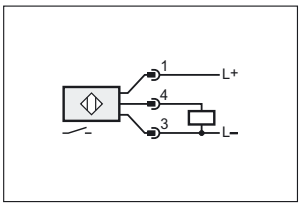

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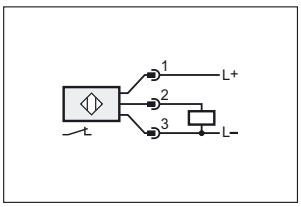

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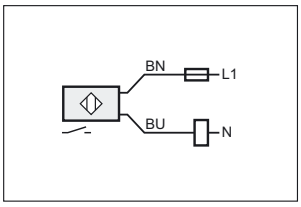

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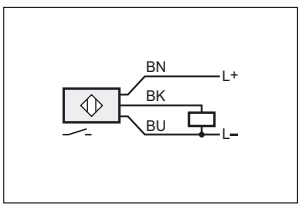

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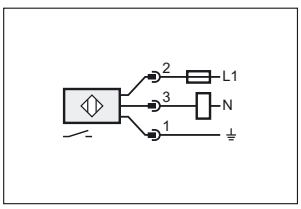

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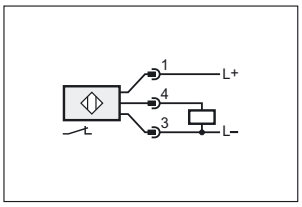

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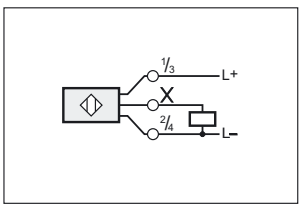

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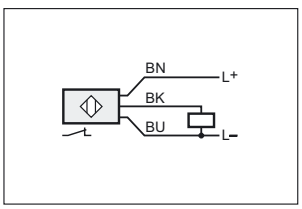

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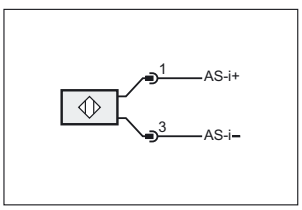

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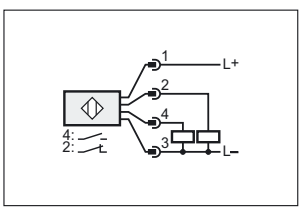

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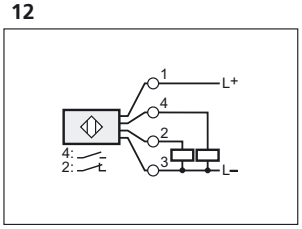

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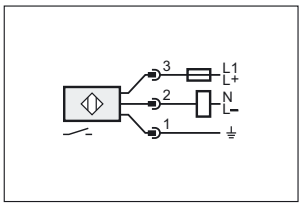

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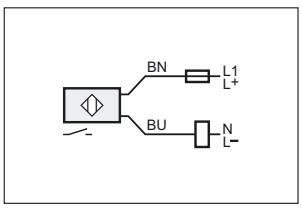

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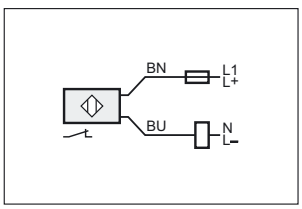

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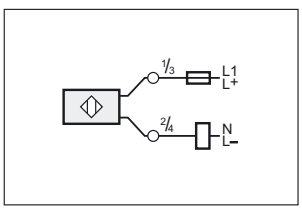

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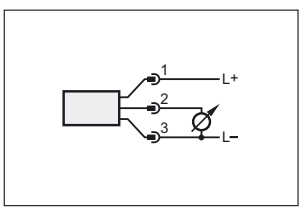

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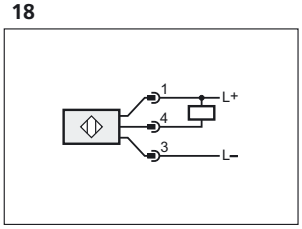

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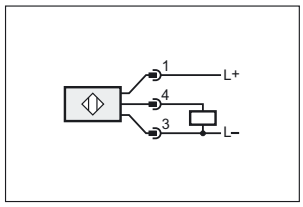

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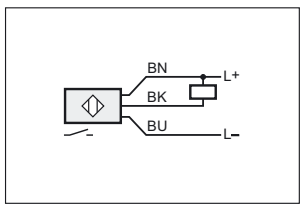

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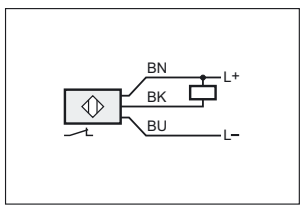

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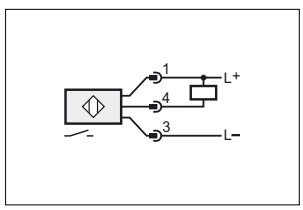

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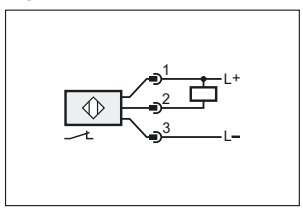

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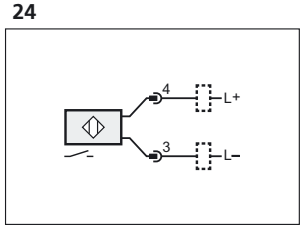

Wiring diagrams

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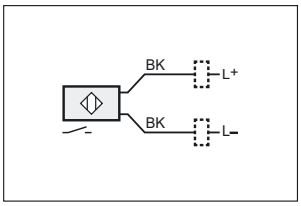

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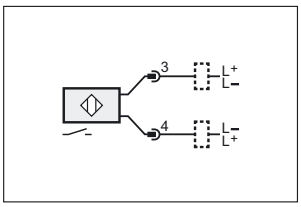

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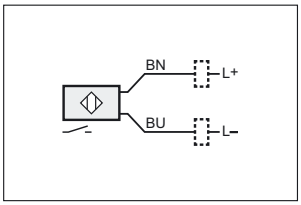

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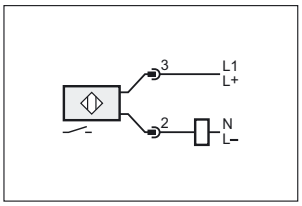

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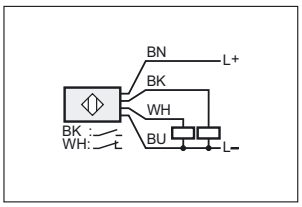

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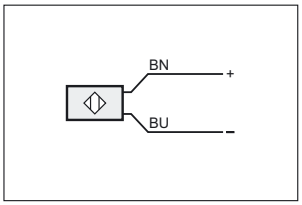

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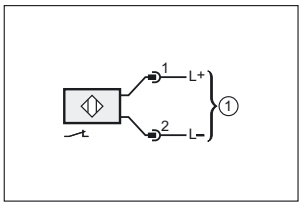

1: connection to NAMUR-amplifier

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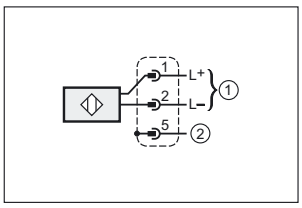

1: connection to NAMUR-amplifier, 2: Potential equalisation plug housing

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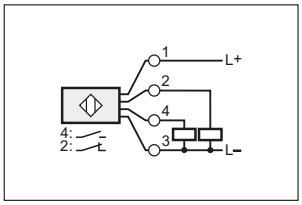

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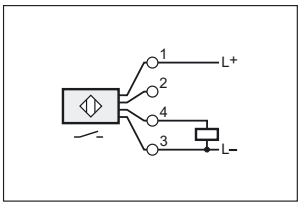

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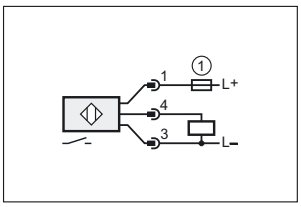

1: fuse

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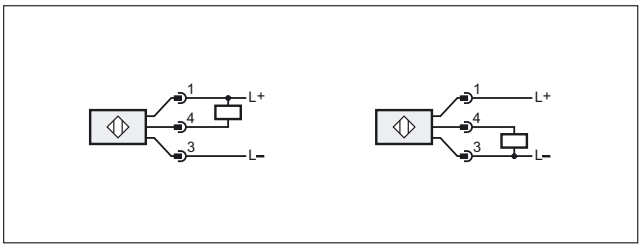

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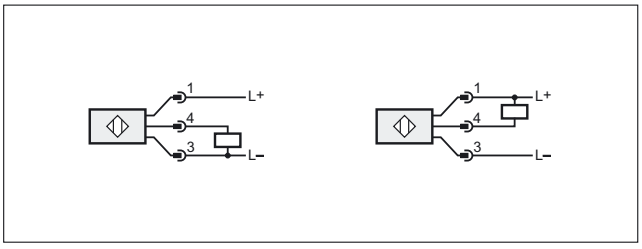

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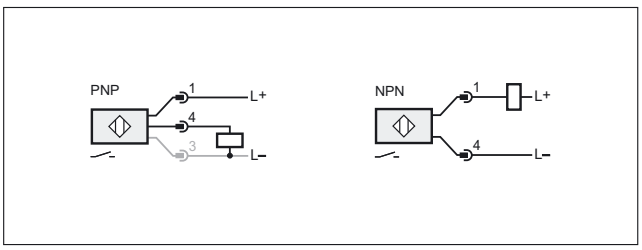

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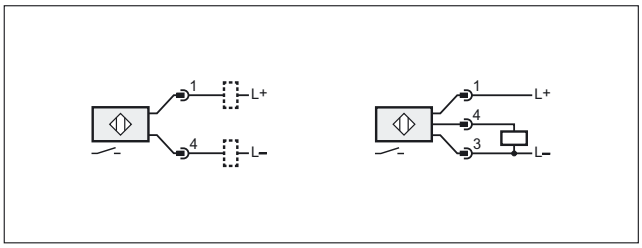

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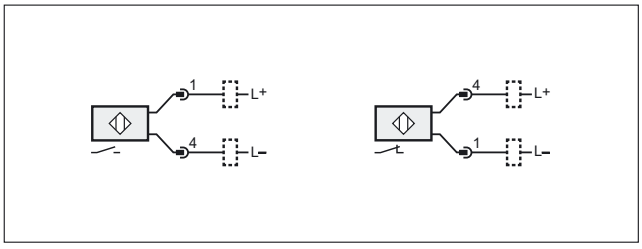

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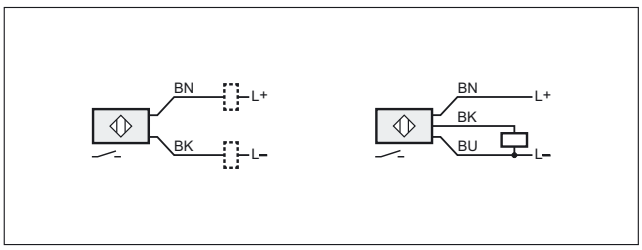

Wiring diagrams

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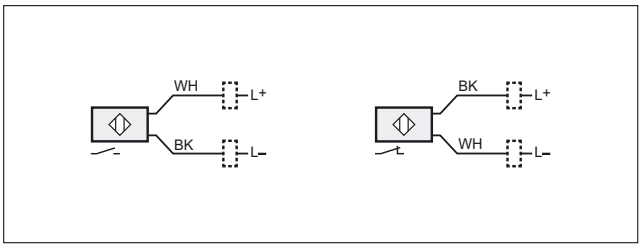

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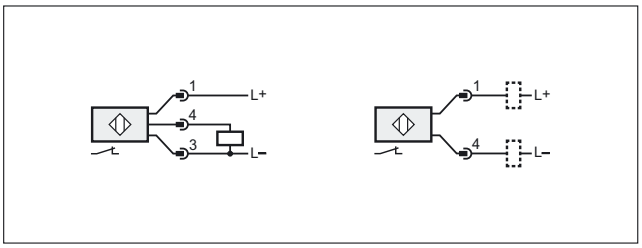

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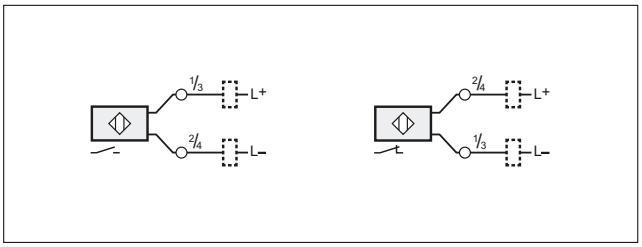

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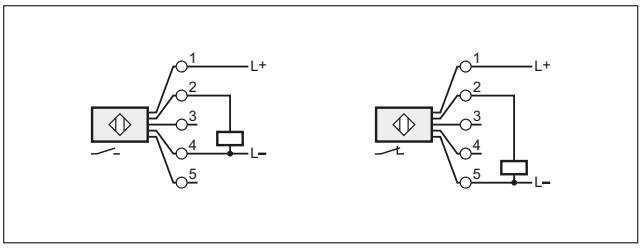

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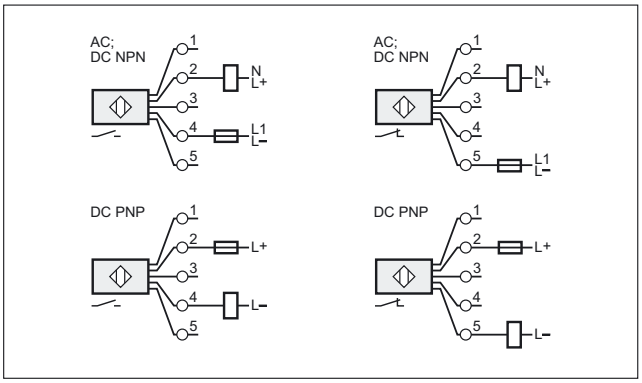

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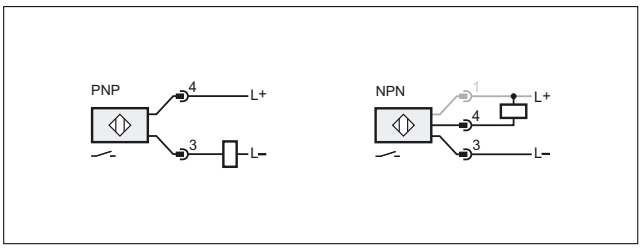

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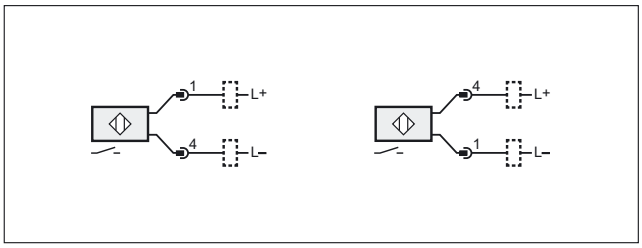

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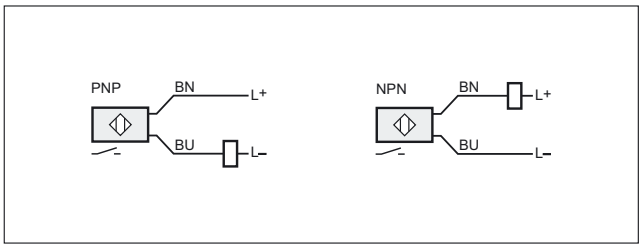

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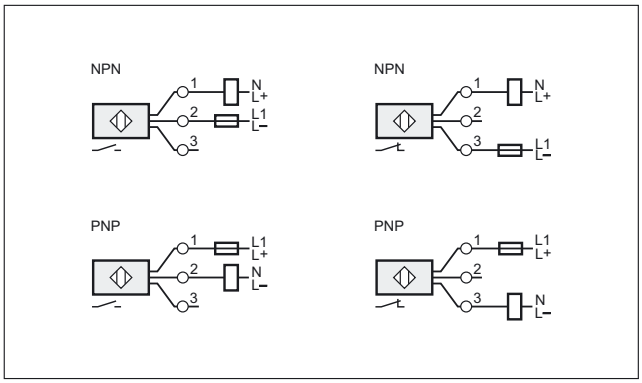

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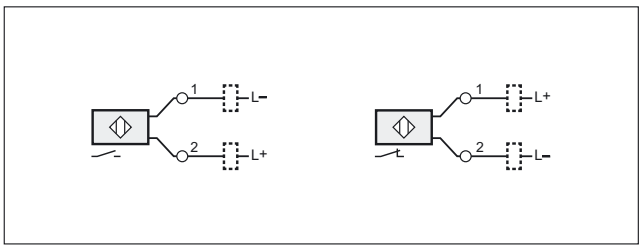

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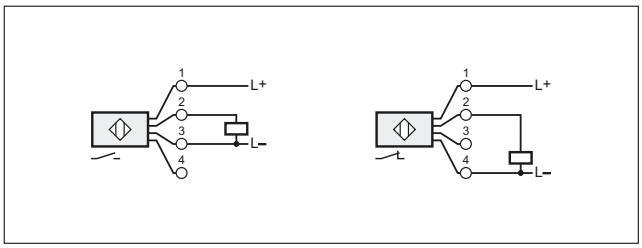

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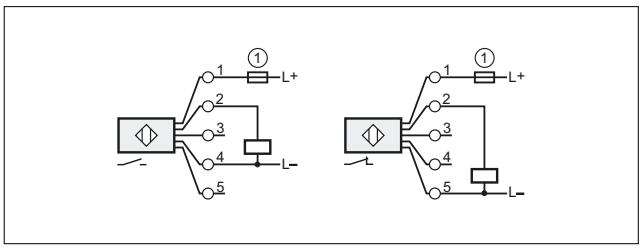

1: fuse

Scale drawings / drawing no. – CAD download: www.ifm.com

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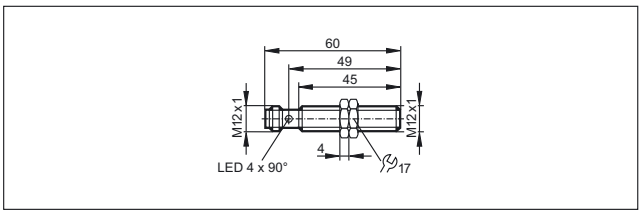

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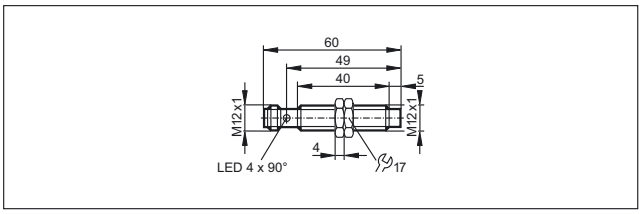

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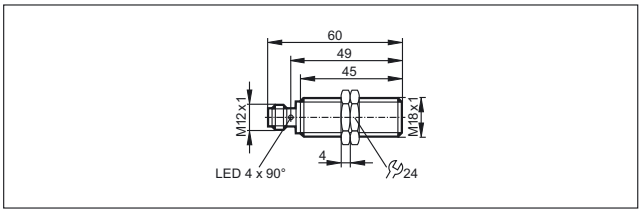

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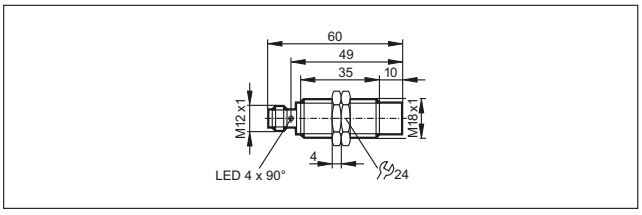

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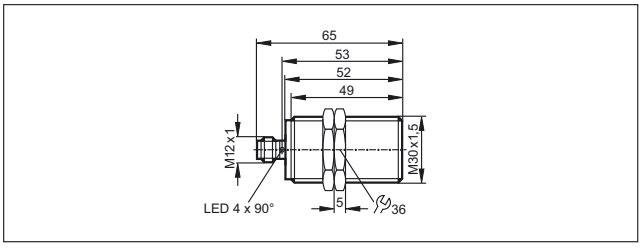

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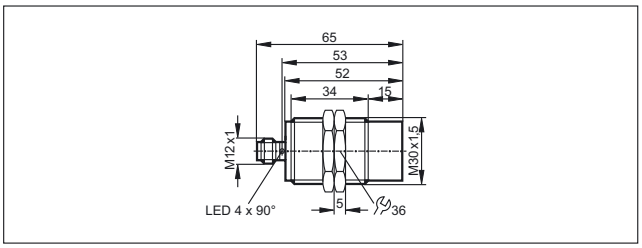

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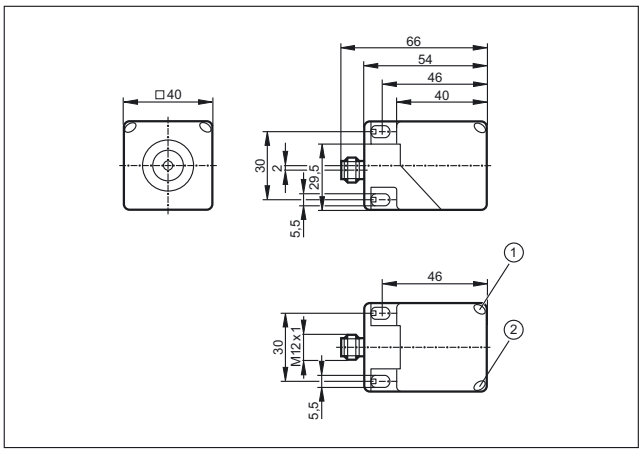

1: LED yellow, 2: LED green

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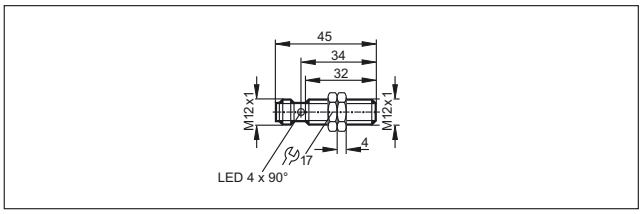

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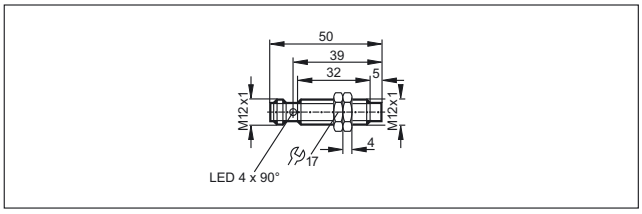

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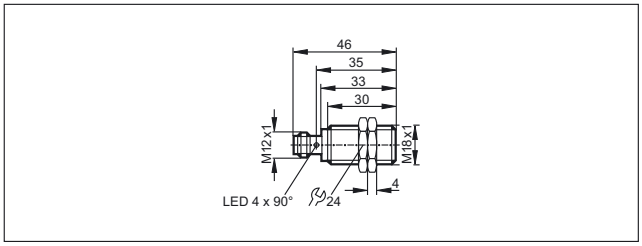

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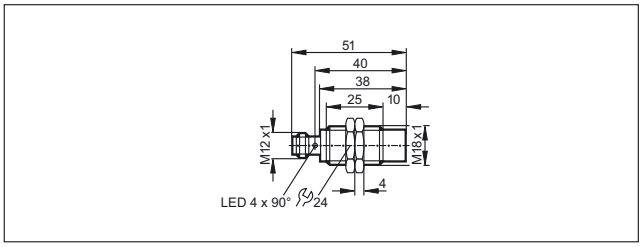

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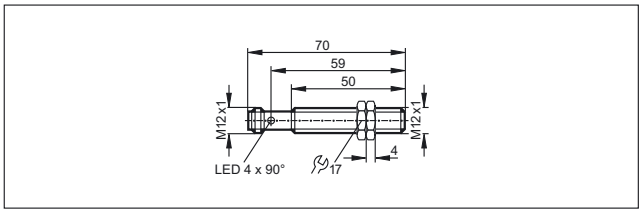

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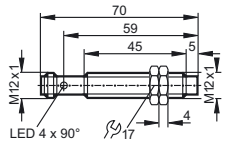

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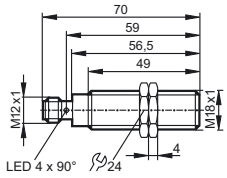

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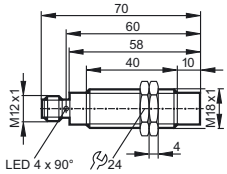

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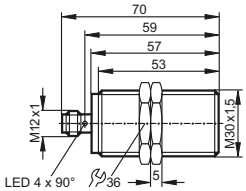

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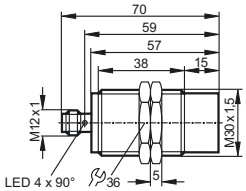

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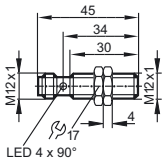

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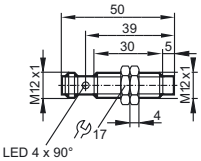

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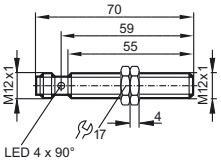

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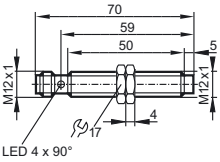

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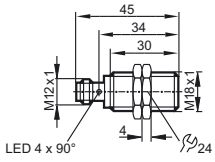

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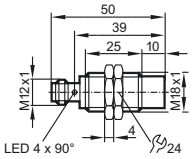

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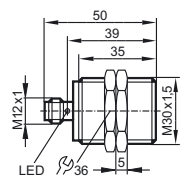

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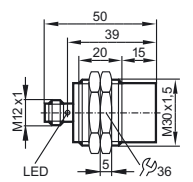

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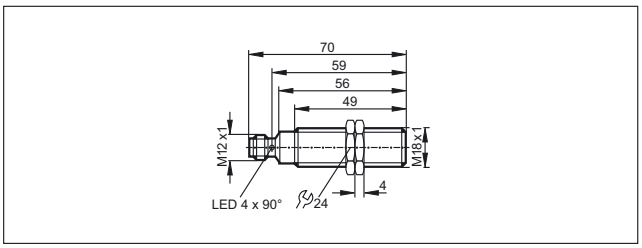

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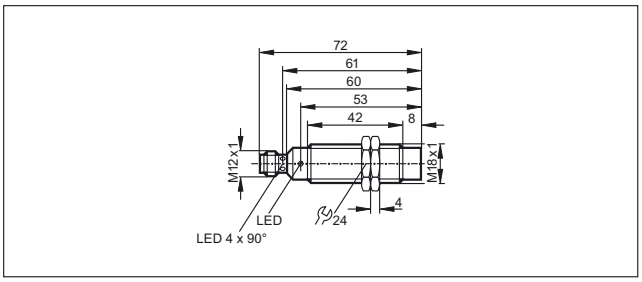

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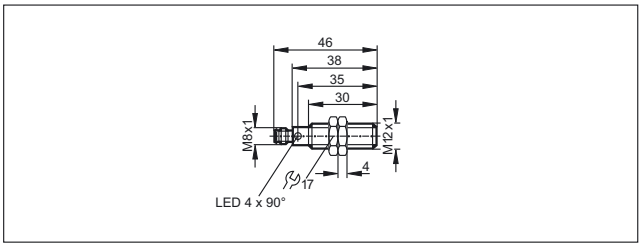

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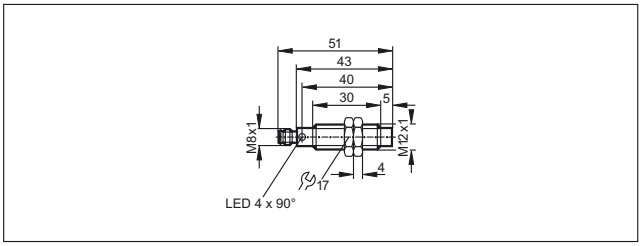

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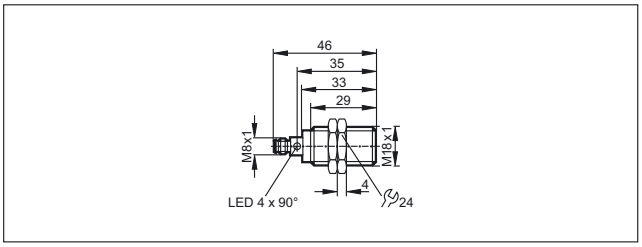

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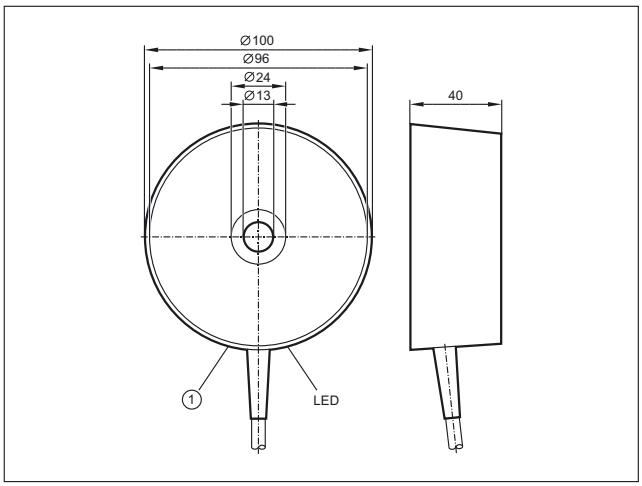

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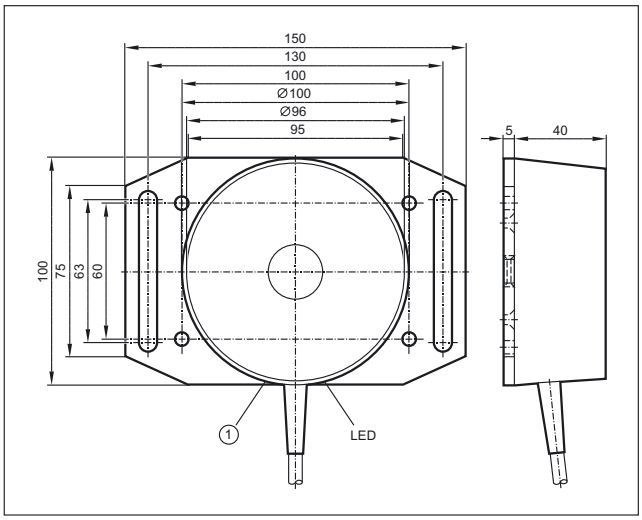

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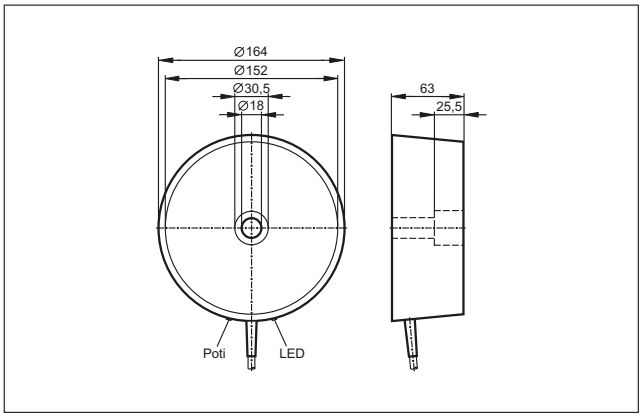

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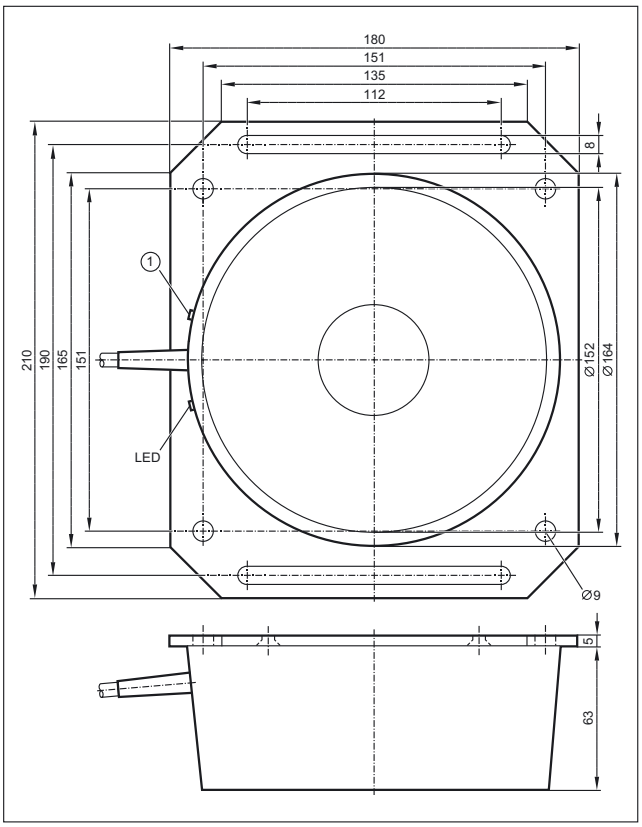

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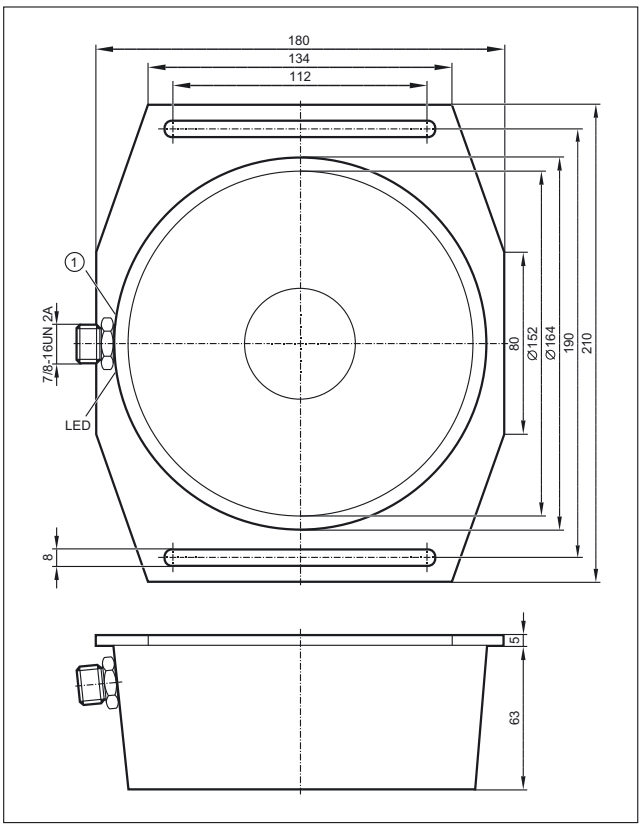

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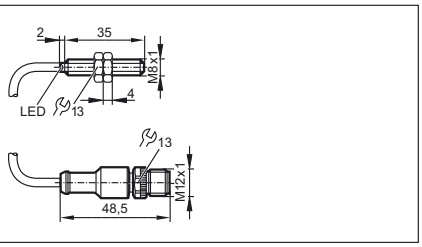

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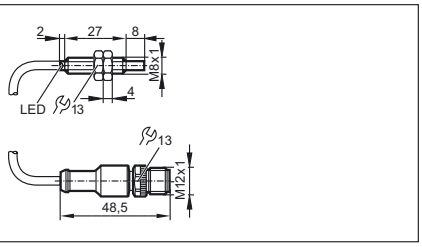

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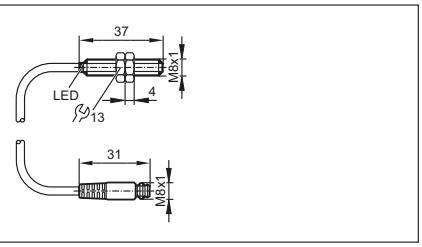

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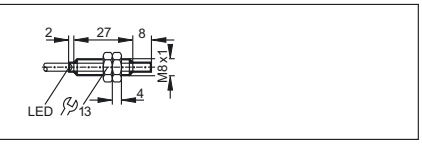

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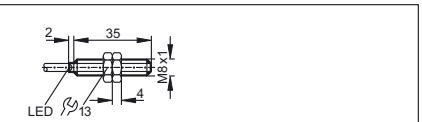

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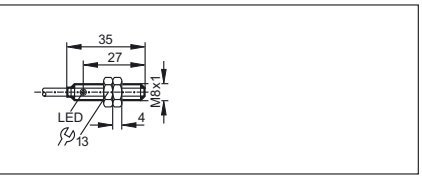

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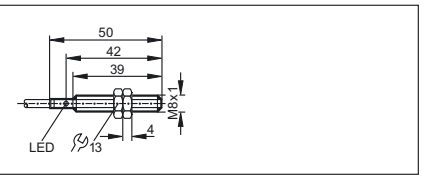

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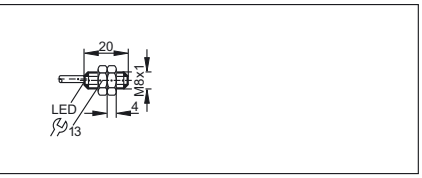

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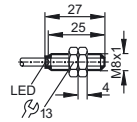

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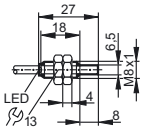

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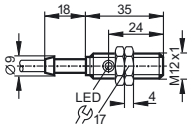

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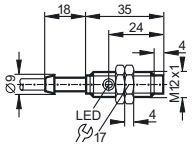

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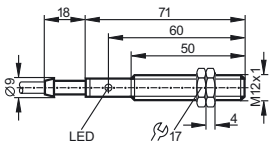

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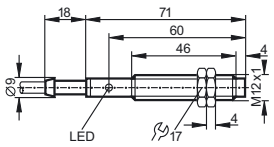

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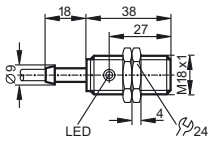

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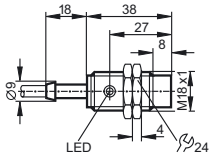

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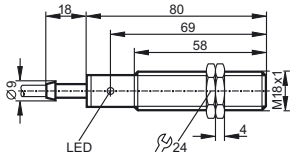

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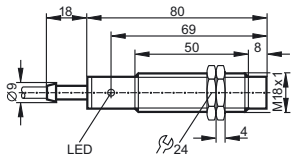

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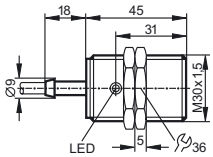

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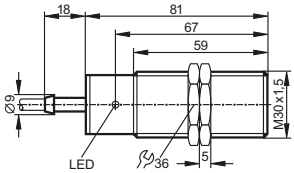

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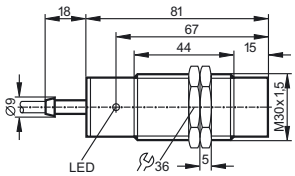

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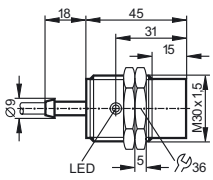

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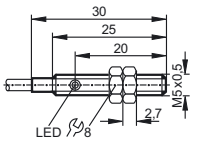

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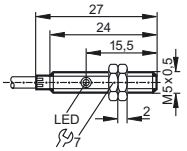

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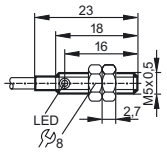

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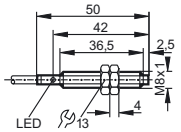

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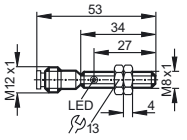

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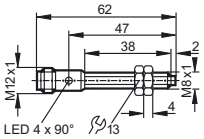

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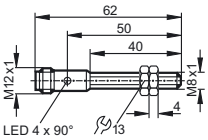

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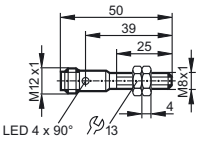

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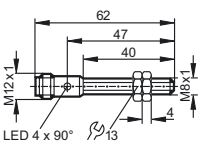

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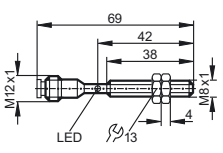

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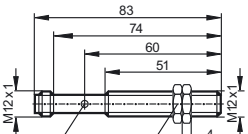

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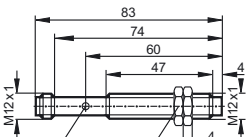

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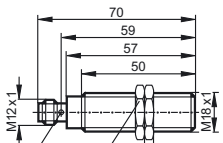

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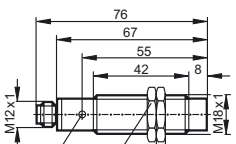

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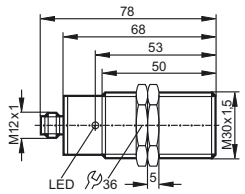

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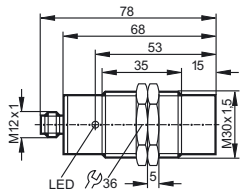

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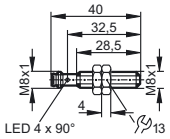

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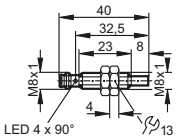

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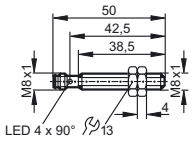

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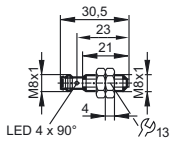

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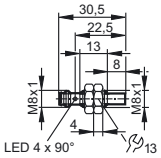

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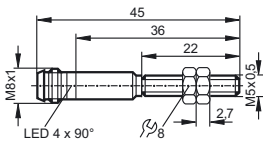

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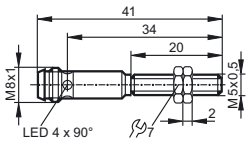

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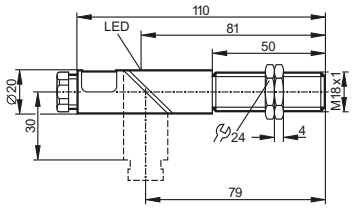

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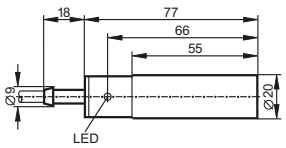

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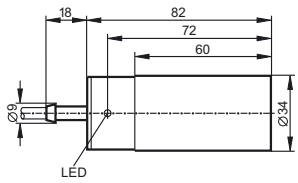

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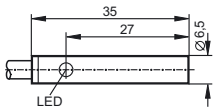

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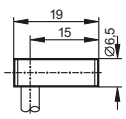

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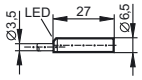

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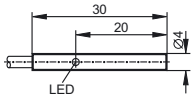

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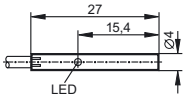

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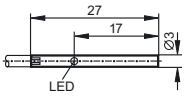

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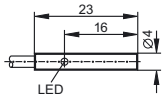

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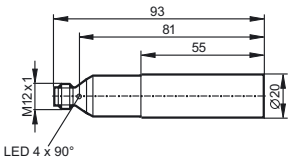

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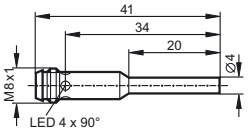

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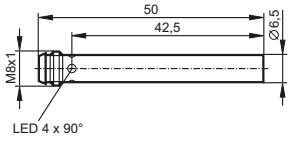

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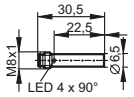

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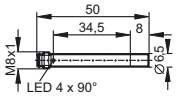

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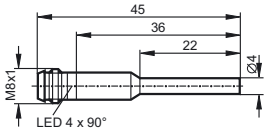

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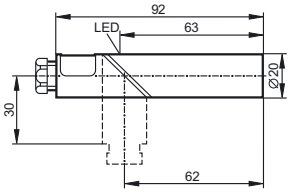

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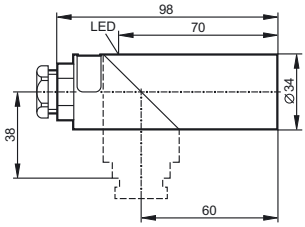

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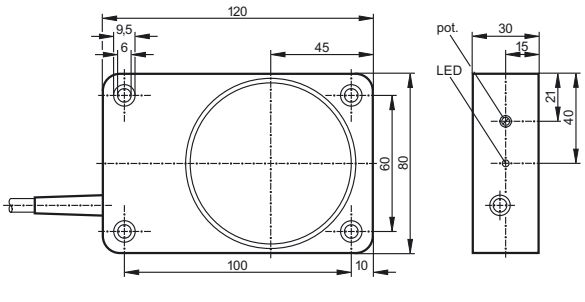

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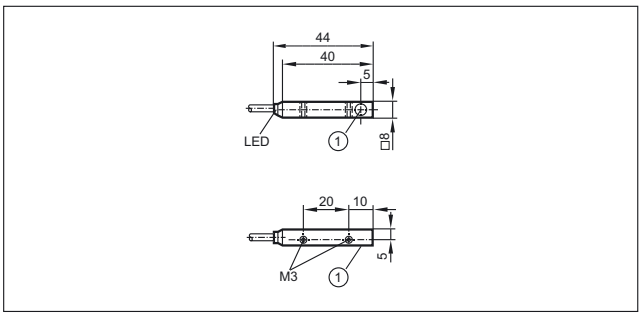
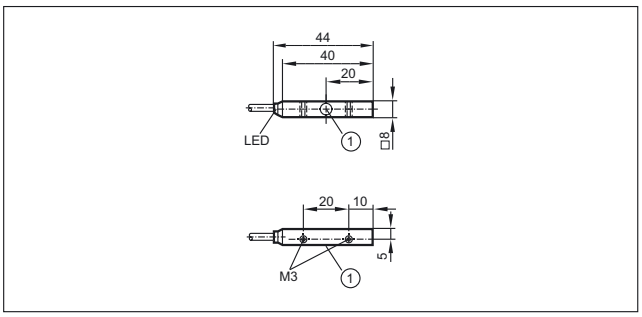


1: sensing face

101



1: sensing face

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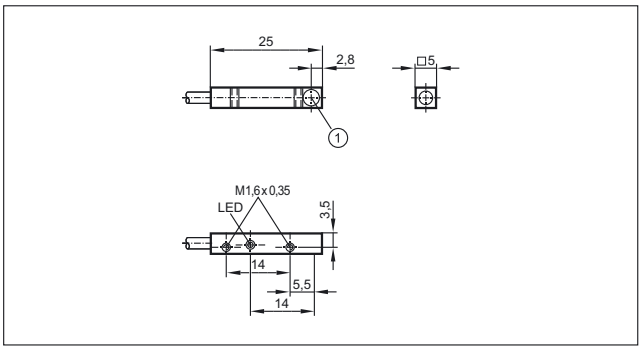
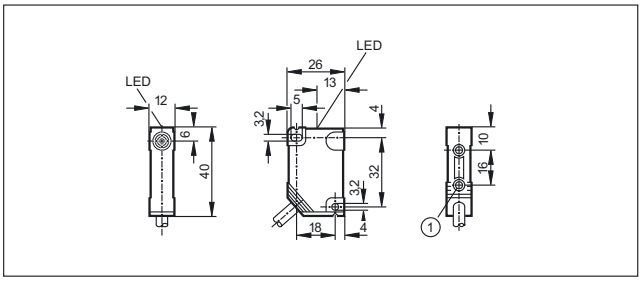


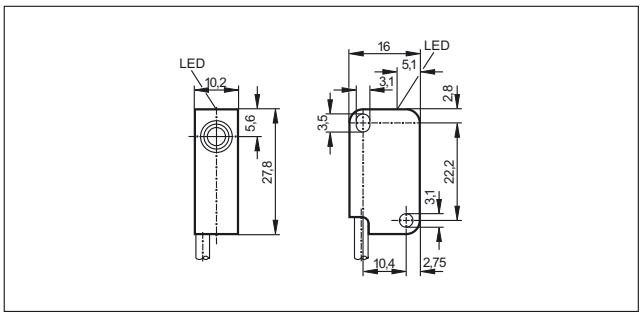
1: sensing face

103



1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

104



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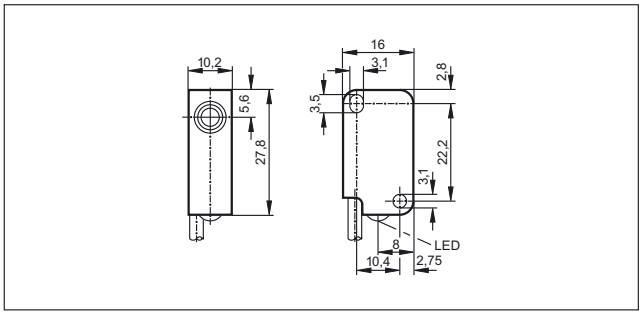

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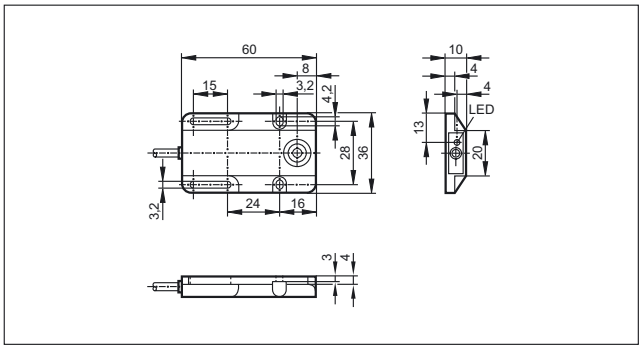

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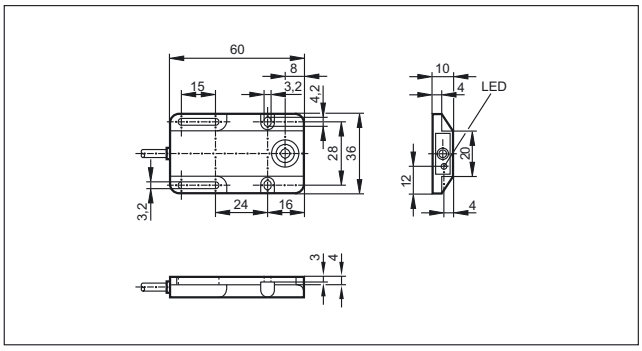

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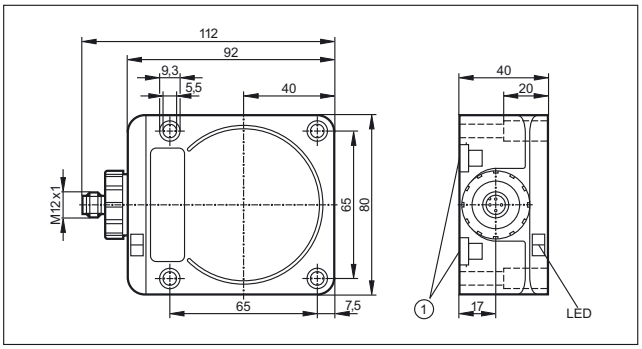

1: Mounting on DIN rail

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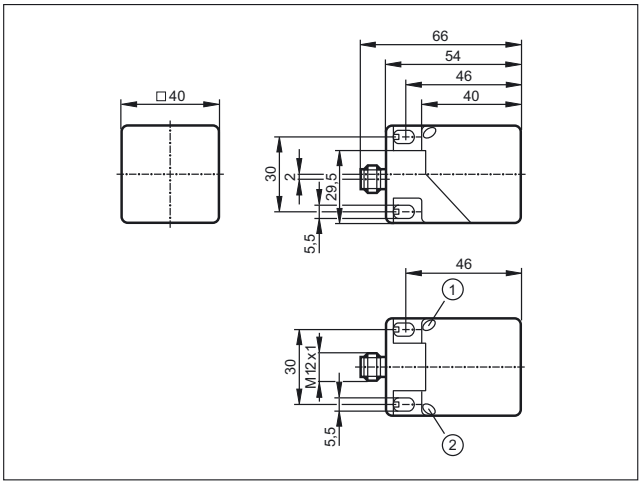
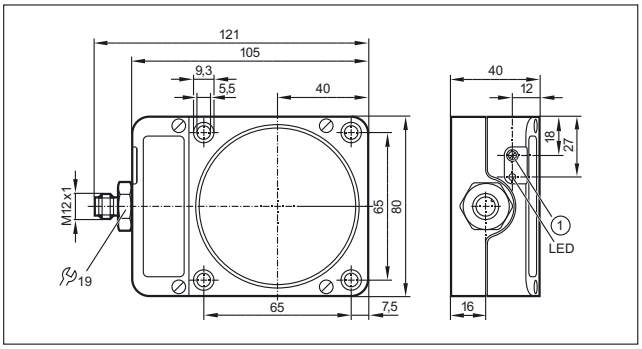


1: LED yellow, 2: LED green

110



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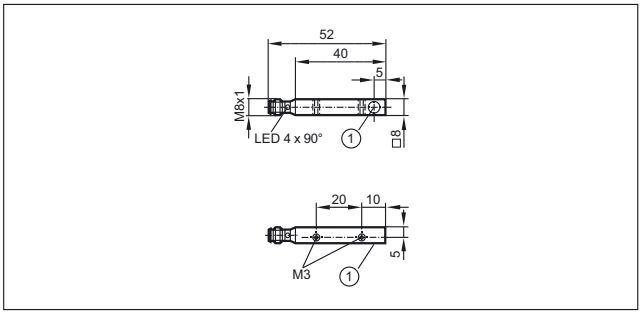
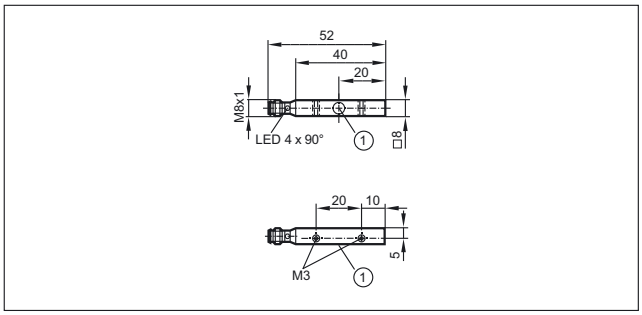


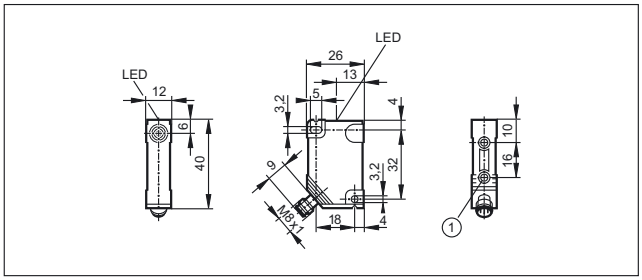
1: sensing face

112



1: sensing face

113



1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

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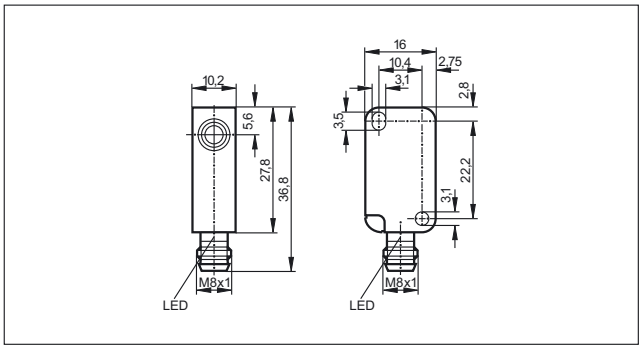

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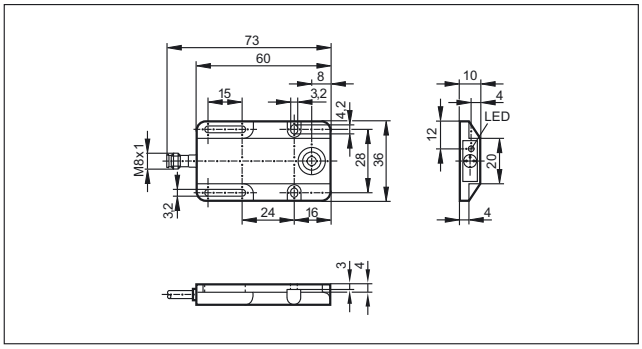

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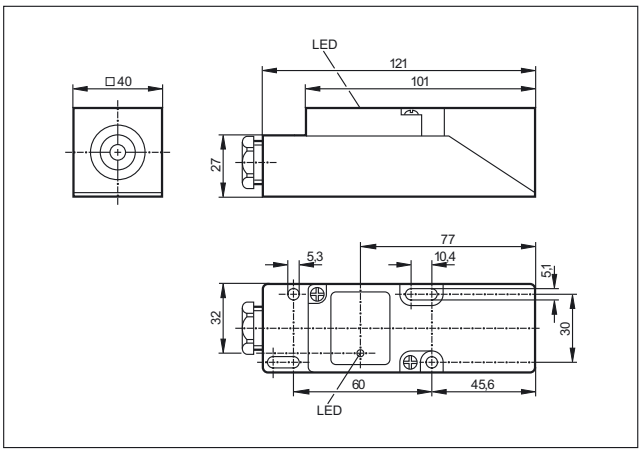

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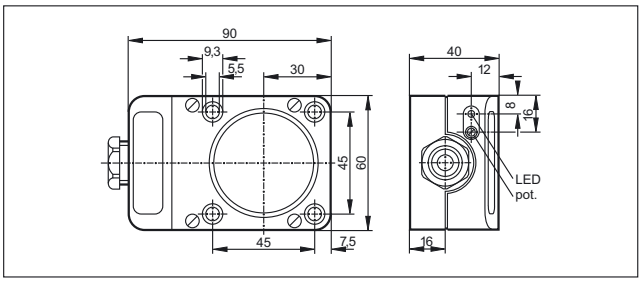

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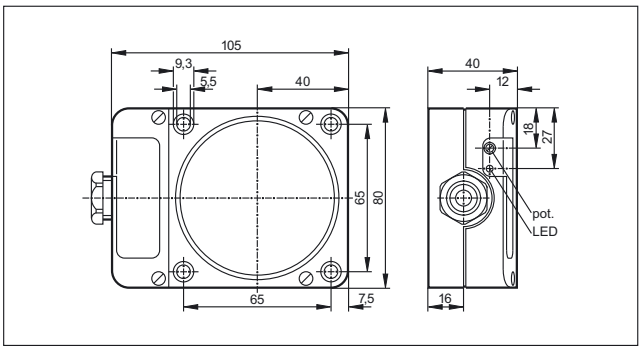

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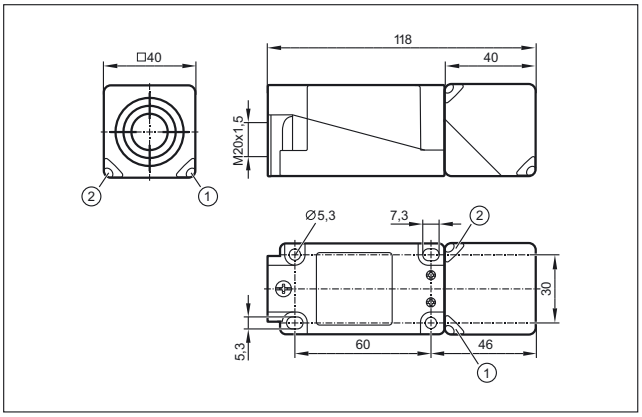
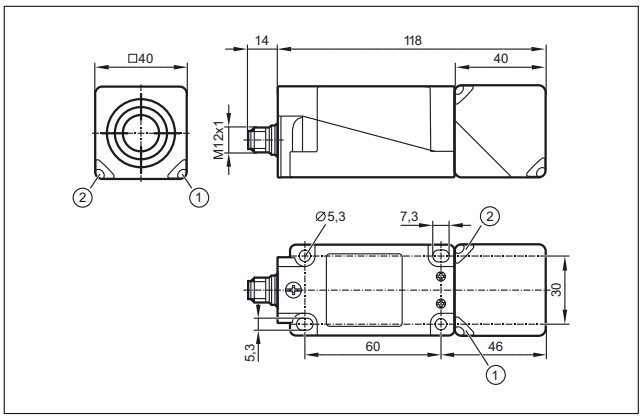


1: LED green, 2: LED yellow

120



1: LED green, 2: LED yellow

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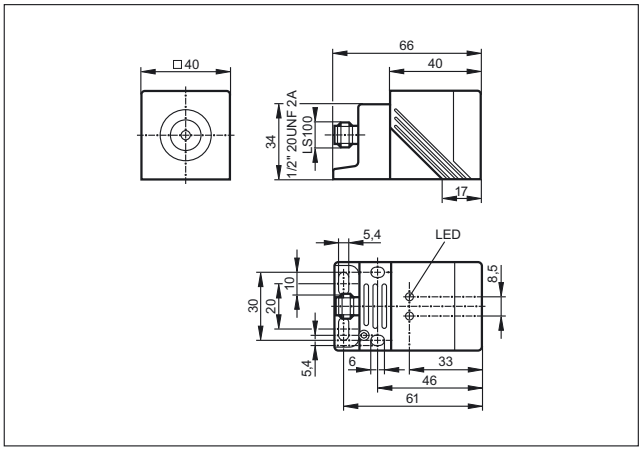

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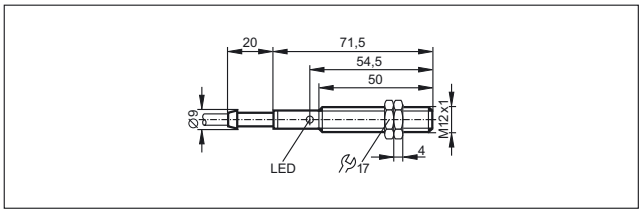

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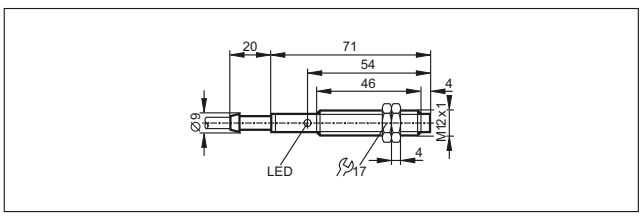

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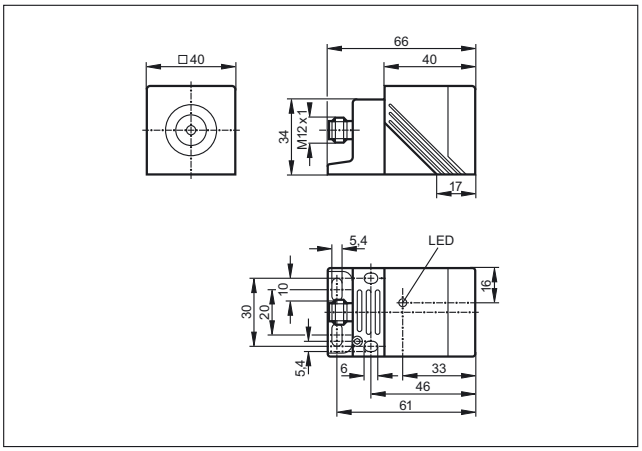

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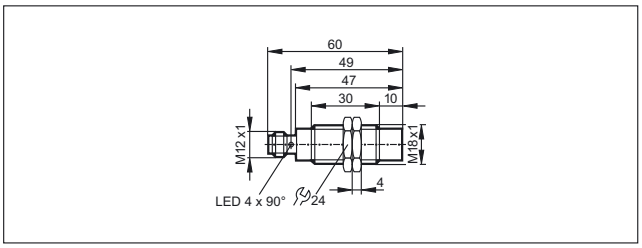

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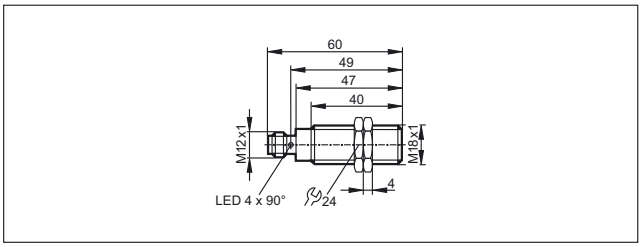

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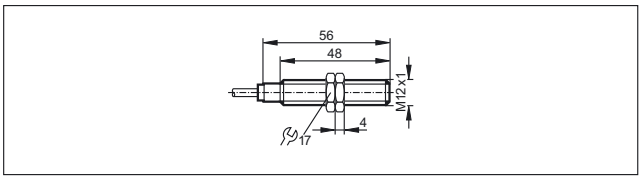

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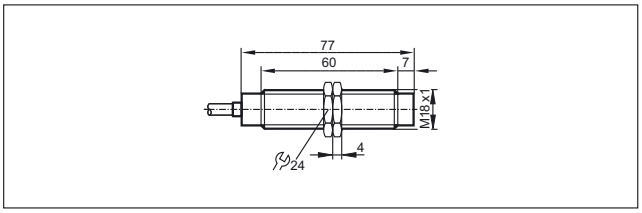

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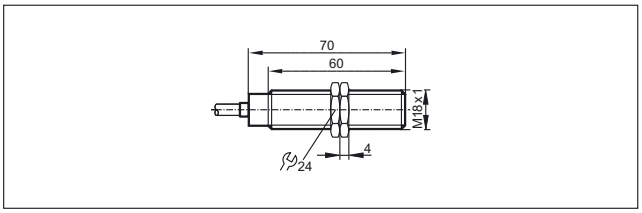

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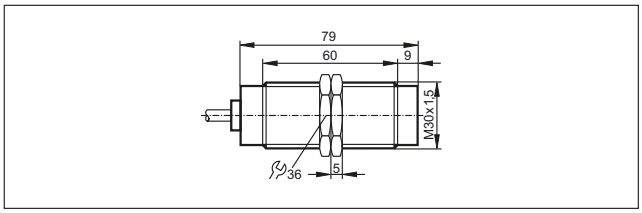

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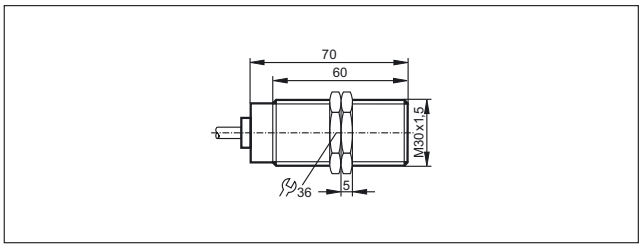

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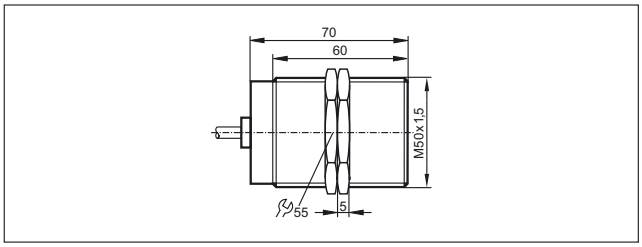

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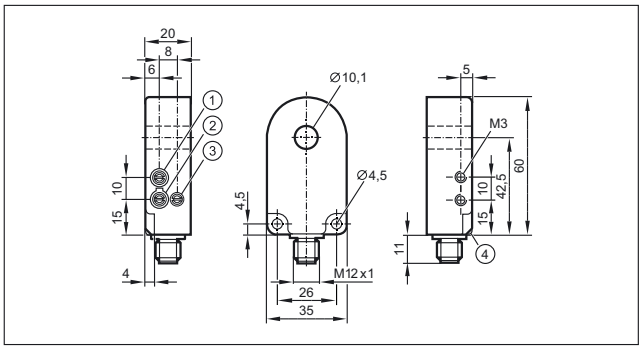

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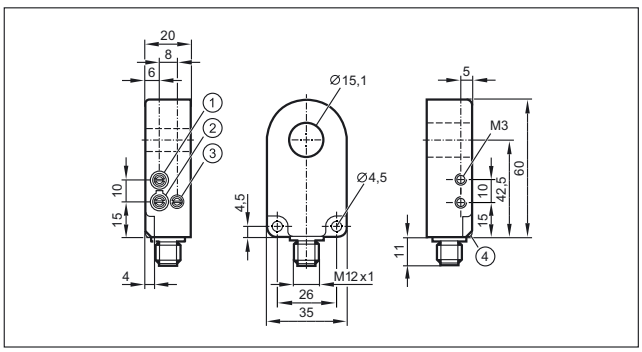

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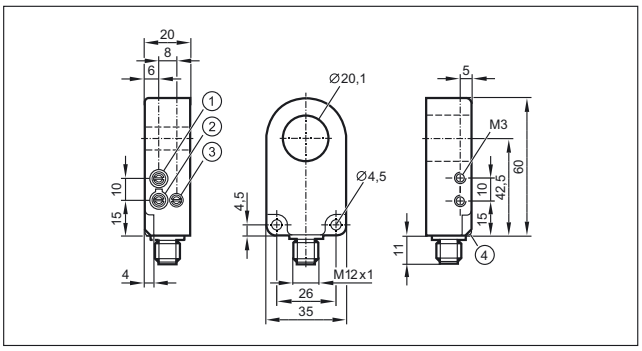

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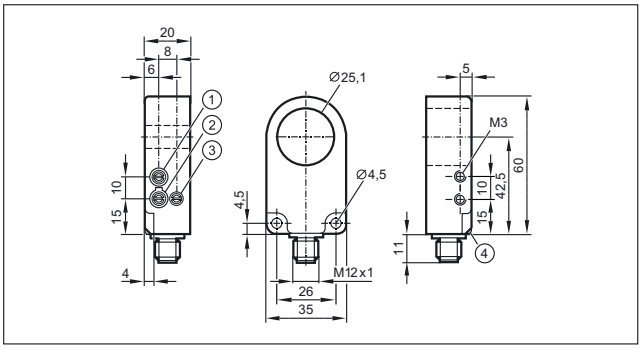

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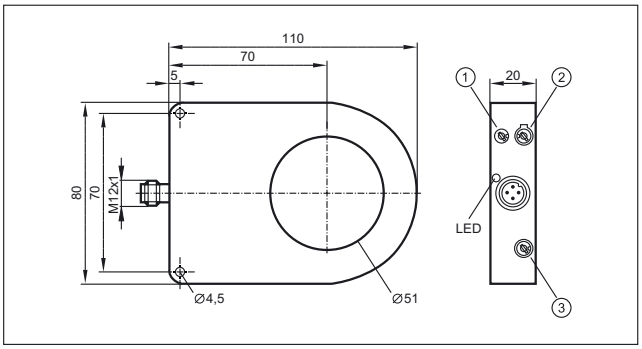

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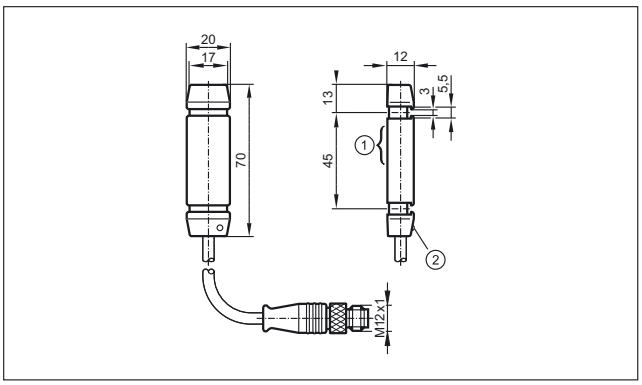
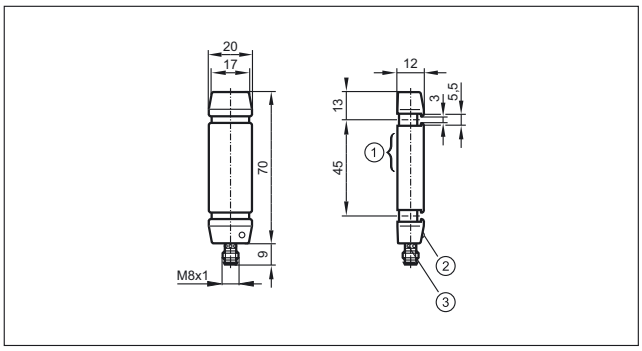


1: sensing face, 2: LED operating status

139



1: sensing face, 2: LED operating status, 3: LED switching status

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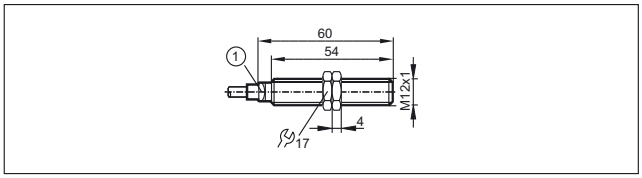
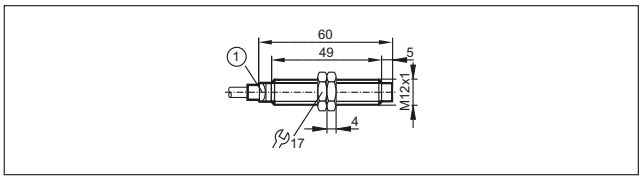


1: LED (yellow)

141



1: LED (yellow)

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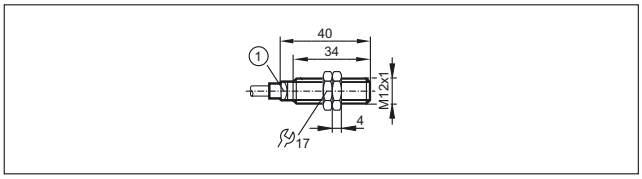

1: LED (yellow)

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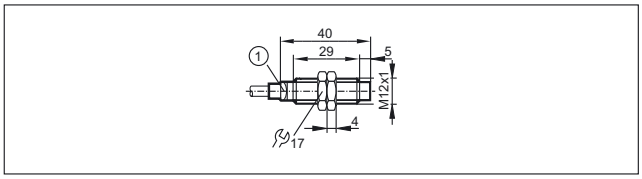

1: LED (yellow)

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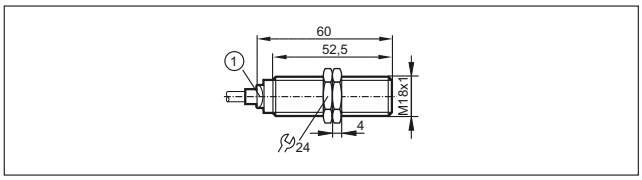

1: LED (yellow)

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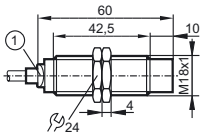

1: LED (yellow)

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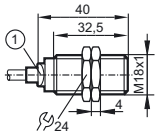
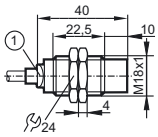


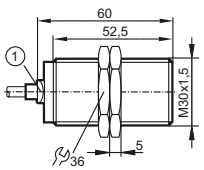
1: LED (yellow)

147



1: LED (yellow)

148



1: LED (yellow)

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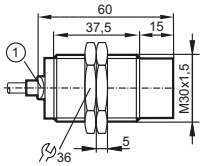

1: LED (yellow)

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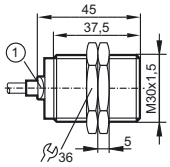

1: LED (yellow)

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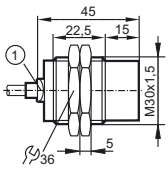

1: LED (yellow)

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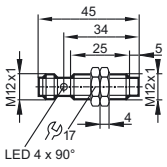

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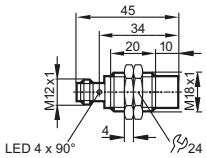

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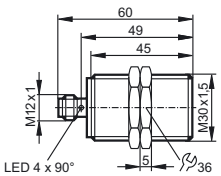

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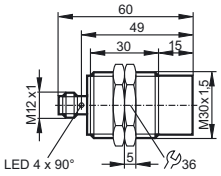

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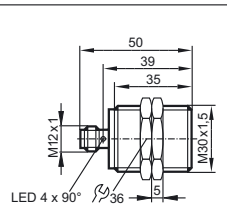

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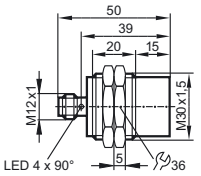

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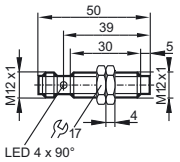

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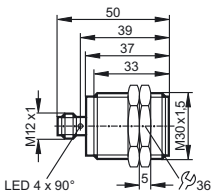

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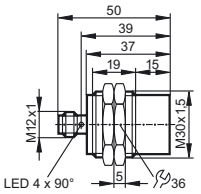

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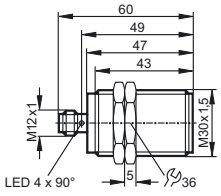

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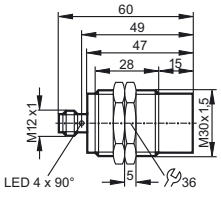

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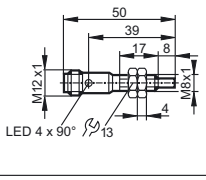

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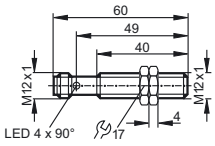

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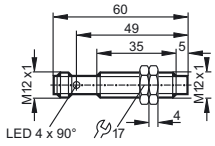

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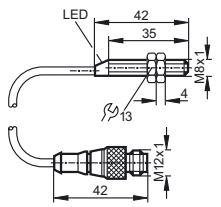

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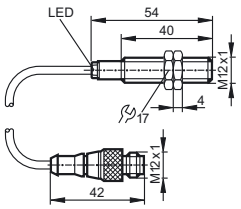

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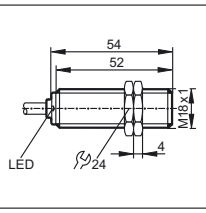

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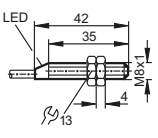

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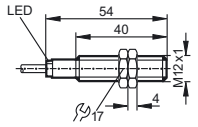

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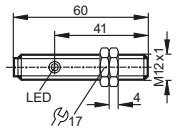

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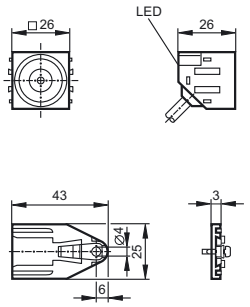

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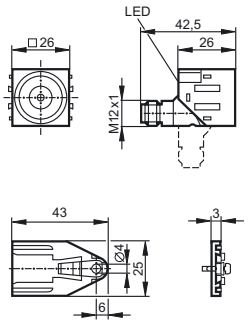

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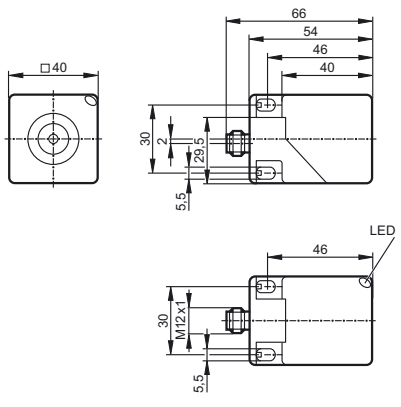

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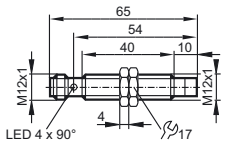

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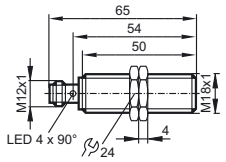

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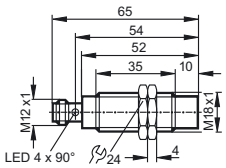

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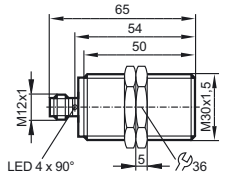

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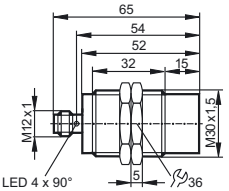

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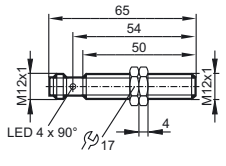

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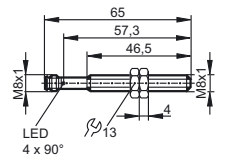

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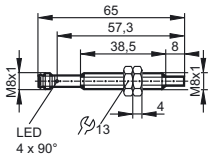

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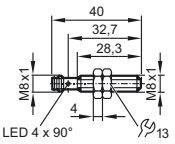

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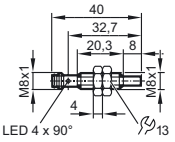

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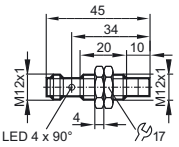

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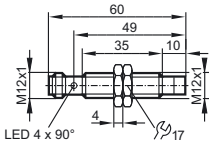

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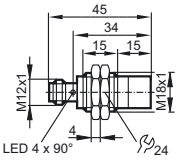

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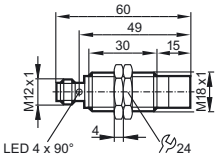

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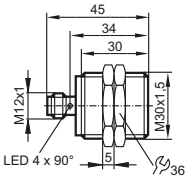

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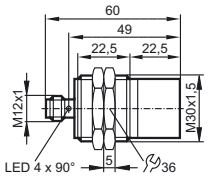

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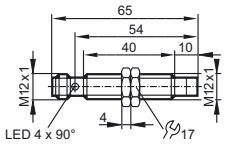

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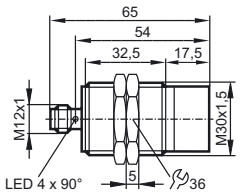

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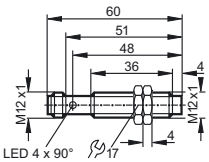

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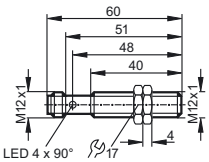

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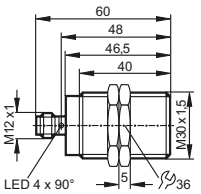

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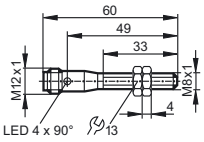

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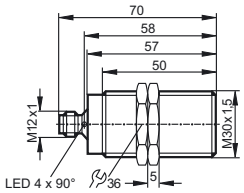

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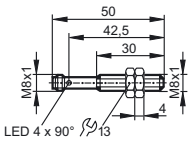

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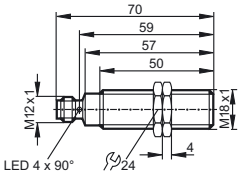

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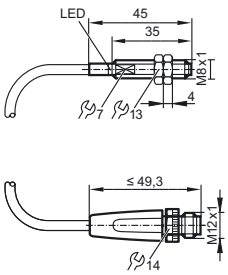

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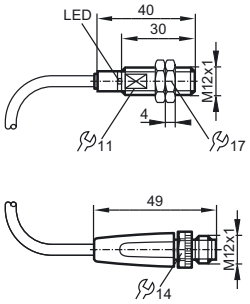

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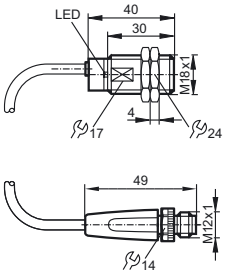

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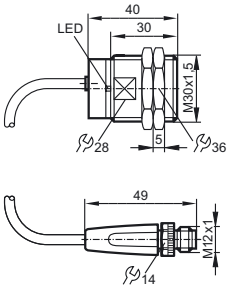

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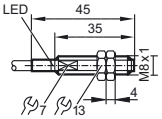

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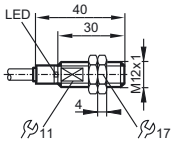

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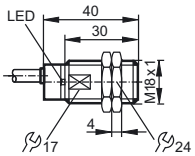

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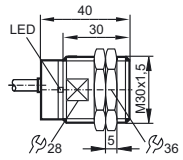

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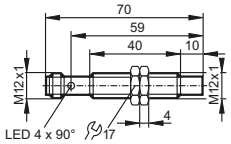

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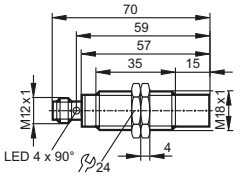

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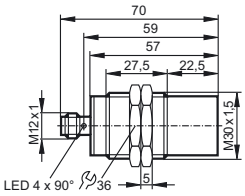

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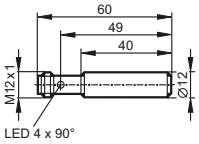

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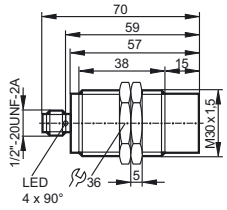

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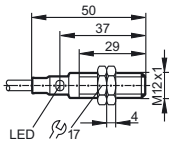

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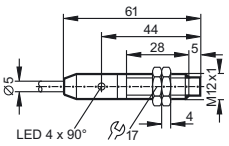

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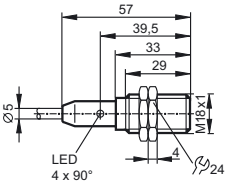

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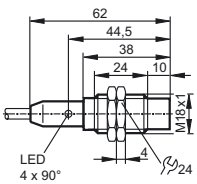

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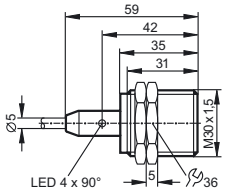

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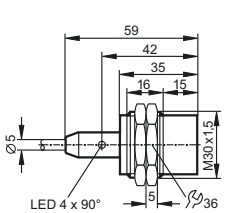

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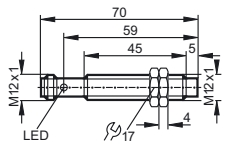

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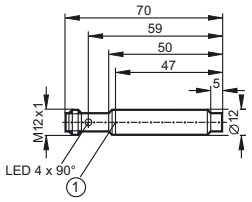

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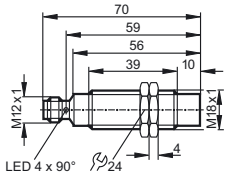

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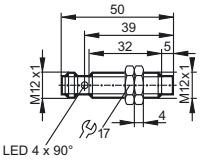

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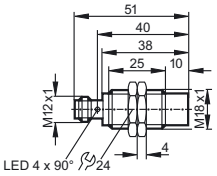

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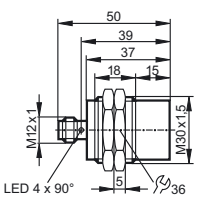

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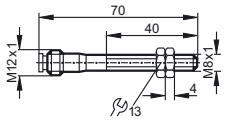

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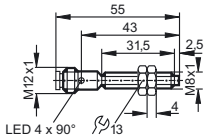

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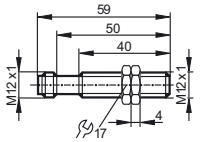

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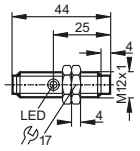

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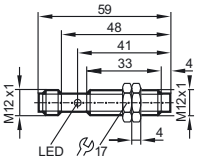

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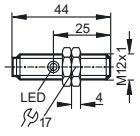

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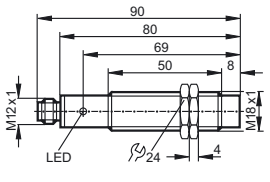

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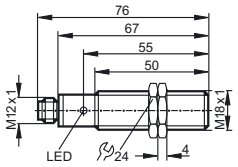

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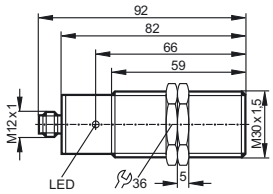

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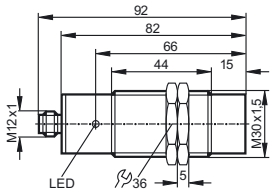

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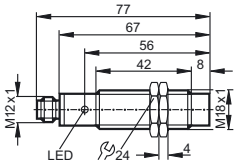

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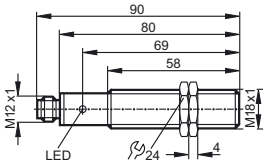

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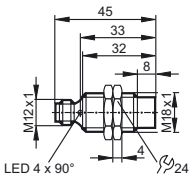

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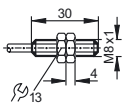

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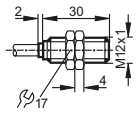

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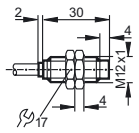

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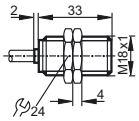

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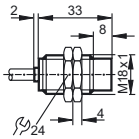

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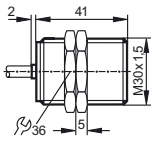

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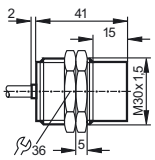

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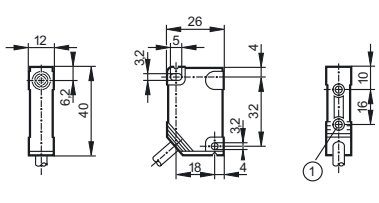

1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

Scale drawings / drawing no. – CAD download: www.ifm.com

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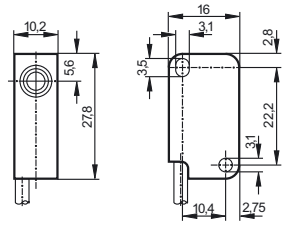

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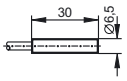
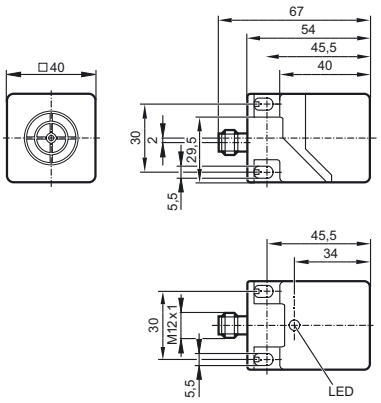


248



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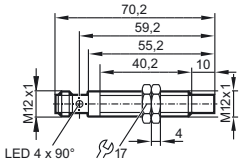
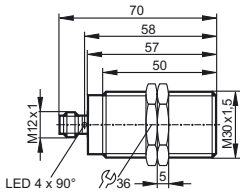
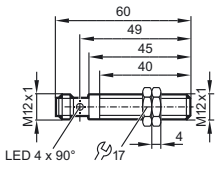


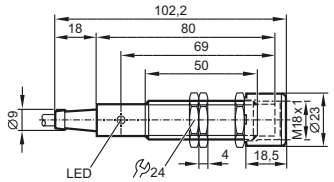
250



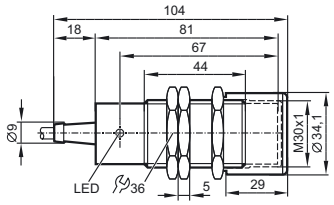
251



252

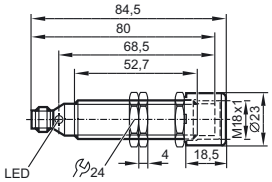


253



1: Sensor, 2: Sensor with protective cover

254



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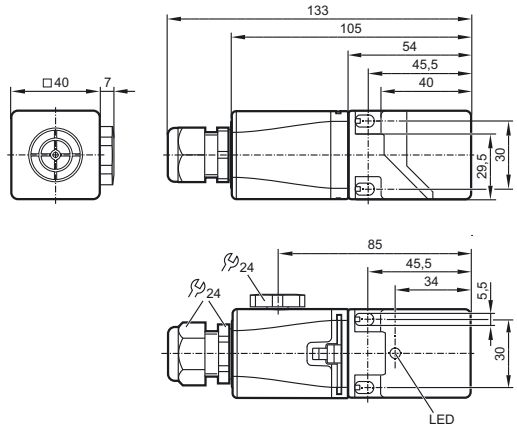
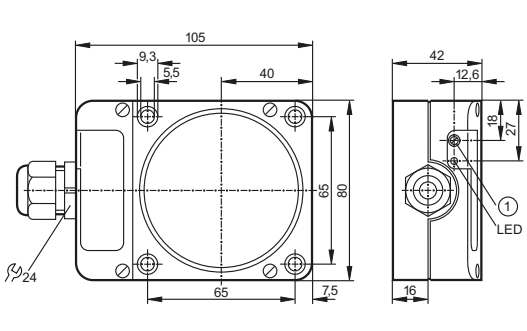


256



1: potentiometer

Capacitive sensors ensure accurate detection of positions and levels

Capacitive sensors

- **Easy parameter setting via IO-Link before installation of the sensor**
- **Versatile data processing via IO-Link**
- **Plastic or metal housings for different applications**
- **Sensors for position and level detection**
- **Mounting accessories for installation on tanks or sight glasses (bypass)**

Capacitive sensors

Capacitive sensors are used for non-contact detection of any types of objects and for level monitoring. In contrast to inductive sensors, which only detect metallic objects, capacitive sensors can also detect non-metallic materials.

IO-Link for more convenience

IO-Link allows direct detection of the process value or switch-on/switch-off delays of the output. The parameters are set via the IO-Link interface.

Capacitive touch sensors

Capacitive touch sensors are wear and maintenance-free since switching does not require any pressure. Their operating principle is dynamic, static or latching. They are typically used as start / stop buttons or enable switches.

System overview	*Page*
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Sensors for level and position detection AC/DC	*163 - 164*
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Sensors with ATEX approval	*167 - 168*
Switching amplifiers with ATEX approval	*168 - 169*
Dynamic capacitive touch sensors	*169*
Static capacitive touch sensors	*170*
Capacitive touch sensors with latching evaluation principle	*170*
Software	*171*
Accessories	*171 - 172*
Accessories mounting adapters	*172*
Accessories mounting components	*172 - 173*
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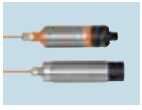
Scale drawings / drawing no. – CAD download: www.ifm.com	*174 - 178*

Sensors for level and position detection DC

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 1									
	M12 / L = 69	4 f	high-grade stainless steel	10...36	IP 65	50	100	1	**KF5014**
	M12 / L = 70	8 nf	high-grade stainless steel	10...36	IP 65	50	100	2	**KF5015**
Cable 2 m · Output function ⎍ / ⎎ · DC PNP · Wiring diagram no. 2									
	M18 / L = 77	8 nf	PP	10...36	IP 65 / IP 67	10	200	3	**KG5069**
M12 connector · Output function ⎍ / ⎎ · DC PNP · Wiring diagram no. 19 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M30 / L = 116	nf	PPS	10...30	IP 67	10	200	4	**KN5121**
M12 connector · Output function ⎍ / ⎎ · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 87	12 nf	PBT	10...36	IP 65 / IP 67	10	200	5	**KG5066**
	M18 / L = 87	8 nf	PBT	10...36	IP 65 / IP 67	10	200	5	**KG5071**
	M30 / L = 90	20 nf	PBT	10...36	IP 65 / IP 67	10	200	6	**KI5083**
M12 connector · Output function ⎍ / ⎎ · DC PNP/NPN · Wiring diagram no. 20 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 90	20 nf	PBT	10...36	IP 65 / IP 67	10	200	6	**KI5082**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	4 f	High-grade st. steel	10...36	IP 65	50	100	7	**KF5001**
	M12 / L = 61	8 nf	High-grade st. steel	10...36	IP 65	50	100	8	**KF5002**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	4 f	High-grade st. steel	10...36	IP 65	50	100	7	**KF5013**

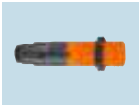
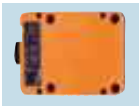
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M30 / L = 90	8 f	High-grade st. steel	10...30	IP 65 / IP 67	10	100	9	**KI5085**
	M30 / L = 90	15 nf	High-grade st. steel	10...30	IP 65 / IP 67	10	100	10	**KI5087**
M12 connector · Output function ⎍ / ⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	11	**KG6000**

f = flush / nf = non flush / qf = quasi-flush

Sensors for level and position detection AC/DC

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · AC/DC · Wiring diagram no. 5									
	M18 / L = 84	8 nf	PBT	20...250	IP 67	25 / 50	150 / 100	12	**KG0009***
	M30 / L = 81	15 nf	PBT	20...250	IP 65	25 / 40	200	13	**KI0016***
	120 x 80 x 30	60 nf	modified PPO	20...250	IP 65	10	200	14	**KD0012***
Cable 2 m · Output function ⎍ · AC/DC · Wiring diagram no. 6									
	M18 / L = 84	8 nf	PBT	20...250	IP 67	25 / 50	150 / 100	12	**KG0010***
	M30 / L = 81	15 nf	PBT	20...250	IP 65	25 / 40	200	13	**KI0020***
1/2" UNF-Connector · Output function ⎍ / ⎍ · AC/DC · Wiring diagram no. 7 · Connector group 33									
	M18 / L = 87	12 nf	PBT	20...250	IP 65 / IP 67	10	100	15	**KG0016***
	M30 / L = 90	20 nf	PBT	20...250	IP 65 / IP 67	10	100	16	**KI0054***

You can find wiring diagrams and scale drawings from page 173

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Terminals · Output function ⎍ / ⎍ · AC/DC · Wiring diagram no. 8									
	M30 / L = 125	15 nf	PBT	20...250	IP 65	25 / 40	200	17	**KI0024***
Terminals · Output function ⎍ / ⎍ · AC/DC · Wiring diagram no. 21									
	105 x 80 x 40	60 nf	modified PPO	20...250	IP 65	10	200	18	**KD0009***

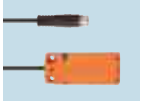
f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

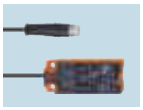
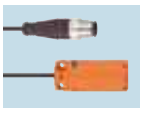
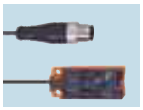
Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Sensors with IO-Link

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	19	**KI6000**
Cable 2 m · Output function ⎍ · DC NPN · Wiring diagram no. 9									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	**KI5300**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 10									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	**KI5301**
Cable 2 m · Output function ⎍ · DC NPN · Wiring diagram no. 11									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	**KI5302**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 10									
	M30 / L = 92	15 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	**KI5304**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 1									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	**KI5303**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 12									
	M30 / L = 92	15 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	**KI5305**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	**KI5306**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 13 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	**KI5307**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	**KI5308**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 15 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	**KI5309**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 13 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 92	15 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	**KI5310**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 15 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 92	15 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	**KI5311**
Cable 2 m · Output function ⎍ / ⎍ · DC PNP · Wiring diagram no. 2									
	20 x 7 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	22	**KQ5100**
	20 x 14 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	23	**KQ6002**
Cable with connector 0.04 m · Output function ⎍ / ⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	20 x 7 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	24	**KQ5102**

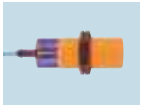
You can find wiring diagrams and scale drawings from page 173

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable with connector 0.04 m · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 4, 5, 80, 86, 147									
	20 x 14 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	25	**KQ6004**
Cable with connector 0.1 m · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	20 x 7 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	26	**KQ5101**
	20 x 14 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	27	**KQ6005**
M12 connector · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	11	**KG6000**
Cable 2 m · Output function ⎍ · DC NPN · Wiring diagram no. 9									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	**KG5300**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 10									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	**KG5301**
Cable 2 m · Output function ⎍ · DC NPN · Wiring diagram no. 11									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	**KG5302**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 1									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	**KG5303**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 10									
	M18 / L = 92.5	8 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	**KG5304**
Cable 2 m · Output function ⎍ · DC NPN · Wiring diagram no. 1									
	M18 / L = 92.5	8 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	**KG5305**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	**KG5306**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 13 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	**KG5307**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	**KG5308**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 15 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	**KG5309**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 13 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 92.5	8 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	**KG5310**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 15 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 92.5	8 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	**KG5311**

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 16										
	M30 / L = 81	15 nf	PBT	8.2 DC	7.5...15	375	1	40	13	**KI5030**
Cable 2 m · Output function ⎍ · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 17										
	M34 / L = 92	15 nf	Brass	8.2 DC	7.5...15	375	1	40	30	**KX5001**

You can find wiring diagrams and scale drawings from page 173

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
Terminals · Output function ⎓+⏚ · DC PNP · Wiring diagram no. 18										
	M30 / L = 150	15 nf	PBT	10...30 DC	–	–	–	10	31	**KI503A**
	M30 / L = 125	15 nf	PBT	10...30 DC	–	–	–	10	32	**KI505A**
Terminals · Output function ⎓/⏚ · AC/DC · Wiring diagram no. 22										
	M30 / L = 150	15 nf	PBT	20...250 DC / 30...250 AC	–	–	–	10	31	**KI000A***
	M30 / L = 125	15 nf	PBT	20...250 DC / 30...250 AC	–	–	–	10	32	**KI001A***
Terminals · Output function ⎓/⏚ · AC/DC · Wiring diagram no. 21										
	105 x 80 x 42	60 nf	modified PPE	20...250 AC/DC	–	–	–	4	33	**KD001A***
Terminals · Output function ⎓/⏚ · DC PNP · Wiring diagram no. 23										
	105 x 80 x 42	60 nf	modified PPO	10...36 DC	–	–	–	10	33	**KD501A**

f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

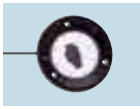
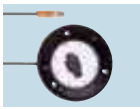
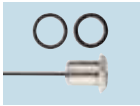
Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Switching amplifiers with ATEX approval

Type	U_b [V]	Power / current consumption [VA] / [mA]	f [Hz]	T_a [°C]	Output	Protection	Draw-ing no.	Order no.
	115	1.0 /	10	-20...60	relay (1 changeover contact)	IP 20	34	**N0030A**
	230	1.0 /	10	-20...60	relay (1 changeover contact)	IP 20	34	**N0031A**
	115	1.3 /	10	-20...60	relay (1 changeover contact per channel)	IP 20	34	**N0032A**
	230	1.3 /	10	-20...60	relay (1 changeover contact per channel)	IP 20	34	**N0033A**
	24	/ < 23	10	-20...60	relay (1 changeover contact)	IP 20	34	**N0530A**

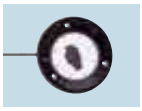
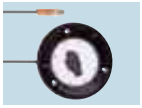
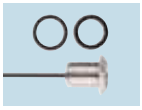
Type	U_b [V]	Power / current consumption [VA] / [mA]	f [Hz]	T_a [°C]	Output	Protection	Draw-ing no.	Order no.
	24	/ < 50	5000	-20...60	2 transistor outputs PNP (100 mA, short-circuit protection)	IP 20	34	**N0531A**
	24	/ < 50	5000	-20...60	2 outputs (optocoupler, bipolar, 100 mA, short-circuit protection)	IP 20	34	**N0532A**
	24	/ < 50	10	-20...60	relay (1 changeover contact per channel)	IP 20	34	**N0533A**
	24	/ < 50	5000	-20...60	2 transistor outputs PNP (100 mA, short-circuit protection)	IP 20	34	**N0534A**

Dynamic capacitive touch sensors

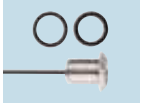
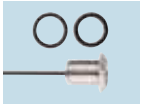
Type	U_b [V]	I_{load} [mA]	Current consumption [mA]	Ambient temperature [°C]	Protection	Draw-ing no.	Order no.
Cable 2 m · Output function ⎍ · DC PNP							
	24	200	30	-40...85	IP 67 / IP 69K	35	**KT5010**
Cable with connector 0.3 m · Output function ⎍ · DC PNP · Connector groups 4, 5, 80, 86, 147							
	24	200	30	-40...85	IP 67 / IP 69K	35	**KT5011**
Cable 2 m · Output function ⎍ · DC PNP							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	36	**KT5309**
Cable with connector 0.3 m · Output function ⎍ · DC PNP · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	**KT5102**
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	**KT5112**
Cable 2 m · Output function ⎍ · DC PNP							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	**KT5111**

You can find wiring diagrams and scale drawings from page 173

Static capacitive touch sensors

Type	U_b [V]	I_{load} [mA]	Current consumption [mA]	Ambient temperature [°C]	Protection	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · DC PNP							
	24	200	30	-40...85	IP 67 / IP 69K	35	**KT5012**
Cable with connector 0.3 m · Output function ⎍ · DC PNP · Connector groups 4, 5, 80, 86, 147							
	24	200	30	-40...85	IP 67 / IP 69K	35	**KT5013**
Cable with connector 0.3 m · Output function ⎍ · DC PNP · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	**KT5106**
Cable 2 m · Output function ⎍ · DC PNP							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	**KT5110**
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	36	**KT5310**

Capacitive touch sensors with latching evaluation principle

Type	U_b [V]	I_{load} [mA]	Current consumption [mA]	Ambient temperature [°C]	Protection	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · DC PNP							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	**KT5150**
Cable 0.3 m · Output function ⎍ · DC PNP · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	**KT5151**
Cable 2 m · Output function ⎍ · DC PNP							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	36	**KT5350**
Cable 0.3 m · Output function ⎍ · DC PNP · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	36	**KT5351**

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0011**
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0012**

Accessories

Type	Description	Order no.
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	**E30398**
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS yellow	**E80372**
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS green	**E80373**
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS Red	**E80374**
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS blue	**E80375**
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS orange	**E80376**
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Start symbol · Housing materials: Polyamide	**E12377**
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Symbol Stop · Housing materials: Polyamide	**E12378**
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Symbol ON · Housing materials: Polyamide	**E12379**
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Symbol OFF · Housing materials: Polyamide	**E12380**

You can find wiring diagrams and scale drawings from page 173

Type	Description	Order no.
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Without symbol, transparent · Housing materials: Polyamide	**E12386**

Accessories mounting adapters

Type	Description	Order no.
	Mounting adapter · M18 x 1 - G ¾ · Housing materials: POM	**E43900**
	Mounting adapter · M18 x 1 - G 1 · Housing materials: POM	**E43904**
	Mounting adapter · M30 x 1.5 - G 1¼ · Housing materials: PVDF / EPDM	**E11036**
	Mounting adapter · M30 x 1.5 - G 1½ · Housing materials: PVDF / EPDM	**E11034**
	Mounting adapter · Ø 34 mm - G 1½ · Housing materials: POM	**E11027**
	Locknut · G ¾ · for mounting adapter · Housing materials: POM	**E43902**
	Locknut · G 1¼ · for mounting adapter · Housing materials: PVDF	**E11030**
	Locknut · G 1½ · for mounting adapter · Housing materials: PVDF	**E11032**
	Protective cover · G 1¼ · for mounting adapter · Housing materials: PES black transparent	**E11078**

Accessories mounting components

Type	Description	Order no.
	Mounting clamp · Ø 20 mm - Ø 18 mm · with reducing bush · for type M18 · Housing materials: PBT	**E10076**
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	**E10077**

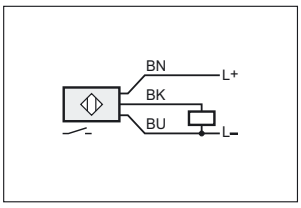
Type	Description	Order no.
	Angle bracket · for type M12 · Housing materials: stainless steel	**E10735**
	Angle bracket · for type M18 · Housing materials: stainless steel	**E10736**
	Angle bracket · for type M30 · Housing materials: stainless steel	**E10737**
	Mounting adapter for free-standing mounting · for type KQ5, KQ6 · Housing materials: adapter: PBT / inserts: Brass / screw: steel galvanised	**E12153**
	Mounting adapter · Pipe and tube installation KQ5 / KQ6 with cable ties · Fixing of the types KQ5 and KQ6 to pipes and tubes · Housing materials: Mounting adapter: PA 12 black	**E12163**
	Fixing strap · Length: 760 mm · for capacitive level sensors · for type KNQ, KQ5, KQ6 · Housing materials: PA	**E10880**
	Mounting set · M30 x 1.5 / G ¼...G 1 · for capacitive sensors on rising pipes G ¼" - 1" · Housing materials: POM	**E11037**

Wiring diagrams

Core colours

BN	brown
BU	blue
BK	black
GN/YE	green/yellow

1



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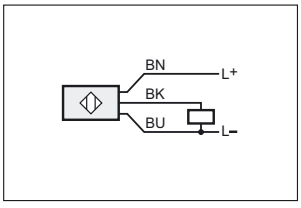

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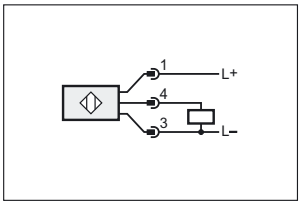

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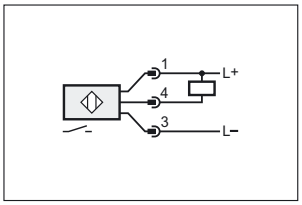

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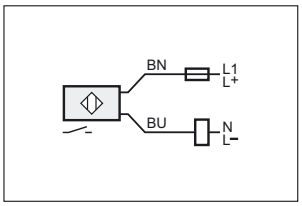

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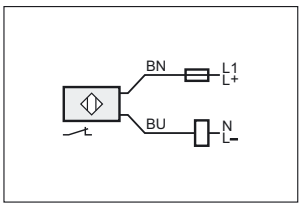

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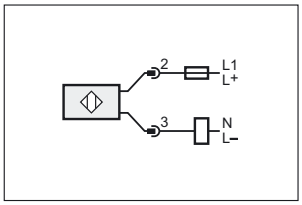

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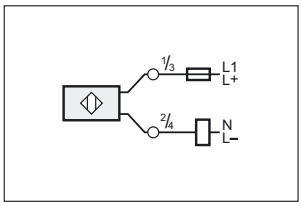

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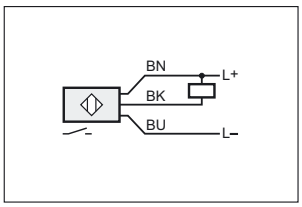

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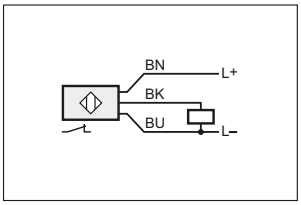

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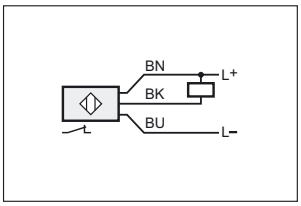

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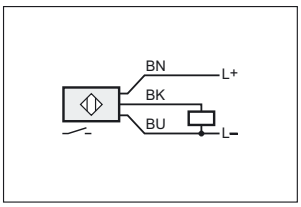
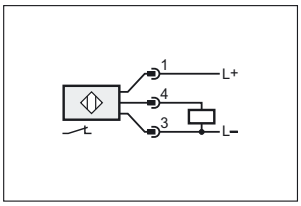


Wiring diagrams

13



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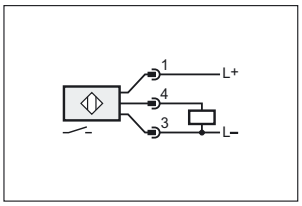

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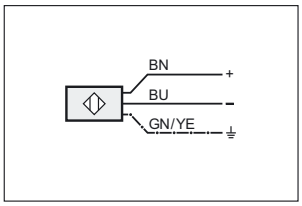

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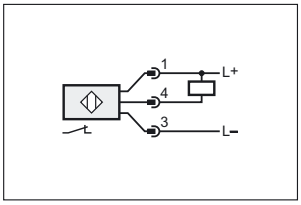

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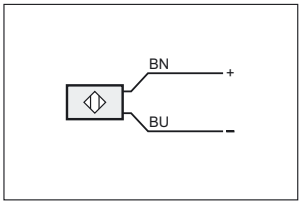

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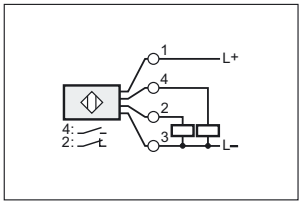

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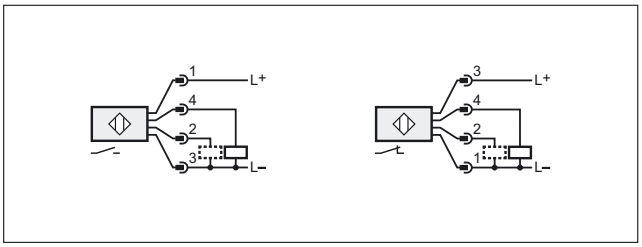
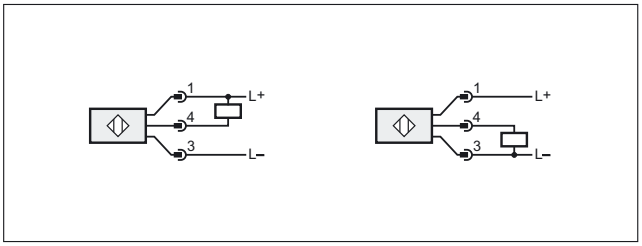


2: function check output / programming wire

20



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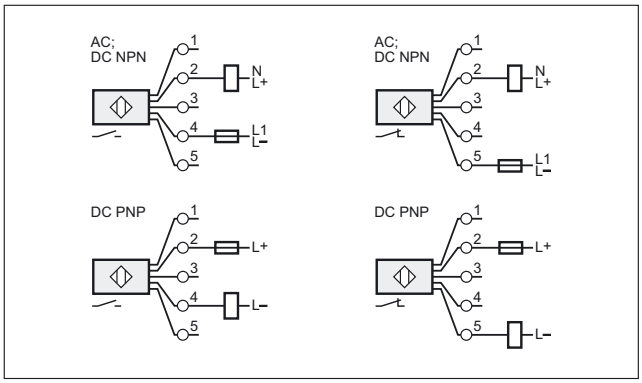

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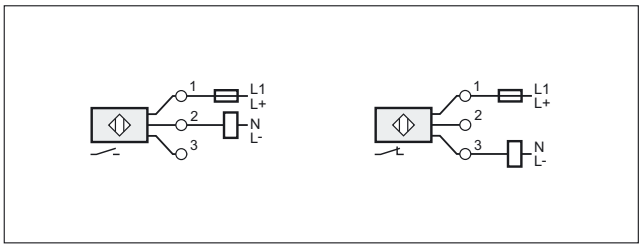

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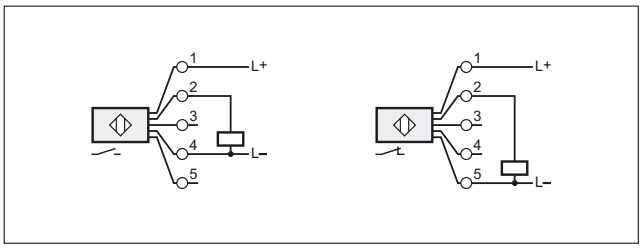

Scale drawings / drawing no. – CAD download: www.ifm.com

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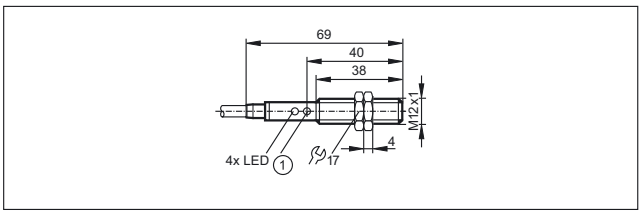

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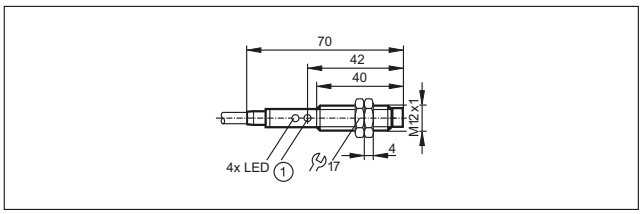

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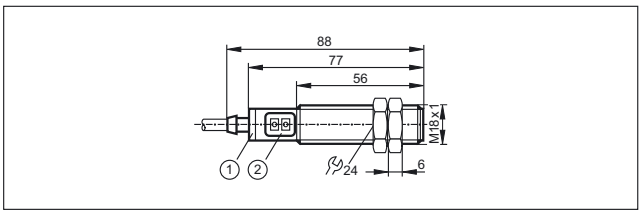
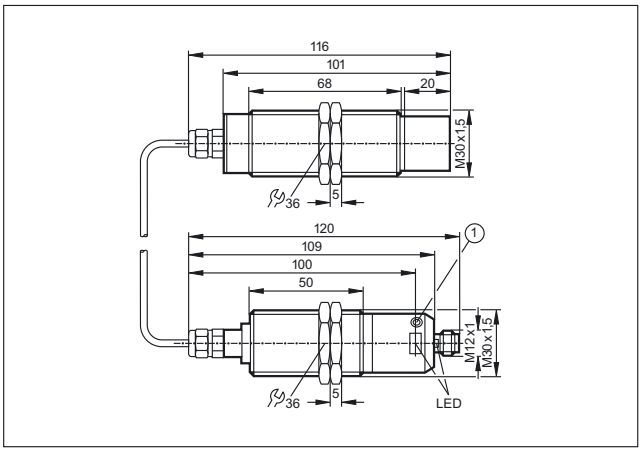


1: LED ring, 2: Programming buttons

4



1: Programming button

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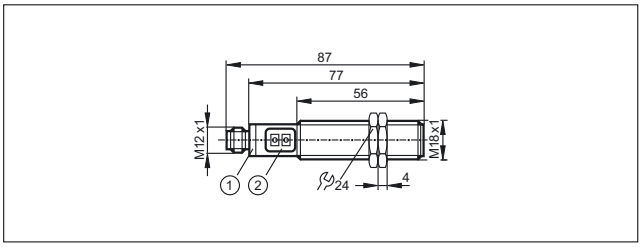

1: LED ring, 2: Programming buttons

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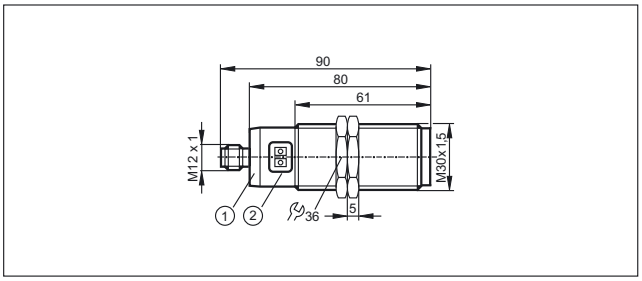
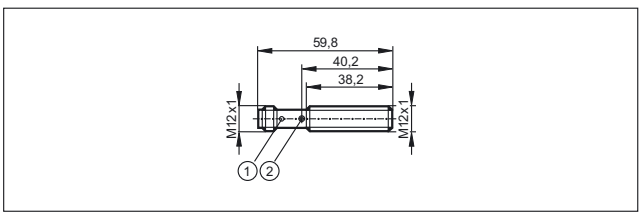


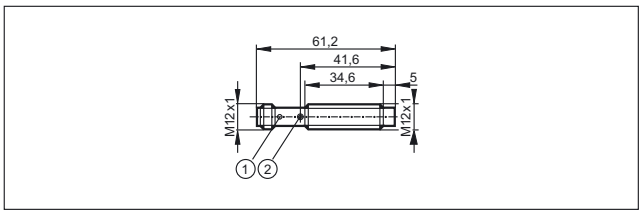
1: LED ring, 2: Programming buttons

7



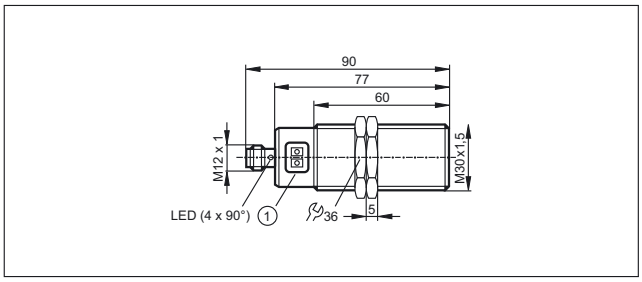
1: LED 4 x 90°, 2: potentiometer

8



1: LED 4 x 90°, 2: potentiometer

9



1: Programming buttons

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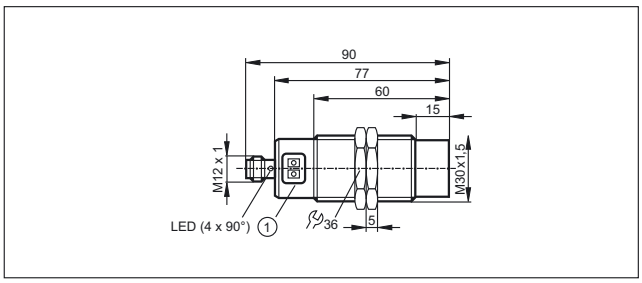

1: Programming buttons

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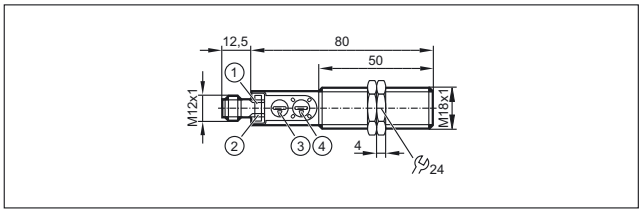
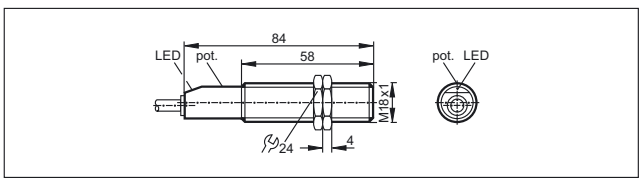


1: LED yellow (output status indication), 2: LED green (output status indication), 3: Potentiometer (sensing range), 4: Potentiometer (switching function)

12



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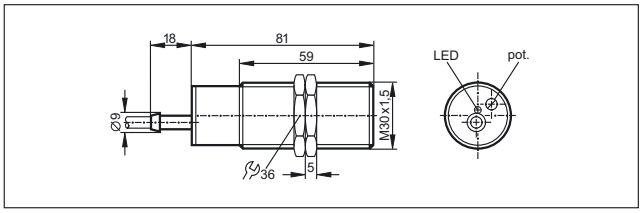

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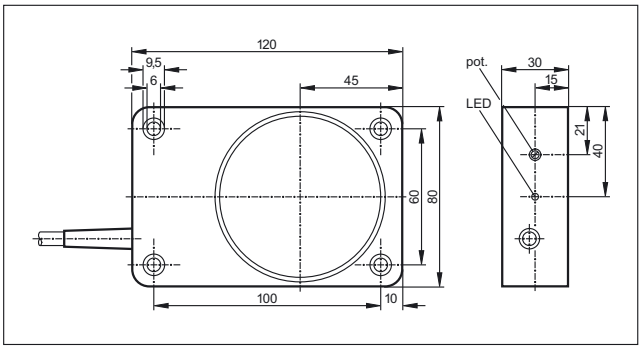

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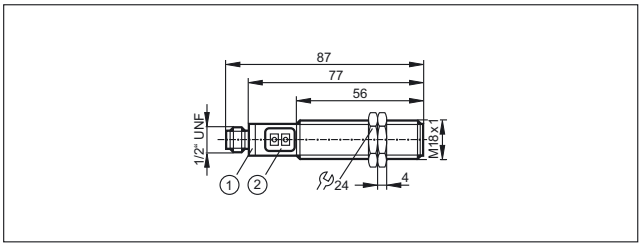

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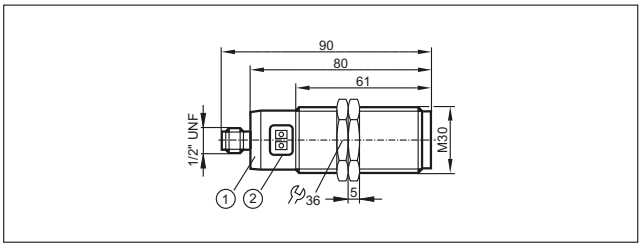
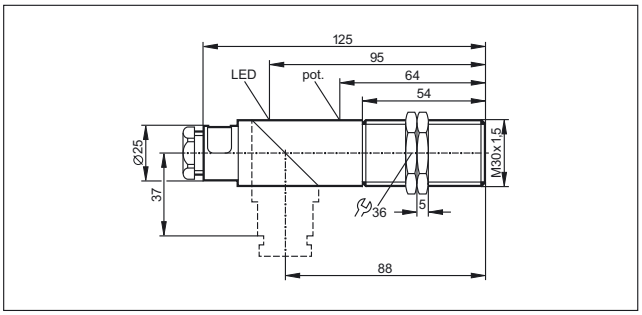


1: LED ring, 2: Programming buttons

17



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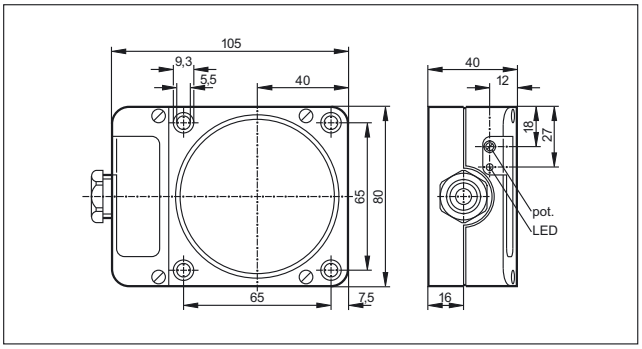

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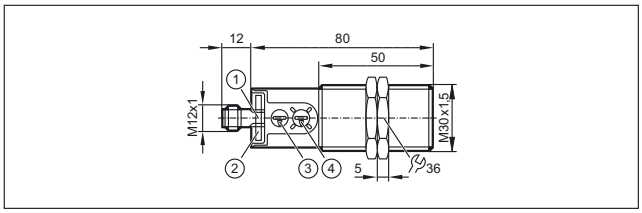
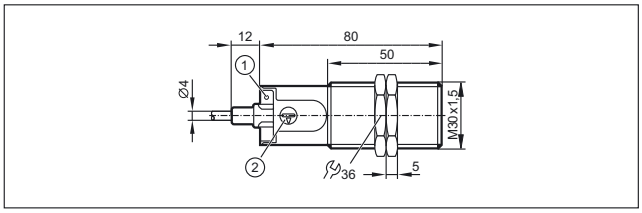


1: LED yellow (output status indication), 2: LED green (output status indication), 3: Potentiometer (sensing range), 4: Potentiometer (switching function)

20



1: LED yellow (output status indication), 2: Potentiometer (sensing range)

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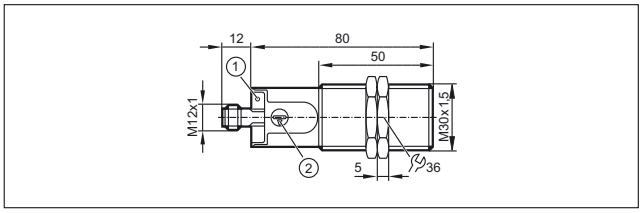

1: LED yellow (output status indication), 2: Potentiometer (sensing range)

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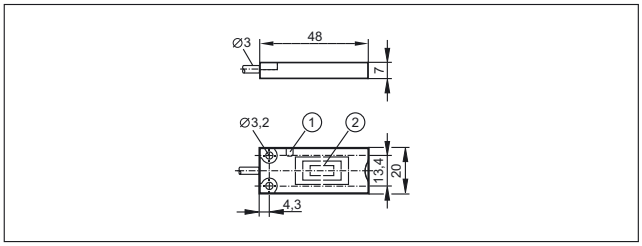
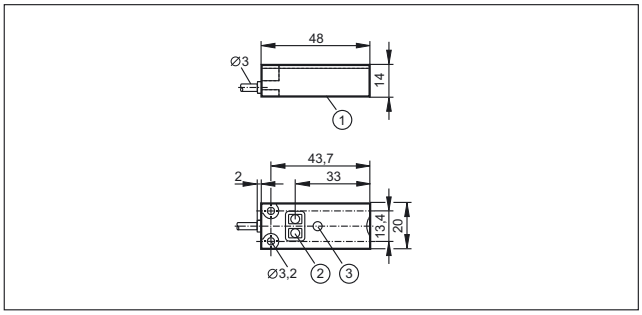


1: LED, 2: sensing face

23



1: sensing face, 2: Programming buttons, 3: LED

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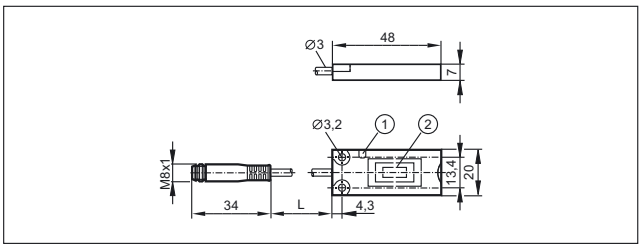
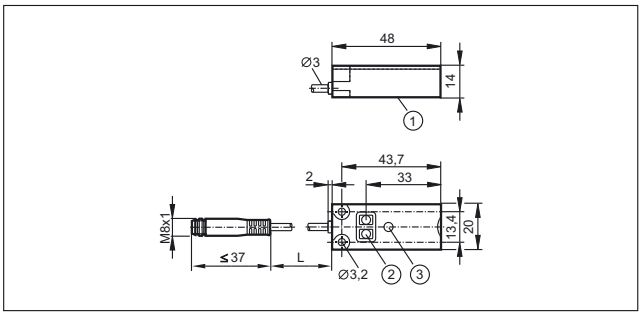


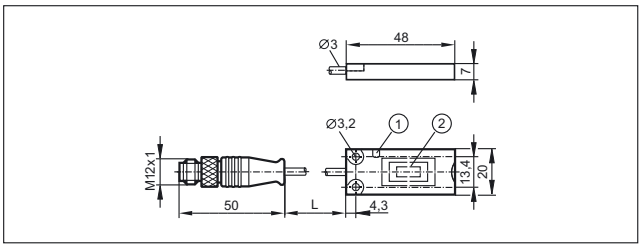
1: LED, 2: sensing face

25



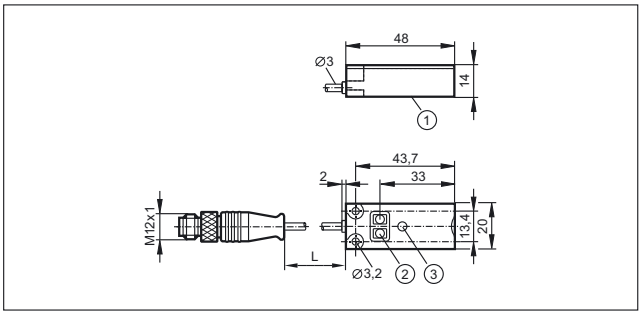
1: sensing face, 2: Programming buttons, 3: LED

26



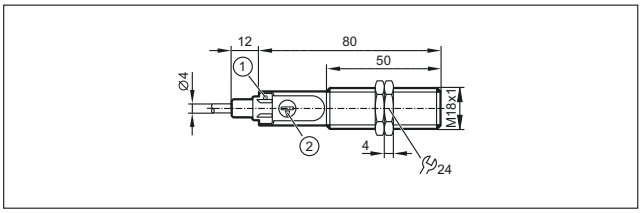
1: LED, 2: sensing face

27



1: sensing face, 2: Programming buttons, 3: LED

28



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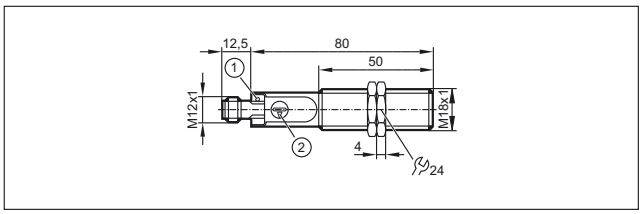
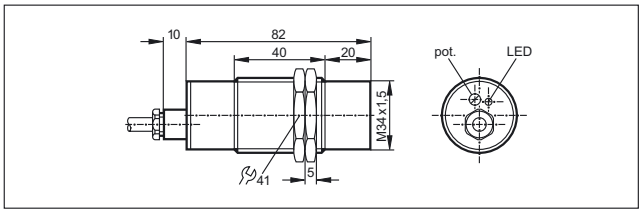


1: LED yellow (output status indication), 2: Potentiometer (sensing range)

30



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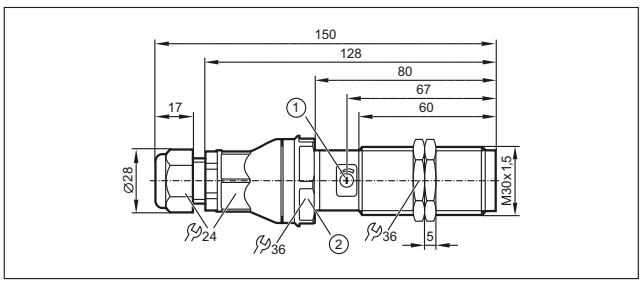
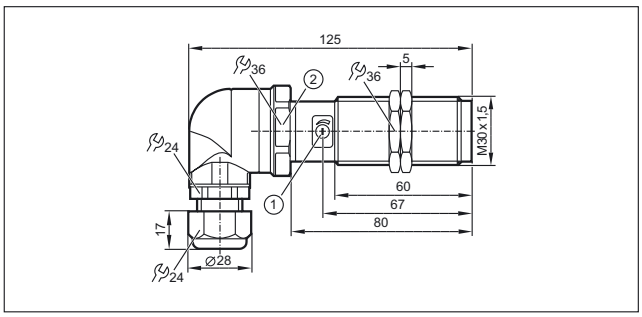


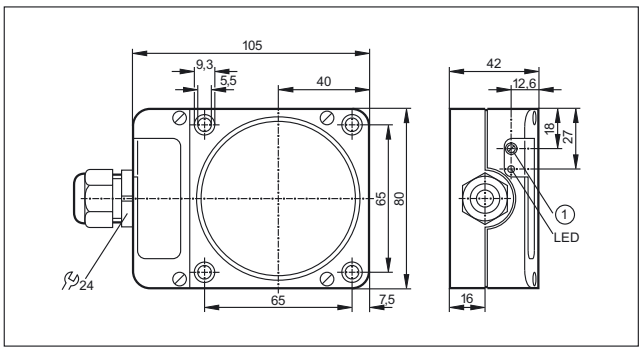
1: potentiometer, 2: tightening torque 10 Nm

32



1: potentiometer, 2: tightening torque 10 Nm

33



1: potentiometer

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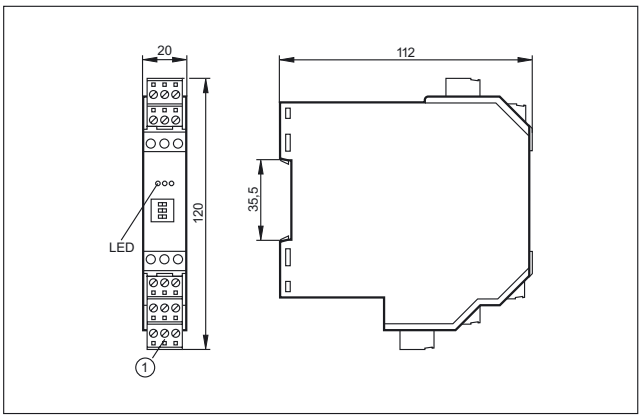
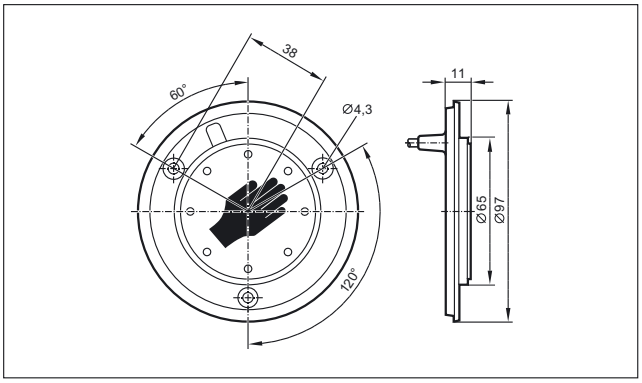


1: Combicon plug with screw terminals (optional)

35



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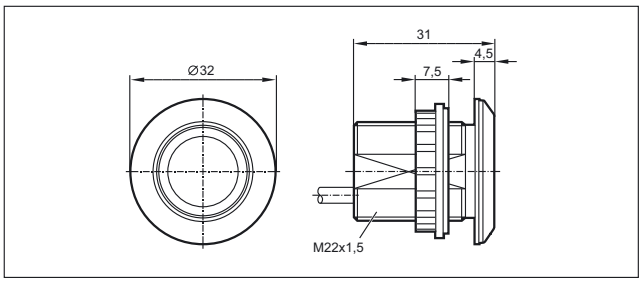

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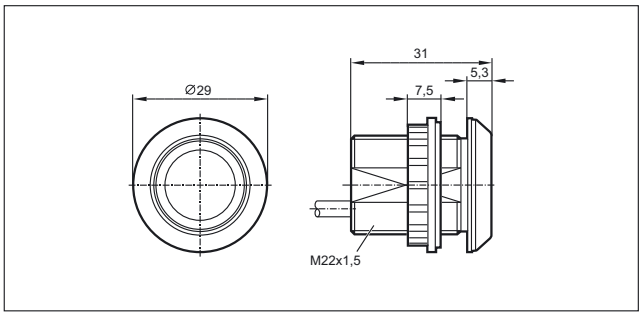


Non-contact and wear-free detection with magnetic sensors

Magnetic sensors

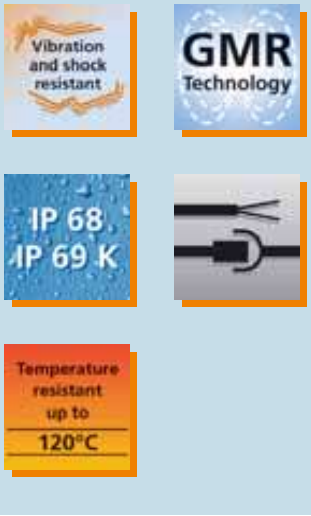
Detection also through non-magnetisable metals

Small designs with very long sensing ranges up to 100 mm

Cylinder and rectangular designs for demanding applications

High mechanical stability in case of shock or vibration

Flush or non-flush installation in non-magnetisable metals



Magnetic sensors

Magnetic sensors are used in automation to detect positions without contact or wear and tear. Magnetic sensors come into their own where inductive sensors reach their limits. Advantage: Magnetic sensors offer small designs with very long sensing ranges. Depending on the orientation of the magnetic field, the sensor can be damped from the front or from the side.

Since magnetic fields penetrate all non-magnetisable materials, the sensors can detect magnets through walls made of non-ferrous metal, stainless steel, aluminium, plastic or wood.

In the food industry, for example, magnetic sensors are often used in connection with pigs (cleaning devices which pass through the inside of pipes). Magnetic sensors are used to determine their exact position from the outside through the wall of the stainless steel pipe.

System overview	*Page*
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Full metal sensors for hygienic and wet areas	*185*
Sensors for hygienic and wet areas	*185*
Accessories damping magnets	*185 - 186*
Accessories mounting components	*186 - 187*
Accessories mounting sets	*187*
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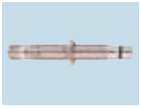
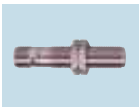
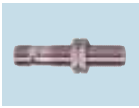
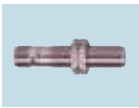
Full-metal sensors for high-pressure resistant applications on hydraulic cylinders and valves

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 93	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	1	**MFH200**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 93	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	1	**MFH201**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	2	**MFH202**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	2	**MFH203**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	2	**MFH204**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 4									
	M12 / L = 40	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	3	**MFH205**
Cable 2 m · Output function ⎍ · DC NPN · Wiring diagram no. 5									
	M12 / L = 40	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	3	**MFH206**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 6									
	M12 / L = 40	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	3	**MFH207**
Cable 2 m · Output function normally open / closed · DC PNP · Wiring diagram no. 7									
	M12 / L = 40	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	3	**MFH208**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function normally open / closed · DC PNP · Wiring diagram no. 8									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	100	4	**MFH209**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M14 / L = 53	2 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	5	**M9H200**

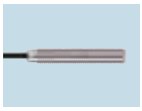
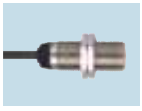
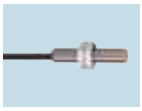
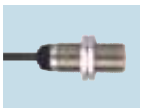
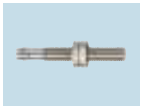
f = flush / nf = non flush / qf = quasi-flush

Full metal sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	6	**MFS211**
	M18 / L = 60	70	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	7	**MGS204**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 2 · Connector groups 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	6	**MFS209**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	6	**MFS210**
	M18 / L = 60	70	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	7	**MGS206**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 2 · Connector groups 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 60	70	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	7	**MGS205**

You can find wiring diagrams and scale drawings from page 187

Sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 4									
	M8 / L = 50	60	stainless steel (316L)	10...30	IP 67	5000	200	8	**ME5011**
	M12 / L = 50	60	High-grade st. steel	10...30	IP 67	5000	200	9	**MFS201**
	M18 / L = 50	70	stainless steel	10...30	IP 67	5000	200	10	**MGS201**
Cable 2 m · Output function ⎍ · DC NPN · Wiring diagram no. 5									
	M8 / L = 40	60	stainless steel (316L)	10...30	IP 67	5000	200	11	**ME5015**
	M12 / L = 50	60	High-grade st. steel	10...30	IP 67	5000	200	9	**MFS202**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 6									
	M18 / L = 50	70	stainless steel	10...30	IP 67	5000	200	10	**MGS202**
M8 connector · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	M8 / L = 60	60	stainless steel (316L)	10...30	IP 67	5000	200	12	**ME5010**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 4									
	28 x 10 x 16	60	PBT	10...30	IP 67	5000	200	13	**MS5011**
Cable with connector 0.15 m · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	40 x 12 x 26	60	PBT	10...30	IP 67	–	200	14	**MN5200**
M8 connector · Output function ⎍ · DC PNP · Wiring diagram no. 9 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	28 x 10 x 16	60	PBT	10...30	IP 67	5000	200	15	**MS5013**
M8 connector · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	28 x 10 x 16	60	PBT	10...30	IP 67	5000	200	15	**MS5010**

Full metal sensors for hygienic and wet areas

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 68 / IP 69K	5000	100	6	**MFT202**
	Ø 12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 68 / IP 69K	5000	100	16	**MFT204**
	M18 / L = 60	70	High-grade st. steel	10...30	IP 65 / IP 68 / IP 69K	5000	100	7	**MGT203**

Sensors for hygienic and wet areas

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 68 / IP 69K	5000	100	6	**MFT202**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M18 / L = 60	100	High-grade st. steel	10...30	IP 68 / IP 69K	–	200	7	**MGT201**

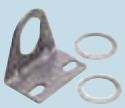
Accessories damping magnets

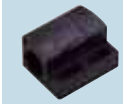
Type	Description	Order no.
	Damping magnet · M 3.2 · Housing materials: Barium ferrite	**E12537**
	Damping magnet · M 6.1 · Housing materials: Neodymium	**E12538**
	Damping magnet · M 6.1 · Housing materials: Neodymium	**E12539**
	Damping magnet · M 7.0 · Housing materials: Neodymium galvanised	**E12540**

You can find wiring diagrams and scale drawings from page 187

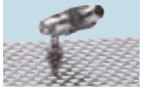
Type	Description	Order no.
	Damping magnet · M 7.1 · Housing materials: Neodymium / plastics	**E12541**
	Damping magnet · M 1.0 · Housing materials: Samarium cobalt	**E10749**
	Damping magnet · M 2.0 · Housing materials: AlNiCo	**E10750**
	Damping magnet · M 3.0 · Housing materials: Barium ferrite	**E10751**
	Damping magnet · M 3.1 · Housing materials: Barium ferrite / stainless steel	**E12291**
	Damping magnet · M 4.0 · Housing materials: Barium ferrite	**E10752**
	Damping magnet · M 4.1 · Housing materials: Barium ferrite / stainless steel	**E11803**
	Damping magnet · M 5.0 · Housing materials: Barium ferrite	**E10753**
	Damping magnet · M 5.1 · Housing materials: Barium ferrite with plastic coating / steel	**E10754**

Accessories mounting components

Type	Description	Order no.
	Angle bracket · for type M8 · Housing materials: stainless steel	**E10734**
	Angle bracket · for type M12 · Housing materials: stainless steel	**E10735**
	Angle bracket · for type M18 · Housing materials: stainless steel	**E10736**
	Mounting clamp · Ø 8 mm · Housing materials: aluminium black anodised	**E10221**

Type	Description	Order no.
	Mounting clamp · Ø 12 mm · with end stop · for type M12 · Housing materials: PC	**E11047**
	Mounting clamp · Ø 18 mm · with end stop · for type M18 · Housing materials: PC	**E11048**

Accessories mounting sets

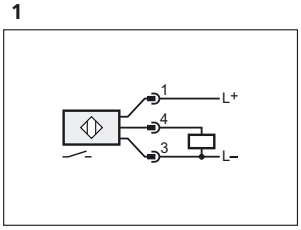
Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20718**
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20719**
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20869**
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20870**
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20866**
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20867**

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white

1



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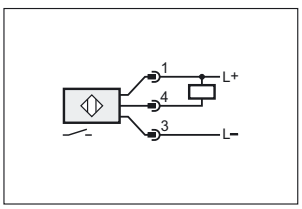

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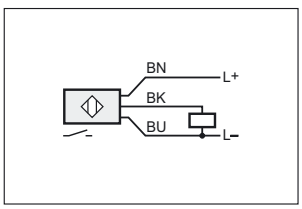

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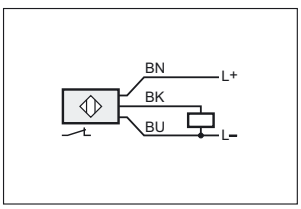

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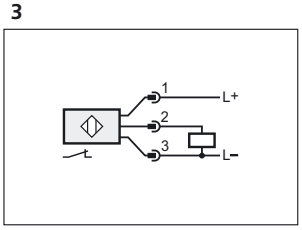

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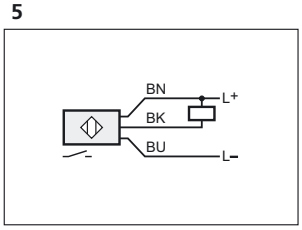

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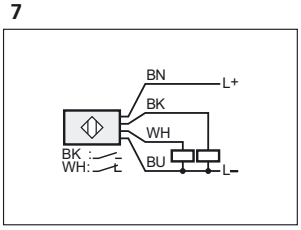
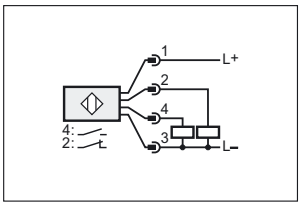


Wiring diagrams

8



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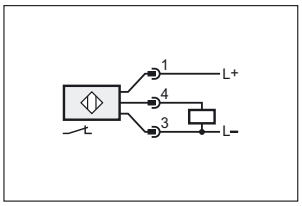

Scale drawings / drawing no. – CAD download: www.ifm.com

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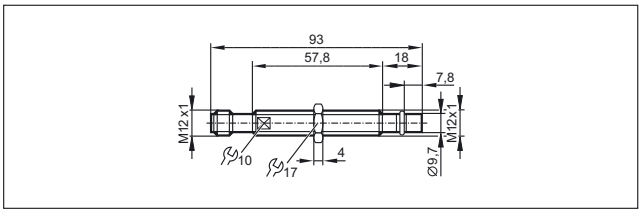

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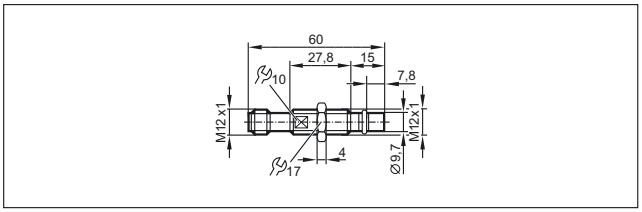

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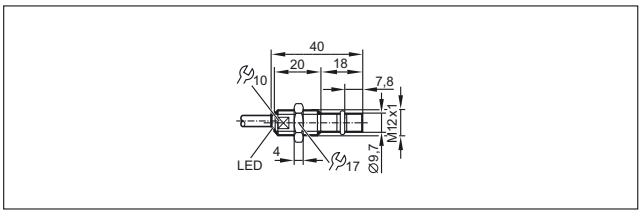

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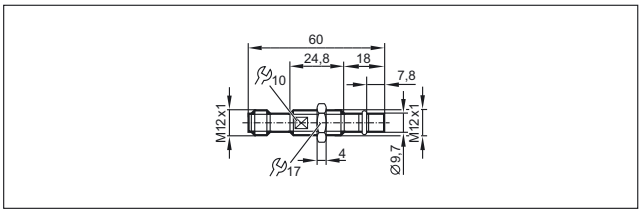

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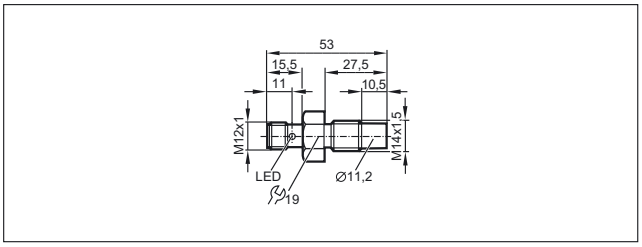

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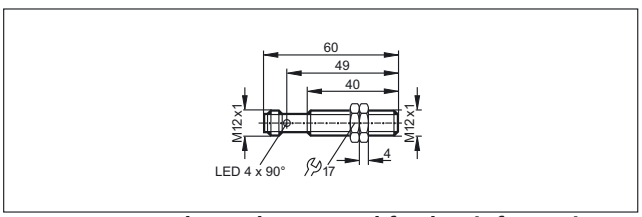

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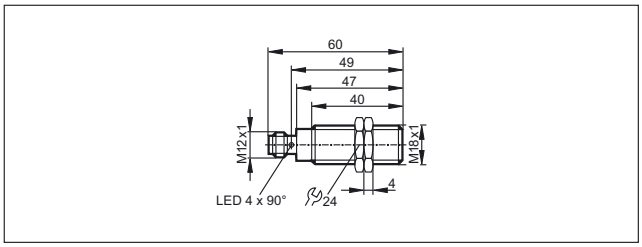

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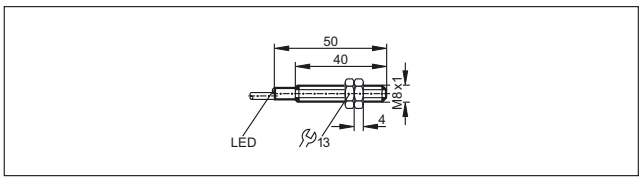

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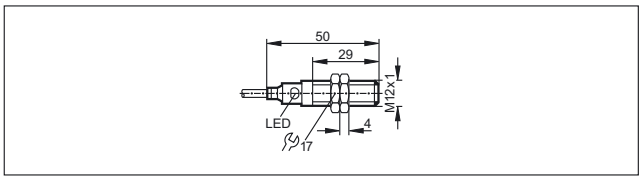

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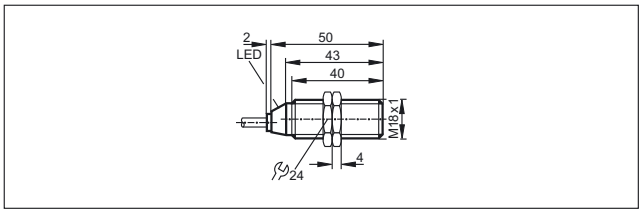

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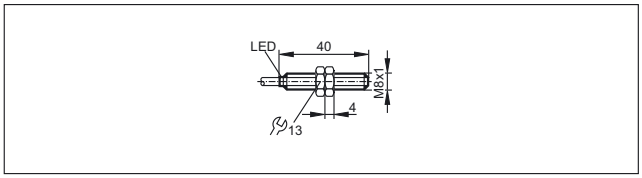

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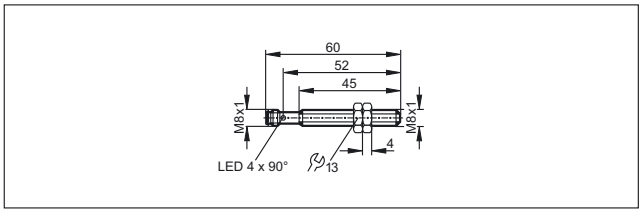
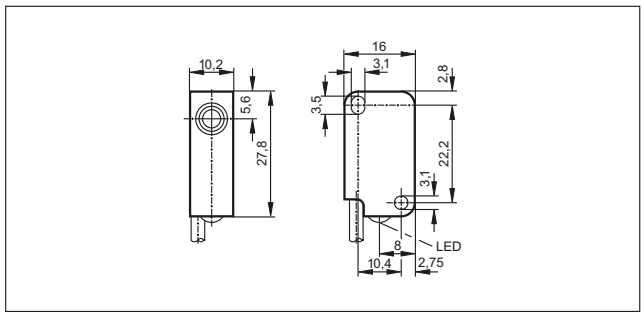


Scale drawings / drawing no. – CAD download: www.ifm.com

13



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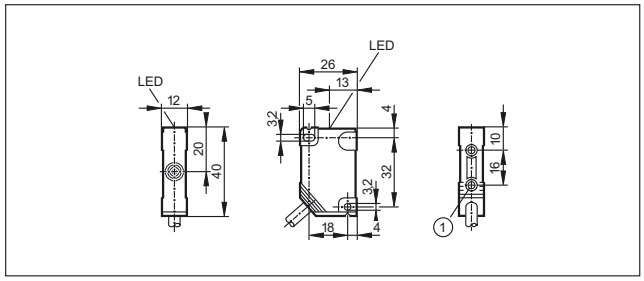
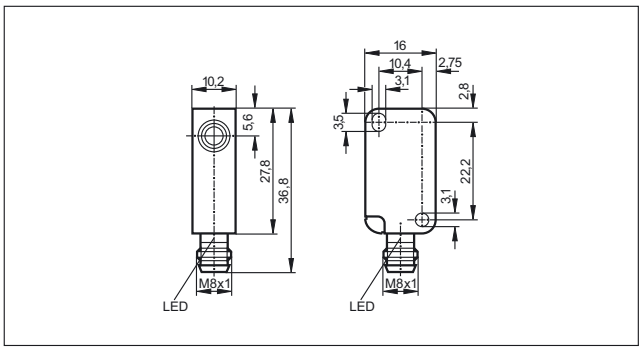


1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

15



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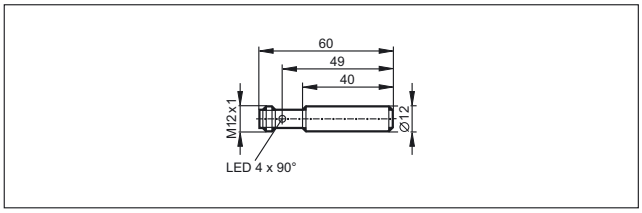

Accurate detection of the piston position in pneumatic cylinders

Cylinder sensors

Self-clamping fixture for easy adjustment and quick mounting

Convenient: Can be easily inserted from above into the slot

Suitable for almost all C- and T-slots

Unit versions available with connection cable and M8 or M12 cable plug

Wide selection of adapter accessories

Cylinder sensors

Cylinder sensors are used for position detection of pistons in pneumatic cylinders. They are directly mounted onto the cylinder.
The ring magnet attached to the piston is detected through the housing wall of non-magnetisable material (e.g. aluminium, brass or stainless steel).

ifm offers a standard solution for different cylinder types and manufacturers. Moreover, a wide range of adapters and fixing accessories ensures fast and reliable installation.

System overview	*Page*
T-slot sensors for industrial applications	*192 - 193*
T-slot reed sensors for industrial applications, 2-wire	*193 - 194*
T-slot reed sensors for industrial applications, 3-wire	*194 - 195*
T-slot sensors for hygienic and wet areas	*195*
T-slot sensors for short-stroke cylinders	*196*
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T-slot sensors with ATEX approval 1G/1D	*197*
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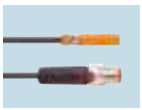
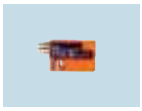
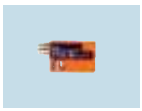
T-slot sensors for industrial applications

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	1	**MK5100**
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	200	-25...85	1	**MK5115**
Cable 2 m · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 2									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	1	**MK5114**
Cable 2 m · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 3									
	25 x 5 x 6.5	PA (polyamide)	10...30	4000	IP 65 / IP 67	100	-25...85	1	**MK5103**
Cable 6 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	200	-25...85	1	**MK5117**
Cable 10 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	1	**MK5124**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	2	**MK5101**
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	200	-25...85	2	**MK5106**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	2	**MK5112**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 6 · Connector groups 1, 3, 145									
	25 x 5 x 6.5	PA (polyamide)	10...30	4000	IP 65 / IP 67	100	-25...85	2	**MK5104**

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 0.3 m · with M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	3	**MK5102**
Cable 0.3 m · with M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	4	**MK5107**
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	200	-25...85	4	**MK5108**
Cable 0.3 m · with M8 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 6 · Connector groups 1, 3, 145									
	25 x 5 x 6.5	PA (polyamide)	10...30	4000	IP 65 / IP 67	100	-25...85	3	**MK5105**
Cable 0.3 m · with M12 connector · Output function ⎍ · 2-wire · DC PNP/NPN · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	25 x 5 x 6.5	PA (polyamide)	10...30	4000	IP 65 / IP 67	100	-25...85	4	**MK5109**
Cable 1 m · with M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	3	**MK5122**
M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	27.5 x 18 x 15.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	5	**MK5900**
M8 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145									
	27.5 x 18 x 15.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	5	**MK5902**

T-slot reed sensors for industrial applications, 2-wire

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
M8 connector · Output function ⎍ · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 7									
	27.5 x 18 x 15.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	100	-25...70	5	**MR0901***

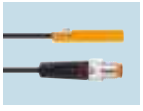
You can find wiring diagrams and scale drawings from page 205

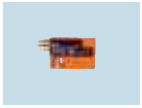
Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 8									
	30.5 x 5 x 6.5	PA (polyamide)	5...120	1000	IP 65 / IP 67	100	-25...70	6	**MR0100***
Cable 6 m · Output function ⎍ · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 8									
	30.5 x 5 x 6.5	PA (polyamide)	5...120	1000	IP 65 / IP 67	100	-25...70	6	**MR0117***
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 7 · Connector groups 1, 3, 145									
	30.5 x 5 x 6.5	PA (polyamide)	5...60	1000	IP 65 / IP 67	100	-25...70	7	**MR0101***
Cable 0.3 m · with M8 connector · Output function ⎍ · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 7 · Connector groups 1, 3, 145									
	30.5 x 5 x 6.5	PA (polyamide)	5...60	1000	IP 65 / IP 67	100	-25...70	8	**MR0102***
Cable 0.3 m · with M12 connector · Output function ⎍ · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 7 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	30.5 x 5 x 6.5	PA (polyamide)	5...60	1000	IP 65 / IP 67	100	-25...70	9	**MR0107***

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 0,175 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

T-slot reed sensors for industrial applications, 3-wire

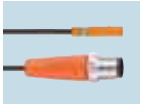
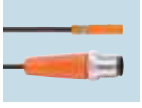
Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · AC/DC PNP · Wiring diagram no. 9 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	7	**MR0119***
Cable 0.3 m · with M8 connector · Output function ⎍ · 3-wire · AC/DC PNP · Wiring diagram no. 9 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	8	**MR0120***
Cable 2 m · Output function ⎍ · 3-wire · AC/DC PNP · Wiring diagram no. 10									
	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	6	**MR0122***

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 6 m · Output function ⎍ · 3-wire · AC/DC PNP · Wiring diagram no. 10									
	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	6	**MR0123***
Cable 0.3 m · with M12 connector · Output function ⎍ · 3-wire · AC/DC PNP · Wiring diagram no. 9 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	9	**MR0121***
M8 connector · Output function ⎍ · 3-wire · AC/DC PNP · Wiring diagram no. 9									
	27.5 x 18 x 15.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	5	**MR0902***

*** Note on use of miniature fuses for electrical connection**

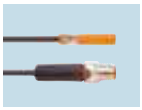
Miniature fuse to IEC60127-2 sheet 1, ≤ 0,175 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

T-slot sensors for hygienic and wet areas

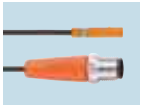
Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67 / IP 69K	100	-25...85	1	**MK5110**
Cable 6 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67 / IP 69K	100	-25...85	1	**MK5128**
Cable 0.3 m · with M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67 / IP 69K	100	-25...85	10	**MK5111**
Cable 0.3 m · with M12 connector · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67 / IP 69K	100	-25...85	11	**MK5186**

You can find wiring diagrams and scale drawings from page 205

T-slot sensors for short-stroke cylinders

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	12	**MK5140**
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 11									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	12	**MK5156**
Cable 10 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	12	**MK5161**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	13	**MK5137**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	13	**MK5138**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 12 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	13	**MK5155**
Cable 0.3 m · with M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	14	**MK5159**
Cable 0.3 m · with M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	15	**MK5139**

T-slot sensors for short-stroke cylinders for hygienic and wet areas

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67 / IP 69K	100	-25...85	12	**MK5158**
Cable 0.3 m · with M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67 / IP 69K	100	-25...85	11	**MK5157**

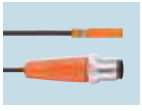
T-slot sensors with ATEX approval 1G/1D

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 6 m · Output function ⎍ · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 3									
	25 x 5 x 6.5	PA (polyamide)	–	2000	IP 65 / IP 67	–	-25...70	12	**MK502A**

T-slot sensors with ATEX approval 3D/3G

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 6 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-20...60	12	**MK503A**

T-slot sensors with ATEX approval 3D

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...60	1	**MK500A**
Cable 0.3 m · with M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 196, 198									
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...60	10	**MK501A**

You can find wiring diagrams and scale drawings from page 205

T-slot reed sensors with ATEX approval 1G/1D

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 6 m · Output function ⎓ · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 3									
	30.5 x 5 x 6.5	PA (polyamide)	–	–	IP 65 / IP 67	–	-25...70	6	**MR500A**

T-slot reed sensors with ATEX approval 3D/3G

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 6 m · Output function ⎓ · 2-wire · DC PNP/NPN · Wiring diagram no. 13									
	30.5 x 5 x 6.5	PA (polyamide)	5...30	–	IP 65 / IP 67	100	-20...60	6	**MR501A***

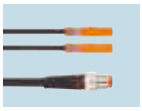
*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 0,175 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

T-slot sensors for welding applications, weld-field immune

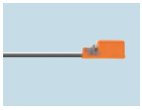
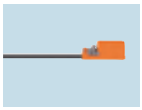
Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 0.3 m · with M12 connector · Output function ⎓ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 137, 138, 139, 140, 141									
	25 x 5 x 6.5	PA (polyamide)	10...30	9	IP 65 / IP 67	100	-25...85	4	**MK5214**
Cable 0.3 m · with M8 connector · Output function ⎓ · 3-wire · DC PNP · Wiring diagram no. 4									
	25 x 5 x 6.5	PA (polyamide)	10...30	9	IP 65 / IP 67	100	-25...85	3	**MK5215**

Two T-slot sensors on one connector

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 0.3 m · with M8 connector · Output function ⎓ · 4-wire · DC PNP · Wiring diagram no. 14 · Connector groups 4, 5, 80, 86, 147									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	16	**MK5208**

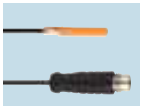
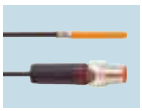
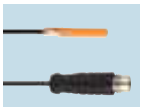
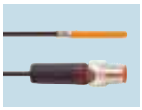
Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 0.3 m · with M12 connector · Output function ⎍⎽ · 4-wire · DC PNP · Wiring diagram no. 14 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	17	**MK5209**

Non flush C-slot sensors for industrial applications

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 2 m · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 1									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	18	**MK5300**
Cable 2 m · Output function ⎍⎽ · 3-wire · DC NPN · Wiring diagram no. 2									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	18	**MK5306**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	19	**MK5301**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍⎽ · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	19	**MK5307**
Cable 0.3 m · with M8 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	20	**MK5302**
Cable 0.5 m · with M8 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	20	**MK5305**
Cable 0.3 m · with M12 connector · Output function ⎍⎽ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	21	**MK5304**

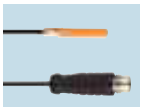
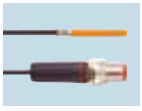
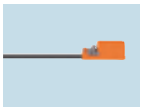
You can find wiring diagrams and scale drawings from page 205

Flush C-slot sensors for industrial applications

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	22	**MK5312**
Cable 2 m · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 2									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	22	**MK5309**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	23	**MK5310**
Cable 0.3 m · with M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	24	**MK5311**
Cable 0.3 m · with M12 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	25	**MK5314**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	23	**MK5308**
Cable 0.5 m · with M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	26	**MK5315**

C-slot sensors for short-stroke cylinders

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	22	**MK5325**

Type	Dimensions [mm]	Material	U_b [V]	f [Hz]	Protection	I_{load} [mA]	T_a [°C]	Drawing no.	Order no.
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	23	**MK5326**
Cable 0.3 m · with M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25.8 x 2.8 x 5	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	27	**MK5328**
Cable 2 m · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 1									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	28	**MK5329**
Cable 0.3 m · with M8 connector (snap-fit) · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	29	**MK5330**
Cable 0.3 m · with M8 connector · Output function ⎍ · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	30	**MK5331**

Fixing straps for clean line cylinders

Type	Description	Order no.
	Fixing strap for clean-line cylinders · Piston diameter 8...12 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	**E11816**
	Fixing strap for clean-line cylinders · Piston diameter 16...20 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	**E11817**
	Fixing strap for clean-line cylinders · Piston diameter 25...32 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	**E11818**
	Fixing strap for clean-line cylinders · Piston diameter 40 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	**E11819**
	Fixing strap for clean-line cylinders · Piston diameter 50 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	**E11820**
	Fixing strap for clean-line cylinders · Piston diameter 63 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	**E11821**

You can find wiring diagrams and scale drawings from page 205

Type	Description	Order no.
	Fixing strap for clean-line cylinders · Piston diameter 80 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	**E11822**
	Fixing strap for clean-line cylinders · Piston diameter 100 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	**E11823**
	Fixing strap for clean-line cylinders · Piston diameter 10...16 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	**E11975**
	Fixing strap for clean-line cylinders · Piston diameter 20...25 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	**E11976**
	Fixing strap for clean-line cylinders · Piston diameter 32 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	**E11977**
	Fixing strap for clean-line cylinders · Piston diameter 40 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	**E11978**
	Fixing strap for clean-line cylinders · Piston diameter 50 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	**E11979**
	Fixing strap for clean-line cylinders · Piston diameter 63 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	**E11980**
	Fixing strap for clean-line cylinders · Piston diameter 80 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	**E11981**
	Fixing strap for clean-line cylinders · Piston diameter 100 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	**E11982**
	Adapter for clean-line cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: PA	**E11846**
	Adapter for clean-line cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: stainless steel	**E11877**

Clips

Type	Description	Order no.
	Clip · for types MKT (T-slot cylinder sensors) · Piston diameter 12 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	**E11961**
	Clip · for types MKT (T-slot cylinder sensors) · Piston diameter 16 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	**E11958**

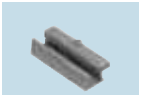
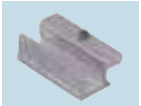
Type	Description	Order no.
	Clip · for types MKT (T-slot cylinder sensors) · Piston diameter 20 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	**E11959**
	Clip · for types MKT and MKI (T-slot cylinder sensors) · Piston diameter 25 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	**E11960**
	Clip · for types MKT (T-slot cylinder sensors) · Clamping range 44-45 mm · Piston diameter 40 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	**E12015**
	Clip · for types MKT (T-slot cylinder sensors) · Clamping range 35-36 mm · Piston diameter 32 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	**E12017**

Adapters for tie rod and integrated profile

Type	Description	Order no.
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 5...11 mm · Housing materials: aluminium / screw: stainless steel	**E11797**
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 9...15 mm · Housing materials: aluminium / screw: stainless steel	**E11799**
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 14...20 mm · Housing materials: aluminium / screw: stainless steel	**E11801**
	Adapter for tie rod cylinders (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · Clamping range 3...7 mm · Housing materials: aluminium / screw: stainless steel	**E11913**
	Adapter for tie rod cylinders (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · Clamping range 5...7 mm · Housing materials: aluminium / screw: stainless steel	**E11912**
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 5...11 mm · Housing materials: aluminium / screw: stainless steel	**E12231**
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 9...13.5 mm · Housing materials: aluminium / screw: stainless steel	**E12232**
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 9...17 mm · Housing materials: aluminium / screw: stainless steel	**E12233**
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 13...15 mm · Housing materials: aluminium / screw: stainless steel	**E12234**

You can find wiring diagrams and scale drawings from page 205

Adapters for trapezoidal slot cylinders

Type	Description	Order no.
	Adapter for trapezoidal slot cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium alloy / set screw: stainless steel	**E11796**
	Adapter for trapezoidal slot cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium alloy / set screw: stainless steel	**E11957**
	Adapter for trapezoidal slot cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium alloy / set screw: stainless steel	**E11988**
	Adapter for Pneumax cylinders 1500 series (or cylinders of the same dimensions) · for types MKT / MRT (T-slot cylinder sensors) · Housing materials: aluminium	**E12375**

Various adapters and memorisation blocks

Type	Description	Order no.
	Adapter for Bosch Rexroth cylinders ICL series and Festo cylinders type CDN · for types MKT (T-slot cylinder sensors) · Housing materials: adapter: aluminium anodised / screw: stainless steel	**E12164**
	Adapter for Bosch-Rexroth cylinders PRA / PRB series (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium / screw: stainless steel	**E11892**
	Adapter for Bosch-Rexroth cylinders 523 series (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · L-slot · Housing materials: aluminium / screw: stainless steel	**E11894**
	Adapter for SMC cylinders ECDQ2 series (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · T-slot rail, flat · Housing materials: aluminium / screw: stainless steel	**E11890**
	Adapter for SMC cylinders CDQ2 series (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · T-slot rail, high · Housing materials: aluminium / screw: stainless steel	**E11891**
	Adapter for SMC cylinder CP95 · for types MKT (T-slot cylinder sensors) · Housing materials: stainless steel	**E11872**
	Adapter for Festo cylinders type DZH (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium / screw: stainless steel	**E11895**
	Adapter for Norgren cylinders of the M series · for types MKT (T-slot cylinder sensors) · Housing materials: stainless steel	**E12218**
	Protective adapter for T-slot cylinder sensors · for types MKT (T-slot cylinder sensors) · Housing materials: diecast zinc coated / screws: stainless steel	**E12259**

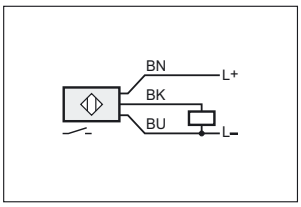
Type	Description	Order no.
	T-slot adapter for C-slot sensor · for types MKC (C-slot cylinder sensor) for installation in T-slot cylinders · (height 5 mm) · Housing materials: diecast zinc / fixing element: stainless steel	**E11928**
	T-slot adapter for C-slot sensor · for types MKC (C-slot cylinder sensor) for installation in T-slot cylinders · (height 7.7 mm) · Housing materials: diecast zinc / fixing element: stainless steel	**E11914**
	T-slot cylinder memorisation block · for types MKT (T-slot cylinder sensors) · Housing materials: PA / stainless steel	**E11798**
	C-slot cylinder memorisation block · for types MKC (C-slot cylinder sensors) · Housing materials: PA / stainless steel	**E12004**

Wiring diagrams

Core colours

BK black
BN brown
BU blue

1



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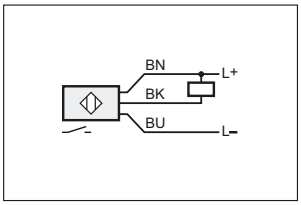

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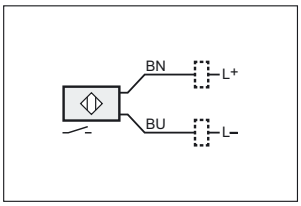

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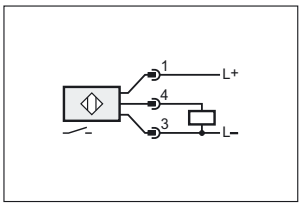

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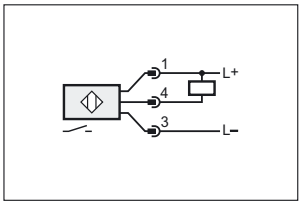

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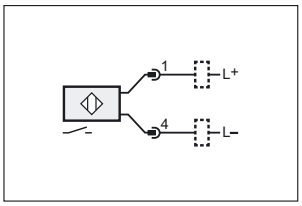

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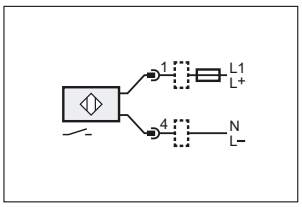

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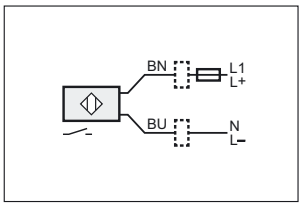

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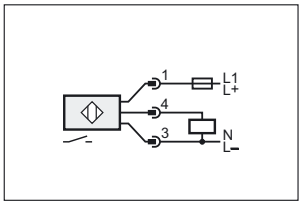

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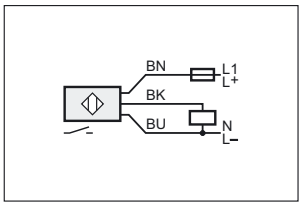

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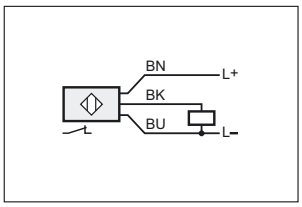
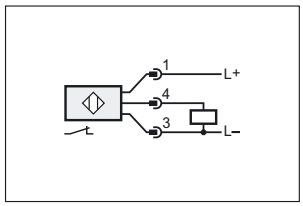


12



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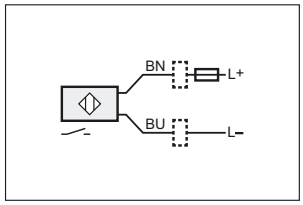
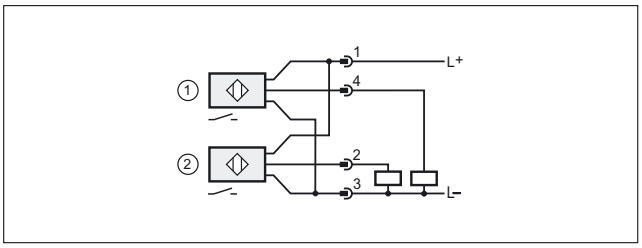


Note: miniature fuse to IEC60127-2 sheet 1, ≤ 0,175 A (fast acting)

Wiring diagrams

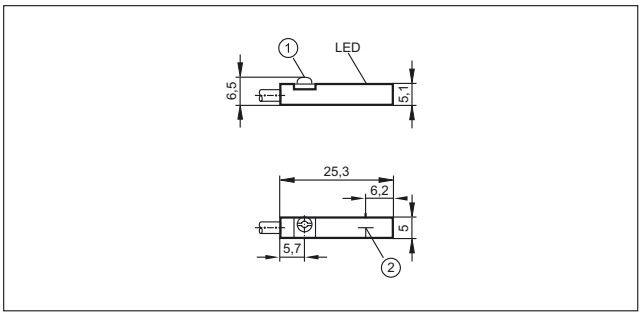
14



1: sensor 1, 2: sensor 2

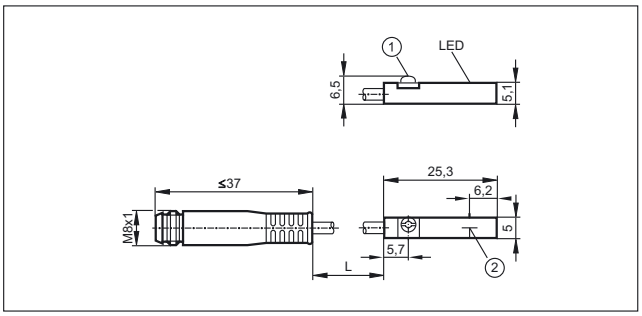
Scale drawings / drawing no. – CAD download: www.ifm.com

1



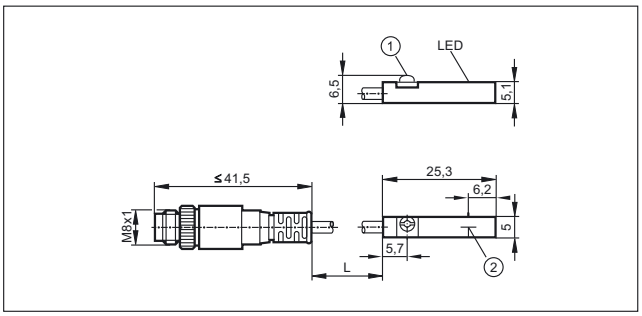
1: Fastening clamp, 2: sensing face

2



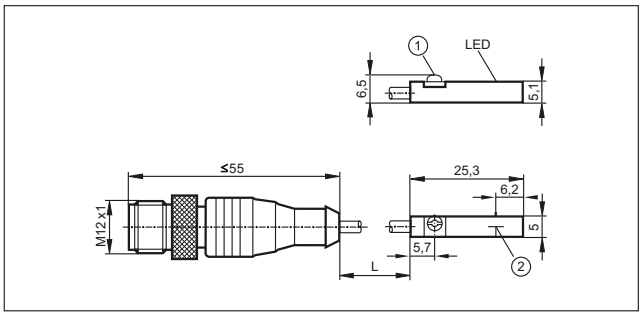
1: Fastening clamp, 2: sensing face

3



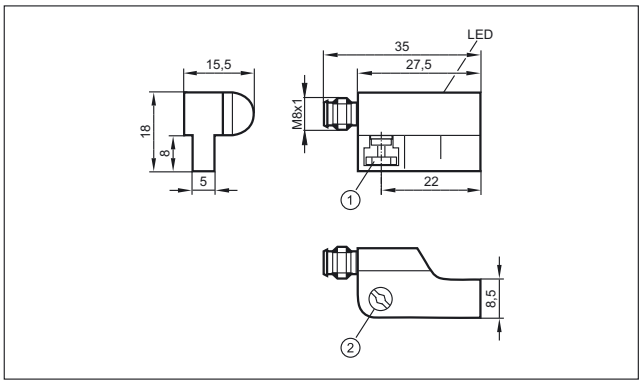
1: Fastening clamp, 2: sensing face

4



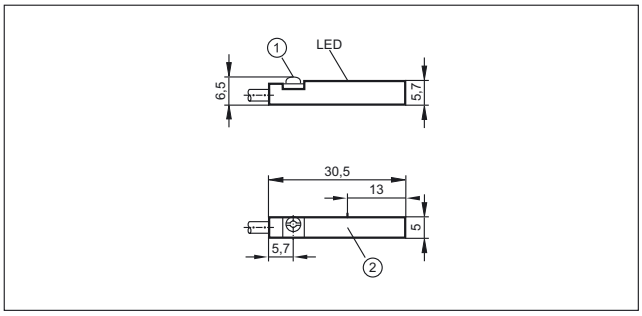
1: Fastening clamp, 2: sensing face

5



1: fixing element, 2: combined head screw for fixing element

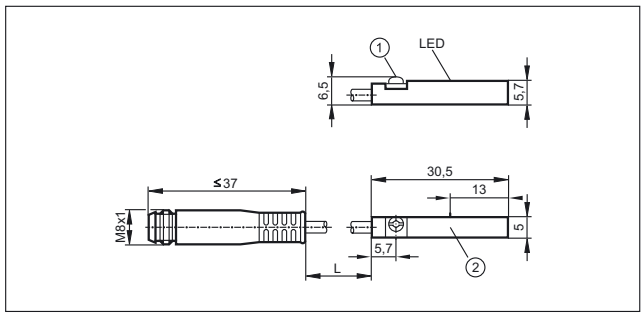
6



1: Clamping screw with combined slot/hexagon socket head AF 1.5,
2: sensing face

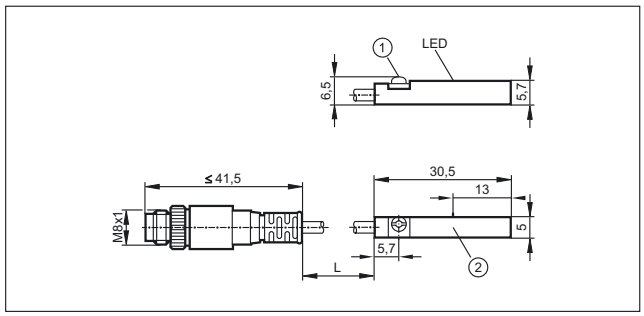
Scale drawings / drawing no. – CAD download: www.ifm.com

7



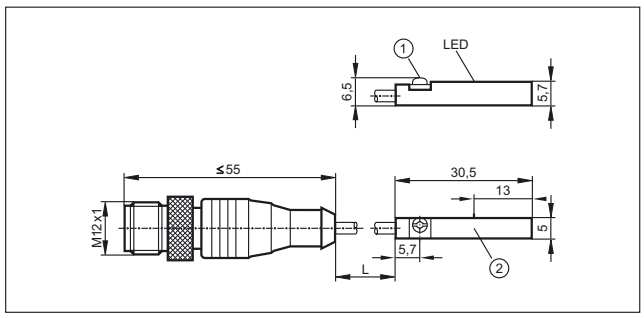
1: Clamping screw with combined slot/hexagon socket head AF 1.5, 2: sensing face

8



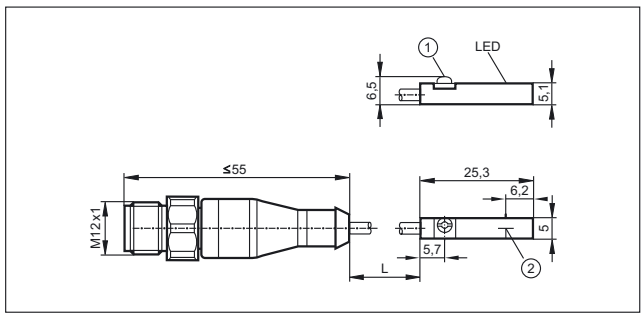
1: Clamping screw with combined slot/hexagon socket head AF 1.5, 2: sensing face

9



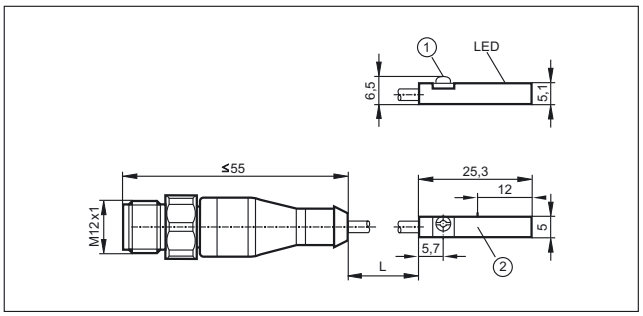
1: Clamping screw with combined slot/hexagon socket head AF 1.5, 2: sensing face

10



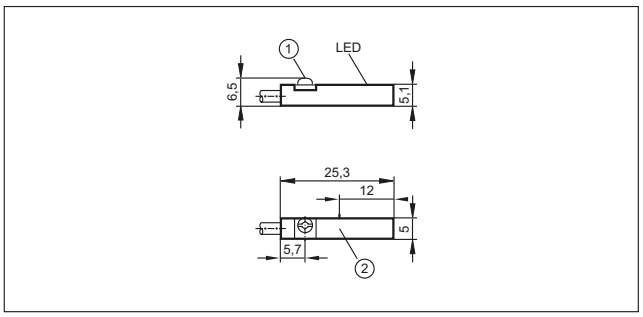
1: Fastening clamp, 2: sensing face

11



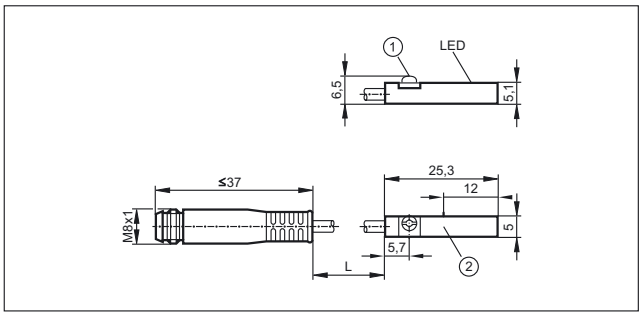
1: Fastening clamp, 2: sensing face

12



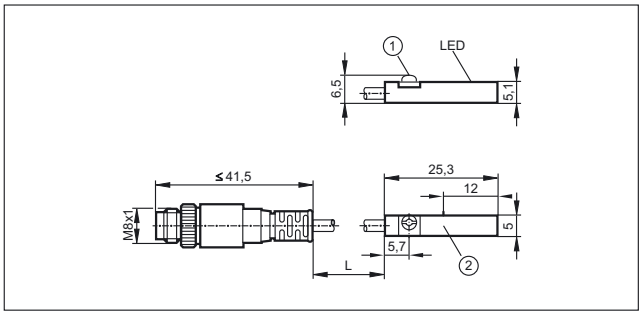
1: Fastening clamp, 2: sensing face

13



1: Fastening clamp, 2: sensing face

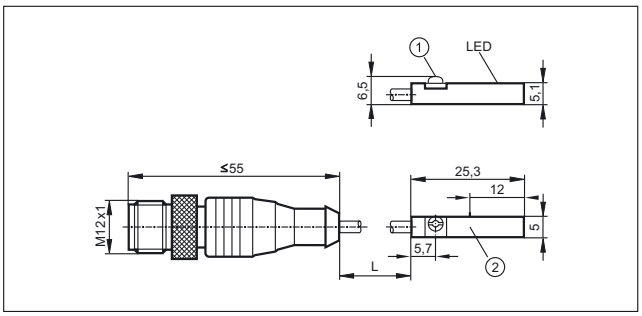
14



1: Fastening clamp, 2: sensing face

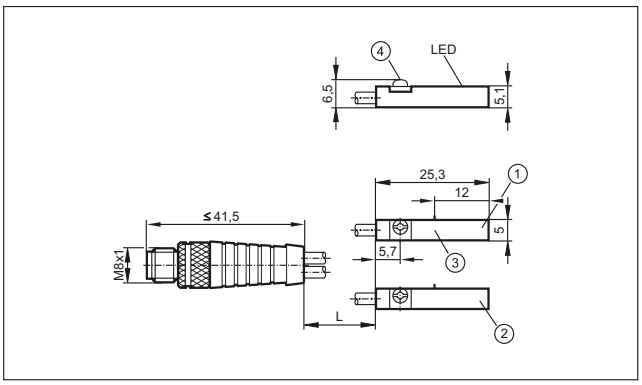
Scale drawings / drawing no. – CAD download: www.ifm.com

15



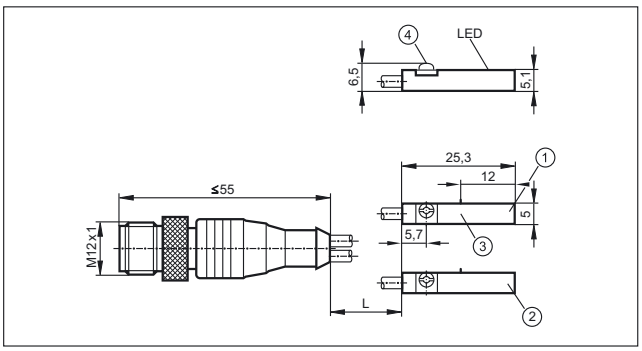
1: Fastening clamp, 2: sensing face

16



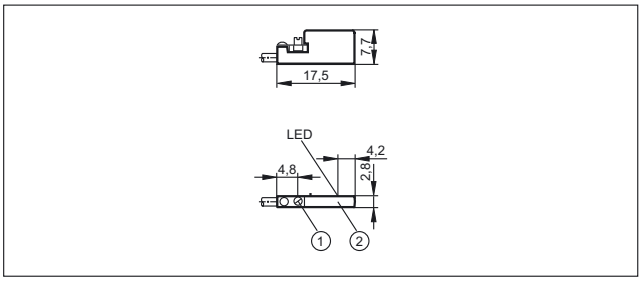
1: sensor 1, 2: sensor 2, 3: sensing face, 4: Fastening clamp

17



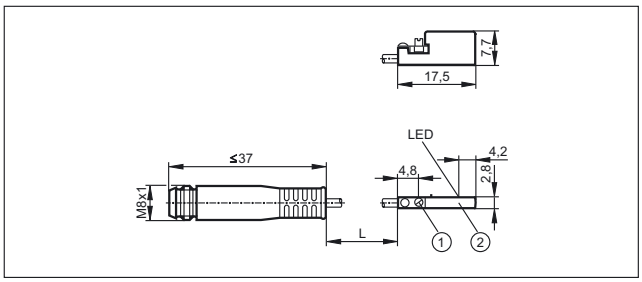
1: sensor 1, 2: sensor 2, 3: sensing face, 4: Fastening clamp

18



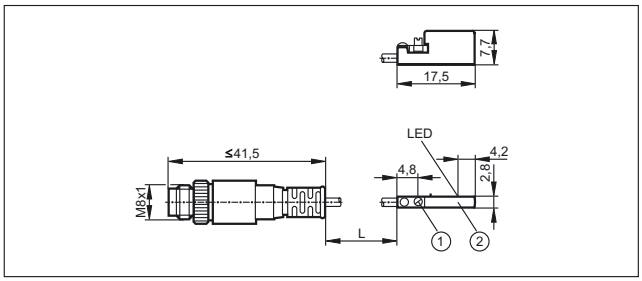
1: Fastening clamp, 2: sensing face

19



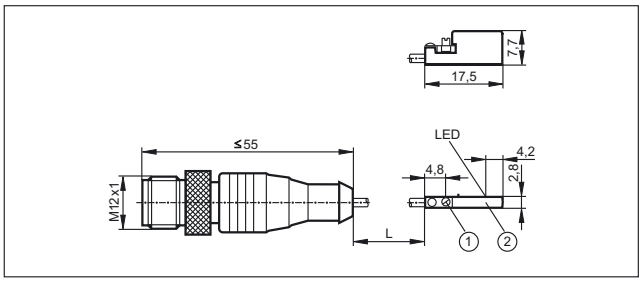
1: Fastening clamp, 2: sensing face

20



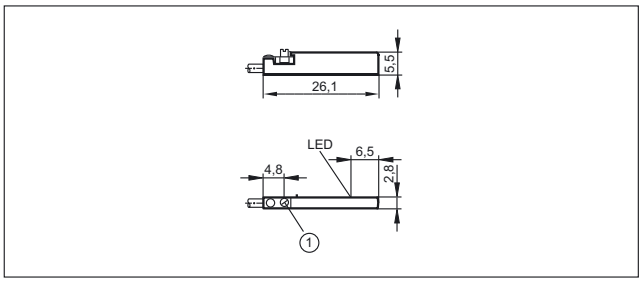
1: Fastening clamp, 2: sensing face

21



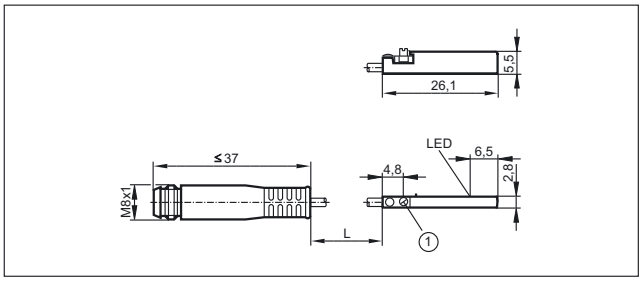
1: Fastening clamp, 2: sensing face

22



1: Fastening clamp

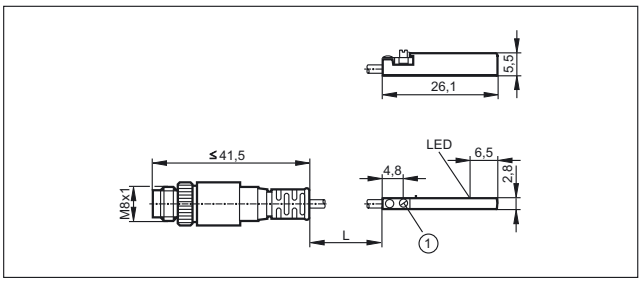
23



1: Fastening clamp

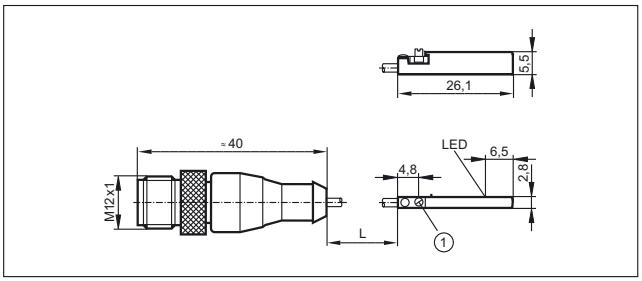
Scale drawings / drawing no. – CAD download: www.ifm.com

24



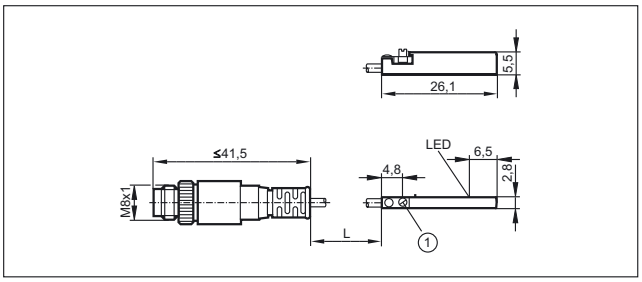
1: Fastening clamp

25



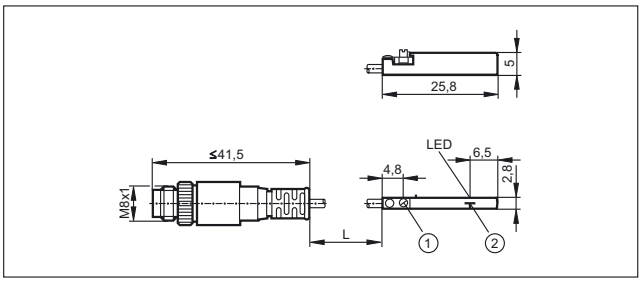
1: Fastening clamp

26



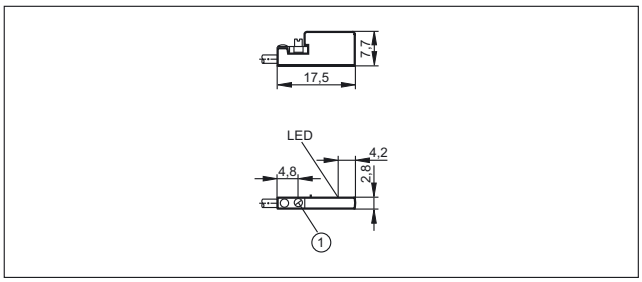
1: Fastening clamp

27



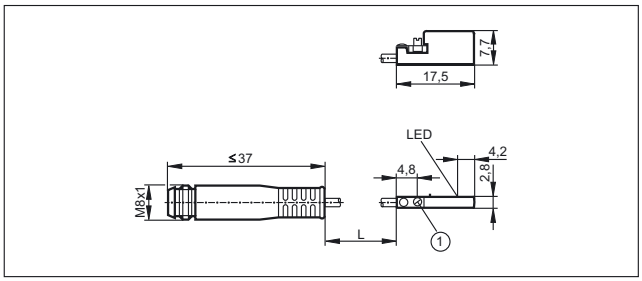
1: Fastening clamp, 2: sensing face

28



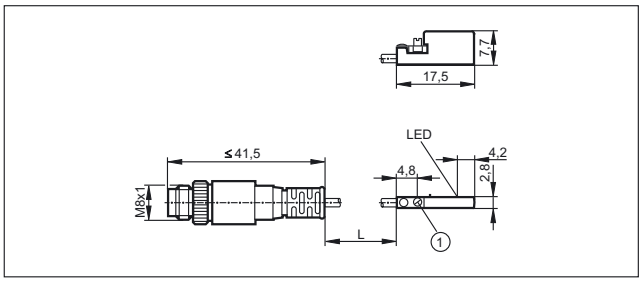
1: Fastening clamp

29



1: Fastening clamp

30



1: Fastening clamp

Ultrasonic sensors – hear what's hard to see

Ultrasonic sensors

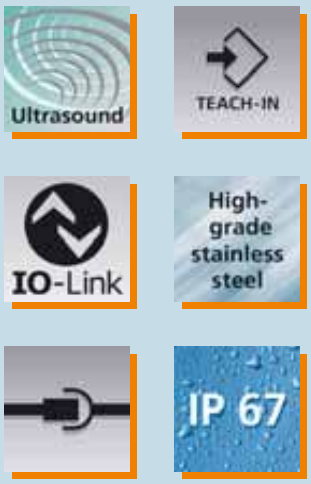
Robust high-grade stainless steel housing for demanding applications

M18 plastic housing available in the lengths 60 and 98 mm

The vibrating sound transducer reduces the deposit of dirt

Digital and analogue output for point level measurement and distance detection

Setting via teach button, wire teach or IO-Link



The alternative for difficult surfaces

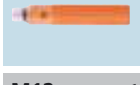
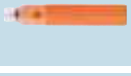
Ultrasonic sensors transmit and receive sound waves in the ultrasonic range. The object to be detected reflects the sound waves and the distance information is determined via time of flight measurement. As opposed to photoelectric sensors colour, transparency or the object's surface shine do not play a role. Blister packages in packaging technology or transparent plastic bowls in the food industry, for example, can be reliably detected.

High performance

The ifm ultrasonic sensors in M18 design provide a particularly small blind zone and long sensing ranges which are usually only achieved by sensors of a considerably larger design. The sensors operate reliably with heavy soiling so that they can be used in applications in which photoelectric sensors meet their limits.

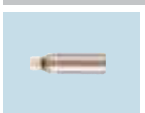
System overview	*Page*
Ultrasonic diffuse-reflection sensor with plastic housing	*212 - 213*
Ultrasonic diffuse-reflection sensor with stainless steel housing	*213 - 216*
Ultrasonic retro-reflective sensor	*216*
Accessories	*217*
Wiring diagrams	*217*
Scale drawings / drawing no. – CAD download: www.ifm.com	*218*

Ultrasonic diffuse-reflection sensor with plastic housing

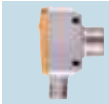
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 60.5	300	PBT	10...30	IP 67	8	100	1	**UGT200**
	M18 / L = 60.5	800	PBT	10...30	IP 67	5	100	1	**UGT201**
	M18 / L = 60.5	1200	PBT	10...30	IP 67	5	100	1	**UGT202**
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC NPN · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 60.5	300	PBT	10...30	IP 67	8	100	1	**UGT209**
	M18 / L = 60.5	800	PBT	10...30	IP 67	5	100	1	**UGT210**
	M18 / L = 60.5	1200	PBT	10...30	IP 67	5	100	1	**UGT211**
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 60.5	300	PBT	10...30	IP 67	8	100	1	**UGT212**
	M18 / L = 60.5	800	PBT	10...30	IP 67	5	100	1	**UGT213**
	M18 / L = 60.5	1200	PBT	10...30	IP 67	5	100	1	**UGT214**
M12 connector · Output function 2 x normally open / closed programmable · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	PBT	10...30	IP 67	3	100	2	**UGT203**
	M18 / L = 97.5	2200	PBT	10...30	IP 67	2	100	2	**UGT206**
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	PBT	10...30	IP 67	3	100	2	**UGT204**
	M18 / L = 97.5	2200	PBT	10...30	IP 67	2	100	2	**UGT207**

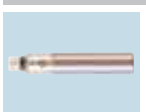
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	PBT	10...30	IP 67	3	100	2	**UGT205**
	M18 / L = 97.5	2200	PBT	10...30	IP 67	2	100	2	**UGT208**

Ultrasonic diffuse-reflection sensor with stainless steel housing

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	8	100	1	**UGT500**
	M18 / L = 60.5	800	1.4404	10...30	IP 67	5	100	1	**UGT503**
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	5	100	1	**UGT506**
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC NPN · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	8	100	1	**UGT521**
	M18 / L = 60.5	800	1.4404	10...30	IP 67	5	100	1	**UGT522**
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	5	100	1	**UGT523**
M12 connector · Output function 1x analogue 4...20 mA · 3-wire · DC analogue · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	–	–	1	**UGT501**
	M18 / L = 60.5	800	1.4404	10...30	IP 67	–	–	1	**UGT504**
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	–	–	1	**UGT507**

You can find wiring diagrams and scale drawings from page 217

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 0...10 V analogue · 3-wire · DC analogue · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	–	–	1	**UGT502**
	M18 / L = 60.5	800	1.4404	10...30	IP 67	–	–	1	**UGT505**
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	–	–	1	**UGT508**
M12 connector · Output function ⎍ / ⎎ · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	8	100	1	**UGT524**
	M18 / L = 60.5	800	1.4404	10...30	IP 67	5	100	1	**UGT525**
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	5	100	1	**UGT526**
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	**UGT580**
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	**UGT582**
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	**UGT584**
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	**UGT581**
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	**UGT583**
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	**UGT585**
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	**UGT586**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	**UGT588**
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	**UGT590**
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	**UGT587**
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	**UGT589**
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	**UGT591**
M12 connector · Output function 1 x Schließer / Öffner programmierbar · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	**UGT592**
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	**UGT593**
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	**UGT594**
M12 connector · Output function 2 x normally open / closed programmable · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	**UGT509**
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	**UGT512**
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	**UGT510**
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	**UGT513**
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	**UGT511**

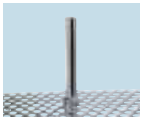
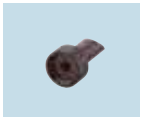
You can find wiring diagrams and scale drawings from page 217

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	**UGT514**
M12 connector · Output function 2 x normally open / closed programmable · 3-wire · DC NPN · Wiring diagram no. 8 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	**UGT515**
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	**UGT518**
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	**UGT516**
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	**UGT519**
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	**UGT517**
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	**UGT520**

Ultrasonic retro-reflective sensor

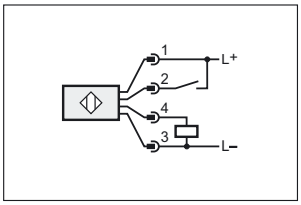
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC PNP · Wiring diagram no. 9 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	2	100	2	**UGR500**
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	**UGR501**
M12 connector · Output function ⎍ / ⎍ · 3-wire · DC NPN · Wiring diagram no. 10 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	2	100	2	**UGR502**
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	**UGR503**

Accessories

Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20720**
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	**E21206**
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20721**
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	**E21207**
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20938**
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E20940**
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	**E20951**
	Sound Tube · for type UG · Housing materials: POM	**E23000**

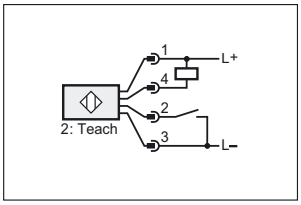
Wiring diagrams

1



2: Teach

2



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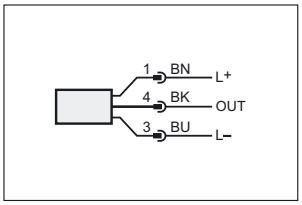

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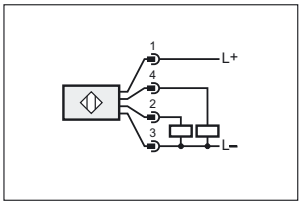

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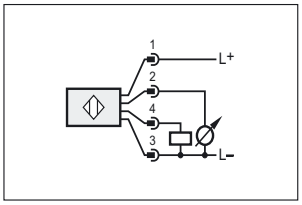

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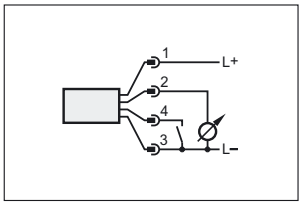

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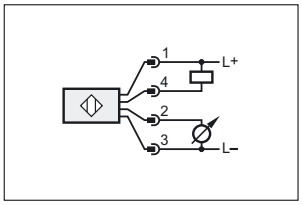

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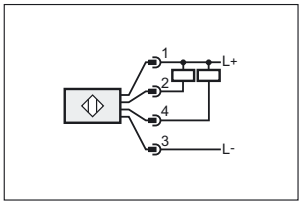

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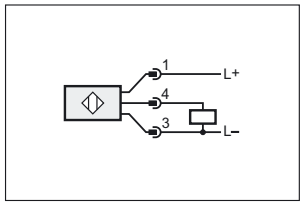

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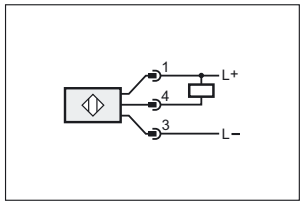
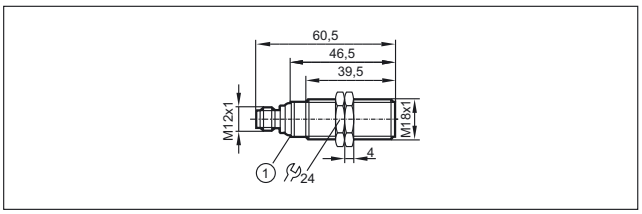


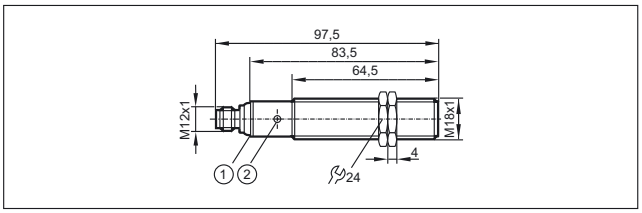
Scale drawings / drawing no. – CAD download: www.ifm.com

1



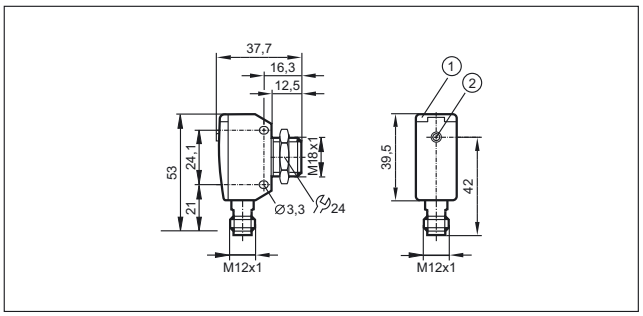
1: LEDs

2



1: LEDs, 2: teach button

3

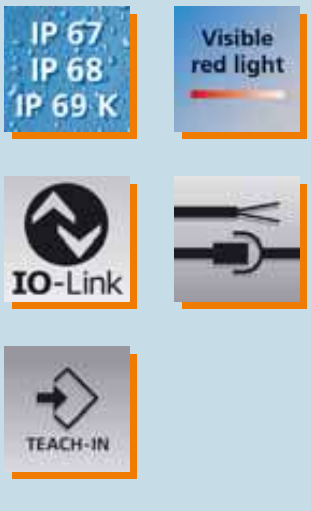


1: LEDs, 2: teach button

Infrared / red light sensors for maximum detection zones

Photoelectric sensors for general applications

- **Visible red light for easy adjustment**
- **Versions for use in hygienic and wet areas**
- **LED display to check operation, switching status and function**
- **Pushbuttons for quick and easy set-up**
- **Wide range of system components for easy and secure mounting**



Photoelectric sensors

Photoelectric sensors as „artificial eyes“ are fundamental to automation technology. They are used where a reliable and non-contact detection of the exact position of objects is required. The material of the object to be detected is of no importance. Compared to inductive sensors, photoelectric sensors have a much larger sensing zone.

They are available as through-beam, retro-reflective and diffuse reflection sensors in various designs and sizes.

For hygienic and wet areas, the products of the WetLine series offer special characteristics such as high ingress-resistance up to IP 68 / IP 69K or stainless steel housings.

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Cylindrical OF housing (M12) BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 2 m · 10...36 DC · metal · IP67								
	Transmitter	4 m	Infrared	700	–	1	1	**OF5018**
	Receiver	4 m	Infrared	–	H/D PNP	31	1	**OF5019**
Through-beam sensor · M12 connector · 10...36 DC · metal · IP65 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	4 m	Infrared	700	–	2	2	**OF5021**
	Receiver	4 m	Infrared	–	H/D PNP	32	3	**OF5022**
Retro-reflective sensor · Cable 2 m · 10...36 DC · metal · IP67								
	Retro-reflective sensor	0.05...2 m	Infrared	140	H/D PNP	31	1	**OF5014**
	Polarisation filter	0.2...0.8 m	Red	70	H/D PNP	31	1	**OF5024**
	Retro-reflective sensor	0.05...2 m	Infrared	140	H/D NPN	33	1	**OF5050**
Retro-reflective sensor · M12 connector · 10...36 DC · metal · IP65 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Retro-reflective sensor	0.05...2 m	Infrared	140	H/D PNP	32	3	**OF5016**
	Polarisation filter	0.2...0.8 m	Red	70	H/D PNP	32	3	**OF5025**
	Retro-reflective sensor	0.05...2 m	Infrared	140	H/D NPN	34	3	**OF5051**
	Polarisation filter	0.2...0.8 m	Red	70	H/D NPN	34	3	**OF5062**
Diffuse reflection sensor · Cable 2 m · 10...36 DC · metal · IP67								
	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D PNP	31	1	**OF5010**
	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D NPN	35	1	**OF5048**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · Cable 2 m · 10...36 DC · metal · IP67								
	Diffuse reflection sensor	1...400 mm	Infrared	185	H/D PNP	31	1	**OF5026**
Diffuse reflection sensor · Cable 6 m · 10...36 DC · high-grade stainless steel · IP67								
	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D PNP	31	1	**OF5032**
Diffuse reflection sensor · M12 connector · 10...36 DC · metal · IP65 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D PNP	32	3	**OF5012**
	Diffuse reflection sensor	1...400 mm	Infrared	185	H/D PNP	32	3	**OF5027**
	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D NPN	36	3	**OF5049**
	Diffuse reflection sensor	1...400 mm	Infrared	185	H/D NPN	36	3	**OF5060**

Cylindrical housing OG (M18) BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	8 m	Red	600	–	2	4	**OGS100**
Through-beam sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	8 m	Red	–	D PNP	3	4	**OGE100**
	Receiver	8 m	Red	–	H PNP	4	4	**OGE101**
Through-beam sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Receiver	8 m	Red	–	D NPN	5	4	**OGE102**
	Receiver	8 m	Red	–	H NPN	5	4	**OGE103**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	20 m	Red	800	–	2	5	**OGS200**
Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	20 m	Red	–	D PNP	3	5	**OGE200**
	Receiver	20 m	Red	–	H PNP	4	5	**OGE201**
Through-beam sensor · Cable 2 m · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67								
	Transmitter	15 m	Infrared	2000	–	6	6	**OG0028**
	Receiver	15 m	Infrared	–	H AC/DC	7	6	**OG0029***
	Receiver	15 m	Infrared	–	D AC/DC	7	6	**OG0038***
Through-beam sensor · 1/2" connector · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67 · Connector group 33								
	Transmitter	15 m	Infrared	2000	–	8	7	**OG0030**
	Receiver	15 m	Infrared	–	H AC/DC	9	7	**OG0031***
	Receiver	15 m	Infrared	–	D AC/DC	9	7	**OG0039***
Retro-reflective sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.05...2.5 m	Red	200	D PNP	3	4	**OGP100**
	Polarisation filter	0.05...2.5 m	Red	200	H PNP	4	4	**OGP101**
Retro-reflective sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Polarisation filter	0.05...2.5 m	Red	200	D NPN	5	4	**OGP102**
	Polarisation filter	0.05...2.5 m	Red	200	H NPN	5	4	**OGP103**

You can find wiring diagrams and scale drawings from page 261

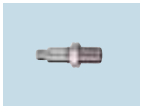
Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.03...4 m	Red	160	D PNP	3	5	**OGP200**
	Polarisation filter	0.03...4 m	Red	160	H PNP	4	5	**OGP201**
Retro-reflective sensor · Cable 2 m · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67								
	Polarisation filter	3 m	Red	262	H AC/DC	7	6	**OG0043***
	Polarisation filter	3 m	Red	262	D AC/DC	7	6	**OG0032***
Retro-reflective sensor · 1/2" connector · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67 · Connector group 33								
	Polarisation filter	3 m	Red	262	H AC/DC	9	7	**OG0044***
	Polarisation filter	3 m	Red	262	D AC/DC	9	7	**OG0033***
Diffuse reflection sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Diffuse reflection sensor	10...400 mm	Red	25	H PNP	3	8	**OGT100**
	Diffuse reflection sensor	10...400 mm	Red	25	D PNP	3	8	**OGT101**
Diffuse reflection sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Diffuse reflection sensor	10...400 mm	Red	25	H NPN	5	8	**OGT102**
	Diffuse reflection sensor	10...400 mm	Red	25	D NPN	5	8	**OGT103**
Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Diffuse reflection sensor	2...600 mm	Red	50	H PNP	3	9	**OGT200**
	Background suppression	15...250 mm	Red	21	H PNP	3	9	**OGH200**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · Cable 2 m · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67								
	Diffuse reflection sensor	1...600 mm	Infrared	< 169	H AC/DC	7	6	**OG0034***
	Diffuse reflection sensor	1...600 mm	Infrared	< 169	D AC/DC	7	6	**OG0040***
Diffuse reflection sensor · 1/2" connector · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67 · Connector group 33								
	Diffuse reflection sensor	1...600 mm	Infrared	< 169	H AC/DC	9	7	**OG0035***
	Diffuse reflection sensor	1...600 mm	Infrared	< 169	D AC/DC	9	7	**OG0041***

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Cylindrical housing OG (M18) PerformanceLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 2 m · 10...36 DC · high-grade stainless steel · IP67								
	Transmitter	25 m	Red	1000	–	1	10	**OGS501**
	Receiver	25 m	Red	–	H/D PNP	10	11	**OGE502**
Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	25 m	Red	1000	–	2	12	**OGS500**
Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	25 m	Red	–	H/D PNP	3	13	**OGE500**
Retro-reflective sensor · Cable 2 m · 10...36 DC · high-grade stainless steel · IP67								
	Polarisation filter	0.03...5 m	Red	200	H/D PNP	10	11	**OGP502**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.03...5 m	Red	200	H/D PNP	3	13	**OGP500**
Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Polarisation filter	0.03...5 m	Red	200	H/D NPN	5	13	**OGP503**
Diffuse reflection sensor · Cable 2 m · 10...36 DC · high-grade stainless steel · IP67								
	Background suppression	15...300 mm	Red	25	H/D PNP	10	11	**OGH501**
Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Diffuse reflection sensor	2...800 mm	Red	66	H/D PNP	3	13	**OGT500**
	Background suppression	15...300 mm	Red	25	H/D PNP	3	13	**OGH500**
Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	15...300 mm	Red	25	H/D NPN	5	13	**OGH504**
	Background suppression	15...300 mm	Red	25	H/D NPN	5	13	**OGH502**

Cylindrical housing OG (M18) WetLine for hygienic and wet areas

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 6 m · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K								
	Transmitter	20 m	Red	800	–	1	14	**OGS301**
	Receiver	20 m	Red	–	D PNP	10	14	**OGE302**
	Receiver	20 m	Red	–	H PNP	10	14	**OGE303**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Transmitter	20 m	Red	800	–	2	5	**OGS300**
Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Receiver	20 m	Red	–	D PNP	3	5	**OGE300**
	Receiver	20 m	Red	–	H PNP	4	5	**OGE301**
Retro-reflective sensor · Cable 6 m · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K								
	Polarisation filter	0.03...4 m	Red	160	D PNP	10	14	**OGP302**
	Polarisation filter	0.03...4 m	Red	160	H PNP	10	14	**OGP303**
Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Polarisation filter	0.03...4 m	Red	160	D PNP	3	5	**OGP300**
	Polarisation filter	0.03...4 m	Red	160	H PNP	4	5	**OGP301**
Diffuse reflection sensor · Cable 6 m · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K								
	Background suppression	100 mm	Red	9	H PNP	10	15	**OGH306**
	Background suppression	100 mm	Red	9	D PNP	10	15	**OGH307**
	Background suppression	200 mm	Red	17	H PNP	10	15	**OGH308**
	Background suppression	200 mm	Red	17	D PNP	10	15	**OGH309**
	Background suppression	300 mm	Red	25	H PNP	10	15	**OGH310**
	Background suppression	300 mm	Red	25	D PNP	10	15	**OGH311**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Background suppression	100 mm	Red	9	H PNP	3	16	**OGH300**
	Background suppression	100 mm	Red	9	D PNP	3	16	**OGH301**
	Background suppression	200 mm	Red	17	H PNP	3	16	**OGH302**
	Background suppression	200 mm	Red	17	D PNP	3	16	**OGH303**
	Background suppression	300 mm	Red	25	H PNP	3	16	**OGH304**
	Background suppression	300 mm	Red	25	D PNP	3	16	**OGH305**

Cylindrical housing OG (M18) BasicLine with lateral sensing face

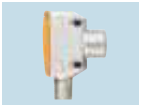
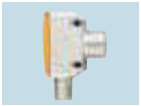
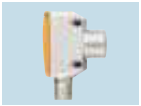
Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...30 DC · high-grade stainless steel · IP68 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	9 m	Red	< 3000	–	2	17	**OG5129**
	Receiver	9 m	Red	–	H PNP	11	17	**OG5127**
	Receiver	9 m	Red	–	D PNP	12	17	**OG5128**
Retro-reflective sensor · M12 connector · 10...30 DC · high-grade stainless steel · IP68 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Polarisation filter	3 m	Red	< 96	H PNP	11	17	**OG5125**
	Polarisation filter	3 m	Red	< 96	D PNP	12	17	**OG5126**
Diffuse reflection sensor · M12 connector · 10...30 DC · high-grade stainless steel · IP68 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	100 mm	Red	< 16	H PNP	11	18	**OG5123**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · M12 connector · 10...30 DC · high-grade stainless steel · IP68 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	200 mm	Red	< 28	H PNP	11	18	**OG5124**

Rectangular housing OG (M18)

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	20 m	Red	800	–	2	19	**OGS280**
	Receiver	20 m	Red	–	D NPN	13	19	**OGE282**
Through-beam sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	20 m	Red	–	D PNP	14	19	**OGE280**
	Receiver	20 m	Red	–	H PNP	4	19	**OGE281**
Retro-reflective sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.1...4 m	Red	160	D PNP	14	19	**OGP280**
	Polarisation filter	0.1...4 m	Red	160	H PNP	4	19	**OGP281**
Retro-reflective sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Polarisation filter	0.1...4 m	Red	160	D NPN	13	19	**OGP282**
	Polarisation filter	0.1...4 m	Red	160	H NPN	15	19	**OGP283**
Diffuse reflection sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	100 mm	Red	7	H PNP	4	19	**OGH280**
	Background suppression	200 mm	Red	13	H PNP	4	19	**OGH281**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	15...200 mm	Red	13	H/D PNP	3	20	**OGH580**
Diffuse reflection sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	100 mm	Red	7	H NPN	15	19	**OGH282**
	Background suppression	200 mm	Red	13	H NPN	15	19	**OGH283**
	Background suppression	15...200 mm	Red	13	H/D NPN	5	20	**OGH581**

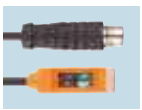
OG series (M18) WetLine with rectangular housing for hygienic and wet areas

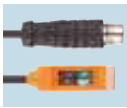
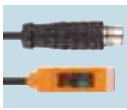
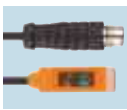
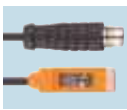
Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...30 DC · metal · IP67 / IP68 / IP69K · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	15 m	Red	800	–	2	21	**OGS380**
Through-beam sensor · M12 connector · 10...30 DC · metal · IP67 / IP68 / IP69K · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	15 m	Red	–	D PNP	14	21	**OGE380**
	Receiver	15 m	Red	–	H PNP	4	21	**OGE381**
	Receiver	15 m	Red	–	D NPN	13	21	**OGE382**
Diffuse reflection sensor · M12 connector · 10...30 DC · metal · IP67 / IP68 / IP69K · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	100 mm	Red	7	H PNP	4	21	**OGH380**
	Background suppression	200 mm	Red	13	H PNP	4	21	**OGH381**
	Background suppression	100 mm	Red	7	H NPN	15	21	**OGH382**
	Background suppression	200 mm	Red	13	H NPN	15	21	**OGH383**

Rectangular O8 design

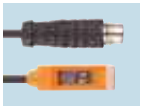
Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67								
	Background suppression	3...15 mm	Red	4	H PNP	16	22	**O8H200**
	Background suppression	1...30 mm	Red	4	H PNP	16	22	**O8H206**
	Background suppression	1...50 mm	Red	4	H PNP	16	22	**O8H212**
	Background suppression	1...80 mm	Red	4.5	H PNP	16	22	**O8H218**
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123								
	Background suppression	3...15 mm	Red	4	H PNP	4	22	**O8H202**
	Background suppression	1...30 mm	Red	4	H PNP	4	22	**O8H208**
	Background suppression	1...50 mm	Red	4	H PNP	4	23	**O8H214**
	Background suppression	1...80 mm	Red	4.5	H PNP	4	22	**O8H220**
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	3...15 mm	Red	4	H PNP	4	22	**O8H204**
	Background suppression	1...30 mm	Red	4	H PNP	4	22	**O8H210**
	Background suppression	1...50 mm	Red	4	H PNP	4	22	**O8H216**
	Background suppression	1...80 mm	Red	4.5	H PNP	4	22	**O8H222**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67								
	Background suppression	3...15 mm	Red	4	H NPN	17	22	**O8H201**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Drawing no.	Order no.
Diffuse reflection sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67								
	Background suppression	1...30 mm	Red	4	H NPN	17	22	**O8H207**
	Background suppression	1...50 mm	Red	4	H NPN	17	22	**O8H213**
	Background suppression	1...80 mm	Red	4.5	H NPN	17	22	**O8H219**
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123								
	Background suppression	3...15 mm	Red	4	H NPN	15	22	**O8H203**
	Background suppression	1...30 mm	Red	4	H NPN	15	22	**O8H209**
	Background suppression	1...50 mm	Red	4	H NPN	15	22	**O8H215**
	Background suppression	1...80 mm	Red	4.5	H NPN	15	22	**O8H221**
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	3...15 mm	Red	4	H NPN	15	22	**O8H205**
	Background suppression	1...30 mm	Red	4	H NPN	15	22	**O8H211**
	Background suppression	1...50 mm	Red	4	H NPN	15	22	**O8H217**
	Background suppression	1...80 mm	Red	4.5	H NPN	15	22	**O8H223**
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123								
	Diffuse reflection sensor	0...180 mm	Red	18	H PNP	4	24	**O8T202**
	Diffuse reflection sensor	0...180 mm	Red	18	H NPN	15	25	**O8T203**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Diffuse reflection sensor	0...180 mm	Red	18	H PNP	4	25	**O8T204**
	Diffuse reflection sensor	0...180 mm	Red	18	H NPN	15	25	**O8T205**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67								
	Diffuse reflection sensor	0...180 mm	Red	18	H PNP	16	25	**O8T200**
	Diffuse reflection sensor	0...180 mm	Red	18	H NPN	17	25	**O8T201**
Retro-reflective sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123								
	Polarisation filter	20...1800 mm	Red	120	D PNP	14	25	**O8P202**
	Polarisation filter	20...1800 mm	Red	120	D NPN	13	25	**O8P203**
Retro-reflective sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	20...1800 mm	Red	120	D PNP	14	25	**O8P204**
	Polarisation filter	20...1800 mm	Red	120	D NPN	13	25	**O8P205**
Retro-reflective sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67								
	Polarisation filter	20...1800 mm	Red	120	D PNP	18	25	**O8P200**
	Polarisation filter	20...1800 mm	Red	120	D NPN	19	25	**O8P201**
Through-beam sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123								
	Receiver	3 m	Red	–	D PNP	14	26	**O8E202**
	Receiver	3 m	Red	–	D NPN	13	27	**O8E203**
	Transmitter	3 m	Red	200	–	2	28	**O8S201**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Receiver	3 m	Red	–	D PNP	14	27	**O8E204**
	Receiver	3 m	Red	–	D NPN	13	27	**O8E205**
	Transmitter	3 m	Red	200	–	2	29	**O8S202**
Through-beam sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67								
	Receiver	3 m	Red	–	D PNP	20	27	**O8E200**
	Receiver	3 m	Red	–	D NPN	21	27	**O8E201**
	Transmitter	3 m	Red	200	–	1	29	**O8S200**

Rectangular housing O7 BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 0.2 m · with M8 connector · 10...30 DC · plastics · IP65 · Connector groups 1, 3, 78, 84, 145								
	Transmitter	0...1.5 m	Red	90	–	2	30	**O7S200**
Through-beam sensor · Cable 0.2 m · with M8 connector · 10...30 DC · plastics · IP65 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Receiver	0...1.5 m	Red	–	D PNP	14	31	**O7E200**
	Receiver	0...1.5 m	Red	–	H PNP	4	31	**O7E201**
	Receiver	0...1.5 m	Red	–	D NPN	13	31	**O7E202**
	Receiver	0...1.5 m	Red	–	H NPN	15	31	**O7E203**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · Cable 0.2 m · with M8 connector · 10...30 DC · plastics · IP65 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Polarisation filter	0.03...1 m	Red	55	D PNP	14	32	**O7P200**
	Polarisation filter	0.03...1 m	Red	55	H PNP	4	32	**O7P201**
	Polarisation filter	0.03...1 m	Red	55	D NPN	13	32	**O7P202**
	Polarisation filter	0.03...1 m	Red	55	H NPN	15	32	**O7P203**
Diffuse reflection sensor · Cable 0.2 m · with M8 connector · 10...30 DC · plastics · IP65 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Background suppression	5...30 mm	Red	2.5	H PNP	4	33	**O7H200**
	Background suppression	5...30 mm	Red	2.5	D PNP	14	33	**O7H201**
	Background suppression	5...30 mm	Red	2.5	H NPN	15	33	**O7H206**
	Background suppression	5...30 mm	Red	2.5	D NPN	13	33	**O7H207**
	Background suppression	5...50 mm	Red	2.5	H PNP	4	33	**O7H202**
	Background suppression	5...50 mm	Red	2.5	H NPN	15	33	**O7H208**
	Background suppression	5...50 mm	Red	2.5	D NPN	13	33	**O7H209**
	Background suppression	5...50 mm	Red	2.5	D PNP	14	33	**O7H203**
	Background suppression	3...100 mm	Red	7	H PNP	4	33	**O7H204**
	Background suppression	3...100 mm	Red	7	D PNP	14	33	**O7H205**
	Background suppression	3...100 mm	Red	7	H NPN	15	33	**O7H210**
	Background suppression	3...100 mm	Red	7	D NPN	13	33	**O7H211**

You can find wiring diagrams and scale drawings from page 261

Rectangular housing OJ BasicLine, lateral sensing face

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 1, 3, 78, 84, 145								
	Transmitter	0...10 m	Red	< 1000	–	2	34	**OJS200**
Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Receiver	10 m	–	–	D PNP	3	34	**OJE200**
Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Retro-reflective sensor	1.8 m	Red	64	D PNP	3	34	**OJR200**
	Polarisation filter	1.8 m	Red	64	D PNP	3	34	**OJP200**
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Background suppression	100 mm	Red	< 13	H PNP	3	35	**OJH200**

Rectangular housing OJ PerformanceLine, lateral sensing face

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Transmitter	10 m	Red	1000	–	2	36	**OJ5130**
	Receiver	10 m	Red	–	H/D PNP	22	36	**OJ5131**
Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	0...2 m	Red	64	H/D PNP	22	36	**OJ5126**
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Diffuse reflection sensor	1...600 mm	Red	60	H/D PNP	22	37	**OJ5122**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	15...400 mm	Red	< 18	H/D PNP	22	38	**OJ5148**

Rectangular housing OJ PerformanceLine, front sensing face

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Transmitter	10 m	Red	1000	–	2	39	**OJ5108**
	Receiver	10 m	Red	–	H/D PNP	22	39	**OJ5109**
Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	0...2 m	Red	64	H/D PNP	22	39	**OJ5104**
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Diffuse reflection sensor	1...600 mm	Red	60	H/D PNP	22	40	**OJ5100**
	Background suppression	15...400 mm	Red	< 18	H/D PNP	22	41	**OJ5144**

Rectangular plastic housing in O6 design

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Transmitter	10 m	Red	300	–	1	42	**O6S200**
	Receiver	10 m	Red	–	H/D PNP	10	43	**O6E200**
	Receiver	10 m	Red	–	H/D NPN	23	43	**O6E204**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	10 m	Red	300	–	2	42	**O6S201**
Through-beam sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	10 m	Red	–	H/D PNP	3	43	**O6E201**
Through-beam sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Receiver	10 m	Red	–	H/D NPN	5	43	**O6E205**
Through-beam sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145								
	Transmitter	10 m	Red	300	–	2	44	**O6S202**
Through-beam sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Receiver	10 m	Red	–	H/D PNP	3	45	**O6E202**
Through-beam sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Receiver	10 m	Red	–	H/D PNP	3	45	**O6E203**
Through-beam sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145								
	Receiver	10 m	Red	–	H/D NPN	5	45	**O6E206**
Through-beam sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Receiver	10 m	Red	–	H/D NPN	5	45	**O6E207**
	Receiver	15 m	Infrared	–	H/D NPN	24	45	**O6E216**
	Receiver	15 m	Infrared	–	H/D PNP	3	45	**O6E215**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Background suppression	2...200 mm	Red	8	H/D PNP	10	46	**O6H200**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	46	**O6H201**
Diffuse reflection sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	47	**O6H202**
Diffuse reflection sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	47	**O6H203**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Background suppression	2...200 mm	Red	8	H/D NPN	23	46	**O6H204**
Diffuse reflection sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	46	**O6H205**
Diffuse reflection sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	47	**O6H206**
Diffuse reflection sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	47	**O6H207**
Retro-reflective sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	10	46	**O6P200**
Retro-reflective sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	46	**O6P201**
Retro-reflective sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	47	**O6P202**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	47	**O6P203**
Retro-reflective sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	23	46	**O6P204**
Retro-reflective sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	46	**O6P205**
Retro-reflective sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	47	**O6P206**
Retro-reflective sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	47	**O6P207**
Through-beam sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Transmitter	10 m	Red	300	–	2	44	**O6S203**
	Transmitter	15 m	Infrared	460	–	2	44	**O6S215**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	10	46	**O6T200**
Diffuse reflection sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	46	**O6T201**
Diffuse reflection sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	47	**O6T202**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	47	**O6T203**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	23	46	**O6T204**
Diffuse reflection sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	46	**O6T205**
Diffuse reflection sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	47	**O6T206**
Diffuse reflection sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	47	**O6T207**
	Diffuse reflection sensor	5...600 mm	Infrared	24	H/D NPN	24	47	**O6T216**
	Diffuse reflection sensor	5...600 mm	Infrared	24	H/D PNP	3	47	**O6T215**

Rectangular housing O6 PerformanceLine, WetLine for hygienic and wet areas

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Transmitter	10 m	Red	300	–	1	48	**O6S300**
	Receiver	10 m	Red	–	H/D PNP	10	49	**O6E300**
Through-beam sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Receiver	10 m	Red	–	H/D PNP	3	49	**O6E301**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Transmitter	10 m	Red	300	–	2	50	**O6S302**
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 145, 146								
	Receiver	10 m	Red	–	H/D PNP	3	51	**O6E302**
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Receiver	10 m	Red	–	H/D PNP	3	51	**O6E303**
Through-beam sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Transmitter	10 m	Red	300	–	2	48	**O6S301**
Through-beam sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Receiver	10 m	Red	–	H/D NPN	23	49	**O6E304**
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Transmitter	10 m	Red	300	–	25	50	**O6S305**
Through-beam sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Receiver	10 m	Red	–	H/D NPN	5	49	**O6E305**
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Transmitter	10 m	Red	300	–	2	50	**O6S303**
	Receiver	10 m	Red	–	H/D PNP	3	51	**O6E309**
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Receiver	10 m	Red	–	H/D NPN	5	51	**O6E306**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Receiver	10 m	Red	–	H/D NPN	5	51	**O6E307**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Background suppression	2...200 mm	Red	8	H/D PNP	10	52	**O6H300**
Diffuse reflection sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	52	**O6H301**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 145, 146								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	53	**O6H302**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	53	**O6H303**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Background suppression	2...200 mm	Red	8	H/D NPN	23	52	**O6H304**
Diffuse reflection sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	52	**O6H305**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	53	**O6H306**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	53	**O6H307**
	Background suppression	2...200 mm	Red	8	H/D PNP	3	53	**O6H309**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	2...200 mm	Red	8	H+D PNP	26	54	**O6H210**
	Background suppression	100 mm	Red	6	H PNP	3	55	**O6H211**
	Background suppression	200 mm	Red	8	H PNP	3	55	**O6H212**
	Background suppression	100 mm	Red	6	H NPN	5	55	**O6H213**
	Background suppression	200 mm	Red	8	H NPN	5	55	**O6H214**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Background suppression	2...200 mm	Red	8	H+D PNP	26	56	**O6H310**
Retro-reflective sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	10	52	**O6P300**
Retro-reflective sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	52	**O6P301**
Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 145, 146								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	53	**O6P302**
Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	53	**O6P303**
Retro-reflective sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	23	52	**O6P304**
Retro-reflective sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	52	**O6P305**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	53	**O6P306**
Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	53	**O6P307**
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	53	**O6P309**
	Polarisation filter	0.05...5 m	Red	150	H+D PNP	27	56	**O6P310**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	10	52	**O6T300**
Diffuse reflection sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	52	**O6T301**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 145, 146								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	53	**O6T302**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	53	**O6T303**
Diffuse reflection sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	23	52	**O6T304**
Diffuse reflection sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	52	**O6T305**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	53	**O6T306**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	53	**O6T307**
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	53	**O6T309**

Rectangular O6 design for oils and coolants

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 ; IP68 · Connector groups 4, 5								
	Transmitter	10 m	Red	300	–	2	50	**O6S400**
	Receiver	10 m	Red	–	H/D PNP	3	51	**O6E400**
	Receiver	10 m	Red	–	H/D NPN	5	51	**O6E401**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 ; IP68 · Connector groups 4, 5								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	53	**O6H400**
	Background suppression	2...200 mm	Red	8	H/D NPN	5	53	**O6H401**
Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 ; IP68 · Connector groups 4, 5								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	53	**O6P400**
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	53	**O6P401**
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 ; IP68 · Connector groups 4, 5								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	53	**O6T400**
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	53	**O6T401**

Rectangular housing O5 BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	20 m	Red	500	–	2	57	**O5S200**
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	20 m	Red	–	D PNP	14	57	**O5E200**
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.1...7 m	Red	175	D PNP	14	58	**O5P200**
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.1...7 m	Red	175	H PNP	28	58	**O5P201**
Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP65 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	50...1400 mm	Red	50	H PNP	4	59	**O5H200**

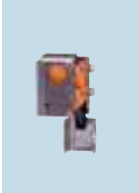
Rectangular housing O5 PerformanceLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 2 m · 10...36 DC · plastics · IP67								
	Transmitter	25 m	Red	625	–	1	60	**O5S501**
	Receiver	25 m	Red	–	H/D PNP	10	61	**O5E501**
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	25 m	Red	625	–	2	57	**O5S500**
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	25 m	Red	–	H/D PNP	3	62	**O5E500**

You can find wiring diagrams and scale drawings from page 261

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Receiver	25 m	Red	–	H/D NPN	5	62	**O5E502**
Retro-reflective sensor · Cable 2 m · 10...36 DC · plastics · IP67								
	Polarisation filter	0.075...10 m	Red	250	H/D PNP	10	63	**O5P501**
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.075...10 m	Red	250	H/D PNP	3	64	**O5P500**
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Polarisation filter	0.075...10 m	Red	250	H/D NPN	5	64	**O5P502**
Diffuse reflection sensor · Cable 2 m · 10...36 DC · plastics · IP67								
	Background suppression	50...1800 mm	Red	50	H/D PNP	10	63	**O5H503**
Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	50...1800 mm	Red	50	H/D PNP	3	64	**O5H500**
	Background suppression	60...700 mm	Red	35	H/D PNP	3	64	**O5H501**
Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	50...1800 mm	Red	50	H/D NPN	5	64	**O5H504**

Rectangular housing O5 PerformanceLine with ATEX approval 3D

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 196, 198								
	Transmitter	25 m	Red	625	–	2	65	**O5S51A**
	Receiver	25 m	Red	–	H/D PNP	3	65	**O5E51A**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 196, 198								
	Polarisation filter	0.075...10 m	Red	250	H/D PNP	3	65	**O5P51A**
Diffuse reflection sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 196, 198								
	Background suppression	50...1800 mm	Red	50	H/D PNP	3	65	**O5H51A**

Rectangular OA design with relay output

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · Terminals · 20...250 AC/DC (47...63 Hz AC) · plastics · IP65								
	Polarisation filter	0.2...8 m	Red	420	H/D Relay	29	66	**OA0106***
Diffuse reflection sensor · Terminals · 20...250 AC/DC (47...63 Hz AC) · plastics · IP65								
	Diffuse reflection sensor	5...1500 mm	Infrared	370	H/D Relay	29	66	**OA0108***
Through-beam sensor · Terminals · 20...250 AC/DC (47...63 Hz AC) · plastics · IP65								
	Transmitter	50 m	Infrared	1500	–	30	66	**OA0101**
	Receiver	25...50 m	Infrared	–	H/D Relay	29	66	**OA0102***

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Rectangular housing O4 BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	0...50 m	Red	1000	–	2	67	**O4S200**

You can find wiring diagrams and scale drawings from page 261

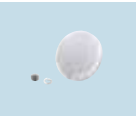
Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	0...50 m	Red	–	D PNP	14	68	**O4E200**
	Receiver	0...50 m	Red	–	H PNP	4	68	**O4E201**
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.3...18 m	Red	500	D PNP	14	69	**O4P200**
	Polarisation filter	0.3...18 m	Red	500	H PNP	4	69	**O4P201**
Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP65 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	100...2000 mm	Red	100	H PNP	4	70	**O4H200**
	Background suppression	100...2000 mm	Red	100	D PNP	14	70	**O4H201**

Rectangular housing O4 PerformanceLine

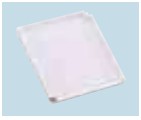
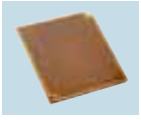
Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · Cable 2 m · 10...36 DC · plastics · IP67								
	Transmitter	0...80 m	Red	2400	–	1	71	**O4S501**
	Receiver	0...80 m	Red	–	H/D PNP	10	72	**O4E501**
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	0...80 m	Red	2400	–	2	67	**O4S500**
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	0...80 m	Red	–	H/D PNP	3	73	**O4E500**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · Cable 2 m · 10...36 DC · plastics · IP67								
	Polarisation filter	0.3...22 m	Red	660	H/D PNP	10	74	**O4P501**
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.3...22 m	Red	660	H/D PNP	3	75	**O4P500**
Diffuse reflection sensor · Cable 2 m · 10...36 DC · plastics · IP67								
	Background suppression	100...2600 mm	Red	50	H/D PNP	10	76	**O4H501**
Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	100...2600 mm	Red	50	H/D PNP	3	77	**O4H500**

Prismatic reflectors, reflective tape and fixing components

Type	Description	Order no.
	Prismatic reflector · Ø 20 mm · round · For red light and infrared light retro-reflective sensors · Housing materials: plastics	**E20003**
	Prismatic reflector · Ø 25 mm · round · fixing by screw · For red light and infrared light retro-reflective sensors · Housing materials: plastics	**E20953**
	Prismatic reflector · Ø 35 mm · round · fixing by screw · For red light and infrared light retro-reflective sensors · Housing materials: plastics	**E20954**
	Prismatic reflector · Ø 42 mm · round · For red light and infrared light retro-reflective sensors · Housing materials: plastics	**E20004**
	Prismatic reflector · Ø 50 mm · round · fixing by screw · For red light and infrared light retro-reflective sensors · Housing materials: plastics	**E20956**
	Prismatic reflector · Ø 80 mm · round · For red light and infrared light retro-reflective sensors · Housing materials: plastics	**E20005**
	Prismatic reflector · 45 x 28 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: plastics	**E20452**

You can find wiring diagrams and scale drawings from page 261

Type	Description	Order no.
	Prismatic reflector · 48 x 48 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: front plate: PMMA / base: ABS	**E20744**
	Prismatic reflector · 93 x 45 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: plastics	**E20453**
	Prismatic reflector · 96 x 96 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: plastics	**E20454**
	Prismatic reflector · 18 x 18 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: Solidchem	**E21267**
	Prismatic reflector · 56 x 38 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: Solidchem	**E21268**
	Prismatic reflector · 48 x 48 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: Solidchem	**E21269**
	Prismatic reflector · 96 x 96 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: Solidchem	**E21270**
	Mounting set · for reflector · Ø 25 mm · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20903**
	Mounting set · for reflector · Ø 35 mm · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20907**
	Mounting set · for reflector · Ø 50 mm · Clamp mounting · Free-standing M10 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20911**
	Mounting set · for reflector · Ø 80 mm · Clamp mounting · free-standing M12 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E20914**
	Mounting set · for reflector · Ø 80 mm · Clamp mounting · free-standing M12 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20915**
	Angle bracket · for reflector · 50 x 50 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571	**E20724**
	Reflective tape · TS-02 · 50 x 1000 mm · For red light and infrared light retro-reflective sensors · Housing materials: plastics / acrylic	**E21015**

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0011
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0012

Accessories OA

Type	Description	Order no.
	Mounting set · Clamp mounting · free-standing M12 · for type OA · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20893

Accessories OF design (M12)

Type	Description	Order no.
	angle support · 90° · for type OF · Housing materials: housing: ABS / lens: PC	E20590
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21200
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21201
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21202
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21203

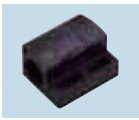
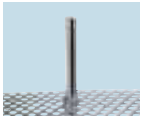
Accessories OG design (M18)

Type	Description	Order no.
	Angle bracket · for type M18 · Housing materials: stainless steel	E10736

You can find wiring diagrams and scale drawings from page 261

Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20720**
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20721**
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	**E21206**
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	**E21207**

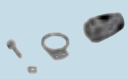
Accessories OI design (M30)

Type	Description	Order no.
	Angle bracket · for type M30 · Housing materials: stainless steel	**E10737**
	Mounting clamp · Ø 30 mm · with end stop · for type M30 · Housing materials: PC	**E11049**
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	**E10077**
	Mounting set · Ø 30.2 mm · Clamp mounting · aluminium profile · for type II, KI, OID, OI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20875**
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E20873**
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20874**
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20938**
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	**E20951**
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	**E30398**

Accessories O7 housing

Type	Description	Order no.
	Mounting set · O7 · Clamp mounting · rod mounting Ø 10 mm · Housing materials: fixture: stainless steel / clamp: stainless steel / screw: stainless steel / nut: stainless steel	**E21237**
	Mounting set · O7 · Free-standing mounting · free-standing · Housing materials: fixture: stainless steel / screws: stainless steel	**E21238**
	Mounting set · O7 · Free-standing mounting · with fine adjustment · free-standing · Housing materials: fixture: stainless steel / Spring: spring steel / screws: stainless steel	**E21239**
	Mounting set · O7 · ball joint · free-standing · Housing materials: fixture: diecast zinc / mounting base: diecast zinc / screws: stainless steel	**E21240**

Accessories OJ housing

Type	Description	Order no.
	Angle bracket · for type OJ · Housing materials: high-grade stainless steel	**E20984**
	Basic clip · OJ · Housing materials: high-grade stainless steel	**E20965**
	Basic clip · OJ · Housing materials: diecast zinc	**E20964**
	Swivel-mount clip · for type OJ · Housing materials: diecast zinc	**E20974**
	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E20968**
	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20969**
	Mounting set · OJ · for side lens · rod mounting Ø 10 mm · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	**E21095**
	Mounting set · OJ · for side lens · Clamp mounting · rod mounting Ø 10 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21222**
	Mounting set · OJ · for front lens · Clamp mounting · free-standing M8 · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	**E20966**

You can find wiring diagrams and scale drawings from page 261

Type	Description	Order no.
	Mounting set · OJ · for front lens · Clamp mounting · rod mounting · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E21221**

Accessories for O6 design

Type	Description	Order no.
	Angle bracket · O6 · for type O6 · Housing materials: stainless steel 316Ti / 1.4571	**E21271**
	Mounting set · O6 · Clamp mounting · rod mounting Ø 10 mm · for type O6 · Housing materials: stainless steel 316Ti / 1.4571	**E21272**
	Protective cover · O6 · for type O6 · Housing materials: stainless steel 316Ti / 1.4571	**E21273**
	Pinhole mask · 0.5 mm · for type O6E / O6S plastic · Housing materials: stainless steel	**E21277**
	Slot mask · 0.5 x 8 mm · for type O6E / O6S plastic · Housing materials: stainless steel	**E21280**

Accessories O5 housing

Type	Description	Order no.
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21087**
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21085**
	Angle bracket · O5, O4 · for mounting O5, O4 sensors instead of OL sensors · Dovetail clamp · Housing materials: Dovetail clamp: AlMgSi0.5 / fixture: AlMg3	**E21122**
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	**E21088**
	Mounting brackets Mounting on the back of the unit · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21086**
	Mounting sleeve · O5 · for mounting O5 sensors instead of OC sensors · Housing materials: AlZnMgCu1.5 F51/52	**E21114**

Type	Description	Order no.
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	**E21223**
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21210**
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21211**
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	**E21212**
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 14 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E21142**
	Mounting set · Clamp mounting · With protective cover · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21084**
	Mounting set · Clamp mounting · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21083**
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	**E30398**

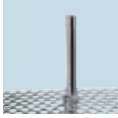
Accessories O4 housing

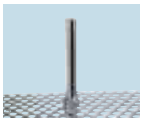
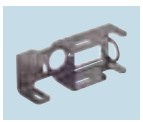
Type	Description	Order no.
	Angle bracket · O1D, O4 · for type O1D, O4 · Housing materials: stainless steel 316L / 1.4404	**E21120**
	Angle bracket · O4 · for type O4 · Housing materials: stainless steel 316L / 1.4404	**E21117**
	Angle bracket · O5, O4 · for mounting O5, O4 sensors instead of OL sensors · Dovetail clamp · Housing materials: Dovetail clamp: AlMgSi0.5 / fixture: AlMg3	**E21122**
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	**E21088**
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	**E21215**

You can find wiring diagrams and scale drawings from page 261

Type	Description	Order no.
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: high-grade stainless steel	**E21216**
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	**E21217**
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: high-grade stainless steel	**E21218**
	Mounting set · O4 · Clamp mounting · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	**E21118**
	Mounting set · O4 · Clamp mounting · With protective cover · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	**E21119**
	Mounting set · O4 · Clamp mounting · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	**E21118**

Accessories for system components

Type	Description	Order no.
	clamp · Ø 10 mm; M8 · free-standing M8 · Housing materials: clamp: diecast zinc	**E20843**
	clamp · Ø 10 mm; M8 · free-standing M8 · Housing materials: clamp: stainless steel 316Ti / 1.4571	**E20844**
	clamp · Ø 12 mm; M10 · Free-standing M10 · Housing materials: clamp: diecast zinc	**E20716**
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: diecast zinc	**E20717**
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: stainless steel	**E21110**
	clamp · Ø 14 mm; M12 · free-standing M12 · Housing materials: clamp: diecast zinc	**E20796**
	mounting rod · Ø 10 / M8 · Length: 150 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21081**

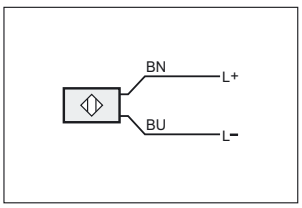
Type	Description	Order no.
	mounting rod · Ø 10 / M8 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E80310**
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20938**
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E20940**
	Head cap screw · M8 x 40 mm · ISO 4762 (DIN 912) · free-standing M8 · Housing materials: screw: steel galvanised	**E21204**
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: steel galvanised	**E21208**
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: high-grade stainless steel	**E21209**
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: steel galvanised	**E21213**
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: high-grade stainless steel	**E21214**
	Cube · M8 · aluminium profile · Housing materials: diecast zinc	**E20950**
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	**E20951**
	Protective bracket for free-standing and rod mounting · Ø 18 mm · Clamp mounting · Housing materials: stainless steel 316L / 1.4404	**E21125**
	Protective bracket for free-standing and rod mounting · Ø 18 mm · with end stop · Mounting clamp · Clamp mounting · Housing materials: Mounting clamp: PC black / Angle bracket: stainless steel 316L / 1.4404	**E21126**

Wiring diagrams

Core colours

BN	brown
BU	blue
BK	black

1



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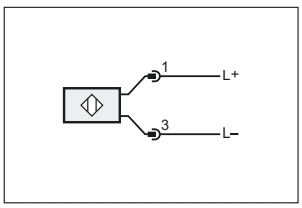

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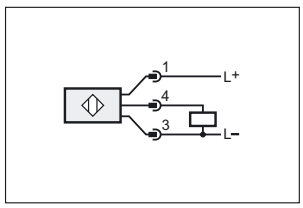
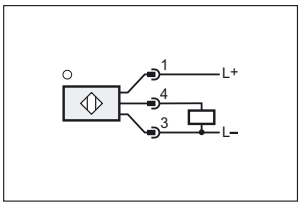


Wiring diagrams

4



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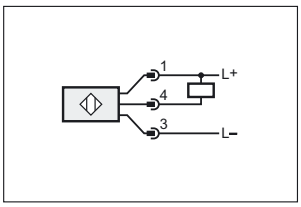

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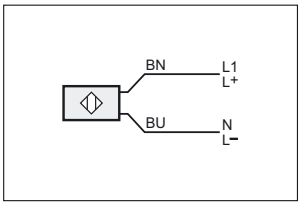

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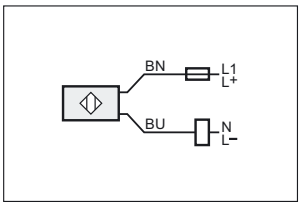

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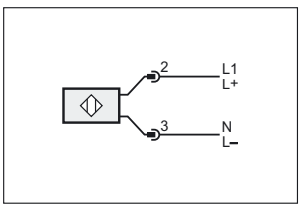

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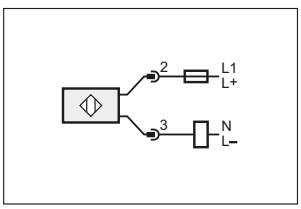

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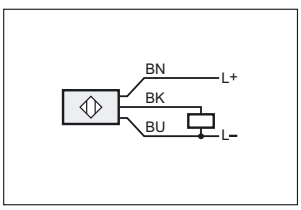

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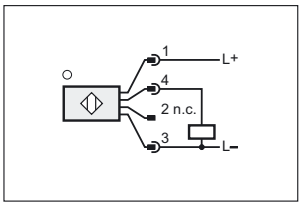

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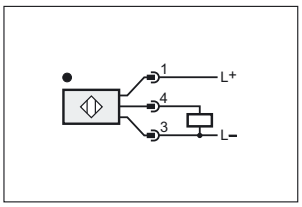

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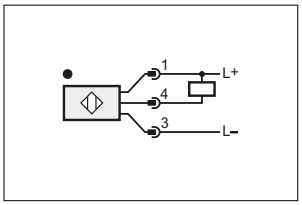

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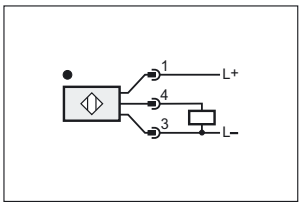

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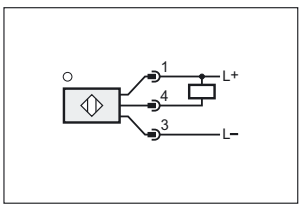

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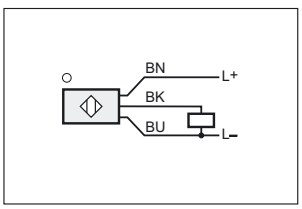

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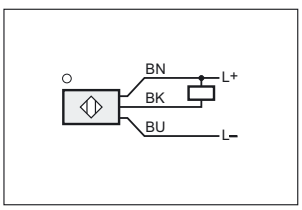

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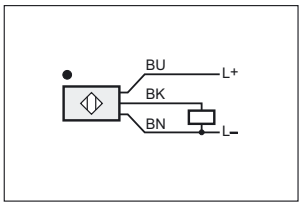

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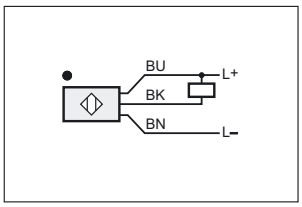

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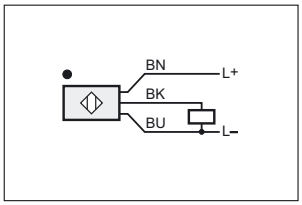

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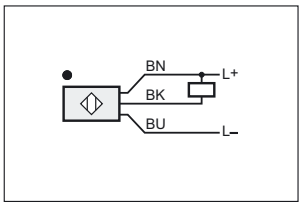

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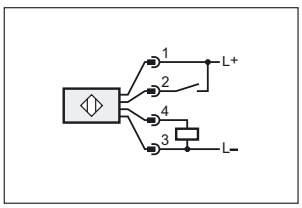
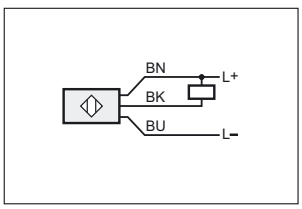


2: Teach

23



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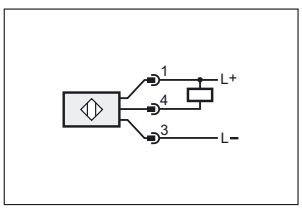

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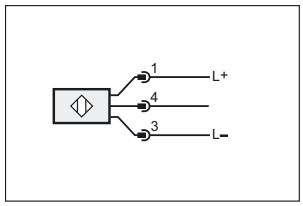

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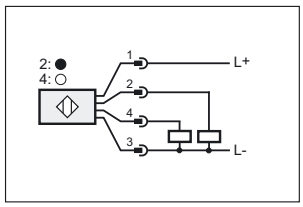

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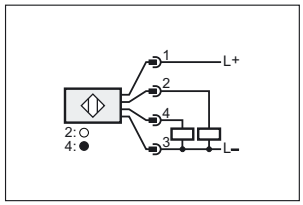

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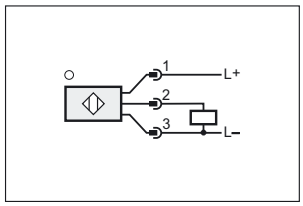

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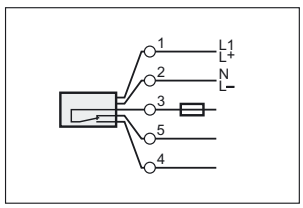

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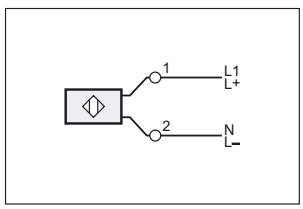
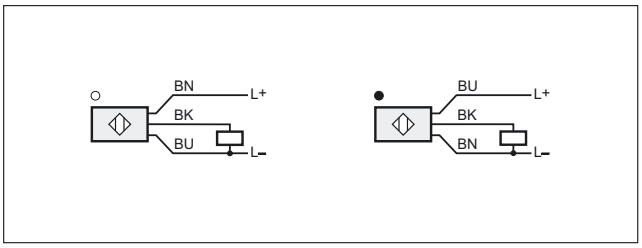


Wiring diagrams

31



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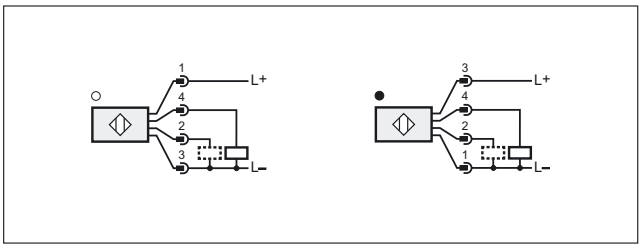

2: function check

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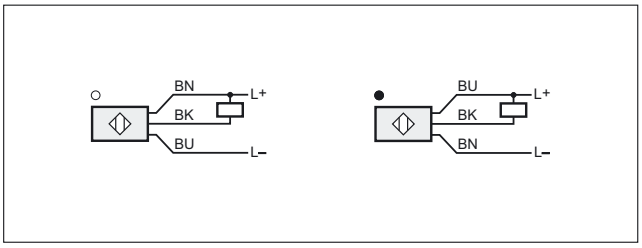

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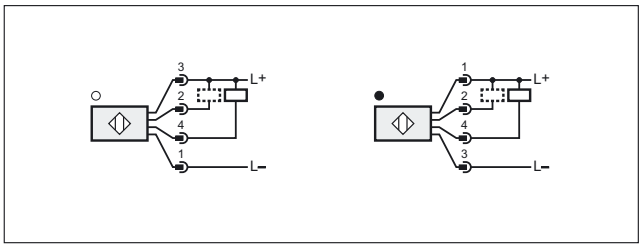

2: function check

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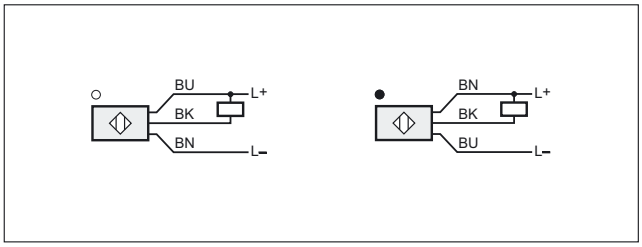

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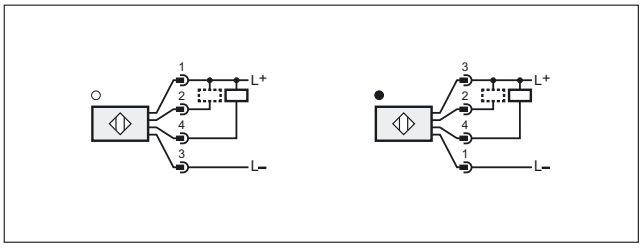

2: function check

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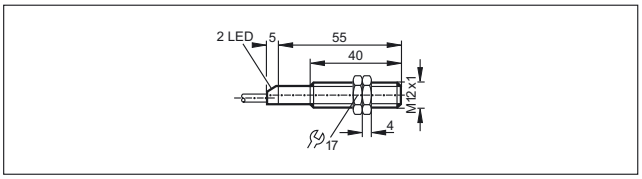

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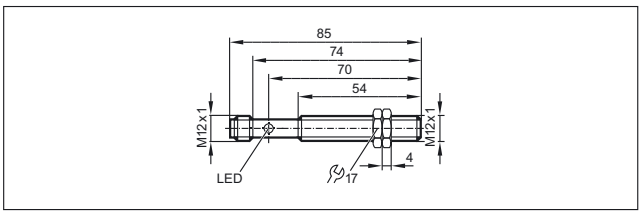

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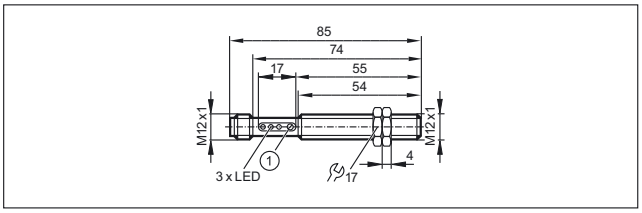

1: potentiometer

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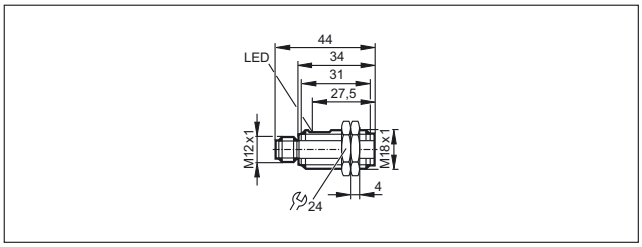

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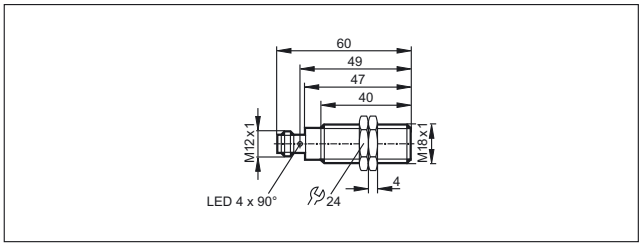

Scale drawings / drawing no. – CAD download: www.ifm.com

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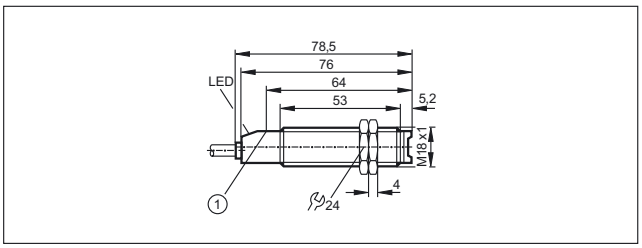

1: pushbutton

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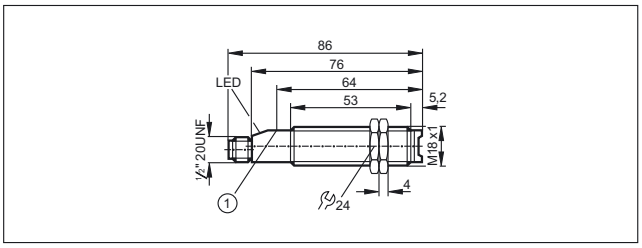

1: pushbutton

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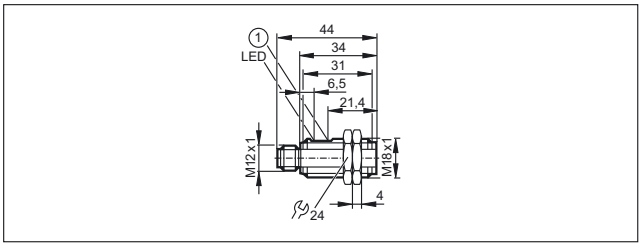

1: potentiometer

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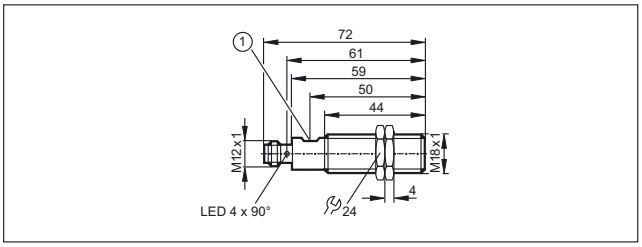

1: potentiometer

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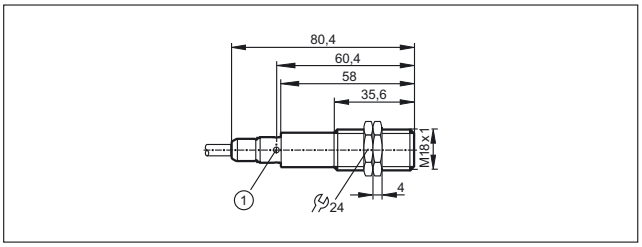

1: LED 4 x 90°

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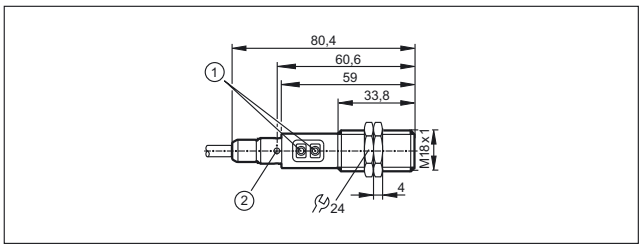

1: Programming buttons, 2: LED 4 x 90°

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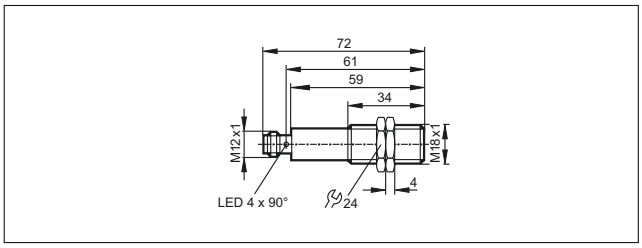

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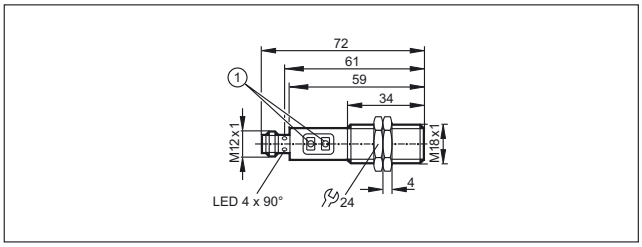

1: Programming buttons

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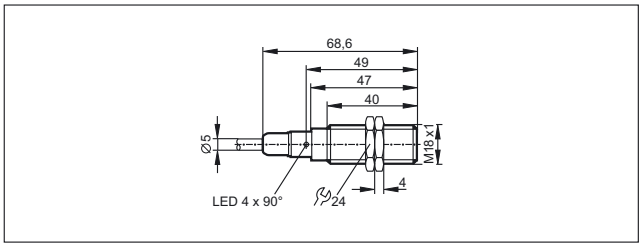

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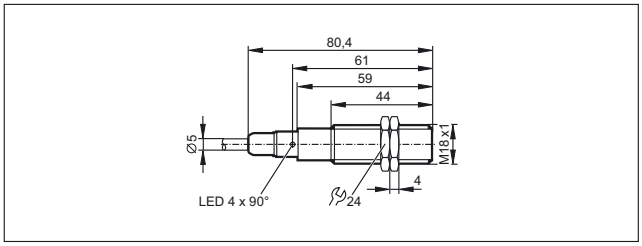

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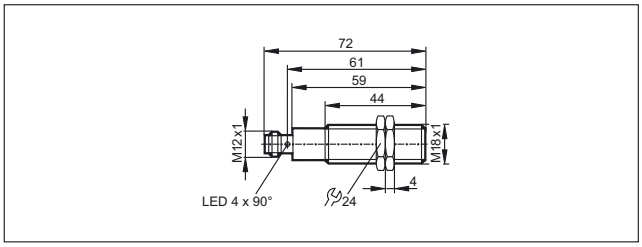

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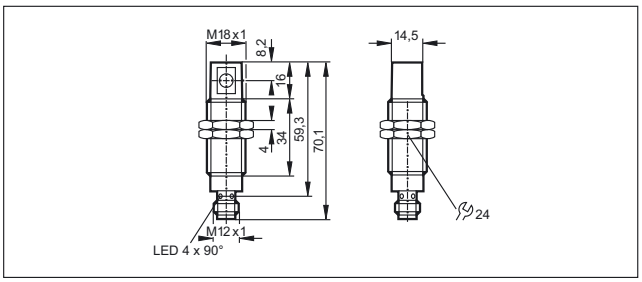

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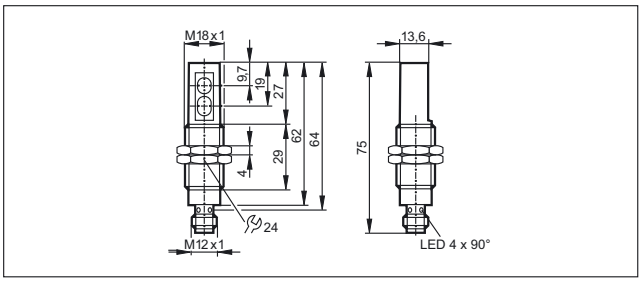

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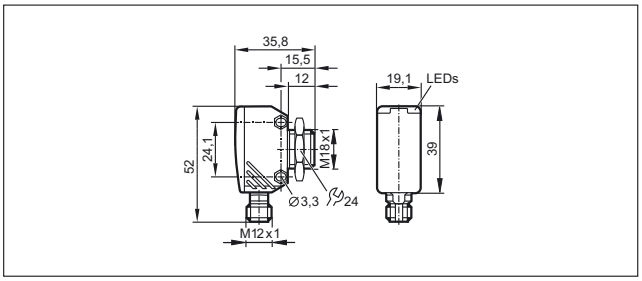

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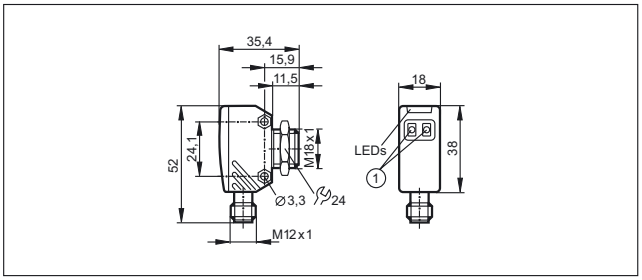

1: setting pushbuttons

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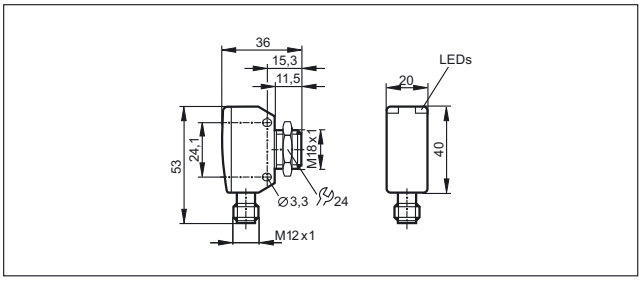

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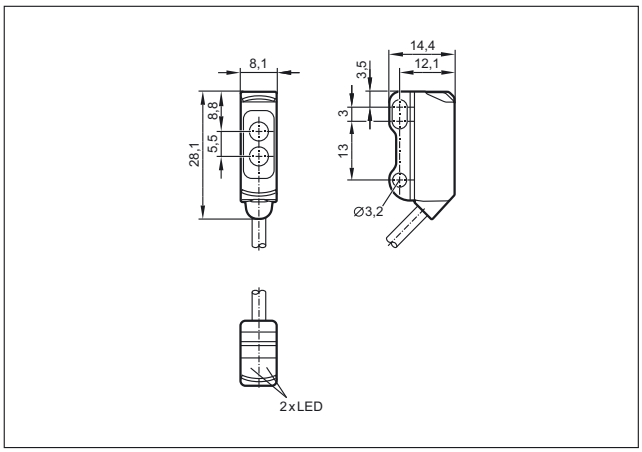

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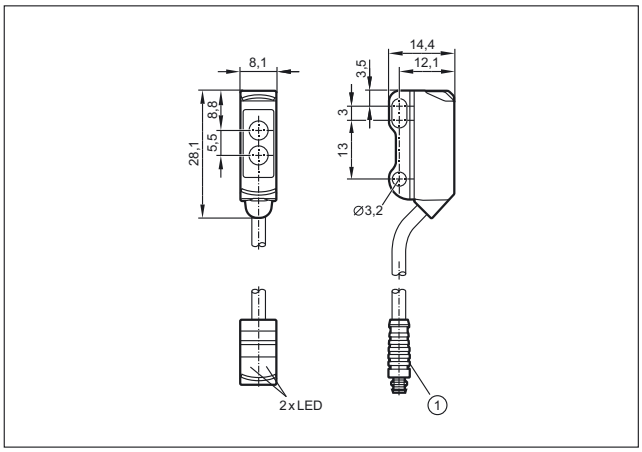

1: illustration (example)

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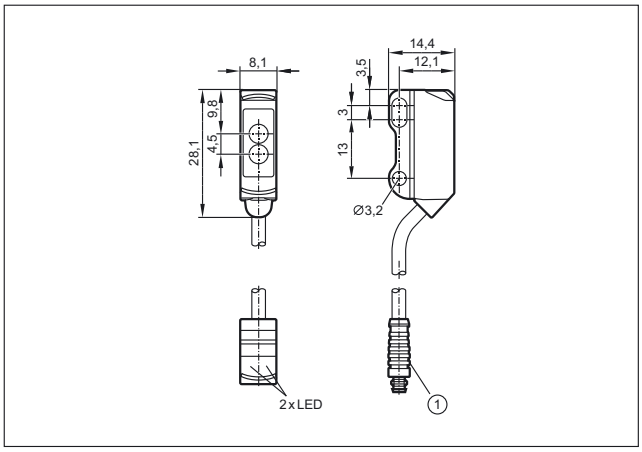

1: illustration (example)

Scale drawings / drawing no. – CAD download: www.ifm.com

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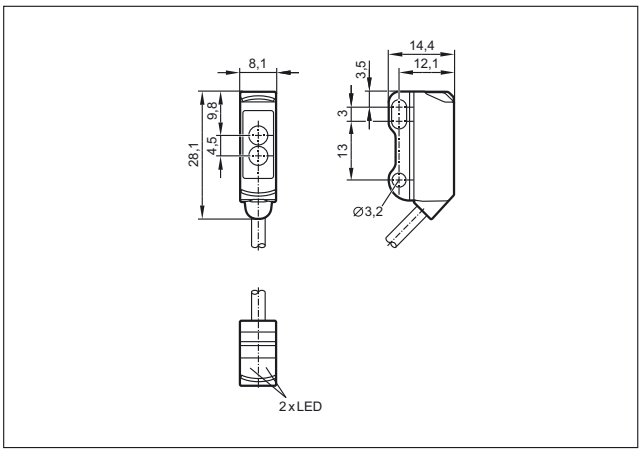

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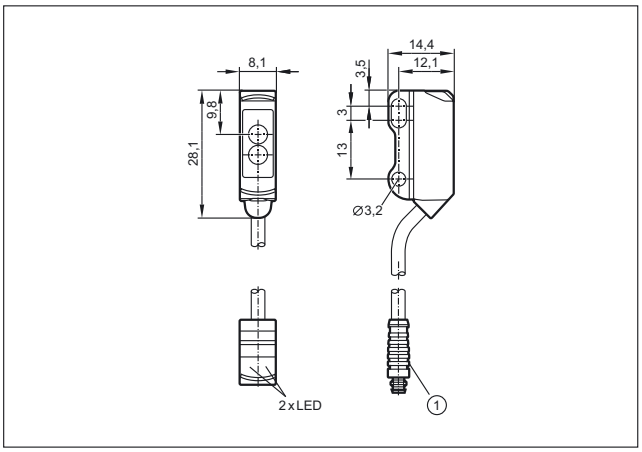

1: illustration (example)

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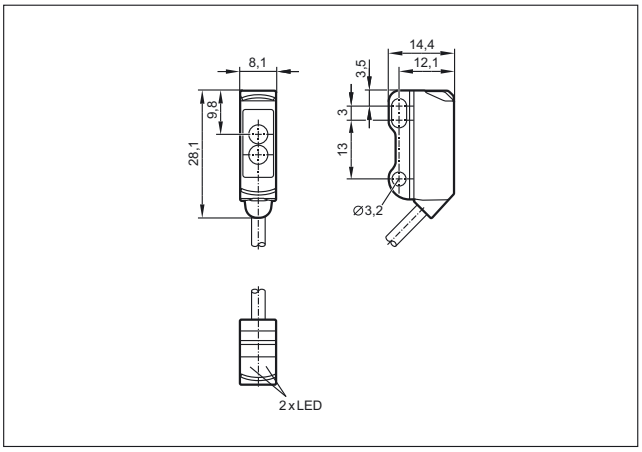

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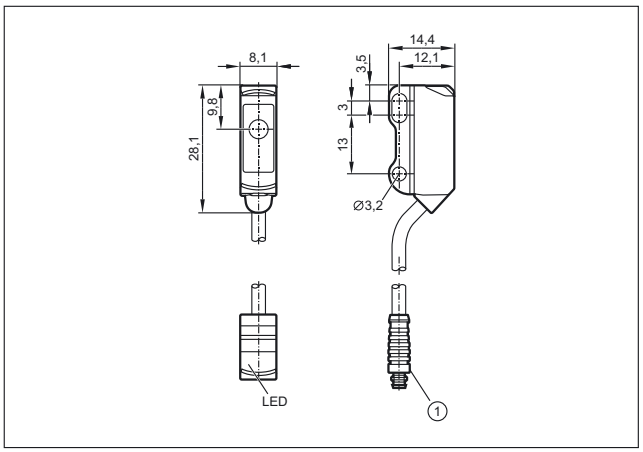

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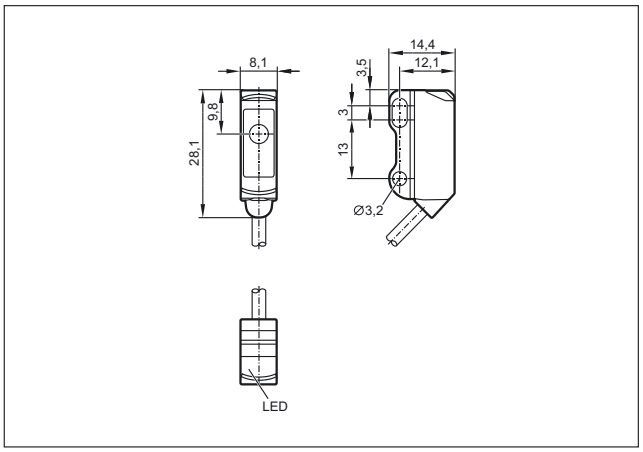

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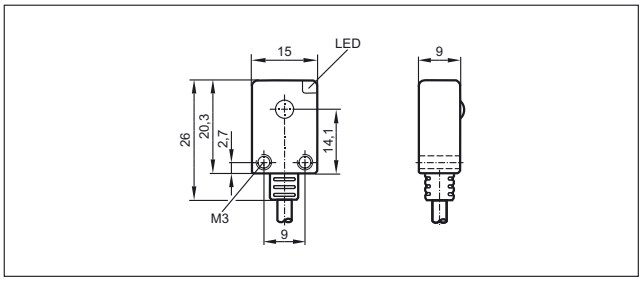

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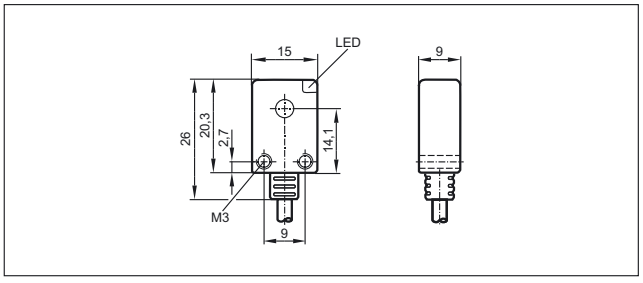

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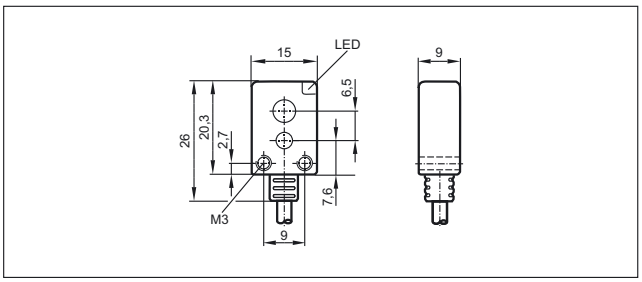

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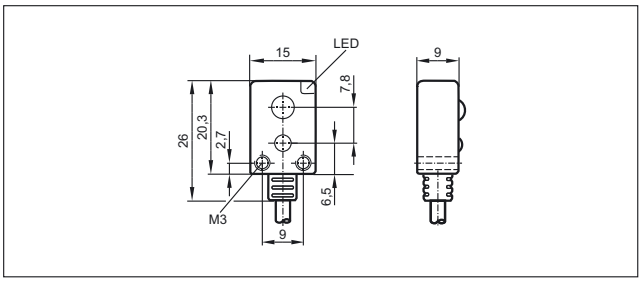

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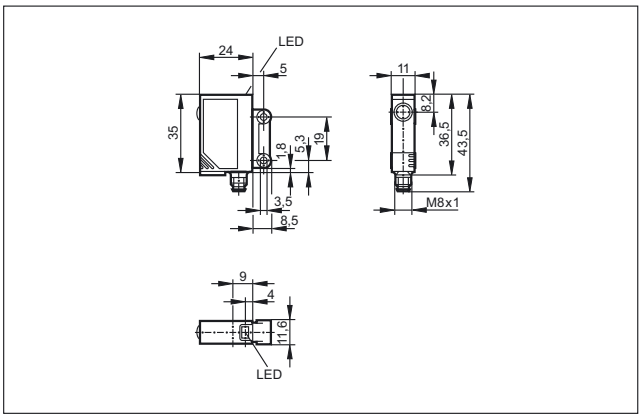

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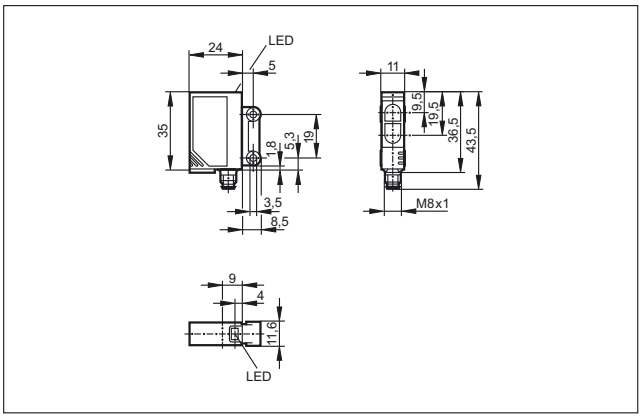

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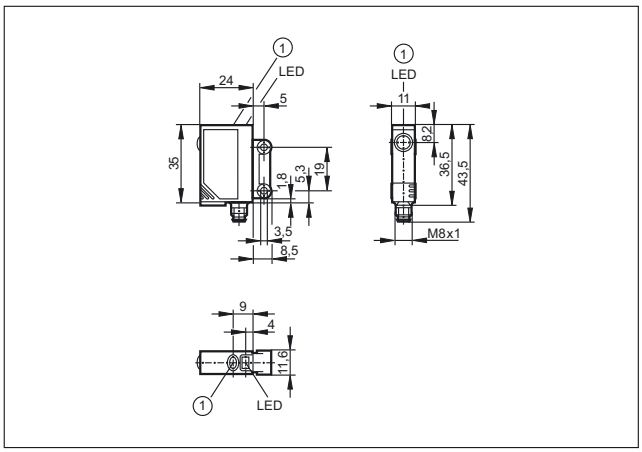

1: pushbutton

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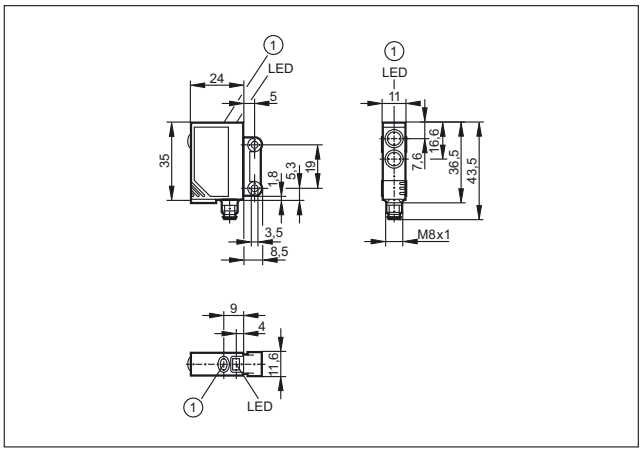

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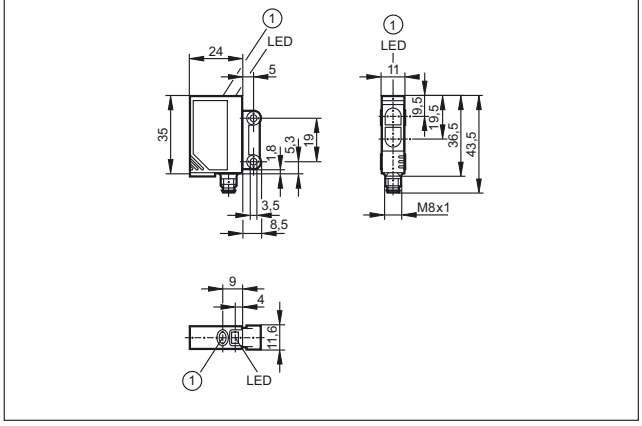

1: pushbutton

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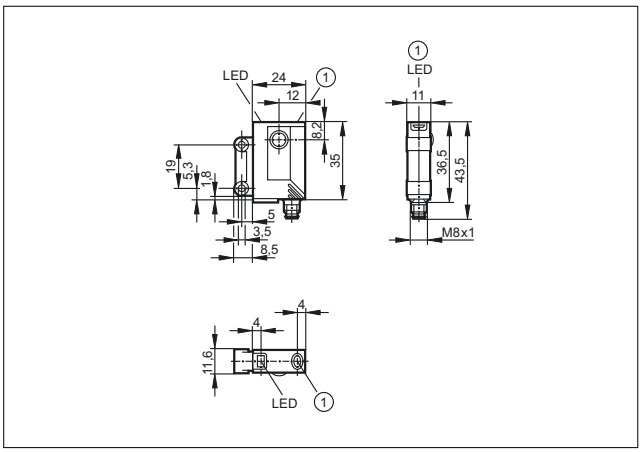

1: pushbutton

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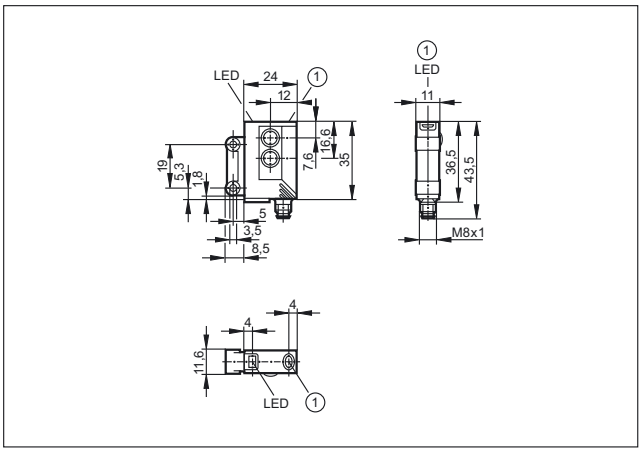

1: pushbutton

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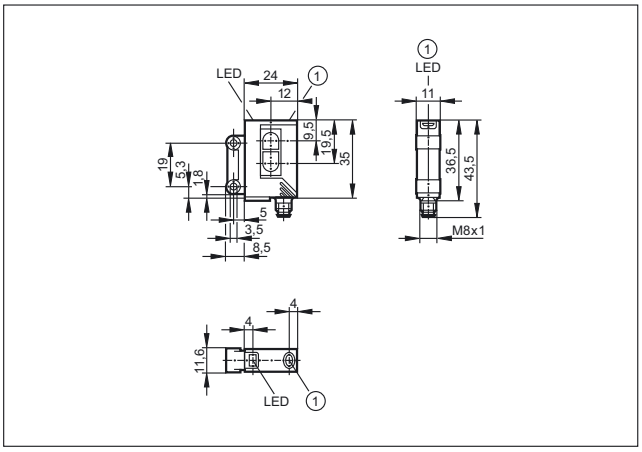

1: pushbutton

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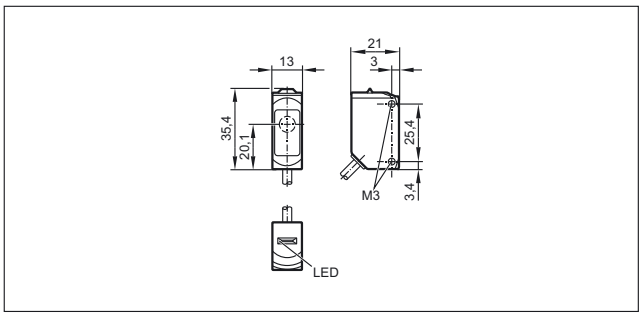

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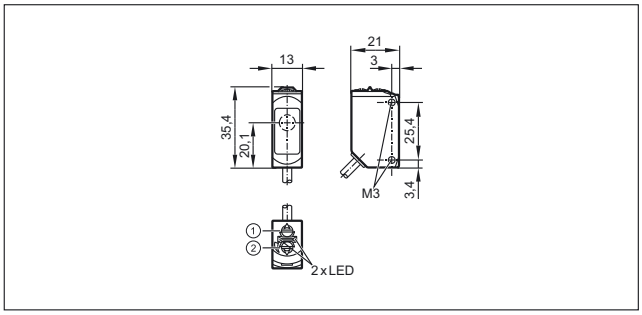

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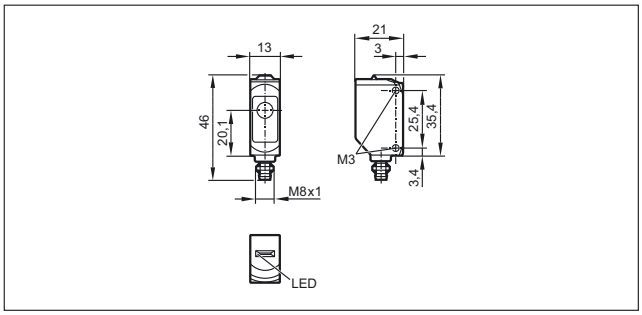

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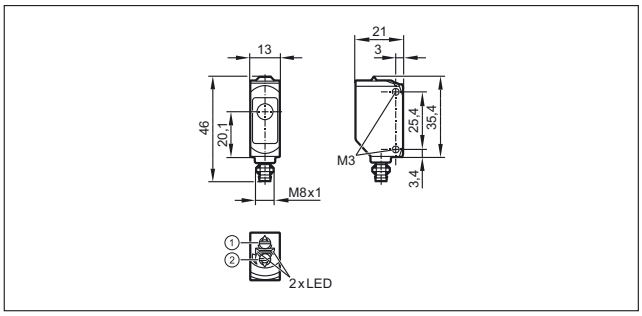

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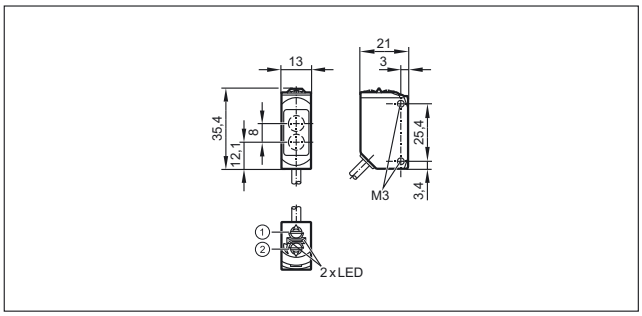

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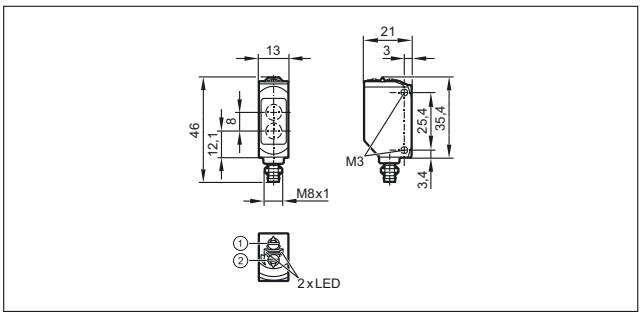

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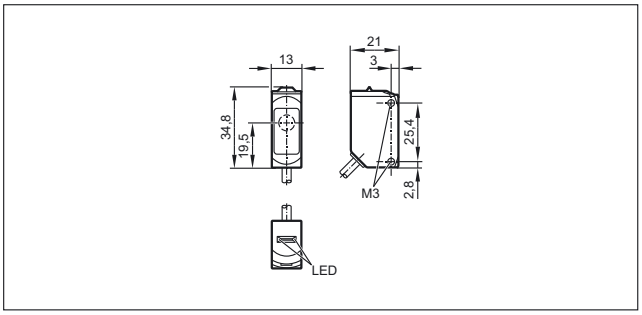

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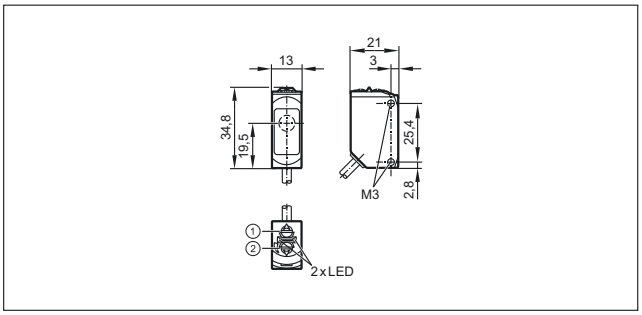
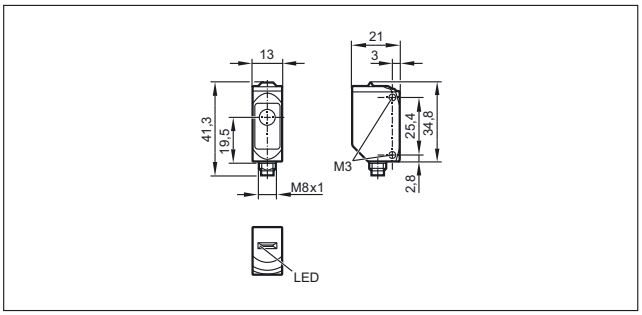


1:: output function switch, 2:: potentiometer sensitivity

50



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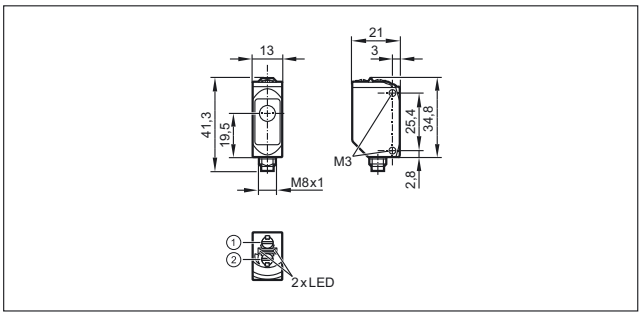
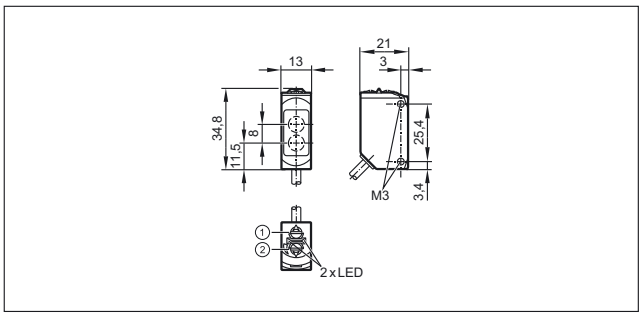


1:: output function switch, 2:: potentiometer sensitivity

52



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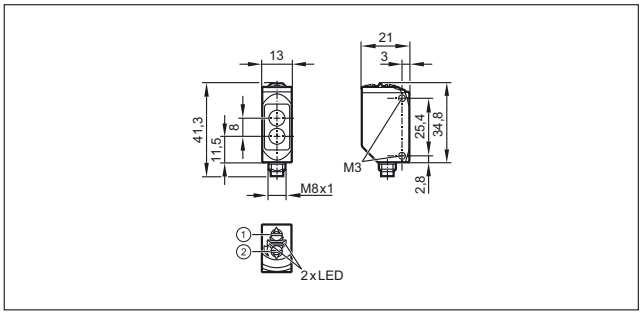

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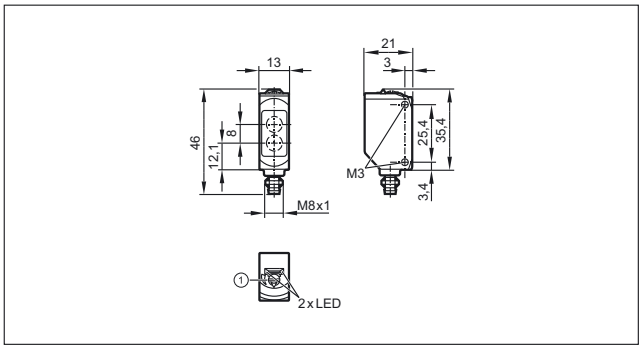

1: potentiometer sensitivity

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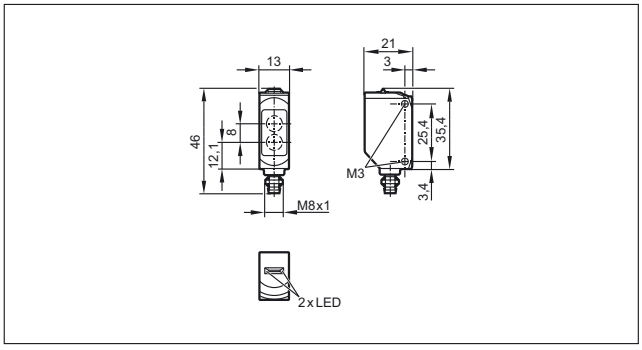

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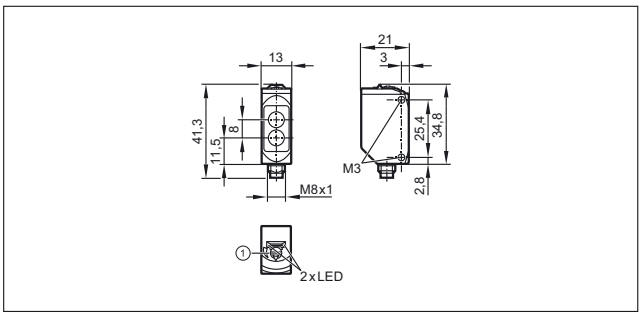
56



1: potentiometer sensitivity

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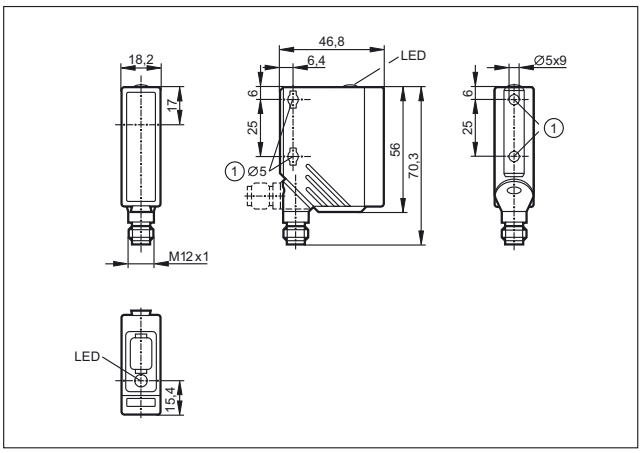
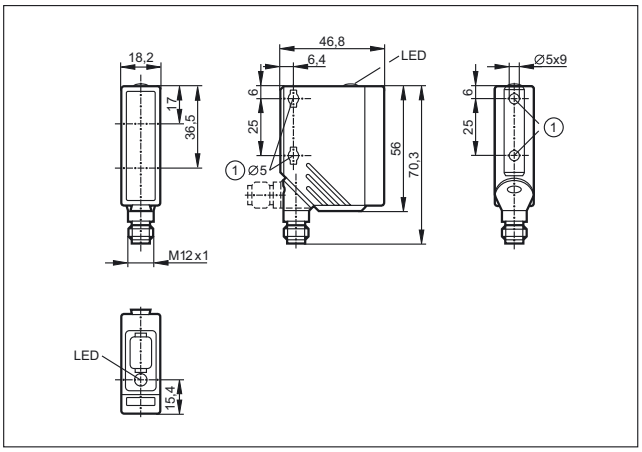


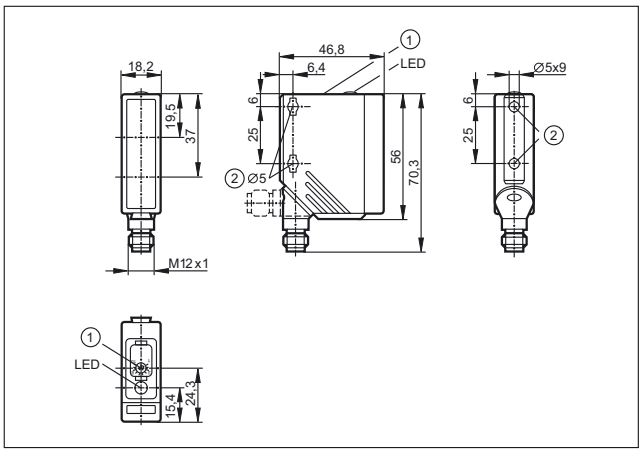
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

58



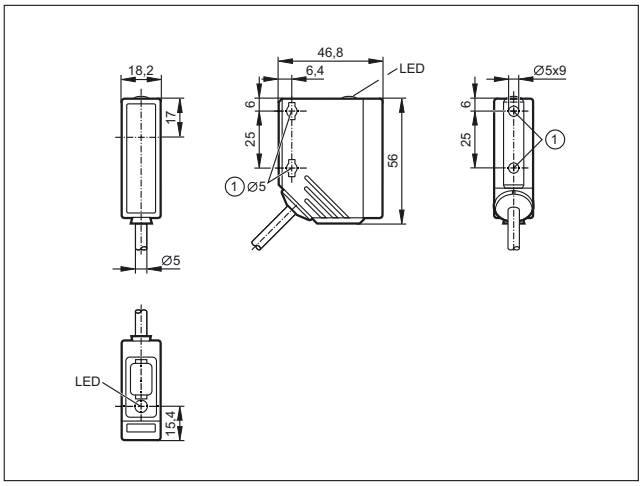
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

59



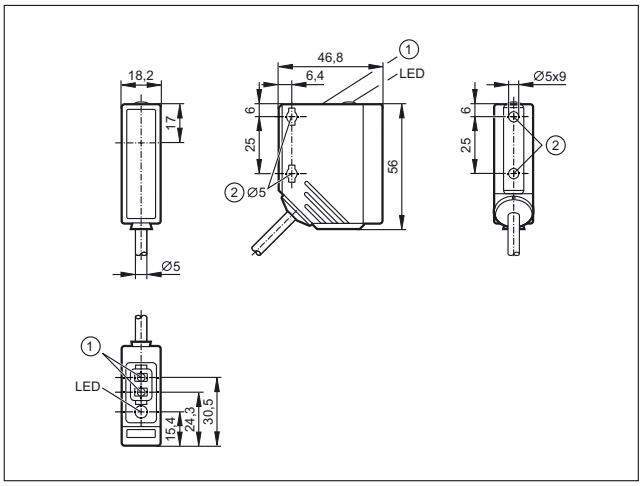
1: potentiometer, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

60



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

61



1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

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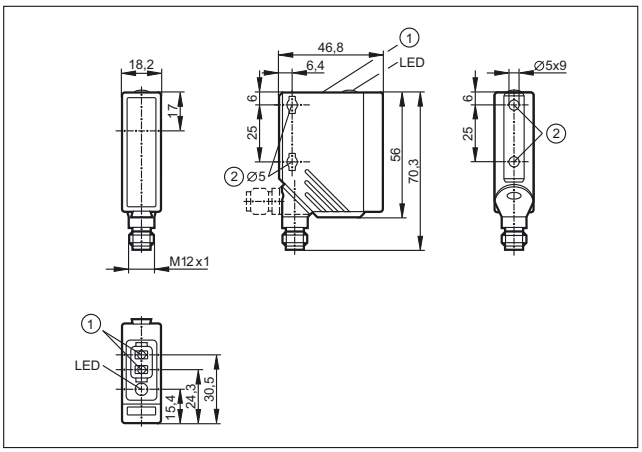
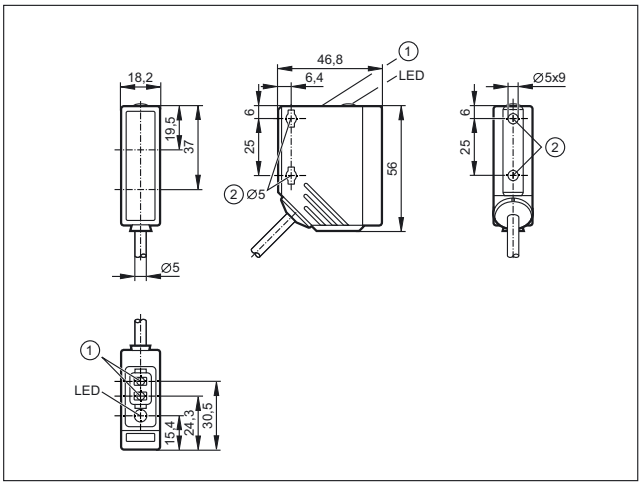
62



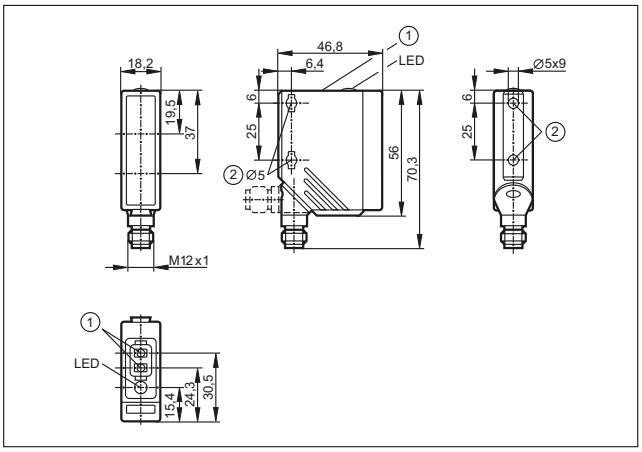
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

63



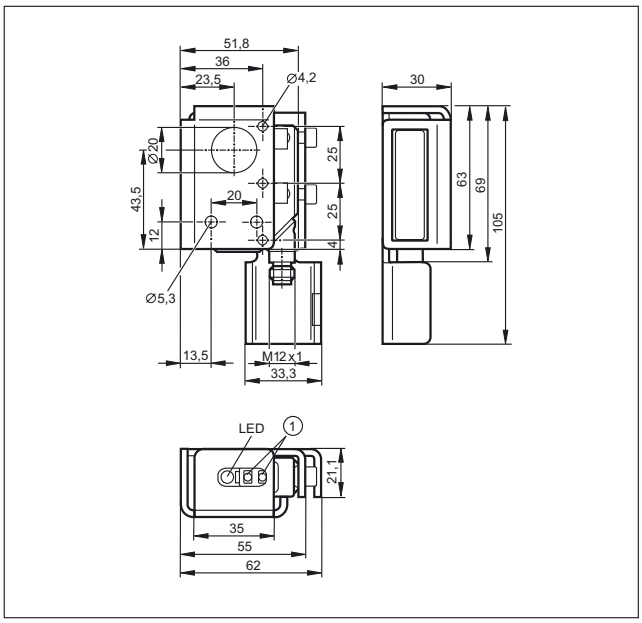
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

64



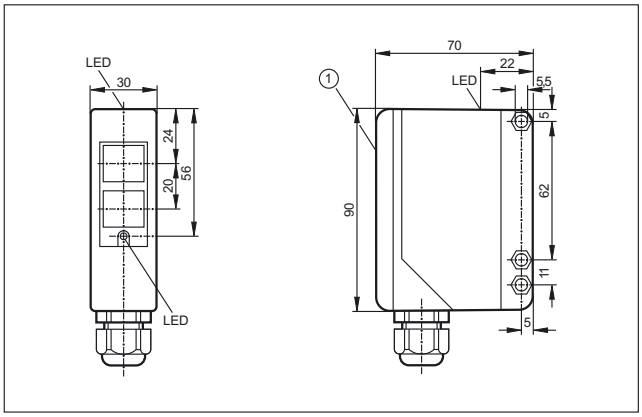
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

65



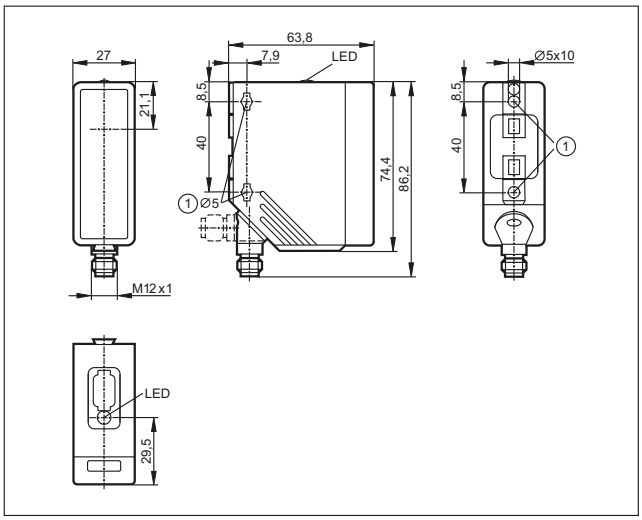
1: Programming buttons

66



1: selection switch, pot's (under cover)

67



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

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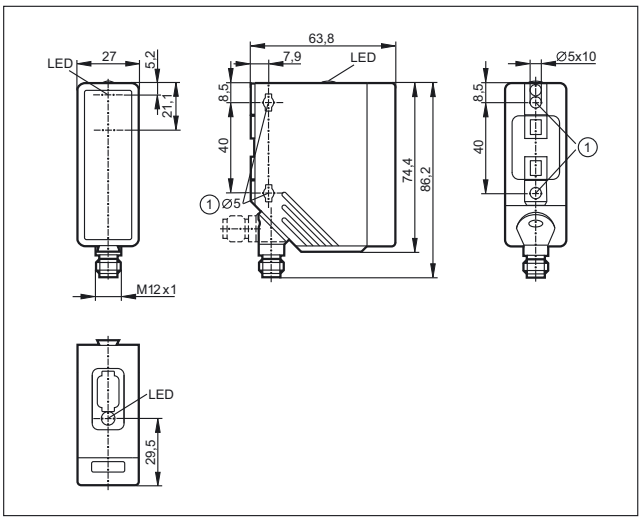
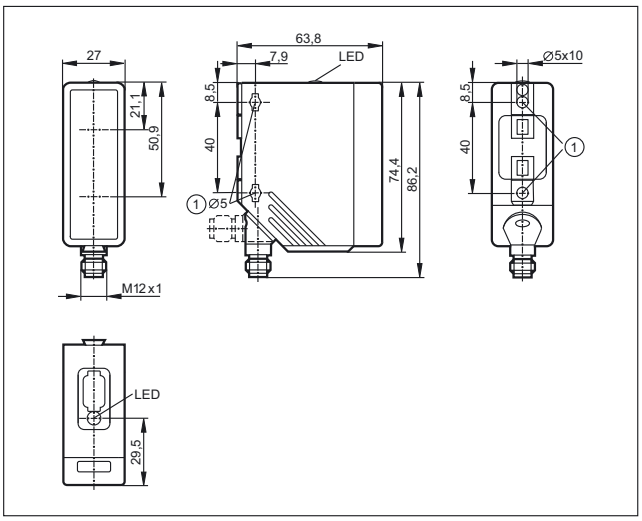
68



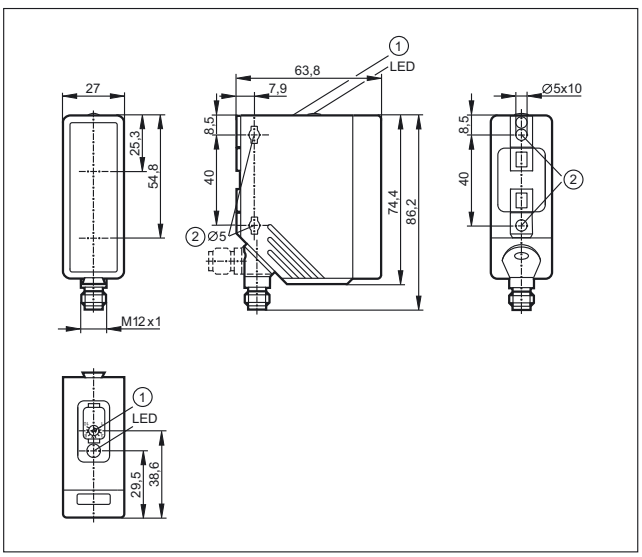
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

69



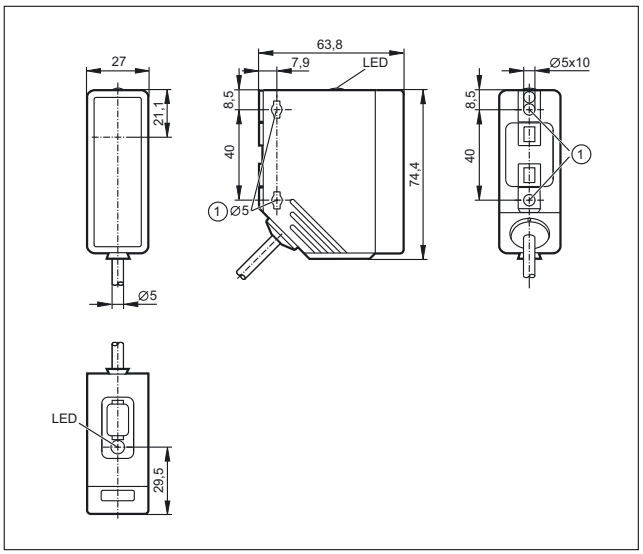
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

70



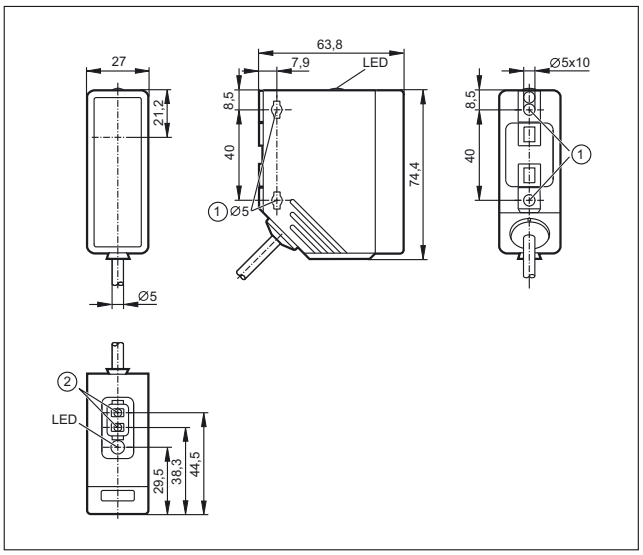
1: potentiometer, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

71



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

72



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

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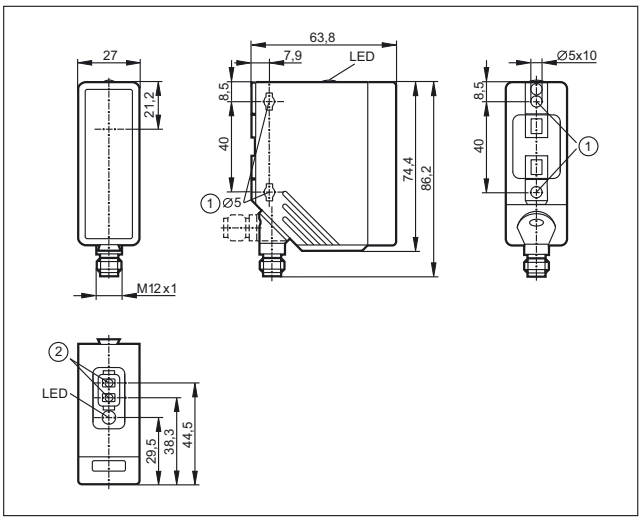
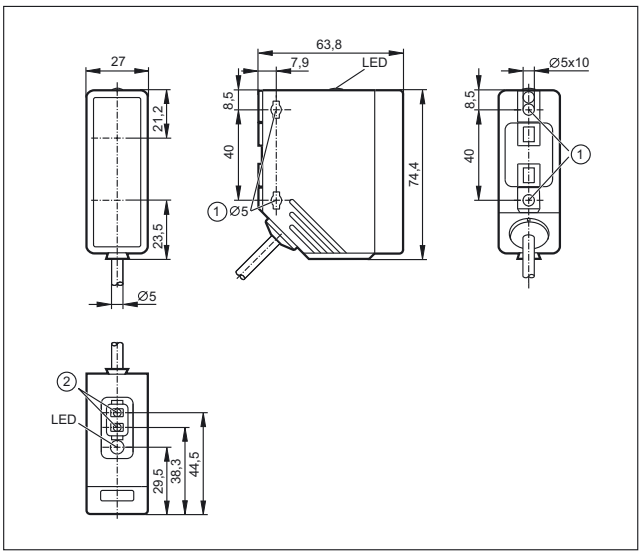
73



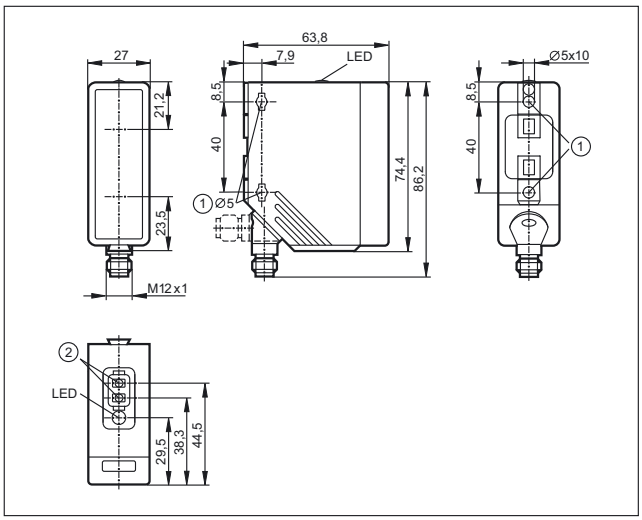
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

74



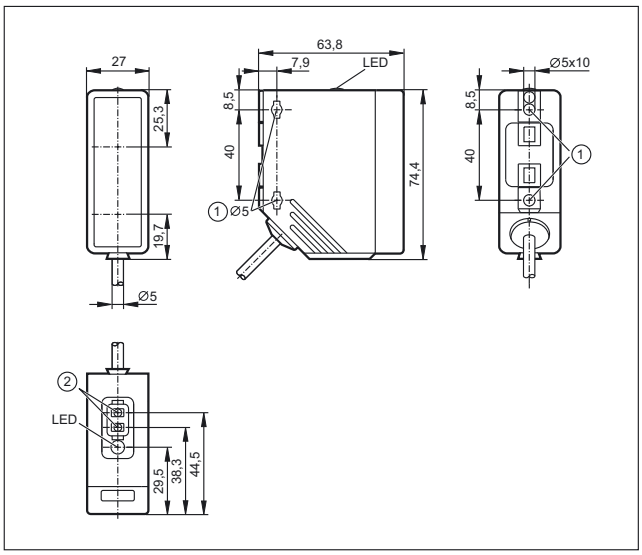
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

75



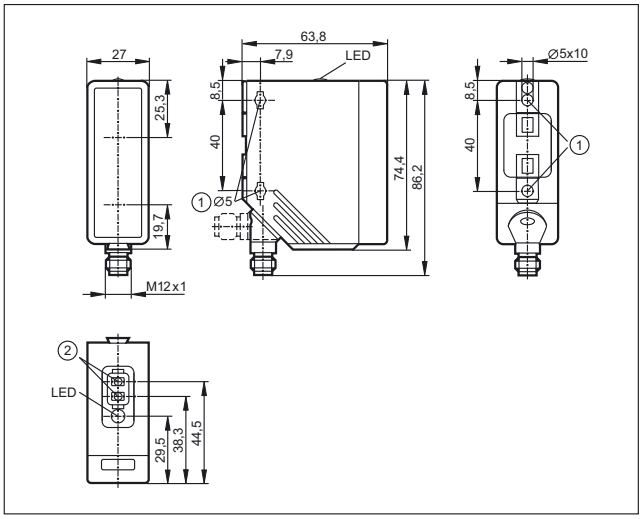
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

76



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

77

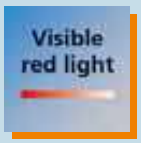


1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

Photoelectric fork and angle sensors for tiny objects

Photoelectric fork sensors / angle sensors

- **Quick set-up: no need to align transmitter and receiver**
- **Fine and precise light beam across the whole fork width**
- **Metal housing reduces distortion**
- **Light-on / dark-on mode selectable via rotary switch**
- **Easy sensitivity setting via potentiometer**



Optical fork and angle sensors

The photoelectric fork and angle sensors are made from distortion-resistant diecast zinc and feature a high switching frequency. Possible applications are in particular part monitoring in feeding technology and handling systems. Further application examples are belt edge and double feed monitoring.

Easy to use

Sensitivity setting using the potentiometer and setting of light-on / dark-on mode using the rotary switch are simple and time-saving. No complex adjustment is required because transmitter and receiver are already aligned towards each other. Due to the fine and precise red light beam which is constant across the entire fork width, out-of-balance monitoring of shafts can also be carried out.

System overview	*Page*
Optical fork sensors	*276*
Laser fork sensors, laser class 2	*277*
Optical angle sensors	*277*
Wiring diagrams	*277 - 278*
Scale drawings / drawing no. – CAD download: www.ifm.com	*278 - 279*

Optical fork sensors

Type	Fork width (w) [mm]	Fork depth (d) [mm]	Smallest detectable object Ø [mm]	Switching frequency [Hz]	Output H = light-on D = dark-on	U_b [V]	Draw-ing no.	Order no.
Optical fork sensor · Type OPU · M8 connector · metal · DC · Wiring diagram no. 3 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	10	17	0.3	10000	H/D PNP/NPN	10...35	1	**OPU200**
Optical fork sensor · Type OPU · M8 connector · metal · DC · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	20	25	0.4	4000	H/D PNP	10...35	2	**OPU201**
	30	35	0.5	4000	H/D PNP	10...35	3	**OPU202**
	50	55	0.5	4000	H/D PNP	10...35	4	**OPU203**
	80	55	0.5	4000	H/D PNP	10...35	5	**OPU204**
	120	60	0.8	2000	H/D PNP	10...35	6	**OPU205**
Optical fork sensor · Type OPU · M8 connector · metal · DC · Wiring diagram no. 2 · Connector groups 1, 3, 78, 84, 145								
	20	25	0.4	4000	H/D NPN	10...35	2	**OPU207**
	30	35	0.5	4000	H/D NPN	10...35	3	**OPU208**
	50	55	0.5	4000	H/D NPN	10...35	4	**OPU209**
	80	55	0.5	4000	H/D NPN	10...35	5	**OPU210**
	120	60	0.8	2000	H/D NPN	10...35	6	**OPU211**

Laser fork sensors, laser class 2

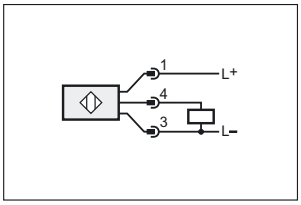
Type	Fork width (w) [mm]	Fork depth (d) [mm]	Smallest detectable object Ø [mm]	Switching frequency [Hz]	Output H = light-on D = dark-on	U_b [V]	Drawing no.	Order no.
Optical fork sensor · Type OPU · M8 connector · metal · DC · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	30	35	0.05	3000	H/D PNP	10...30	7	**OPU700**
	50	55	0.05	3000	H/D PNP	10...30	8	**OPU701**
	80	55	0.05	3000	H/D PNP	10...30	9	**OPU702**

Optical angle sensors

Type	Side length (x, y) [mm]	Sensor width (z) [mm]	Smallest detectable object Ø [mm]	Switching frequency [Hz]	Output H = light-on D = dark-on	U_b [V]	Drawing no.	Order no.
Optical angle sensor · Type OPL · M8 connector · metal · DC · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	50	60	0.5	4000	H/D PNP	10...35	10	**OPL200**
	80	100	0.7	4000	H/D PNP	10...35	11	**OPL201**
Optical angle sensor · Type OPL · M8 connector · metal · DC · Wiring diagram no. 2 · Connector groups 1, 3, 78, 84, 145								
	50	60	0.5	4000	H/D NPN	10...35	10	**OPL202**
	80	100	0.7	4000	H/D NPN	10...35	11	**OPL203**

Wiring diagrams

1



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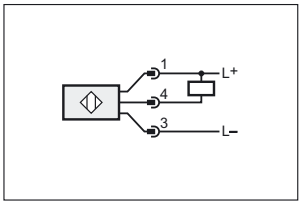
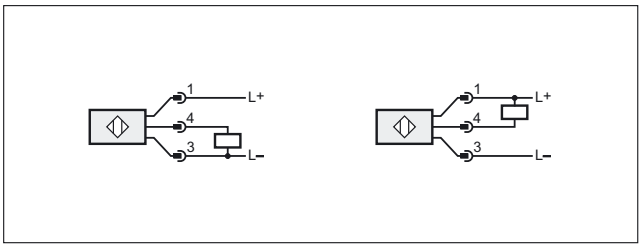


Wiring diagrams

3



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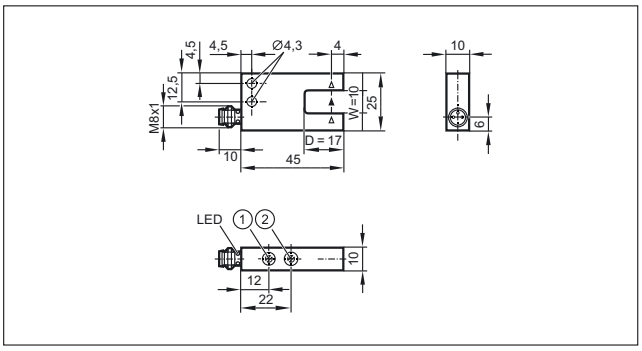
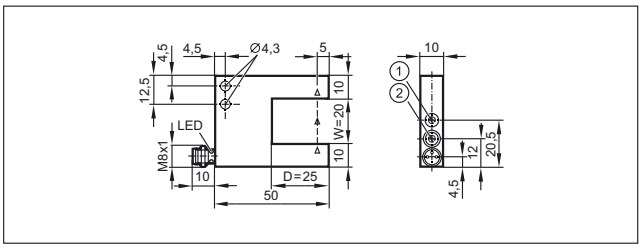


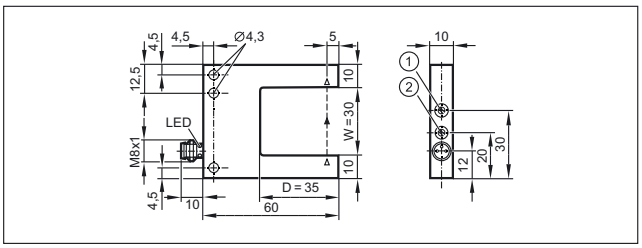
1: output function switch, 2: potentiometer sensitivity

2



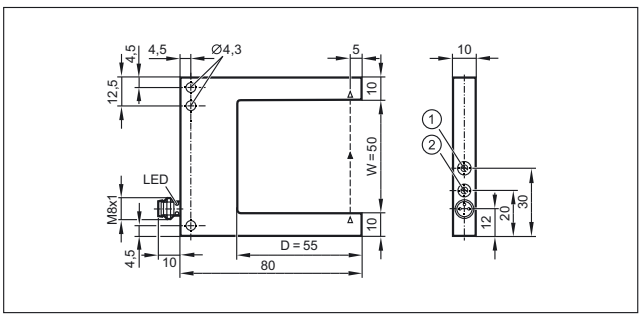
1: potentiometer sensitivity, 2: output function switch

3



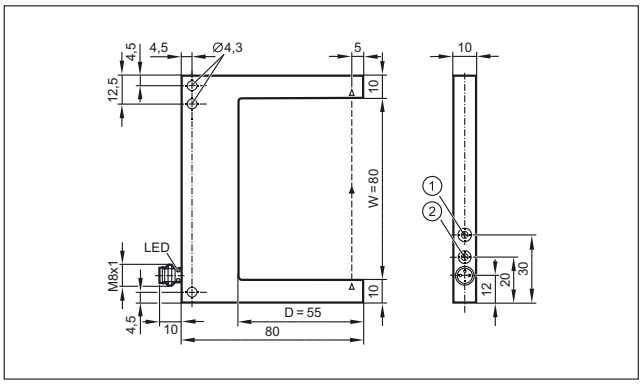
1: potentiometer sensitivity, 2: output function switch

4



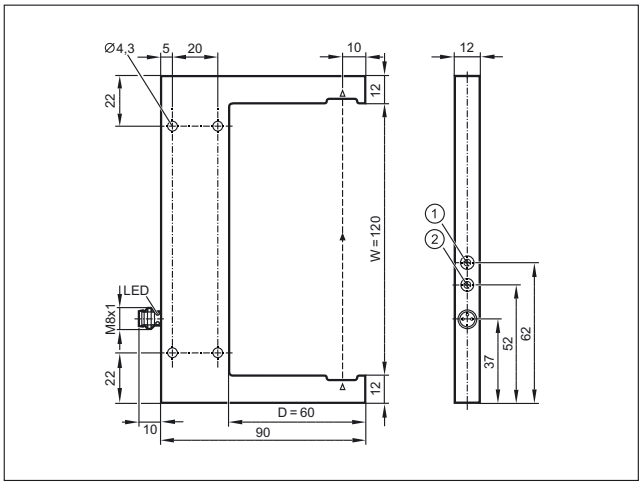
1: potentiometer sensitivity, 2: output function switch

5



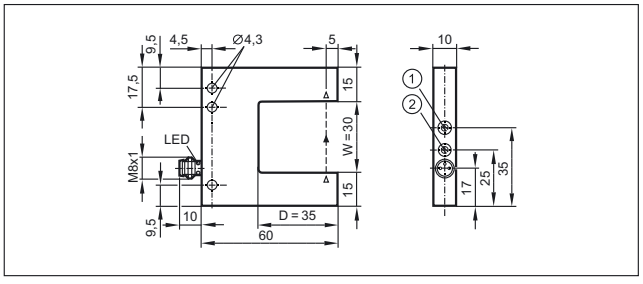
1: potentiometer sensitivity, 2: output function switch

6



1: potentiometer sensitivity, 2: output function switch

7



1: potentiometer sensitivity, 2: output function switch

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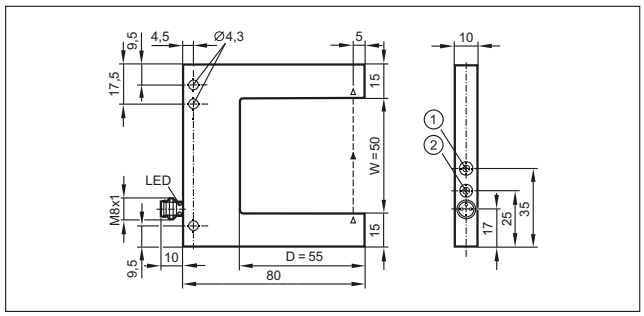
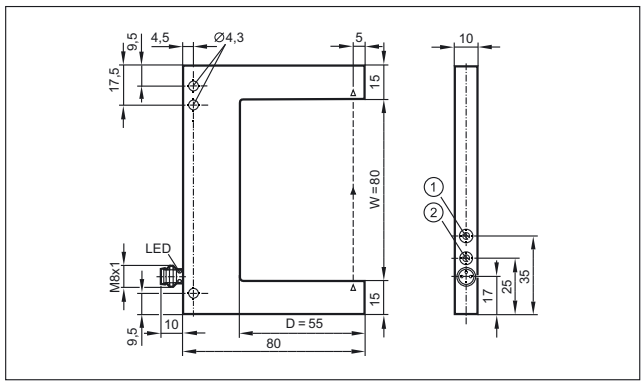
8



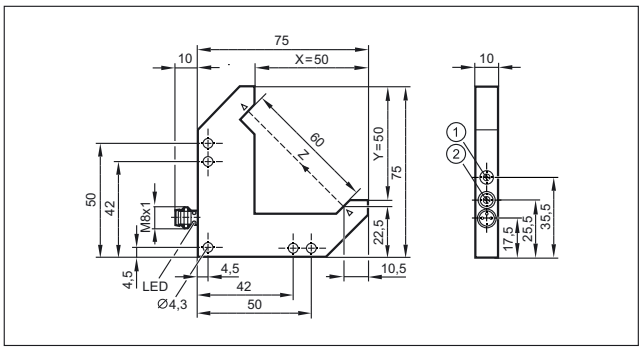
1: potentiometer sensitivity, 2: output function switch

9



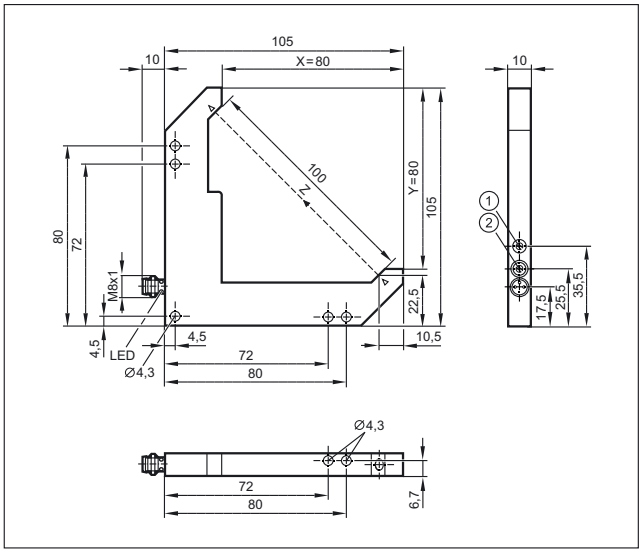
1: potentiometer sensitivity, 2: output function switch

10



1: potentiometer sensitivity, 2: output function switch

11



1: potentiometer sensitivity, 2: output function switch

Laser and distance sensors for precise object detection

Laser sensors / distance measurement sensors

- **Detection of tiny objects**
- **Clearly visible red light for easy adjustment to the object.**
- **Automatic switch point setting by pressing a pushbutton**
- **Application sensors for special application areas**
- **System components for fine adjustment**

Laser sensors

Laser sensors are used where small objects or precise positions are to be detected. They are designed as through-beam sensors, retro-reflective sensors or diffuse reflection sensors.

Laser light consists of light waves of the same wave length with a fixed phase ratio (coherence). This this characteristic constitutes an important feature of laser sensors: their almost perfectly parallel light beam. The result: Long ranges can be achieved thanks to the small angle of divergence. The laser spot which is even in daylight clearly visible makes it easier to align the system.

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Cylindrical OG housing (M18) Laser PerformanceLine, laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	2 m	Red	5	–	1	1	**OGS701**
	Transmitter	60 m	Red	312	–	1	1	**OGS700**
Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	2 m	Red	–	H/D PNP	2	2	**OGE701**
	Receiver	60 m	Red	–	H/D PNP	2	2	**OGE700**
Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.2...2 m	Red	5	H/D PNP	2	2	**OGP701**
	Polarisation filter	0.2...15 m	Red	78	H/D PNP	2	2	**OGP700**
Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	20...200 mm	Red	1.2	H/D PNP	2	2	**OGH700**

Rectangular housing OJ Laser PerformanceLine, lateral sensing face, laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Transmitter	1 m	Red	< 4	–	1	3	**OJ5141**
	Receiver	1 m	Red	–	H/D PNP	3	3	**OJ5142**
	Transmitter	15 m	Red	< 24	–	1	3	**OJ5138**
	Receiver	15 m	Red	–	H/D PNP	3	3	**OJ5139**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	8 m	Red	< 12	H/D PNP	3	3	**OJ5136**
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	7...150 mm	Red	0.8	H/D PNP	3	4	**OJ5158**
	Background suppression	15...200 mm	Red	2 x 1	H/D PNP	3	5	**OJ5154**

Rectangular housing OJ Laser PerformanceLine, front sensing face, laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Transmitter	15 m	Red	< 24	–	1	6	**OJ5116**
	Receiver	15 m	Red	–	H/D PNP	3	6	**OJ5117**
Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	8 m	Red	< 12	H/D PNP	3	7	**OJ5014**
	Polarisation filter	8 m	Red	< 12	H/D PNP	3	6	**OJ5114**
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	15...200 mm	Red	2 x 1	H/D PNP	3	8	**OJ5152**

Rectangular housing O5 laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	60 m	Red	150	–	1	9	**O5S700**

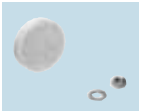
You can find wiring diagrams and scale drawings from page 293

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	60 m	Red	–	H/D PNP	2	10	**O5E700**
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	15 m	Red	40	H/D PNP	2	11	**O5P700**
Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	20...200 mm	Red	1.2	H/D PNP	2	12	**O5H700**

Rectangular housing O1 Laser PerformanceLine with background suppression, laser class 2

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	0.2...10 m	–	< 15 x 15	normally open / closed programmable PNP	2	13	**O1D101**
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.2...10 m	–	< 15 x 15	normally open / closed programmable NPN	4	13	**O1D104**

Prismatic reflector

Type	Description	Order no.
	Prismatic reflector · Ø 10 mm · round · fixing by screw · M3 · for retro-reflective laser sensors · Housing materials: screw: stainless steel 316 / 1.4401 / spring washer: stainless steel 316 / 1.4401 / nut: stainless steel 316 / 1.4401 / front plate: PMMA / base: ABS	**E20990**
	Prismatic reflector · Ø 15 mm · round · fixing by screw · M3 · for retro-reflective laser sensors · Housing materials: screw: stainless steel 316 / 1.4401 / spring washer: stainless steel 316 / 1.4401 / nut: stainless steel 316 / 1.4401 / front plate: PMMA / base: ABS	**E20992**
	Prismatic reflector · Ø 19 mm · round · fixing by screw · M3 · for retro-reflective laser sensors · Housing materials: screw: stainless steel 316 / 1.4401 / spring washer: stainless steel 316 / 1.4401 / nut: stainless steel 316 / 1.4401 / front plate: PMMA / base: ABS	**E20993**
	Prismatic reflector · 11 x 11 mm · rectangular · fixing by screw · M3 · for retro-reflective laser sensors · Housing materials: screw: stainless steel 316 / 1.4401 / spring washer: stainless steel 316 / 1.4401 / nut: stainless steel 316 / 1.4401 / front plate: PMMA / base: ABS	**E20991**

Type	Description	Order no.
	Prismatic reflector · 14 x 23 mm · rectangular · for retro-reflective laser sensors · Housing materials: front plate: PMMA / base: ABS	**E20989**
	Prismatic reflector · 30 x 20 mm · rectangular · for retro-reflective laser sensors · Housing materials: front plate: PMMA / base: ABS	**E20994**
	Prismatic reflector · 50 x 10 mm · rectangular · for retro-reflective laser sensors · Housing materials: front plate: PMMA / base: ABS	**E20988**
	Prismatic reflector · 48 x 48 mm · rectangular · for retro-reflective laser sensors and glass and film detection · Housing materials: plastics	**E20722**

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0011**
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0012**

Accessories OG housing

Type	Description	Order no.
	Mounting and fine adjustment bracket for laser units · Ø 18.5 mm · Clamp mounting · rod or free-standing depending on the clamp · for type OG · Housing materials: stainless steel 316Ti / 1.4571	**E20737**
	Mounting and fine adjustment bracket for laser units · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	**E21220**
	Mounting and fine adjustment bracket for laser units · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21219**
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20720**
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20721**

You can find wiring diagrams and scale drawings from page 293

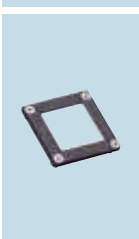
Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	**E21206**
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	**E21207**

Accessories O5 housing

Type	Description	Order no.
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21087**
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21085**
	Angle bracket · O5, O4 · for mounting O5, O4 sensors instead of OL sensors · Dovetail clamp · Housing materials: Dovetail clamp: AlMgSi0.5 / fixture: AlMg3	**E21122**
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	**E21088**
	Mounting brackets Mounting on the back of the unit · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21086**
	Mounting sleeve · O5 · for mounting O5 sensors instead of OC sensors · Housing materials: AlZnMgCu1.5 F51/52	**E21114**
	Mounting and fine adjustment bracket for laser units · Clamp mounting · rod or free-standing depending on the clamp · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E20794**
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	**E21223**
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21210**
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21211**
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	**E21212**

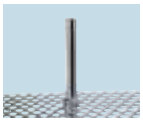
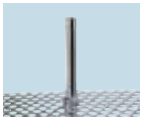
Type	Description	Order no.
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 14 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E21142**
	Mounting set · Clamp mounting · With protective cover · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21084**
	Mounting set · Clamp mounting · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21083**
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	**E30398**

Accessories O1 housing

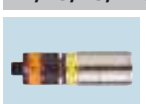
Type	Description	Order no.
	Prismatic reflector · 226 x 262 mm · rectangular · Housing materials: plastics	**E21159**
	Mounting adapter · O1D · for optical distance sensors · for type O1D · Housing materials: flange: stainless steel 316L / 1.4404 / sealing: FKM / Protective cover: PMMA transparent / screws: high-grade stainless steel / washers: high-grade stainless steel	**E21224**
	Mounting and fine adjustment bracket for laser units · O1D · Clamp mounting · rod or free-standing depending on the clamp · Housing materials: fixture: aluminium transparent anodised / plastics: POM / screws: stainless steel	**E1D100**
	Mounting set · E2D101 + E20938 + E20951	**E21079**
	Angle bracket · O1D, O4 · for type O1D, O4 · Housing materials: stainless steel 316L / 1.4404	**E21120**
	Protective bracket · O1D · for type O1D · Housing materials: Angle bracket: stainless steel 316 / 1.4401 / screws: stainless steel / housing: polyamide	**E21236**
	Protective cover · O1D · Housing materials: bezel: ZnAl4Cu1 finish black / window: PMMA transparent and colourless / sealing: FPM 75+/-5 Shore A black / screws: stainless steel	**E21133**
	Protective cover · O1D · Housing materials: bezel: ZnAl4Cu1 finish black / window: glass transparent and colourless / sealing: FPM 75+/-5 Shore A black / screws: stainless steel	**E21171**

You can find wiring diagrams and scale drawings from page 293

Accessories for system components

Type	Description	Order no.
	mounting rod · Ø 10 / M8 · Length: 150 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21081**
	mounting rod · Ø 10 / M8 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E80310**
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20938**
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E20940**
	Head cap screw · M8 x 40 mm · ISO 4762 (DIN 912) · free-standing M8 · Housing materials: screw: steel galvanised	**E21204**
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: steel galvanised	**E21208**
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: high-grade stainless steel	**E21209**
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	**E20951**

Cylindrical OI housing (M30) for optical distance measurement, laser class 2

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm, inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	14	**OID200**
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	14	**OID201**
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm, inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary NPN	6	14	**OID202**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 / IP68 / IP69K · Display unit: cm · Connector groups 12, 13, 22, 24, 150, 152, 154, 155, 186, 190, 192, 194, 205								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	7	15	**OID204**

Cylindrical OI housing (M30) for optical distance measurement, laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm, inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	14	**OID250**
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	14	**OID251**
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 / IP68 / IP69K · Display unit: cm · Connector groups 12, 13, 22, 24, 150, 152, 154, 155, 186, 190, 192, 194, 205								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	7	15	**OID254**

Rectangular housing O5 for optical distance measurement, laser class 2

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	16	**O5D100**
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	16	**O5D101**
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary NPN	6	16	**O5D102**
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	16	**O5D150**

You can find wiring diagrams and scale drawings from page 293

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	16	**O5D151**

Rectangular housing O1 for optical distance measurement, laser class 1

Type	Operating principle	Range	Sampling rate [Hz]	Spot Ø at max. range [mm]	U_b [V]	Wiring diagr. no.	Draw-ing no.	Order no.
Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Photoelectric distance sensor	0.3...6 m	1...33	< 8 x 8	18...30	8	13	**O1D155**

Rectangular housing O1 for optical distance measurement, laser class 2

Type	Operating principle	Range	Sampling rate [Hz]	Spot Ø at max. range [mm]	U_b [V]	Wiring diagr. no.	Draw-ing no.	Order no.
Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Photoelectric distance sensor	1...75 m on reflector E21159	1...33	< 150 x 150	18...30	8	13	**O1D106**
	Photoelectric distance sensor	0.2...10 m	1...33	< 15 x 15	18...30	8	13	**O1D105**
Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 9 · Connector groups 12, 13, 22, 24, 150, 152, 154, 155, 186, 190, 192, 194, 205								
	Background suppression	0.2...10 m	1...50	< 15 x 15	18...30	9	13	**O1D100**
Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 10 · Connector groups 12, 13, 22, 24, 152, 155, 186, 192, 194, 205								
	Photoelectric distance sensor	0.2...10 m	1...50	< 15 x 15	18...30	10	13	**O1D103**

Rectangular housing O1 Laser PerformanceLine with background suppression, laser class 2

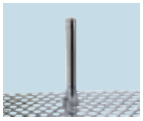
Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	0.2...10 m	–	< 15 x 15	normally open / closed programmable PNP	2	13	**O1D101**

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.2...10 m	–	< 15 x 15	normally open / closed programmable NPN	4	13	**O1D104**
Photoelectric distance sensor · M12 connector · 18...30 DC · metal · IP67 · Connector groups 12, 13, 22, 24, 150, 152, 154, 155, 186, 190, 192, 194, 205								
	Background suppression	0.2...10 m	–	< 15 x 15	OUT1: normally open/closed progr. OUT2: normally open/closed progr. or analogue (4...20 mA / 0...10 V, scalable) PNP	9	13	**O1D120**

Rectangular housing O1 for optical level measurement, laser class 2

Type	Operating principle	Range	Sampling rate [Hz]	Spot Ø at max. range [mm]	U_b [V]	Wiring diagr. no.	Draw-ing no.	Order no.
Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Optical level sensor	0.2...10 m	1...33	< 15 x 15	18...30	8	13	**O1D300**

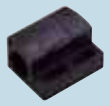
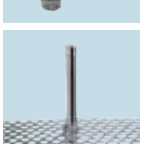
Accessories OI design (M30)

Type	Description	Order no.
	Mounting set · Clamp mounting · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21083**
	Mounting set · Clamp mounting · With protective cover · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21084**
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20938**
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	**E20951**
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21085**
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21087**
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	**E21088**

You can find wiring diagrams and scale drawings from page 293

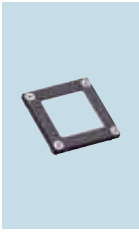
Type	Description	Order no.
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	**E30398**

Accessories O5 housing

Type	Description	Order no.
	Angle bracket · for type M30 · Housing materials: stainless steel	**E10737**
	Mounting clamp · Ø 30 mm · with end stop · for type M30 · Housing materials: PC	**E11049**
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	**E10077**
	Mounting set · Ø 30.2 mm · Clamp mounting · aluminium profile · for type II, KI, OID, OI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20875**
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E20873**
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20874**
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20938**
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	**E20951**
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	**E30398**

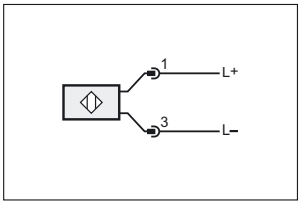
Accessories O1 housing

Type	Description	Order no.
	Prismatic reflector · 226 x 262 mm · rectangular · Housing materials: plastics	**E21159**
	Mounting and fine adjustment bracket for laser units · O1D · Clamp mounting · rod or free-standing depending on the clamp · Housing materials: fixture: aluminium transparent anodised / plastics: POM / screws: stainless steel	**E1D100**

Type	Description	Order no.
	Mounting set · E2D101 + E20938 + E20951	**E21079**
	Protective cover · O1D · Housing materials: bezel: ZnAl4Cu1 finish black / window: PMMA transparent and colourless / sealing: FPM 75+/-5 Shore A black / screws: stainless steel	**E21133**
	Protective cover · O1D · Housing materials: bezel: ZnAl4Cu1 finish black / window: glass transparent and colourless / sealing: FPM 75+/-5 Shore A black / screws: stainless steel	**E21171**
	Cooling box · Protective housing with an active cooling system for the O1D design · for type O1D · Housing materials: housing: aluminium transparent anodised / cover: aluminium black anodised / bezel: aluminium black anodised / window: float glass / cable gland: Brass nickel-plated / nozzle: Brass nickel-plated / sealing: FPM	**E21248**
	Cable · 10 m	**E12274**

Wiring diagrams

1



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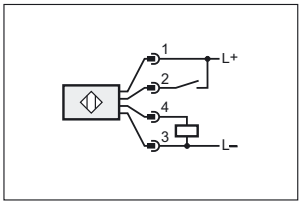

2: Teach

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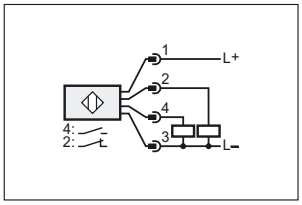

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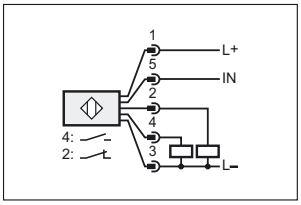

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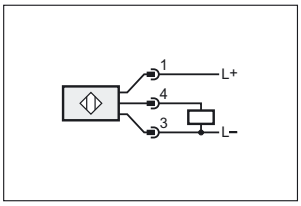

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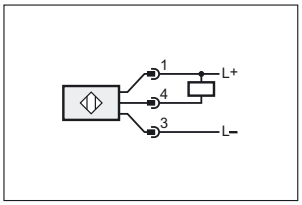

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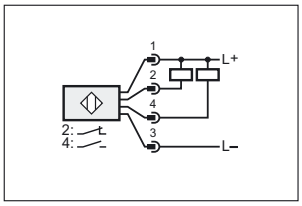

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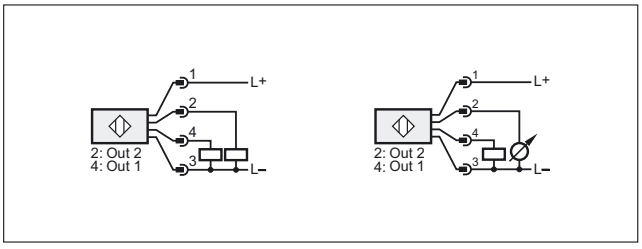

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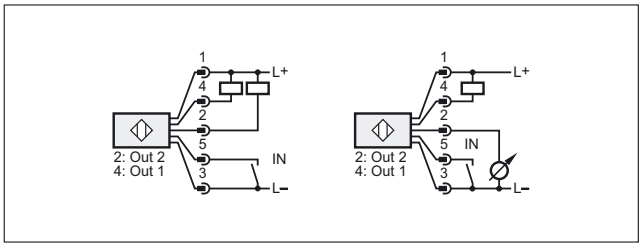

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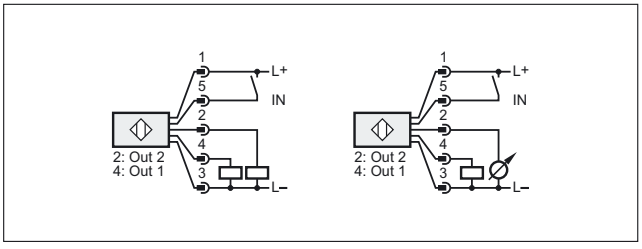

Scale drawings / drawing no. – CAD download: www.ifm.com

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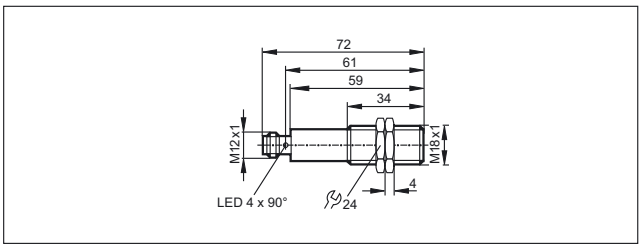

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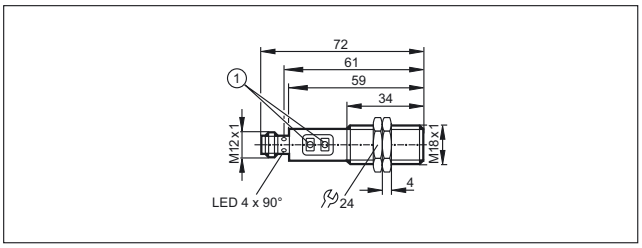
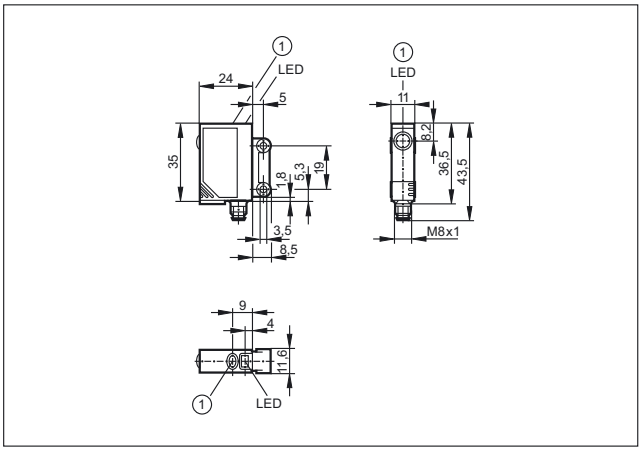


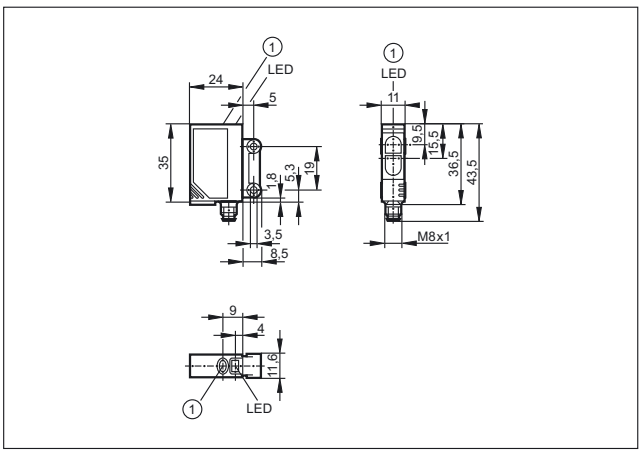
1: Programming buttons

3



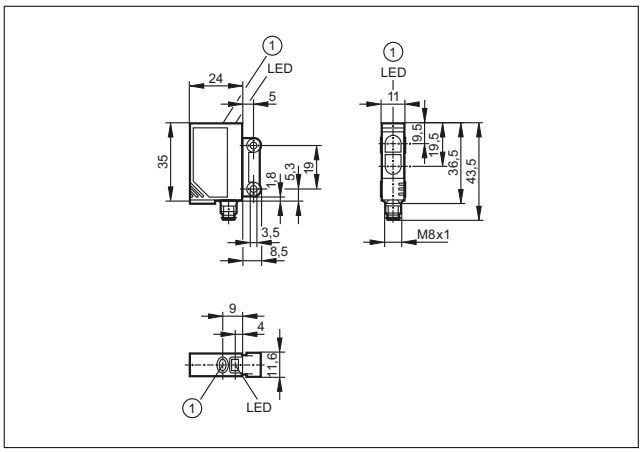
1: pushbutton

4



1: pushbutton

5



1: pushbutton

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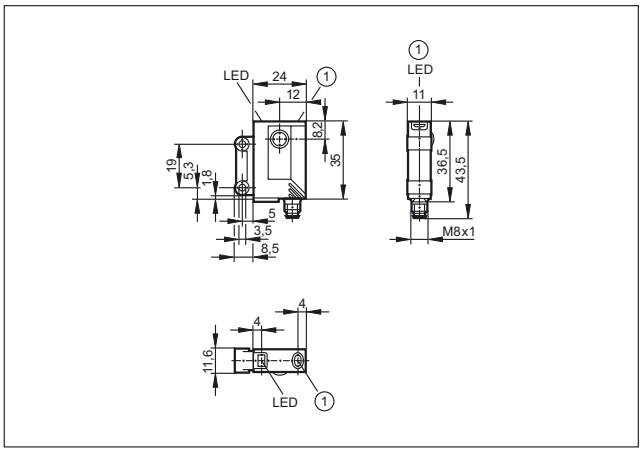

1: pushbutton

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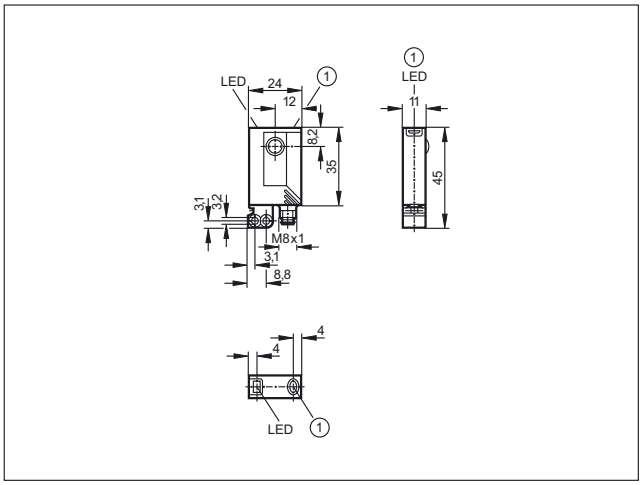
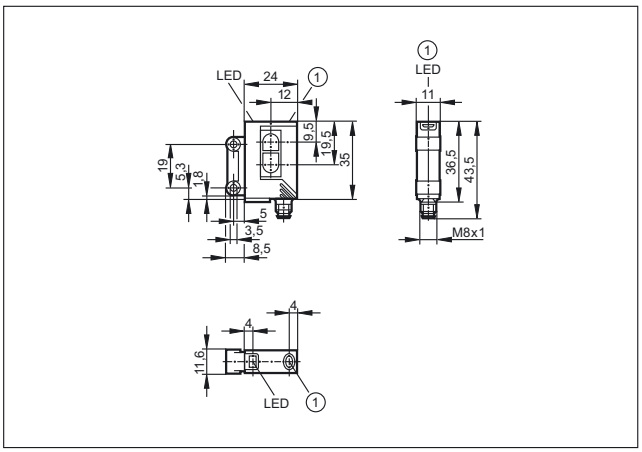


1: pushbutton

Scale drawings / drawing no. – CAD download: www.ifm.com

8



1: pushbutton

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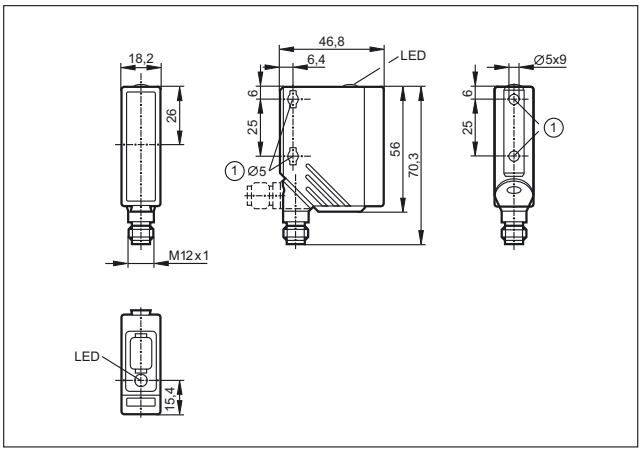

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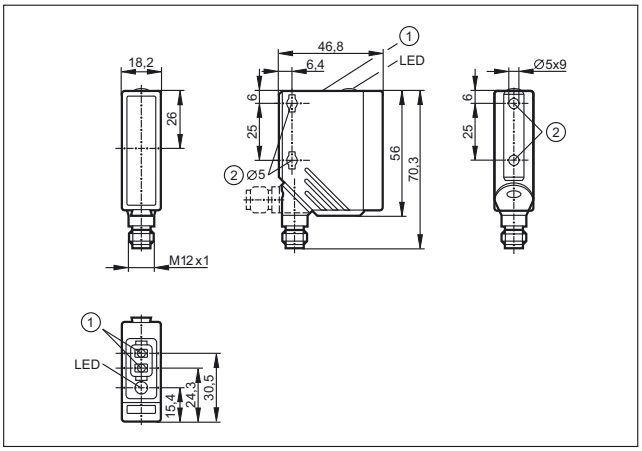

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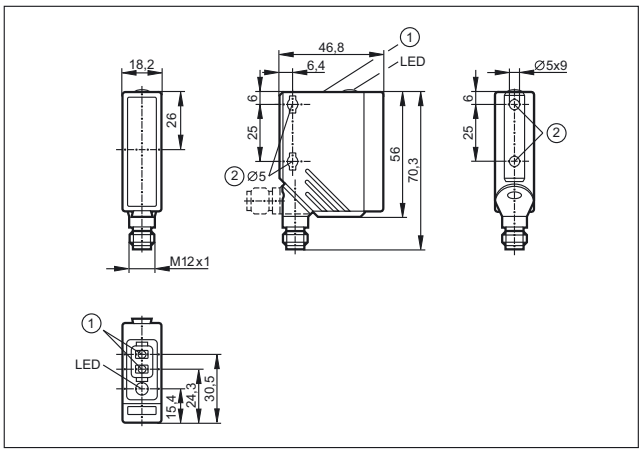
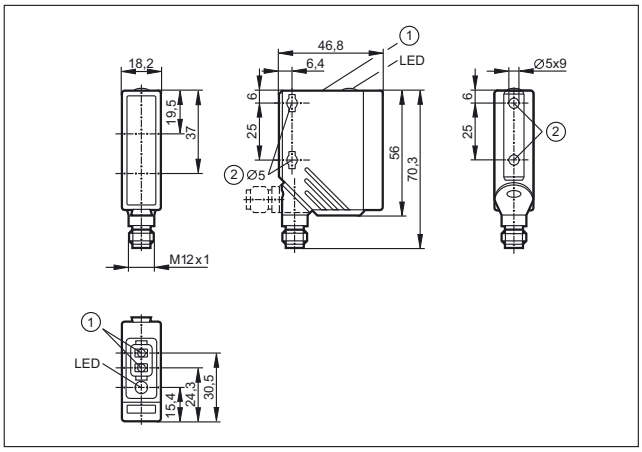


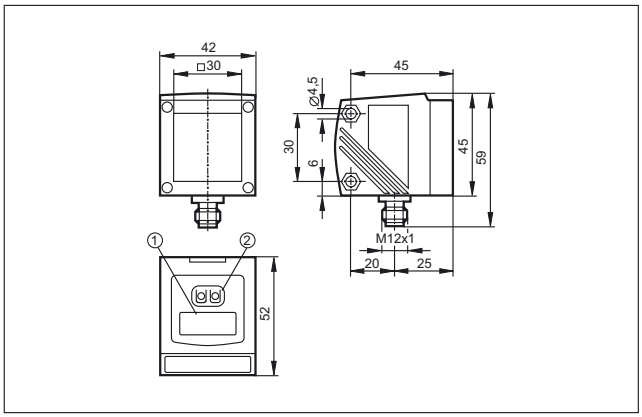
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

12



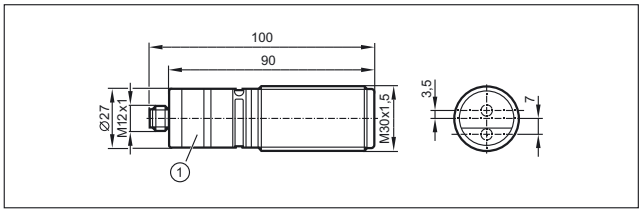
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

13



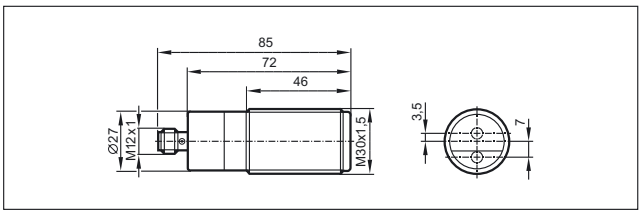
1: 4-digit alphanumeric display, 2: Programming buttons

14



Scale drawings / drawing no. – CAD download: www.ifm.com

15



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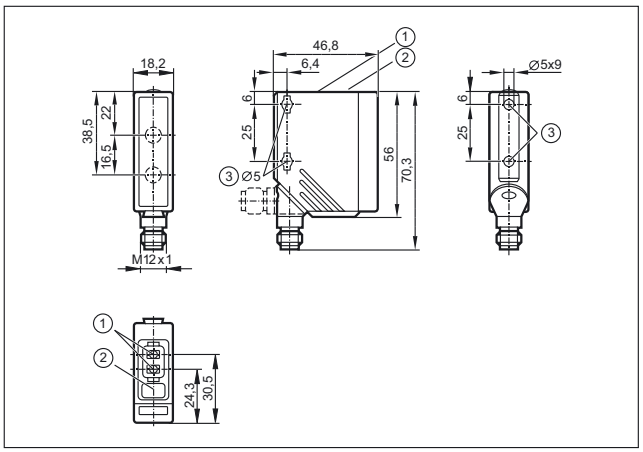

Fibre optics and amplifiers for the smallest of spaces

Fibre optic sensors

- **Easy connection of different fibre optics**
- **Manual or automatic setting via pushbutton**
- **LED display to check operation, switching status and function**
- **Various fibre materials for different applications**
- **Easy mounting on DIN rail possible**

Fibre optics systems

If there is only little mounting space for standard photoelectric sensors, fibre optics can be used. They are connected via fibre optic amplifiers which contain the control monitor and photoelectric components. Both the through-beam and the sensing principle are applied.

Fibre-optics materials

Fibre optics made of silicate glass are particularly resistant to heat and ageing, their optical response does not change when they are bent. They cannot be cut to length by the user.

Acrylic fibre optics are suited for standard applications, they can be cut to length and are less expensive than glass fibre optics.

High-flex fibre optics allow extremely small bending radii.

System overview	*Page*
OOF amplifiers for acrylic fibre optics	*300*
OBF amplifiers for acrylic fibre optics	*300*
Acrylic fibre optics for OBF / OOF housings, through-beam system	*301*
Acrylic fibre optics for OBF / OOF housings, through-beam system, highly flexible	*301*
Acrylic fibre optics for OBF / OOF housings, diffuse reflection system	*302*
Acrylic fibre optics for OBF / OOF housings, diffuse reflection system, highly flexible	*303*
Acrylic fibre optics for OBF / OOF housings, through-beam system, can be cut to length	*303*
Acrylic fibre optics for OBF / OOF housings, diffuse reflection system, can be cut to length	*303*
Acrylic fibres on a reel for OBF housing	*303*
OOF amplifiers for glass fibre optics	*304*
OKF amplifiers for glass fibre optics	*304*
OUF amplifiers for glass fibre optics	*304 - 305*
Glass fibre optics for OOF / OKF and OUF housings, through-beam system	*305 - 306*
Glass fibre optics for OOF / OKF and OUF housings, diffuse reflection system	*306 - 307*
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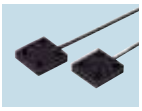
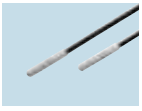
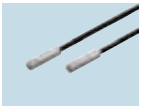
OOF amplifiers for acrylic fibre optics

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U_b [V]	Draw-ing no.	Order no.
Type OOF · M12 connector · plastics · DC · Wiring diagram no. 1 · Connector groups 14, 16, 17									
	2	FE/FT-11	Red	3.8 m	0...300 mm	H/D PNP	12...36	1	**OO5000**
Type OOF · M12 connector · plastics · DC · Wiring diagram no. 6 · Connector groups 16, 17									
	4	FE/FT-11	Red	3.8 m	0...300 mm	H/D PNP	12...36	2	**OO5001**
Type OOF · M16 connector · plastics · DC · Wiring diagram no. 7 · Connector group 27									
	6	FE/FT-11	Red	3.8 m	0...300 mm	H/D PNP	12...36	3	**OO5002**
Type OOF · M16 connector · plastics · DC · Wiring diagram no. 8 · Connector group 27									
	8	FE/FT-11	Red	3.8 m	0...300 mm	H/D PNP	12...36	4	**OO5003**

OBF amplifiers for acrylic fibre optics

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U_b [V]	Draw-ing no.	Order no.
Type OBF · M12 connector · plastics · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	1	FE/FT-11	Red	0...2 m	0...100 mm	H/D PNP/NPN	10...30	5	**OBF500**
Type OBF · M8 connector · plastics · DC · Wiring diagram no. 9 · Connector groups 4, 5, 80, 86, 147									
	1	FE/FT-11	Red	0...2 m	0...100 mm	H/D PNP/NPN	10...30	6	**OBF501**
Type OBF · Cable 2 m · plastics · DC · Wiring diagram no. 10									
	1	FE/FT-11	Red	0...2 m	0...100 mm	H/D PNP/NPN	10...30	7	**OBF502**
Type OBF · M8 connector · plastics · DC · Wiring diagram no. 11 · Connector groups 1, 3, 145									
	1	FE/FT-11	Red	0...2 m	0...100 mm	H/D PNP/NPN	10...30	6	**OBF503**

Acrylic fibre optics for OBF / OOF housings, through-beam system

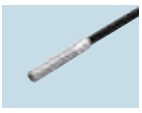
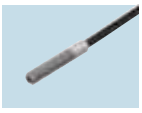
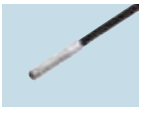
Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FE-11	PMMA	60 / 130 / 160	aluminium	-40...70	PE (polyethylene)	8	**E20609**
	FE-11	PMMA	60 / 130 / 160	aluminium	-40...70	PE (polyethylene)	9	**E20612**
	FE-11	PMMA	150 / 210 / 800	aluminium	-40...70	PE (polyethylene)	9	**E20615**
	FE-11	PMMA	150 / 300 / 700	aluminium	-40...70	PE (polyethylene)	10	**E20757**
	FE-11	PMMA	200 / 350 / 800	aluminium	-40...70	PE (polyethylene)	11	**E20603**
	FE-11	PMMA	200 / 450 / 800	aluminium	-40...70	PE (polyethylene)	9	**E20606**
	FE-11	PMMA	400 / 900 / 1600	aluminium	-40...70	PE (polyethylene)	12	**E20753**
	FE-11	PMMA	1200 / 2000 / 3800	aluminium	-40...70	PE (polyethylene)	13	**E20752**
	FE-11	PMMA	140 / 230 / 400	stainless steel	-40...70	PE (polyethylene)	14	**E20714**
	FE-11	PMMA	200 / 450 / 800	stainless steel 316L / 1.4404	-40...70	PE (polyethylene)	15	**E20750**

Acrylic fibre optics for OBF / OOF housings, through-beam system, highly flexible

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FE-11	PMMA	50 / 56 / 120	aluminium	-40...60	PE (polyethylene)	8	**E21103**
	FE-11	PMMA	50 / 56 / 120	aluminium	-40...60	PE (polyethylene)	9	**E21104**
	FE-11	PMMA	250 / 350 / 750	aluminium	-40...60	PE (polyethylene)	9	**E21102**

You can find wiring diagrams and scale drawings from page 308

Acrylic fibre optics for OBF / OOF housings, diffuse reflection system

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FT-11	PMMA	6 / 10 /	aluminium	-40...70	PE (polyethylene)	16	**E20756**
	FT-11	PMMA	20 / 25 / 60	aluminium	-40...70	PE (polyethylene)	17	**E20639**
	FT-11	PMMA	20 / 25 / 60	aluminium	-40...70	PE (polyethylene)	11	**E20712**
	FT-11	PMMA	60 / 70 / 300	aluminium	-40...70	PE (polyethylene)	18	**E20645**
	FT-11	PMMA	60 / 90 / 300	aluminium	-40...70	PE (polyethylene)	18	**E20651**
	FT-11	PMMA	60 / 70 / 300	aluminium	-40...70	PE (polyethylene)	19	**E20648**
	FT-11	PMMA	60 / 90 / 300	aluminium	-40...70	PE (polyethylene)	19	**E20654**
	FT-11	PMMA	70 / 100 / 300	aluminium	-40...70	PE (polyethylene)	19	**E20633**
	FT-11	PMMA	15 / 25 / 60	stainless steel	-40...70	PE (polyethylene)	20	**E20748**
	FT-11	PMMA	20 / 25 / 60	stainless steel	-40...70	PE (polyethylene)	21	**E20711**
	FT-11	PMMA	40 / 60 / 150	stainless steel	-40...70	PE (polyethylene)	22	**E20715**
	FT-11	PMMA	70 / 100 / 300	stainless steel	-40...70	PE (polyethylene)	23	**E20749**
	FE-11	PMMA	–	–	-30...70	PE (polyethylene)	24	**E20772**

Acrylic fibre optics for OBF / OOF housings, diffuse reflection system, highly flexible

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FT-11	PMMA	10 / 10 / 30	aluminium	-40...60	PE (polyethylene)	25	**E21106**
	FT-11	PMMA	10 / 10 / 30	aluminium	-40...60	PE (polyethylene)	26	**E21107**
	FT-11	PMMA	70 / 104 / 180	aluminium	-40...60	PE (polyethylene)	27	**E21105**

Acrylic fibre optics for OBF / OOF housings, through-beam system, can be cut to length

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FE-11	PMMA	175 / 370 / 700	aluminium	-40...70	–	28	**E20767**

Acrylic fibre optics for OBF / OOF housings, diffuse reflection system, can be cut to length

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FT-11	PMMA	55 / 110 / 235	aluminium	-40...70	–	29	**E20765**

Acrylic fibres on a reel for OBF housing

Type	Description	Order no.
	acrylic fibres on a reel · 20 m · for type OBF, OOF · Housing materials: PE (polyethylene), Fibre optic: PMMA, can be cut to length	**E20773**
	acrylic fibres on a reel · 50 m · for type OBF, OOF · Housing materials: PE (polyethylene), Fibre optic: PMMA, can be cut to length	**E20774**

You can find wiring diagrams and scale drawings from page 308

OOF amplifiers for glass fibre optics

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U_b [V]	Drawing no.	Order no.
Type OOF · M12 connector · plastics · DC · Wiring diagram no. 1 · Connector groups 14, 16, 17									
	2	FE/FT-00	Red	0.4 m	0...200 mm	H/D PNP	12...36	30	**OO5004**
Type OOF · M12 connector · plastics · DC · Wiring diagram no. 6 · Connector groups 16, 17									
	4	FE/FT-00	Red	0.4 m	0...200 mm	H/D PNP	12...36	31	**OO5005**
Type OOF · M16 connector · plastics · DC · Wiring diagram no. 7 · Connector group 27									
	6	FE/FT-00	Red	0.4 m	0...200 mm	H/D PNP	12...36	32	**OO5006**
Type OOF · M16 connector · plastics · DC · Wiring diagram no. 8 · Connector group 27									
	8	FE/FT-00	Red	0.4 m	0...200 mm	H/D PNP	12...36	33	**OO5007**

OKF amplifiers for glass fibre optics

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U_b [V]	Drawing no.	Order no.
Type OKF · Cable 2 m · plastics · DC · Wiring diagram no. 12									
	1	FE/FT-00	Red	0...0.12 m	0...40 mm	H/D PNP	10...36	34	**OK5001**
Type OKF · M12 connector · plastics · DC · Wiring diagram no. 13 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	1	FE/FT-00	Red	0...0.12 m	0...40 mm	H/D PNP	10...36	35	**OK5008**

OUF amplifiers for glass fibre optics

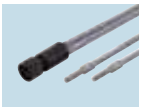
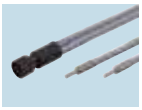
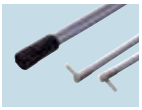
Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U_b [V]	Drawing no.	Order no.
Type OUF · Cable 2 m · plastics · DC · Wiring diagram no. 2									
	1	FE/FT-00	Infrared	0.12 m	40 mm	H PNP	10...36	36	**OU5001**

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U_b [V]	Draw-ing no.	Order no.
Type OUF · Cable 2 m · plastics · DC · Wiring diagram no. 3									
	1	FE/FT-00	Infrared	0.12 m	40 mm	D PNP	10...36	36	**OU5002**
Type OUF · M12 connector · plastics · DC · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	1	FE/FT-00	Infrared	0...0.12 m	0...40 mm	H PNP	10...36	37	**OU5043**
Type OUF · M12 connector · plastics · DC · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	1	FE/FT-00	Infrared	0...0.12 m	0...40 mm	D PNP	10...36	37	**OU5044**

Glass fibre optics for OOF / OKF and OUF housings, through-beam system

Type	System	Fibre optic material	Range OOF / OKF / OUF [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FE-00	glass	400 / 120 / 120	aluminium	-20...80	PVC	38	**E20059**
	FE-00	glass	400 / 120 / 120	aluminium	-20...80	PVC	39	**E20060**
	FE-00	glass	400 / 120 / 120	aluminium	-20...80	PVC	40	**E20062**
	FE-00	glass	400 / 120 / 120	aluminium	-20...80	PVC	41	**E20228**
	FE-00	glass	160 / 50 / 50	stainless steel	-20...80	PVC	42	**E20061**
	FE-00	glass	400 / 120 / 120	aluminium	-40...290	aluminium	43	**E20128**
	FE-00	glass	400 / 120 / 120	aluminium	-40...290	aluminium	44	**E20130**
	FE-00	glass	400 / 120 / 120	aluminium	-40...290	aluminium	45	**E20129**
	FE-00	glass	160 / 50 / 50	stainless steel	-40...290	aluminium	46	**E20127**

You can find wiring diagrams and scale drawings from page 308

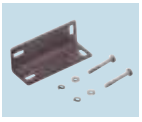
Type	System	Fibre optic material	Range OOF / OKF / OUF [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FE-00	glass	160 / 50 / 50	stainless steel	-20...150	metal silicone	47	**E20506**
	FE-00	glass	400 / 120 / 120	stainless steel	-20...150	metal silicone	48	**E20505**
	FE-00	glass	400 / 120 / 120	stainless steel	-20...150	metal silicone	49	**E20492**
	FE-00	glass	400 / 120 / 120	stainless steel	-20...150	metal silicone	50	**E20493**

Glass fibre optics for OOF / OKF and OUF housings, diffuse reflection system

Type	System	Fibre optic material	Range OOF / OKF / OUF [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FT-00	glass	200 / 40 / 40	aluminium	-20...80	PVC	51	**E20051**
	FT-00	glass	200 / 40 / 40	aluminium	-20...80	PVC	52	**E20052**
	FT-00	glass	200 / 40 / 40	aluminium	-20...80	PVC	53	**E20054**
	FT-00	glass	200 / 40 / 40	Brass	-20...80	PVC	54	**E20249**
	FT-00	glass	24 / 6 / 6	stainless steel	-20...80	PVC	55	**E20230**
	FT-00	glass	24 / 8 / 8	stainless steel	-20...80	PVC	42	**E20053**
	FT-00	glass	200 / 40 / 40	aluminium	-40...290	aluminium	56	**E20055**
	FT-00	glass	200 / 40 / 40	aluminium	-40...290	aluminium	57	**E20056**
	FT-00	glass	200 / 40 / 40	aluminium	-40...290	aluminium	58	**E20058**
	FT-00	glass	24 / 8 / 8	stainless steel	-40...290	aluminium	46	**E20057**

Type	System	Fibre optic material	Range OOF / OKF / OUF [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw-ing no.	Order no.
	FT-00	glass	24 / 8 / 8	stainless steel	-20...150	metal silicone	47	**E20507**
	FT-00	glass	200 / 40 / 40	stainless steel	-20...150	metal silicone	59	**E20489**
	FT-00	glass	200 / 40 / 40	stainless steel	-20...150	metal silicone	60	**E20494**
	FT-00	glass	200 / 40 / 40	stainless steel	-20...150	metal silicone	53	**E20495**
	FT-00	glass	- / 40 / 40	Brass	-20...80	–	61	**E20078**

Accessories

Type	Description	Order no.
	Lens attachment · Ø 5 mm / M3 · for through-beam fibre optics · Housing materials: aluminium black anodised / glass	**E20679**
	Lens attachment · Ø 6 mm / M4 · for through-beam fibre optics · Housing materials: aluminium black anodised / glass	**E20680**
	Lens attachment · D5x10-M3-ALU · for through-beam fibre optics · M3 · Housing materials: aluminium black anodised	**E20754**
	Lens attachment · D5x10-M4-ALU · for through-beam fibre optics · M4 · Housing materials: aluminium black anodised	**E20755**
	Diaphragm attachment · D5x10-M3-ALU/D0.4 · for through-beam fibre optics · M3 · Housing materials: aluminium black anodised	**E20762**
	Angle bracket · for type OBF · Housing materials: steel galvanised	**E20593**
	Angle bracket · OU · with mounting material · Housing materials: galvanised steel	**E20211**
	Mounting clamp · Ø 3 mm · for fibre optics · Housing materials: aluminium black anodised	**E20107**
	Mounting clamp · Ø 3.5 mm · for fibre optics · Housing materials: aluminium black anodised	**E20106**

You can find wiring diagrams and scale drawings from page 308

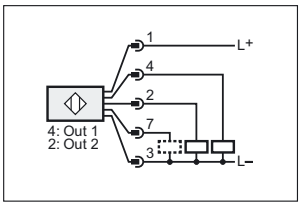
Type	Description	Order no.
	Mounting clamp · Ø 4.5 mm · for fibre optics · Housing materials: aluminium black anodised	**E20105**
	Mounting clamp · Ø 5 mm · for fibre optics · Housing materials: aluminium black anodised	**E20104**
	Mounting clamp · Ø 6 mm · for fibre optics · Housing materials: aluminium black anodised	**E20103**
	Mounting clamp · Ø 7 mm · for fibre optics · Housing materials: aluminium black anodised	**E20102**
	Mounting clamp · Ø 8 mm · Housing materials: aluminium black anodised	**E10221**
	Mounting clamp · Ø 10 mm · for fibre optics · Housing materials: PBT	**E20353**
	cutter for fibre optics · for type FE/FT-11 · Housing materials: plastics	**E20600**

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
VT	purple
WH	white

1



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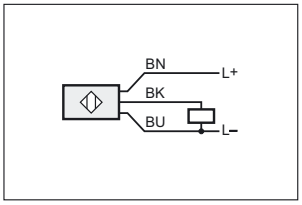

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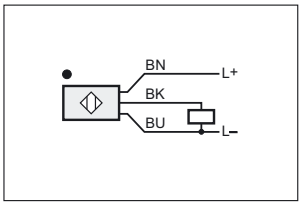

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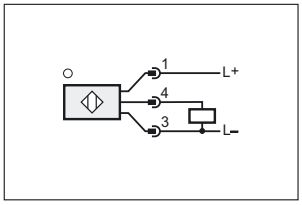

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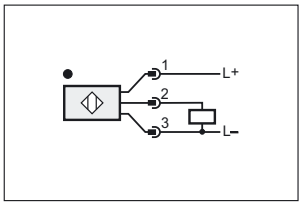

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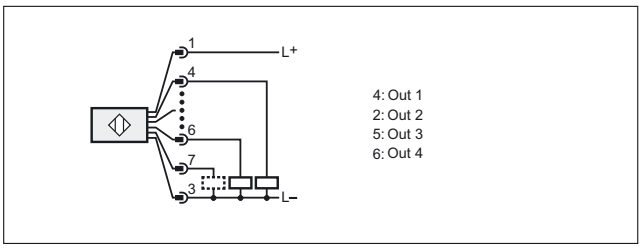

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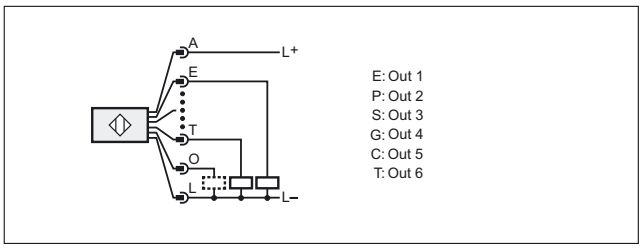
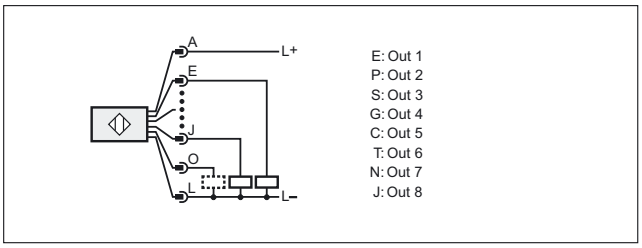


O: function check

Wiring diagrams

8



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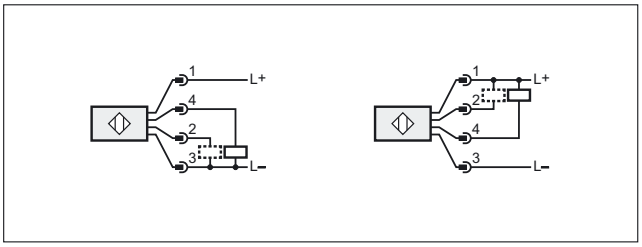

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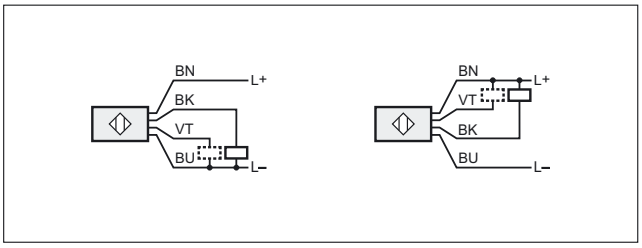

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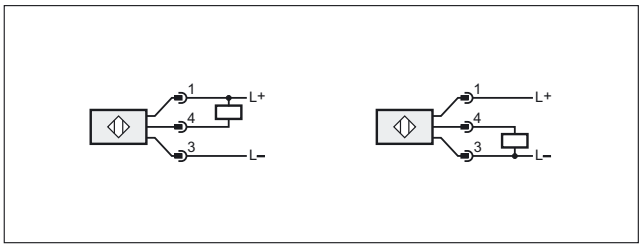

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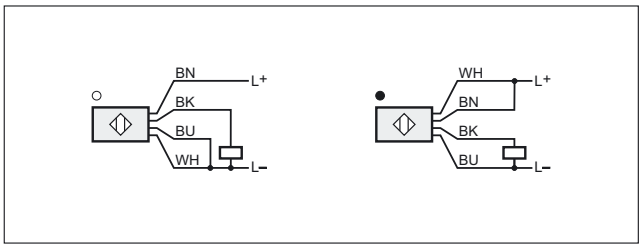

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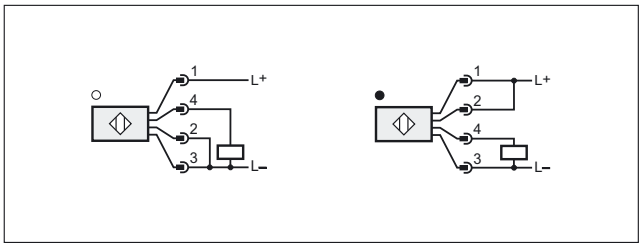

Scale drawings / drawing no. – CAD download: www.ifm.com

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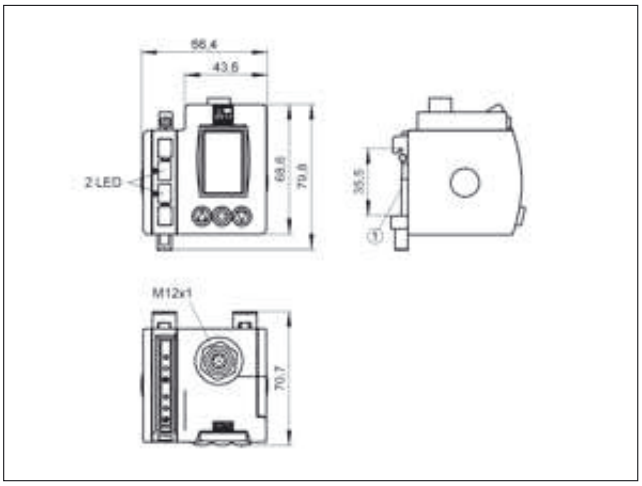
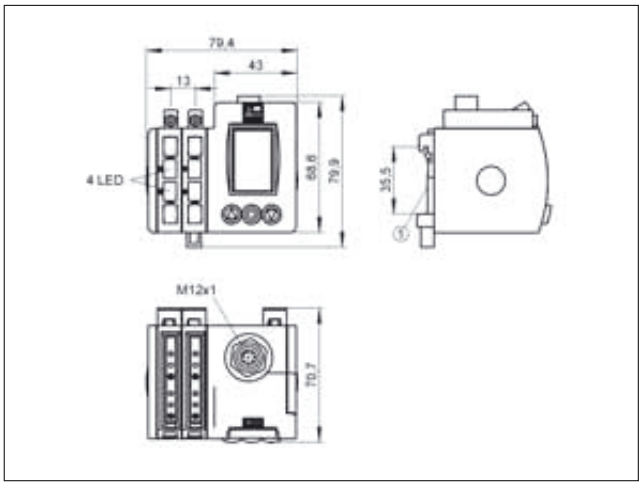


1: Mounting on DIN rail

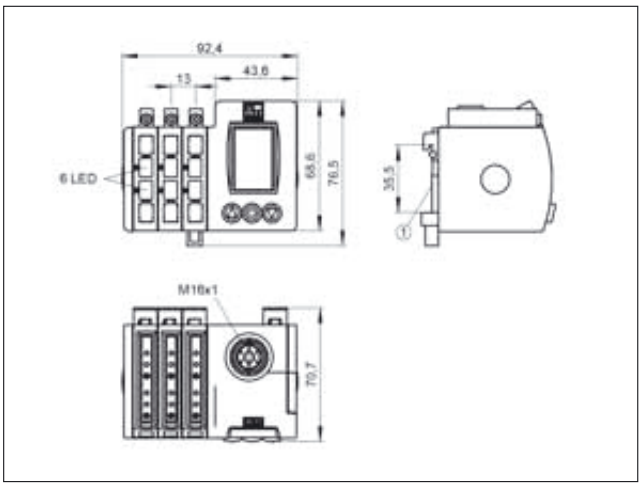
2



1: Mounting on DIN rail

Scale drawings / drawing no. – CAD download: www.ifm.com

3



1: Mounting on DIN rail

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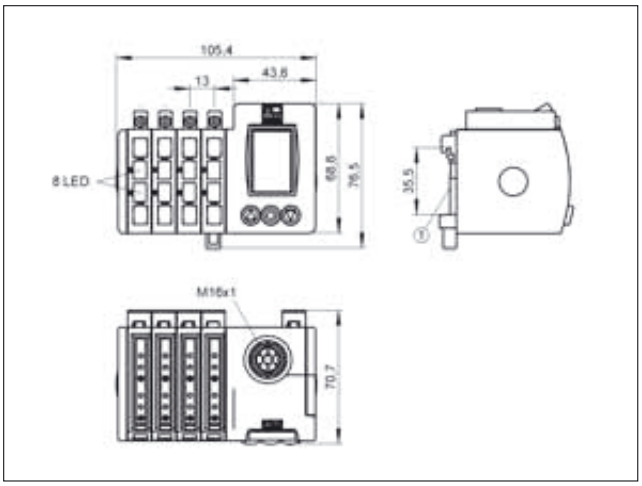

1: Mounting on DIN rail

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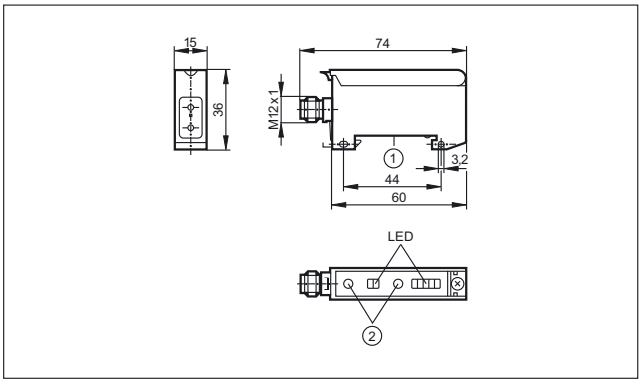

1: Mounting on DIN rail, 2: setting pushbuttons

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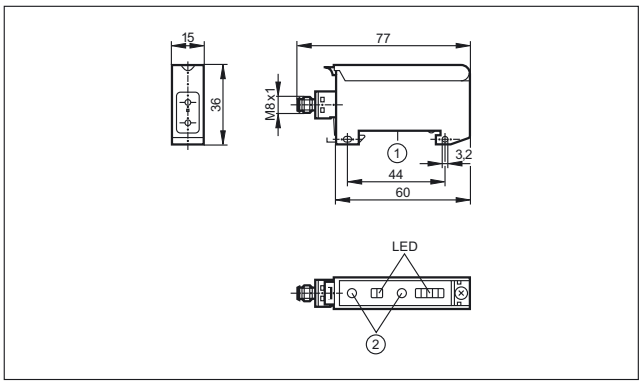

1: Mounting on DIN rail, 2: setting pushbuttons

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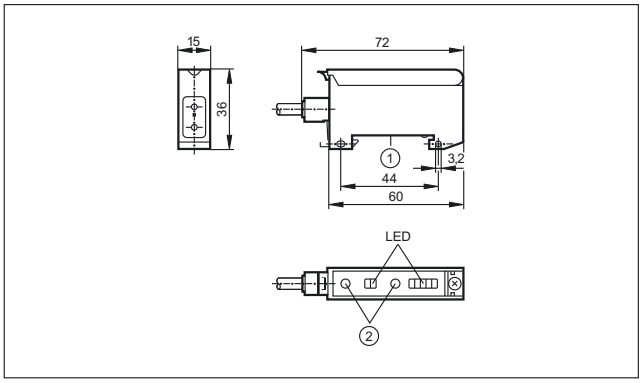

1: Mounting on DIN rail, 2: setting pushbuttons

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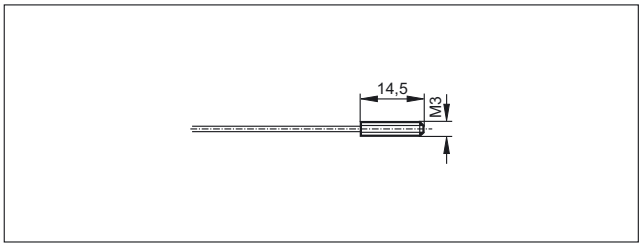

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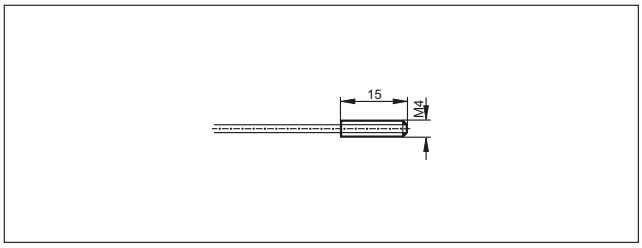

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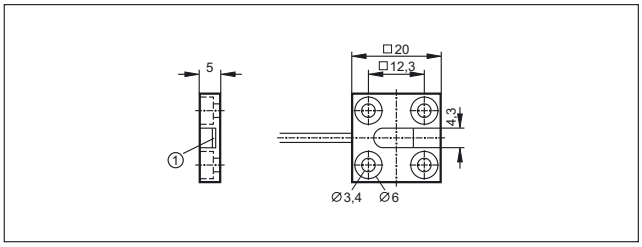

1: Sensing surface

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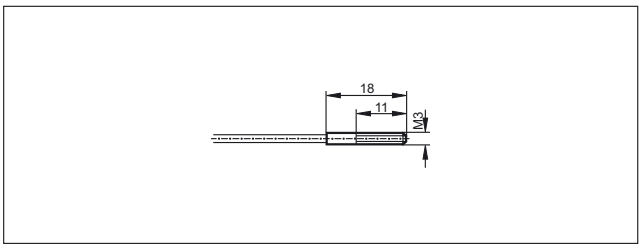

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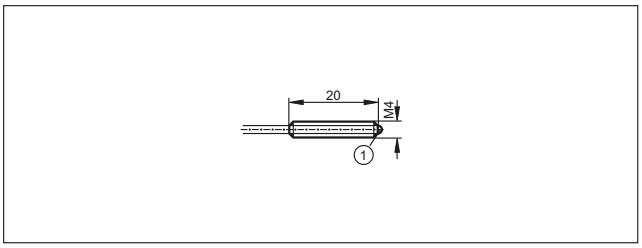

1: glass lens

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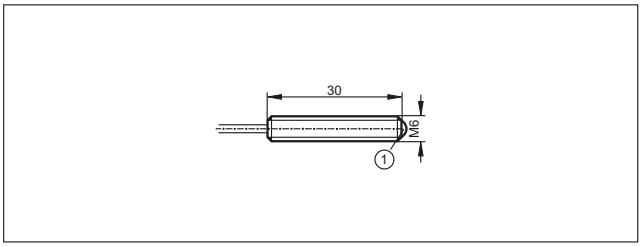

1: glass lens

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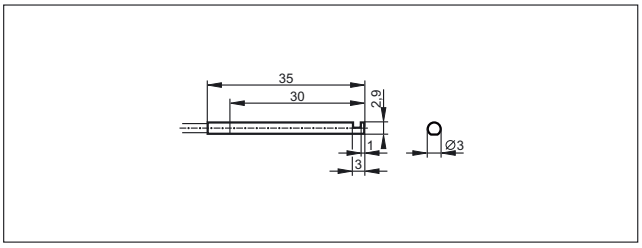

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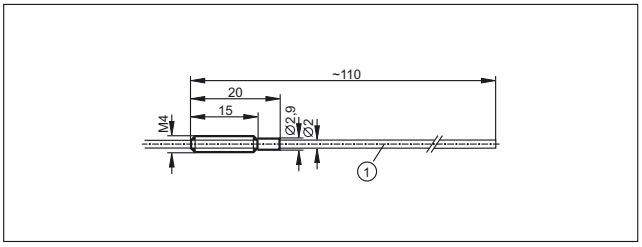

1: bendable

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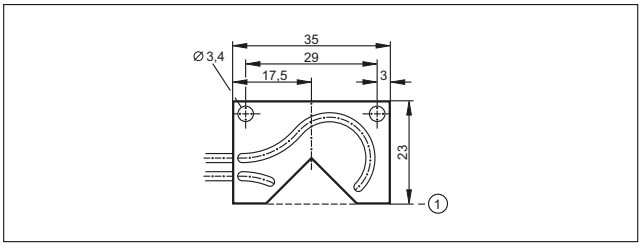

1: Reference edge

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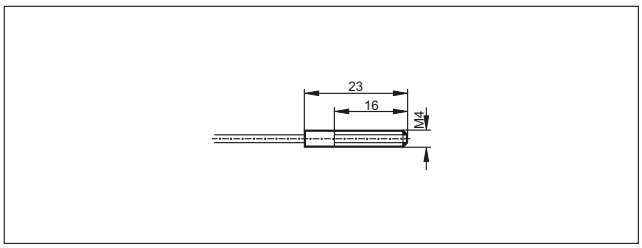

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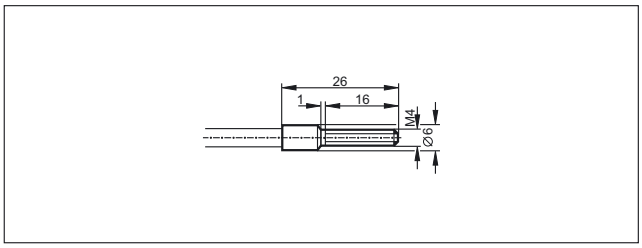

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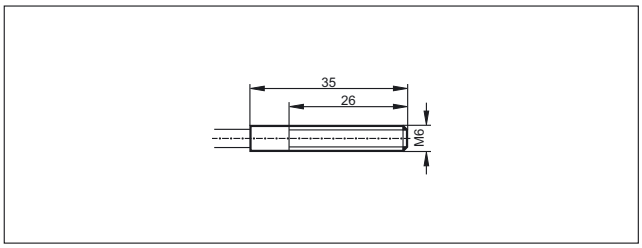

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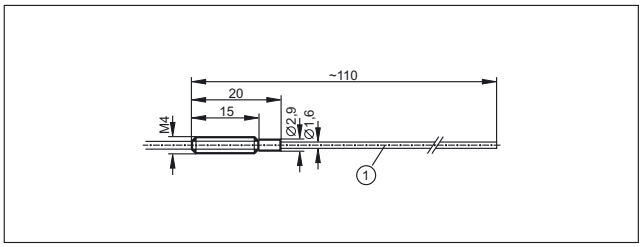

1: bendable

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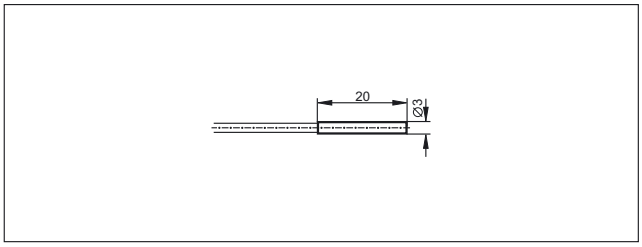

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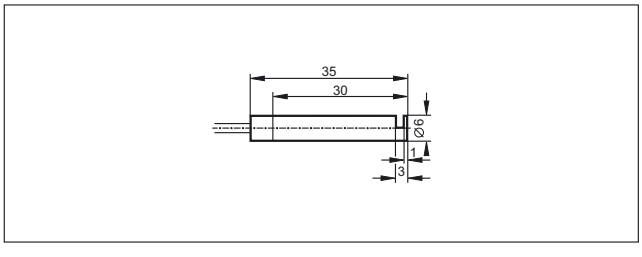

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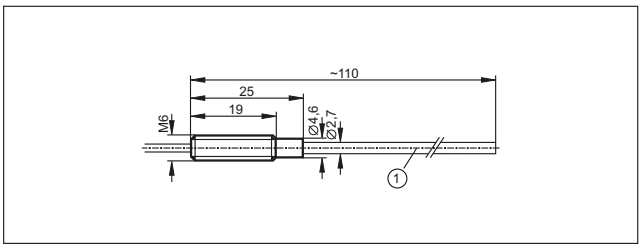

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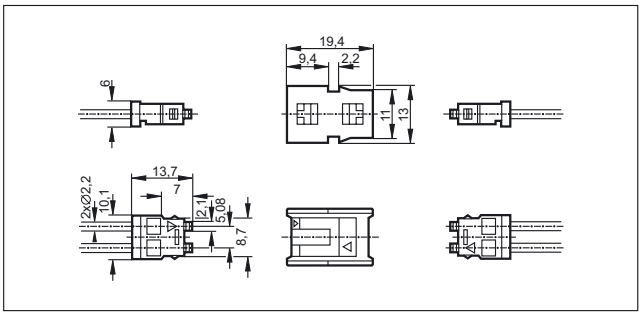

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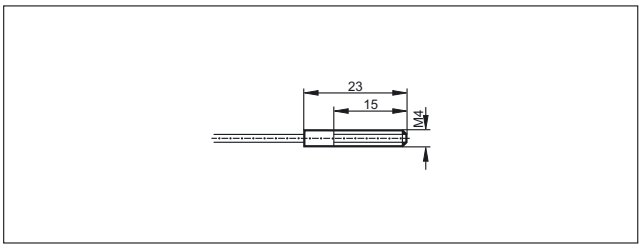

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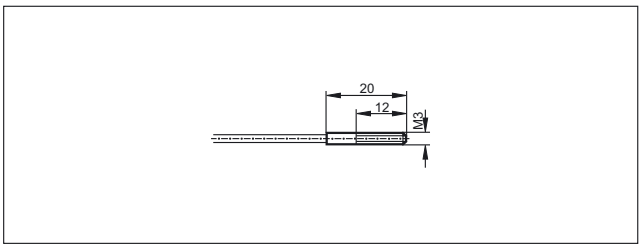

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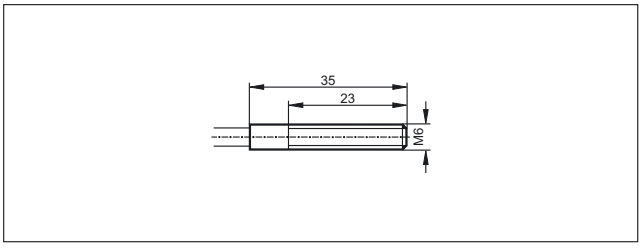

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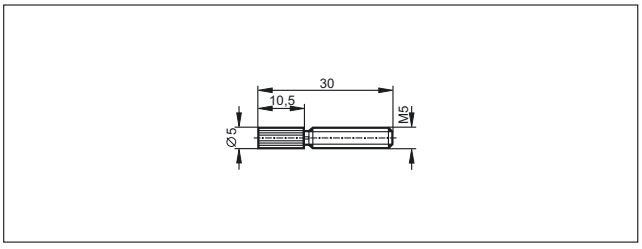

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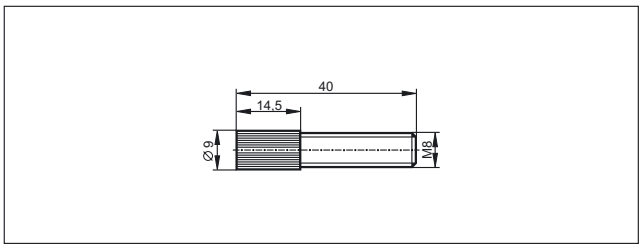

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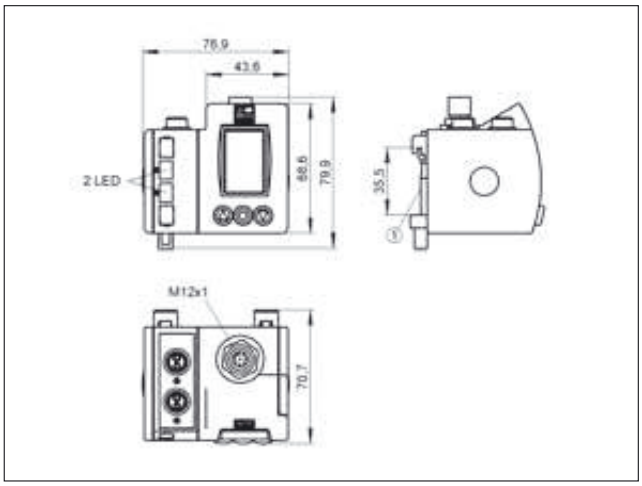
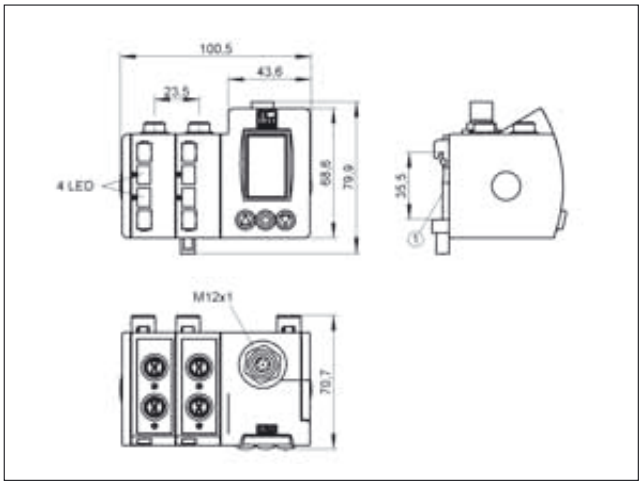


1: Mounting on DIN rail

31



1: Mounting on DIN rail

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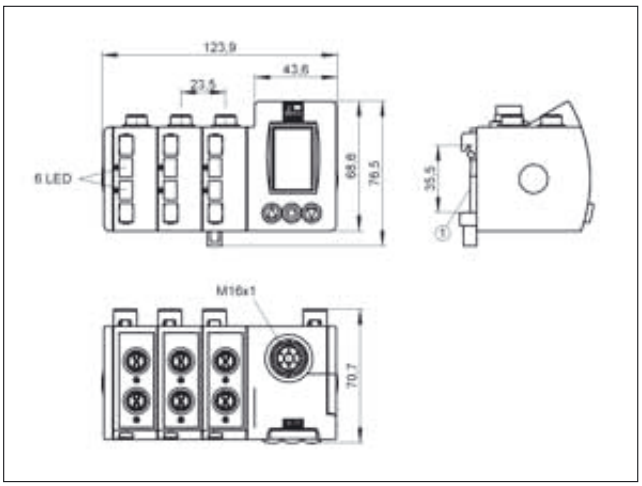

1: Mounting on DIN rail

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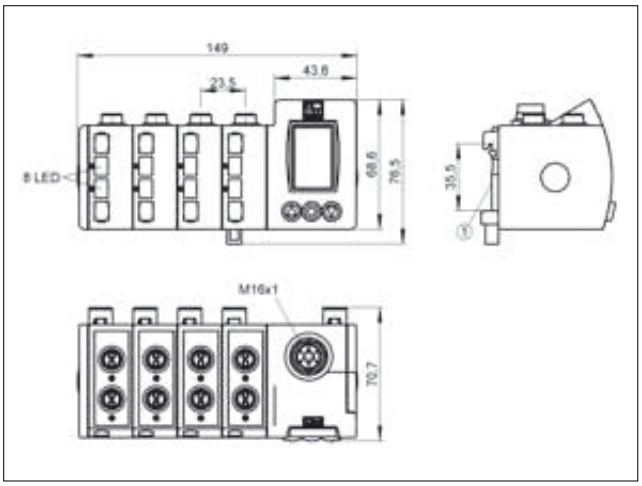

1: Mounting on DIN rail

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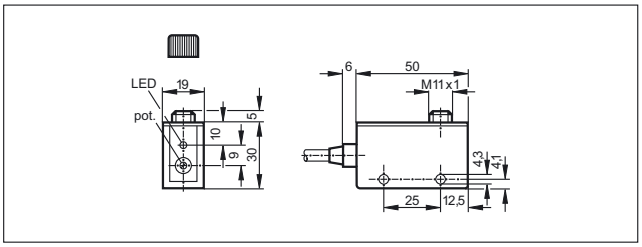

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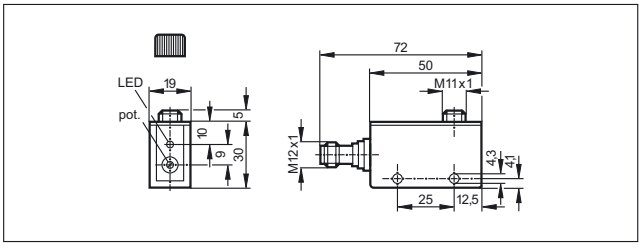

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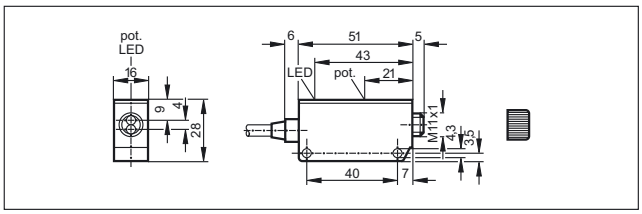

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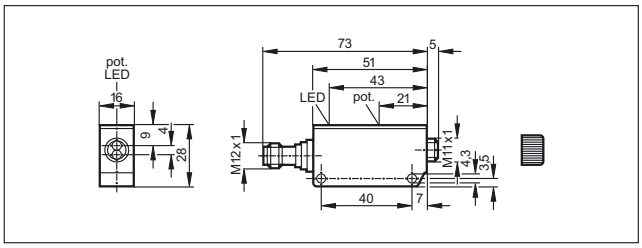

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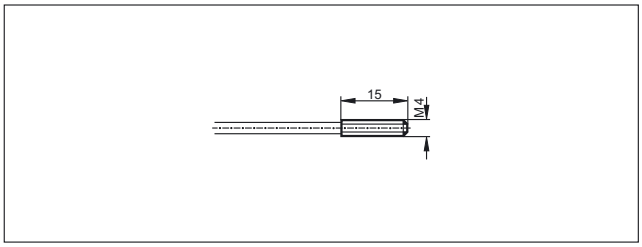

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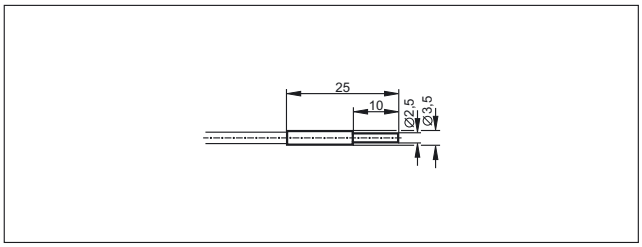

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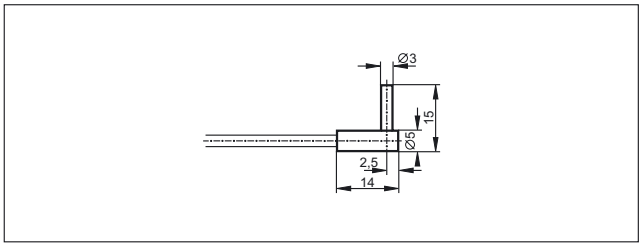

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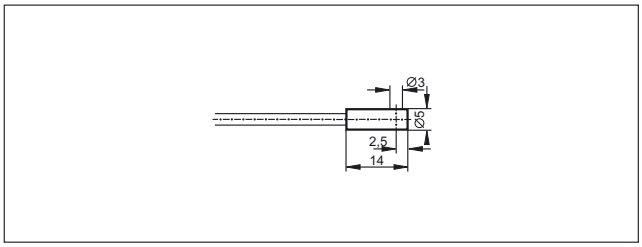

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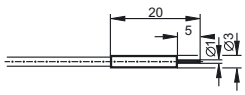

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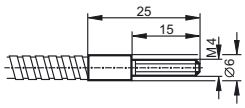

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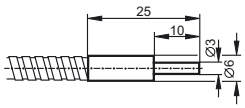

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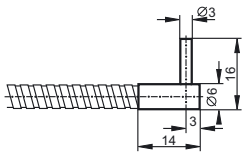

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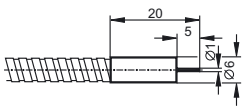

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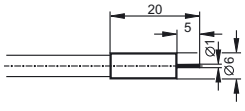

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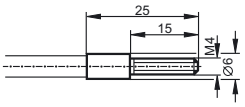

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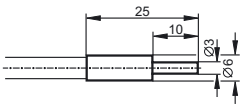

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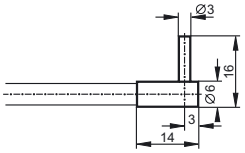

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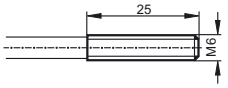

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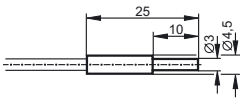

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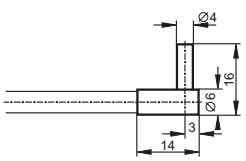

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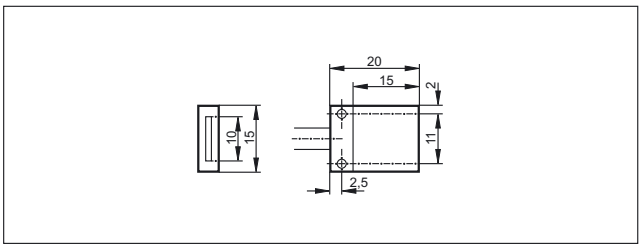

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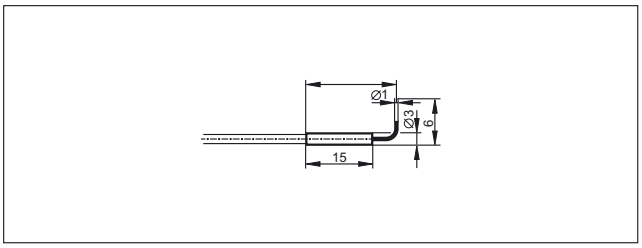

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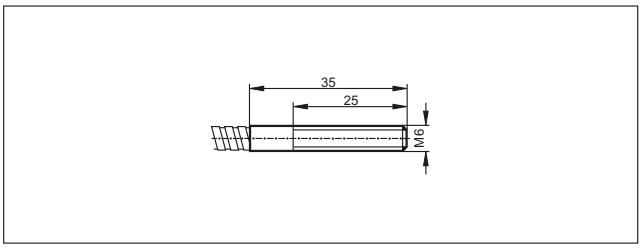

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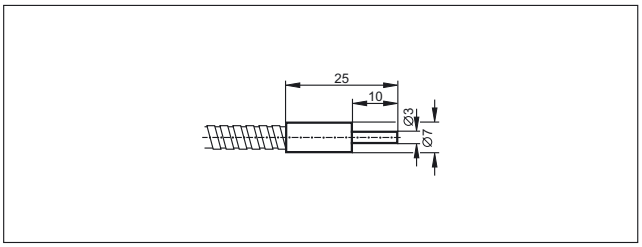

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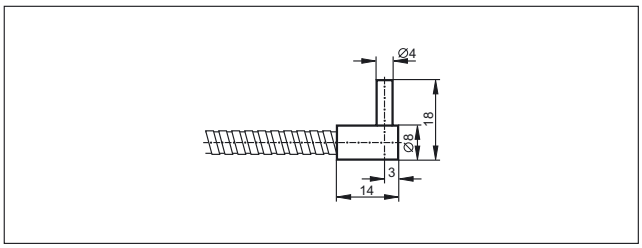
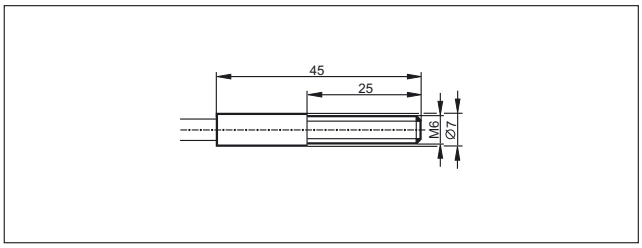


59



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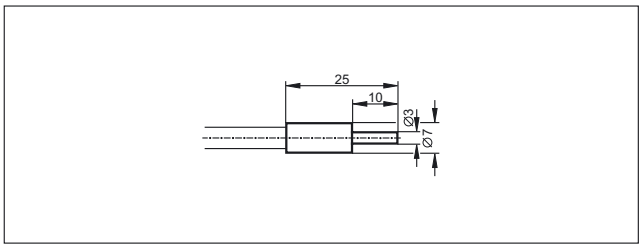
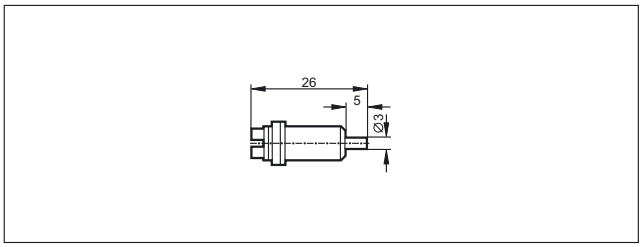


61



First-class photo-electric systems for flexible use

Photoelectric sensors for specific applications

- **High-quality photoelectric sensors for different applications**
- **Excellent price / performance ratio**
- **Easy adjustment via teach buttons or potentiometer**
- **Wide range of system components for easy and secure mounting**

Detection of transparent objects

ifm offers a retro-reflective sensor with a small switching hysteresis, in particular for the detection of transparent objects.

Contrast sensor

The O5 contrast sensor is particularly suited to detect print marks and very flat objects. With its RGB transmitter LED, the sensor detects even very small differences in contrast.

High-resolution colour sensor

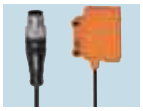
With the five selectable tolerance steps, the colour sensor perfectly differentiates even the finest shades of colour from the background or other objects.

Photoelectric level measurement

Using the time of flight measurement principle, the O1 determines the distance to an object to the nearest millimetre. Installed in the top of a tank, it can detect the level without contact.

System overview	*Page*
Sensors for the detection of transparent objects	*318*
Contrast sensors	*318*
Sensors for colour detection	*318*
Rectangular housing O1 for optical level measurement, laser class 2	*319*
Prismatic reflector	*319*
Accessories OJ housing	*319 - 320*
Accessories O5 housing	*320*
Accessories for system components	*320 - 321*
Wiring diagrams	*321*
Scale drawings / drawing no. – CAD download: www.ifm.com	*322 - 323*

Sensors for the detection of transparent objects

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
Retro-reflective sensor · PVC cable 0.15 m · with M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.2...1.5 m	Red	64	H/D PNP	1	1	**OJ5191**
	Polarisation filter	0.2...1.5 m	Red	64	H/D PNP	1	2	**OJ5190**
Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	0.2...1.5 m	Red	64	H/D PNP	2	3	**OJ5186**
	Polarisation filter	0.2...1.5 m	Red	64	H/D NPN	3	3	**OJ5189**
	Polarisation filter	0.2...1.5 m	Red	64	H/D PNP	2	4	**OJ5185**
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205								
	Polarisation filter	0...3 m	Red	80	H/D PNP/NPN	5	5	**O5G500**

Contrast sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw-ing no.	Order no.
M12 connector · 10...36 DC · plastics · IP67 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205								
	Diffuse contrast sensor	18...22 mm	RGB	1.5 x 5	H/D PNP/NPN	6	6	**O5K500**

Sensors for colour detection

Type	Operating principle	Measuring range	Light spot diameter [mm]	U_b [V]	Current consumption [mA]	Sampling rate / switching frequency [Hz]	Draw-ing no.	Order no.
M12 connector · Output function light-on / dark-on programmable · DC PNP/NPN · Wiring diagram no. 4 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205								
	Colour sensor	15...19 mm	2.5 x 6	10...36	50	2000	6	**O5C500**

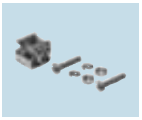
Rectangular housing O1 for optical level measurement, laser class 2

Type	Operating principle	Range	Sampling rate [Hz]	Spot Ø at max. range [mm]	U_b [V]	Wiring diagr. no.	Draw-ing no.	Order no.
Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 7 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Optical level sensor	0.2...10 m	1...33	< 15 x 15	18...30	7	7	**O1D300**

Prismatic reflector

Type	Description	Order no.
	Prismatic reflector · 48 x 48 mm · rectangular · for retro-reflective laser sensors and glass and film detection · Housing materials: plastics	**E20722**

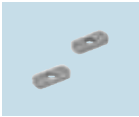
Accessories OJ housing

Type	Description	Order no.
	Angle bracket · for type OJ · Housing materials: high-grade stainless steel	**E20984**
	Basic clip · OJ · Housing materials: high-grade stainless steel	**E20965**
	Basic clip · OJ · Housing materials: diecast zinc	**E20964**
	Swivel-mount clip · for type OJ · Housing materials: diecast zinc	**E20974**
	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E20968**
	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20969**
	Mounting set · OJ · for side lens · rod mounting Ø 10 mm · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	**E21095**
	Mounting set · OJ · for side lens · Clamp mounting · rod mounting Ø 10 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21222**

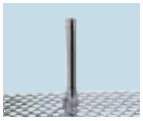
You can find wiring diagrams and scale drawings from page 321

Type	Description	Order no.
	Mounting set · OJ · for front lens · Clamp mounting · free-standing M8 · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	**E20966**
	Mounting set · OJ · for front lens · Clamp mounting · rod mounting · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E21221**

Accessories O5 housing

Type	Description	Order no.
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21085**
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21087**
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	**E21223**
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21210**
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	**E21211**
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	**E21212**
	Mounting brackets Mounting on the back of the unit · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	**E21086**
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	**E21088**

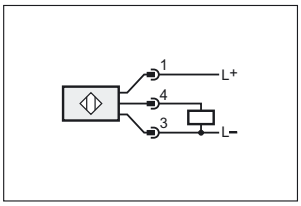
Accessories for system components

Type	Description	Order no.
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20938**
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E20940**

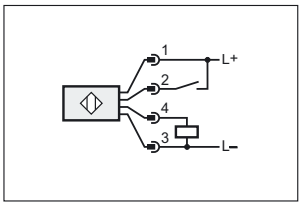
Type	Description	Order no.
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: steel galvanised	**E21213**
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: high-grade stainless steel	**E21214**
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	**E20951**

Wiring diagrams

1

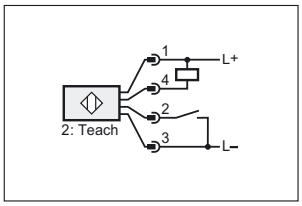


2

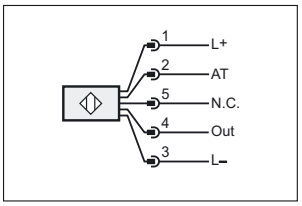


2: Teach

3

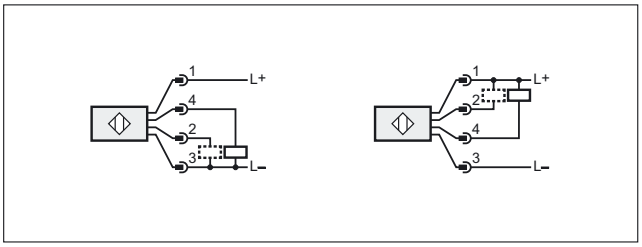


4

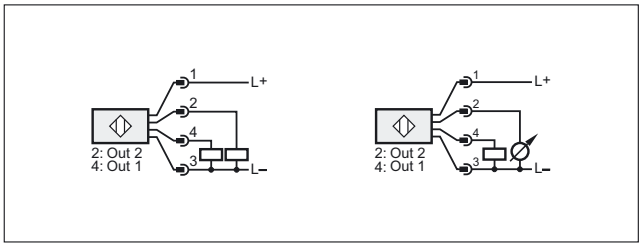


2: Input AT activation trigger, 5: n.c. = not connected

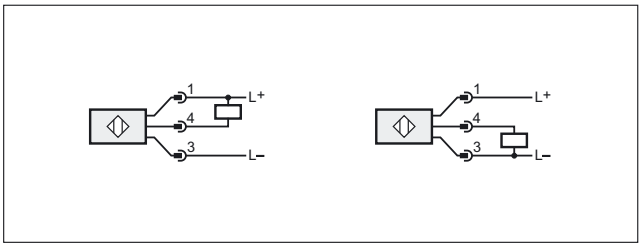
5



7

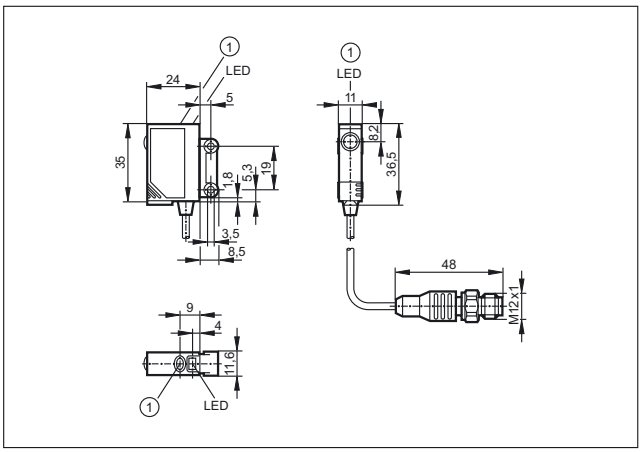


6



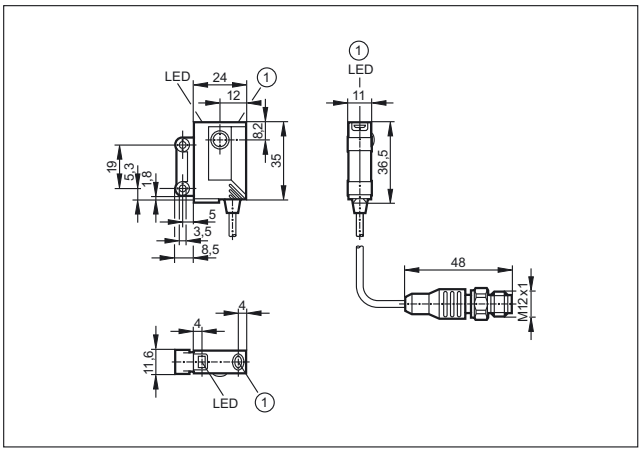
Scale drawings / drawing no. – CAD download: www.ifm.com

1



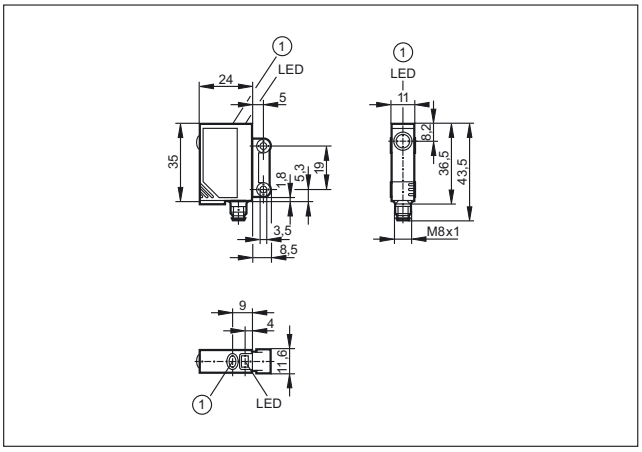
1: pushbutton

2



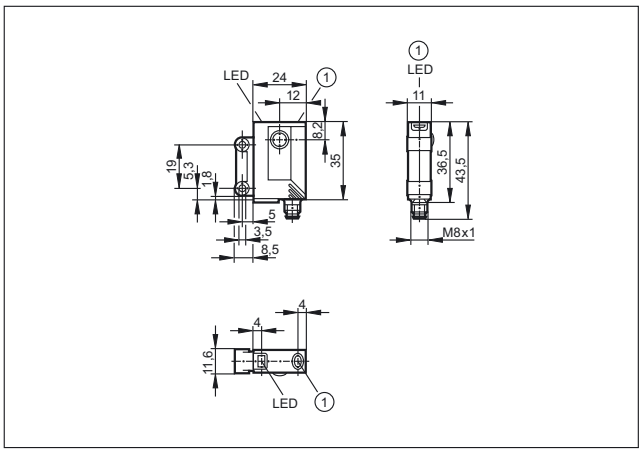
1: pushbutton

3



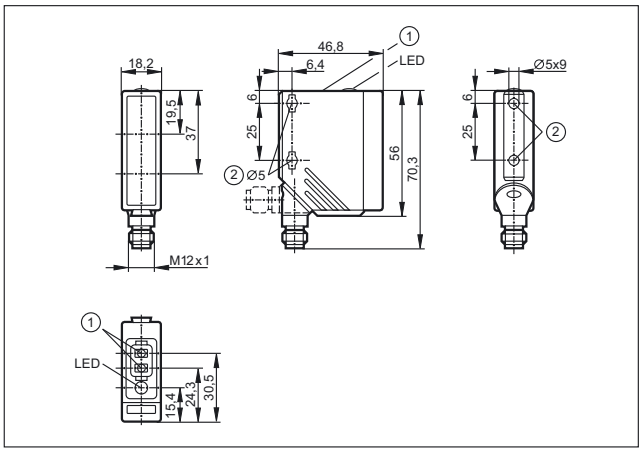
1: pushbutton

4



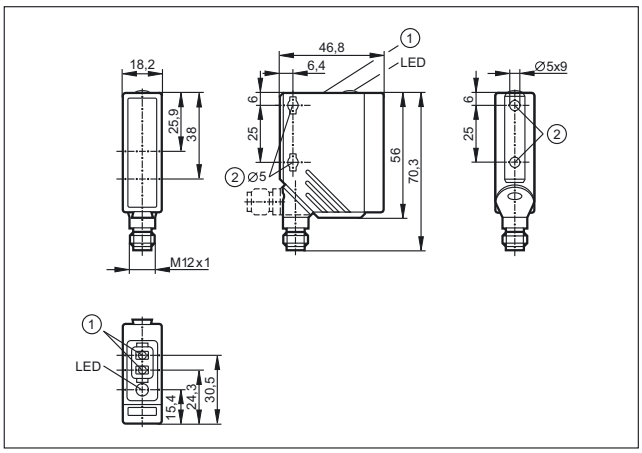
1: pushbutton

5



1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

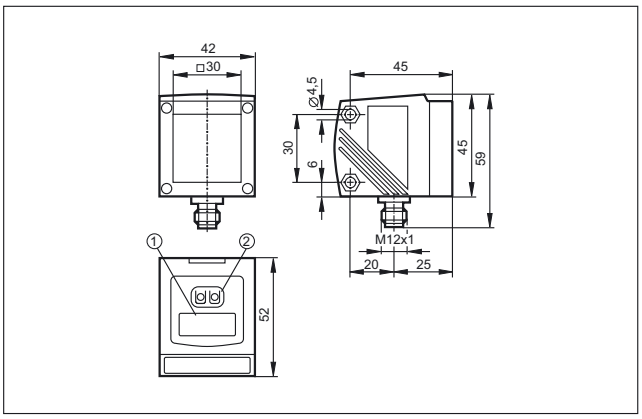
6



1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

Scale drawings / drawing no. – CAD download: www.ifm.com

7



1: 4-digit alphanumeric display, 2: Programming buttons

Reliable valve position monitoring

Feedback systems for valves and valve actuators

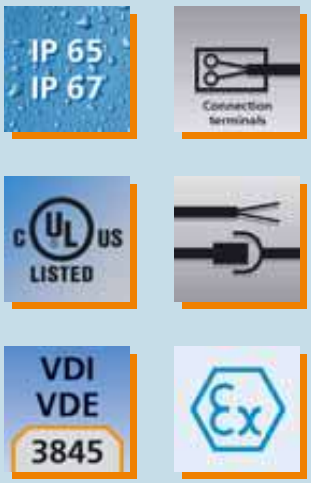
Dual inductive feedback sensors for pneumatic actuators and valves

Designed for simple fit to common actuators based on VDI / VDE 3845

AS-i valve sensor for quick and safe „plug & play“ installation

Position feedback for rising stem valves up to 80 mm

Permanent valve monitoring for condition-based maintenance



Dual sensor for quarter-turn actuators

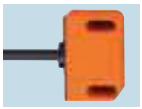
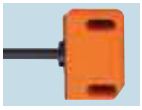
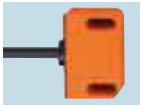
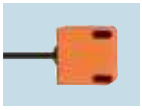
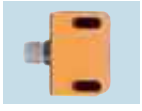
A round switching cam, also called "puck", that has at least two metal screws positioned at 90° to each other or a version that is freely adjustable to any angle is mounted to the actuator shaft. The screws are located at a different height. Two inductive sensors detect the upper or lower metal screw depending on the valve position and thus the two switch positions of the actuator. This system operates reliably with no wear at all. It is resistant to external influence and insensitive to mechanical stress such as vibration and shock.

Sensor for rising stem valves

Two or three switch points can be set via pushbuttons over a stroke of 80 mm. Thanks to a resolution of 0.2 mm, the sensor detects even very small changes in the position of the valve. The inductive measuring principle guarantees wear-free non-contact operation.

System overview	*Page*
Sensors for industrial applications	*326 - 327*
Sensors for industrial applications, AS-i system	*327*
Sensors with ATEX approval 1G / 2G and 1D	*328*
Sensors with ATEX approval 3D and / or 3G	*328 - 329*
Sensors for rising stem valves	*329*
Sensors for rising stem valves, AS-i system	*329*
Added value packages with Bürkert solenoid valve	*330*
Added value packages with Norgren Herion solenoid valve	*330*
Switching cams for sensors with quarter-turn actuators	*330 - 331*
Accessories for quarter-turn actuator sensors	*331*
Accessories for rising stem valve sensors	*332*
Accessories mounting sets	*332*
Wiring diagrams	*333 - 334*
Scale drawings / drawing no. – CAD download: www.ifm.com	*334 - 336*

Sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 1									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	1	**IN5251**
Terminals · Output function ⎍/⎍ · AC/DC · Wiring diagram no. 13									
	33 x 60 x 92	4 nf	PA (polyamide)	20...250	IP 67	25 / 50	350 / 100	2	**IN0131***
Cable 6 m · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 1									
	40 x 26 x 26	4 nf	PC (polycarbonate)	10...36	IP 67	1300	250	1	**IN5304**
Cable 10 m · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 1									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	1	**IN5323**
Cable 2 m · Output function ⎍/⎍ · AC/DC · Wiring diagram no. 2									
	40 x 26 x 40	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	3	**IN0110***
M12 connector · Output function ⎍/⎍ · DC PNP/NPN · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	4	**IN5224**
M12 connector · Output function ⎍/⎍ · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	40 x 26 x 47	4 nf	PBT	10...36	IP 67	250	250	5	**IN5331**
M12 connector · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 4 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	4	**IN5225**
	40 x 26 x 47	4 nf	PBT	10...36	IP 67	1300	250	5	**IN5327**
M18 connector · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 4 · Connector group 28									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	6	**IN5285**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
M18 connector · Output function ⎍⎓/⎍⎓ · AC/DC · Wiring diagram no. 5 · Connector group 28									
	40 x 26 x 40	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	7	**IN0108***
Rd 24 x 1/8 connector 6 pins · Output function ⎍⎓/⎍⎓ · DC PNP · Connector groups 38, 44, 159, 160									
	40 x 26 x 60	4 nf	PBT	10...36	IP 67	1300	250	8	**IN5334**
Terminals · Output function ⎍⎓/⎍⎓ · DC PNP · Wiring diagram no. 15									
	33 x 60 x 92	4 nf	PA (polyamide)	10...30	IP 67	500	100	2	**IN5409**

f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

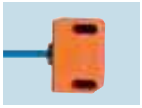
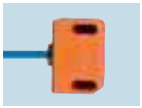
Sensors for industrial applications, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
M12 connector · AS-i · Wiring diagram no. 6 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	9	**AC2315**
M12 connector · Output function transistor PNP · AS-i · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	100	10	**AC2316**
M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	10	**AC2317**

f = flush / nf = non flush / qf = quasi-flush

You can find wiring diagrams and scale drawings from page 333

Sensors with ATEX approval 1G / 2G and 1D

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
M12 connector · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 7 · Connector group 195										
	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	11	**NN5008**
Cable 2 m · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 8										
	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	1	**NN5009**
Cable 10 m · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 8										
	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	140	1800	1	**NN5011**
M18 connector · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 9 · Connector group 28										
	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	6	**NN5013**
Terminals · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 16										
	33 x 60 x 92	4 nf	PA (polyamide)	8.2 DC	7.5...15 DC	–	–	500	2	**NN504A**
Terminals · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 17 · Connector group --										
	33 x 60 x 92	4 nf	PA (polyamide)	8.2 DC	7.5...15 DC	–	–	500	12	**NN505A**

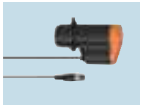
f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 3D and / or 3G

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Draw-ing no.	Order no.
M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 196, 198									
	55 x 60 x 35	4	PBT	26.5...31.6	IP 5x	–	–	13	**AC327A**
M12 connector · Output function transistor PNP · 2 inputs / 1 output · Connector groups 196, 198									
	55 x 60 x 35	4	PBT	26.5...31.6	IP 5x	–	–	13	**AC336A**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
M12 connector · Output function transistor PNP · 2 inputs / 1 output · Connector groups 196, 198									
	55 x 60 x 35	4	PBT (Pocan)	26.5...31.6	IP 67	–	–	13	**AC326A**
M12 connector · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 4 · Connector groups 196, 198									
	40 x 26 x 47	4	PBT	10...30	IP 67	1300	100	14	**IN507A**
Cable 2 m · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 1									
	40 x 26 x 26	4	PBT	10...30	IP 67	1300	100	15	**IN512A**

Sensors for rising stem valves

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Cable 2 m · Output function 1...5 V analogue · DC · Wiring diagram no. 10									
	67.5 x 43 x 110	–	PA	18...36	IP 65 / IP 67	–	–	16	**IX5002**
Cable 2 m · Output function 3 x normally open · DC PNP · Wiring diagram no. 11									
	67.5 x 43 x 110	–	PA	18...36	IP 65 / IP 67	–	100	17	**IX5006**
Cable with connector 0.3 m · Output function 3 x normally open · DC PNP · Wiring diagram no. 12 · Connector groups 152, 155, 186, 192, 194, 205									
	65 x 52 x 110	–	PA	18...36	IP 65 / IP 67	–	100	18	**IX5010**
	65 x 43 x 110	0.2	PA	18...36	IP 65 / IP 67	–	100	19	**ZZ0214**

Sensors for rising stem valves, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Cable with connector 0.15 m · AS-i · Wiring diagram no. 6 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205									
	65 x 52 x 110	–	PA	26.5...31.6	IP 65 / IP 67	–	–	18	**IX5030**

You can find wiring diagrams and scale drawings from page 333

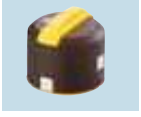
Added value packages with Bürkert solenoid valve

Type	Description	Order no.
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 20 mm · Hole spacing 80 mm · Connector	AC0017
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 80 mm · Connector	AC0019
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 130 mm · Connector	AC0020

Added value packages with Norgren Herion solenoid valve

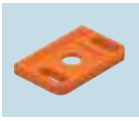
Type	Description	Order no.
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 20 mm · Hole spacing 80 mm · Connector	AC0021
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 80 mm · Connector	AC0022
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 130 mm · Connector	AC0023

Switching cams for sensors with quarter-turn actuators

Type	Description	Order no.
	Target puck · Ø 53 mm · adjustable · Housing materials: Target puck: PA 6 black / Metal parts: stainless steel	E12516
	Target puck · Ø 53 mm · Housing materials: Target puck: PA 6 black / Metal parts: stainless steel	E12517
	Target puck · Ø 55 mm · Inverted function · Housing colour: black · Housing materials: Target puck: PVC / screws: high-grade stainless steel / Metal ring: stainless steel	E17205
	Target puck · Ø 102 mm · adjustable target screws · Housing colour: black · Housing materials: Target puck: PVC / screws: stainless steel 316Ti / 1.4571	E17119
	Target puck · Ø 102 mm · 3 possible switching flag positions · Housing colour: black · Housing materials: Target puck: PA 6 / screws: stainless steel	E17328

Type	Description	Order no.
	Target puck · Ø 102 mm · Housing colour: black · 8 possible switching flag positions · Housing materials: Target puck: PA 6 / screws: stainless steel	**E17329**
	direction indicator black · 12 x 4.8 · For target puck · Housing materials: POM	**E17295**
	direction indicator yellow · 12 x 4.8 · For target puck · Housing materials: POM	**E17296**
	Spacer · Housing materials: PA 6 black / screw: stainless steel	**E12526**

Accessories for quarter-turn actuator sensors

Type	Description	Order no.
	Spacer · 10 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	**E10579**
	Spacer · 3 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	**E10584**
	Spacer · 5 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	**E10585**
	Cable gland · M20 x 1.5 · Housing materials: PA 6.6	**E12208**
	Protective cap · M20 x 1.5 · Housing materials: PA 6.6	**E12209**
	Plug for covering the oblong holes · Housing materials: EPDM	**E12212**
	reinforcement bracket · for type IND · Housing materials: stainless steel 316Ti / 1.4571	**E11310**
	protective housing · Accessory for valve sensors · for type IND · Housing materials: stainless steel	**E11984**
	Mounting kit · MS-MEC-KU-RA--F04A · for ball valve Mecafrance ISO5211/F04 DN25 PN40 · Detection of the "ON/OFF" position by means of the IND dual sensor	**E10597**

You can find wiring diagrams and scale drawings from page 333

Accessories for rising stem valve sensors

Type	Description	Order no.
	Mounting adapter · for Alfa Laval valves type SSV (Single Seat Valves) · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / target: stainless steel 316L / 1.4404 / screws: stainless steel / clamping device: stainless steel	**E12470**
	Mounting adapter · for Alfa Laval valves type LKLA-T (Butterfly Valves) · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / clamping device: stainless steel / target: stainless steel 316L / 1.4404 / screw: stainless steel / sealing: EPDM	**E12476**
	Mounting adapter · for SPX/APV valves type single seat valves · accessory for IX5010, IX5030 · Housing materials: flange: high-grade stainless steel / spacer: POM / target: stainless steel 316L / 1.4404	**E12515**
	Mounting adapter · for SPX/APV valves type butterfly valves · accessory for IX5010, IX5030 · Housing materials: flange: high-grade stainless steel / spacer: POM / target: stainless steel 316L / 1.4404 / sealing: FPM Shore hardness A 80° C	**E12501**
	Mounting adapter · for GEA single-seat valves · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / target: stainless steel 316L / 1.4404	**E12478**
	Mounting adapter · for Bardiani valves · accessory for IX5010, IX5030 · Housing materials: adapter: PA / target: stainless steel 316L / 1.4404	**E12170**

Accessories mounting sets

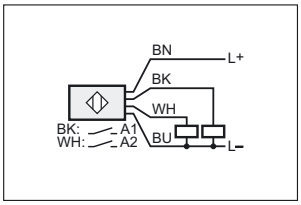
Type	Description	Order no.
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	**E12519**
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	**E12520**
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	**E12521**
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	**E12522**
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	**E12523**
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	**E12524**

Wiring diagrams

Core colours

BN	brown
BU	blue
BK	black
WH	white
GY	grey

1



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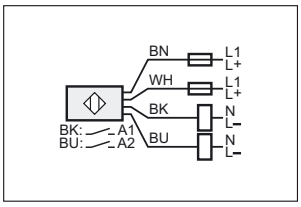

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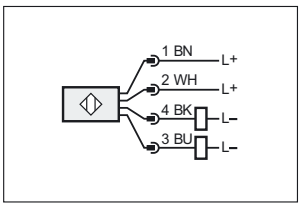

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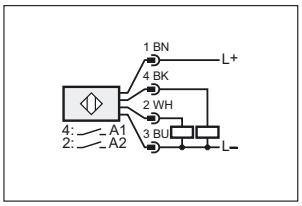

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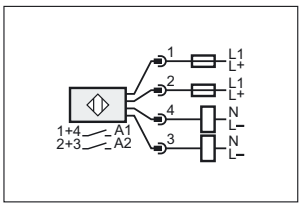

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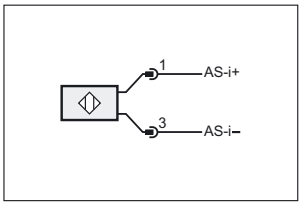

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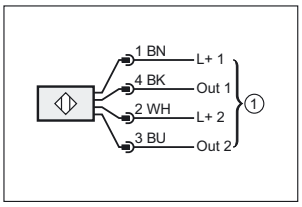

1: connection to NAMUR-amplifier

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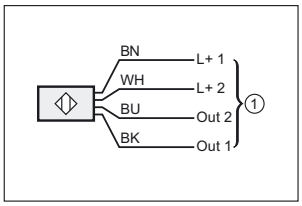

1: connection to NAMUR-amplifier

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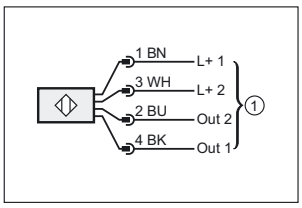

1: connection to NAMUR-amplifier

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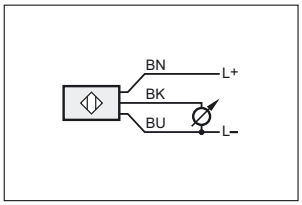

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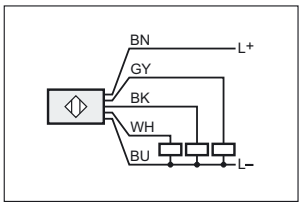

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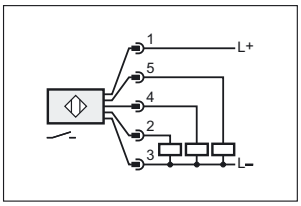

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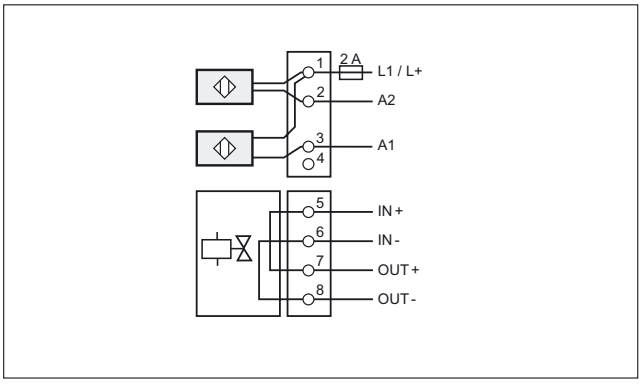

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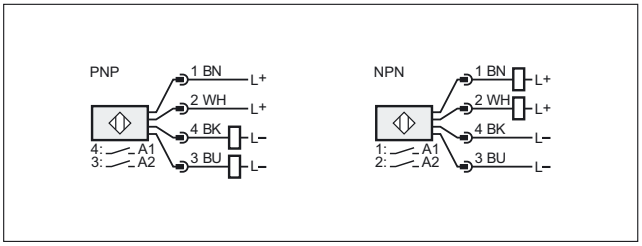

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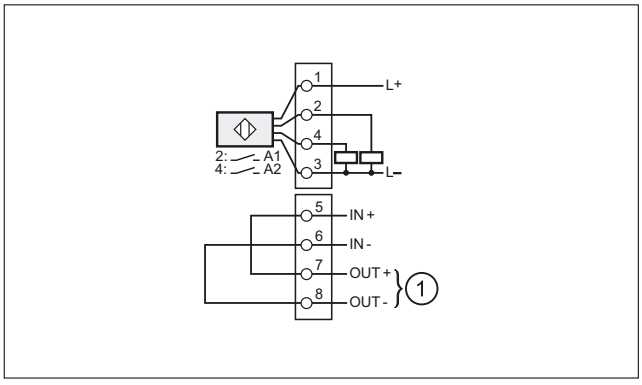
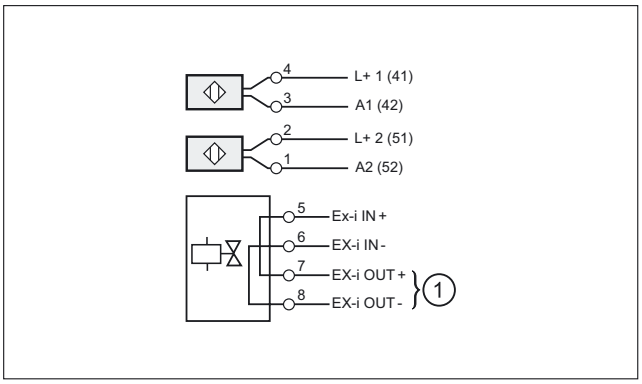


1: solenoid valve

Wiring diagrams

16



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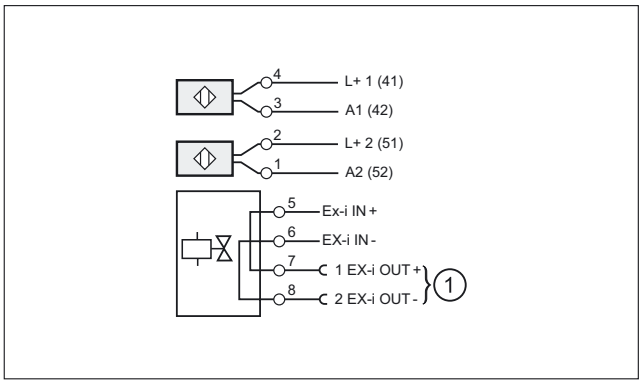

Scale drawings / drawing no. – CAD download: www.ifm.com

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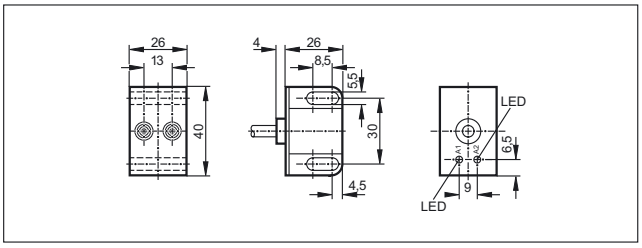

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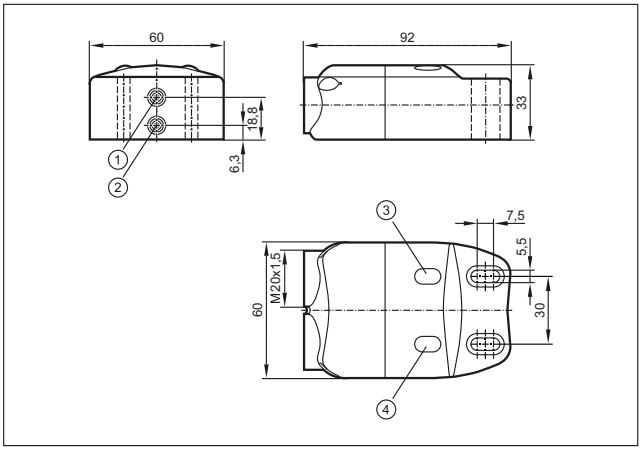
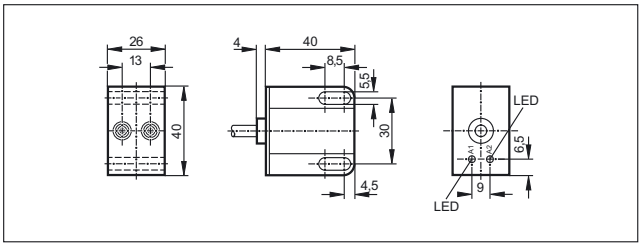


1: sensor 1, 2: sensor 2, 3: LED OUT 2, 4: LED OUT 1

3



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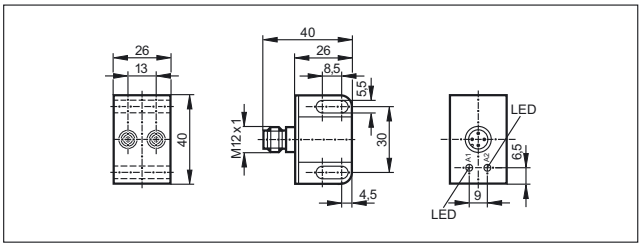

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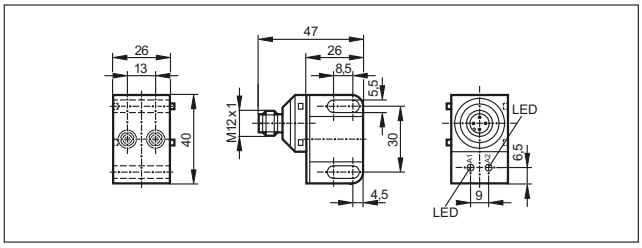

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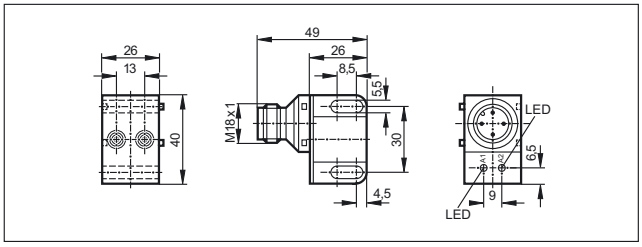

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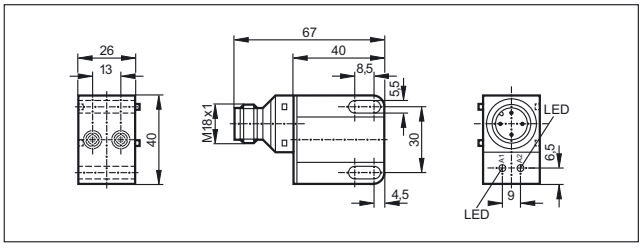

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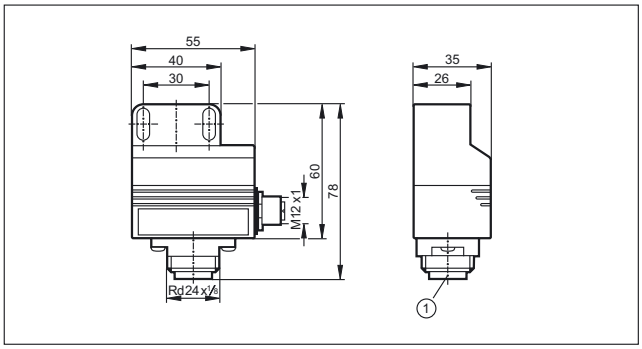
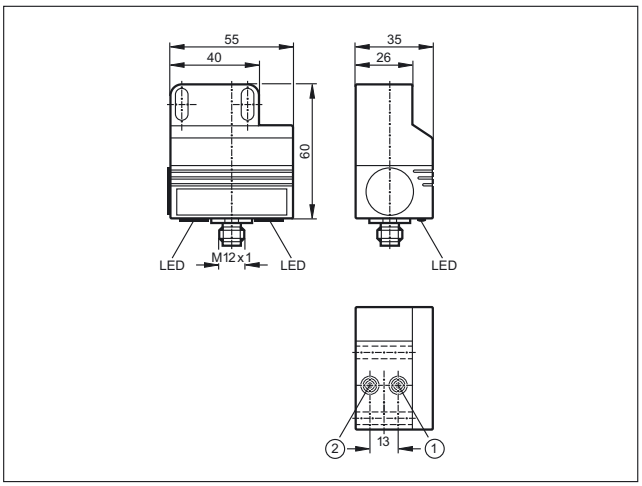


1: field connection

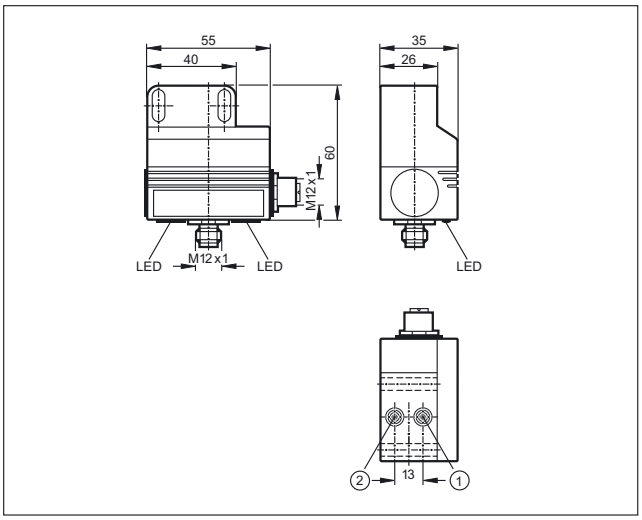
Scale drawings / drawing no. – CAD download: www.ifm.com

9



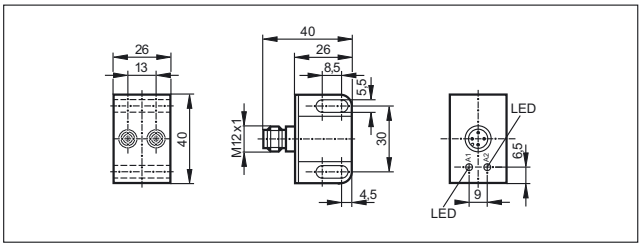
1: sensor 1, 2: sensor 2

10

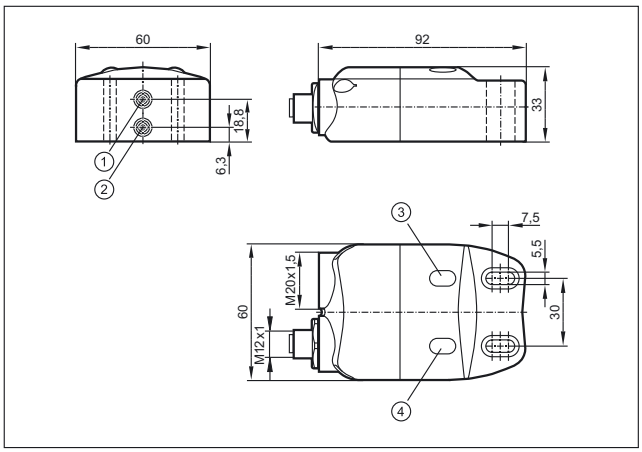


1: sensor 1, 2: sensor 2

11

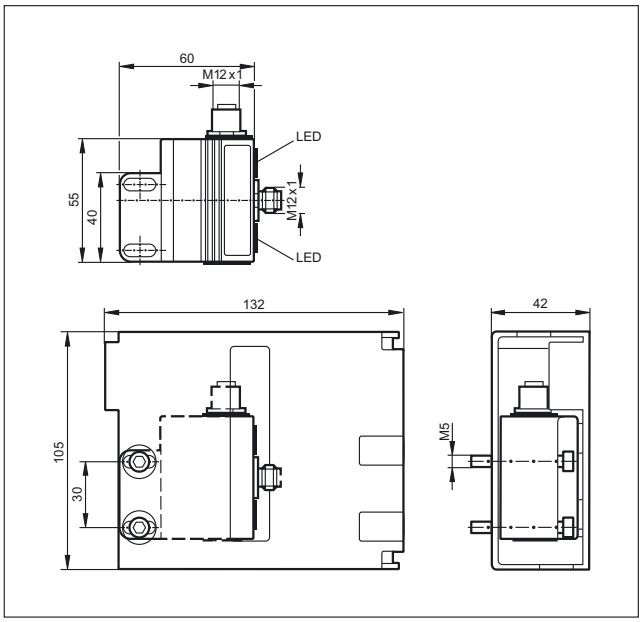


12

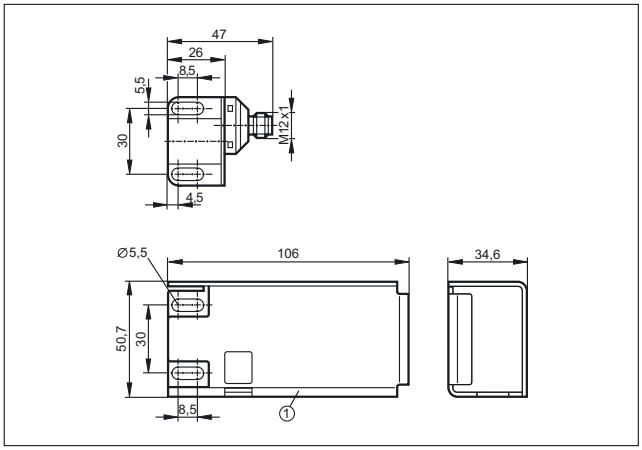


1: sensor 1, 2: sensor 2, 3: LED OUT 2, 4: LED OUT 1

13



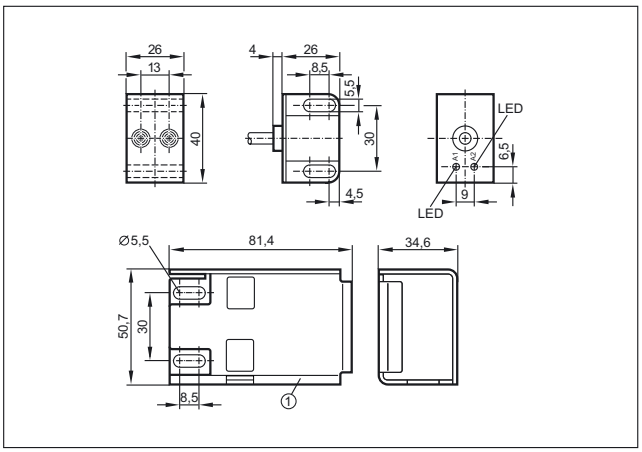
14



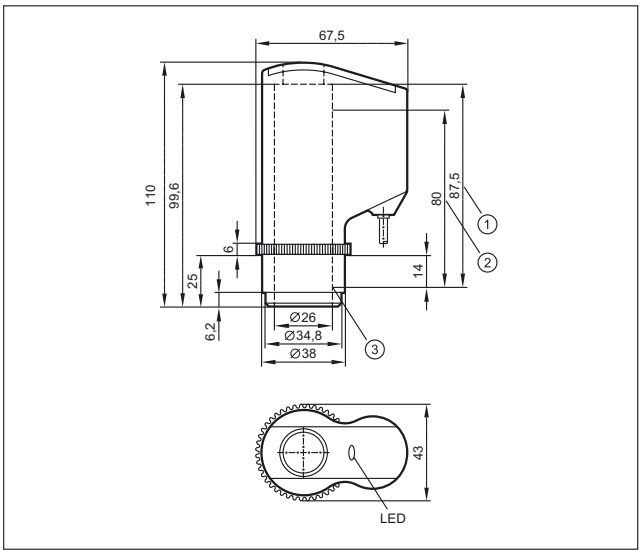
1: protective housing

Scale drawings / drawing no. – CAD download: www.ifm.com

15

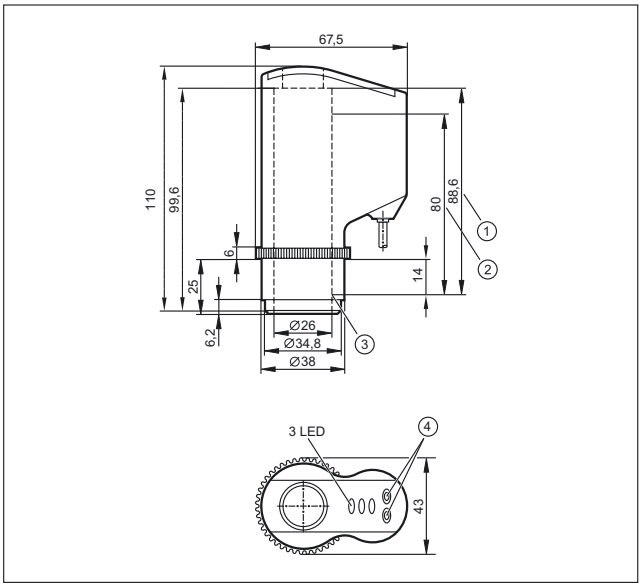


16



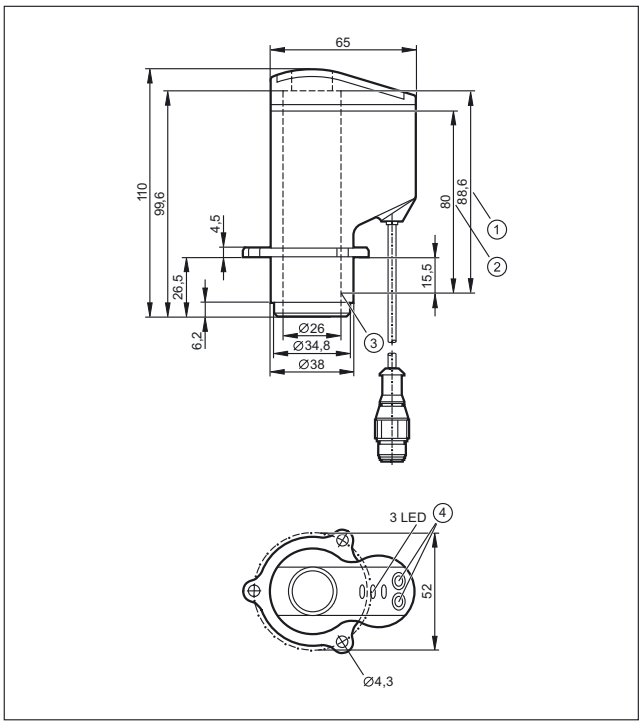
1: Max. spindle stroke, 2: Measuring range, 3: Initial value of the measuring range (zero point)

17



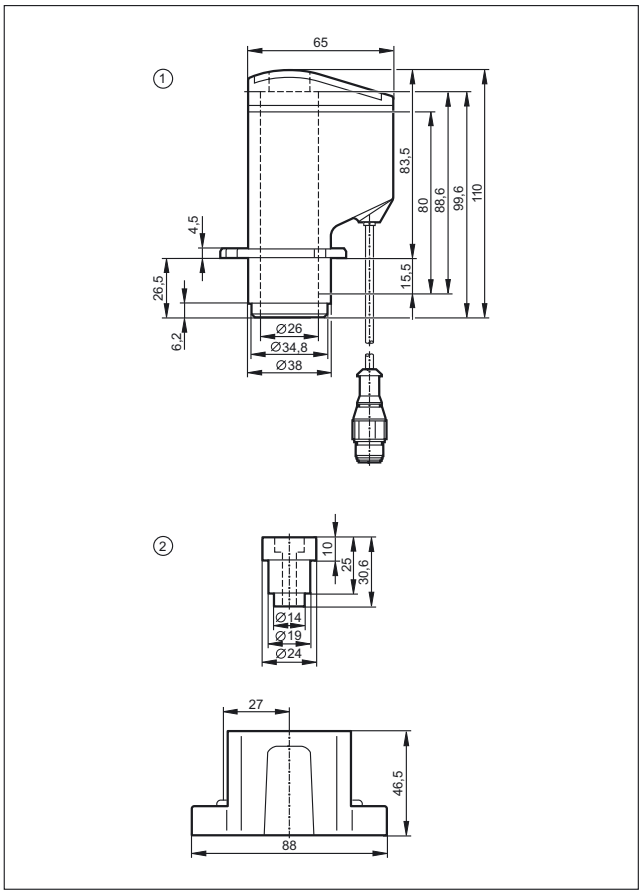
1: Max. spindle stroke, 2: Measuring distance, 3: Initial value of the measuring range (zero point), 4: Programming buttons

18



1: Max. spindle stroke, 2: Measuring distance, 3: Initial value of the measuring range (zero point), 4: Programming buttons

19



1: Valve sensor IX5010, 2: Mounting adapter E11900

Switching amplifier for converting sensor signals in AC networks

Switching amplifiers

Integrated wide-range power supply for the sensor supply

Small design requiring only very little space

Plug-in screw terminals simplify installation

PNP or NPN control selectable

One or two-channel design

Relay for high load currents

The transistor outputs of conventional sensors are designed for small load currents. If the user wants to switch higher currents or even alternating currents, he must use a switching amplifier.

It uses the sensor signal to control an output relay.

Flexible and space-saving

ifm offers switching amplifiers in one and two-channel design. They have an integrated wide-range power supply (110...240 V AC) to supply the connected sensors with voltage (24 V DC). The new switching amplifiers are distinguished by their slim design so that they only need little space in the control cabinet.

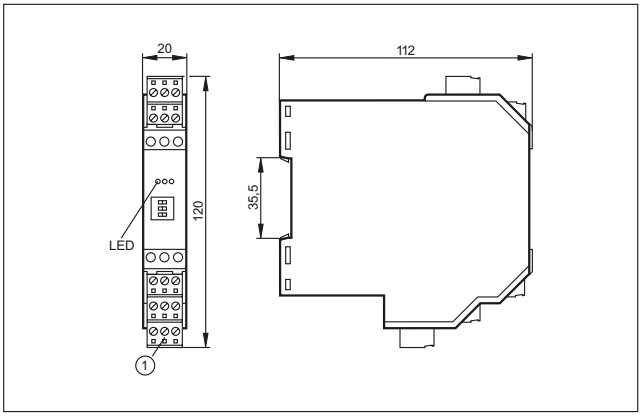
System overview	*Page*
Switching amplifiers with ATEX approval	*340*
Scale drawings / drawing no. – CAD download: www.ifm.com	*340*

Switching amplifiers with ATEX approval

Type	U_b [V]	Power / current consumption [VA] / [mA]	f [Hz]	T_a [°C]	Output	Protection	Drawing no.	Order no.
	115	1.0 /	10	-20...60	relay (1 changeover contact)	IP 20	1	**N0030A**
	230	1.0 /	10	-20...60	relay (1 changeover contact)	IP 20	1	**N0031A**
	115	1.3 /	10	-20...60	relay (1 changeover contact per channel)	IP 20	1	**N0032A**
	230	1.3 /	10	-20...60	relay (1 changeover contact per channel)	IP 20	1	**N0033A**
	24	/ < 23	10	-20...60	relay (1 changeover contact)	IP 20	1	**N0530A**
	24	/ < 50	5000	-20...60	2 transistor outputs PNP (100 mA, short-circuit protection)	IP 20	1	**N0531A**
	24	/ < 50	5000	-20...60	2 outputs (optocoupler, bipolar, 100 mA, short-circuit protection)	IP 20	1	**N0532A**
	24	/ < 50	10	-20...60	relay (1 changeover contact per channel)	IP 20	1	**N0533A**
	24	/ < 50	5000	-20...60	2 transistor outputs PNP (100 mA, short-circuit protection)	IP 20	1	**N0534A**

Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: Combicon plug with screw terminals (optional)

Accurate linear, angle and rotational speed measurement

Encoders

Encoders convert rotary motion into digital signals. This rotary motion is the result of linear measurements, for example on conveyor belts, or of angle measurements such as those taken by solar tracking systems to optimally align the solar panels towards the sun.

Inclination sensors

Inclination sensors are also used for angle measurement. They are smaller than encoders and easier to install. The core element is a measuring cell for example based on MEMS technology (Micro Electro Mechanical Systems). This measuring method allows evaluation of two axes in one unit. Inclination sensors are therefore a valuable supplement to encoders. They are frequently used in mobile machines (levelling of cranes or fire engines) or in the field of renewable energies.

Speed sensors

Inductive speed sensors with integrated evaluation electronics do not only measure revolutions, but also monitor overspeed and underspeed. Once the sensor has been taught the desired speed, it works completely independently. It relieves users from the additional burden of programming their PLC: they only need to connect the sensor, teach the rotational speed and start the system. If the speed drops below the set value or exceeds it, the sensor sets a binary switching output as a warning.

Systems for pulse evaluation

By using the matching evaluation systems, sensor pulses can be detected, evaluated, compared and converted into different output signals. The user can choose between binary, analogue (4…20 mA and 0…10 V) and PWM output signals.

Encoders 344 - 357

Speed sensors 358 - 364

Inclination sensors 366 - 369

Pulse evaluation systems 370 - 379

Robust incremental and absolute encoders

Encoders

- **Robust designs**
- **Industrial standard housings**
- **Cable entry for axial and radial use**
- **Designs with integrated bus interface**
- **Hollow shaft encoders for direct mounting on actuators**

Incremental encoder

They generate a precisely defined number of pulses per revolution. They are a measure of the angular or linear distance moved. The phase difference between the A signal and the B signal, which are shifted by 90 degrees, enables evaluation of the rotational direction.

Absolute encoders

They provide an absolute numerical value for each angular position. Even in the event of a power failure the present position is quickly and reliably detected.

Singleturn and multiturn

Singleturn encoders divide a mechanical revolution into a certain number of measuring steps. The measuring values are repeated after one complete revolution. Multiturn encoders additionally count revolutions.

Product selectors and further information can be found at: www.ifm.com

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Hollow shaft encoders, programmable via IO-Link	346 - 347
Encoders with display, programmable via IO-Link or pushbuttons	347 - 348
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Absolute multiturn encoders (Profibus)	349
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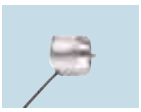
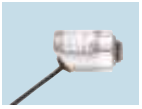
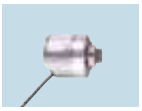
Solid shaft encoders, programmable via IO-Link

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
M12 connector · 5-pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA									
	1...10000	4.75...30	1000	50	6	-40...85	radial / axially	1	**RB3100**
Cable 2 m · Output function HTL 50 mA (preset at the factory) / TTL 50 mA									
	1...10000	4.75...30	1000	50	6	-40...80	radial / axially	2	**RB3500**
M12 connector · 5-pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA									
	1...10000	4.75...30	1000	50	6	-40...85	radial / axially	3	**RU3100**
Cable 2 m · Output function HTL 50 mA (preset at the factory) / TTL 50 mA									
	1...10000	4.75...30	1000	50	6	-40...80	radial / axially	4	**RU3500**
M12 connector · 5-pole · Output function HTL, TTL 50 mA									
	1...10000	4.75...30	1000	50	10	-40...85	radial / axially	5	**RV3100**
Cable 2 m · Output function HTL, TTL 50 mA									
	1...10000	4.75...30	1000	50	10	-40...80	radial / axially	6	**RV3500**

Hollow shaft encoders, programmable via IO-Link

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
M12 connector · 5-pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA									
	1...10000	4.75...30	1000	50	6 H7	-40...85	radial / axially	7	**RA3100**
	1...10000	4.75...30	1000	50	6 H7	-40...85	radial / axially	8	**RA3101**
M12 connector · 8 pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA · Connector groups 16, 17									
	1...10000	4.75...30	1000	50	12 H7	-40...85	radial / axially	9	**RA3102**

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw-ing no.	Order no.
Cable 2 m · Output function HTL 50 mA (preset at the factory) / TTL 50 mA									
	1...10000	4.75...30	1000	50	6 H7	-40...80	radial / axially	10	**RA3500**
	1...10000	4.75...30	1000	50	6 H7	-40...80	radial / axially	11	**RA3501**
M12 connector · 5-pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA									
	1...10000	4.75...30	1000	50	12 F7	-40...85	radial / axially	12	**RO3100**
	1...10000	4.75...30	1000	50	12 F7	-40...85	radial / axially	13	**RO3101**
	1...10000	4.75...30	1000	50	15 F7	-40...85	radial / axially	14	**RO3102**
	1...10000	4.75...30	1000	50	9.525 F7	-40...85	radial / axially	15	**RO3103**
	1...10000	4.75...30	1000	50	15.875 F7	-40...85	radial / axially	16	**RO3104**
Cable 2 m · Output function HTL 50 mA (preset at the factory) / TTL 50 mA									
	1...10000	4.75...30	1000	50	12 F7	-40...80	radial / axially	17	**RO3500**
	1...10000	4.75...30	1000	50	12 F7	-40...80	radial / axially	18	**RO3501**

Encoders with display, programmable via IO-Link or pushbuttons

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw-ing no.	Order no.
M12 connector · 8 pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA · Connector groups 16, 17									
	1...10000	4.75...30	1000	50	6	-40...85	radial / axially	19	**RUP500**
	1...10000	4.75...30	1000	50	10	-40...85	radial / axially	20	**RVP510**
	1...10000	4.75...30	1000	50	12 F7	-40...85	radial / axially	21	**ROP520**

You can find scale drawings from page 353

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
M12 connector · 8 pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA · Connector groups 16, 17									
	1...10000	4.75...30	1000	50	12 F7	-40...85	radial / axially	22	**ROP521**
	1...10000	4.75...30	1000	50	15 F7	-40...85	radial / axially	23	**ROP522**
	1...10000	4.75...30	1000	50	9.525 F7	-40...85	radial / axially	24	**ROP523**
	1...10000	4.75...30	1000	50	15.875 F7	-40...85	radial / axially	25	**ROP524**

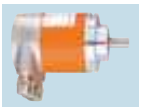
Absolute multiturn encoders (SSI)

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
Cable 2 m · Output function SSI data interface									
	4096	4.5...30	–	–	6	-40...85	axial	26	**RM8001**
	4096	4.5...30	–	–	10	-40...85	axial	27	**RM8002**
	4096	4.5...30	–	–	12	-40...85	axial	28	**RM8003**
M12 connector · Output function CANopen interface · Connector group 205									
	24 bits	9...30	–	–	12	-40...85	axial	29	**RM8004**

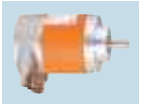
Absolute singleturn-encoders (Profibus)

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
Terminals · Output function Profibus data interface									
	13 bits	10...30	–	–	10	-40...85	–	30	**RN3001**

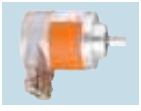
Absolute multiturn encoders (Profibus)

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
Terminals · Output function Profibus data interface									
	25 bits	10...30	–	–	6	-40...85	–	31	**RM3006**
	25 bits	10...30	–	–	10	-40...85	–	32	**RM3007**
	25 bits	10...30	–	–	12	-40...85	–	33	**RM3008**

Absolute multiturn encoders (ProfiNet)

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
M12 connector · Output function Profinet IO data interface · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	25 bits	10...30	–	–	10	-40...85	–	34	**RM3011**
	25 bits	10...30	–	–	12	-40...85	–	35	**RM3010**

Absolute singleturn-encoders (CANopen)

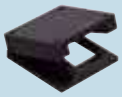
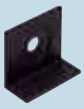
Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
Terminals · Output function CANopen interface									
	13 bits	10...30	–	–	6	-40...85	–	36	**RN7011**
	13 bits	10...30	–	–	10	-40...85	–	30	**RN7012**

You can find scale drawings from page 353

Absolute multiturn-encoders (CANopen)

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
Terminals · Output function CANopen interface									
	25 bits	10...30	–	–	6	-40...85	–	31	**RM7011**
	25 bits	10...30	–	–	10	-40...85	–	32	**RM7012**
M12 connector · Output function CANopen interface · Connector group 205									
	4096	9...30	–	–	10	-40...85	axial	37	**RM9010**

Fixing accessories for encoders

Type	Description	Order no.
	Resilient base for angle flanges · Housing materials: aluminium black anodised	**E60036**
	Angle bracket · for encoders · for type RB, RC, RM, RN, RU · Housing materials: aluminium black anodised	**E60033**
	Angle bracket · for encoders · for type RM, RMU, RN, RU · Housing materials: aluminium black anodised	**E60034**
	Angle bracket · for encoders · for type RMV, RV · Housing materials: aluminium black anodised	**E60035**
	Angle bracket · for encoders · for type RM · Housing materials: aluminium black anodised	**E60302**
	Fastening clamp · for solid shaft encoders · Housing materials: steel	**E60041**

Couplings for encoders

Type	Description	Order no.
	Flexible coupling with clamp connection [KV] · Ø 6 mm / 1/4'' / 1/4 inch / [6.35 mm] · Housing materials: aluminium	**E60206**

Type	Description	Order no.
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 3/8" / 3/8 inch / [9.525 mm] · Housing materials: aluminium	**E60207**
	Flexible coupling with clamp connection [KV] · Ø 10 mm / Ø 1/2" / 1/2 inch / [12.7 mm] · Housing materials: aluminium	**E60208**
	Flexible coupling with clamp connection [KV] · Ø 10 mm / Ø 3/8" / 3/8 inch / [9.525 mm] · Housing materials: aluminium	**E60209**
	Flexible coupling with clamp connection [KV] · Ø 4 mm / Ø 6 mm · Housing materials: aluminium	**E60119**
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 6 mm · Housing materials: aluminium	**E60064**
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 6 mm · Housing materials: aluminium	**E60065**
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 8 mm · Housing materials: aluminium	**E60120**
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 10 mm · Housing materials: aluminium	**E60066**
	Flexible coupling with clamp connection [KV] · Ø 10 mm / Ø 10 mm · Housing materials: aluminium	**E60067**
	Flexible coupling with adjusting screw connection [SV] · Ø 4 mm / Ø 6 mm · Housing materials: aluminium	**E60062**
	Flexible coupling with adjusting screw connection [SV] · Ø 6 mm / Ø 6 mm · Housing materials: aluminium	**E60063**
	Flexible coupling with adjusting screw connection [SV] · Ø 6 mm / Ø 8 mm · Housing materials: aluminium	**E60027**
	Flexible coupling with adjusting screw connection [SV] · Ø 6 mm / Ø 10 mm · Housing materials: aluminium	**E60028**
	Flexible coupling with adjusting screw connection [SV] · Ø 10 mm / Ø 10 mm · Housing materials: aluminium	**E60022**
	Spring disc coupling electrically isolating · Ø 6 mm / Ø 6 mm · Housing materials: diecast zinc / PA	**E60121**
	Spring disc coupling electrically isolating · Ø 6 mm / Ø 10 mm · Housing materials: diecast zinc / PA	**E60117**

You can find scale drawings from page 353

Type	Description	Order no.
	Spring disc coupling electrically isolating · Ø 10 mm / Ø 10 mm · Housing materials: diecast zinc / PA	**E60118**
	Plastic beam coupling with stainless steel hub · Ø 10 mm / Ø 10 mm · Housing materials: PA 6.6 / stainless steel 316L / 1.4404	**E60193**

Measuring wheels for encoders

Type	Description	Order no.
	Measuring wheel · Ø 63.6 mm / Ø 6 mm · cross-knurl · Housing materials: wheel: aluminium / surface characteristics: aluminium	**E60006**
	Measuring wheel · Ø 63.6 mm / Ø 10 mm · cross-knurl · Housing materials: wheel: aluminium / surface characteristics: aluminium	**E60095**
	Measuring wheel · Ø 63.66 ±0.1 mm / Ø 6 mm · smooth plastic · Housing materials: wheel: aluminium / surface characteristics: PU	**E60111**
	Measuring wheel · Ø 63.66 ±0.1 mm / Ø 10 mm · smooth plastic · Housing materials: wheel: aluminium / surface characteristics: PU	**E60112**
	Measuring wheel · Ø 63.66 ±0.1 mm / Ø 6 mm · grooved plastic · Housing materials: wheel: aluminium / surface characteristics: PU	**E60137**
	Measuring wheel · Ø 63.66 ±0.1 mm / Ø 10 mm · grooved plastic · Housing materials: wheel: aluminium / surface characteristics: PU	**E60138**
	Measuring wheel · Ø 159.15 mm / Ø 10 mm · cross-knurl · Housing materials: wheel: aluminium / surface characteristics: aluminium	**E60098**
	Measuring wheel · Ø 159.16 mm / Ø 10 mm · rubber · Housing materials: wheel: aluminium / surface characteristics: PU	**E60076**
	Measuring wheel · Ø 159.15 mm / Ø 10 mm · smooth plastic · Housing materials: wheel: aluminium / surface characteristics: PU	**E60110**

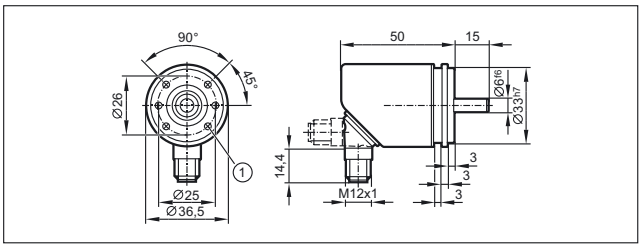
Connectors for encoders

Type	Description	Order no.
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · For applications in particularly harsh environments · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVM039**

Type	Description	Order no.
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · Housing materials: housing: TPU black / sealing: FKM	**EVC492**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · For applications in particularly harsh environments · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVM036**
	Socket · straight · M12 connector · 2 m · Housing materials: TPU	**E12402**
	Jumper · straight / straight · Free from halogen · 0.3 m · Housing materials: PUR	**E12432**

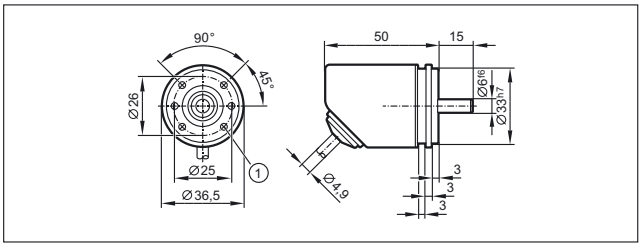
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: M3 x 0.5 6 mm deep

2



1: M3 x 0.5 6 mm deep

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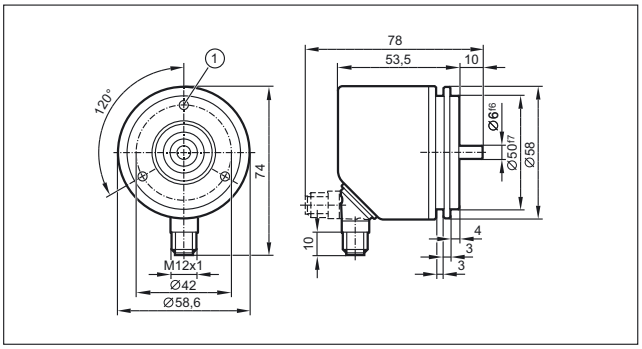

1: M4 x 0.7 6 mm deep

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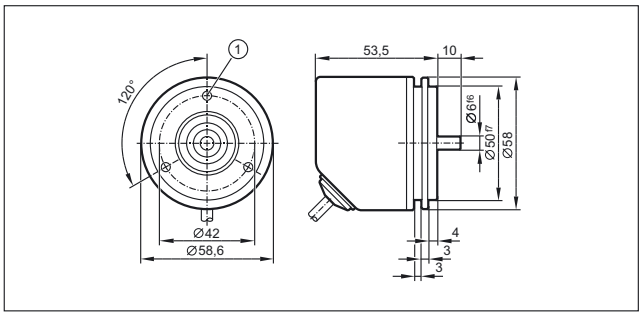

1: M4 x 0.7 6 mm deep

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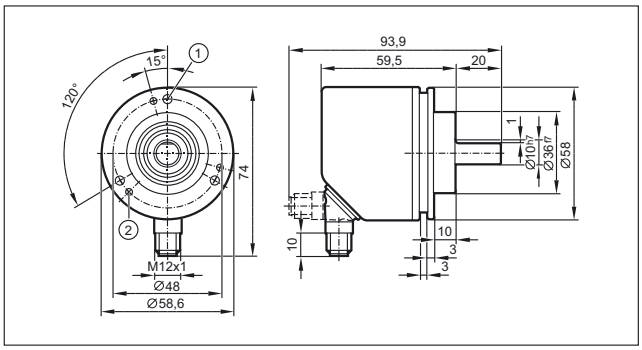
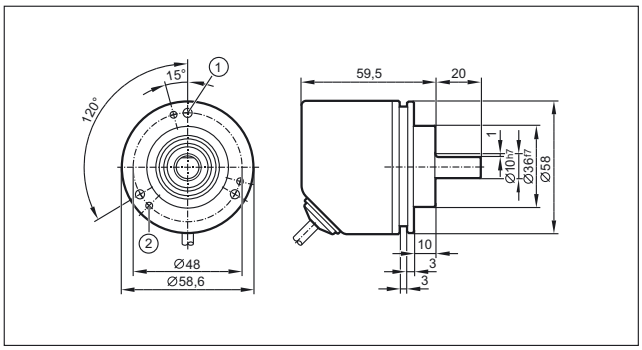


1: M4 x 0.7 6 mm deep, 2: M3 x 0.5 6 mm deep

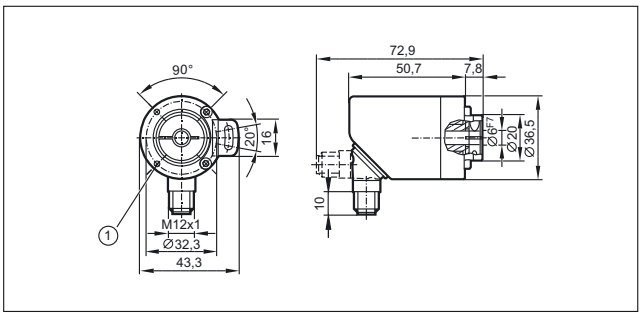
6



1: M4 x 0.7 6 mm deep, 2: M3 x 0.5 6 mm deep

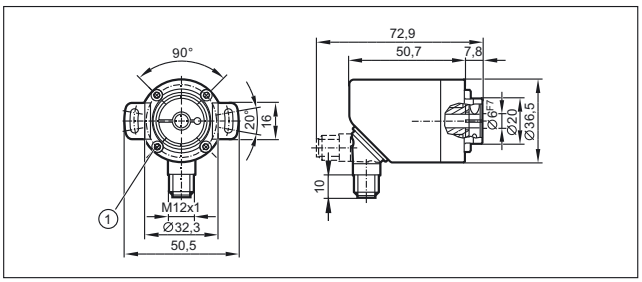
Scale drawings / drawing no. – CAD download: www.ifm.com

7



M2.5 x 0.45 6mm deep

8



1: M3 x 0.5 6 mm deep

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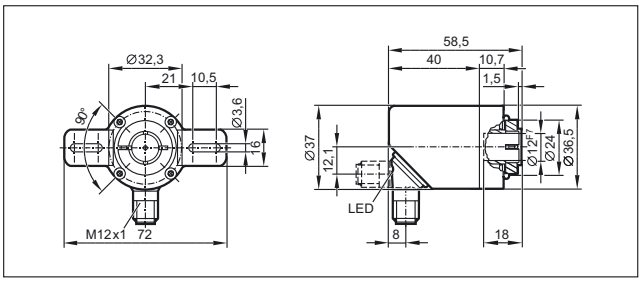

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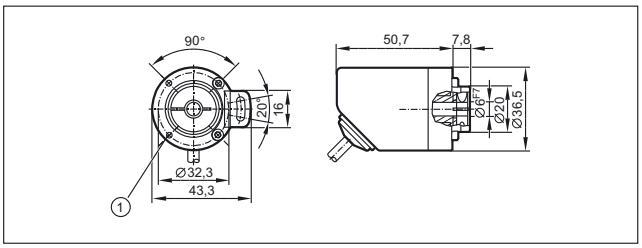

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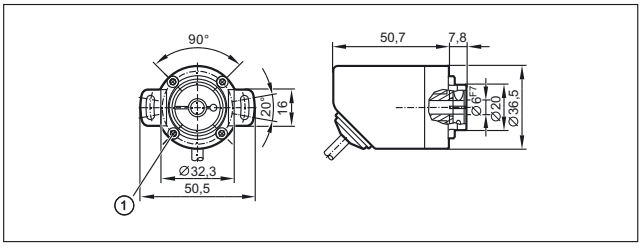

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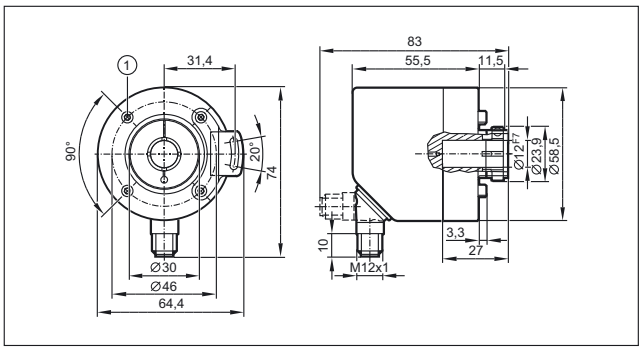

1: M3 x 0.5 6 mm deep

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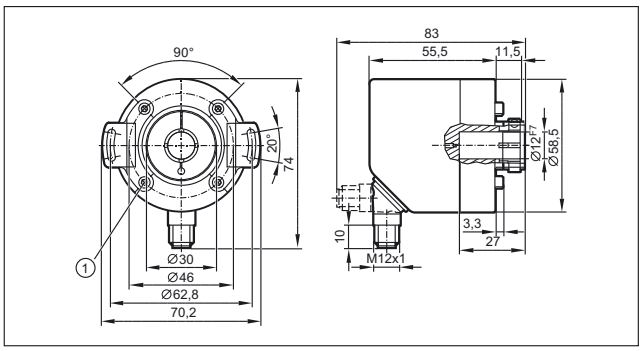

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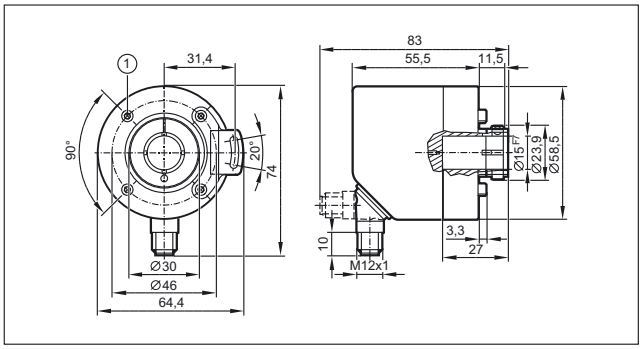

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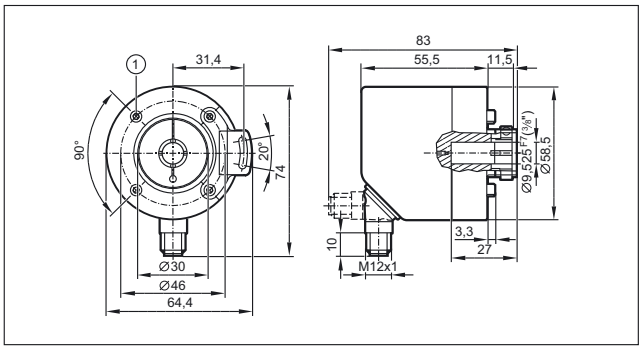

Scale drawings / drawing no. – CAD download: www.ifm.com

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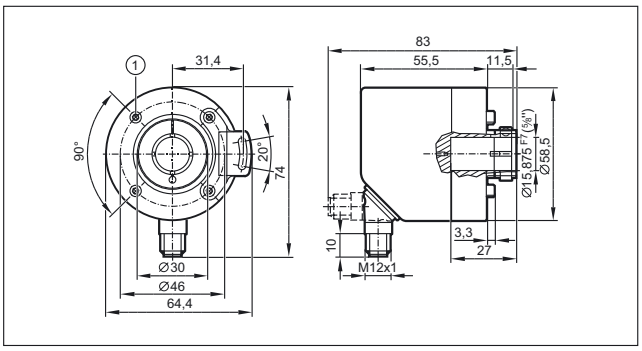

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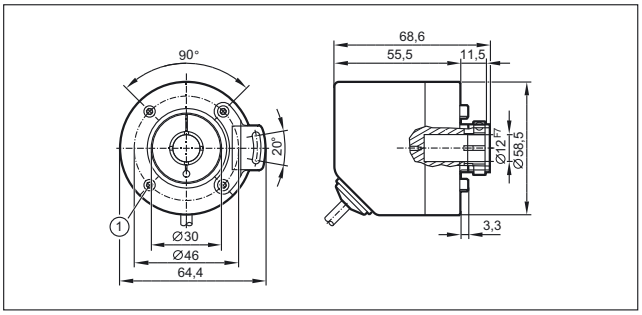

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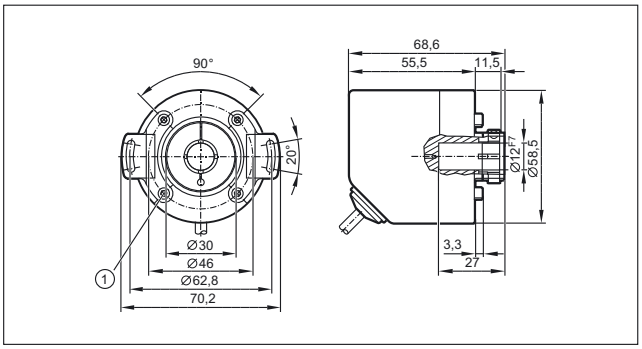

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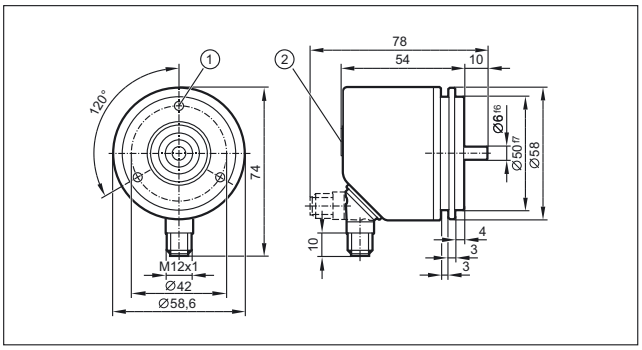
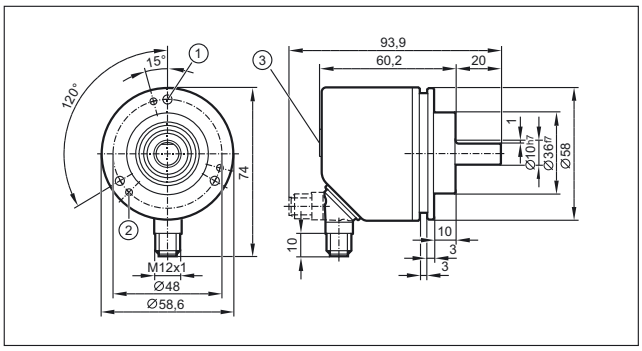


1: M4 x 0.7 6 mm deep, 2: display

20



1: M4 x 0.7 6 mm deep, 2: M3 x 0.5 6 mm deep, 3: display

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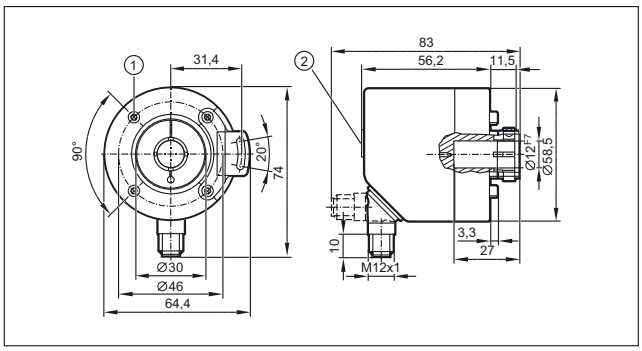

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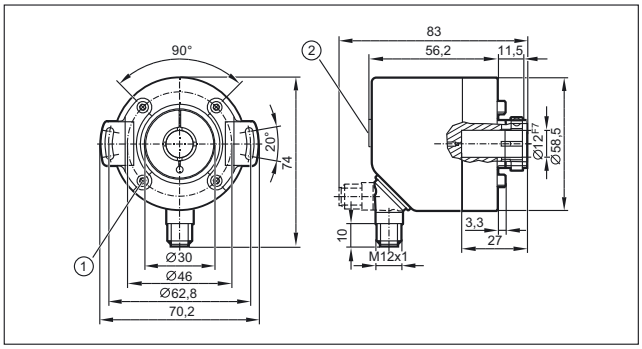

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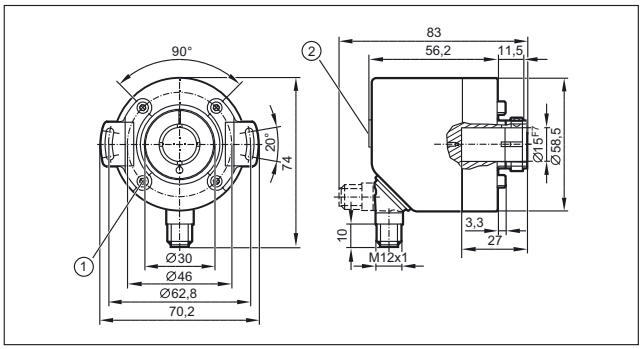
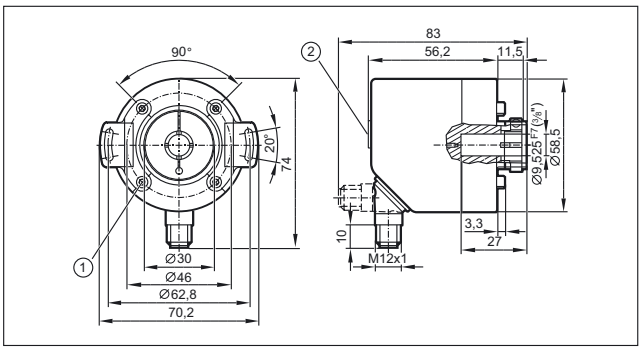


Scale drawings / drawing no. – CAD download: www.ifm.com

24



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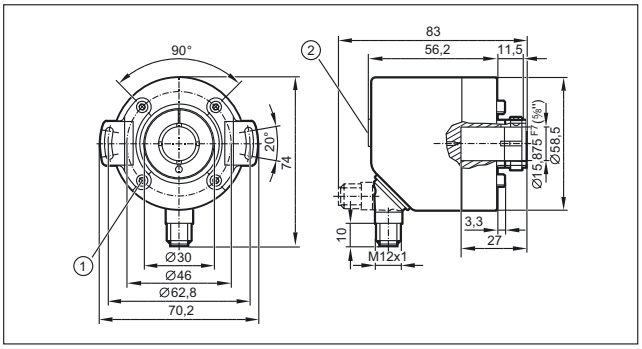

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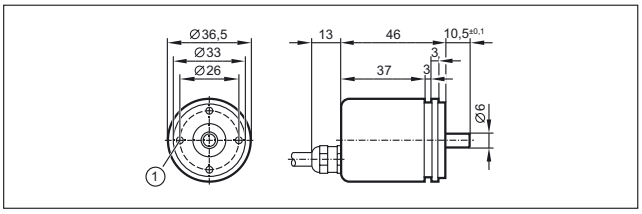
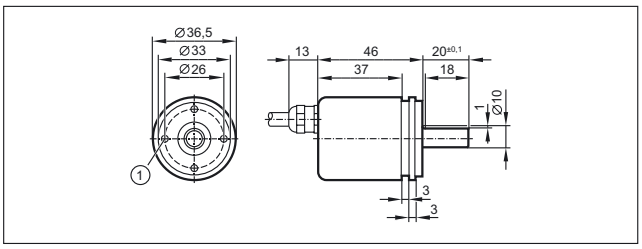


M3 6 mm deep

27



M3 6 mm deep

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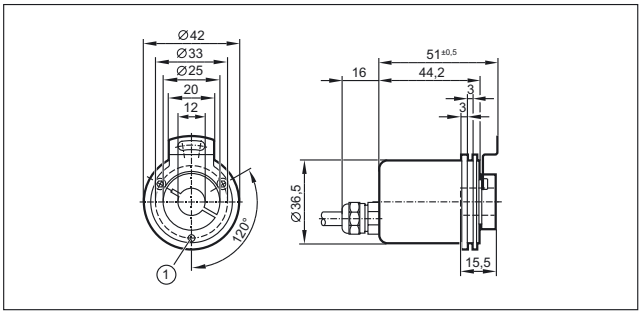
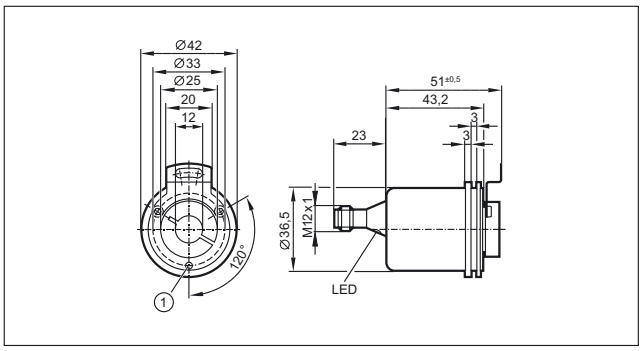


1: M3 x 6

29



1: M3 x 6

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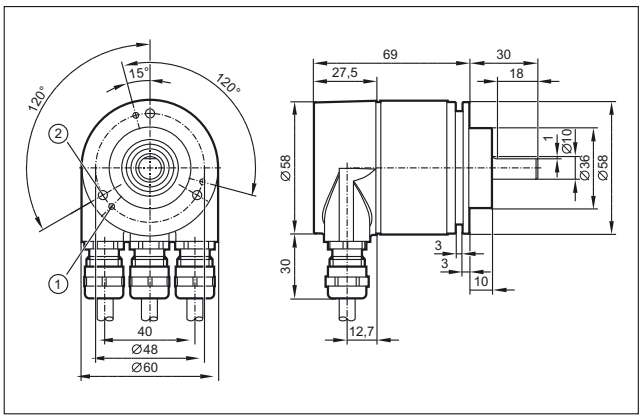
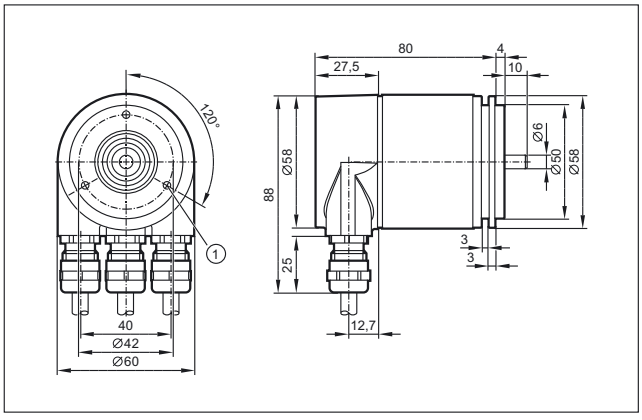


1: M3 6 mm deep, 2: M4 6 mm deep

31



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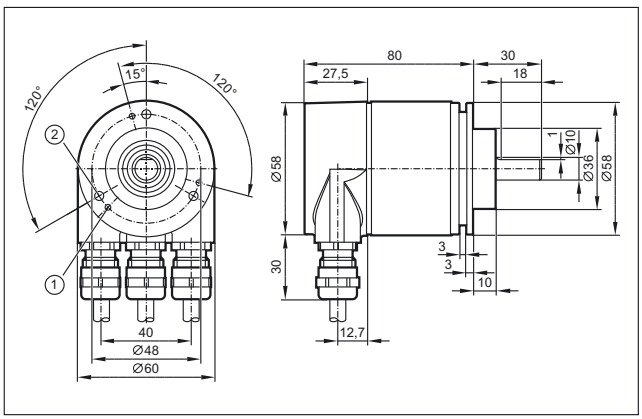
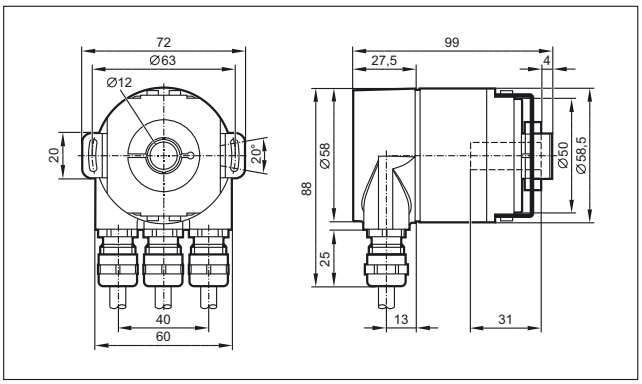


1: M3 6 mm deep, 2: M4 6 mm deep

Scale drawings / drawing no. – CAD download: www.ifm.com

33



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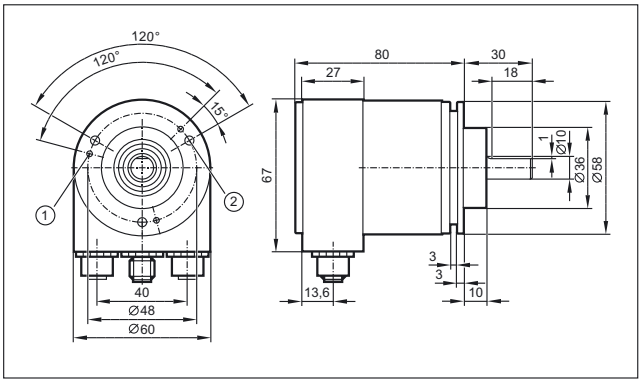

1: M3 6 mm deep, 2: M4 6 mm deep

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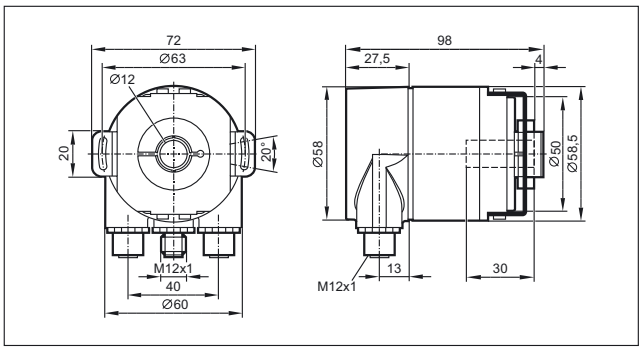

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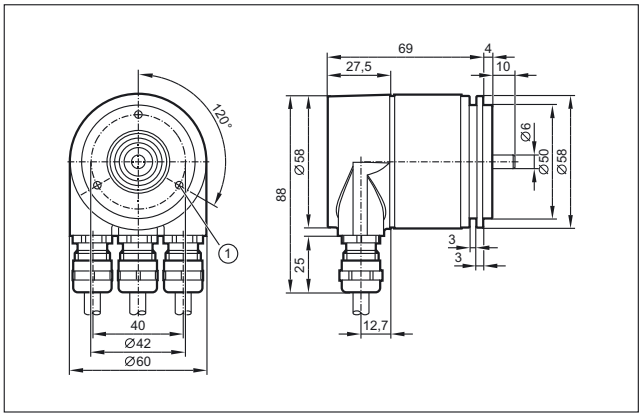

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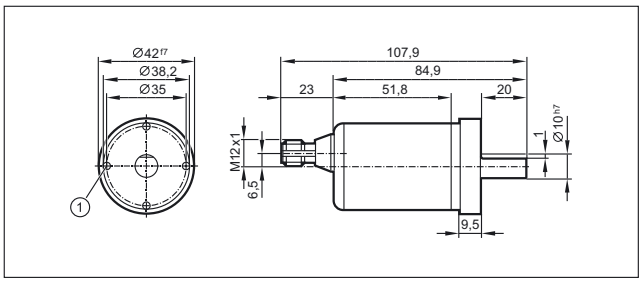


1: M4 8 mm deep

Sensor with integrated speed evaluation

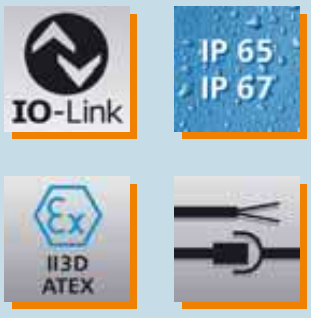
Speed sensors

2 in 1: speed sensor and evaluation in one compact housing

Space-saving design

Easy to fit

Easy parameter setting by potentiometer or pushbutton



Inductive sensor with integrated speed evaluation

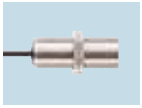
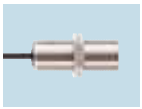
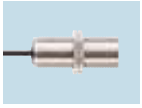
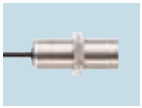
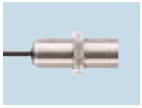
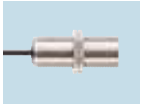
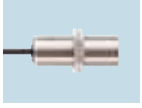
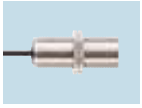
In many industrial applications drives need to be monitored for rotational speed or standstill. A typical application in building automation is V-belt monitoring on fans. In conveying, standstill monitoring is used to detect belt break on conveyors. A similar principle is applied in agricultural engineering to monitor elevator drives or detect failure of screw conveyors.

The compact DI series speed monitor offers a specially low-cost and reliable solution. In principle it is an inductive sensor with integrated speed evaluation. Advantage: the condition information of the drive is directly transferred to the control system.

The nominal speed is easily set by potentiometer or pushbutton.

System overview	*Page*
Speed monitor with integrated sensor	*360*
Speed monitors with integrated sensor, ATEX category 3D	*361*
Speed sensors with magnetic measuring principle	*361 - 362*
Accessories	*362*
Wiring diagrams	*362 - 363*
Scale drawings / drawing no. – CAD download: www.ifm.com	*363 - 364*

Speed monitor with integrated sensor

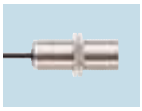
Type	Dimensions [mm]	Sensing range [mm]	Electrical design	U_b [V]	Setting range [puls. / min.]	Start-up delay [s]	Drawing no.	Order no.
Output function ⎍/⎍ · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	M18 / L = 68	12 nf	DC PNP	10...36 DC	3...6000	0...15	1	**DI6001**
Output function ⎍ · Wiring diagram no. 2								
	M30 / L = 80	10 f	AC/DC	20...250 AC/DC	5...3600	< 0.5	2	**DI0104***
	M30 / L = 80	10 f	AC/DC	20...250 AC/DC	5...3600	12	2	**DI0101***
Output function ⎍ · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	M30 / L = 82	10 f	DC PNP	10...36 DC	5...300	15	3	**DI5009**
Output function ⎍ · Wiring diagram no. 4								
	M30 / L = 80	10 f	DC PNP	10...36 DC	5...3600	0	2	**DI5022**
	M30 / L = 80	10 f	DC PNP	10...36 DC	5...3600	15	2	**DI5020**
Output function ⎍ · Wiring diagram no. 5								
	M30 / L = 80	10 f	DC PNP	10...36 DC	5...3600	5	2	**DI5021**
Output function ⎍ · Wiring diagram no. 4								
	M30 / L = 80	10 f	DC PNP	10...36 DC	5...3600	15	2	**DI520A**
Output function ⎍/⎍ · Wiring diagram no. 6								
	M30 / L = 80	10 f	DC PNP/NPN	10...36 DC	5...3600	0...30	2	**DI5026**
	M30 / L = 80	10 f	DC PNP/NPN	10...36 DC	5...3600	0...30	2	**DI523A**

f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Speed monitors with integrated sensor, ATEX category 3D

Type	Dimensions [mm]	Sensing range [mm]	Electrical design	U_b [V]	Setting range [puls. / min.]	Start-up delay [s]	Draw-ing no.	Order no.
Output function ⎍ · Wiring diagram no. 2								
	M30 / L = 80	10 f	AC/DC	20...250 AC/DC	5...3600	12	2	**DI103A***
Output function ⎍ · Wiring diagram no. 3 · Connector group --								
	M30 / L = 82	10 f	DC PNP	10...36 DC	5...300	15	4	**DI505A**
	M30 / L = 82	10 f	DC PNP	10...36 DC	5...300	5	4	**DI506A**
Output function ⎍ / ⎍ · Wiring diagram no. 1 · Connector group --								
	M18 / L = 68	8 nf	DC PNP	10...36 DC	3...6000	0...15	5	**DI602A**

f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

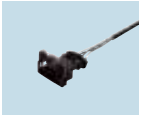
Speed sensors with magnetic measuring principle

Type	Dimensions [mm]	Sensing range [mm]	Electrical design	U_b [V]	Connection	Ambient temperature sensor [°C]	Draw-ing no.	Order no.
Wiring diagram no. 7								
	Ø 15 / L = 49.5	1.7	DC NPN	15	PUR cable	-32...140	6	**MX5015**
	Ø 15 / L = 50	1.7	DC NPN	15	PUR cable	-32...140	7	**MX5017**
Output function ⎍ · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Ø 15 / L = 60	1.7	DC PNP	10...30 DC	PUR cable	-32...85	8	**MX5050**
Wiring diagram no. 9								
	–	1.7	DC NPN	7...30 DC	AMP Junior Timer connector (282 1921)	-32...140	9	**MX5004**

You can find wiring diagrams and scale drawings from page 362

Type	Dimensions [mm]	Sensing range [mm]	Electrical design	U_b [V]	Connection	Ambient temperature sensor [°C]	Drawing no.	Order no.
Wiring diagram no. 9								
	–	1.7	DC NPN	7...30 DC	AMP Junior Timer connector (282 1921)	-32...140	10	**MX5000**

Accessories

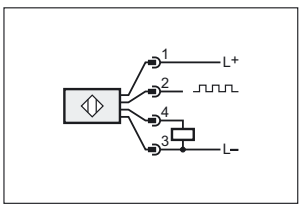
Type	Description	Order no.
	Angle bracket · for type M18 · Housing materials: stainless steel	**E10736**
	Angle bracket · for type M30 · Housing materials: stainless steel	**E10737**
	Mounting clamp · Ø 20 mm - Ø 18 mm · with reducing bush · for type M18 · Housing materials: PBT	**E10076**
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	**E10077**
	Target wheel · Plastic disk with 8 screws as "target" · Centered drill holes	**E89010**
	Target for pulse pickups · Strap dimensions 7 x 145 mm	**E89013**
	Cable plug · straight · 10 m	**E60303**
	Amplifier · 1-channel · selectable for pnp and npn switching sensors · Output 24 V DC / 300 mA · short-circuit and overload protection · Housing materials: plastics: PC GF20	**DN0210**

Wiring diagrams

Core colours

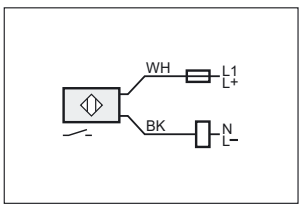
BK	black
WH	white
BN	brown
BU	blue

1



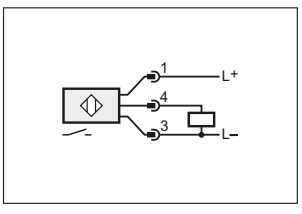
2: pulse output (the pulse sequence corresponds to the damping frequency),
4: switching output (adjustable)

2



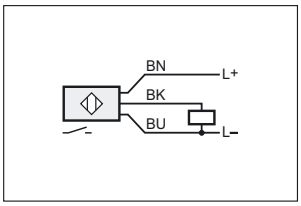
Note: miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting)

3



Wiring diagrams

4



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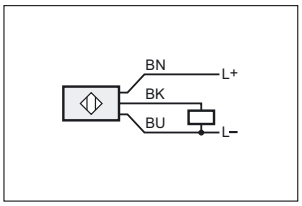

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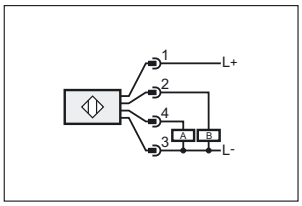
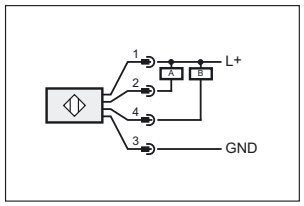


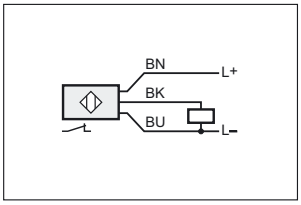
A: Pulse output, B: pulse output (the pulse sequence corresponds to the damping frequency)

9



A: Pulse output, B: pulse output (the pulse sequence corresponds to the damping frequency)

5



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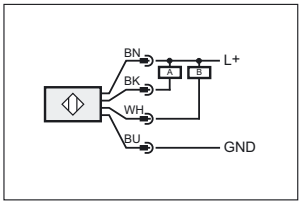
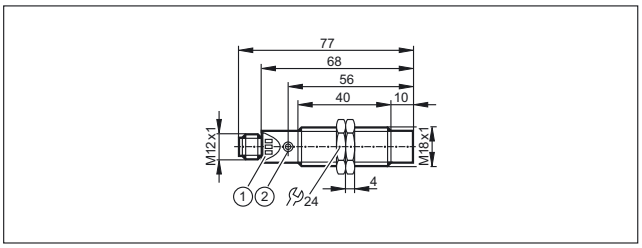


A: Pulse output, B: pulse output (the pulse sequence corresponds to the damping frequency)

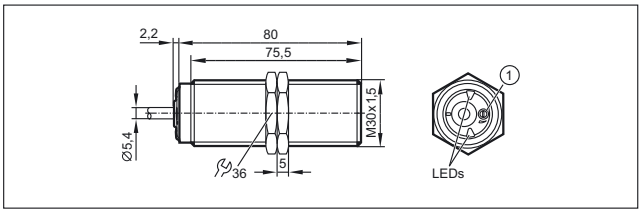
Scale drawings / drawing no. – CAD download: www.ifm.com

1



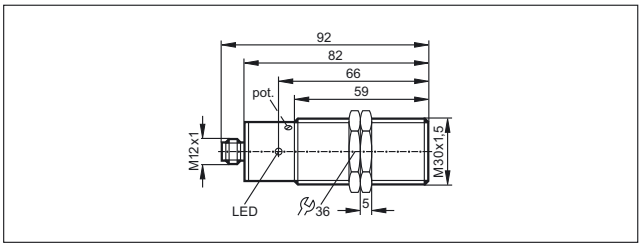
1: 3 LED, 2: setting pushbutton

2



1: potentiometer

3



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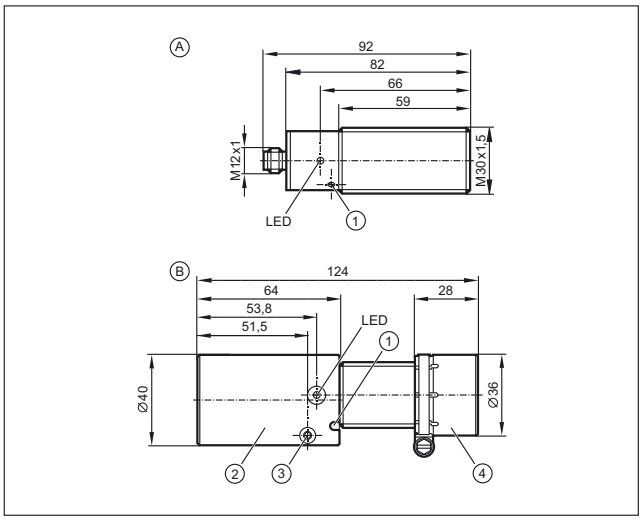
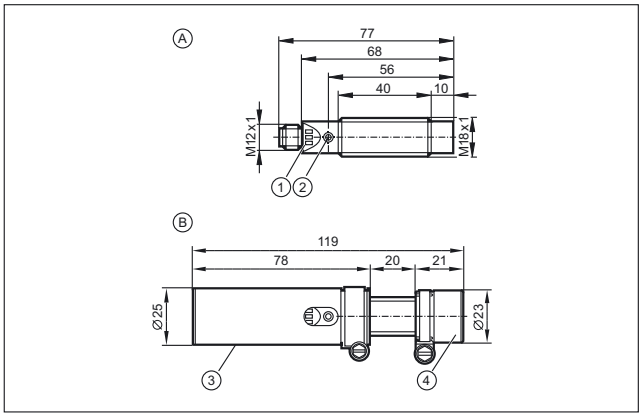


A: Sensor, B: sensor with impact protection housing,
1: potentiometer, 2: impact protection housing for the connector,
3: clamping screw, 4: impact protection housing for the sensor

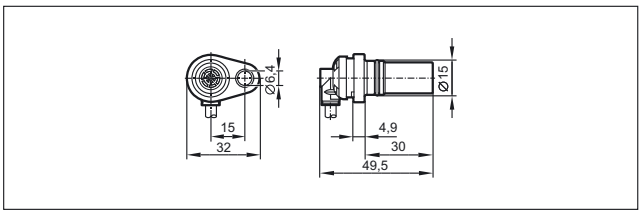
5



A: Sensor, B: sensor with impact protection housing, 1: 3 LED,
2: setting pushbutton, 3: impact protection housing for the connector, 4: impact protection housing for the sensor

Scale drawings / drawing no. – CAD download: www.ifm.com

6



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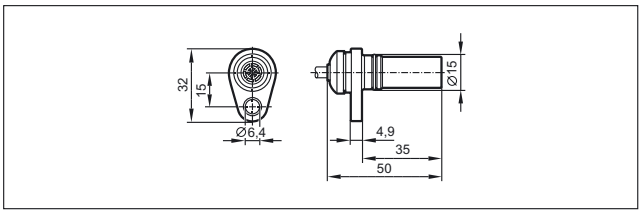

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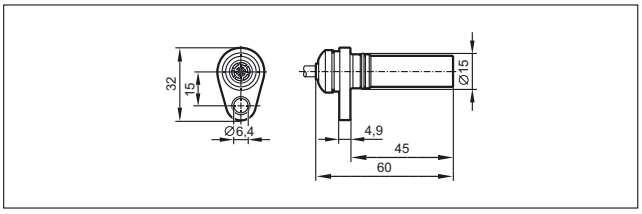

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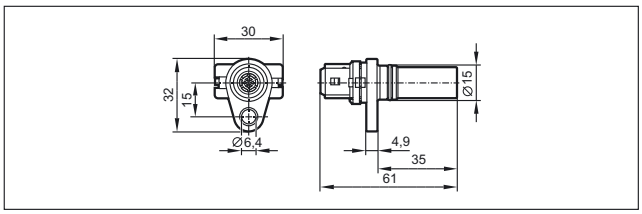

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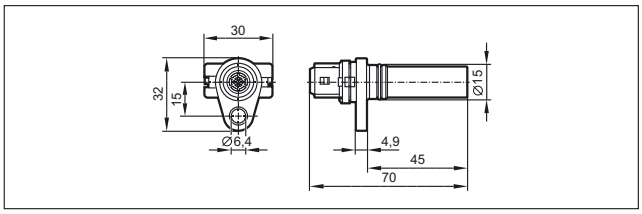


Inclination sensors measure each angle with precision

Inclination sensors

- **Compact and robust design**
- **Wide angle range and high accuracy**
- **Sensor types for signal output via CANbus, IO-Link as digital or analogue signal**
- **High protection rating IP 65 to IP 69K**
- **CAN and IO-Link sensors are freely configurable**

Inclination detection

Often the horizontal alignment of machines or machine parts is an important requirement for reliable operation.
Typical applications are cranes, access platforms or outriggers.

ifm inclination sensors differ by their signal outputs, number of measurement axes, the measuring range and the connection type. Depending on the sensor type, signal output is via CANbus, IO-Link, analogue or digital.

If only a switch point is to be detected, the mercury-free tilt sensor is used. Due to its design, it has the same good switching characteristics as a conventional mercury switch. Due to the harmless filling of the switching element with alcohol it has considerable ecological advantages in case of damage or disposal.

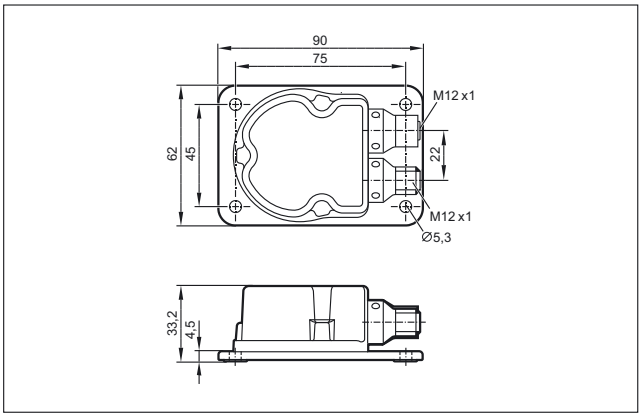
System overview	*Page*
Inclination sensors	*368*
Scale drawings / drawing no. – CAD download: www.ifm.com	*368 - 369*

Inclination sensors

Type	Description	Drawing no.	Order no.
	Inclination sensor · 0...360° / ± 180° · CANopen interface · Self-test function · Heartbeat · Emergency messages available · housing: diecast zinc nickel-plated	1	**JN2100**
	Inclination sensor · ± 180° · Self-test function · IO-Link interface · Analogue interfaces (voltage / current) · Analogue / binary outputs · housing: diecast zinc nickel-plated	2	**JN2200**
	Inclination sensor · 0...360° / ± 180° · SAE J1939 interface · Self-test function · Diagnostic Trouble Code (DTC) available · housing: diecast zinc nickel-plated	1	**JN2300**
	Inclination sensor · ± 45° · CANopen interface · Self-test function · Heartbeat · Emergency messages available · housing: diecast zinc nickel-plated	1	**JN2101**
	Inclination sensor · ± 45° · Self-test function · IO-Link interface · Analogue interfaces (voltage / current) · Analogue / binary outputs · housing: diecast zinc nickel-plated	2	**JN2201**
	Inclination sensor · ± 45° · SAE J1939 interface · Self-test function · Diagnostic Trouble Code (DTC) available · housing: diecast zinc nickel-plated	1	**JN2301**
	Inclination sensor · ± 90° · 15...30 V DC · Output 0...10 V · Cable	3	**EC2019**
	Inclination sensor · ± 90° · Input 8...30 V DC · Output 0.5...4.5 V · Cable	3	**EC2045**
	Inclination sensor · ± 20° · Analogue output · 4...20 mA	3	**EC2060**
	Inclination sensor · ± 90° · Analogue output · 4...20 mA · Cable with connector	3	**EC2082**
	Tilt sensor · free from mercury · semi-conductor output · 10...30 V DC · Cable	4	**EC2061**

Scale drawings / drawing no. – CAD download: www.ifm.com

1



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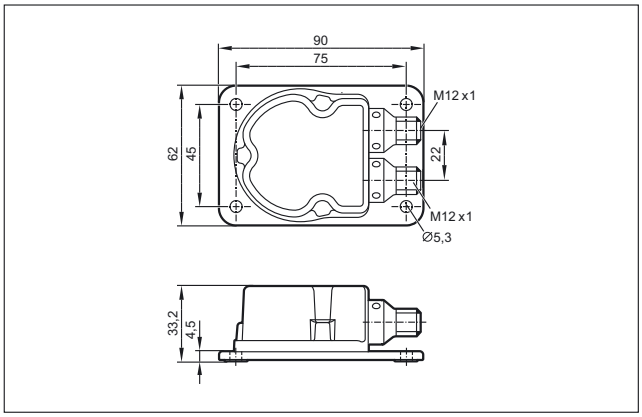

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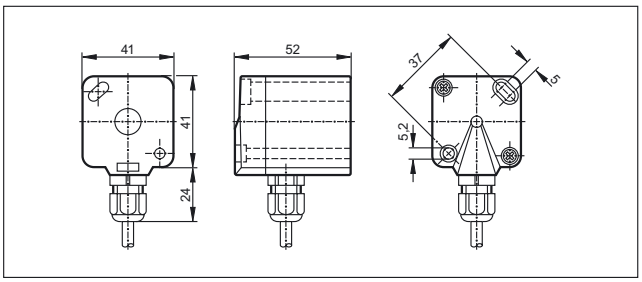

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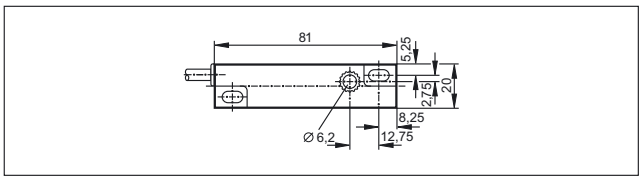


Versatile pulse evaluation systems

Pulse evaluation systems

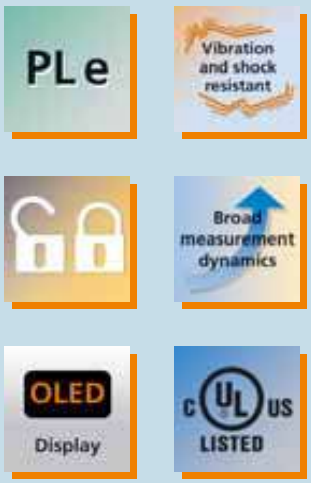
Easy parameter setting

Primary voltage 24V DC or 110 / 230V AC, wide-range input

Programmable switching characteristics

Standstill, overspeed, direction, slip and frequency conversion, counter

Switching relays and transistor outputs, scalable analogue output



Evaluation systems

Although PLC applications in industrial automation are becoming more and more versatile, there are still numerous processes which require decentralised monitoring.

For this purpose, ifm offers various pulse evaluation systems:

- speed monitors
- standstill monitor
- slip / synchronous monitors
- direction monitor
- frequency-to-current converter
- threshold relay
- displays with frequency and analogue input
- counter
- processing of analogue standard signals

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Universal speed monitors with sensor wire monitoring	*372*
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Dual speed monitors with sensor wire monitoring	*372*
Standard speed monitors / standstill monitor	*373*
Level monitoring relays	*373*
Level control relays	*373*
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Slip / synchronous monitors with sensor wire monitoring	*374*
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2-channel threshold relay for analogue standard signals	*375*
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Universal speed monitors

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
FR-1 · 2 switch points for monitoring overspeed/underspeed and acceptable range										
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	1...60000	0.1...1000	1	2	2	1	**DD2503**

Universal speed monitors with sensor wire monitoring

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
FR-1N · 2 switch points for monitoring overspeed/underspeed and acceptable range										
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	Namur 8.2 V	1...60000	0.1...1000	1	2	4	1	**DD2603**

Dual speed monitors

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
FR-2 · 1 switch point each for monitoring overspeed/underspeed and acceptable range										
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	2	PNP / NPN / Namur	1...60000	0.1...1000	–	2	2	1	**DD2505**

Dual speed monitors with sensor wire monitoring

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
FR-2N · 1 switch point each for monitoring overspeed/underspeed and acceptable range										
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	2	Namur 8.2 V	1...60000	0.1...1000	–	2	4	1	**DD2605**

Standard speed monitors / standstill monitor

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
D200 · evaluation of pulse sequences with regard to overspeed and underspeed; rotational speed monitoring										
	110...240 AC / 27 (24) DC	1	PNP	0.1...10 / 10...1000	–	–	1	–	2	**DD0203**
	110...240 AC / 27 (24) DC	1	PNP	0.2...20 / 20...2000	–	–	1	–	2	**DD0296**

Level monitoring relays

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
L200 · protection of a tank against overflow or running dry										
	110...240 AC / 27 (24) DC	1	PNP	–	–	–	1	–	3	**DL0201**

Level control relays

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
L200 · two point level control										
	110...240 AC / 27 (24) DC	1	PNP	–	–	–	1	–	4	**DL0203**

Slip monitors

Type	U_b [V]	In-puts	Input function	Setting range	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
FS-1 · 1 switching output for slip monitoring; 1 switching output for overspeed/underspeed and acceptable range								
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	slip: 0.1...99.9 % rotational speed (frequency): 1...60000 pulses/min (0.1...1000)	2	2	1	**DS2503**

You can find scale drawings from page 378

Slip monitors with sensor wire monitoring

Type	U_b [V]	Inputs	Input function	Setting range	Outputs relays	Outputs transist.	Drawing no.	Order no.
FS-1N · 1 switching output for slip monitoring; 1 switching output for overspeed/underspeed and acceptable range								
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	Namur 8.2 V	slip: 0.1...99.9 % rotational speed (frequency): 1...60000 pulses/min (0.1...1000)	2	2	1	**DS2603**

Slip / synchronous monitors

Type	U_b [V]	Inputs	Input function	Setting range	Outputs relays	Outputs transist.	Drawing no.	Order no.
FS-2 · 2 switch points for slip/synchronous monitoring								
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	pulse differences: 1...999 reset time: 0.0...1000.0 s	2	2	1	**DS2505**
FS-3 · 2 switch points for synchronous monitoring								
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	pulse differences: 1...999 hysteresis: 1...999	2	2	1	**DS2506**

Slip / synchronous monitors with sensor wire monitoring

Type	U_b [V]	Inputs	Input function	Setting range	Outputs relays	Outputs transist.	Drawing no.	Order no.
FS-2N · 2 switch points for slip/synchronous monitoring								
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	Namur 8.2 V	pulse differences: 1...999 reset time: 0.0...1000.0 s	2	2	1	**DS2605**

Combined direction and speed monitors

Type	U_b [V]	Inputs	Input function	Setting range	Outputs relays	Outputs transist.	Drawing no.	Order no.
FD-1 · 1 switching output for indication of direction; 1 switching output for overspeed/underspeed and acceptable range								
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	cycle time: 0.0...1000 s rotational speed (frequency): 1...60000 pulses/min (1...1000)	2	2	1	**DR2503**
FD-2 · 2 switching outputs for separate indication of direction; adjustable reset times for standstill monitoring								
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	reset time: 0.0...1000 s	2	2	1	**DR2505**

Frequency-to-current converters

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
FA-1 · Conversion of pulse sequences into analogue standard signals										
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	0...600000	0...10000	2	1	1	1	**DW2503**

2-channel threshold relay for analogue standard signals

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
AL-3 · 2-channel analogue threshold relay for analogue standard signals										
	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	2	2 x 0/4...20 mA	–	–	1	1	1	1	**DL2503**

Safety standstill monitors, SIL 3, PL e

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
Monitoring rotational or linear movements for minimum switch point not reached (standstill)										
	24 DC	1	PNP	–	0.2 / 0.5 / 1.0 / 2.0	–	2	1	5	**DA102S**

Safety speed monitor, SIL 3, PL e

Type	U_b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.
Monitoring of rotational or linear movements for adherence to a maximum setpoint (overspeed)										
	24 DC	1	PNP	–	-40...70	–	2	1	6	**DD110S**
	24 DC	1	PNP	–	-40...70	–	2	1	6	**DD111S**
Monitoring of rotational or linear movements for underspeed (minimum switch point not reached)										
	24 DC	1	PNP	–	-40...70	–	2	1	6	**DU110S**

You can find scale drawings from page 378

Multifunctional displays for digital signals / frequency input

Type	Inputs / outputs	Description	Drawing no.	Order no.
AX460 · universal unit for displaying and monitoring analogue signals (e.g. pressure sensors, temperature sensors or flow sensors)				
	2 x analogue in	Digital display · Multi-functional display and evaluation system · for analogue standard signals · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	**DX2041**
	2 x analogue in 4 x digital out	Digital display · Multi-functional display and evaluation system · for analogue standard signals · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	**DX2042**
	2 x analogue in	Digital display · Multi-functional display and evaluation system · for analogue standard signals · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	**DX2051**
	2 x analogue in 4 x digital out	Digital display · Multi-functional display and evaluation system · for analogue standard signals · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	**DX2052**

Multifunctional displays for analogue standard signals

Type	Inputs / outputs	Description	Drawing no.	Order no.
FX460 · universal evaluation and display for all physical units which can be derived from pulse sequences				
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	**DX2021**
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Analogue output · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	**DX2022**
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	**DX2023**
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	**DX2031**
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Analogue output · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	**DX2032**
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	**DX2033**
Decentralised display, preprocessing and conversion of 4...20 mA analogue signals				
	normally open / closed programmable	Threshold display · 4...20 mA analogue input · transistor output · IO-Link interface · 4-digit alphanumeric display / alternating indication of red and green · Conversion of analogue measured values to an IO-Link communication · Analogue input 4...20 mA · Ambient temperature -25...60 °C · Operating voltage 18...30 V DC · IP 67	8	**DP2200**

Type	Inputs / outputs	Description	Drawing no.	Order no.
scaleable display for sensors with analogue output (e.g. pressure sensors, flow sensors)				
	–	LC display · LCD 3½ digits; 15 mm high · Supply from the current loop · Input 4...20 mA · Ambient temperature 0...60 °C · terminals up to 2.5 mm² · IP 65	9	**E89150**

Universal counters

Type	U_b [V]	Inputs	Input function	Setting range	Outputs relays	Outputs transist.	Drawing no.	Order no.
preset counter with 2 presets								
	90...260 AC	1	PNP / NPN	–	2	–	10	**E89005**

Accessories pulse divider / pulse stretcher

Type	Description	Drawing no.	Order no.
	Pulse divider · Ratio input/output pulse 10:1 · Housing for DIN rail mounting · Terminals · Housing materials: plastics	11	**E80100**
	Pulse stretcher · Pulse length · IN (min): > 0.2 ms / OUT: 25 ms · Housing for DIN rail mounting · Terminals · Housing materials: plastics	11	**E80110**
	Pulse divider · Division 1...255	12	**E80102**

Accessories

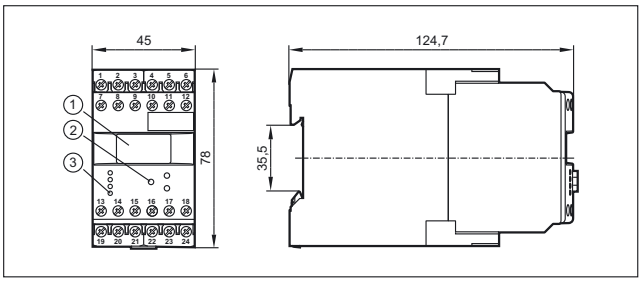
Type	Description	Order no.
	Angle bracket · for type M18 · Housing materials: stainless steel	**E10736**
	Angle bracket · for type M30 · Housing materials: stainless steel	**E10737**
	Mounting clamp · Ø 20 mm - Ø 18 mm · with reducing bush · for type M18 · Housing materials: PBT	**E10076**
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	**E10077**

You can find scale drawings from page 378

Type	Description	Order no.
	mounting clip · Housing materials: 2.1247	**E89208**
	Target wheel · Plastic disk with 8 screws as "target" · Centered drill holes	**E89010**
	Target for pulse pickups · Strap dimensions 7 x 145 mm	**E89013**

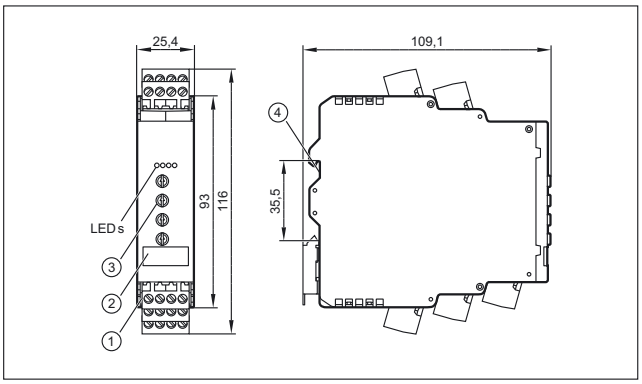
Scale drawings / drawing no. – CAD download: www.ifm.com

1



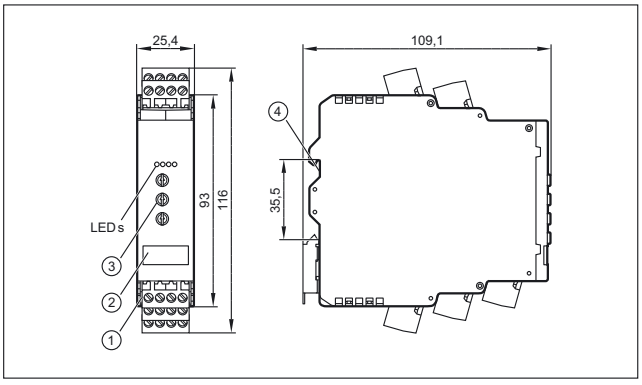
1: OLED display, 2: Programming buttons, 3: LEDs

2



1: plug-in screw terminals, 2: label, 3: potentiometer, 4: Mounting on DIN rail

3



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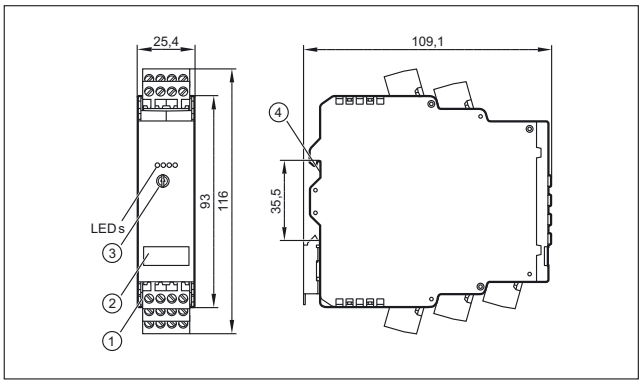

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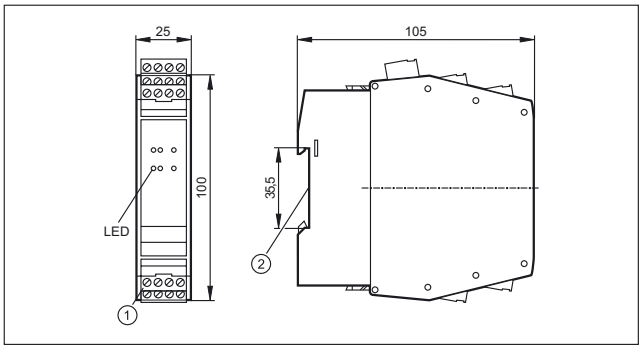
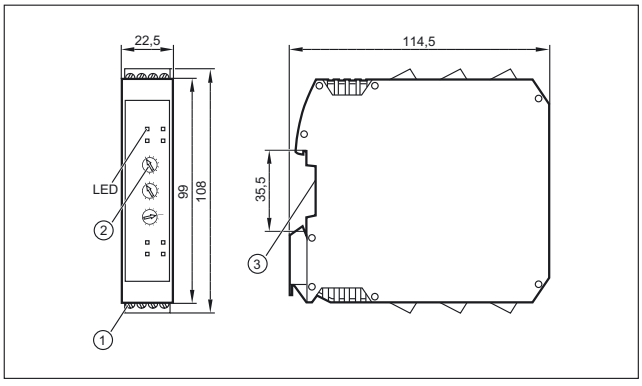


1: Combicon connector with screw terminals, 2: Mounting on DIN rail

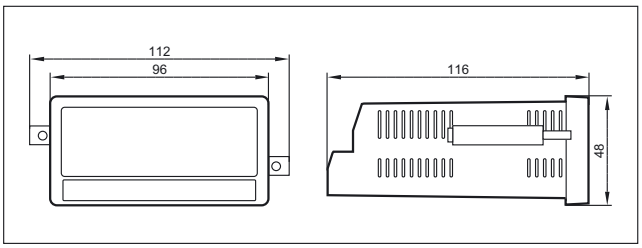
6



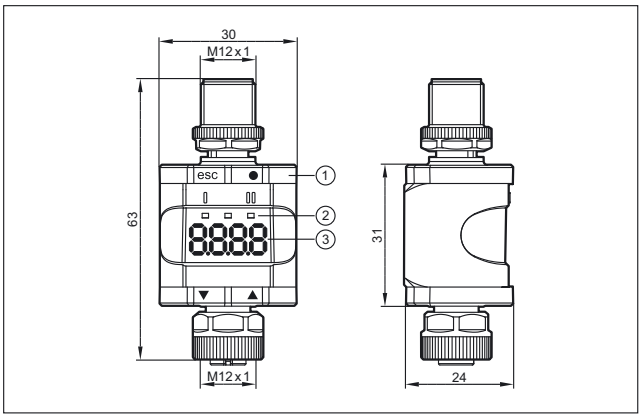
1: screw terminals, 2: Rotary switch, 3: Mounting on DIN rail

Scale drawings / drawing no. – CAD download: www.ifm.com

7

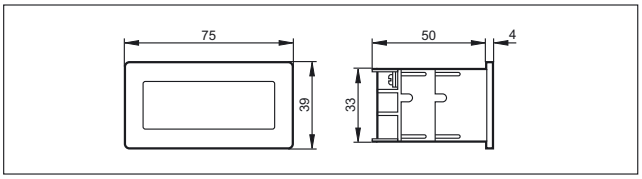


8



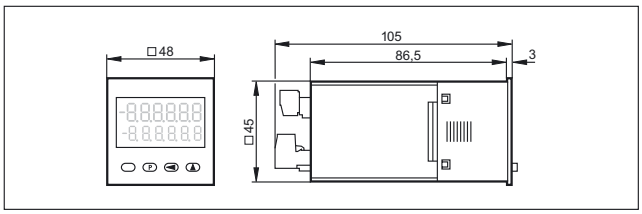
1: Push ring, 2: LEDs, 3: Display

9



control panel cutout: 68 x 33 mm (according to DIN)

10



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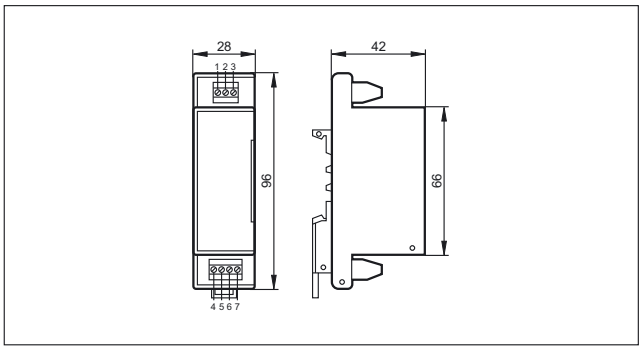
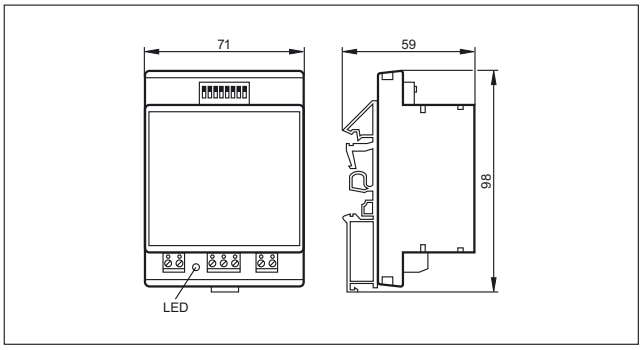


12



Vision sensors recognise everything at a glance

The power of a camera system with the simplicity of a sensor

In automation technology, vision sensors are nowadays not only an integral part of assembly, production and quality control, but also a means to increase efficiency. Vision sensors are cameras with application-specific evaluation, i.e. reliable electronic eyes at a low cost and a high degree of integration.

A few years ago, high-price camera systems were needed. Due to technical developments and continuously falling prices for components, ever more intelligent functions could be implemented at low cost in an ever smaller space. Not only do compact vision sensors replace camera systems, but they also offer additional application options. They are, for example, used to detect objects that have variable positions or shapes, replacing complex proximity sensors or multiple sensor solutions such as sensor bridges used for completeness checks of pallets or crates.

Easy to integrate

One of the distinguishing features of vision sensors is their simplicity. This means that they can be used without any specific prior knowledge. All units have switching outputs to confirm pass/fail conditions. So vision sensors offer the same ease of use as binary sensors. Ready-to-use function blocks support the integration into the PLC. An Ethernet process interface is used for data transmission, parameter setting and remote maintenance.

Robust and compact

Another advantage: the high protection ratings and wide temperature ranges of ifm vision sensors make it possible to install them close to the objects to be monitored. In contrast to complex camera solutions, all necessary components such as lighting, optics, evaluation electronics and output logic are integrated in the industrial housing.
With ifm vision sensors, tasks such as quality and completeness checks can now be solved easily and at a low cost.

Vision sensors 382 - 386

3D sensors 388 - 390

3D cameras 392 - 395

Illumination 396 - 400

Vision sensors

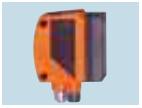
Stand-alone unit with integrated lighting and evaluation in a robust, industrially compatible housing.

The electronic eye for monitoring presence, completeness, position, quality control as well as sorting tasks.

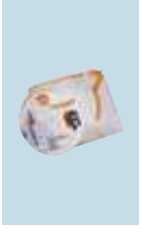
System overview	*Page*
Sensors for object recognition	*382 - 383*
Software for vision sensors	*383*
Panel PC for vision sensors	*384*
Fixing components for vision sensors	*384 - 385*
Reflective tapes, diffusers and protective panes for vision sensors	*385*
Scale drawings / drawing no. – CAD download: www.ifm.com	*386*

Sensors for object recognition

Type	Operating principle	Max. field of view size [mm]	Resolution [mm]	Detection rate [Hz]	Type of light	Ambient temperature [°C]	Drawing no.	Order no.
Type O2V · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · PNP · Connector groups 16, 17, 157, 183								
	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	White light	-10...60	1	**O2V100**
	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	Infrared	-10...60	1	**O2V120**
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	White light	-10...60	1	**O2V102**
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	Infrared	-10...60	1	**O2V122**
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	White light	-10...60	2	**O2V104**
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	Infrared	-10...60	2	**O2V124**
Type O2V · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · NPN · Connector groups 16, 17, 157, 183								
	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	White light	-10...60	1	**O2V101**

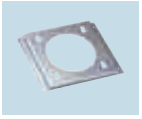
Type	Operating principle	Max. field of view size [mm]	Resolution [mm]	Detection rate [Hz]	Type of light	Ambient temperature [°C]	Draw-ing no.	Order no.
Type O2V · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · NPN · Connector groups 16, 17, 157, 183								
	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	Infrared	-10...60	1	**O2V121**
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	White light	-10...60	1	**O2V103**
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	Infrared	-10...60	1	**O2V123**
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	White light	-10...60	2	**O2V105**
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	Infrared	-10...60	2	**O2V125**
Type O2D2 · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · PNP · Connector groups 16, 17, 157, 183								
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	Infrared	-10...60	2	**O2D224**
	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	Infrared	-10...60	1	**O2D220**
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	Infrared	-10...60	1	**O2D222**
Type O2D2 · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · NPN · Connector groups 16, 17, 157, 183								
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	Infrared	-10...60	2	**O2D225**
	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	Infrared	-10...60	1	**O2D227**
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	Infrared	-10...60	1	**O2D229**

Software for vision sensors

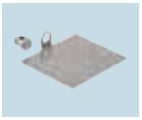
Type	Description	Order no.
	Operating software · O2D	**E2D200**
	Operating software · O2V	**E2V100**

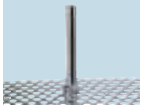
You can find scale drawings from page 386

Panel PC for vision sensors

Type	Description	Order no.
	Touch Panel PC · 12.1" colour display · Intel Atom CPU 1.6 GHz · 2 GByte RAM · Windows Embedded Standard 7 SP1 (32 bits)	**E2D400**
	Mounting bracket · for Touch Panel PC · for wall mounting · VESA standard 100 x 100 mm · Housing materials: fixture: metal	**E2D401**
	Mounting set · for Touch Panel PC · for control cabinet mounting · Housing materials: fixture: metal / End cap: plastics	**E2D402**

Fixing components for vision sensors

Type	Description	Order no.
	Mounting set · O2D, O2M, O2I, O2V · Clamp mounting · rod mounting Ø 12 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	**E2D110**
	Mounting set · O2D, O2M, O2I, O2V · Clamp mounting · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	**E2D112**
	Mounting set · Backlight 50 x 50 mm · Clamp mounting · Housing materials: Mounting plate: stainless steel / clamp: high-grade stainless steel	**E2D108**
	Mounting set · Backlight 100 x 100 mm · Clamp mounting · Housing materials: Mounting plate: stainless steel / clamp: high-grade stainless steel	**E2D109**
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: stainless steel	**E21110**
	clamp · Ø 14 mm · rod mounting Ø 14 mm · Housing materials: clamp: stainless steel	**E21109**
	clamp · Ø 12 mm; M10 · Free-standing M10 · Housing materials: clamp: stainless steel	**E20946**
	clamp · Ø 14 mm; M12 · free-standing M12 · Housing materials: clamp: stainless steel	**E20948**
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20938**
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E20940**

Type	Description	Order no.
	mounting rod · Ø 12 · Length: 150 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21111**
	mounting rod · Ø 12 · Length: 200 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21112**
	mounting rod · Ø 12 · Length: 300 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21113**
	mounting rod · Ø 14 / M12 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20939**
	mounting rod · Ø 14 / M12 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E20941**
	Connection piece · Ø 20 mm · for the connection of two clamps with Ø 20 mm · Housing materials: stainless steel 316L / 1.4404	**E21076**
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	**E20951**
	Cube · M12 · aluminium profile · Housing materials: diecast zinc	**E20952**

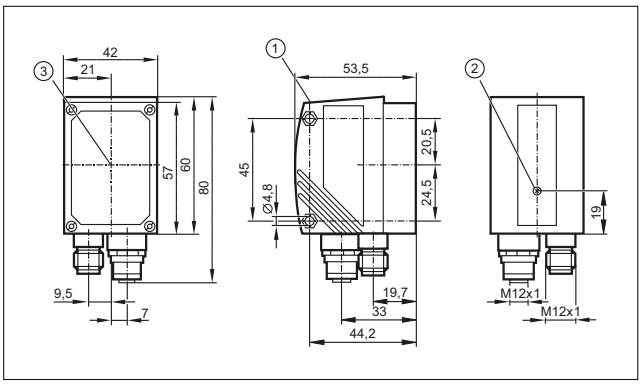
Reflective tapes, diffusers and protective panes for vision sensors

Type	Description	Order no.
	Reflective tape · TS-00 · 50 x 1000 mm · for redlight and infrared light retro-reflective sensors without polarisation filter · Housing materials: plastics	**E20401**
	Reflective tape · TS-02 · 50 x 1000 mm · For red light and infrared light retro-reflective sensors · Housing materials: plastics / acrylic	**E21015**
	Plastic diffuser · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA	**E21165**
	Plastic protective pane for the food industry · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA	**E21166**
	Glass protective pane · O2D / O2I · Housing materials: housing: diecast zinc black / lens: float glass	**E21168**
	Daylight filter · O2D · Housing materials: housing: diecast zinc black / lens: PMMA / Metal ring: aluminium black anodised / sealing: FPM 75+/-5 Shore A black	**E21172**

You can find scale drawings from page 386

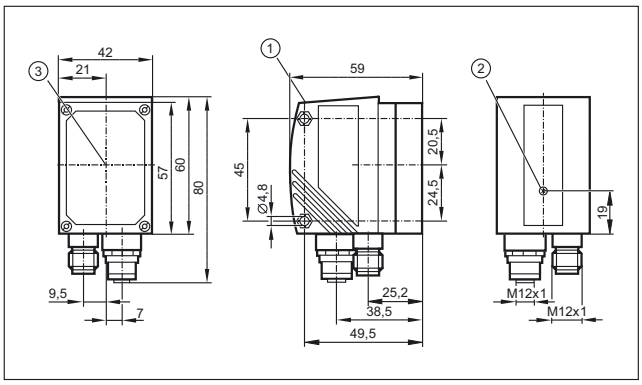
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: display, 2: Focus adjustment screw, 3: Centre of the lens axes

2



1: display, 2: Focus adjustment screw, 3: Centre of the lens axes

3D sensors

Photoelectric 3D sensors are suited for many different applications, such as volume, distance and level detection. They measure the distance between the sensor and the nearest surface point by point using the time-of-flight principle. The sensors illuminate the scene with an internal or external infrared light source and calculate the distance by means of the light reflected from the surface.

These sensors for industrial applications can be used for completeness checks, volume determination or sorting tasks. Sensors for applications in mobile machines have an outstanding shock and vibration resistance.

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Panel PC for vision sensors	389
Fixing components for 3D sensors	389
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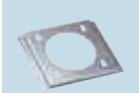
Sensors for 3D object recognition

Type	Operating principle	Resolution (pixels)	Angle of aperture (horizontal x vertical) [°]	Lighting	Max. sampling rate [Hz]	Ambient temperature [°C]	Drawing no.	Order no.
PMD 3D sensor · Type O3D · M12 connector · metal · DC · Connector groups 16, 17, 157, 183								
	3D ToF sensor	64 x 48	30 x 40	Infrared LED	20	-10...50	1	**O3D200**
	3D ToF sensor	64 x 48	64 x 48	Infrared LED	20	-10...50	2	**O3D222**
3D sensor · Type O3D · M12 connector · metal · DC · Connector groups 16, 17								
	3D ToF sensor	176 x 132	40 x 30	Infrared LED	25	-10...50	3	**O3D300**
	3D ToF sensor	176 x 132	60 x 45	Infrared LED	25	-10...50	4	**O3D302**
3D sensor · Type O3D · M12 connector · metal · DC · Connector groups 16, 17, 157, 183								
	3D ToF sensor	176 x 132	40 x 30	Infrared LED	25	-10...50	3	**O3D310**
	3D ToF sensor	176 x 132	60 x 45	Infrared LED	25	-10...50	4	**O3D312**

Software for 3D sensors

Type	Description	Order no.
	Operating software · O3D2xx	E3D200
	Operating software · O3Mxxx · O3D3xx	E3D300

Panel PC for vision sensors

Type	Description	Order no.
	Touch Panel PC · 12.1" colour display · Intel Atom CPU 1.6 GHz · 2 GByte RAM · Windows Embedded Standard 7 SP1 (32 bits)	E2D400
	Mounting bracket · for Touch Panel PC · for wall mounting · VESA standard 100 x 100 mm · Housing materials: fixture: metal	E2D401
	Mounting set · for Touch Panel PC · for control cabinet mounting · Housing materials: fixture: metal / End cap: plastics	E2D402

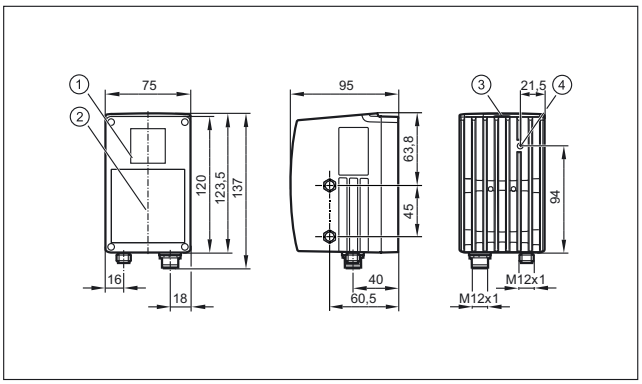
Fixing components for 3D sensors

Type	Description	Order no.
	Mounting set · O3D · Clamp mounting · Type O3D · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E3D103
	Mounting set · O3D · Clamp mounting · Type Smart Camera · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E3D301
	mounting rod · Ø 14 / M12 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20939
	mounting rod · Ø 14 · Length: 200 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21228
	mounting rod · Ø 14 · Length: 300 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21229
	mounting rod · Ø 14 · Length: 500 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21232

You can find scale drawings from page 390

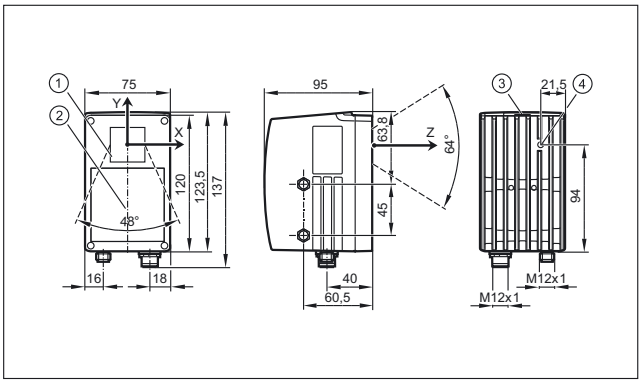
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: lens, 2: Illumination unit, 3: Display / buttons / LEDs, 4: Focus adjustment screw

2



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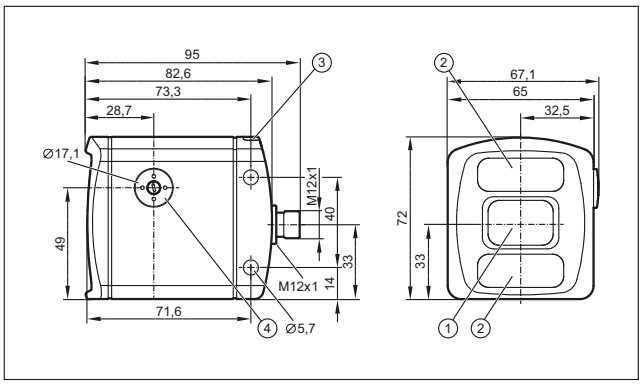
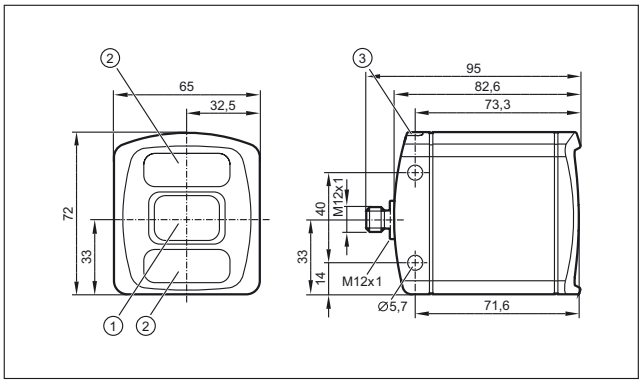


1: lens, 2: Illumination unit, 3: LED 2 colours (yellow/green), 4: Focus adjustment screw

4



1: lens, 2: Illumination unit, 3: LED 2 colours (yellow/green)

3D cameras

The pmd 3d camera detects scenes and objects in their spatial dimensions at a glance. In contrast to laser scanners it does not require moving components and is thus robust and wear-free. The operating principle is the same as for the 3D sensor. Besides the 3D distance image the camera provides a grey image of the scene. The combination of these images offers the possibility to freely program application-specific tasks by means of a software development kit.

System overview

	Page
Cameras for 3D object recognition	*392*
Software for 3D cameras	*393*
Accessories	*393*
Fixing components for 3D cameras	*393*
Connection cables for industrial imaging	*394 - 395*
Scale drawings / drawing no. – CAD download: www.ifm.com	*395*

Cameras for 3D object recognition

Type	Operating principle	Resolution (pixels)	Angle of aperture (horizontal x vertical) [°]	Lighting	Max. sampling rate [Hz]	Ambient temperature [°C]	Drawing no.	Order no.
PMD 3D camera · Type O3D · M12 connector · metal · DC · Connector groups 16, 17, 157, 183								
	3D ToF camera	64 x 48	40 x 30	Infrared LED	20	-10...50	1	**O3D201**
	3D ToF Kamera	64 x 48	64 x 48	Infrared LED	20	-10...50	2	**O3D223**
3D camera · Type O3D · M12 connector · metal · DC · Connector groups 12, 13, 22, 24, 152, 155, 186, 192, 194, 205								
	3D ToF Kamera	176 x 132	40 x 30	Infrared LED	25	-10...50	3	**O3D301**
	3D ToF Kamera	176 x 132	60 x 45	Infrared LED	25	-10...50	4	**O3D303**
3D camera · Type O3D · M12 connector · metal · DC · Connector groups 152, 155, 157, 183, 186, 192								
	3D ToF Kamera	176 x 132	40 x 30	Infrared LED	25	-10...50	3	**O3D311**
	3D ToF Kamera	176 x 132	60 x 45	Infrared LED	25	-10...50	4	**O3D313**

Software for 3D cameras

Type	Description	Order no.
	Operating software · O3D2xx	**E3D201**
	Operating software · O3Mxxx · O3D3xx	**E3D300**

Accessories

Type	Description	Order no.
	Cooling element · O3D · Cooling element · Heat conductor · Type Smart Camera · panel/surf. · Housing materials: Cooling element: AlMgSi1MgMn / Heat conductor: AlMg3	**E3D302**
	Cooling element · O3D · Double cooling element · Heat conductor · Type Smart Camera · panel/surf. · Housing materials: Cooling element: AlMgSi1MgMn / Heat conductor: AlMg3	**E3D304**
	Heat conductor · O3D · Heat conductor · Type Smart Camera · panel/surf. · Housing materials: Heat conductor: AlMg3	**E3D303**

Fixing components for 3D cameras

Type	Description	Order no.
	Mounting set · O3D · Clamp mounting · Type O3D · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	**E3D103**
	Mounting set · O3D · Clamp mounting · Type Smart Camera · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	**E3D301**
	mounting rod · Ø 14 / M12 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20939**
	mounting rod · Ø 14 · Length: 200 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21228**
	mounting rod · Ø 14 · Length: 300 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21229**
	mounting rod · Ø 14 · Length: 500 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21232**

You can find scale drawings from page 395

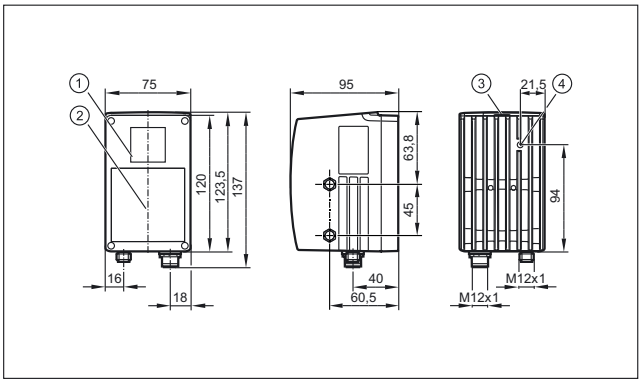
Connection cables for industrial imaging

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	**E11898**
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: TPU / PA	**E12090**
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 2 m · Housing materials: TPU	**E21138**
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 5 m · Housing materials: TPU	**E21139**
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 10 m · Housing materials: TPU	**E21137**
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	**E12204**
	Jumper · straight / straight · Ethernet · 20 m · Housing materials: PUR / PC	**E12205**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: PUR	**E11231**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: PUR	**E11232**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	**E12260**
	Socket · straight · Free from halogen · M12 connector · 5 m · Housing materials: PUR	**E11807**
	Socket · straight · Free from halogen · M12 connector · 10 m · Housing materials: PUR	**E11311**
	Socket · straight · Free from halogen · M12 connector · 2 m · Housing materials: PUR	**E11950**
	Adapter · angled · Connector	**E21140**

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR	**EC2080**
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 5 m · Housing materials: PUR	**E30112**

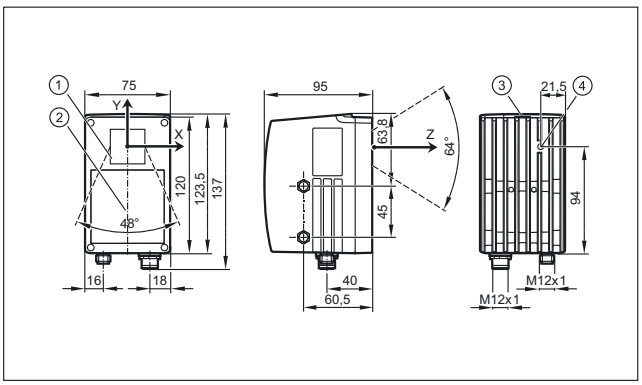
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: lens, 2: Illumination unit, 3: Display / buttons / LEDs, 4: Focus adjustment screw

2



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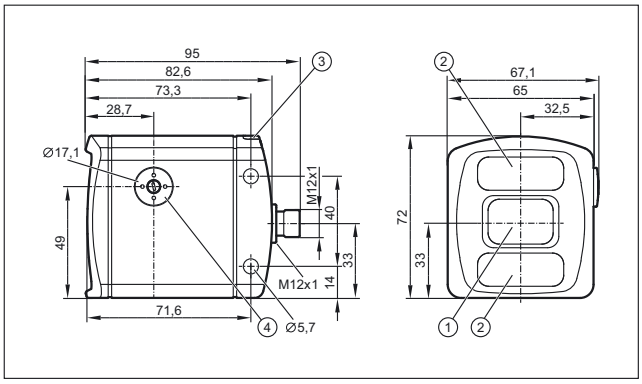
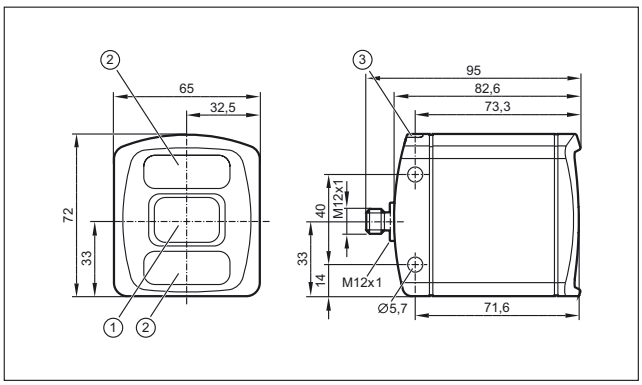


1: lens, 2: Illumination unit, 3: LED 2 colours (yellow/green), 4: Focus adjustment screw

4



1: lens, 2: Illumination unit, 3: LED 2 colours (yellow/green)

Illumination

The lighting units generate a homogeneous light field with visible red or invisible infrared light and are available in three different sizes. They are most often used in combination with object recognition and object inspection sensors for contour and position verification. The high-quality LED illumination creates homogeneous light - either for virtually shadow-free object illumination or for emphasising surface characteristics such as dot-peened codes, scratches or nicks.

The optional angle bracket and the tried-and-tested ifm mounting system facilitate the alignment of the different types of additional illumination.

System overview	*Page*
Illumination units, ring	*396*
Illumination units, bar	*397*
Illumination units, dark field	*397*
Illumination units, backlight	*397 - 398*
Illumination units, spotlight	*398*
Accessories for illumination units	*398 - 399*
Wiring diagrams	*399*
Scale drawings / drawing no. – CAD download: www.ifm.com	*399 - 400*

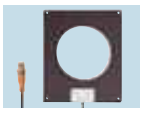
Illumination units, ring

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I_0 normal light intensity [mA]	I_0 high light intensity [mA]	Trigger	Drawing no.	Order no.
PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Ø 122 / L = 20.5	Red	Ø 66 / 106	800	1300	external; 24 V PNP	1	**O2D915**
	Ø 122 / L = 20.5	Infrared	Ø 66 / 106	800	1400	external; 24 V PNP	1	**O2D917**
	Ø 122 / L = 20.5	White light	Ø 66 / 106	800	1200	external; 24 V PNP	1	**O2D919**

Illumination units, bar

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I_0 normal light intensity [mA]	I_0 high light intensity [mA]	Trigger	Drawing no.	Order no.
PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	116 x 13 x 18	White light	10 x 75	165	275	external; 24 V PNP	2	**O2D923**
	200 x 13 x 18	White light	10 x 150	265	475	external; 24 V PNP	4	**O2D926**
	116 x 13 x 18	Red	10 x 75	225	375	external; 24 V PNP	2	**O2D921**
	200 x 13 x 18	Red	10 x 150	460	700	external; 24 V PNP	4	**O2D924**
	116 x 13 x 18	Infrared	10 x 75	185	325	external; 24 V PNP	2	**O2D922**
	200 x 13 x 18	Infrared	10 x 150	415	640	external; 24 V PNP	4	**O2D925**

Illumination units, dark field

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I_0 normal light intensity [mA]	I_0 high light intensity [mA]	Trigger	Drawing no.	Order no.
PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	155 x 130 x 9.8	Red	Ø 90	–	–	external; 24 V PNP	3	**O2D920**

Illumination units, backlight

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I_0 normal light intensity [mA]	I_0 high light intensity [mA]	Trigger	Drawing no.	Order no.
PUR cable 2 m · metal · DC · Wiring diagram no. 3								
	108 x 9.8 x 81	Red	50 x 50	200	100	External; 24 V PNP to IEC61131-1	5	**O2D902**
	108 x 9.8 x 81	Infrared	50 x 50	200	100	External; 24 V PNP to IEC61131-1	5	**O2D903**
	161.2 x 9.8 x 133	Red	100 x 100	450	250	External; 24 V PNP to IEC61131-1	6	**O2D904**

You can find wiring diagrams and scale drawings from page 399

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I_0 normal light intensity [mA]	I_0 high light intensity [mA]	Trigger	Drawing no.	Order no.
PUR cable 2 m · metal · DC · Wiring diagram no. 3								
	161.2 x 9.8 x 133	Infrared	100 x 100	450	250	External; 24 V PNP to IEC61131-1	6	**O2D905**
PUR cable 0.15 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	108 x 9.8 x 81	Red	50 x 50	200	100	External; 24 V PNP to IEC61131-1	5	**O2D911**
	108 x 9.8 x 81	Infrared	50 x 50	200	100	External; 24 V PNP to IEC61131-1	5	**O2D907**
	161.2 x 9.8 x 133	Red	100 x 100	450	250	External; 24 V PNP to IEC61131-1	6	**O2D912**
	161.2 x 9.8 x 133	Infrared	100 x 100	450	250	External; 24 V PNP to IEC61131-1	6	**O2D908**

Illumination units, spotlight

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I_0 normal light intensity [mA]	I_0 high light intensity [mA]	Trigger	Drawing no.	Order no.
M12 connector · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	42 x 42 x 31	Red	Diffuser no	180	90	External; 24 V PNP to IEC61131-1	7	**O2D909**
	42 x 42 x 32.2	Red	Diffuser yes	180	90	External; 24 V PNP to IEC61131-1	8	**O2D913**

Accessories for illumination units

Type	Description	Order no.
	Glass diffuser · Ring light · Housing materials: housing: aluminium black anodised / lens: glass	**E2D202**
	Mounting set · Ring light · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	**E2D201**
	Mounting set · Dark field light · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	**E2D115**

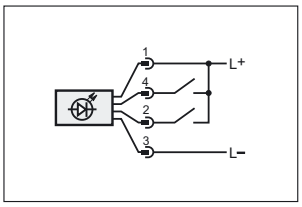
Type	Description	Order no.
	Mounting set · Clamp mounting · for 4 bar lights 10x75 mm · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	**E2D116**
	Mounting set · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	**E2D114**

Wiring diagrams

Core colours

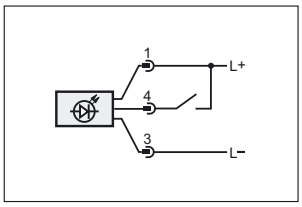
BK	black
BN	brown
BU	blue
WH	white

1



1: Trigger, 2: Operating mode "high light intensity"

2



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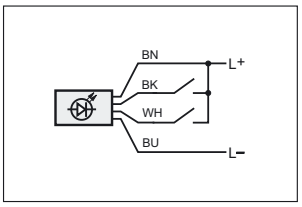
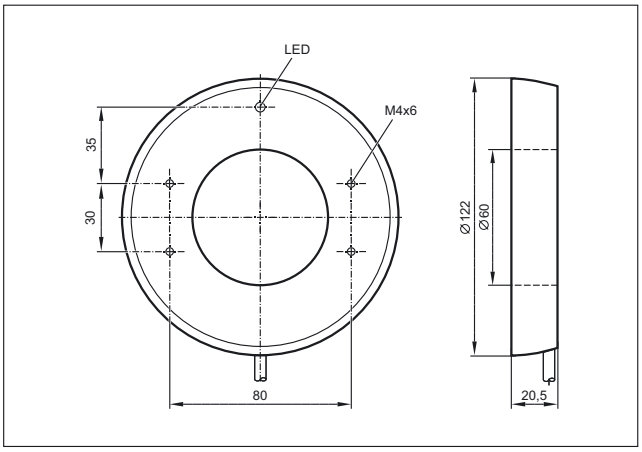


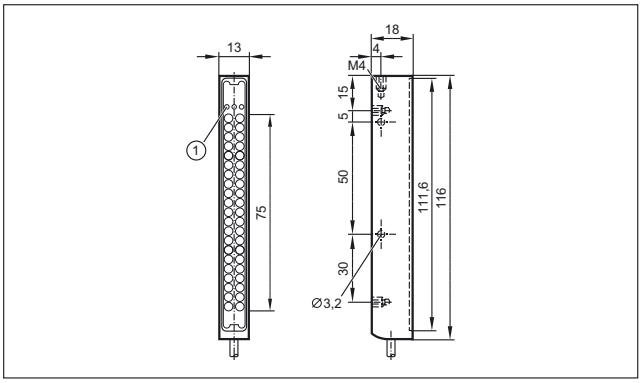
black: Trigger, white: Operating mode "high light intensity"

Scale drawings / drawing no. – CAD download: www.ifm.com

1

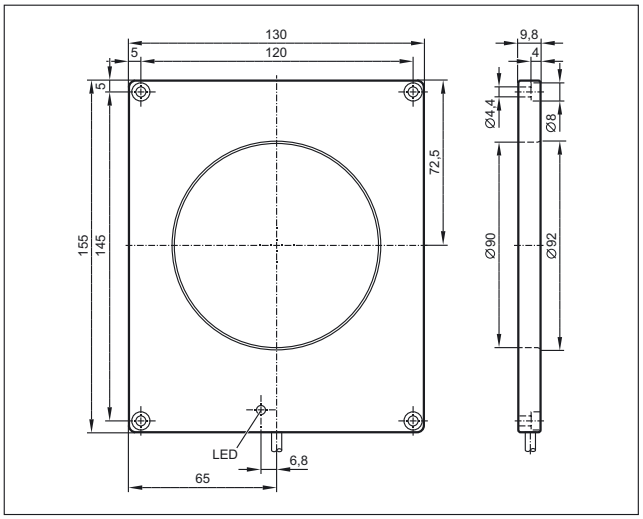


2



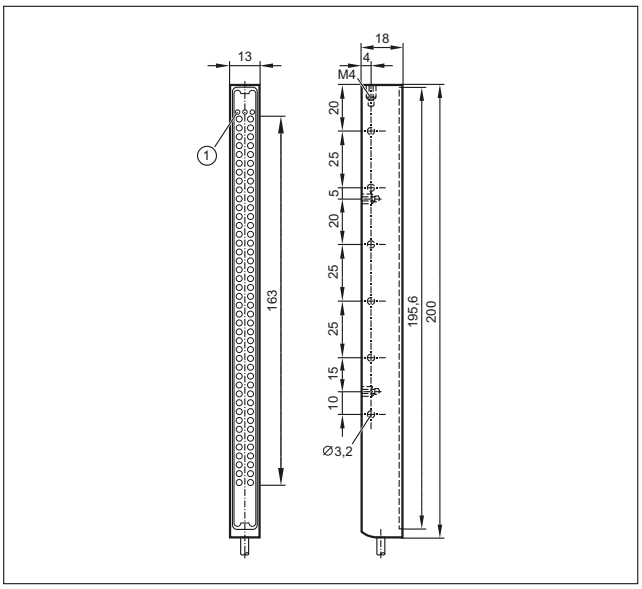
1: LED

3



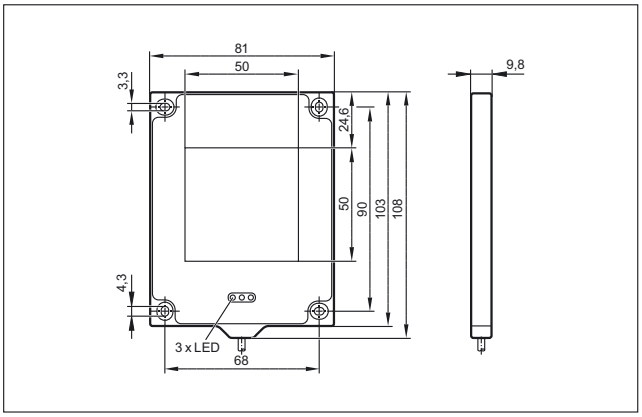
Scale drawings / drawing no. – CAD download: www.ifm.com

4



1: LED

5



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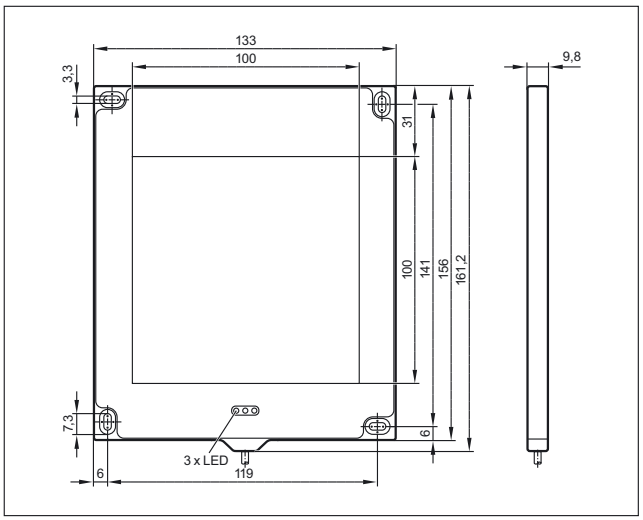

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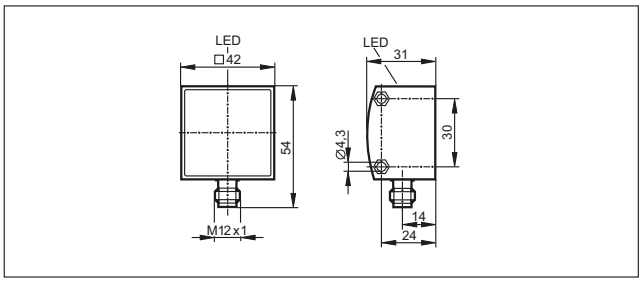

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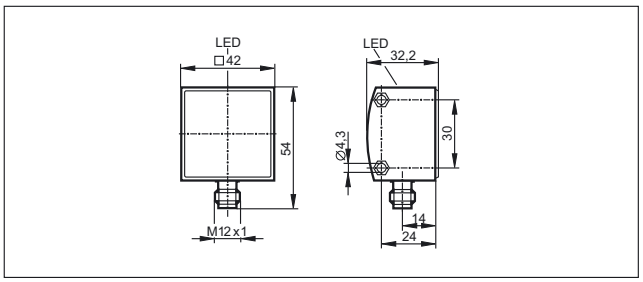


Reliable operator, process and machine protection

Applications

Today, automation technology can no longer be imagined without Functional Safety – not least because of the new EC Machinery Directive (2006/42/EC).

Its primary objective is to protect operators as stipulated by the Machinery Directive, whereby machinery should not present a risk. Moreover, safety technology is an important guarantor of process protection and, in particular, of machine protection.

Approvals

A series of standards relates to the subject of Functional Safety.
They specify different Safety Integrity Levels.

- IEC 61508: This standard is regarded as the basic safety standard and classifies safety products for automation by „Safety Integrity Levels“ (SIL 1 – SIL 3).
- IEC 62061: This standard is based on IEC 61508 and determines „Safety Integrity Level Claim Limits“ (SIL CL1 – SIL CL 3). These are comparable to the Safety Integrity Levels of IEC 61508. This standard specifies the design of control systems.
- ISO 13849-1: This standard is the successor to the previously applicable standard EN 954-1. In this standard „Performance Levels“ (PL a to PL e) can be achieved. PL b-c correspond to SIL 1, PL d corresponds to SIL 2 and PL e corresponds to SIL 3. This standard covers the machinery sector.
- IEC 61496: This standard specifies general requirements for Electro-Sensitive Protective Equipment (ESPE) such as safety light grids. Variants are types 2 to 4.

Output versions

Output options include safe output stages such as OSSD outputs (Output Signal Switching Devices), outputs with a safe clock cycle that can be connected in series as well as relay outputs.

OSSD and pulsed outputs are the ideal choice for local safety-related tasks associated with controllers. Relay outputs are used to switch contactors. Moreover safe bus systems such as AS-i Safety at Work or CANopen Safety are available.

Fail-safe inductive sensors 404 - 407

Safety light curtains 408 - 427

Safety light grids 428 - 434

Safety relays 436 - 437

Safety controllers 438 - 439

AS-Interface Safety at Work 440 - 445

Fail-safe inductive sensors

Here you will find the first electronic fail-safe sensors which do not require a special counterpart but switch directly on the door or a stainless steel or mild steel target. They are wear-free and largely independent from mounting tolerances after a longer use of the doors.

System overview	*Page*
Inductive sensors for safety-related applications SIL 3 and PL e with the possibility of connection in series	*404*
Inductive sensors for safety-related applications, 2 x OSSD, SIL 2, PL d	*405*
Inductive sensors for safety-related applications, 2 x OSSD, SIL 3, PL e	*405*
Accessories	*406*
Wiring diagrams	*406*
Scale drawings / drawing no. – CAD download: www.ifm.com	*406 - 407*

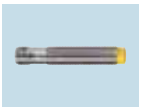
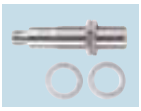
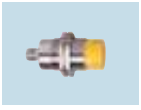
Inductive sensors for safety-related applications SIL 3 and PL e with the possibility of connection in series

Type	Length [mm]	Enable zone [mm]	Housing material	U_b DC [V]	Protection	Response time in case of a safety request / enable time [ms]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1 · Connector groups 148, 149, 153, 184, 188, 193, 202								
	M18 / L = 71.5	0...6.5 nf	High-grade st. steel	24	IP 65 / IP 67 / IP 69K	≤ 1 / ≤ 1	1	**GG714S**
M12 connector · Wiring diagram no. 3 · Connector groups 148, 149, 153, 184, 188, 193, 202								
	M18 / L = 90	3...6 nf	High-grade st. steel	24	IP 68 / IP 69K	≤ 20 / ≤ 200	2	**GG505S**
	M18 / L = 90.5	1...4 f	Brass	24	IP 68 / IP 69K	≤ 20 / ≤ 200	3	**GG507S**
	M30 / L = 80	6...12 nf	High-grade st. steel	24	IP 68 / IP 69K	≤ 20 / ≤ 200	4	**GI505S**
	40 x 40 x 66	10...15 nf	PPE	24	IP 65 / IP 67	≤ 20 / ≤ 200	5	**GM504S**
	40 x 40 x 66	10...20 nf	PPE	24	IP 65 / IP 67	≤ 20 / ≤ 200	5	**GM505S**

f = flush / nf = non flush / qf = quasi-flush

Product selectors and further information can be found at: www.ifm.com

Inductive sensors for safety-related applications, 2 x OSSD, SIL 2, PL d

Type	Length [mm]	Enable zone [mm]	Housing material	U_b DC [V]	Protection	Response time in case of a safety request / enable time [ms]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1 · Connector groups 148, 149, 153, 184, 188, 193, 202								
	M12 / L = 70	0.5...4 nf	High-grade st. steel	24	IP 65 / IP 67	≤ 1 / ≤ 1	6	**GF711S**
	M18 / L = 70.5	1...8 nf	High-grade st. steel	24	IP 65 / IP 67	≤ 1 / ≤ 1	7	**GG711S**
	M18 / L = 70	1...5 f	Brass	24	IP 65 / IP 67	≤ 1 / ≤ 1	8	**GG712S**
M12 connector · Wiring diagram no. 2 · Connector groups 148, 149, 153, 184, 188, 193, 202								
	M18 / L = 86.5	> 10 f	Brass	24	IP 65 / IP 67	≤ 5 / ≤ 5	9	**GG851S**
M12 connector · Wiring diagram no. 1 · Connector groups 148, 149, 153, 184, 188, 193, 202								
	M30 / L = 70	1...15 nf	High-grade st. steel	24	IP 65 / IP 67	≤ 10 / ≤ 1	10	**GI711S**
	M30 / L = 70	1...10 f	High-grade st. steel	24	IP 65 / IP 67	≤ 10 / ≤ 1	11	**GI712S**

f = flush / nf = non flush / qf = quasi-flush

Inductive sensors for safety-related applications, 2 x OSSD, SIL 3, PL e

Type	Length [mm]	Enable zone [mm]	Housing material	U_b DC [V]	Protection	Response time in case of a safety request / enable time [ms]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1 · Connector groups 148, 149, 153, 184, 188, 193, 202								
	M30 / L = 80	6...12 nf	High-grade st. steel	24	IP 68 / IP 69K	≤ 50 / ≤ 200	4	**GI701S**
	40 x 40 x 66	10...15 nf	PPE	24	IP 65 / IP 67	≤ 50 / ≤ 200	5	**GM701S**
	40 x 40 x 66	4...20 nf	PPE	24	IP 65 / IP 67	≤ 50 / ≤ 200	5	**GM705S**

f = flush / nf = non flush / qf = quasi-flush

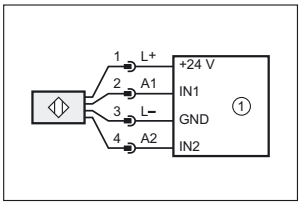
You can find wiring diagrams and scale drawings from page 406

Accessories

Type	Description	Order no.
	Safety T-splitter · M12 socket - 1 M12 connector / 1 M12 socket · T-piece for the pseudo-serial connection of fail-safe sensors · Housing materials: PUR	E11569

Wiring diagrams

1



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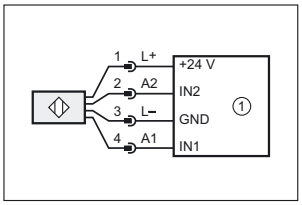

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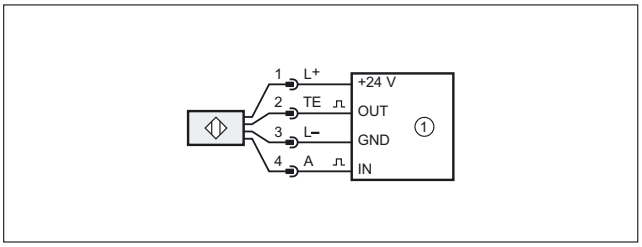
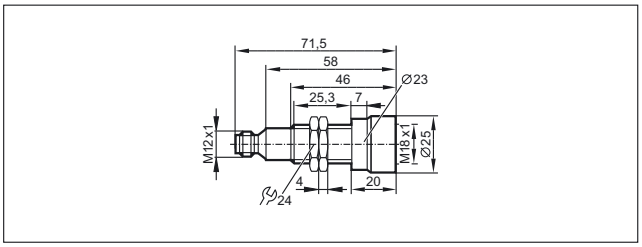


Scale drawings / drawing no. – CAD download: www.ifm.com

1



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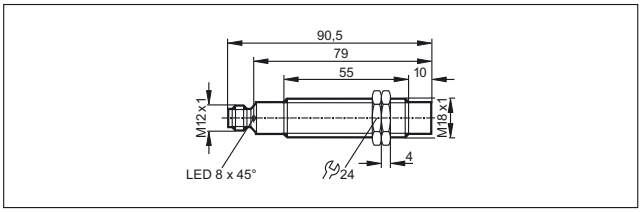

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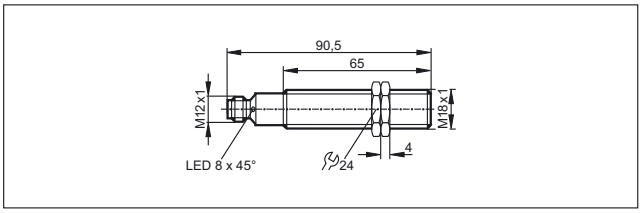

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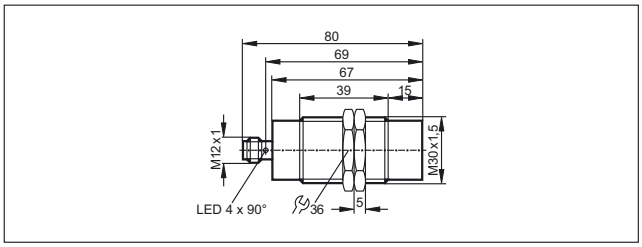

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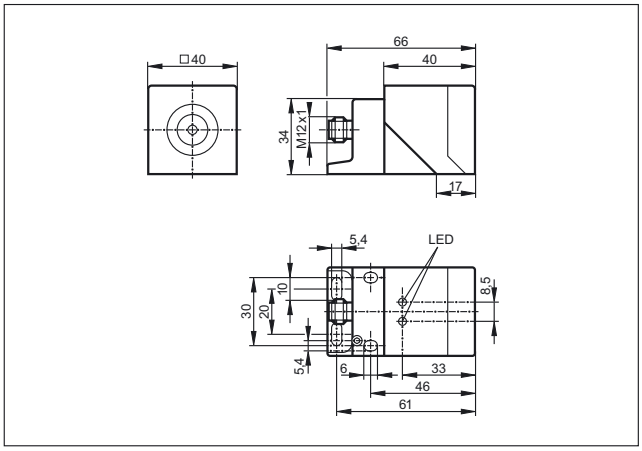
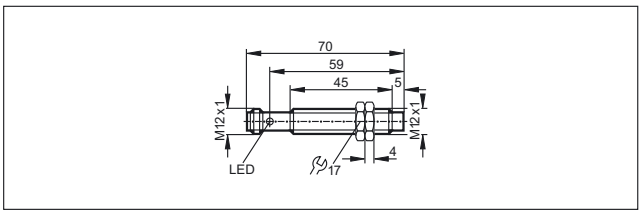


Scale drawings / drawing no. – CAD download: www.ifm.com

6



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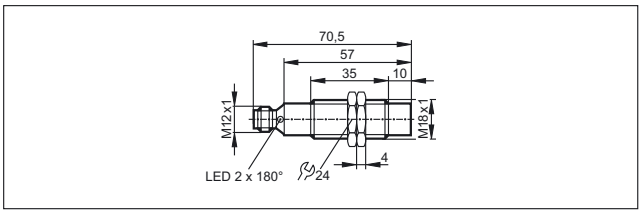

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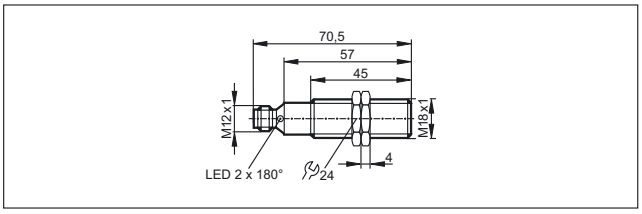

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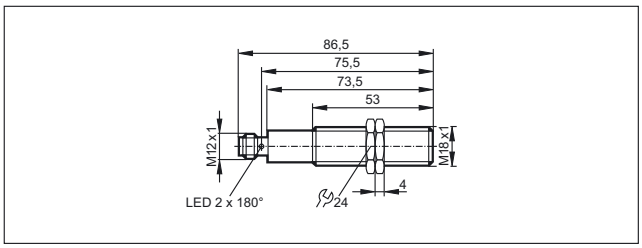

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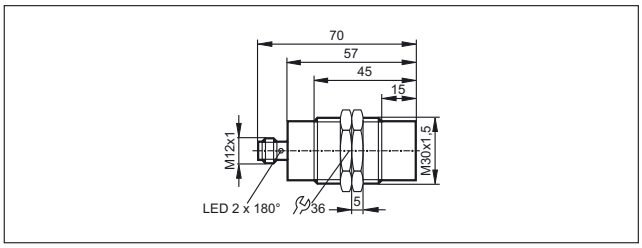

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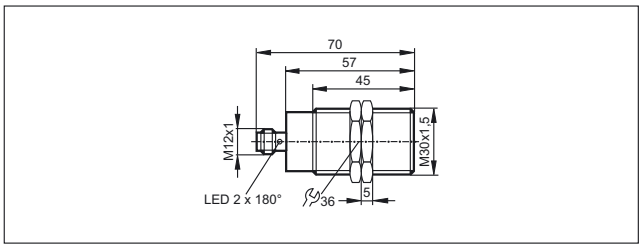


Safety light curtains

Wherever motion of machine parts presents a danger to people or goods, safety light curtains or safety light grids are used.

The protective equipment ensures that the outputs are switched off which results in a machine halt.

System overview	*Page*
Safety light curtains type 4, SIL 3, PL e, resolution 14 mm, protected area width up to 6 m	*409*
Safety light curtains type 4, SIL 3, PL e, resolution 20 mm, protected area width up to 20 m	*410*
Safety light curtains type 4, SIL 3, PL e, resolution 30 mm, protected area width up to 12 m	*410 - 411*
Safety light curtains type 4, SIL 3, PL e, resolution 30 mm, protected area width up to 20 m	*411 - 412*
Safety light curtains type 4, SIL 3, PL e, resolution 40 mm, protected area width up to 12 m	*412*
Safety light curtains type 4, SIL 3, PL e, resolution 40 mm, protected area width up to 20 m	*413*
Safety light curtains type 4, SIL 3, PL e, resolution 50 mm, protected area width up to 12 m	*413 - 414*
Safety light curtains type 4, SIL 3, PL e, resolution 50 mm, protected area width up to 20 m	*414 - 415*
Safety light curtains type 4, SIL 3, PL e, resolution 90 mm, protected area width up to 12 m	*415*
Safety light curtains type 4, SIL 3, PL e, resolution 90 mm, protected area width up to 20 m	*415 - 416*
Safety light curtains type 2, SIL 1, PL c, resolution 30 mm, protected area width up to 12 m	*416 - 417*
Safety light curtains type 2, SIL 1, PL c, resolution 40 mm, protected area width up to 12 m	*417*
Safety light curtains type 2, SIL 1, PL c, protected area width up to 12 m	*418*
Safety light curtains type 2, SIL 1, PL c, resolution 90 mm, protected area width up to 12 m	*418 - 419*
Safety light curtains for hygienic and wet areas, IP 69K, type 4, SIL 3, PL e, resolution 14 mm, protected area width up to 5 m	*419*
Safety light curtains for hygienic and wet areas, IP 69K, type 4, SIL 3, PL e, resolution 30 mm, protected area width up to 15 m	*419 - 420*
Safety light curtains for hygienic and wet areas, IP 69K, type 2, SIL 1, PL c, resolution 30 mm, protected area width up to 10 m	*420 - 421*
Safety light curtains with floating blanking type 4, SIL 3, PL e, resolution 14 mm, protected area width up to 5 m	*421*
Safety light curtains with floating blanking type 4, SIL 3, PL e, resolution 20 mm, protected area width up to 18 m	*421 - 422*
Safety light curtains with floating blanking type 4, SIL 3, PL e, resolution 40 mm, protected area width up to 18 m	*422*
Accessories for safety light curtains	*422 - 424*
Bases for safety light curtains	*424*
Bases for safety light curtains with corner mirror	*424*
Accessories necessary for bases	*425*

System overview	*Page*
Wiring diagrams	*425*
Scale drawings / drawing no. – CAD download: www.ifm.com	*426 - 427*

Safety light curtains type 4, SIL 3, PL e, resolution 14 mm, protected area width up to 6 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	213	14	160	0...3 / 1...6	4	24	1	**OY001S**
	363	14	310	0...3 / 1...6	5.5	24	1	**OY002S**
	513	14	460	0...3 / 1...6	7.5	24	1	**OY003S**
	663	14	610	0...3 / 1...6	9	24	1	**OY004S**
	813	14	760	0...3 / 1...6	11	24	1	**OY005S**
	963	14	910	0...3 / 1...6	13	24	1	**OY006S**
	1113	14	1060	0...3 / 1...6	14.5	24	1	**OY007S**
	1263	14	1210	0...3 / 1...6	16.5	24	1	**OY008S**
	1413	14	1360	0...3 / 1...6	18	24	1	**OY009S**
	1563	14	1510	0...3 / 1...6	20	24	1	**OY010S**
	1863	14	1810	0...3 / 1...6	20	24	1	**OY011S**

Safety light curtains type 4, SIL 3, PL e, resolution 20 mm, protected area width up to 20 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	213	20	160	0...10 / 3...20	4	24	1	**OY221S**
	363	20	310	0...10 / 3...20	5.5	24	1	**OY222S**
	513	20	460	0...10 / 3...20	7.5	24	1	**OY223S**
	663	20	610	0...10 / 3...20	9	24	1	**OY224S**
	813	20	760	0...10 / 3...20	11	24	1	**OY225S**
	963	20	910	0...10 / 3...20	13	24	1	**OY226S**
	1113	20	1060	0...10 / 3...20	14.5	24	1	**OY227S**
	1263	20	1210	0...10 / 3...20	16.5	24	1	**OY228S**
	1413	20	1360	0...10 / 3...20	18	24	1	**OY229S**
	1563	20	1510	0...10 / 3...20	20	24	1	**OY230S**

Safety light curtains type 4, SIL 3, PL e, resolution 30 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	213	30	160	0...4 / 3...12	4	24	2	**OY041S**
	363	30	310	0...4 / 3...12	5.5	24	2	**OY042S**
	513	30	460	0...4 / 3...12	7.5	24	2	**OY043S**

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	663	30	610	0...4 / 3...12	8.5	24	2	**OY044S**
	813	30	760	0...4 / 3...12	10.5	24	2	**OY045S**
	963	30	910	0...4 / 3...12	12	24	2	**OY046S**
	1113	30	1060	0...4 / 3...12	14	24	2	**OY047S**
	1263	30	1210	0...4 / 3...12	15.5	24	2	**OY048S**
	1413	30	1360	0...4 / 3...12	17	24	2	**OY049S**
	1563	30	1510	0...4 / 3...12	18.5	24	2	**OY050S**

Safety light curtains type 4, SIL 3, PL e, resolution 30 mm, protected area width up to 20 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	213	30	160	0...10 / 3...20	3	24	1	**OY241S**
	363	30	310	0...10 / 3...20	4	24	1	**OY242S**
	513	30	460	0...10 / 3...20	5	24	1	**OY243S**
	663	30	610	0...10 / 3...20	6	24	1	**OY244S**
	813	30	760	0...10 / 3...20	6.5	24	1	**OY245S**
	963	30	910	0...10 / 3...20	7.5	24	1	**OY246S**
	1113	30	1060	0...10 / 3...20	8.5	24	1	**OY247S**

You can find wiring diagrams and scale drawings from page 425

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	1263	30	1210	0...10 / 3...20	9.5	24	1	**OY248S**
	1413	30	1360	0...10 / 3...20	10	24	1	**OY249S**
	1563	30	1510	0...10 / 3...20	11	24	1	**OY250S**

Safety light curtains type 4, SIL 3, PL e, resolution 40 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	213	40	160	0...4 / 3...12	3.5	24	2	**OY061S**
	363	40	310	0...4 / 3...12	4.5	24	2	**OY062S**
	513	40	460	0...4 / 3...12	5.5	24	2	**OY063S**
	663	40	610	0...4 / 3...12	6.5	24	2	**OY064S**
	813	40	760	0...4 / 3...12	7.5	24	2	**OY065S**
	963	40	910	0...4 / 3...12	9	24	2	**OY066S**
	1113	40	1060	0...4 / 3...12	10	24	2	**OY067S**
	1263	40	1210	0...4 / 3...12	11	24	2	**OY068S**
	1413	40	1360	0...4 / 3...12	12	24	2	**OY069S**
	1563	40	1510	0...4 / 3...12	13	24	2	**OY070S**

Safety light curtains type 4, SIL 3, PL e, resolution 40 mm, protected area width up to 20 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	213	40	160	0...10 / 3...20	3	24	1	**OY261S**
	363	40	310	0...10 / 3...20	3.5	24	1	**OY262S**
	513	40	460	0...10 / 3...20	4	24	1	**OY263S**
	663	40	610	0...10 / 3...20	4.5	24	1	**OY264S**
	813	40	760	0...10 / 3...20	5	24	1	**OY265S**
	963	40	910	0...10 / 3...20	6	24	1	**OY266S**
	1113	40	1060	0...10 / 3...20	6.5	24	1	**OY267S**
	1263	40	1210	0...10 / 3...20	7	24	1	**OY268S**
	1413	40	1360	0...10 / 3...20	7.5	24	1	**OY269S**
	1563	40	1510	0...10 / 3...20	8	24	1	**OY270S**

Safety light curtains type 4, SIL 3, PL e, resolution 50 mm, protected area width up to 12 m

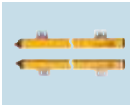
Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	363	50	310	0...4 / 3...12	4	24	2	**OY082S**
	513	50	460	0...4 / 3...12	4.5	24	2	**OY083S**
	663	50	610	0...4 / 3...12	5.5	24	2	**OY084S**

You can find wiring diagrams and scale drawings from page 425

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	813	50	760	0...4 / 3...12	6.5	24	2	**OY085S**
	963	50	910	0...4 / 3...12	7.5	24	2	**OY086S**
	1113	50	1060	0...4 / 3...12	8.5	24	2	**OY087S**
	1263	50	1210	0...4 / 3...12	9	24	2	**OY088S**
	1413	50	1360	0...4 / 3...12	10	24	2	**OY089S**
	1563	50	1510	0...4 / 3...12	11	24	2	**OY090S**

Safety light curtains type 4, SIL 3, PL e, resolution 50 mm, protected area width up to 20 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	363	50	310	0...10 / 3...20	3	24	1	**OY282S**
	513	50	460	0...10 / 3...20	3.5	24	1	**OY283S**
	663	50	610	0...10 / 3...20	4	24	1	**OY284S**
	813	50	760	0...10 / 3...20	4.5	24	1	**OY285S**
	963	50	910	0...10 / 3...20	5	24	1	**OY286S**
	1113	50	1060	0...10 / 3...20	5.5	24	1	**OY287S**
	1263	50	1210	0...10 / 3...20	6	24	1	**OY288S**
	1413	50	1360	0...10 / 3...20	6.5	24	1	**OY289S**

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	1563	50	1510	0...10 / 3...20	7	24	1	**OY290S**

Safety light curtains type 4, SIL 3, PL e, resolution 90 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	663	90	610	0...4 / 3...12	4	24	2	**OY104S**
	813	90	760	0...4 / 3...12	4.5	24	2	**OY105S**
	963	90	910	0...4 / 3...12	5	24	2	**OY106S**
	1113	90	1060	0...4 / 3...12	5.5	24	2	**OY107S**
	1263	90	1210	0...4 / 3...12	5.5	24	2	**OY108S**
	1413	90	1360	0...4 / 3...12	6	24	2	**OY109S**
	1563	90	1510	0...4 / 3...12	6.5	24	2	**OY110S**

Safety light curtains type 4, SIL 3, PL e, resolution 90 mm, protected area width up to 20 m

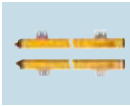
Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	663	90	610	0...10 / 3...20	3	24	1	**OY204S**
	813	90	760	0...10 / 3...20	3.5	24	1	**OY205S**
	963	90	910	0...10 / 3...20	3.5	24	1	**OY206S**

You can find wiring diagrams and scale drawings from page 425

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	1113	90	1060	0...10 / 3...20	3.5	24	1	**OY207S**
	1263	90	1210	0...10 / 3...20	4	24	1	**OY208S**
	1413	90	1360	0...10 / 3...20	4	24	1	**OY209S**
	1563	90	1510	0...10 / 3...20	4.5	24	1	**OY210S**

Safety light curtains type 2, SIL 1, PL c, resolution 30 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	213	30	160	0...4 / 3...12	4.5	24	2	**OY031S**
	363	30	310	0...4 / 3...12	6	24	2	**OY032S**
	513	30	460	0...4 / 3...12	8	24	2	**OY033S**
	663	30	610	0...4 / 3...12	9.5	24	2	**OY034S**
	813	30	760	0...4 / 3...12	11	24	2	**OY035S**
	963	30	910	0...4 / 3...12	12.5	24	2	**OY036S**
	1113	30	1060	0...4 / 3...12	14.5	24	2	**OY037S**
	1263	30	1210	0...4 / 3...12	16	24	2	**OY038S**
	1413	30	1360	0...4 / 3...12	17.5	24	2	**OY039S**
	1563	30	1510	0...4 / 3...12	19.5	24	2	**OY040S**

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	1863	30	1810	0...4 / 3...12	19.5	24	2	**OY300S**

Safety light curtains type 2, SIL 1, PL c, resolution 40 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	213	40	160	0...4 / 3...12	4	24	2	**OY051S**
	363	40	310	0...4 / 3...12	5	24	2	**OY052S**
	513	40	460	0...4 / 3...12	6	24	2	**OY053S**
	663	40	610	0...4 / 3...12	7	24	2	**OY054S**
	813	40	760	0...4 / 3...12	8	24	2	**OY055S**
	963	40	910	0...4 / 3...12	9.5	24	2	**OY056S**
	1113	40	1060	0...4 / 3...12	10.5	24	2	**OY057S**
	1263	40	1210	0...4 / 3...12	11.5	24	2	**OY058S**
	1413	40	1360	0...4 / 3...12	12.5	24	2	**OY059S**
	1563	40	1510	0...4 / 3...12	13.5	24	2	**OY060S**

You can find wiring diagrams and scale drawings from page 425

Safety light curtains type 2, SIL 1, PL c, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	363	50	310	0...4 / 3...12	4.5	24	2	**OY072S**
	513	50	460	0...4 / 3...12	5.5	24	2	**OY073S**
	663	50	610	0...4 / 3...12	6	24	2	**OY074S**
	813	50	760	0...4 / 3...12	7	24	2	**OY075S**
	963	50	910	0...4 / 3...12	8	24	2	**OY076S**
	1113	50	1060	0...4 / 3...12	9	24	2	**OY077S**
	1263	50	1210	0...4 / 3...12	10	24	2	**OY078S**
	1413	50	1360	0...4 / 3...12	10.5	24	2	**OY079S**
	1563	50	1510	0...4 / 3...12	11.5	24	2	**OY080S**

Safety light curtains type 2, SIL 1, PL c, resolution 90 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	663	90	610	0...4 / 3...12	4	24	2	**OY094S**
	813	90	760	0...4 / 3...12	4.5	24	2	**OY095S**
	963	90	910	0...4 / 3...12	5	24	2	**OY096S**
	1113	90	1060	0...4 / 3...12	5.5	24	2	**OY097S**

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	1263	90	1210	0...4 / 3...12	6	24	2	**OY098S**
	1413	90	1360	0...4 / 3...12	6.5	24	2	**OY099S**
	1563	90	1510	0...4 / 3...12	7	24	2	**OY100S**

Safety light curtains for hygienic and wet areas, IP 69K, type 4, SIL 3, PL e, resolution 14 mm, protected area width up to 5 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
Cable 15 m · Wiring diagram no. 4, 5								
	637	14	460	0...2 / 1...5	7.5	24	3	**OY403S**
	937	14	760	0...2 / 1...5	11	24	3	**OY405S**
	1237	14	1060	0...2 / 1...5	14.5	24	3	**OY407S**

Safety light curtains for hygienic and wet areas, IP 69K, type 4, SIL 3, PL e, resolution 30 mm, protected area width up to 15 m

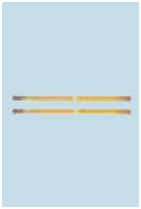
Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
Cable 15 m · Wiring diagram no. 4, 5								
	337	30	160	0...7 / 3...15	3	24	3	**OY441S**
	487	30	310	0...7 / 3...15	4	24	3	**OY442S**
	637	30	460	0...7 / 3...15	5	24	3	**OY443S**
	787	30	610	0...7 / 3...15	6	24	3	**OY444S**
	937	30	760	0...7 / 3...15	6.5	24	3	**OY445S**

You can find wiring diagrams and scale drawings from page 425

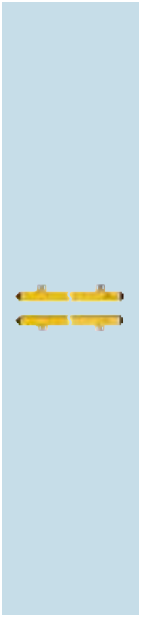
Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
Cable 15 m · Wiring diagram no. 4, 5								
	1087	30	910	0...7 / 3...15	7.5	24	3	**OY446S**
	1237	30	1060	0...7 / 3...15	8.5	24	3	**OY447S**
	1387	30	1210	0...7 / 3...15	9.5	24	3	**OY448S**
	1537	30	1360	0...7 / 3...15	10	24	3	**OY449S**
	1687	30	1510	0...7 / 3...15	11	24	3	**OY450S**
	1987	30	1810	0...7 / 3...15	11	24	3	**OY453S**

Safety light curtains for hygienic and wet areas, IP 69K, type 2, SIL 1, PL c, resolution 30 mm, protected area width up to 10 m

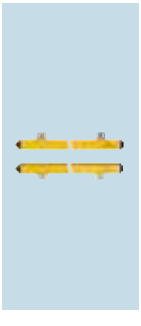
Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
Cable 15 m · Wiring diagram no. 4, 5								
	337	30	160	0...3 / 2...10	4.5	24	4	**OY431S**
	487	30	310	0...3 / 2...10	6	24	4	**OY432S**
	637	30	460	0...3 / 2...10	8	24	4	**OY433S**
	787	30	610	0...3 / 2...10	9.5	24	4	**OY434S**
	937	30	760	0...3 / 2...10	11	24	4	**OY435S**
	1087	30	910	0...3 / 2...10	12.5	24	4	**OY436S**
	1237	30	1060	0...3 / 2...10	14.5	24	4	**OY437S**
	1387	30	1210	0...3 / 2...10	16	24	4	**OY438S**

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
Cable 15 m · Wiring diagram no. 4, 5								
	1537	30	1360	0...3 / 2...10	17.5	24	4	**OY439S**
	1687	30	1510	0...3 / 2...10	19.5	24	4	**OY440S**

Safety light curtains with floating blanking type 4, SIL 3, PL e, resolution 14 mm, protected area width up to 5 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 3 · Connector groups 16, 17								
	261	14	160	0...3 / 0...5	6	24	5	**OY801S**
	711	14	610	0...3 / 0...5	11.5	24	5	**OY804S**
	861	14	760	0...3 / 0...5	13.5	24	5	**OY805S**
	1011	14	910	0...3 / 0...5	15.5	24	5	**OY806S**
	1161	14	1060	0...3 / 0...5	17	24	5	**OY807S**
	1311	14	1210	0...3 / 0...5	19	24	5	**OY808S**

Safety light curtains with floating blanking type 4, SIL 3, PL e, resolution 20 mm, protected area width up to 18 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 1, 3 · Connector groups 16, 17								
	711	20	610	0...6 / 3...18	11.5	24	5	**OY815S**
	861	20	760	0...6 / 3...18	13.5	24	5	**OY816S**
	1011	20	910	0...6 / 3...18	15.5	24	5	**OY817S**

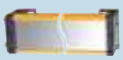
You can find wiring diagrams and scale drawings from page 425

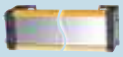
Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 3 · Connector groups 16, 17								
	1161	20	1060	0...6 / 3...18	17	24	5	**OY818S**
	1311	20	1210	0...6 / 3...18	19	24	5	**OY819S**

Safety light curtains with floating blanking type 4, SIL 3, PL e, resolution 40 mm, protected area width up to 18 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 3 · Connector groups 16, 17								
	711	40	610	0...6 / 3...18	8.5	24	5	**OY825S**
	861	40	760	0...6 / 3...18	9.5	24	5	**OY826S**
	1011	40	910	0...6 / 3...18	10.5	24	5	**OY827S**
	1161	40	1060	0...6 / 3...18	11.5	24	5	**OY828S**
	1311	40	1210	0...6 / 3...18	12.5	24	5	**OY829S**

Accessories for safety light curtains

Type	Description	Order no.
	Corner mirror · Length: 250 mm · for safety light curtains · Protected area height · 160 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1001**
	Corner mirror · Length: 400 mm · for safety light curtains · Protected area height · 310 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1002**
	Corner mirror · Length: 540 mm · for safety light curtains · Protected area height · 460 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1003**
	Corner mirror · Length: 715 mm · for safety light curtains · Protected area height · 610 mm · for safety light grids · 2 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1004**

Type	Description	Order no.
	Corner mirror · Length: 885 mm · for safety light curtains · Protected area height · 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1005**
	Corner mirror · Length: 1060 mm · for safety light curtains · Protected area height · 910 mm · for safety light grids · 3 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1006**
	Corner mirror · Length: 1230 mm · for safety light curtains · Protected area height · 1060 mm · for safety light grids · 4 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1007**
	Corner mirror · Length: 1400 mm · for safety light curtains · Protected area height · 1210 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1008**
	Corner mirror · Length: 1450 mm · for safety light curtains · Protected area height · 1360 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1009**
	Corner mirror · Length: 1600 mm · for safety light curtains · Protected area height · 1510 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1010**
	Vibration damper · for type OY · Housing materials: rubber / metal galvanised	**EY3001**
	Vibration damper · for type OY · Housing materials: rubber / metal galvanised	**EY3002**
	Rotatable brackets · axial ± 90° · for type OY · Housing materials: Angle bracket: steel black	**EY3011**
	Adjustable brackets · axial ± 7° · for type OY · Housing materials: metal galvanised	**EY3004**
	Adjustable brackets · axial ± 7° · for type OY · Housing materials: metal galvanised	**EY3005**
	Test rod · Ø 14 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	**EY3006**
	Test rod · Ø 20 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	**EY3007**
	Test rod · Ø 30 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	**EY3008**
	Test rod · Ø 40 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	**EY3009**
	Test rod · Ø 50 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	**EY3010**

You can find wiring diagrams and scale drawings from page 425

Type	Description	Order no.
	Mounting and fine adjustment bracket · for type OY · Housing materials: PA66 reinforced glass-fibre	EY3013
	Laser adjustment aid · for type OY9xxS · for safety light grids · for type OY9 · Housing materials: plastics	EY3098
	Laser adjustment aid · for safety light curtains · for type OY · Housing materials: plastics	EY3099

Bases for safety light curtains

Type	Description	Order no.
	Base · Length: 1010 mm · for safety light grids · 2 beams · for safety light curtains · ≤ 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2001
	Base · Length: 1340 mm · for safety light grids · 3 beams · 4 beams · for safety light curtains · ≤ 1060 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2002
	Base · Length: 1710 mm · for safety light curtains · ≤1360 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2003
	Base · Length: 1980 mm · for safety light curtains · ≤ 1510 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2004

Bases for safety light curtains with corner mirror

Type	Description	Order no.
	Corner mirror with base · Length: 1010 mm · for safety light grids · 2 beams · for safety light curtains · ≤ 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1011
	Corner mirror with base · Length: 1340 mm · for safety light grids · 3 beams · 4 beams · for safety light curtains · ≤ 1060 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1013
	Corner mirror with base · Length: 1710 mm · for safety light curtains · ≤1360 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1014
	Corner mirror with base · Length: 1980 mm · for safety light curtains · ≤ 1510 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1015

Accessories necessary for bases

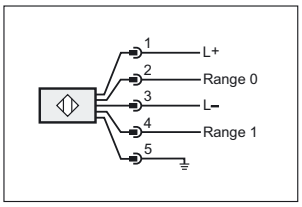
Type	Description	Order no.
	Mounting base · for type OY	EY2005

Wiring diagrams

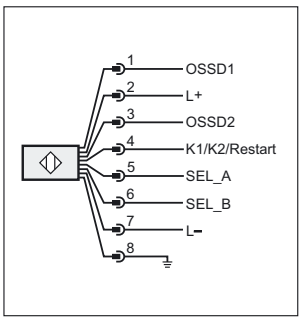
Core colours

BK	black
BN	brown
BU	blue
GN	green
GY	grey
PK	pink
RD	red
VT	purple
WH	white
YE	yellow

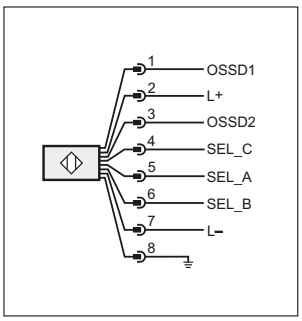
1



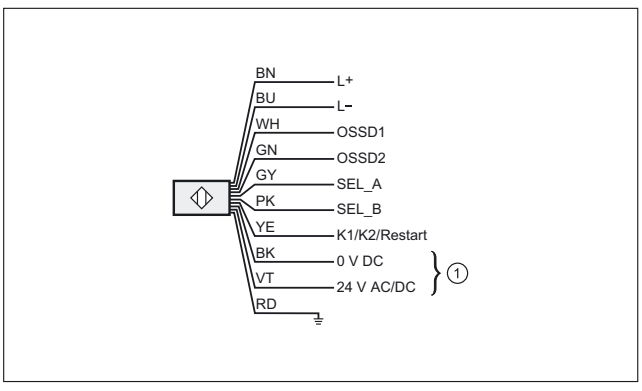
2



3

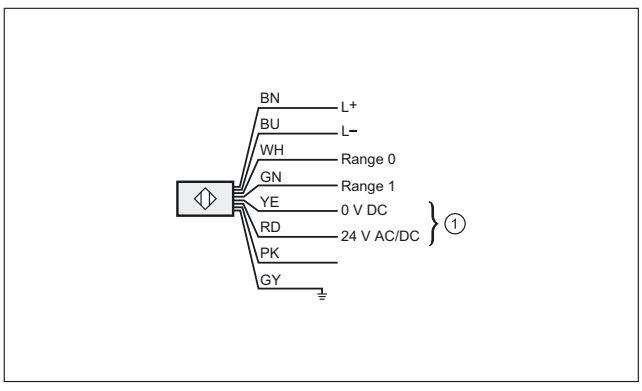


4



1: Heating

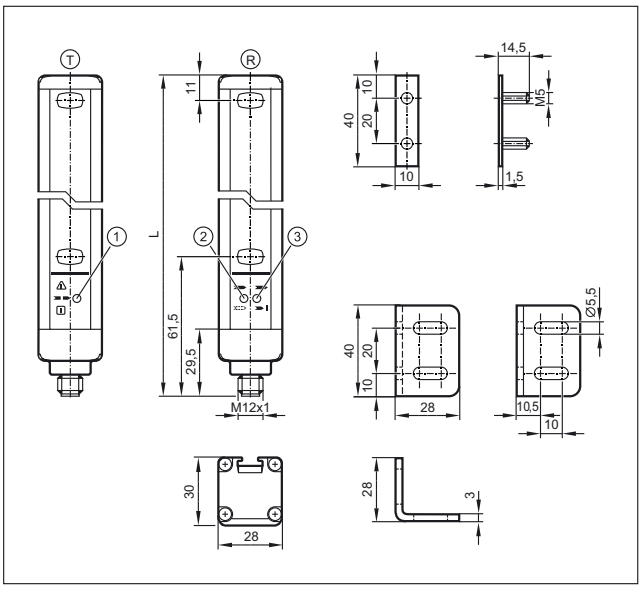
5



1: Heating, pink: not used

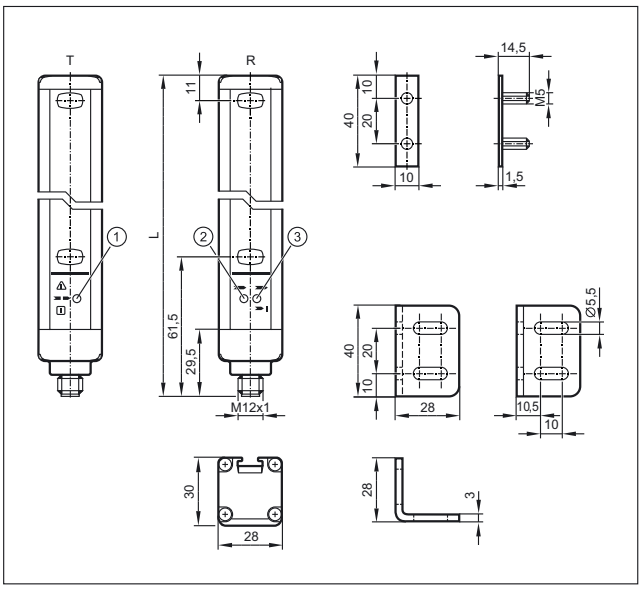
Scale drawings / drawing no. – CAD download: www.ifm.com

1



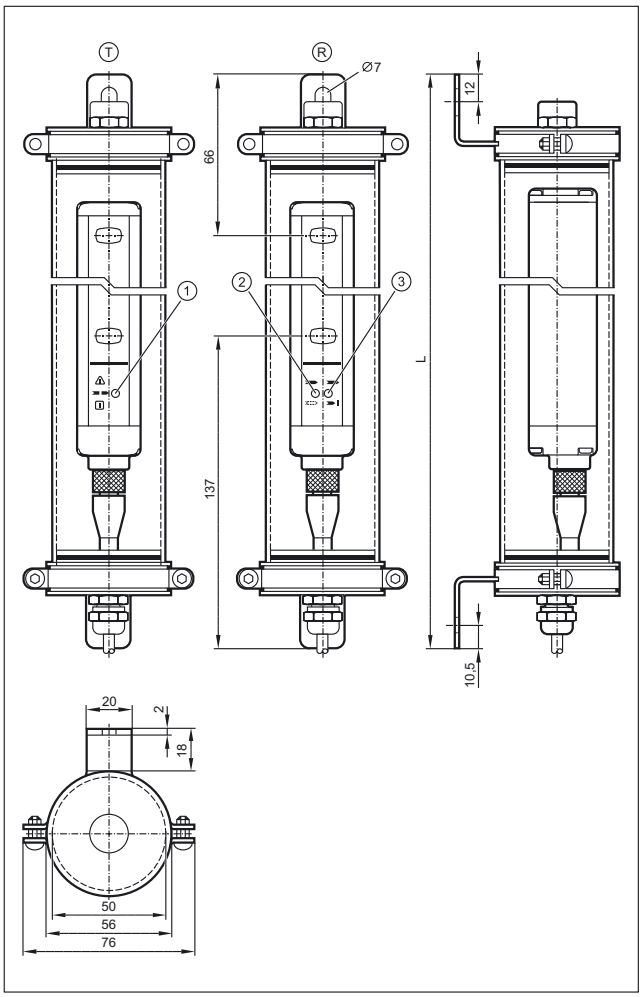
T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange),
2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)

2



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange),
2: LED (yellow), 3: LED 2 colours (red/green)

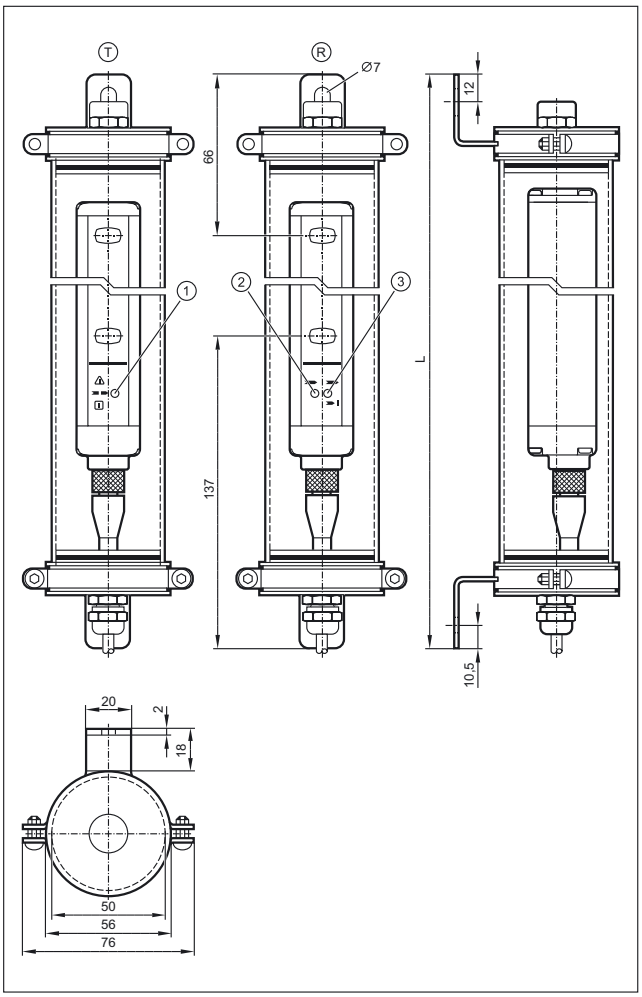
3



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange),
2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)

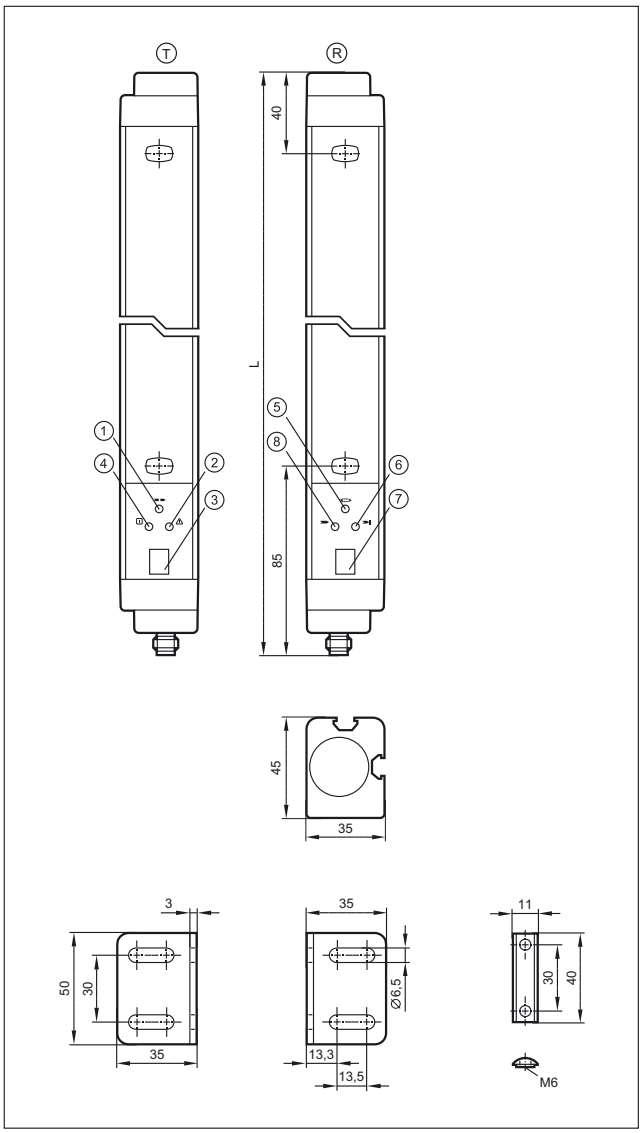
Scale drawings / drawing no. – CAD download: www.ifm.com

4



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange), 2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)

5



T: Transmitter, R: Receiver, 1: LED yellow, 2: LED red, 3: 7-segment LED display, 4: LED green, 5: LED yellow, 6: LED red, 7: 7-segment LCD display, 8: LED green

Safety light grids

Wherever motion of machine parts presents a danger to people or goods, safety light curtains or safety light grids are used.

The protective equipment ensures that the outputs are switched off which results in a machine halt.

System overview	Page
Safety light grids type 2, SIL 1, PL c, 2, 3, 4 beams, protected area width up to 10 m	428
Safety light grids type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 12 m	429
Safety light grids type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 20 m	429
Safety light grids for hygienic and wet areas type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 15 m	429
Safety light grids type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 60 m	430
Safety light grids with active / passive system type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 6 m	430
Safety light grids for hygienic and wet areas type 2, SIL 1, PL c, 2, 3, 4 beams, protected area width up to 10 m	430
Accessories for safety light grids	431
Bases for safety light grids	431
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Wiring diagrams	432
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Safety light grids type 2, SIL 1, PL c, 2, 3, 4 beams, protected area width up to 10 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	L x 28 x 30	2	510	0...4 / 3...12	3	24	1	**OY111S**
	L x 28 x 30	3	810	0...4 / 3...12	3.5	24	1	**OY112S**
	L x 28 x 30	4	910	0...4 / 3...12	3.5	24	1	**OY113S**

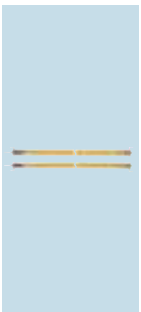
Safety light grids type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 12 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	L x 28 x 30	2	510	0...4 / 3...12	2.5	24	1	**OY114S**
	L x 28 x 30	3	810	0...4 / 3...12	3	24	1	**OY115S**
	L x 28 x 30	4	910	0...4 / 3...12	3	24	1	**OY116S**

Safety light grids type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 20 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	L x 28 x 30	2	510	0...10 / 3...20	2.5	24	1	**OY120S**
	L x 28 x 30	3	810	0...10 / 3...20	2.5	24	1	**OY121S**
	L x 28 x 30	4	910	0...10 / 3...20	2.5	24	1	**OY122S**

Safety light grids for hygienic and wet areas type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 15 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
Cable 15 m · Wiring diagram no. 3, 4								
	L x 76 x 74	2	510	0...7 / 3...15	2.5	24	2	**OY421S**
	L x 76 x 74	3	810	0...7 / 3...15	2.5	24	2	**OY422S**
	L x 76 x 74	4	910	0...7 / 3...15	2.5	24	2	**OY423S**

You can find wiring diagrams and scale drawings from page 432

Safety light grids type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 60 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	L x 50 x 60	2	510	8...30 / 18...60	7	24	3	**OY951S**
	L x 50 x 60	3	810	8...30 / 18...60	7	24	3	**OY952S**
	L x 50 x 60	4	910	8...30 / 18...60	7	24	3	**OY953S**

Safety light grids with active / passive system type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 6 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 2 · Connector groups 16, 17								
	L x 50 x 60	2	510	0...6 / 0...6	10	24	4	**OY901S**
	L x 50 x 60	3	810	0...6 / 0...6	10.5	24	4	**OY902S**
	L x 50 x 60	4	910	0...6 / 0...6	10.5	24	4	**OY903S**

Safety light grids for hygienic and wet areas type 2, SIL 1, PL c, 2, 3, 4 beams, protected area width up to 10 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U_b [V]	Drawing no.	Order no.
Cable 15 m · Wiring diagram no. 3, 4								
	L x 76 x 74	2	510	0...3 / 2...10	3	24	5	**OY411S**
	L x 76 x 74	3	810	0...3 / 2...10	3.5	24	5	**OY412S**
	L x 76 x 74	4	910	0...3 / 2...10	3.5	24	5	**OY413S**

Accessories for safety light grids

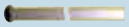
Type	Description	Order no.
	Corner mirror · Length: 715 mm · for safety light curtains · Protected area height · 610 mm · for safety light grids · 2 beams · f or type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1004**
	Corner mirror · Length: 1060 mm · for safety light curtains · Protected area height · 910 mm · for safety light grids · 3 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1006**
	Corner mirror · Length: 1230 mm · for safety light curtains · Protected area height · 1060 mm · for safety light grids · 4 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	**EY1007**
	Vibration damper · for type OY · Housing materials: rubber / metal galvanised	**EY3001**
	Vibration damper · for type OY · Housing materials: rubber / metal galvanised	**EY3002**
	Rotatable brackets · axial ± 90° · for type OY · Housing materials: Angle bracket: steel black	**EY3011**
	Adjustable brackets · axial ± 7° · for type OY · Housing materials: metal galvanised	**EY3004**
	Adjustable brackets · axial ± 7° · for type OY · Housing materials: metal galvanised	**EY3005**
	Laser adjustment aid · for type OY9xxS · for safety light grids · for type OY9 · Housing materials: plastics	**EY3098**
	Laser adjustment aid · for safety light curtains · for type OY · Housing materials: plastics	**EY3099**

Bases for safety light grids

Type	Description	Order no.
	Base · Length: 1010 mm · for safety light grids · 2 beams · for safety light curtains · ≤ 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	**EY2001**
	Base · Length: 1340 mm · for safety light grids · 3 beams · 4 beams · for safety light curtains · ≤ 1060 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	**EY2002**

You can find wiring diagrams and scale drawings from page 432

Bases for safety light grids with corner mirror

Type	Description	Order no.
	Corner mirror with base · Length: 1010 mm · for safety light grids · 2 beams · for safety light curtains · ≤ 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1011
	Corner mirror with base · Length: 1340 mm · for safety light grids · 3 beams · 4 beams · for safety light curtains · ≤ 1060 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1013

Accessories necessary for bases

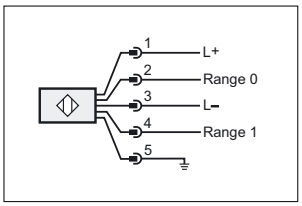
Type	Description	Order no.
	Mounting base · for type OY	EY2005

Wiring diagrams

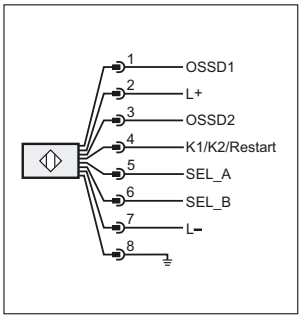
Core colours

BK	black
BN	brown
BU	blue
GN	green
GY	grey
PK	pink
RD	red
VT	purple
WH	white
YE	yellow

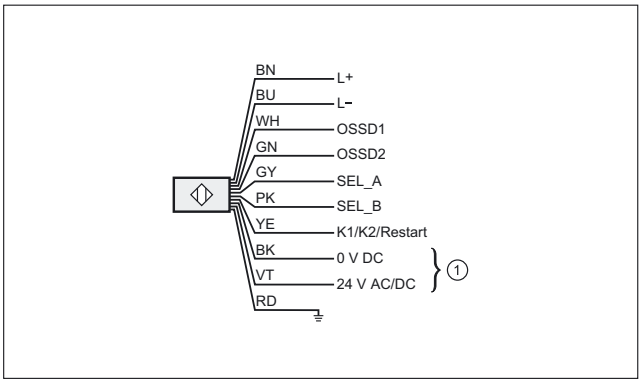
1



2

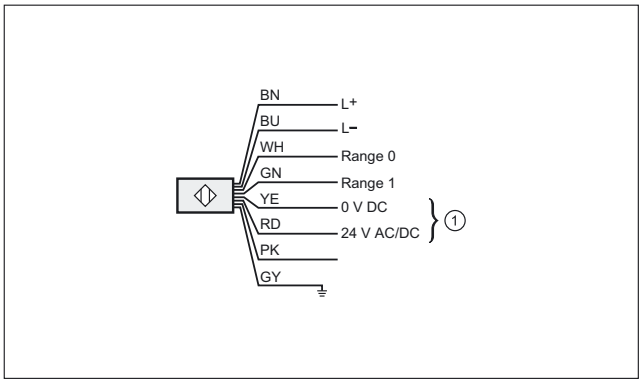


3



1: Heating

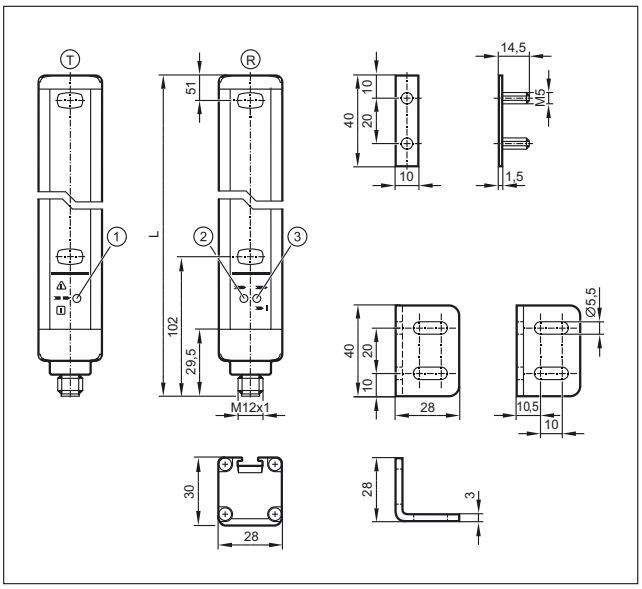
4



1: Heating, pink: not used

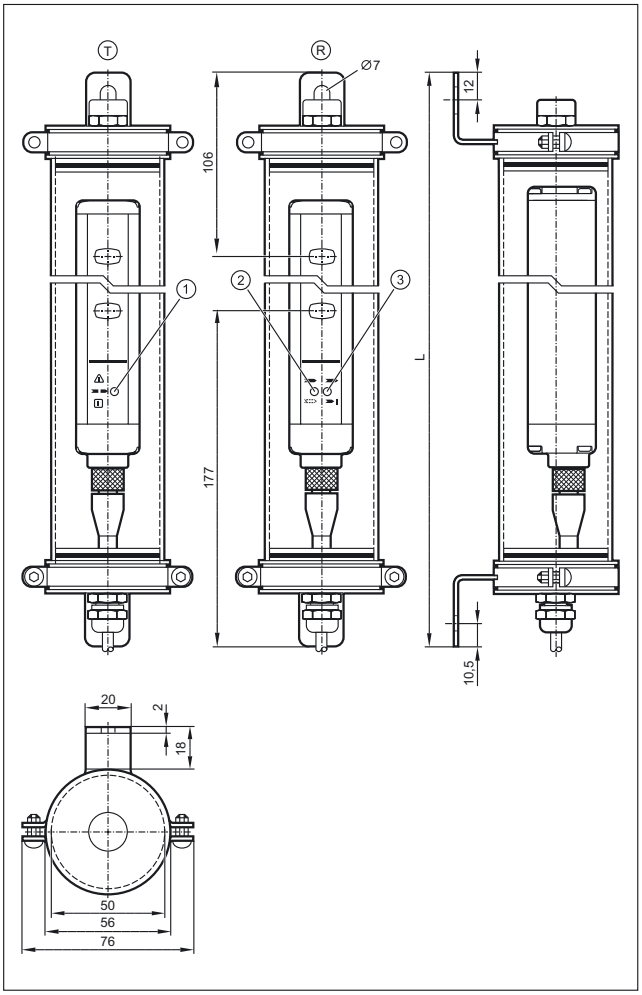
Scale drawings / drawing no. – CAD download: www.ifm.com

1



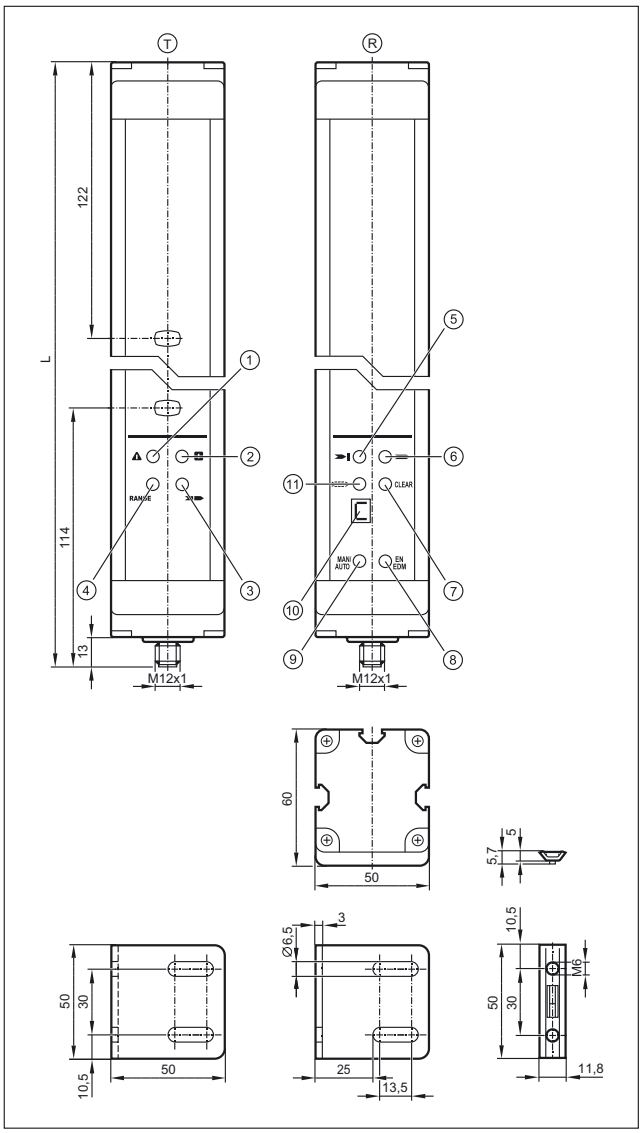
T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange), 2: LED yellow, 3: LED 2 colours (red/green)

2



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange), 2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)

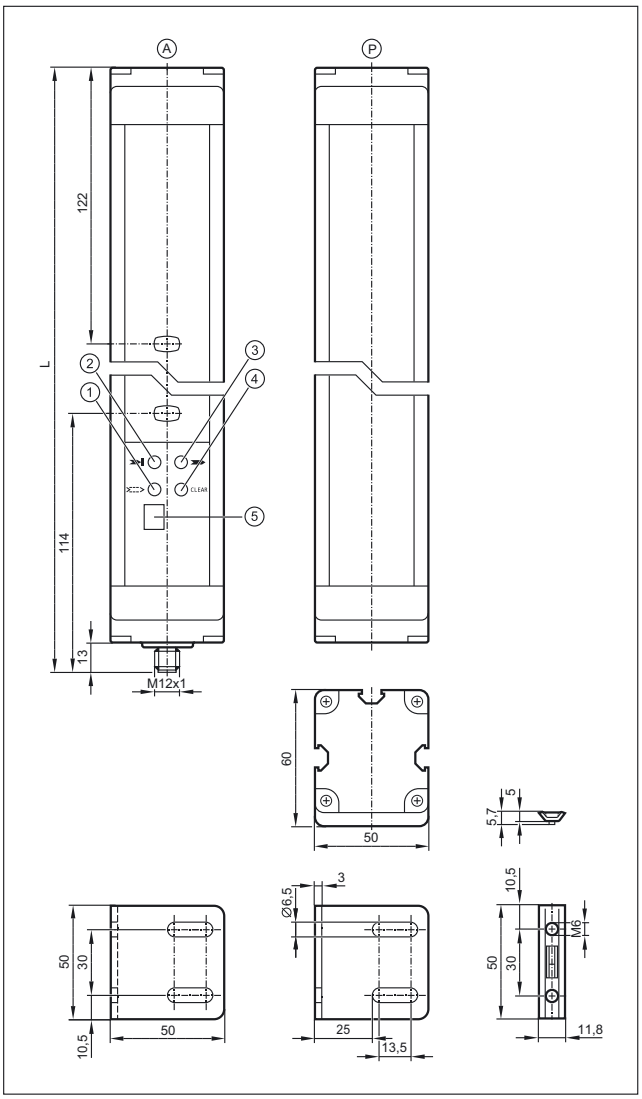
3



T: Transmitter, R: Receiver, 1: LED (red), 2: LED (green), 3: LED (yellow), 4: LED (orange), 5: LED (red), 6: LED (green), 7: LED (yellow), 8: LED (yellow), 9: LED (yellow), 10: display, 11: LED (orange)

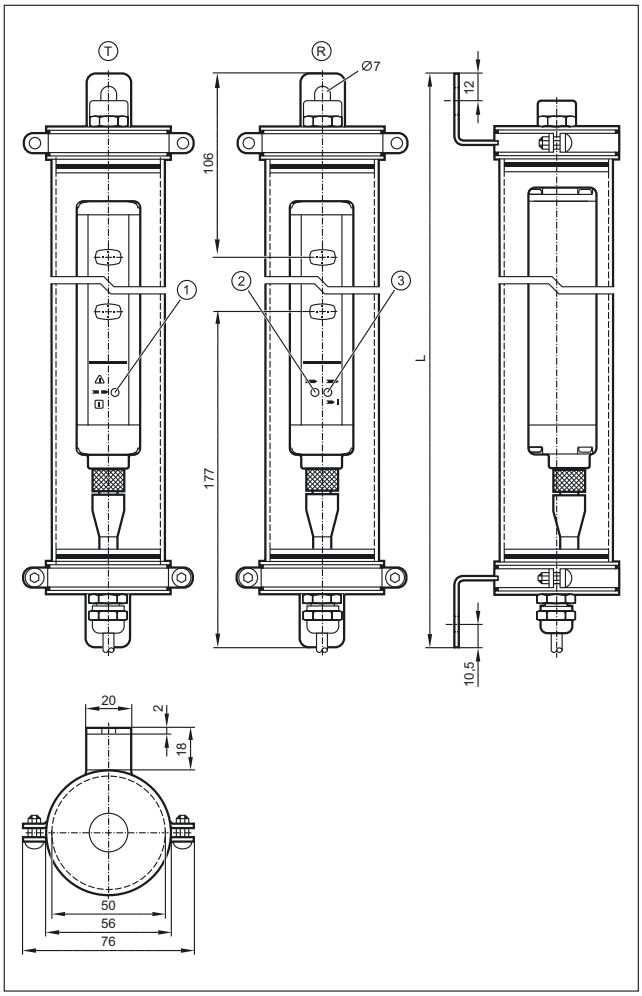
Scale drawings / drawing no. – CAD download: www.ifm.com

4



A: active element, P: passive element, 1: LED (orange), 2: LED (red), 3: LED (green), 4: LED (yellow), 5: display

5



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange), 2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)

Safety relays

Multifunctional with the advantage on your side: The safety relays provide various connection options for safety light curtains, fail-safe inductive sensors or other non-contact guards. They meet the highest requirement with SIL 3 (IEC 61508). "Monitored" or "automatic start" as well as external muting are only some of numerous functions.

System overview	*Page*
Safety relays with relay outputs for fail-safe sensors	*436*
Safety relays with solid state outputs for fail-safe sensors	*436*
Safety relays for safety light curtains	*436*
Accessories	*437*
Scale drawings / drawing no. – CAD download: www.ifm.com	*437*

Safety relays with relay outputs for fail-safe sensors

Type	U_b [V]	Electrical design	ISO 13849-1: Category / performance level	IEC 61508: SIL	Drawing no.	Order no.
	24	Relay	4 / e	3	1	**G1501S**
	24	Relay	4 / e	3	2	**G1502S**

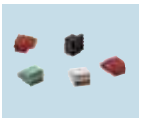
Safety relays with solid state outputs for fail-safe sensors

Type	U_b [V]	Electrical design	ISO 13849-1: Category / performance level	IEC 61508: SIL	Drawing no.	Order no.
	24	Semi-conductor outputs	4 / e	3	3	**G1503S**

Safety relays for safety light curtains

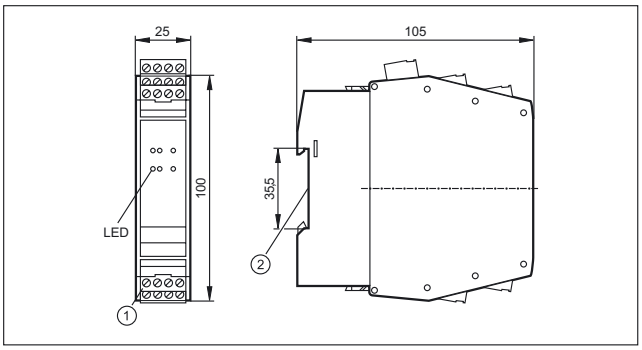
Type	U_b [V]	Electrical design	ISO 13849-1: Category / performance level	IEC 61508: SIL	Drawing no.	Order no.
	24	Relay	4 / e	3	4	**G2001S**

Accessories

Type	Description	Order no.
	Combicon connector · with cage clamps 4 poles · Housing materials: PA / current carrying parts: copper alloy tin-plated	**E11930**

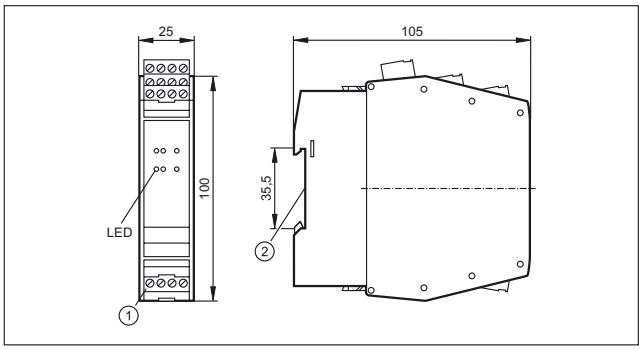
Scale drawings / drawing no. – CAD download: www.ifm.com

1



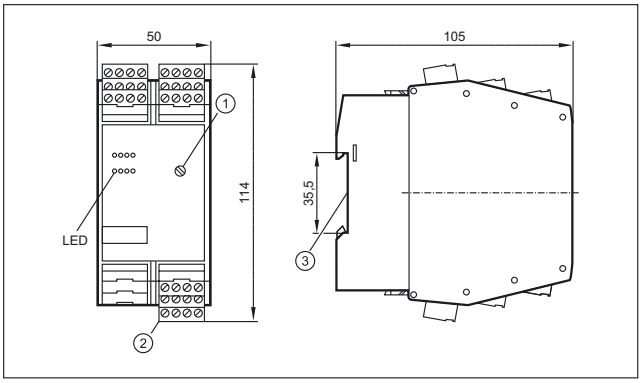
1: Combicon connector with screw terminals, 2: Mounting on DIN rail

3



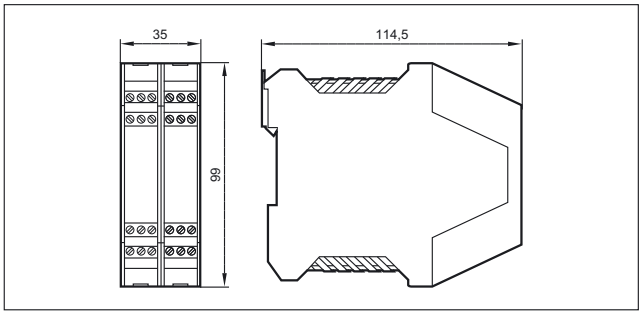
1: Combicon connector with screw terminals, 2: Mounting on DIN rail

2



1: Rotary switch for switch-off delay, 2: Combicon connector with screw terminals, 3: Mounting on DIN rail

4



Safety controllers

Controllers for safety-related applications up to safety category 3 (EN 954-1) are called "safety controllers". Special test routines for hardware and software monitoring are implemented in the devices. Due to the certification of the hardware, operating system software and programming tools it is easy for the project engineer to get the approval for the machine.

System overview	Page
SafetyController 32 bits	438
Accessories and software	438 - 439
Scale drawings / drawing no. – CAD download: www.ifm.com	439

SafetyController 32 bits

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.
SILcl 2 (IEC 62061), PL d (EN ISO 13849-1), Configurable input / output functions, Programming according to IEC 61131-3						
	32	16 x Digital 16 x analogue (U/I) 16 x frequency	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	1	**CR7032**
	80	32 x Digital 32 x analogue (U/I) 32 x frequency	48 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	4 x CAN 1 x RS-232 1 x USB	2	**CR7132**

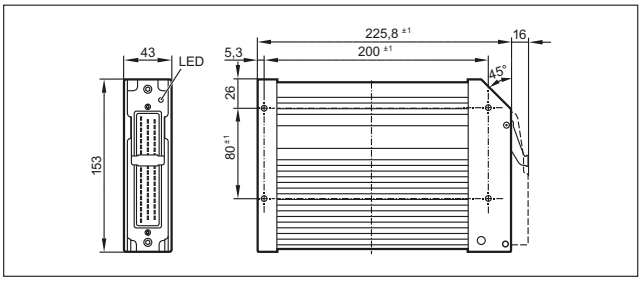
Accessories and software

Type	Description	Order no.
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · German version · incl. the DVD "Software, tools and documentation"	**CP9006**
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · English version · incl. the DVD "Software, tools and documentation"	**CP9008**
	Connector AMP 55-pole · wirable · with contacts (Junior Power Timer)	**EC2013**
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Cores sealed individually · Core cross-section 1 mm²	**EC2084**

Type	Description	Order no.
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Cores sealed individually · Core cross-section 1 mm²	**EC2097**
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC2086**
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Core cross-section 1 mm²	**EC2046**

Scale drawings / drawing no. – CAD download: www.ifm.com

1



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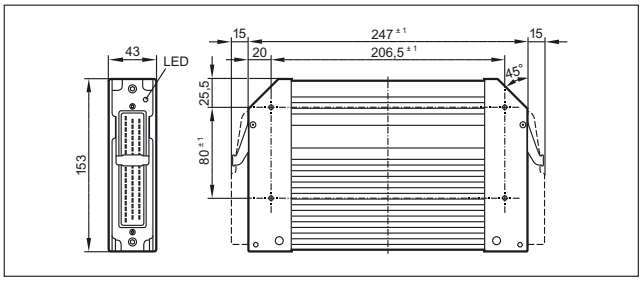

AS-Interface Safety at Work

The sophisticated AS-i technology and the extended diagnostic possibilities provide high reliability and machine uptime. "Safety at Work" is the extension of the AS-interface by safety-related components. Safety components up to the highest control category 4 to EN 954-1, SIL 3 to IEC 61508 and EN ISO 13849 - 1 / PL e can be connected to AS-i.

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AS-i manuals	*442*
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Safety at Work

Type	Description	Drawing no.	Order no.
	AS-i safety monitor · Basic version · 1-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	**AC001S**
	AS-i safety monitor · Basic version · 2-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	**AC002S**
	AS-i safety monitor · Extended functionality · 1-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	**AC003S**
	AS-i safety monitor · Extended functionality · 2-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	**AC004S**
	AS-i safety monitor · Extended functionality and integrated safe slave for triggering a safe AS-i output · 2-channel · Configuration and setup by configuration software ASIMON V3.0 · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	2	**AC032S**
	AS-i safety monitor · 2 safe semi-conductor outputs · SIL 3 to EN 62061, IEC 61508 / SIL 3 and EN ISO 13849 - 1 / PL e · Chip card to save the configuration data · Configuration and setup by configuration software ASIMON V3 G2 · USB 2.0 interface · Chip card and Combicon screw terminals supplied with the device · Screw terminal	3	**AC041S**
	Safe active AS-i module · Performance Level e to EN ISO 13849-1 et IEC 61508 / SIL 3 for the connection of mechanical contacts · Combicon connection · PA · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	4	**AC009S**
	Safe active AS-i output module · SIL 3 to EN 62061, IEC 61508 / SIL 3 and EN ISO 13849 - 1 / PL e · for the safe triggering of actuators · Combicon connection · PA · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	5	**AC030S**
	AS-i Safety at Work · Safe AS-i input module 2SI - 2LO · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 62061: SILcl 3	6	**AC505S**

Product selectors and further information can be found at: www.ifm.com

Type	Description	Drawing no.	Order no.
	AS-i Safety at Work · Safe AS-i input module 4SI / 2DO T / 2LO · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 3 · ISO 13849-1: PL d · IEC 62061: SILcl 2	6	**AC506S**
	AS-i Safety at Work · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3 · IEC 62061: SILcl 3	6	**AC507S**
	AS-i Safety at Work · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 3 · ISO 13849-1: PL d · IEC 62061: SILcl 2	6	**AC509S**
	Illuminated E-STOP · front mounting · reset by turning · 2 NC contacts / 1 red LED · fool-proof E-STOP to EN ISO 13850	7	**E7007S**
	Illuminated E-STOP with integrated AS-i connection · fool-proof E-STOP to EN ISO 13850 · Pull to reset · AS-i interface via AS-i flat cable IP 67 · PC GF20 · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	8	**AC010S**
	Key-release E-STOP with integrated AS-i connection · Connector M12 x 1 · AS-i interface via AS-i flat cable IP 67 · fool-proof E-STOP to EN ISO 13850 · Reset by key operation · PC GF20 · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	9	**AC011S**
	safe AS-i e-stop operating unit with integrated AS-i connection · AS-i interface via M12 x 1 connector · fool-proof E-STOP to EN ISO 13850 · Pull to reset · interchangeable button inserts · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	10	**AC012S**
	AS-i safety PCB · Connection of mechanical contact and LED components · Certification to ISO 13849-1: PL e and IEC 61508 / SIL 3 · Complies with the requirements: · IEC 61508: SIL 3	11	**AC015S**
	Fail-safe inductive sensor · M12 connector, Gold-plated contacts · PPE / diecast zinc · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	12	**GM504S**
	Fail-safe inductive sensor · M12 connector, Gold-plated contacts · PPE / diecast zinc · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	12	**GM505S**
	Fail-safe inductive sensor · M18 x 1 · M12 connector, Gold-plated contacts · high-grade stainless steel / PBT · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	13	**GG505S**
	Fail-safe inductive sensor · M30 x 1.5 · M12 connector, Gold-plated contacts · PEEK / high-grade stainless steel / O-ring: EPDM · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	14	**GI505S**
	Safety switch with guard locking · Normally closed principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	15	**AC901S**
	Safety switch with guard locking · Normally open principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	15	**AC902S**
	Safety switch with guard locking · Normally closed principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply from AS-i · M12 connector · thermoplastic reinforced glass-fibre	16	**AC903S**
	Safety switch with guard locking · Normally open principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply from AS-i · M12 connector · thermoplastic reinforced glass-fibre	16	**AC904S**

You can find scale drawings from page 443

Accessories Safety at Work

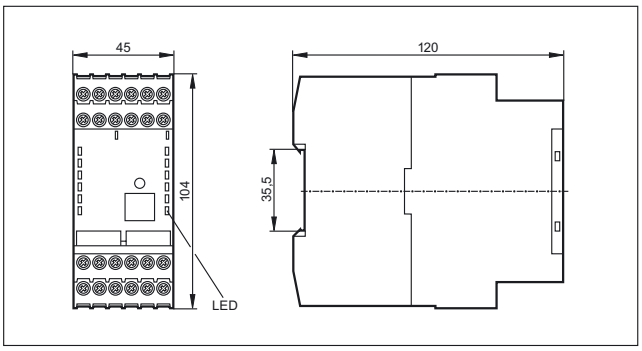
Type	Description	Order no.
	AS-i Safety at Work · Programming software for AS-i safety monitor AC001S / AC002S / AC003S / AC004S / AC032S · Version 3.0 · Configuration, set-up and diagnostics of the AS-i safety monitor	**E7040S**
	Software ASIMON V3 G2 · Configuration, set-up and diagnostics of the AS-i safety monitor · AC041S	**E7050S**
	USB interface cable for the connection of the safety monitor AC041S to the PC · cable length 1.8 m · 1.8 m	**E7051S**
	Chip card to save the configuration data of the AS-i safety monitor AC041S · 256 K	**E7052S**
	Safe contact expander without delay · 2 independent channels · 4 contact blocks (NO) per channel · 1 feedback circuit (NC) per channel · Mounting on DIN rail · Screw terminal	**E7053S**
	Connection cable PC / AS-i safety monitor · Parameter setting cable PC / AS-i safety monitor · Western connector RJ 45 8 poles / D-Sub socket 9 poles · 2.5 m	**E7001S**
	Connection cable AS-i safety monitor / AS-i safety monitor · Download cable AS-i safety monitor / AS-i safety monitor · Western connector RJ 45 8 poles · 0.3 m	**E7002S**
	EMERGENCY STOP label IP66 4 languages DE, UK, FR, IT · EMERGENCY STOP label 4 languages for a safe illuminated EMERGENCY STOP button with integrated AS-i interface AC010S / AC011S / AC012S · 50 x 50 mm	**E7003S**
	EMERGENCY STOP protective collar · EMERGENCY STOP protective collar for safe E-STOP AC010S / AC011S / AC012S · Housing materials: PC GF20 RAL 1004	**E7004S**
	bridging plug for safety modules · Housing materials: PUR	**E7005S**
	Bulkhead connector · straight · M20 - M12 · M12 connector · 0.07 m · Housing materials: polyamide	**E7006S**

AS-i manuals

Type	Description	Order no.
	ecolog asi system · AS-Interface Manual (German)	**AC0115**
	ecolog asi system · AS-Interface Manual (English)	**AC0116**

Scale drawings / drawing no. – CAD download: www.ifm.com

1



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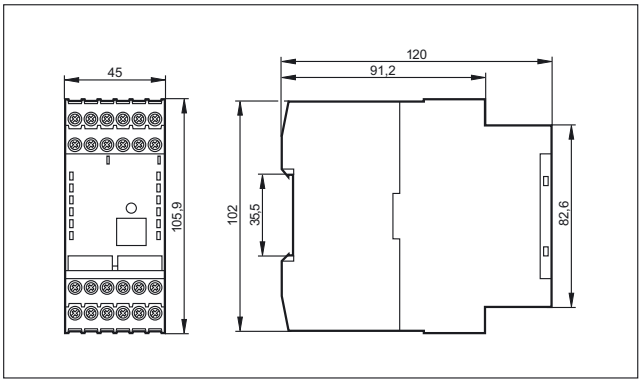

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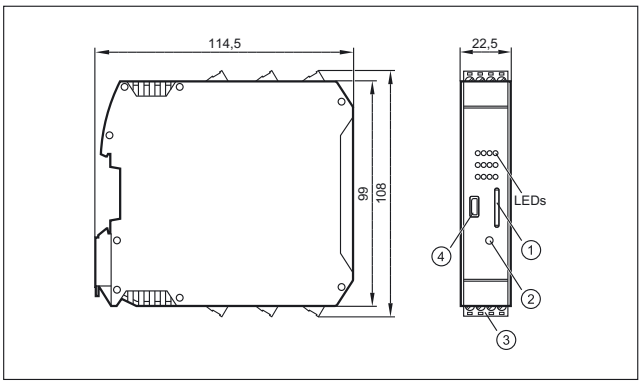
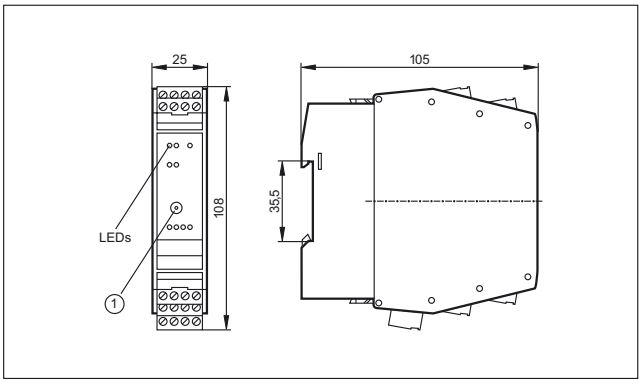


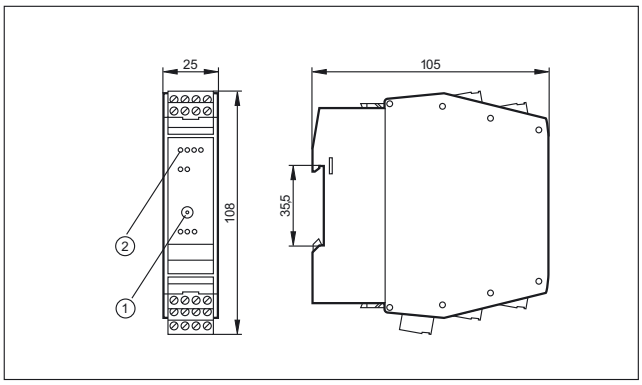
1: Chip card, 2: service button, 3: Combicon connector with screw terminals, 4: Micro USB interface

4



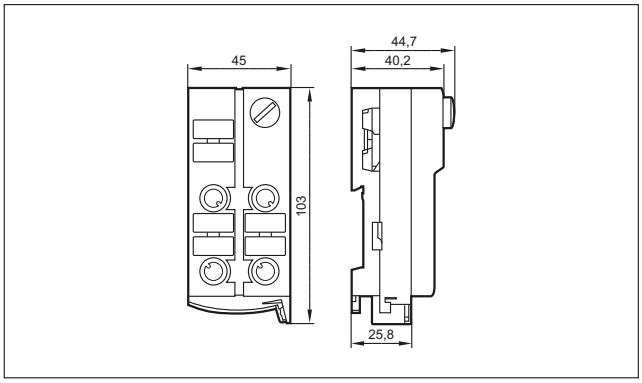
1: Addressing socket

5



1: Addressing socket, 2: LED

6



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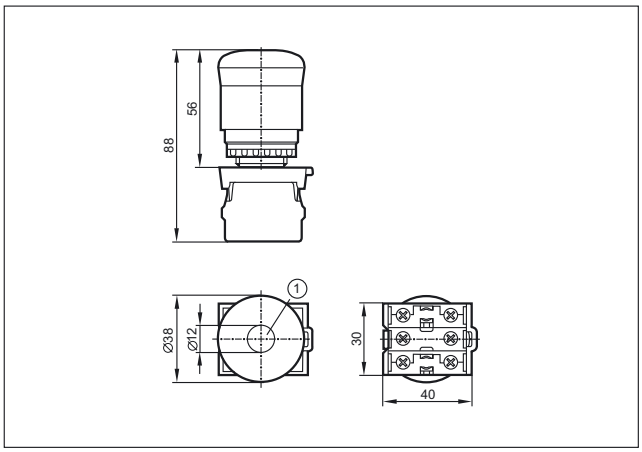

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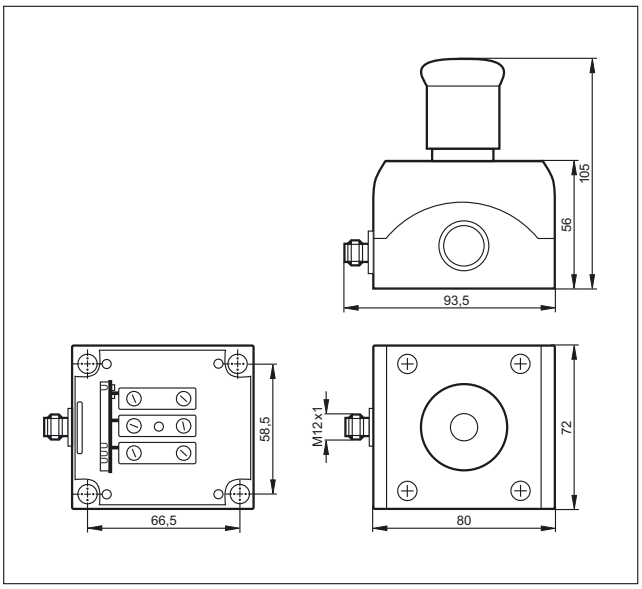

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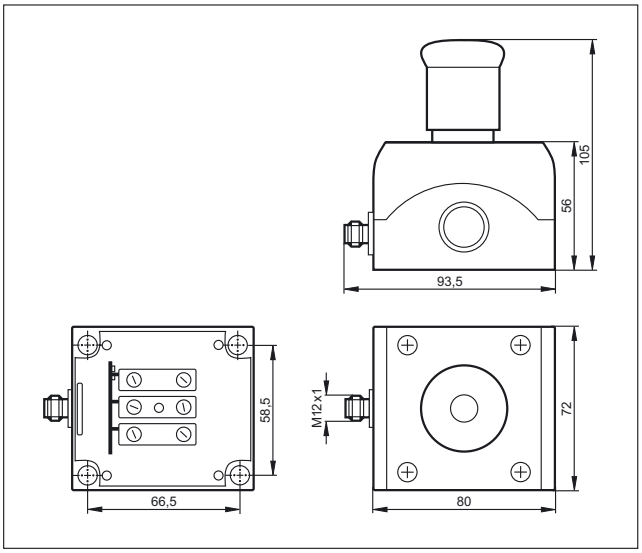

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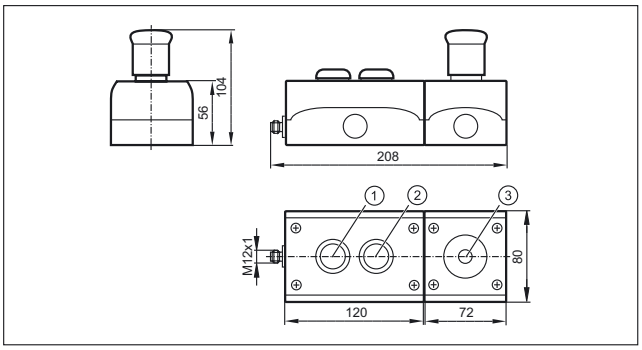

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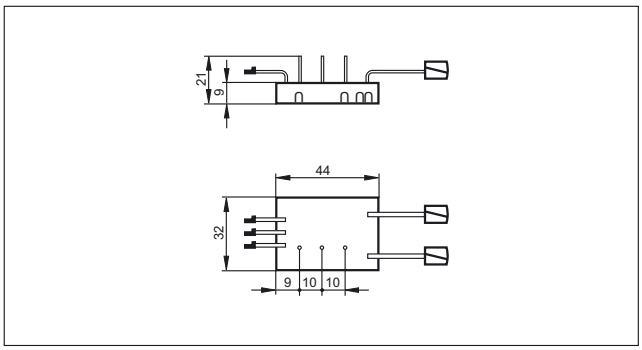

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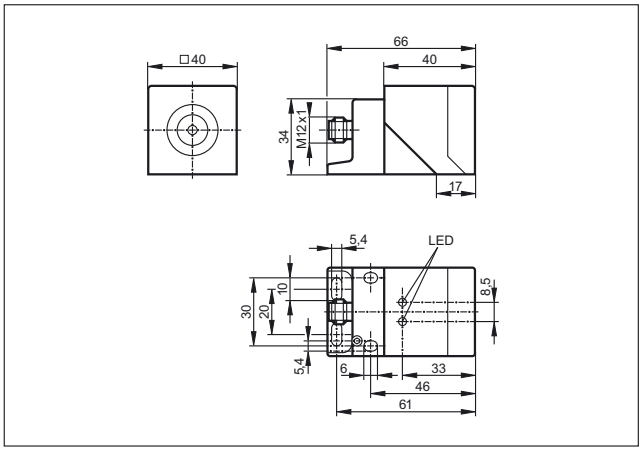

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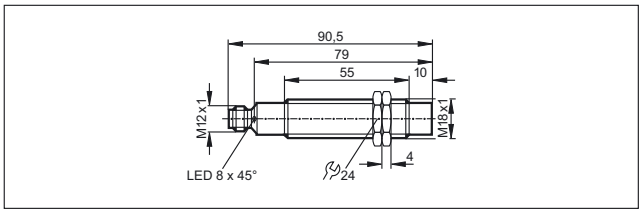

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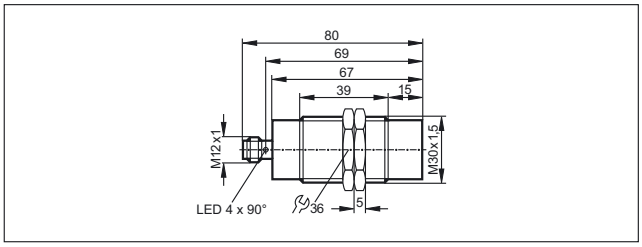

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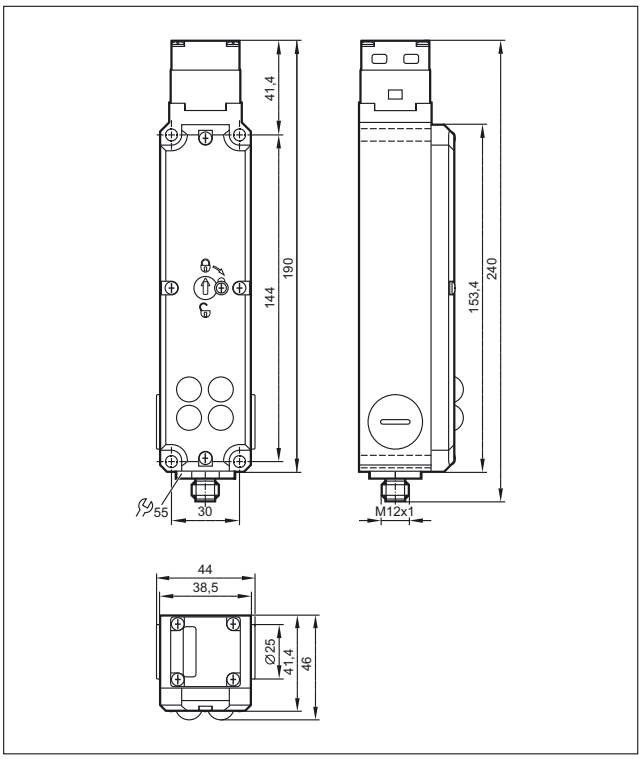
15



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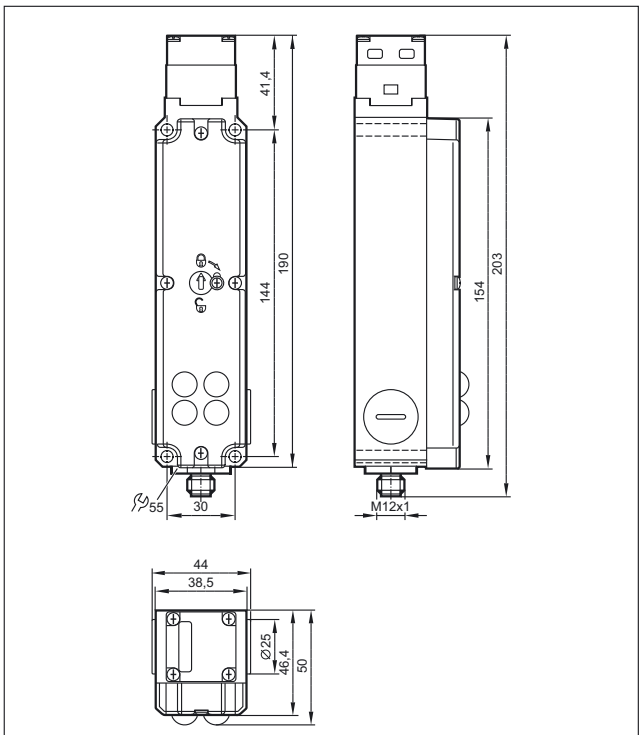

Measuring and monitoring fluids – now also with IO-Link

Multiple features

ifm process sensors can be used for control and measurement of the most important parameters of fluids –no matter whether it is pressure, level, flow, temperature or valve position. The range of applications spans from simple monitoring tasks and presence detection of media to accurate and highly repeatable measurements.

The applied microprocessor technology allows for a selection of key parameter settings. In addition to local parameter setting, IO-Link compatible sensors provide an easy way of communication while their parameters can be set directly from the controller. For further data processing, switching and analogue outputs are available. The transmission of data to the controller can also be achieved via bus systems (AS-i). Process and set pa-rameters are indicated locally by a 4-digit alphanumeric display.

As the sensors are mostly in direct contact with the medium, the design of the units and the selection of the materials were driven by the high requirements in the applications.

These include in particular resistance to pressure, vibration, shock, media and temperature as well as electromagnetic compatibility and a high protection rating.

Multiple applications

The broad range of ifm sensors can be used across many different applications. The main areas of application are machine building, hygienic applications (e.g. in the food industry), mobile machines and industrial or chemical process plants.

An extensive range of process adapters and mounting accessories guarantees easy integration of the sensors into the application. Moreover, the units comply with required approvals such as EHEDG, 3A, FDA, KTW, ATEX and e1 for safe use in the application.

Regular examinations in production and high test requirements at the development stage ensure a consistently high quality.

	Pressure sensors	448 - 483
	Flow sensors / flow meters	484 - 517
	Level sensors	518 - 543
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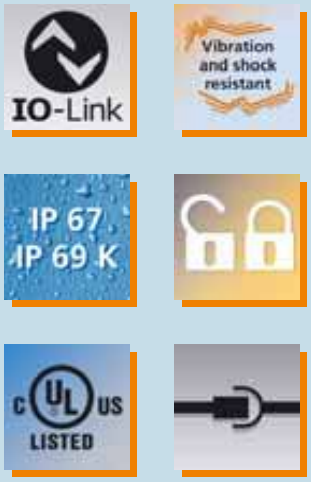
	Signal evaluation systems	580 - 585
	Feedback systems for valves and valve actuators	586 - 599

Robust pressure sensors and transmitters for flexible use

Pressure sensors

- **Sensors and transmitters with integrated evaluation**
- **Units with special design for hygienic applications**
- **Overload-protected measuring principles with a good long-term stability**
- **Measuring ranges of -1…600 bar**
- **Variable process connection and sealing technology via adapters**



Pressure sensors

All units have robust housings and do not require moving parts such as pistons or springs. The result: the sensors are extremely shock and vibration resistant and operate without any wear and tear or maintenance.

The tried and tested ceramic-capacitive measuring cell is corrosion-resistant and long-term stable. This ensures consistent and long-term accuracy of the measured values. The sensors are resistant to dynamic pressure peaks and have a high overload protection.

The units featuring a stainless steel measuring cell are distinguished by their very compact and robust design. The welded stainless steel measuring cell without any seals ensures a high degree of safety, in particular for applications with gas pressures of up to 600 bar as well as in air-conditioning and refrigerating technology where aggressive coolants (freons) are used.

Product selectors and further information can be found at: www.ifm.com

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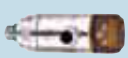
Sensors with switching and analogue outputs, display and IO-Link

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V; scaleable 1:5) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ I	Display unit	0...600	800	2500	18...30	1	**PN2160**
	G ¼ I	Display unit	0...400	800	1700	18...30	1	**PN2070**
	G ¼ I	Display unit	0...250	500	1200	18...30	1	**PN2071**
	G ¼ I	Display unit	0...100	300	650	18...30	1	**PN2092**
	G ¼ I	Display unit	-1...25	150	350	18...30	1	**PN2093**
	G ¼ I	Display unit	-1...10	75	150	18...30	1	**PN2094**
	G ¼ I	Display unit	-0.125...2.5	20	50	18...30	1	**PN2096**
	G ¼ I	Display unit	-0.05...1	10	30	18...30	1	**PN2097**
	G ¼ I	Display unit	-0.0125...25	10	30	18...30	1	**PN2098**
	G ¼ I	Display unit	-1...1	20	50	18...30	1	**PN2099**
	G ¼ I	Display unit	-0.5...0.5	10	30	18...30	1	**PN2169**
	G ¼ A / M5 I	Display unit	0...600	800	2500	18...30	2	**PN2560**
	G ¼ A / M5 I	Display unit	0...400	800	1700	18...30	2	**PN2570**
	G ¼ A / M5 I	Display unit	0...250	500	1200	18...30	2	**PN2571**
	G ¼ A / M5 I	Display unit	0...100	300	650	18...30	2	**PN2592**
	G ¼ A / M5 I	Display unit	-1...25	150	350	18...30	2	**PN2593**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V; scaleable 1:5) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A / M5 I	Display unit	-1...10	75	150	18...30	2	**PN2594**
	G ¼ A / M5 I	Display unit	-0.125...2.5	20	50	18...30	2	**PN2596**
	G ¼ A / M5 I	Display unit	-0.05...1	10	30	18...30	2	**PN2597**
	G ¼ A / M5 I	Display unit	-0.0125...0.25	10	30	18...30	2	**PN2598**
	G ¼ A / M5 I	Display unit	-1...1	20	50	18...30	2	**PN2599**
	G ¼ A / M5 I	Display unit	-0.5...0.5	10	30	18...30	2	**PN2569**
M12 connector · Output function normally open / closed programmable; 4...20 mA or 0...10 V · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ I	Display unit	0...600	800	2500	18...30	1	**PN3160**
	G ¼ I	Display unit	0...400	800	1700	18...30	1	**PN3070**
	G ¼ I	Display unit	0...250	500	1200	18...30	1	**PN3071**
	G ¼ I	Display unit	0...100	300	650	18...30	1	**PN3092**
	G ¼ I	Display unit	0...25	150	350	18...30	1	**PN3093**
	G ¼ I	Display unit	-1...10	75	150	18...30	1	**PN3094**
	G ¼ I	Display unit	0...2.5	20	50	18...30	1	**PN3096**
	G ¼ I	Display unit	0...1	10	30	18...30	1	**PN3097**
	G ¼ I	Display unit	-1...0	20	50	18...30	1	**PN3129**
	G ¼ A / M5 I	Display unit	0...600	800	2500	18...30	2	**PN3560**

You can find wiring diagrams and scale drawings from page 477

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function normally open / closed programmable; 4...20 mA or 0...10 V · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A / M5 I	Display unit	0...400	800	1700	18...30	2	**PN3570**
	G ¼ A / M5 I	Display unit	0...250	500	1200	18...30	2	**PN3571**
	G ¼ A / M5 I	Display unit	0...100	300	650	18...30	2	**PN3592**
	G ¼ A / M5 I	Display unit	0...25	150	350	18...30	2	**PN3593**
	G ¼ A / M5 I	Display unit	0...10	75	150	18...30	2	**PN3594**
	G ¼ A / M5 I	Display unit	0...2.5	20	50	18...30	2	**PN3596**
	G ¼ A / M5 I	Display unit	0...1	10	30	18...30	2	**PN3597**
	G ¼ A / M5 I	Display unit	-1...0	20	50	18...30	2	**PN3529**

Sensors with switching outputs and display with IO-Link

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ¼ I	Display unit	0...600	800	2500	18...30	1	**PN7160**
	G ¼ I	Display unit	0...400	800	1700	18...30	1	**PN7070**
	G ¼ I	Display unit	0...250	500	1100	18...30	1	**PN7071**
	G ¼ I	Display unit	0...100	300	650	18...30	1	**PN7092**
	G ¼ I	Display unit	0...25	150	350	18...30	1	**PN7093**
	G ¼ I	Display unit	-1...10	75	150	18...30	1	**PN7094**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ¼ I	Display unit	0...2.5	20	50	18...30	1	**PN7096**
	G ¼ I	Display unit	0...1	10	30	18...30	1	**PN7097**
	G ¼ I	Display unit	-1...1	20	50	18...30	1	**PN7099**
	G ¼ A / M5 I	Display unit	0...600	800	2500	18...30	2	**PN7560**
	G ¼ A / M5 I	Display unit	0...400	800	1700	18...30	2	**PN7570**
	G ¼ A / M5 I	Display unit	0...250	500	1100	18...30	2	**PN7571**
	G ¼ A / M5 I	Display unit	0...100	300	650	18...30	2	**PN7592**
	G ¼ A / M5 I	Display unit	0...25	150	350	18...30	2	**PN7593**
	G ¼ A / M5 I	Display unit	-1...10	75	150	18...30	2	**PN7594**
	G ¼ A / M5 I	Display unit	0...2.5	20	50	18...30	2	**PN7596**
	G ¼ A / M5 I	Display unit	0...1	10	30	18...30	2	**PN7597**
	G ¼ A / M5 I	Display unit	-1...1	20	50	18...30	2	**PN7599**

Electronic contact manometers with switching output and analogue output

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ½ A	Display unit	0...400	800	1200	18...32	3	**PG2450**
	G ½ A	Display unit	0...250	600	1000	18...32	3	**PG2451**

You can find wiring diagrams and scale drawings from page 477

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Draw-ing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ½ A	Display unit	0...100	300	700	18...32	3	**PG2452**
	G ½ A	Display unit	-1...25	100	300	18...32	3	**PG2453**
	G ½ A	Display unit	-1...10	50	150	18...32	3	**PG2454**
	G ½ A	Display unit	-1...4	30	100	18...32	3	**PG2455**
	G ½ A	Display unit	-0.125...2.5	20	50	18...32	3	**PG2456**
	G ½ A	Display unit	-0.05...1	10	30	18...32	3	**PG2457**
	G ½ A	Display unit	-0.0125...0.25	10	30	18...32	3	**PG2458**
	G ½ A	Display unit	-0.005...0.1	4	30	18...32	3	**PG2489**
	G ½ A	Display unit	-1...1	10	30	18...32	3	**PG2409**

PV sensors with switching outputs, IO-Link

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Draw-ing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A / M5 I	–	0...400	1000	1700	18...30	4	**PV7000**
	G ¼ A / M5 I	–	0...250	625	1200	18...30	4	**PV7001**
	G ¼ A / M5 I	–	0...100	250	1000	18...30	4	**PV7002**
	G ¼ A / M5 I	–	0...60	150	900	18...30	4	**PV7023**
	G ¼ A / M5 I	–	-1...25	65	600	18...30	4	**PV7003**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Draw-ing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A / M5 I	–	-1...10	25	300	18...30	4	**PV7004**

PK sensors with mechanical setting and switching outputs

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Draw-ing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 2 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ¼ A / M5 I	Operation	0...400	600	1600	9.6...32	5	**PK5520**
	G ¼ A / M5 I	Operation	0...250	400	1000	9.6...32	5	**PK5521**
	G ¼ A / M5 I	Operation	0...100	200	1000	9.6...32	5	**PK5522**
	G ¼ A / M5 I	Operation	0...25	60	500	9.6...32	5	**PK5523**
	G ¼ A / M5 I	Operation	0...10	25	300	9.6...32	5	**PK5524**
M12 connector · Output function ⎍+⎍ · DC PNP · Wiring diagram no. 3 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ¼ A / M5 I	Operation	0...400	600	1600	9.6...32	5	**PK6520**
	G ¼ A / M5 I	Operation	0...250	400	1000	9.6...32	5	**PK6521**
	G ¼ A / M5 I	Operation	0...100	200	1000	9.6...32	5	**PK6522**
	G ¼ A / M5 I	Operation	0...25	60	500	9.6...32	5	**PK6523**
	G ¼ A / M5 I	Operation	0...10	25	300	9.6...32	5	**PK6524**
M12 connector · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 4 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ¼ A / M5 I	Switching status	0...400	600	1600	9.6...32	5	**PK7520**

You can find wiring diagrams and scale drawings from page 477

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 4 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ¼ A / M5 I	Switching status	0...250	400	1000	9.6...32	5	**PK7521**
	G ¼ A / M5 I	Switching status	0...100	200	1000	9.6...32	5	**PK7522**
	G ¼ A / M5 I	Switching status	0...25	60	500	9.6...32	5	**PK7523**
	G ¼ A / M5 I	Switching status	0...10	25	300	9.6...32	5	**PK7524**

PP sensors for mobile and industrial applications with switching outputs, IO-Link

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC PNP · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ¼ A / M5 I	Operation	0...400	600	1000	9.6...36	6	**PP7550**
	G ¼ A / M5 I	Operation	0...250	400	850	9.6...36	6	**PP7551**
	G ¼ A / M5 I	Operation	0...100	300	650	9.6...36	7	**PP7552**
	G ¼ A / M5 I	Operation	0...25	150	350	9.6...36	8	**PP7553**
	G ¼ A / M5 I	Operation	-1...10	75	150	9.6...36	8	**PP7554**
	G ¼ A / M5 I	Operation	0...2.5	20	50	9.6...36	8	**PP7556**
M12 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC NPN · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ¼ A / M5 I	Operation	0...400	600	1000	9.6...36	6	**PP0520**
	G ¼ A / M5 I	Operation	0...250	400	850	9.6...36	6	**PP0521**
	G ¼ A / M5 I	Operation	0...100	300	650	9.6...36	7	**PP0522**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC NPN · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ¼ A / M5 I	Operation	0...25	150	350	9.6...36	8	**PP0523**
	G ¼ A / M5 I	Operation	-1...10	75	150	9.6...36	8	**PP0524**

Sensors for pneumatic applications

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC PNP/NPN · Wiring diagram no. 18 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G 1/8 I	Display unit	-1...1	20	30	18...36	9	**PN7809**
	G 1/8 I	Display unit	-1...10	20	30	18...36	9	**PN7834**
M8 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC PNP · Wiring diagram no. 4 · Connector groups 4, 5, 80, 86, 147								
	G 1/8 I	Display unit	-1...1	20	30	18...32	10	**PQ7809**
	G 1/8 I	Display unit	-1...10	20	30	18...32	10	**PQ7834**
M8 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC NPN · Wiring diagram no. 6 · Connector groups 4, 5, 80, 86, 147								
	G 1/8 I	Display unit	-1...1	20	30	18...32	10	**PQ0809**
	G 1/8 I	Display unit	-1...10	20	30	18...32	10	**PQ0834**
M8 connector · Output function 1 x NO / NC programmable + 1 x current output · DC PNP · Wiring diagram no. 7 · Connector groups 4, 5, 80, 86, 147								
	G 1/8 I / M5 I	Display unit	-1...1	20	30	18...32	11	**PQ3809**
	G 1/8 I / M5 I	Display unit	-1...10	20	30	18...32	11	**PQ3834**

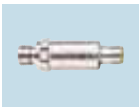
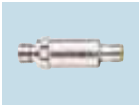
You can find wiring diagrams and scale drawings from page 477

Absolute pressure sensors with analogue outputs for industrial applications

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A	–	0...10	20	50	8...30	12	**PT0504**
	G ¼ A	–	0...4	8	25	8...30	12	**PT0505**
	G ¼ A	–	0...1.6	3.2	10	8...30	12	**PT0517**
	G ¼ A	–	0...1	2	5	8...30	12	**PT0507**

PT sensors for industrial applications with analogue outputs

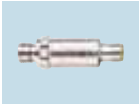
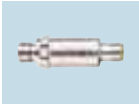
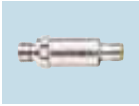
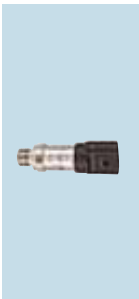
Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A	–	0...600	1500	2500	8.5...36	4	**PT5460**
	G ¼ A	–	0...400	1000	1700	8.5...36	4	**PT5400**
	G ¼ A	–	0...250	625	1200	8.5...36	4	**PT5401**
	G ¼ A	–	0...160	400	1100	8.5...36	4	**PT5412**
	G ¼ A	–	0...100	250	1000	8.5...36	4	**PT5402**
	G ¼ A	–	0...60	150	900	8.5...36	4	**PT5423**
	G ¼ A	–	0...40	100	800	8.5...36	4	**PT5443**
	G ¼ A	–	0...25	65	600	8.5...36	4	**PT5403**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A	–	0...16	40	450	8.5...36	4	**PT5414**
	G ¼ A	–	0...10	25	300	8.5...36	4	**PT5404**
	G ¼ A	–	-1...10	25	300	8.5...36	4	**PT5494**
	G ¼ A	–	0...6	15	200	8.5...36	4	**PT5415**
M12 connector · Output function 0...10 V analogue · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A	–	0...600	1500	2500	16...36	4	**PU5460**
	G ¼ A	–	0...400	1000	1700	16...36	4	**PU5400**
	G ¼ A	–	0...250	625	1200	16...36	4	**PU5401**
	G ¼ A	–	0...160	400	1100	16...36	4	**PU5412**
	G ¼ A	–	0...100	250	1000	16...36	4	**PU5402**
	G ¼ A	–	0...60	150	900	16...36	4	**PU5423**
	G ¼ A	–	0...40	100	800	16...36	4	**PU5443**
	G ¼ A	–	0...25	65	600	16...36	4	**PU5403**
	G ¼ A	–	0...16	40	450	16...36	4	**PU5414**
	G ¼ A	–	0...10	25	300	16...36	4	**PU5404**
	G ¼ A	–	0...6	15	200	16...36	4	**PU5415**

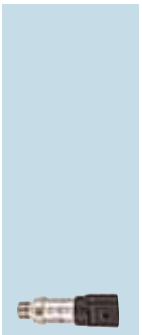
You can find wiring diagrams and scale drawings from page 477

PT / PU sensors for mobile applications with analogue outputs

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 0...10 V analogue · DC · Wiring diagram no. 10 · Connector group 202								
	G ¼ A	–	0...400	600	1600	16...36	13	**PT9550**
	G ¼ A	–	0...250	400	1000	16...36	13	**PT9551**
	G ¼ A	–	0...100	200	1000	16...36	13	**PT9552**
	G ¼ A	–	0...25	60	600	16...36	13	**PT9553**
	G ¼ A	–	0...10	25	300	16...36	13	**PT9554**
DEUTSCH connector DT04-3P · Output function 0...10 V analogue · DC · Wiring diagram no. 11								
	G ¼ A	–	0...600	1500	2500	16...32	14	**PU5760**
	G ¼ A	–	0...400	1000	1700	16...32	14	**PU5700**
	G ¼ A	–	0...250	625	1200	16...32	14	**PU5701**
	G ¼ A	–	0...100	250	1000	16...32	14	**PU5702**
	G ¼ A	–	0...25	65	600	16...32	14	**PU5703**
	G ¼ A	–	0...10	25	300	16...32	14	**PU5704**
DEUTSCH connector DT04-3P · DC · Wiring diagram no. 11								
	G ¼	–	0...400	1000	1700	8...32	14	**PU8700**
	G ¼	–	0...250	625	1200	8...32	14	**PU8701**
	G ¼	–	0...100	250	1000	8...32	14	**PU8702**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
DEUTSCH connector DT04-3P · DC · Wiring diagram no. 11								
	G ¼	–	0...25	65	600	8...32	14	**PU8703**
	G ¼	–	0...10	25	300	8...32	14	**PU8704**
	G ¼	–	0...160	400	1100	8...32	14	**PU8712**
	G ¼	–	0...40	100	800	8...32	14	**PU8743**
	G ¼	–	0...600	1500	2500	8...32	14	**PU8760**
M12 connector · Output function 0.5...4.5 V · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A	–	0...400	1000	1700	8...32	4	**PU8500**
	G ¼ A	–	0...250	625	1200	8...32	4	**PU8501**
	G ¼ A	–	0...100	250	1000	8...32	4	**PU8502**
	G ¼ A	–	0...60	65	600	8...32	4	**PU8503**
	G ¼ A	–	0...10	25	300	8...32	4	**PU8504**
	G ¼ A	–	0...60	150	900	8...32	4	**PU8523**
	G ¼ A	–	0...600	1500	2500	8...32	4	**PU8560**
AMP Superseal · Output function 0...10 V analogue · DC · Wiring diagram no. 12								
	G ¼ A	–	0...600	1500	2500	16...32	15	**PU5660**
	G ¼ A	–	0...400	1000	1700	16...32	15	**PU5600**
	G ¼ A	–	0...250	625	1200	16...32	15	**PU5601**

You can find wiring diagrams and scale drawings from page 477

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
AMP Superseal · Output function 0...10 V analogue · DC · Wiring diagram no. 12								
	G ¼ A	–	0...100	250	1000	16...32	15	**PU5602**
	G ¼ A	–	0...25	65	600	16...32	15	**PU5603**
	G ¼ A	–	0...10	25	300	16...32	15	**PU5604**
M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A	–	0...600	1500	2500	8...32	4	**PT5560**
	G ¼ A	–	0...400	1000	1700	8...32	4	**PT5500**
	G ¼ A	–	0...250	625	1200	8...32	4	**PT5501**
	G ¼ A	–	0...100	250	1000	8...32	4	**PT5502**
	G ¼ A	–	0...25	65	600	8...32	4	**PT5503**
	G ¼ A	–	0...10	25	300	8...32	4	**PT5504**
AMP Superseal · Output function 0...10 V analogue · DC · Wiring diagram no. 12								
	G ¼ A	–	0...400	1000	1700	16...32	15	**PU5600**
	G ¼ A	–	0...250	625	1200	16...32	15	**PU5601**
	G ¼ A	–	0...100	250	1000	16...32	15	**PU5602**
	G ¼ A	–	0...25	65	600	16...32	15	**PU5603**
	G ¼ A	–	0...10	25	300	16...32	15	**PU5604**
	G ¼ A	–	0...600	1500	2500	16...32	15	**PU5660**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
DEUTSCH connector DT04-3P · Output function 4...20 mA analogue · DC · Wiring diagram no. 13								
	G ¼ A	–	0...400	1000	1700	8...32	14	**PT5700**
	G ¼ A	–	0...250	625	1200	8...32	14	**PT5701**
	G ¼ A	–	0...100	250	1000	8...32	14	**PT5702**
	G ¼ A	–	0...25	65	600	8...32	14	**PT5703**
	G ¼ A	–	0...10	25	300	8...32	14	**PT5704**
	G ¼ A	–	0...600	1500	2500	8...32	14	**PT5760**

PA sensors with analogue outputs

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ I	–	0...600	800	1200	9.6...32	16	**PA3060**
	G ¼ I	–	0...400	600	1000	9.6...32	17	**PA3020**
	G ¼ I	–	0...250	400	850	9.6...32	17	**PA3021**
	G ¼ I	–	0...100	300	650	9.6...32	18	**PA3022**
	G ¼ I	–	0...25	150	350	9.6...32	18	**PA3023**
	G ¼ I	–	0...10	75	150	9.6...32	18	**PA3024**
	G ¼ I	–	0...2.5	20	50	9.6...32	18	**PA3026**

You can find wiring diagrams and scale drawings from page 477

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ I	–	0...1	10	30	9.6...32	18	**PA3027**
	G ¼ I	–	0...0.25	10	30	9.6...32	18	**PA3028**
	G ¼ I	–	-1...0	10	30	9.6...32	18	**PA3029**
M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A / M5 I	–	0...250	400	850	9.6...32	19	**PA3521**
	G ¼ A / M5 I	–	0...100	300	650	9.6...32	19	**PA3522**
M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A / M5 I	–	0...25	150	350	9.6...32	19	**PA3523**
	G ¼ A / M5 I	–	0...10	75	150	9.6...32	19	**PA3524**
	G ¼ A / M5 I	–	0...2.5	20	50	9.6...32	19	**PA3526**
	G ¼ A / M5 I	–	0...0.25	10	30	9.6...32	19	**PA3528**
M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A / M5 I	–	0...0.1	4	30	9.6...32	19	**PA3589**
M12 connector · Output function 0...10 V · DC · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ I	–	0...600	800	1200	16...32	16	**PA9060**
	G ¼ I	–	0...400	600	1000	16...32	17	**PA9020**
	G ¼ I	–	0...250	400	850	16...32	18	**PA9021**
	G ¼ I	–	0...100	300	650	16...32	18	**PA9022**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 0...10 V · DC · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ I	–	0...25	150	350	16...32	18	**PA9023**
	G ¼ I	–	0...10	75	150	16...32	18	**PA9024**
	G ¼ I	–	0...2.5	20	50	16...32	18	**PA9026**
	G ¼ I	–	0...1	10	30	16...32	18	**PA9027**
	G ¼ I	–	0...0.25	10	30	16...32	18	**PA9028**
	G ¼ I	–	-1...0	10	30	16...32	18	**PA9029**

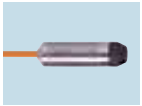
Part seat monitoring

Type	Description	Order no.
	Control unit for part seat monitoring · Setting by adjustment of the pneumatic bridge · Integrated pressure sensor with 2 switching outputs · and 4-digit alphanumerical display for trend display or display of current pressure · Cable	**PS7570**

Sensors for hydrostatic level monitoring

Type	Measuring range [bar]	Cable length / material	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
Output function 4...20 mA analogue · Wiring diagram no. 15							
	0...0.25	5 m PUR cable	2	2.4	10...30	20	**PS3208**
	0...0.6	10 m PUR cable	4	4.8	10...30	20	**PS3407**
	0...0.6	15 m PUR cable	4	4.8	10...30	20	**PS3427**
	0...0.6	30 m PUR cable	4	4.8	10...30	20	**PS3607**
	0...1	15 m PUR cable	5	6	10...30	20	**PS3417**

You can find wiring diagrams and scale drawings from page 477

Type	Measuring range [bar]	Cable length / material	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
Output function 4...20 mA analogue · Wiring diagram no. 15							
	0...1	30 m PUR cable	5	6	10...30	20	**PS3617**
Output function 4...20 mA analogue · Wiring diagram no. 16							
	0...0.25	5 m FEP cable	2	2.4	10...30	21	**PS4208**
	0...0.25	10 m FEP cable	2	2.4	10...30	21	**PS4408**
	0...0.6	10 m FEP cable	3	4	10...30	21	**PS4407**
	0...0.6	20 m FEP cable	3	4	10...30	21	**PS4506**
· Wiring diagram no. 16							
	0...1	15 m FEP cable	5	6	10...30	21	**PS4417**
	0...1	30 m FEP cable	5	6	10...30	21	**PS4607**

Sensors for hydrostatic level monitoring ATEX category 1G/1D

Type	Measuring range [bar]	Cable length / material	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
Output function 4...20 mA analogue · Wiring diagram no. 16							
	0...0.25	5 m FEP cable	2	2.4	10...30	21	**PS308A**
	0...0.6	10 m FEP cable	4	4.8	10...30	21	**PS307A**
	0...1	15 m FEP cable	5	6	10...30	21	**PS317A**

Sensors with ATEX approval 3D/3G

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (I / U, scaleable 1:4) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 196, 198								
	Sealing cone G1 male	Display unit	-1...25	100	350	18...32	22	**PI003A**
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	18...32	22	**PI008A**
	Sealing cone G1 male	Display unit	-1...1	10	30	18...32	22	**PI009A**

Full metal sensors for hygienic and wet areas with switching and analogue outputs, IO-Link

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 19 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Aseptoflex Vario	Display unit	-1...25	100	350	20...32	23	**PI2793**
	Aseptoflex Vario	Display unit	-1...10	50	150	20...32	23	**PI2794**
	Aseptoflex Vario	Display unit	-1...4	30	100	20...32	23	**PI2795**
	Aseptoflex Vario	Display unit	-0.124...2.5	20	50	20...32	23	**PI2796**
	Aseptoflex Vario	Display unit	-0.05...1	10	30	20...32	23	**PI2797**
	Aseptoflex Vario	Display unit	-0.0124...0.25	10	30	20...32	23	**PI2798**
	Aseptoflex Vario	Display unit	-0.005...0.1	4	30	20...32	23	**PI2789**
	Aseptoflex Vario	Display unit	-1...1	10	30	20...32	23	**PI2799**
	Sealing cone G1 male	Display unit	-1...25	100	350	20...32	24	**PI2893***

You can find wiring diagrams and scale drawings from page 477

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 19 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Sealing cone G1 male	Display unit	-1...10	50	150	20...32	24	**PI2894***
	Sealing cone G1 male	Display unit	-1...4	30	100	20...32	24	**PI2895***
	Sealing cone G1 male	Display unit	-0.124...2.5	20	50	20...32	24	**PI2896***
	Sealing cone G1 male	Display unit	-0.05...1	10	30	20...32	24	**PI2897***
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	20...32	24	**PI2898***
	Sealing cone G1 male	Display unit	-0.005...0.1	4	30	20...32	24	**PI2889***
	Sealing cone G1 male	Display unit	-1...1	10	30	20...32	24	**PI2899***

* Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!

Full-metal high-temperature sensors up to 200 °C for hygienic and wet areas with switching output and analogue output, IO-Link

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 20 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Clamp DN 38 / 1½"	Display unit	-1...25	80	150	20...32	25	**PI2203**
	Clamp DN 38 / 1½"	Display unit	-1...10	50	100	20...32	25	**PI2204**
	Clamp DN 38 / 1½"	Display unit	-1...4	30	50	20...32	25	**PI2205**
	Clamp DN 38 / 1½"	Display unit	-0.124...2.5	20	50	20...32	25	**PI2206**
	Clamp DN 38 / 1½"	Display unit	-0.05...1	10	30	20...32	25	**PI2207**
	Clamp DN 38 / 1½"	Display unit	-1...1	10	30	20...32	25	**PI2209**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 20 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Clamp DN 51 / 2"	Display unit	-1...25	80	150	20...32	26	**PI2303**
	Clamp DN 51 / 2"	Display unit	-1...10	50	100	20...32	26	**PI2304**
	Clamp DN 51 / 2"	Display unit	-1...4	30	50	20...32	26	**PI2305**
	Clamp DN 51 / 2"	Display unit	-0.124...2.5	20	50	20...32	26	**PI2306**
	Clamp DN 51 / 2"	Display unit	-0.05...1	10	30	20...32	26	**PI2307**
	Clamp DN 51 / 2"	Display unit	-1...1	10	30	20...32	26	**PI2309**

Electronic contact manometers for hygienic and wet areas with switching and analogue outputs

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Aseptoflex Vario	Display unit	-1...25	100	350	18...32	27	**PG2793**
	Aseptoflex Vario	Display unit	-1...10	50	150	18...32	27	**PG2794**
	Aseptoflex Vario	Display unit	-1...4	30	100	18...32	27	**PG2795**
	Aseptoflex Vario	Display unit	-0.124...2.5	20	50	18...32	27	**PG2796**
	Aseptoflex Vario	Display unit	-0.05...1	10	30	18...32	27	**PG2797**
	Aseptoflex Vario	Display unit	-0.0124...0.25	10	30	18...32	27	**PG2798**
	Aseptoflex Vario	Display unit	-0.005...0.1	4	30	18...32	27	**PG2789**
	Aseptoflex Vario	Display unit	-1...1	10	30	18...32	27	**PG2799**

You can find wiring diagrams and scale drawings from page 477

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Sealing cone G1 male	Display unit	-1...25	100	350	18...32	28	**PG2893***
	Sealing cone G1 male	Display unit	-1...10	50	150	18...32	28	**PG2894***
	Sealing cone G1 male	Display unit	-1...4	30	100	18...32	28	**PG2895***
	Sealing cone G1 male	Display unit	-0.124...2.5	20	50	18...32	28	**PG2896***
	Sealing cone G1 male	Display unit	-0.05...1	10	30	18...32	28	**PG2897***
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	18...32	28	**PG2898***
	Sealing cone G1 male	Display unit	-0.005...0.1	4	30	18...32	28	**PG2889***
	Sealing cone G1 male	Display unit	-1...1	10	30	18...32	28	**PG2899***

* Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!

PF sensors for hygienic and wet areas with switching and analogue outputs

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V; scaleable 1:4) · Wiring diagram no. 21 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¾ A	Switching status	-1...25	100	200	20...30	29	**PF2953**
	G ¾ A	Switching status	-0.5...10	50	150	20...30	29	**PF2954**
	G ¾ A	Switching status	-0.13...2.5	20	50	20...30	29	**PF2956**
	G ¾ A	Switching status	-0.05...1	10	30	20...30	29	**PF2957**

Fixing components for pressure sensors

Type	Description	Order no.
	Angle bracket · Housing materials: PA66-	**E30421**
	Mounting clamp · Ø 34 mm · Housing materials: PBT	**E10017**
	Mounting clamp · Ø 34 mm · Housing materials: PA	**E10193**

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0011**
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0012**

Certificates

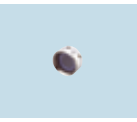
Description	Order no.
Factory calibration certificate for pressure sensors and flow sensors · Measurement points, pressure sensors: 6 measurement points in 20% steps of the final value of the measuring range (acc. to ISO 9001) · Measurement points, flow sensors: 3 or 4 measurement points, distances defined depending on the measuring range (acc. to ISO 9001)	**ZC0004**
DAkkS calibration certificate for pressure sensors · Number of measuring points: 11-point DAkkS calibration · Measurement points: in 10 % steps of the measuring range (according to directive DAkkS-DKD-R 6-1) · Minimum measurement uncertainty [bar]: 20 µbar...140 mbar (depending on the reference pressure)	**ZC0005**

Accessories for pressure sensors

Type	Description	Order no.
	Protective cover · for fluid sensors with M12 connector · Housing materials: Polypropylene homopolymer	**E30420**
	Damping screw · for pressure sensors with M5 internal thread	**E30057**

You can find wiring diagrams and scale drawings from page 477

Type	Description	Order no.
	Damping screw · Housing materials: 1.4404	**E30419**
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	**E30398**
	Teach button · for sensors PP0xE, PP052x, PP755x · for memory plug (E30398) · 0.9 m · Housing materials: stainless steel / PA / PMMA	**E30405**
	Protective cover · with lead seal option · for pressure sensors type PK · for temperature sensors type TK · for vibration sensors type VK · Housing materials: PP transparent	**E30094**
	USB IO-Link master · for parameter setting and analysis of units · Supported communication protocols: IO-Link (4.8, 38.4 and 230 Kbits/s) · for operation with FDT framework software "ifm Container" or software "LINERECORDER SENSOR"	**E30390**
	Syphon · G ¼ · Housing materials: steel	**E30140**
	Syphon · G ½ · Housing materials: steel	**E30141**
	Cable clamp fastener · for submersible pressure transmitter PS3 · Housing materials: steel / plastics	**E30399**
	Filter element · for submersible pressure transmitter PS3 · for fixing on the capillary tube	**E30400**
	Splitter box · with ventilation and terminal block · for submersible pressure transmitter PS3 · Housing materials: plastics	**E30401**
	Additional weight · for submersible pressure transmitter PS3 · Housing materials: stainless steel 316Ti / 1.4571	**E30402**
	DIN rail clip · Housing materials: stainless steel	**E37340**
	label tag · for fluid sensors · Housing materials: PA	**E30422**
	Connector · QS-G 1/8-6 · with hexagonal socket 4 mm a/f · for tube with Ø 6 mm · Housing materials: steel / PBT / Brass / aluminium	**E30076**
	Connector · QS-G 1/8-8 · with hexagonal socket 5 mm a/f · for tube with Ø 8 mm · Housing materials: steel / PBT / Brass / aluminium	**E30077**

Type	Description	Order no.
	Programming/ display unit · for EPS and IO-Link sensors · Connector · Housing materials: stainless steel 316L / 1.4404 / PC copolymer / PBT / FPM	**PP2001**
	Accessory cover for filter system · Housing materials: stainless steel	**E30142**
	Accessory cover for filter system · Housing materials: stainless steel	**E30139**

Accessories

Type	Description	Order no.
	IO-Link display unit · Connector · Housing materials: stainless steel / PC / PBT-GF 30 / PPS / FKM / PA66 GF30	**E30391**
	IO-Link display unit · IO-Link inline display for visualising process data of a connected IO-Link sensor; plug & play for ifm devices; internal updatable ifm device catalogue · Connector · Housing materials: stainless steel / PC / PBT-GF 30 / PPS / FKM	**E30430**
	DIN rail clip · for IO-Link display unit · Housing materials: PA / stainless steel	**E30429**

Adapters and accessories for adapters

Type	Description	Order no.
	Adapter · R1/8 - R1/8 · rotatable · Housing materials: Brass nickel-plated	**E37350**
	Flange adapter · G ¼ · Hole spacing · 31.1 mm · Housing materials: sealing: NBR, acrylonitrile-butadiene-rubber / flange: aluminium / hollow screw: Brass	**E30003**
	Adapter · G ¼ - G ½ · Housing materials: stainless steel / sealing: FPM	**E30000**
	Adapter · G ¼ A - G ¼ A · Housing materials: 1.4404	**E30143**
	Adapter · G ¼ A - R ¼ · Housing materials: Steel 12L13 / 1.0718 / Process connection sealing: FKM	**E30427**
	Adapter · G ¼ - M20 x 1.5 · Housing materials: stainless steel / FPM	**E30010**

You can find wiring diagrams and scale drawings from page 477

Type	Description	Order no.
	Adapter · G ¼ - G ½ · Housing materials: stainless steel / sealing: FPM	**E30050**
	Adapter · ¼" NPT - G ¼ · Housing materials: stainless steel 316Ti / 1.4571	**E30058**
	Adapter · G 1 - G ½ · Housing materials: stainless steel 316L / 1.4404 / sealing: FPM	**E30116**
	Adapter · G ¼ - G ½ · Housing materials: stainless steel 316Ti / 1.4571 / sealing: FPM	**E30135**
	O-ring · Ø 24 mm / Ø 28 mm · Housing materials: FKM FDA compliant	**E30123**
	Sealing ring · Ø 25.9 mm / Ø 29 mm · for Aseptoflex Vario adapter · Housing materials: PEEK FDA compliant	**E30124**
	Welding mandrel · G 1 · carries away heat during welding · Housing materials: CW614N	**E30435**

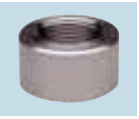
Flange adapters

Type	Description	Order no.
Clamp adapter · 1-1.5" · Aseptoflex Vario		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33201**
	Clamp adapter · with leakage port · Clamp · 1-1.5" · with sealing ring · ISO 2852 · for units with Aseptoflex Vario adapter · Housing materials: stainless steel 316L / 1.4435	**E33208**
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33701**
Clamp adapter · 2" · Aseptoflex Vario		
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33202**
	Aseptoflex Vario adapter · with leakage port · Clamp · 2" · with sealing ring · ISO 2852 · for units with Aseptoflex Vario adapter · Housing materials: stainless steel 316L / 1.4435	**E33209**

Type	Description	Order no.
Clamp adapter · 2" · Aseptoflex Vario		
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33702**
Aseptic clamp connection (clamp DN32) · Aseptoflex Vario		
	Aseptic clamp ferrule with groove · Aseptic clamp connection (clamp DN32) · DIN 11864-NKS-A-35x1.5-1.4435-H4 · for DN32 pipes (according to DIN 11866, type A) · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: High-grade stainless steel 316L / 1.4435	**E33243**
Varivent Adapter · Type F, DN25 (1"), D = 50 · Aseptoflex Vario		
	Clamp adapter · Varivent Adapter · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33221**
	Clamp adapter · Varivent Adapter · with leakage port · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33228**
	Clamp adapter · Varivent Adapter · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33721**
Varivent Adapter · Type N, DN40...DN150 (1.5...6"), D = 68 · Aseptoflex Vario		
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33222**
	Clamp adapter · Varivent Adapter · with leakage port · Varivent type N · DN40 (1.5"), D = 68 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33229**
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33722**
Hygienic pipe fitting · DN32 (1.25") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN32 (1.25") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33211**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN32 (1.25") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33711**
Hygienic pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33212**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33712**

You can find wiring diagrams and scale drawings from page 477

Type	Description	Order no.
Hygienic pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33213**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33713**
Pipe fitting · DN/OD33.7 · Aseptoflex Vario		
	Pipe fitting · Pipe fitting · DIN 11864-1-A-BS · for ISO pipes (series B) · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33304**
SMS pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · SMS pipe fitting · DN40 (1.5") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33731**
SMS pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · SMS pipe fitting · DN50 (2") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33732**
DRD adapter · D65 · Aseptoflex Vario		
	Flange adapter · DRD adapter · flange · DRD · D = 65 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33242**
universal process adapter · Rd52 · Aseptoflex Vario		
	Pipe fitting · universal process adapter · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33340**
Welding adapter · D50 · Aseptoflex Vario		
	Welding adapter · Ø 50 mm · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E30122**
	Welding adapter · Ø 50 mm · with leakage port · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E30130**
Aseptoflex Vario · Aseptoflex Vario		
	sealing plug · Aseptoflex Vario · Housing materials: adapter: stainless steel 316L / 1.4435 / sealing ring: FKM	**E30128**

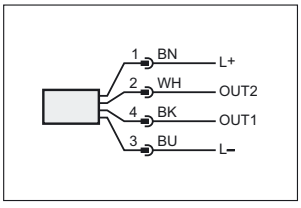
Type	Description	Order no.
Clamp adapter · 1-1.5" · G 1		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with G 1 adaptation · Housing materials: stainless steel 316L / 1.4435	**E33601**
Clamp adapter · 1-1.5" · G 1		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with G 1 adaptation · Housing materials: High-grade stainless steel 316L / 1.4435	**E33602**
Hygienic pipe fitting · DN40 (1.5") · G 1		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with G 1 adaptation · Housing materials: stainless steel 316L / 1.4435	**E33612**
Welding adapter · D50 · G 1		
	Welding adapter · G 1 - Ø 50 mm · Housing materials: stainless steel 316L / 1.4404	**E30013**
	Welding adapter · G 1 - Ø 50 mm · Housing materials: stainless steel 316L / 1.4404 / O-ring: FKM / O-ring: EPDM	**E30072**
G 1		
	sealing plug · G 1 · Housing materials: high-grade stainless steel	**E30070**
Welding adapter · D50 · G ¾		
	Welding adapter · G ¾ - Ø 50 mm · Housing materials: stainless steel 316L / 1.4404	**E30009**

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GY	grey
GN	green

1



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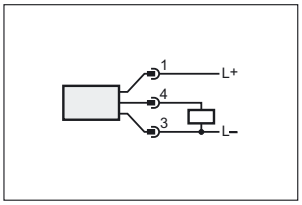

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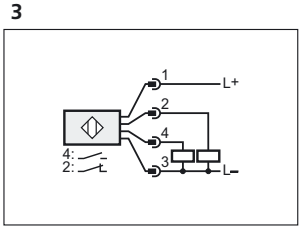

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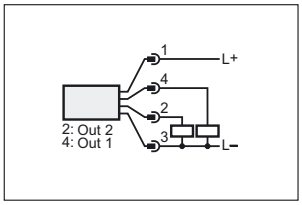

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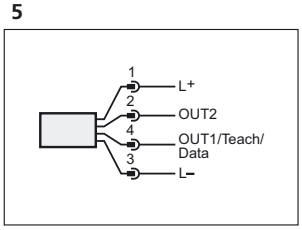

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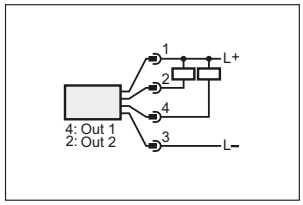

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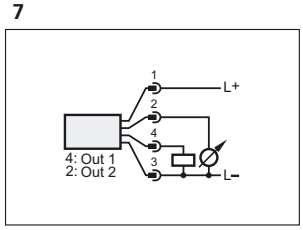
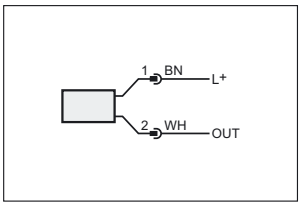


Wiring diagrams

8



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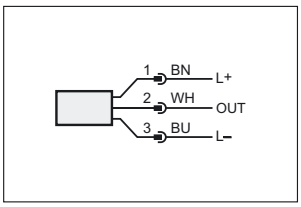

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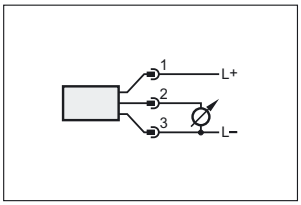

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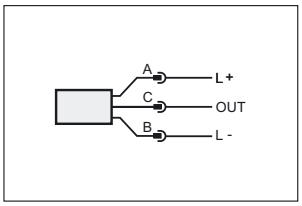

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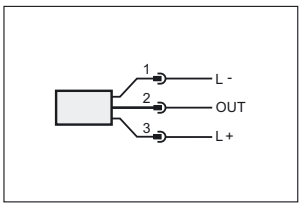

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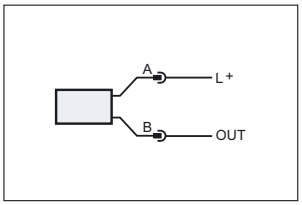

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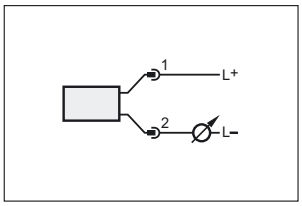

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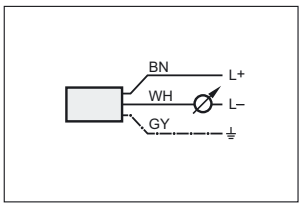

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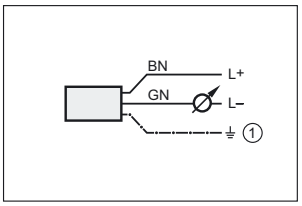
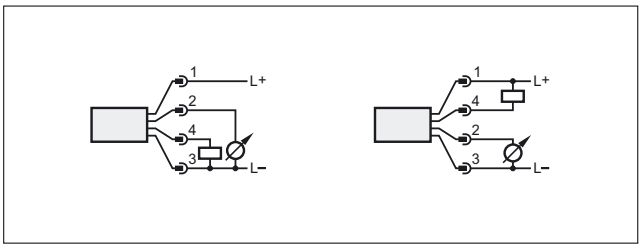


1: screen (connected to the housing)

17



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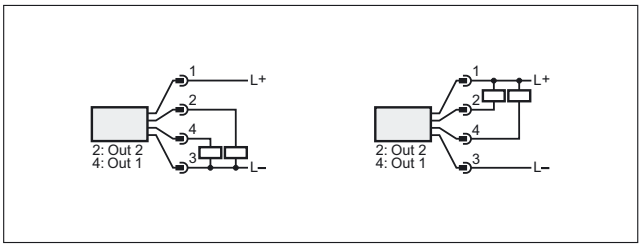

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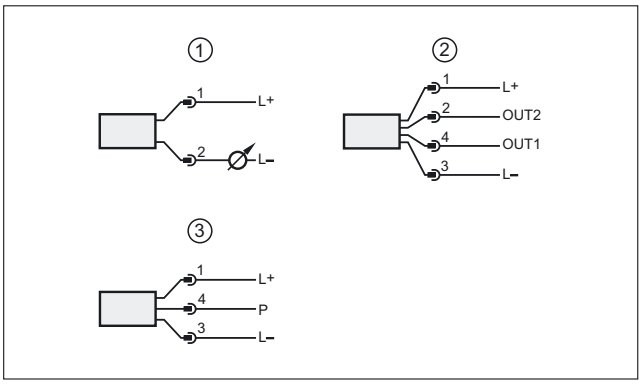
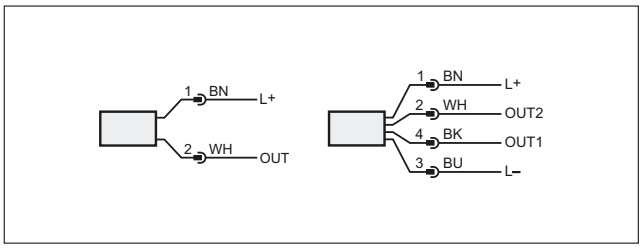


1: connection for 2-wire operation, 2: connection for 3-wire operation, 3: connection for IO-Link parameter setting (P = communication via IO-Link)

20



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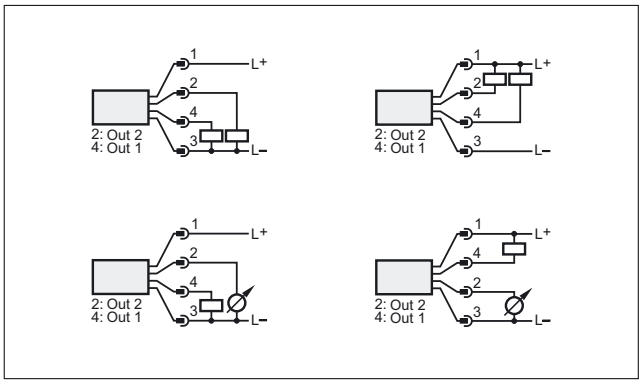

Scale drawings / drawing no. – CAD download: www.ifm.com

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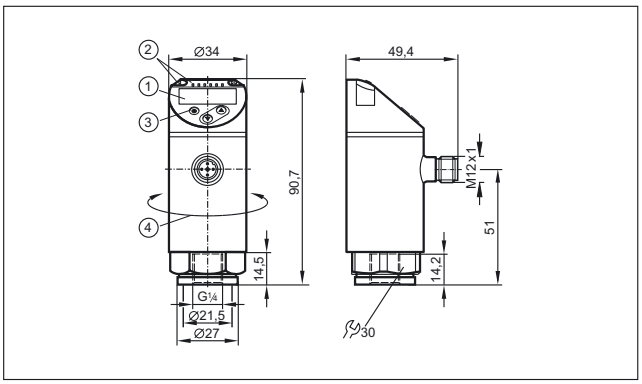
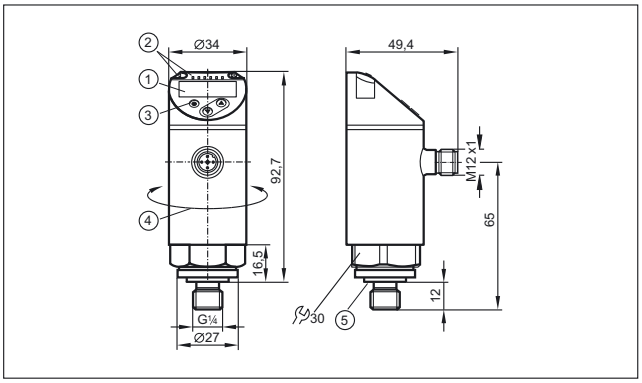


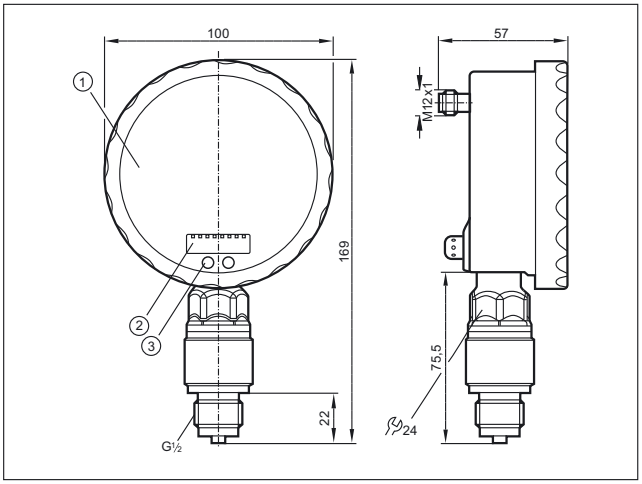
1: 4-digit alphanumeric display / alternating indication of red and green, 2: LEDs (display unit / switching status), 3: Programming button, 4: Upper part of the housing can be rotated by 345°

2



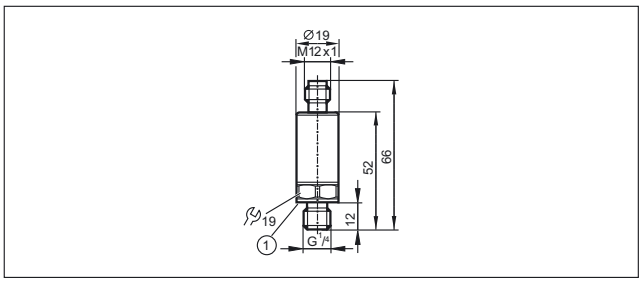
1: 4-digit alphanumeric display / alternating indication of red and green, 2: LEDs (display unit / switching status), 3: Programming button, 4: Upper part of the housing can be rotated by 345°, 5: sealing FKM / DIN 3869

3



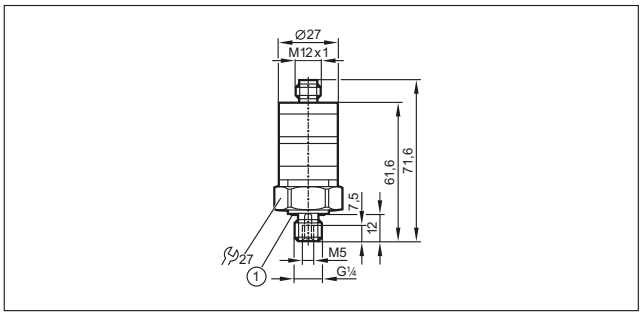
1: Analogue display, 2: 4-digit alphanumeric display, 3: Touch button (programming button)

4



1: sealing

5



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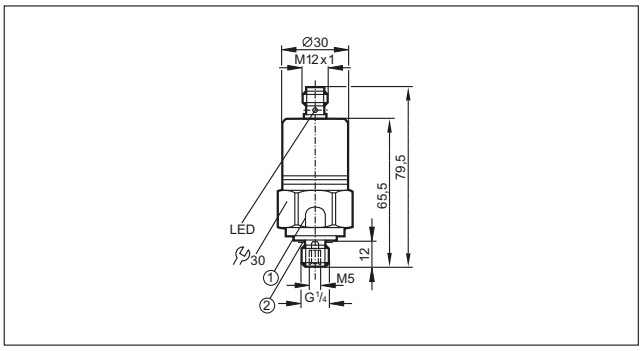
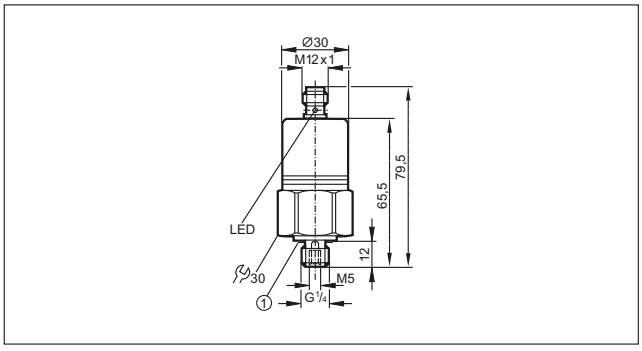


1: Pressure relief mechanism, No mechanical force must be exerted on the pressure relief mechanism., 2: sealing FPM / DIN 3869-14

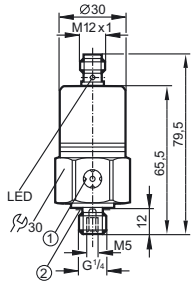
7



1: sealing FPM / DIN 3869-14

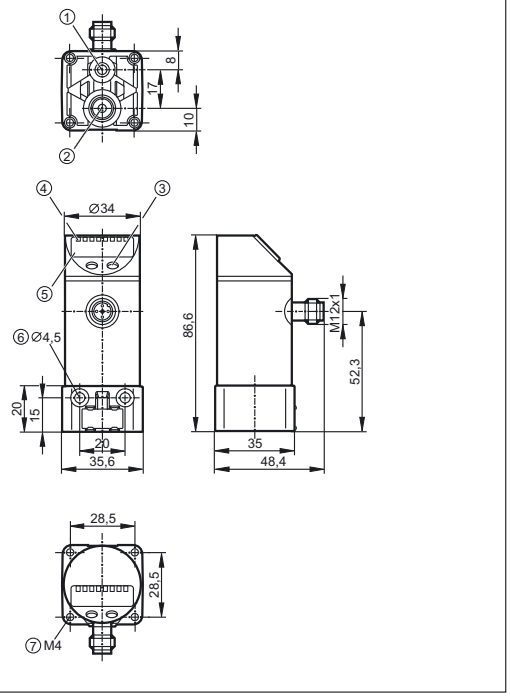
Scale drawings / drawing no. – CAD download: www.ifm.com

8



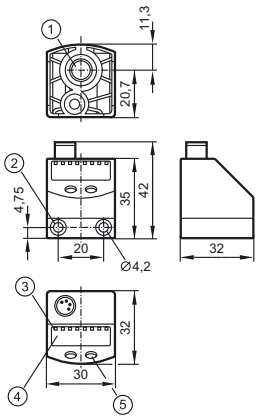
1: ventilation, 2: sealing FPM / DIN 3869-14

9



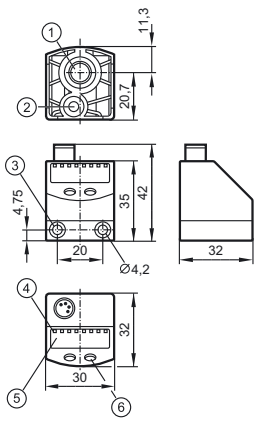
1: ventilation connection M5; max. tightening torque 2.5 Nm, 2: main pressure connection G 1/8; tightening torque max. 8 Nm, 3: Programming button, 4: LEDs (display unit / switching status), 5: 4-digit alphanumeric display, 6: for mounting screw M4; max. tightening torque 2.5 Nm, 7: for mounting screw M4; max. tightening torque 2.5 Nm

10



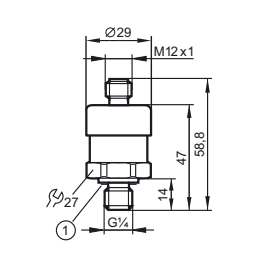
1: main pressure connection G 1/8; tightening torque max. 8 Nm, thread length max: 7.5 mm, 2: for mounting screw M4; max. tightening torque 2.5 Nm, 3: LEDs (display unit / switching status), 4: 4-digit alphanumeric display, 5: Programming button

11



1: Main pressure connection G 1/8; Tightening torque max. 8 Nm, insertion depth max. 7.5 mm, 2: Auxiliary pressure connection M5; Tightening torque max. 2.5 Nm, insertion depth max. 7.5 mm, 3: for mounting screw M4; max. tightening torque 2.5 Nm, 4: LEDs (display unit / switching status), 5: 4-digit alphanumeric display, 6: Programming button

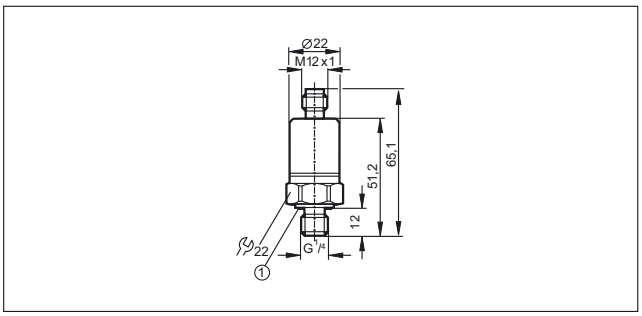
12



sealing

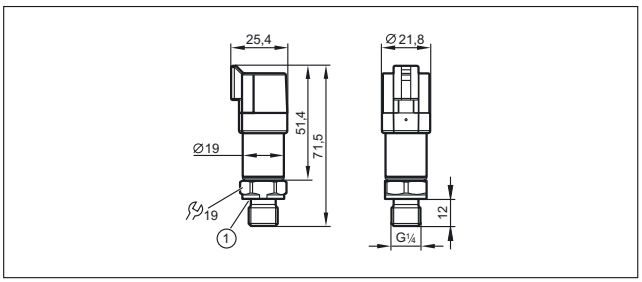
Scale drawings / drawing no. – CAD download: www.ifm.com

13



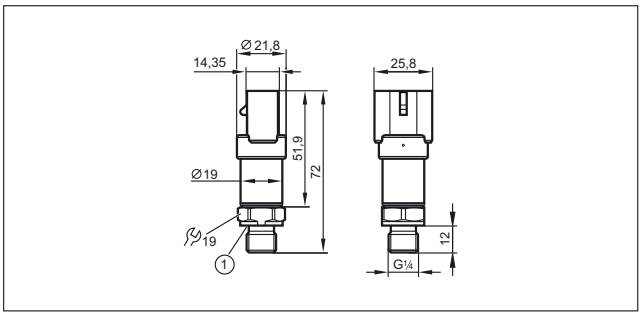
1: FKM seal / DIN 3869-14, tightening torque 25 Nm

14



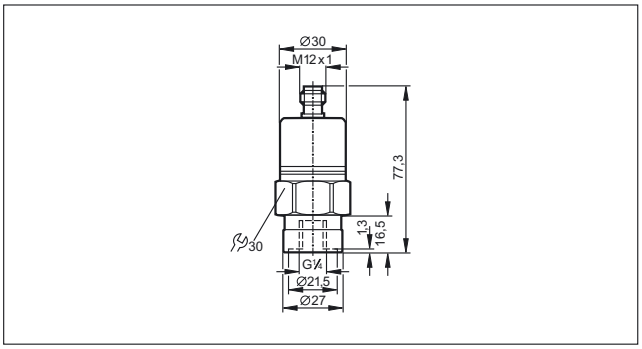
1: sealing FKM / DIN 3869

15



1: sealing FKM / DIN 3869

16



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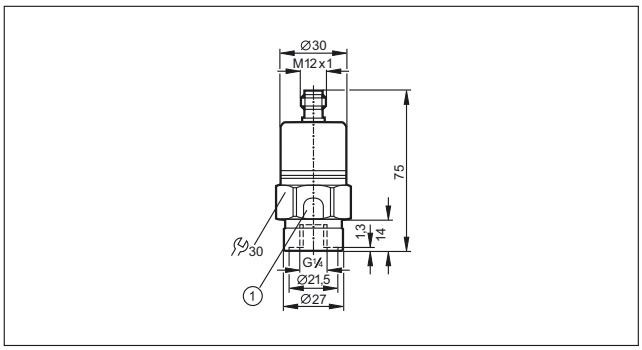
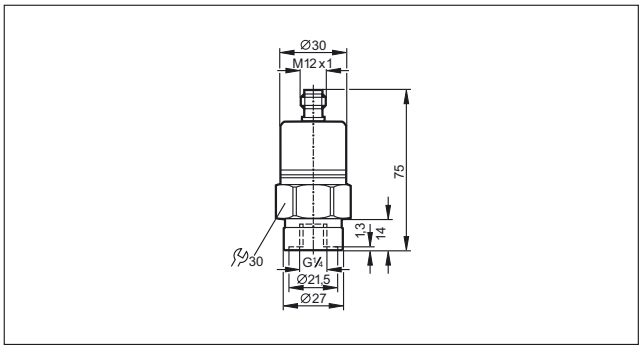
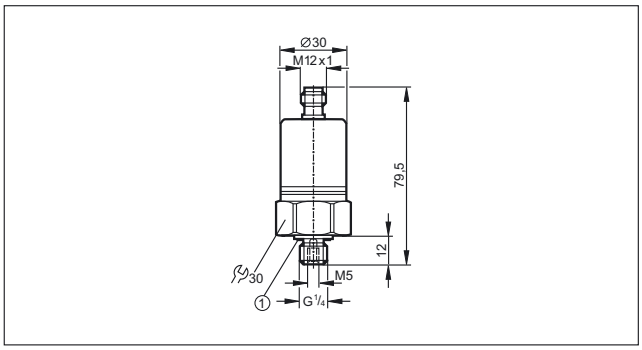


1: Pressure relief mechanism, No mechanical force must be exerted on the pressure relief mechanism.

18

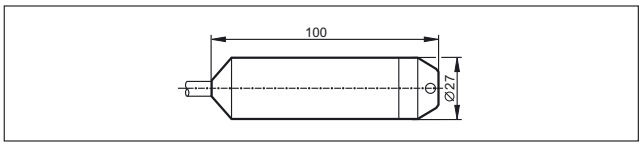


19



1: sealing FPM / DIN 3869-14

20



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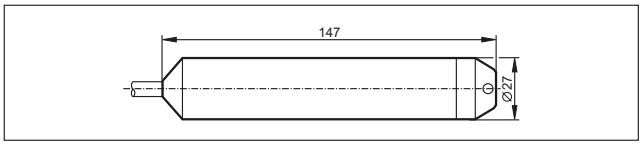

Scale drawings / drawing no. – CAD download: www.ifm.com

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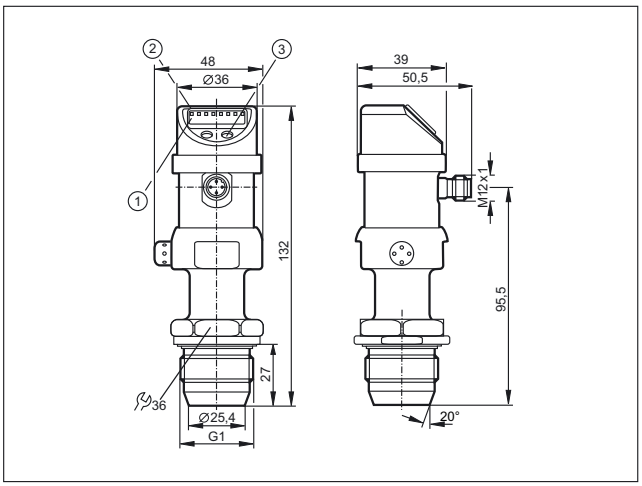
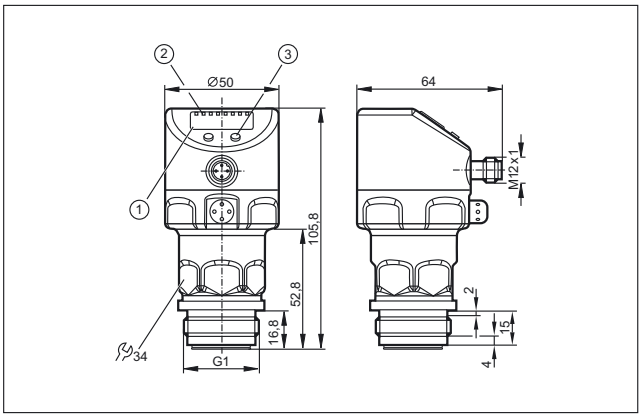


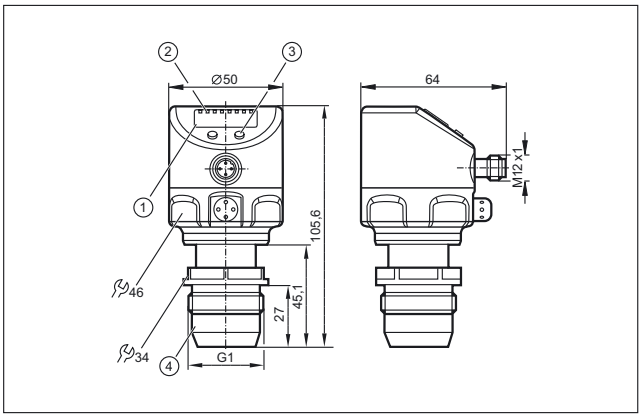
1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

23

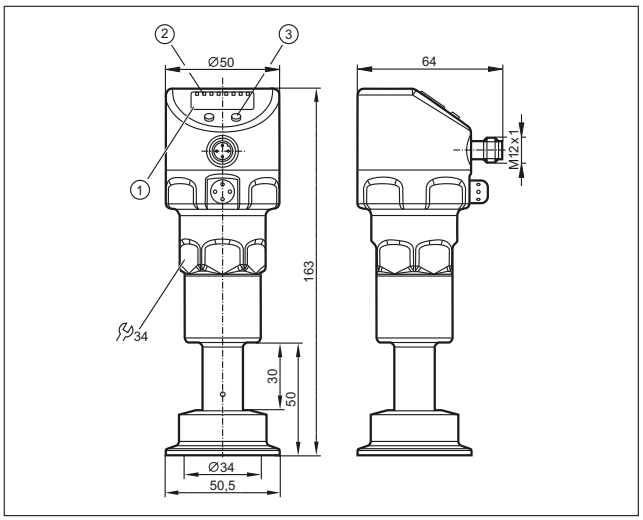


1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

24

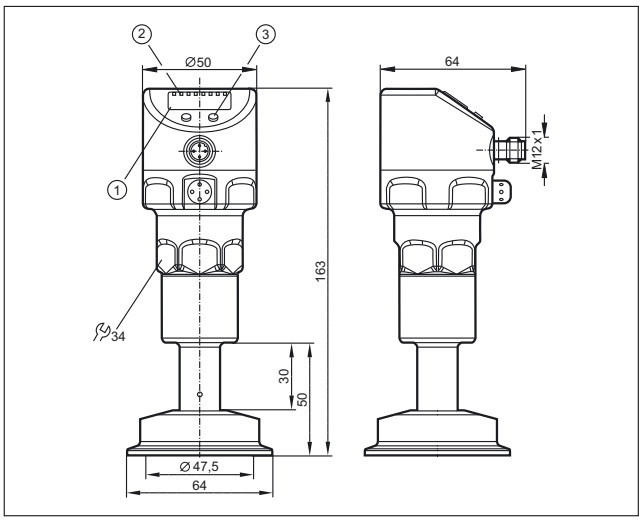


25

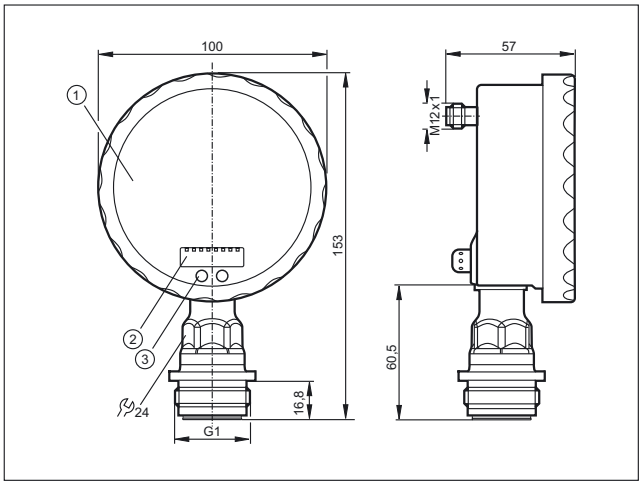


1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

26



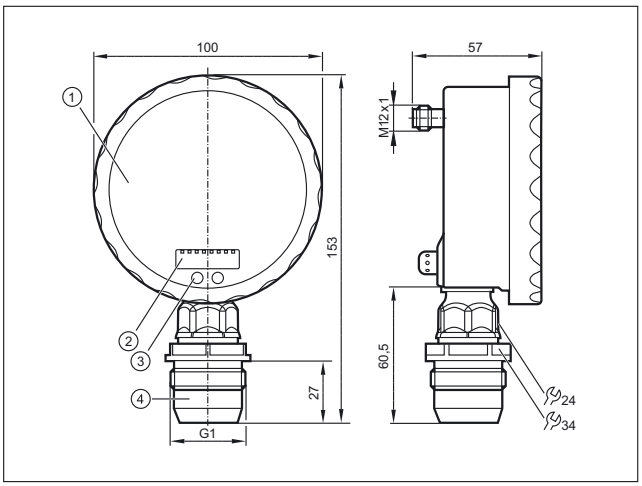
27



1: Analogue display, 2: 4-digit alphanumeric display, 3: Programming button

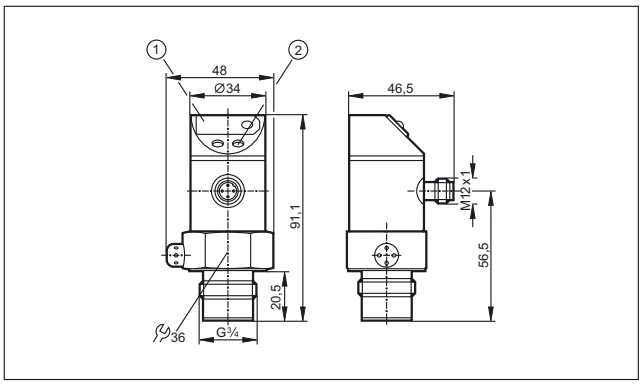
Scale drawings / drawing no. – CAD download: www.ifm.com

28



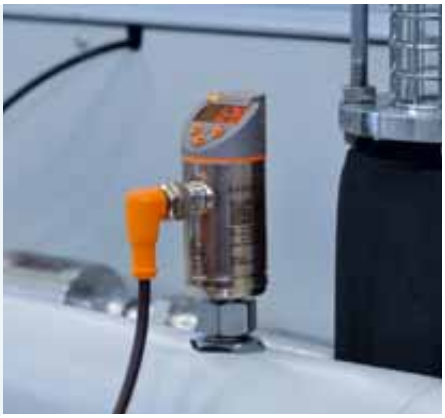
1: Analogue display, 2: 4-digit alphanumeric display, 3: Touch button (programming button), 4: Sealing cone G1 male, Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!

29



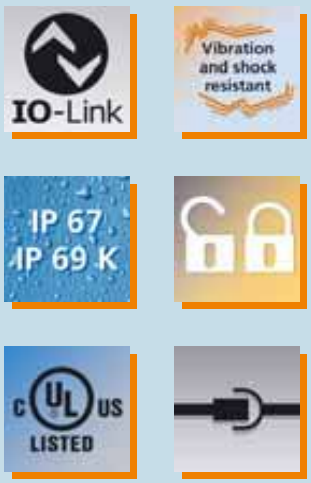
1: 7-segment LED display, 2: Programming button

Flow sensors and flow meters in all versions



Flow sensors / flow meters

- **For liquids and gases**
- **Special versions for food applications and hazardous areas**
- **Optional fittings for variable process connection**
- **Flow monitoring also for aggressive media**



Flow sensors

In almost all fields of process and plant engineering, liquids or gases are used. For coolant and lubricant supply of plant and machinery, ventilation of installations and buildings and product processing. If the flow of these media stops, considerable damage and downtime may result. Therefore it is important to monitor these media. In modern installations, electronic flow monitors are used for this purpose. They work without wear and tear and without mechanical components. This guarantees reliable monitoring even in case of difficult media over a long period.

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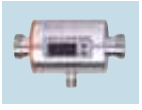
Flow meters with integrated temperature measurement

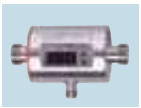
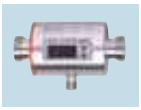
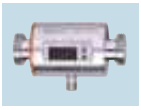
Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Draw-ing no.	Order no.
Output function OUT1: normally open / normally closed programmable or frequency or IO-Link OUT2: normally open / normally closed programmable or frequency · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ½	1...20	-10...90	12	< 1	18...30	1	**SV4200**
	Rc ½	1...20	-10...90	12	< 1	18...30	1	**SV4500**
	G ½	2...40	-10...90	12	< 1	18...30	1	**SV5200**
	Rc ½	2...40	-10...90	12	< 1	18...30	1	**SV5500**
	G ¾	5...100	-10...90	12	< 1	18...30	2	**SV7200**
	Rc ¾	5...100	-10...90	12	< 1	18...30	2	**SV7500**
Output function OUT1 = analogue signal temperature OUT2 = analogue signal flow · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ½	1...20	-10...90	12	< 1	18...30	3	**SV4204**
	Rc ½	1...20	-10...90	12	< 1	18...30	3	**SV4504**
	G ½	2...40	-10...90	12	< 1	18...30	3	**SV5204**
	Rc ½	2...40	-10...90	12	< 1	18...30	3	**SV5504**
	G ¾	5...100	-10...90	12	< 1	18...30	4	**SV7204**
	Rc ¾	5...100	-10...90	12	< 1	18...30	4	**SV7504**
Output function analogue · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ½	0.5...10	-40...100	12	< 0.5	8...33	5	**SV3050**
	G ½	0.5...10	-40...100	12	< 0.5	8...33	5	**SV3150**

You can find wiring diagrams and scale drawings from page 507

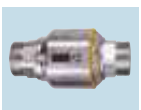
Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Draw-ing no.	Order no.
Output function analogue · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ½	0.9...15	-40...100	12	< 0.5	8...33	6	**SV4050**
	G ½	0.9...15	-40...100	12	< 0.5	8...33	6	**SV4150**
	G ¾	1.8...32	-40...100	12	< 0.5	8...33	7	**SV5050**
	G ¾	1.8...32	-40...100	12	< 0.5	8...33	7	**SV5150**
	G ¾	3.5...50	-40...100	12	< 0.5	8...33	8	**SV6050**
	G ¾	3.5...50	-40...100	12	< 0.5	8...33	8	**SV6150**
	G1	5.0...85	-40...100	12	< 0.5	8...33	9	**SV7050**
	G1	5.0...85	-40...100	12	< 0.5	8...33	9	**SV7150**
	G 1¼	9...150	-40...100	12	< 0.5	8...33	10	**SV8050**
	G 1¼	9...150	-40...100	12	< 0.5	8...33	10	**SV8150**

Magnetic-inductive flow meters with integrated temperature measurement (sealing material FKM)

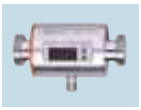
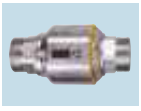
Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Draw-ing no.	Order no.
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G½	0.10...25.00	-10...70	16	< 0.150	18...30	11	**SM6000**
	G¾	0.2...50.0	-10...70	16	< 0.150	18...30	12	**SM7000**
	G1	0.2...100.0	-10...70	16	< 0.150	18...30	13	**SM8000**

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
Output function 2 x analogue (4...20 mA scalable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G½	0.1...25.00	-10...70	16	< 0.150	20...30	11	**SM6004**
	G¾	0.2...50.0	-10...70	16	< 0.150	20...30	12	**SM7004**
	G1	0.2...100.0	-10...70	16	< 0.150	20...30	13	**SM8004**
Output function OUT1: normally open / normally closed progr. or pulse or frequency or empty pipe detection or IO-Link OUT2: normally open / normally closed progr. or analogue (4...20 mA; 0...10 V, scalable) or empty pipe detection · Wiring diagram no. 1 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205								
	G2 flat seal	5...600	-10...70	16	< 0.35	18...32	14	**SM2000**
	G2 flat seal	5...300	-10...70	16	< 0.35	18...32	14	**SM9000**
Output function OUT1: analogue (4...20 mA scalable) OUT2: Analogue (4...20 mA scalable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G2 flat seal	5...600	-10...70 / 14...158	16	< 0.35	18...32	14	**SM2004**
	G2 flat seal	5...300	-10...70 / 14...158	16	< 0.35	18...32	14	**SM9004**
Output function OUT1: normally open / normally closed progr. or pulse or frequency or empty pipe detection or IO-Link OUT2: normally open / normally closed progr. or analogue (4...20 mA; 0...10 V, scalable) or empty pipe detection · Wiring diagram no. 1 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205								
	G2 flat seal	5...900	-10...70	16	< 0.35	18...32	14	**SM0510**

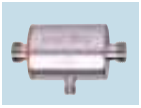
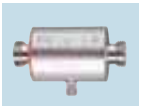
Magnetic-inductive flow meters with integrated temperature measurement (sealing material EPDM)

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
Output function OUT1: normally open / normally closed progr. or pulse or frequency or empty pipe detection or IO-Link OUT2: normally open / normally closed progr. or analogue (4...20 mA; 0...10 V, scalable) or empty pipe detection · Wiring diagram no. 1 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205								
	G2 flat seal	5...600	-10...70	16	< 0.35	18...32	14	**SM2100**
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G½	0.10...25.00	-10...70	16	< 0.150	18...30	11	**SM6100**
	G¾	0.2...50.0	-10...70	16	< 0.150	18...30	12	**SM7100**

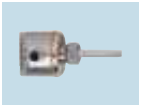
You can find wiring diagrams and scale drawings from page 507

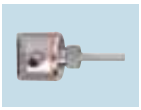
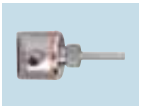
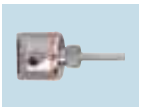
Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G1	0.2...100.0	-10...70	16	< 0.150	18...30	13	**SM8100**
Output function OUT1: normally open / normally closed progr. or pulse or frequency or empty pipe detection or IO-Link OUT2: normally open / normally closed progr. or analogue (4...20 mA; 0...10 V, scalable) or empty pipe detection · Wiring diagram no. 1 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205								
	G2 flat seal	5...300	-10...70	16	< 0.35	18...32	14	**SM9100**

Magnetic-inductive flow meters (sealing material FKM)

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G½	0...25	-10...70	16	< 0.150	18...30	15	**SM6050**
	G¾	0...50	-10...70	16	< 0.150	18...30	16	**SM7050**
	G1	0...100	-10...70	16	< 0.150	18...30	17	**SM8050**

Compact housings for adapters for flow monitoring

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · Wiring diagram no. 5 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	30	1...10	19...36	18	**SI5000**
M12 connector · Output function 2 x normally open / closed programmable · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	300	1...10	18...36	19	**SI5002**

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Draw-ing no.	Order no.
1/2" UNF-Connector · Output function ⎍ / ⎍ · Wiring diagram no. 7 · Connector group 34								
	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	300	1...10	85...265	20	**SI5006***
M12 connector · Output function 4...20 mA analogue · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	3...300 / -	stainless steel 316L / 1.4404	-25...80	300	1...10	19...36	19	**SI5004**
M12 connector · Output function ⎍ / ⎍ · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	300	1...2 / 1...10	18...36	19	**SI5010**

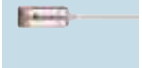
*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

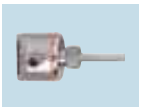
Compact housings can be configured for T-pieces for flow monitoring

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Draw-ing no.	Order no.
Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases) · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205								
	M18 x 1.5	0.04...3	-20...90	100	0.5	18...30	21	**SA5000**
	M18 x 1.5	0.04...3	-20...90	100	0.5	18...30	21	**SA5040**
	G 1/2	0.04...3	-20...90	100	0.5	18...30	22	**SA2000**
	Ø 8 mm	0.04...3	-20...100	50	0.5	18...30	23	**SA4100**
	Ø 8 mm	0.04...3	-20...100	50	0.5	18...30	23	**SA4300**
Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases) · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G 1/2	0.04...3	-20...90	100	0.5	18...30	22	**SA2004**
	M18 x 1.5	0.04...3	-20...90	100	0.5	18...30	21	**SA5004**

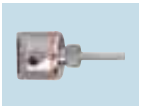
You can find wiring diagrams and scale drawings from page 507

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases) · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Ø 8 mm	0.04...3	-20...100	100	0.5	18...30	23	**SA4104**
	Ø 8 mm	0.04...3	-20...100	100	0.5	18...30	23	**SA4304**

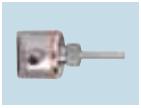
Compact housings for adapters for flow monitoring, Hastelloy sensor tip

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	3...300 / 200...3000	Hastelloy C-4 (2.4610)	-25...80	300	1...2 / 1...10	19...36	19	**SI0553**

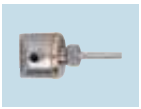
Compact housings for adapters for flow monitoring, titanium sensor tip

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	3...300 / 200...3000	titanium (3.7035)	-25...80	100	1...2 / 1...10	19...36	19	**SI5100**

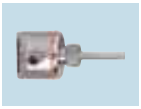
Compact designs for adapter with flow and temperature monitoring

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	300	1...10	18...36	19	**SI5007**

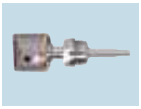
Compact housings for adapters with ATEX approval group II, category 3D / 3G

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · Wiring diagram no. 5 · Connector groups 196, 198								
	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...60	30	1...10	19...36	18	**SI500A**

Compact housings for adapters with Germanischer Lloyd (GL) approval

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	3...300	stainless steel 316L / 1.4404	-15...70	–	1...10	24	19	**SI0521**

Compact housings for adapters for hygienic and wet areas

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · Wiring diagram no. 5 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	3...300 / 200...3000	stainless steel 316L / 1.4435	-25...95	30	1...10	19...36	24	**SI6600**
	3...300 / 200...3000	High-grade stainless steel 316L / 1.4435	-25...95	30	1...10	19...36	25	**SI6700**
	3...300 / 200...3000	High-grade stainless steel 316L / 1.4435	-25...95	30	1...10	19...36	26	**SI6800**

Mechatronic flow sensors for machine tools

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ½	0.3...25	0...60	200	< 0.01	10...30	27	**SBU323**
	G ½	0.3...50	0...60	200	< 0.01	10...30	27	**SBU324**

You can find wiring diagrams and scale drawings from page 507

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function analogue · DC · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ½	0.3...25	0...60	200	< 0.01	24	28	**SBU623**
	G ½	0.3...50	0...60	200	< 0.01	24	28	**SBU624**
	G ½	0.3...75	0...60	200	< 0.01	24	28	**SBU625**
	G ½	0.3...75	0...60	200	< 0.01	24	28	**SBU625**

Mechatronic flow sensors with display

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function OUT1: NO / NC programmable or frequency or IO-Link OUT2: NO / NC programmable or analogue · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Rp ¾	0.3...15	-10...100	40	0.01	18...30	29	**SBY232**
	Rp ¾	0.5...25	-10...100	40	0.01	18...30	29	**SBY233**
	Rp ¾	1...50	-10...100	40	0.01	18...30	29	**SBY234**
	Rp 1	2...100	-10...100	25	0.01	18...30	30	**SBY246**
	Rp 1½	4...200	-10...100	25	0.01	18...30	31	**SBY257**
	G ½	0.3...15	-10...100	40	0.01	18...30	32	**SBG232**
	G ½	0.5...25	-10...100	40	0.01	18...30	32	**SBG233**
	G ½	1...50	-10...100	40	0.01	18...30	32	**SBG234**
	G ¾	2...100	-10...100	25	0.01	18...30	33	**SBG246**

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function OUT1: NO / NC programmable or frequency or IO-Link OUT2: NO / NC programmable or analogue · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G 1¼	4...200	-10...100	25	0.01	18...30	34	**SBG257**

Mechatronic flow sensors for liquids

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Rp ½	0.2...4	0...85	80	< 0.01	10...30	35	**SBY321**
	Rp ¾	1...15	0...85	40	< 0.01	10...30	36	**SBY332**
	Rp ½	2...20	0...85	25	< 0.01	10...30	37	**SBY323**
	Rp ¾	1...25	0...85	40	< 0.01	10...30	36	**SBY333**
	Rp ¾	2...50	0...85	40	< 0.01	10...30	36	**SBY334**
	Rp 1	5...100	0...85	25	< 0.01	10...30	38	**SBY346**
	Rp 1½	20...200	0...85	25	< 0.01	10...30	39	**SBY357**
	G ½	1...15	0...85	40	< 0.01	10...30	40	**SBG332**
	G ½	1...25	0...85	40	< 0.01	10...30	40	**SBG333**
	G ½	2...50	0...85	40	< 0.01	10...30	40	**SBG334**
	G ¾	5...100	0...85	25	< 0.01	10...30	41	**SBG346**
	G 1¼	20...200	0...85	25	< 0.01	10...30	42	**SBG357**

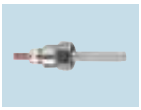
You can find wiring diagrams and scale drawings from page 507

Mechatronic flow sensors for high temperatures

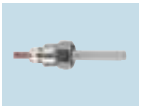
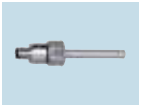
Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
M12 connector · Output function analogue · DC · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Rp ¾	1...25	-10...100	40	< 0.01	18...32	43	**SBY433**
	Rp ¾	2...50	-10...100	40	< 0.01	18...32	43	**SBY434**
	Rp 1	4...100	-10...100	25	< 0.01	18...32	44	**SBY446**
	Rp 1½	8...200	-10...100	25	< 0.01	18...32	45	**SBY457**
Cable with connector 0.3 m · Output function analogue · DC · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Rp ¾	0.3...25	10...180	15	< 0.01	24	46	**SBT633**
	Rp ¾	0.3...50	10...180	15	< 0.01	24	46	**SBT634**

Flow sensors for connection to control monitors, industrial applications

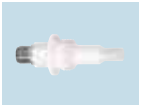
Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T_0 gradient [K/min]	Pressure rating [bar]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 13 · Connector groups 12, 13, 22, 24, 152, 155, 186, 192, 194, 205								
	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	30	30	47	**SF6200**
	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	30	30	48	**SF6201**
M12 connector · Wiring diagram no. 13 · Connector groups 152, 155, 186, 192, 194, 205								
	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	300	300	49	**SF5200**
	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	300	30	50	**SF5201**
Cable 6 m · Wiring diagram no. 14								
	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	300	300	51	**SF5350**

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T_0 gradient [K/min]	Pressure rating [bar]	Draw-ing no.	Order no.
Cable 6 m · Wiring diagram no. 14								
	3...300 / 200...3000	3...60 / 200...800	0...120 / 0...100	1...10	300	300	51	**SF5300**

Flow sensors for connection to control monitors, industrial applications, titanium housing

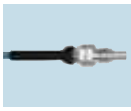
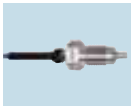
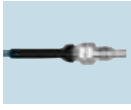
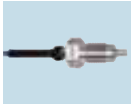
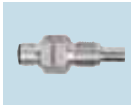
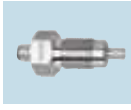
Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T_0 gradient [K/min]	Pressure rating [bar]	Draw-ing no.	Order no.
Cable 6 m · Wiring diagram no. 14								
	3...300 / 200...3000	3...60 / 200...800	0...120 / 0...100	1...10	300	100	51	**SF5800**
M12 connector · Wiring diagram no. 13 · Connector groups 152, 155, 186, 192, 194, 205								
	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	300	100	49	**SF5700**

Flow sensors for connection to control monitors for aggressive media, ceramic housing

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T_0 gradient [K/min]	Pressure rating [bar]	Draw-ing no.	Order no.
M12 connector · Wiring diagram no. 13 · Connector groups 12, 13, 22, 24, 152, 155, 186, 192, 194, 205								
	3...60 / -	3...40 / -	5...70	2...20	7	30	52	**SF2405**
	3...60 / -	3...40 / -	5...70	2...20	7	30	53	**SF3405**
Cable 6 m · Wiring diagram no. 14								
	3...60 / -	3...40 / -	5...70	2...20	7	30	54	**SF2410**
	3...60 / -	3...40 / -	5...70	2...20	7	30	55	**SF3410**

You can find wiring diagrams and scale drawings from page 507

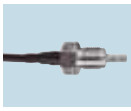
Flow sensors for connection to control monitors with ATEX approval

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T_0 gradient [K/min]	Pressure rating [bar]	Drawing no.	Order no.
Cable 6 m · Wiring diagram no. 15								
	3...300 / 200...2000	3...60 / 200...800	-20...60	1...10	15	300	56	**SF111A**
	3...300 / 200...2000	3...60 / 200...800	-20...60	1...10	15	300	57	**SF211A**
	3...300 / 200...2000	3...60 / 200...800	-20...60	1...10	15	300	58	**SF311A**
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	59	**SF121A**
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	60	**SF221A**
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	61	**SF321A**
M12 connector · Wiring diagram no. 16 · Connector group 197								
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	62	**SF120A**
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	63	**SF220A**
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	64	**SF320A**
	3...300 / 200...3000	3...60 / 200...800	-20...70	1...10	15	30	47	**SF620A**

Flow sensors for connection to control monitors with ATEX approval, ceramic housing

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T_0 gradient [K/min]	Pressure rating [bar]	Drawing no.	Order no.
Cable 6 m · Wiring diagram no. 15								
	3...60 / -	3...40 / -	5...70	2...20	7	30	55	**SF323A**

Flow sensors for connection to control monitors with ATEX approval 2G

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T_0 gradient [K/min]	Pressure rating [bar]	Drawing no.	Order no.
Cable 6 m · Wiring diagram no. 17								
	3...300 / 100...15000	3...100 / 100...7500	-20...70	1...10	30	30	65	**SP321A**

Air flow monitors

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	U_b / tolerance [V] / [%]	Drawing no.	Order no.
Cable 2 m · Wiring diagram no. 18							
	100...1000	100...400	-10...50	3...60	80...250 AC	66	**SL0101***
Cable 2 m · Wiring diagram no. 19							
	100...1000	100...400	-10...50	3...60	24 AC ± 10 %	66	**SL0201***
Cable 2 m · Wiring diagram no. 20							
	100...1000	100...400	-10...50	3...60	24 DC ± 25 %	66	**SL5101**

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

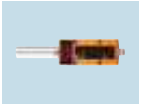
Compressed air meters

Type	Process connection	Setting range [Nm^3/h]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA scaleable) · Wiring diagram no. 21 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	G ¼ (DN8)	0.12...15.00	16	< 0.1	18...30	67	**SD5000**
	R½ (DN15)	0.6...75.0	16	< 0.1	18...30	68	**SD6000**
	G ½ (DN15)	0.6...75	16	< 0.1	18...30	69	**SD6050**

You can find wiring diagrams and scale drawings from page 507

Type	Process connection	Setting range [Nm³/h]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA scaleable) · Wiring diagram no. 21 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	R1 (DN25)	1.8...225.0	16	< 0.1	18...30	70	**SD8000**
	R1½ (DN40)	3.5...410.0	16	< 0.1	18...30	71	**SD9000**
	R2 (DN50)	5...700	16	< 0.1	18...30	72	**SD2000**
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA scaleable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	G 1 I	18...2110	16	< 0.1	18...30	73	**SD0523**

Compressed air meter for special gases

Type	Process connection	Setting range [Nm³/h]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA scaleable) · Wiring diagram no. 24 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ (DN8)	N_2: 0.04...15.00 Ar: 0.08...24.04 CO_2: 0.04...14.36	0...60	16	< 0.1	18...30	67	**SD5100**
	R½ (DN15)	N_2: 0.2...75.0 Ar: 0.4...122.0 CO_2: 0.2...74.7	0...60	16	< 0.1	18...30	68	**SD6100**

Ultrasonic flow meters for liquids (water, glycol solutions, oils)

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
Output function 2 x normally open / closed programmable · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G¾	0.1...50.0	-10...80	16	< 0.250	19...30	74	**SU7200**
	G1	0.2...100.0	-10...80	16	< 0.250	19...30	75	**SU8200**
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 22 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G¾	0.1...50.0	-10...80	16	< 0.250	19...30	74	**SU7000**

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U_b [V]	Drawing no.	Order no.
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 22 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G1	0.2...100.0	-10...80	16	< 0.250	19...30	75	**SU8000**
	G1¼	0.4...200.0	-10...80	16	< 0.250	19...30	76	**SU9000**
Output function 2 x analogue (4...20 mA scalable) · Wiring diagram no. 23 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G1¼	0.0...200.0	-10...80	16	< 0.250	19...30	76	**SU9004**

Accessories for flow sensors and control monitors

Type	Description	Order no.
	T-piece · R½ - M26 x 1.5 - R½ · for sensors and adapters with process connection M26 x 1.5 · Flow rate: 0...10 l/min · Housing materials: stainless steel 316L / 1.4404	**E40136**
	Progressive ring T-piece DIN 2353 · QL 18-18-18 · for sensors and adapters with process connection M26 x 1.5 · Recommendation: precision steel pipes 18 x 1.5 to DIN 2391/ISO 3304 · Housing materials: stainless steel 316Ti / 1.4571	**E40078**
	Progressive ring T-piece DIN 2353 · QL 22-18-22 · for sensors and adapters with process connection M26 x 1.5 · Recommendation: precision steel pipes 22 x 1.5 to DIN 2391/ISO 3304 · Housing materials: stainless steel 316Ti / 1.4571	**E40079**
	Progressive ring T-piece DIN 2353 · QL 28-18-28 · for sensors and adapters with process connection M26 x 1.5 · Recommendation: precision steel pipes 28 x 1.5 to DIN 2391/ISO 3304 · Housing materials: CW614N	**E40083**
	Progressive ring fitting · Ø 8 mm - G1/2 · Housing materials: stainless steel	**E40258**
	Progressive ring fitting · Ø 8 mm - G 1/4 · Housing materials: stainless steel	**E40259**
	Progressive ring fitting · Ø 8 mm - G 3/4 · Housing materials: stainless steel	**E40260**
	Progressive ring fitting · Ø 8 mm - G 1/2 · Housing materials: stainless steel	**E40267**
	Progressive ring fitting · Ø 8 mm - G 3/4 · Housing materials: stainless steel	**E40268**

You can find wiring diagrams and scale drawings from page 507

Type	Description	Order no.
	Progressive ring fitting · Ø 8 mm - 1/2" NPT · Housing materials: stainless steel	**E40261**
	Progressive ring fitting · Ø 8 mm - 1/4" NPT · Housing materials: stainless steel	**E40262**
	Progressive ring fitting · Ø 8 mm - R1/2 · Housing materials: stainless steel	**E40263**
	Progressive ring fitting · Ø 8 mm - R 1/4 · Housing materials: stainless steel	**E40264**
	Adapter block · D10 / G ¼ · for flow sensors type SID, SF5 · Optimised for the following volumetric flow quantities (factory setting with water): · 0.2...2 l/min (SI1xxx) 0.2...3 l/min (SI5xxx) · Housing materials: stainless steel 316L / 1.4404	**E40161**
	Adapter block · D16 / G ½ · for flow sensors type SID, SF5 · Optimised for the following volumetric flow quantities (factory setting with water): · 0.5...5 l/min (SI1xxx) 0.5...7 l/min (SI5xxx) · Housing materials: stainless steel 316L / 1.4404	**E40162**
	Adapter block · D22 / G ¾ · for flow sensors type SID, SF5 · Optimised for the following volumetric flow quantities (factory setting with water): · 1...12 l/min (SI1xxx) 1...16 l/min (SI5xxx) · Housing materials: stainless steel 316L / 1.4404	**E40163**
	Adapter block · D27 / G 1 · for flow sensors type SID, SF5 · Optimised for the following volumetric flow quantities (factory setting with water): · 2...20 l/min (SI1xxx) 2...25 l/min (SI5xxx) · Housing materials: stainless steel 316L / 1.4404	**E40164**
	Adapter · M18 x 1.5 - G ½ · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: titanium	**E40114**
	Adapter · M18 x 1.5 - G ¼ · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: titanium	**E40115**
	Adapter · M18 x 1.5 - L18 · for mounting in T-pieces · Insertion depth of the probe of SID, SFD, TN: · 28.5 mm · Housing materials: nut: stainless steel 316Ti / 1.4571 / adapter: stainless steel 316L / 1.4404 / O-ring: FKM 16 x 1.5 gr 70° Shore A	**E40104**
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: stainless steel 316L / 1.4404	**E40101**
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: CW614N	**E40100**
	Adapter · M18 x 1.5 - ¼" NPT · Insertion depth of the probe of SID, SFD, TN: · 13.9 mm · Housing materials: stainless steel 316L / 1.4404	**E40106**
	Adapter · M18 x 1.5 - G ¼ · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: stainless steel 316L / 1.4404	**E40099**

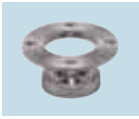
Type	Description	Order no.
	Adapter · M18 x 1.5 - G ¼ · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: CW614N	**E40098**
	Adapter · M18 x 1.5 - G ½ · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: stainless steel 316L / 1.4404	**E40096**
	Adapter · M18 x 1.5 - G ½ · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: CW614N	**E40097**
	Mounting adapter · M18 x 1.5 - Ø 23 mm · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: PE-100	**E40138**
	Welding adapter · M18 x 1.5 - Ø 24 mm · Insertion depth of the probe of SID, SFD, TN: · 15 mm · Housing materials: stainless steel 316L / 1.4404	**E40124**
	Welding adapter · Welding adapter · for compressed air meter type SD · Housing materials: stainless steel 316L / 1.4404	**E40195**
	Welding adapter · Ø 8 mm - Ø 13.7 mm · Progressive ring fitting · Housing materials: stainless steel	**E40265**
	Flow adapter (for low flow rates) · M12 x 1 - G 1/8 · for flow sensors and compact flow monitors with adapter · Housing materials: stainless steel 316L / 1.4404	**E40129**
	Flow adapter (for low flow rates) · M12 x 1 - G 1/8 · for type SA5 · Housing materials: stainless steel 316L / 1.4404	**E40434**
	Combicon connector · with cage clamps 4 poles · Housing materials: current carrying parts: copper alloy tin-plated	**E40171**
	Protective cover · for flow sensors type SI5xxx, SI6xxx, SR59xx · Housing materials: PP uncoloured	**E40203**

Flange adapters for flow sensors

Type	Description	Order no.
	Mounting plate · Housing materials: stainless steel 316L / 1.4404	**E40249**
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33201**

You can find wiring diagrams and scale drawings from page 507

Type	Description	Order no.
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33202**
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33701**
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33702**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN32 (1.25") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33211**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33212**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33213**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN32 (1.25") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33711**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33712**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33713**
	Clamp adapter · Varivent Adapter · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33221**
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33222**
	Clamp adapter · Varivent Adapter · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33721**
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33722**
	Pipe fitting · SMS pipe fitting · DN40 (1.5") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33731**
	Pipe fitting · SMS pipe fitting · DN50 (2") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33732**

Type	Description	Order no.
	Flange adapter · DRD adapter · flange · DRD · D = 65 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33242**
	Welding adapter · Ø 50 mm · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E30122**
	Adapter · G 1 - 2" TRICLAMP · for flow monitor type SM8 · Housing materials: stainless steel 316L / 1.4404	**E40252**
	Adapter · G 1 - 1.5" TRICLAMP · for flow monitor type SM8 · Housing materials: stainless steel 316L / 1.4404	**E40253**
	Adapter · G 2 - 2" TRICLAMP · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316L / 1.4404	**E40254**

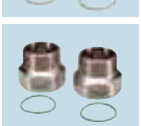
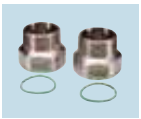
Accessories for airflow monitors

Type	Description	Order no.
	Mounting clamp · Ø 23 mm · for air flow monitor SLG · Housing materials: PBT	**E40048**
	Adapter for E40048 · Ø 8 mm - Ø 23 mm · Housing materials: stainless steel	**E40269**

Accessories for flow meters

Type	Description	Order no.
	Adapter · G ½ - R ½ · for flow monitor type SM6 · flat seal · Housing materials: stainless steel 316Ti / 1.4571	**E40199**
	Adapter · G ½ - G ¾ · for flow monitor type SM6 · flat seal · Housing materials: stainless steel 316L / 1.4404	**E40189**
	Adapter · G ¾ - R ½ · for flow monitor type SM7 / SU7 · Housing materials: stainless steel 316L / 1.4404	**E40178**
	Adapter · G 1 - R ½ · for flow monitor type SM8 / SU8 · Housing materials: stainless steel 316L / 1.4404	**E40179**
	Adapter · G 1 - R ¾ · for flow monitor type SM8 / SU8 · Housing materials: stainless steel 316L / 1.4404	**E40180**

You can find wiring diagrams and scale drawings from page 507

Type	Description	Order no.
	Adapter · G ¾ I - R½ · for flow monitor type SM7 / SU7 · Housing materials: Brass	**E40151**
	Adapter · G 1 - R¾ · for flow monitor type SM8 / SU8 · Housing materials: Brass	**E40153**
	Adapter · G 1¼ - R 1 · for flow monitor type SU9 · Housing materials: stainless steel 316L / 1.4404	**E40205**
	Adapter · G ½ - G ½ · for flow monitor type SM6 · Housing materials: stainless steel 316L / 1.4404	**E40213**
	Adapter · G ¾ - G ½ · for flow monitor type SM7 / SU7 · Housing materials: stainless steel 316L / 1.4404	**E40214**
	Adapter · G 1 - G ¾ · for flow monitor type SM8 / SU8 · Housing materials: stainless steel 316L / 1.4404	**E40215**
	Adapter · G ¾ - G ¾ · for flow monitor type SM7 / SU7 · Housing materials: stainless steel 316L / 1.4404	**E40216**
	Adapter · G 1 - G 1 · for flow monitor type SM8 / SU8 · Housing materials: stainless steel 316L / 1.4404	**E40217**
	Adapter · Victaulic · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	**E40227**
	Adapter · 2" NPT · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	**E40228**
	Adapter · 1½" NPT · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	**E40229**
	Adapter · G 1½ · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	**E40230**
	Adapter · R 2" A · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	**E40231**
	Flange adapter · Flange adapter · Adapter · rotatable · for type SM2, SM9 · Housing materials: flange: stainless steel / adapter: stainless steel 316Ti / 1.4571 / O-ring: EPDM	**E40240**
	Regulating valve · G ½ - G ½ · lockable · Housing materials: Brass nickel-plated / EPDM	**E40250**

Type	Description	Order no.
	Regulating valve · G ¾ - G ¾ · lockable · Housing materials: Brass nickel-plated / EPDM	**E40251**

Grounding clamps for magnetic-inductive flow meters

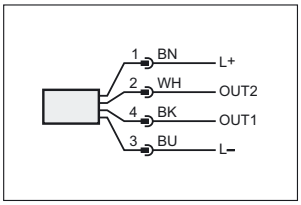
Type	Description	Order no.
	Grounding clamp · Housing materials: stainless steel 316L / 1.4404	**E40234**

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GY	grey

1



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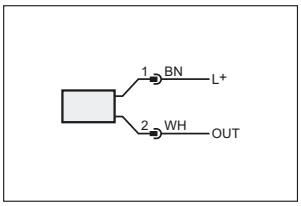

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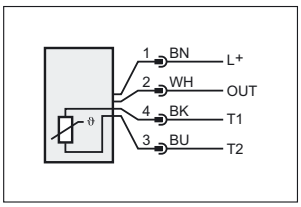
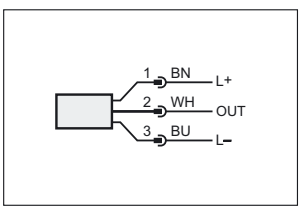


OUT: Analogue output, T1 / T2: Pt1000: -

4



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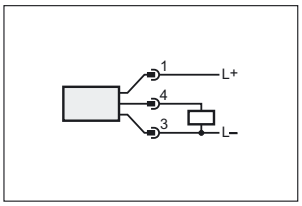

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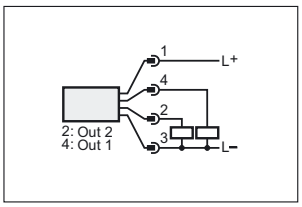

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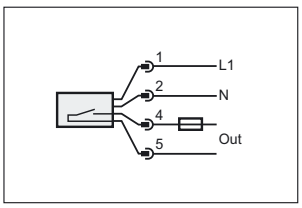

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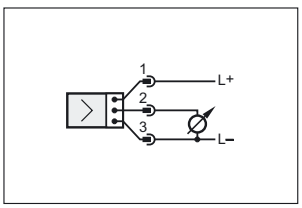

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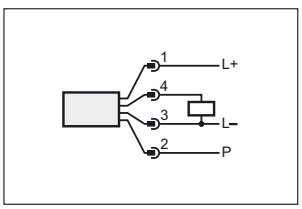

P = programming wire (for remote adjustment)

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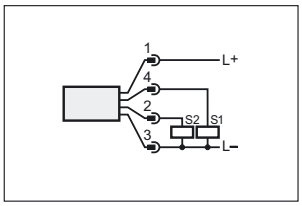

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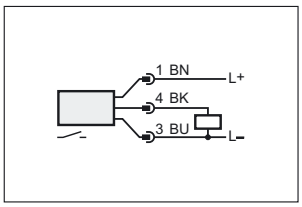

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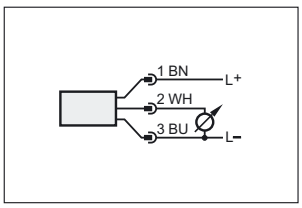

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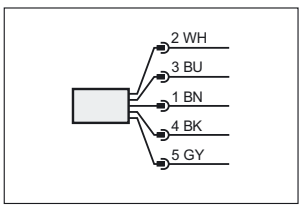

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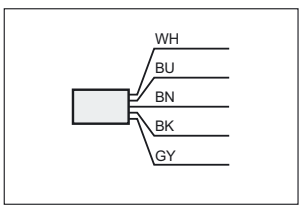

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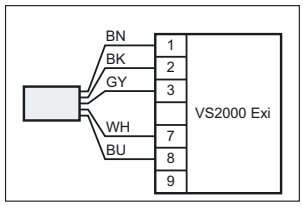

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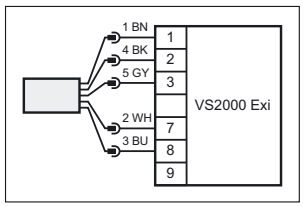

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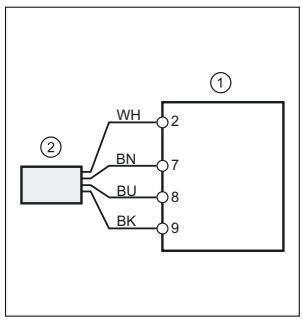

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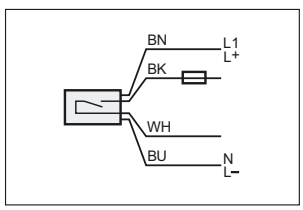

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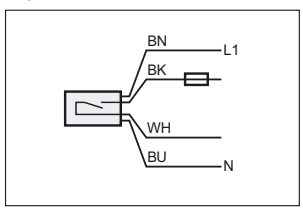

Wiring diagrams

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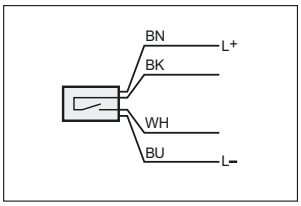

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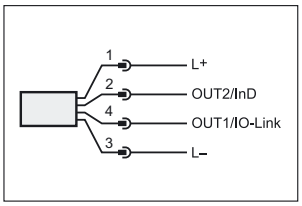

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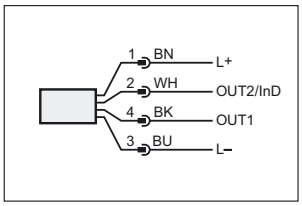

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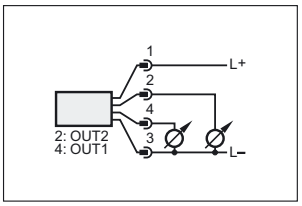

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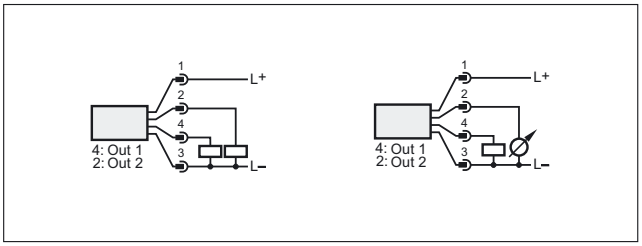

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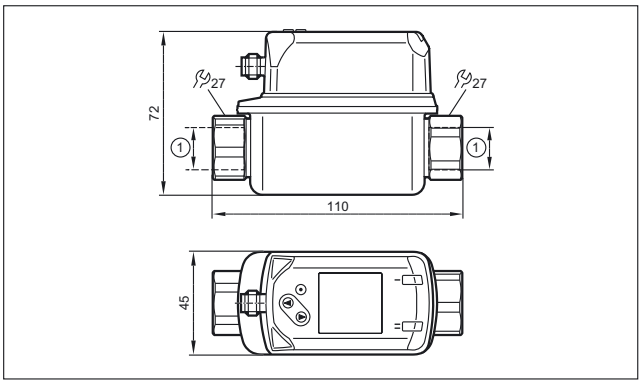

1: Process connection, see data sheet

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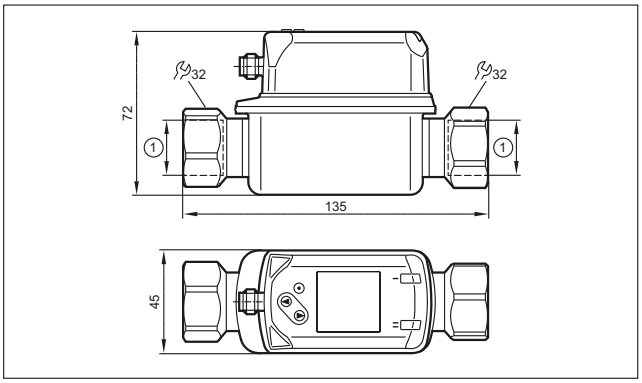

1: Process connection, see data sheet

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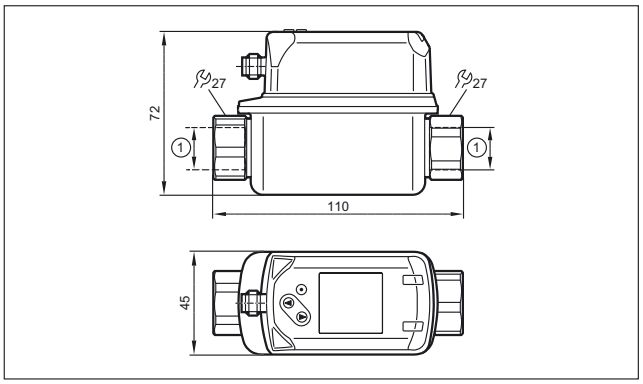

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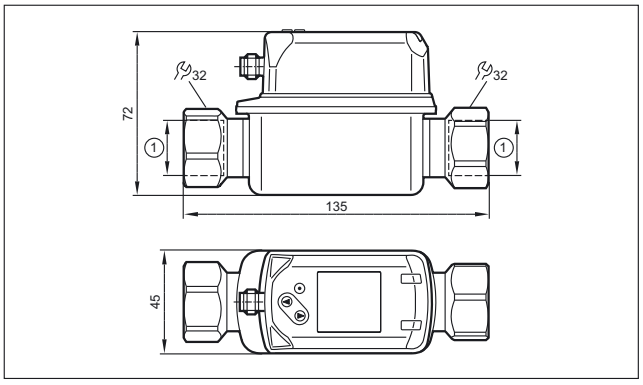

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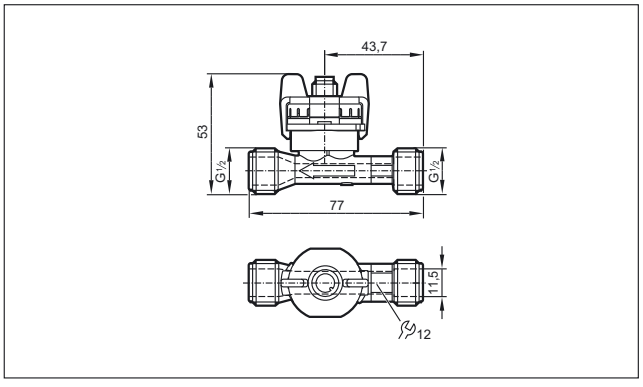

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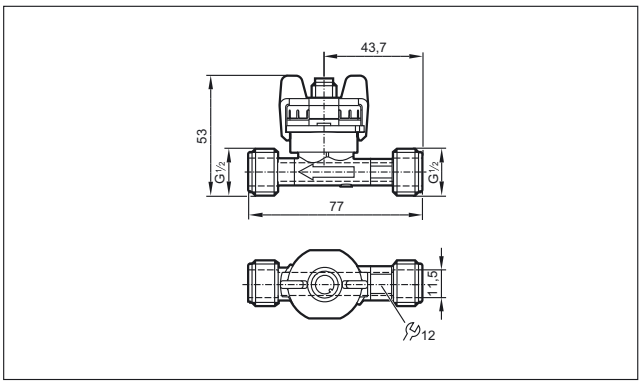

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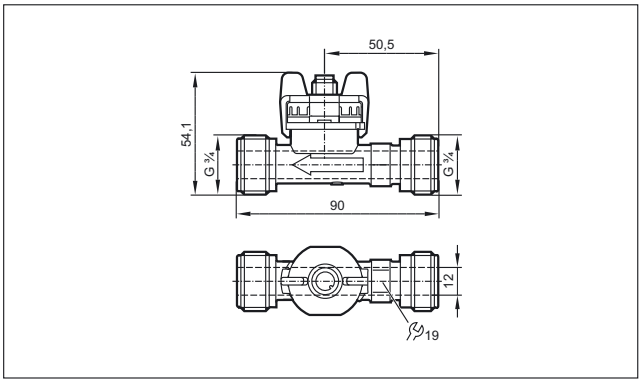

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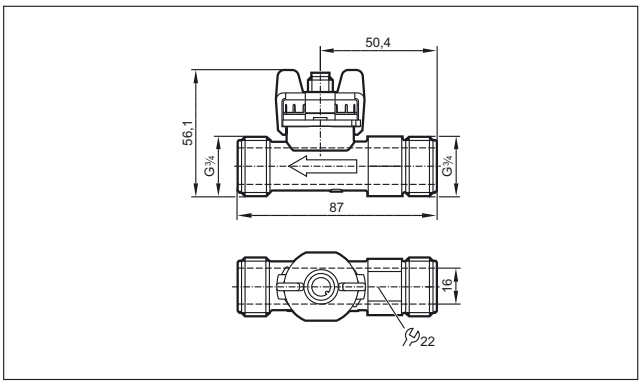

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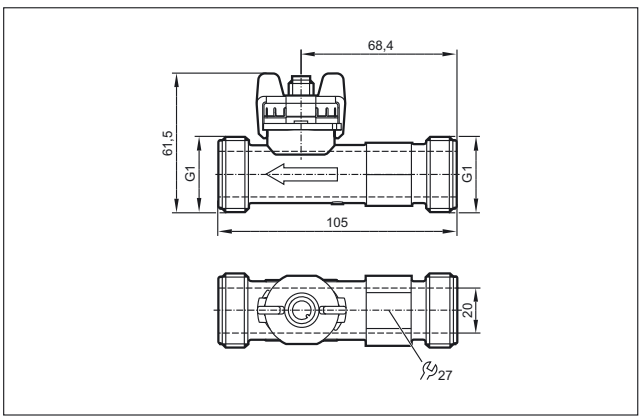

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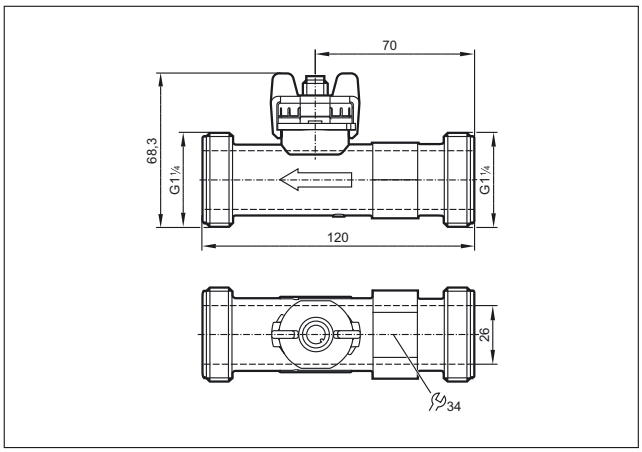

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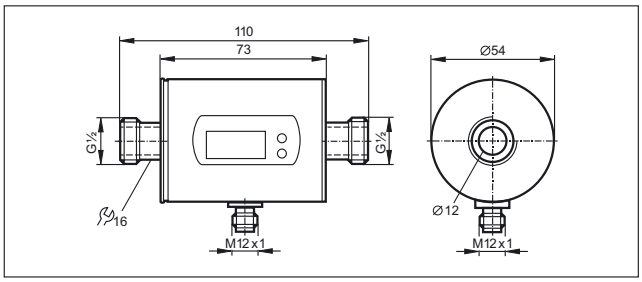

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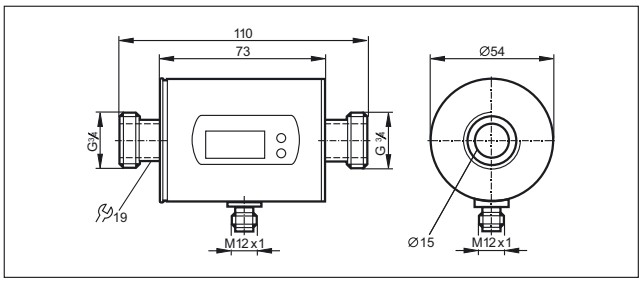

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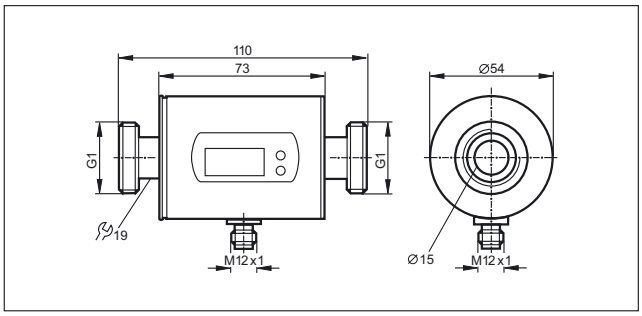

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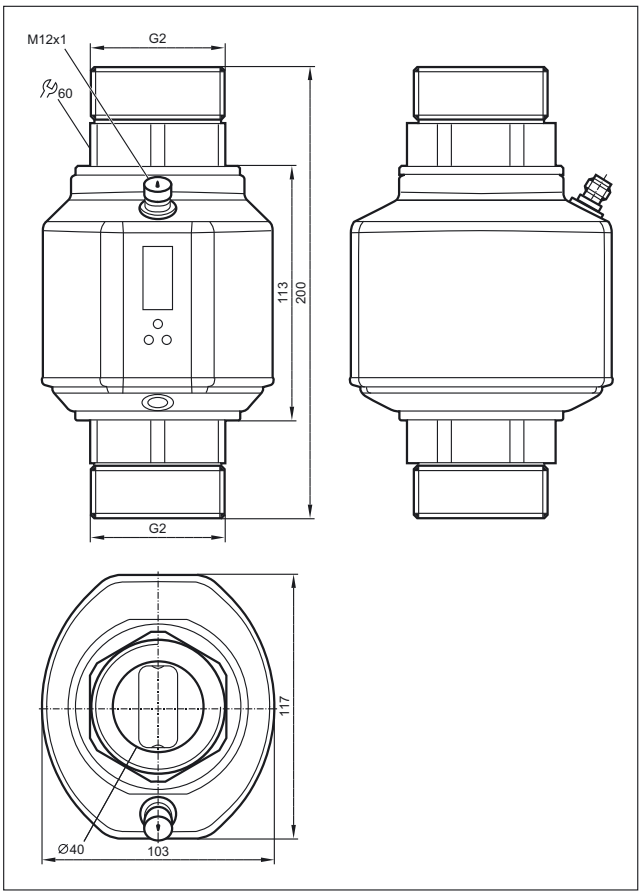

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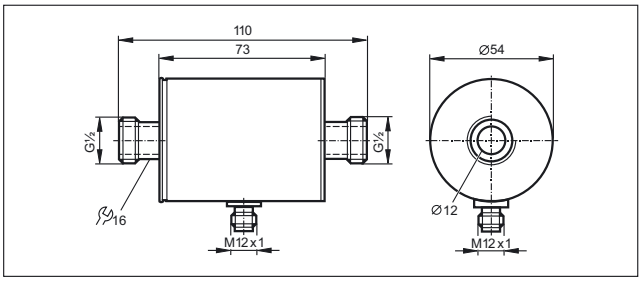

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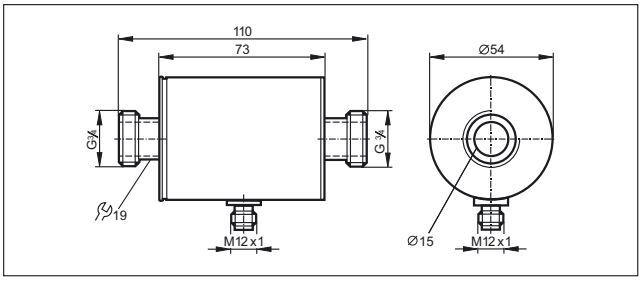

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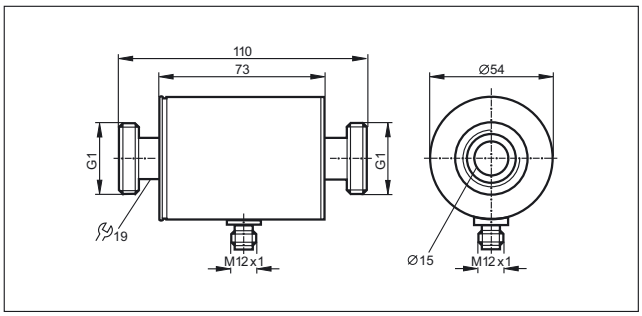

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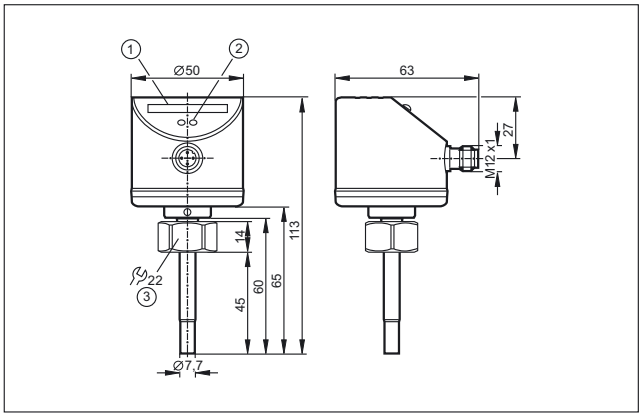

1: LED display, 2: setting pushbutton, 3: tightening torque 25 Nm

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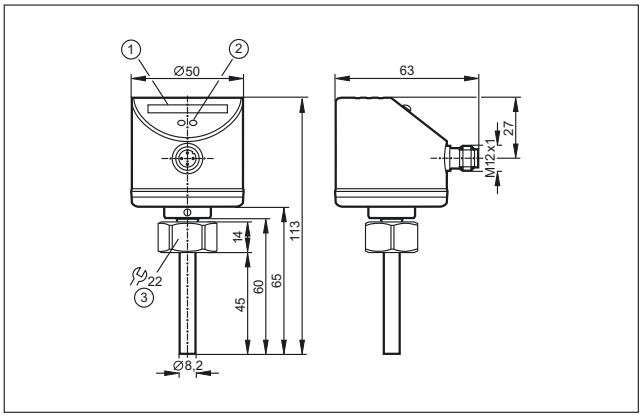

1: LED display, 2: setting pushbutton, 3: tightening torque 25 Nm

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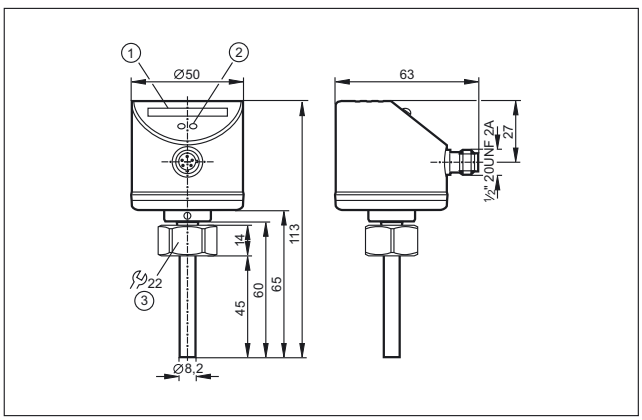

1: LED display, 2: setting pushbutton, 3: tightening torque 25 Nm

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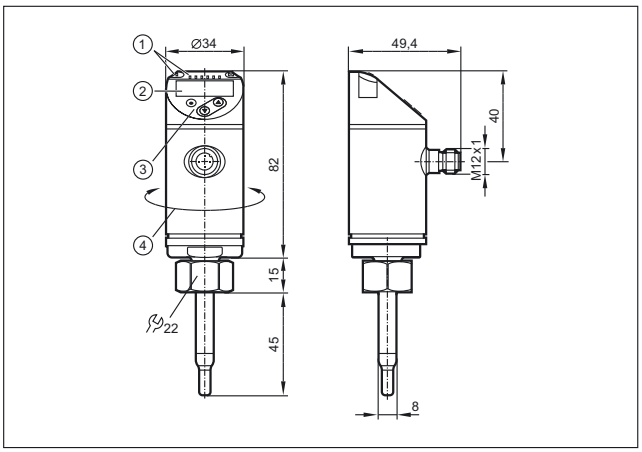

1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

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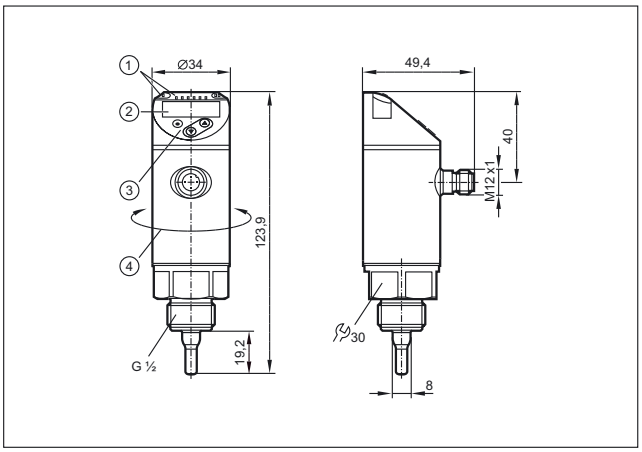

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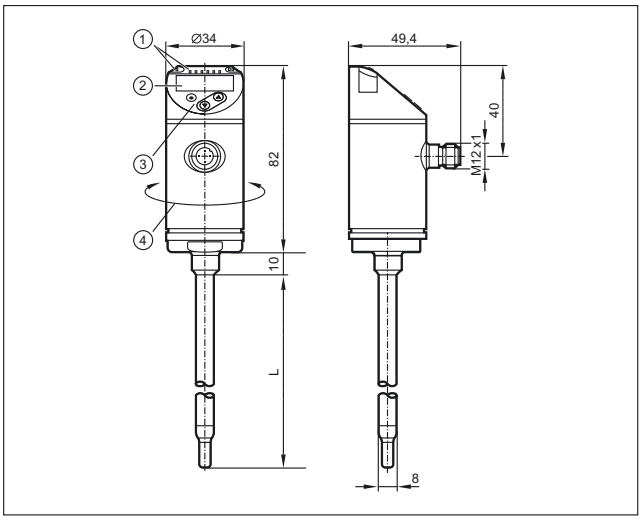

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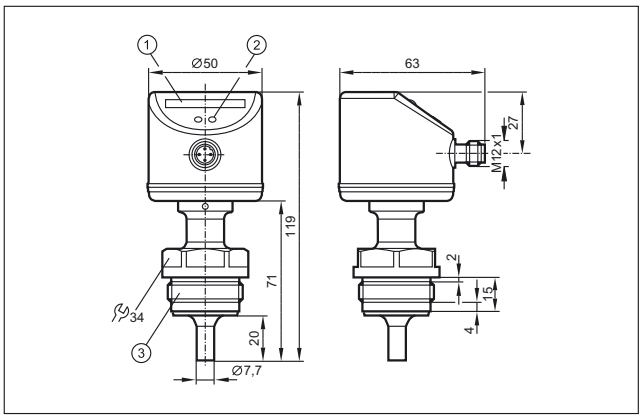

1: LED display, 2: setting pushbutton, 3: G1/Aseptoflex Vario thread

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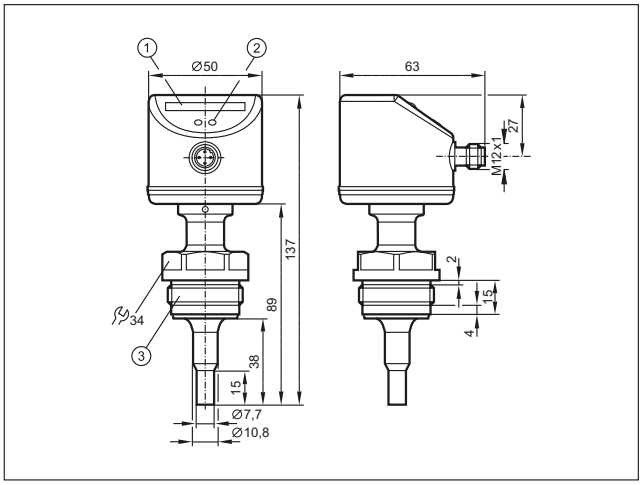

1: LED display, 2: setting pushbutton, 3: G1/Aseptoflex Vario thread

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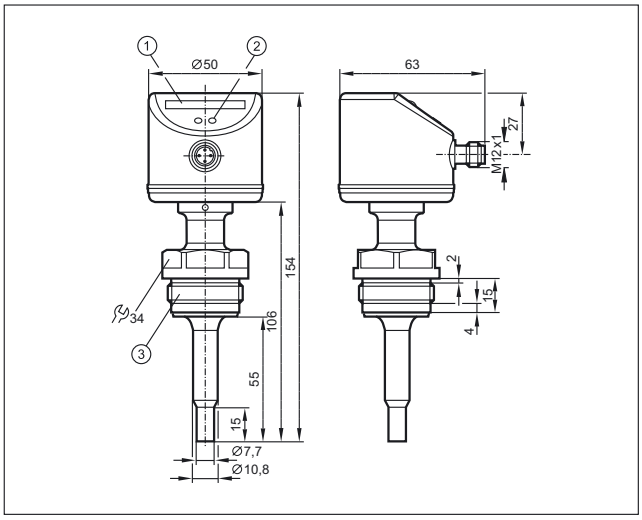

1: LED display, 2: setting pushbutton, 3: G1/Aseptoflex Vario thread

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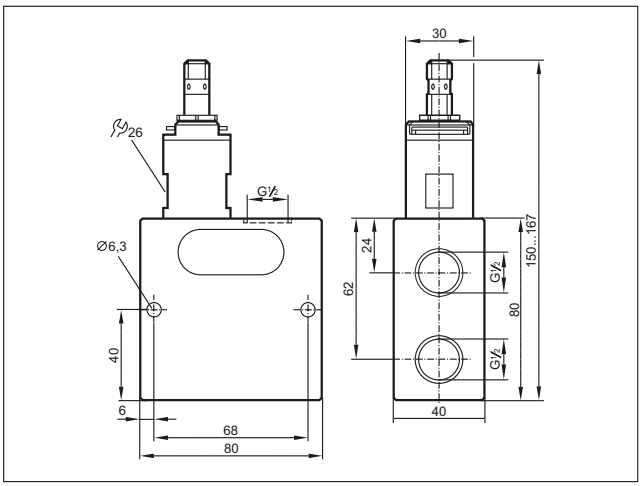

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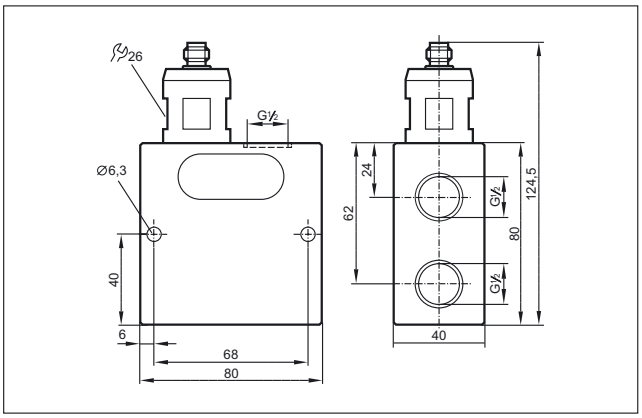

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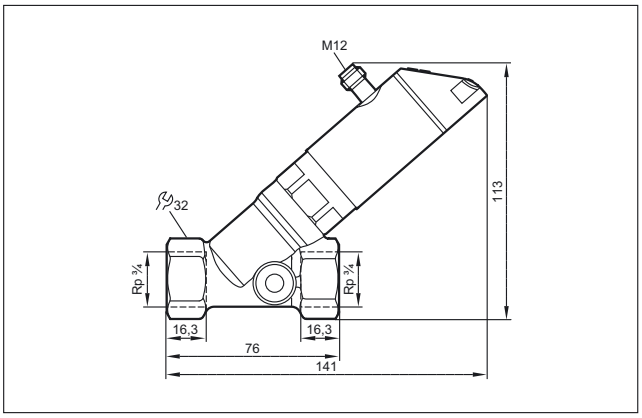

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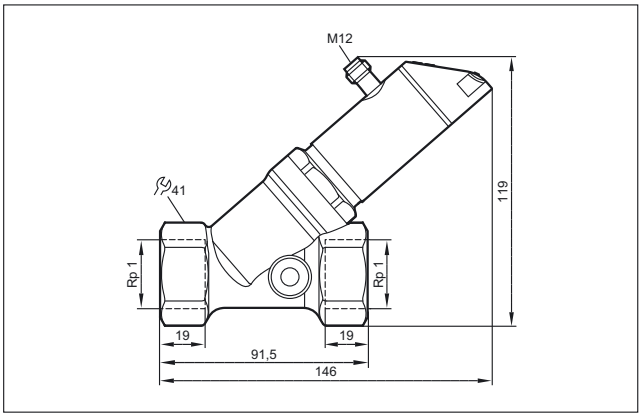

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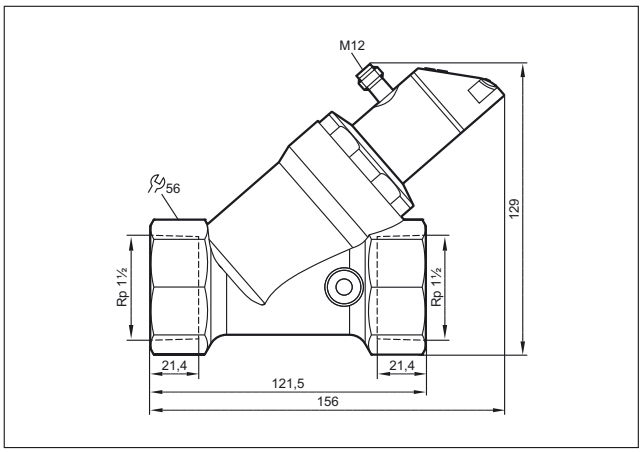

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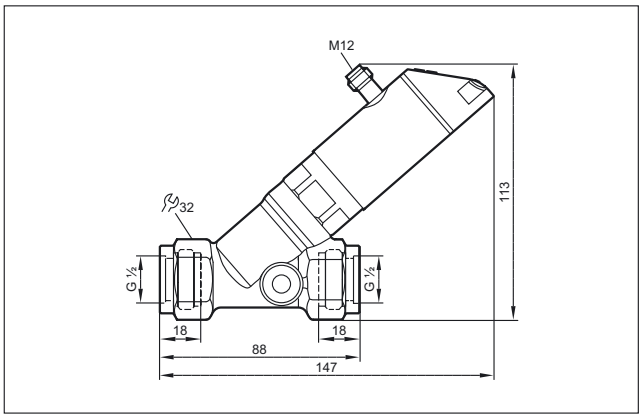

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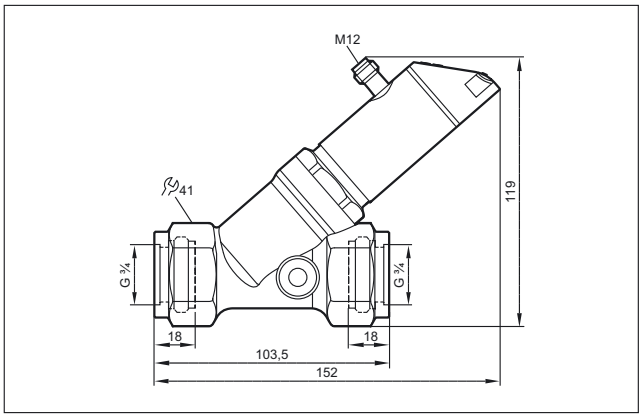

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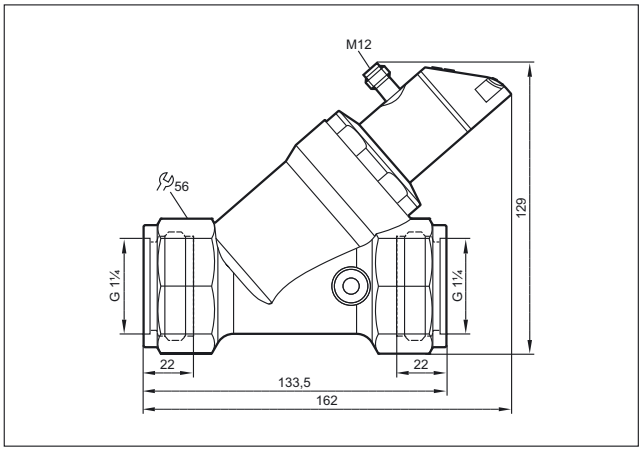

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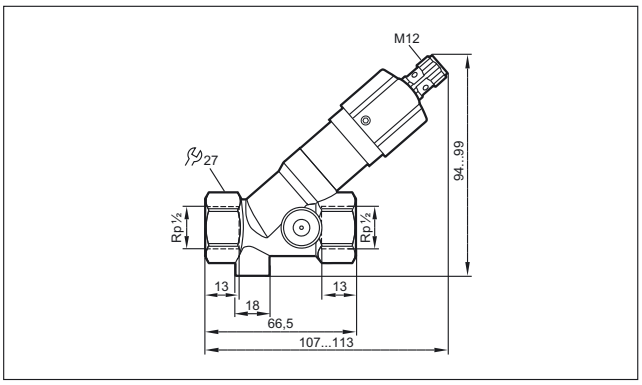

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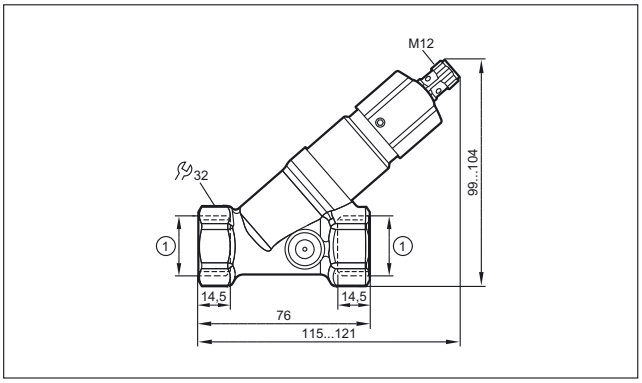

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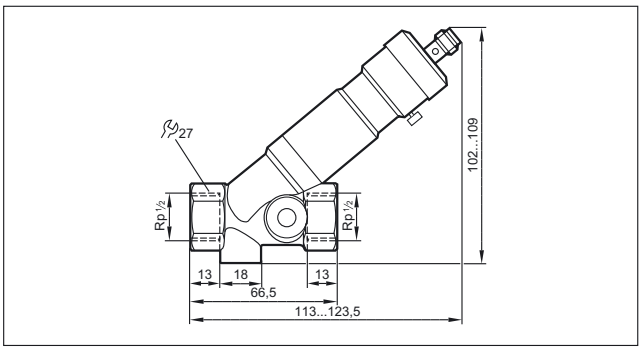

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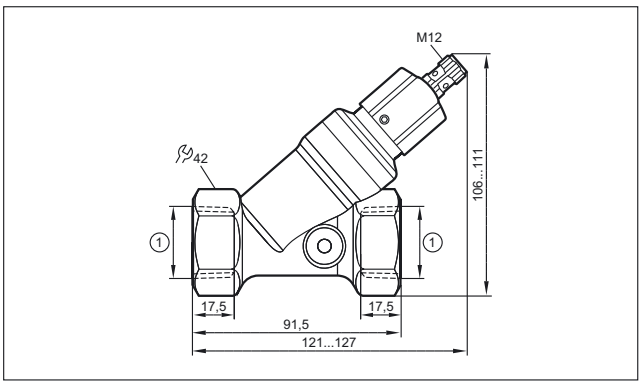

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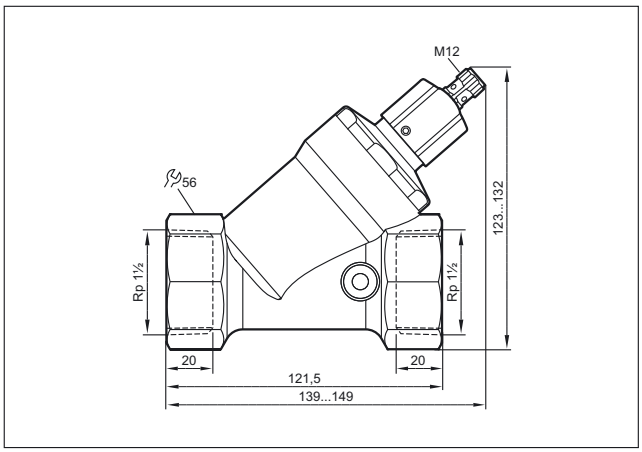

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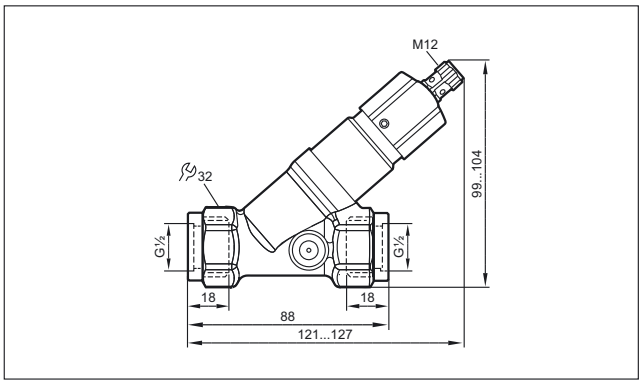

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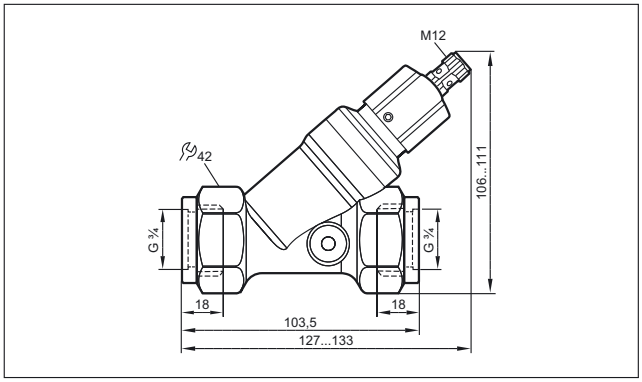

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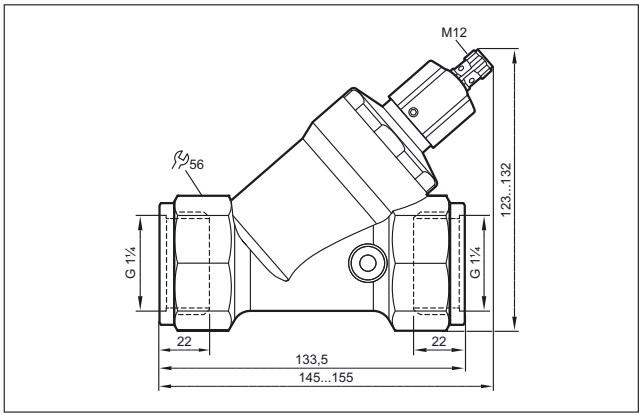

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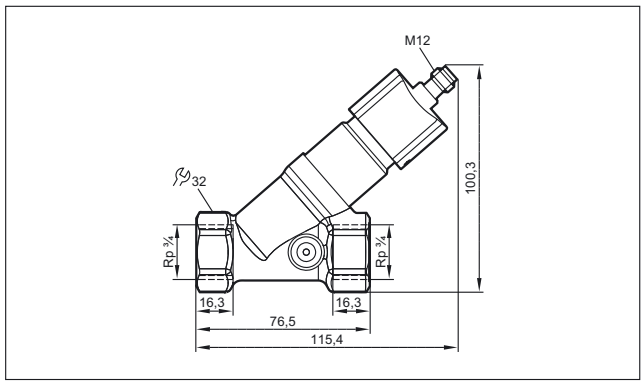

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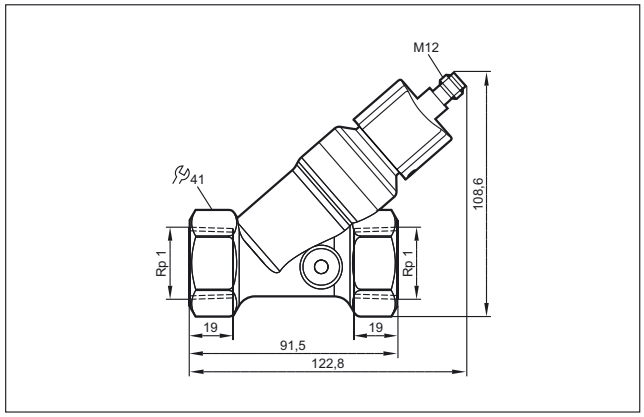

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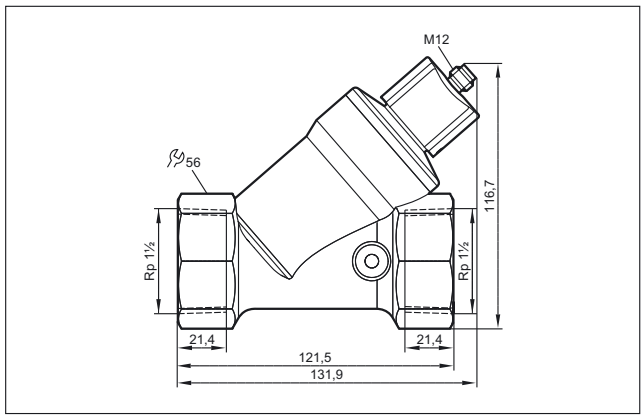

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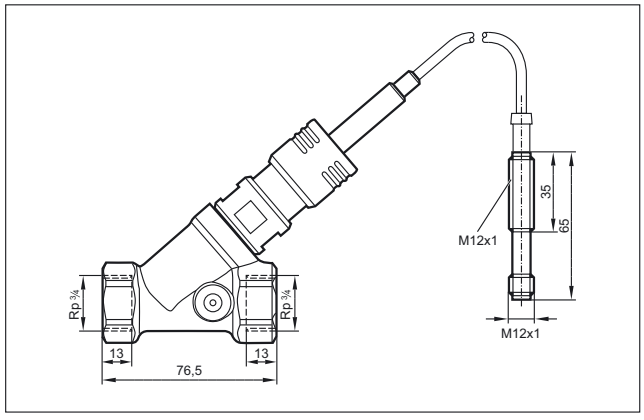

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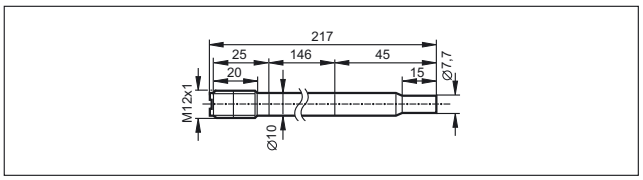

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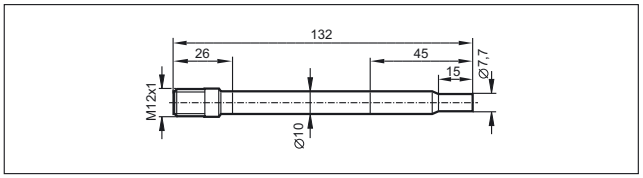

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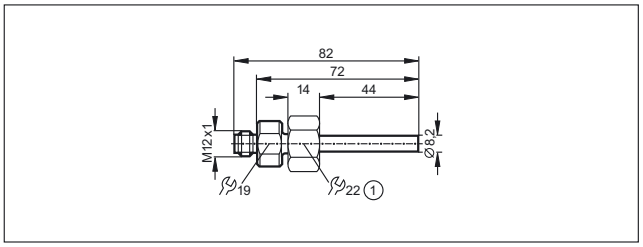
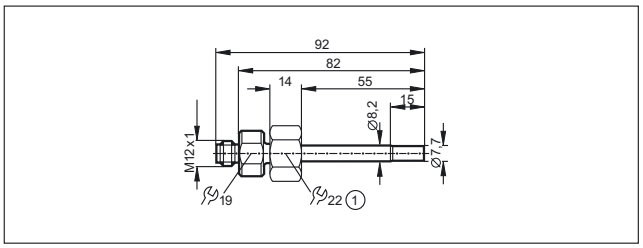


1: internal thread M18 x 1.5

50



internal thread M18 x 1.5

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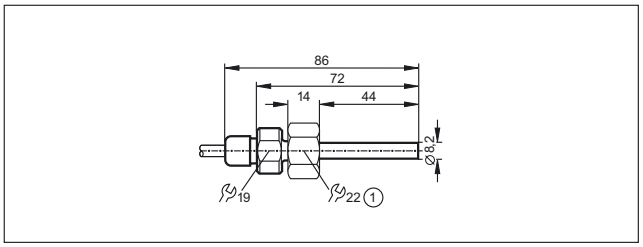

1: internal thread M18 x 1.5

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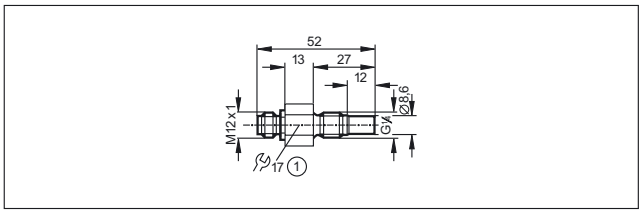

1: tightening torque max. 8 Nm

Scale drawings / drawing no. – CAD download: www.ifm.com

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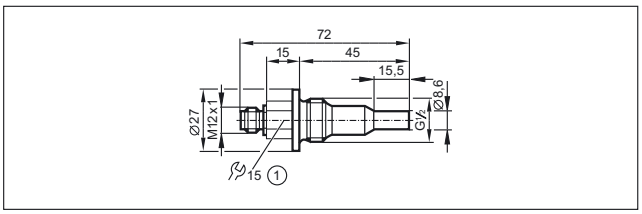

1: tightening torque max. 30 Nm

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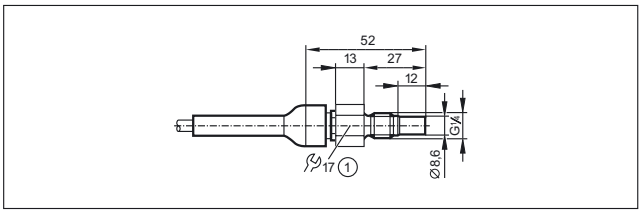

1: tightening torque max. 8 Nm

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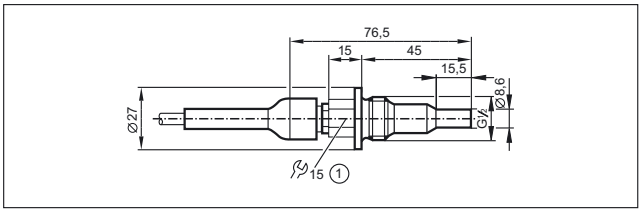

1: tightening torque max. 30 Nm

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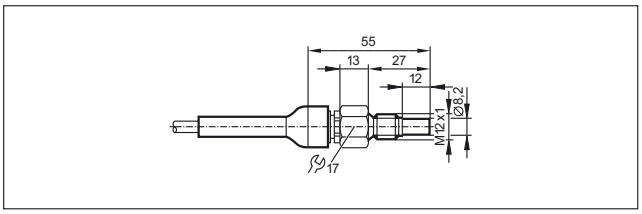

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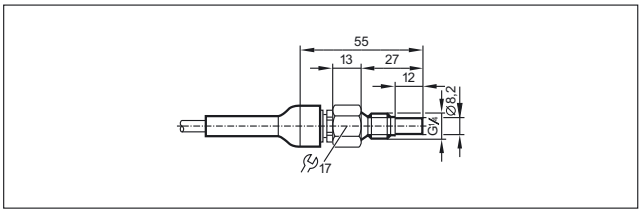

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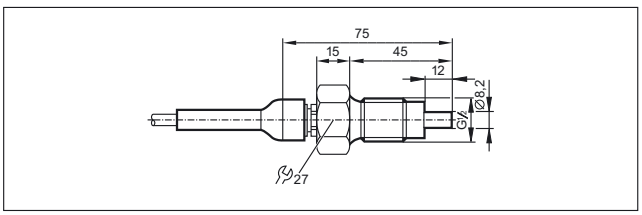

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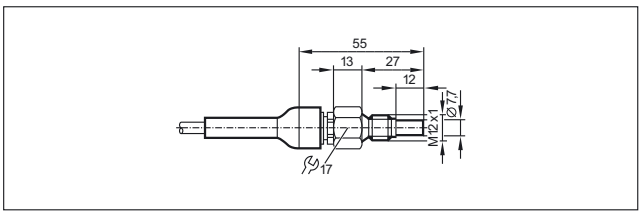

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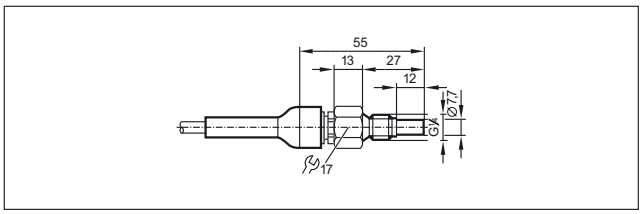

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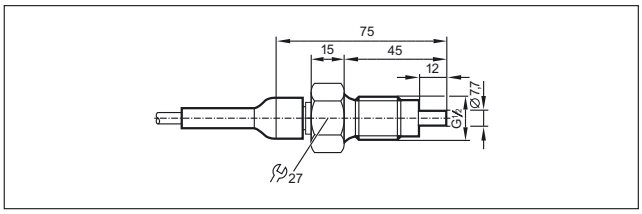

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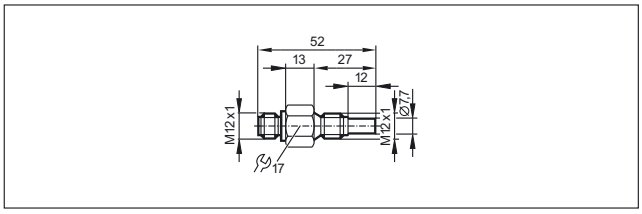

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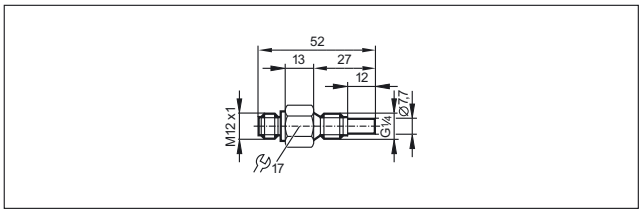

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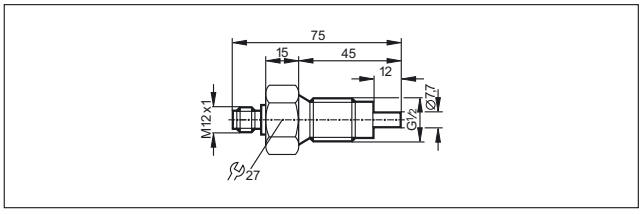

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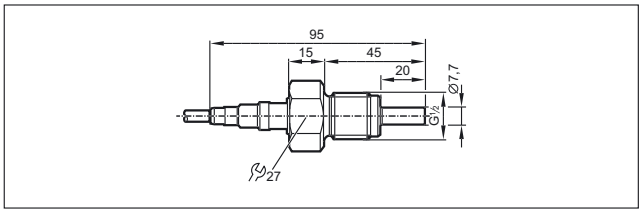

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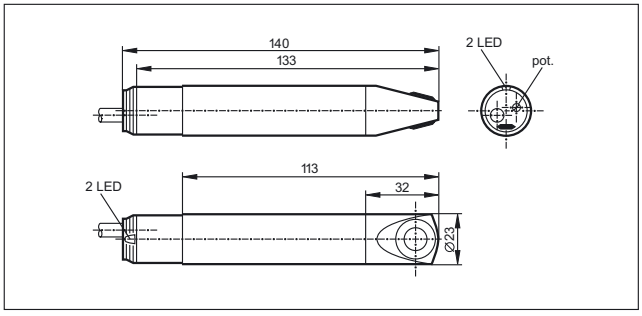

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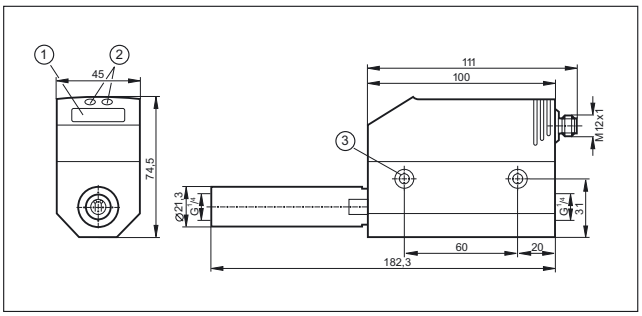
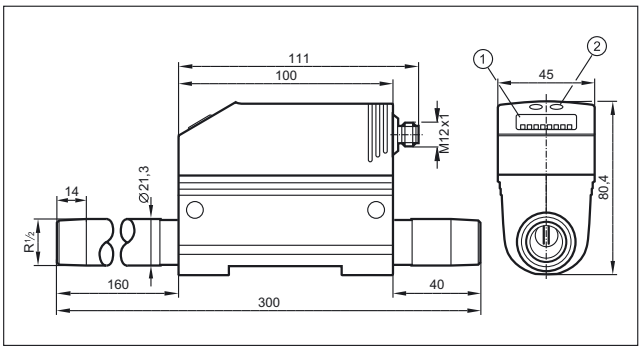


1: 4-digit alphanumeric display, 2: Programming buttons, 3: hole for M5 fixing screw

68



1: 4-digit alphanumeric display, 2: Programming buttons

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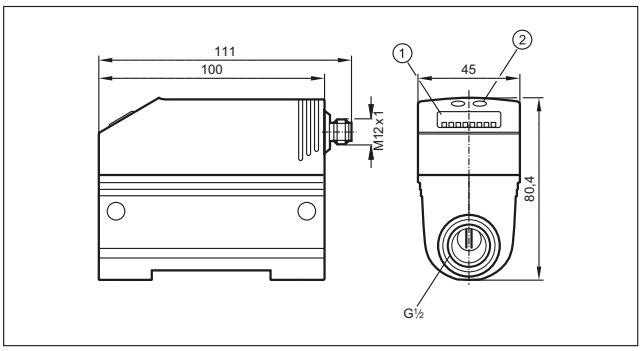

1: 4-digit alphanumeric display, 2: Programming buttons

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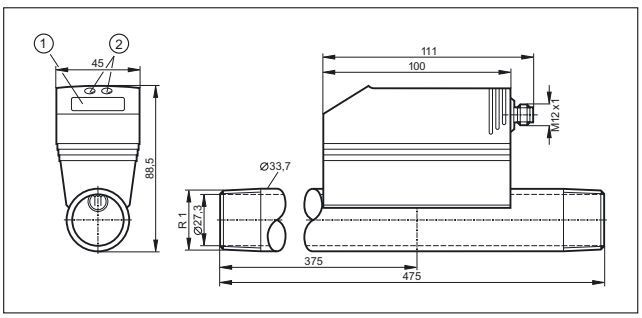

1: 4-digit alphanumeric display, 2: Programming buttons

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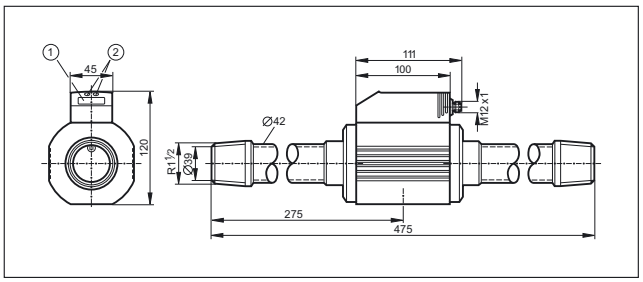

1: 4-digit alphanumeric display, 2: Programming buttons

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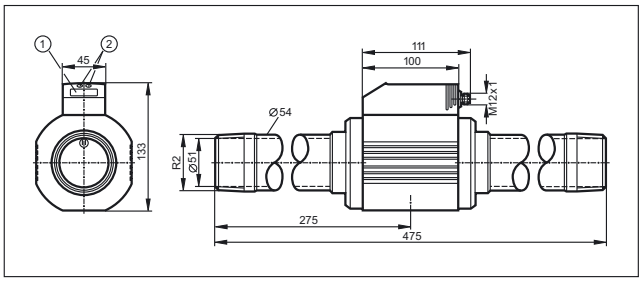

1: 4-digit alphanumeric display, 2: Programming buttons

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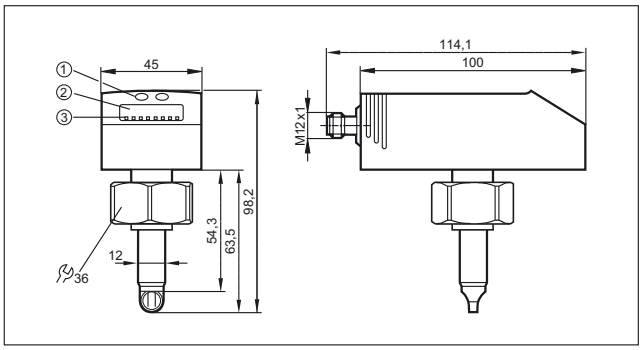

1: Programming buttons, 2: 4-digit alphanumeric display, 3: status LEDs

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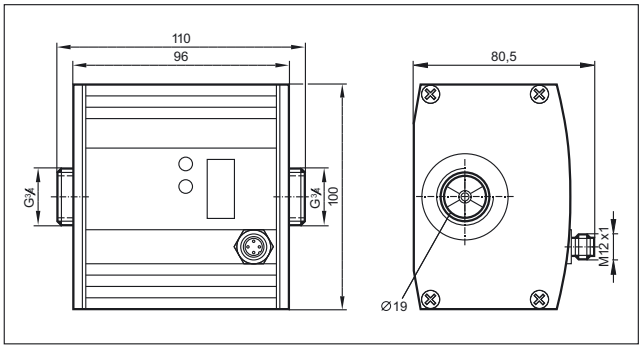

installation length with pipe adapter E40151 / E40154: 185 mm

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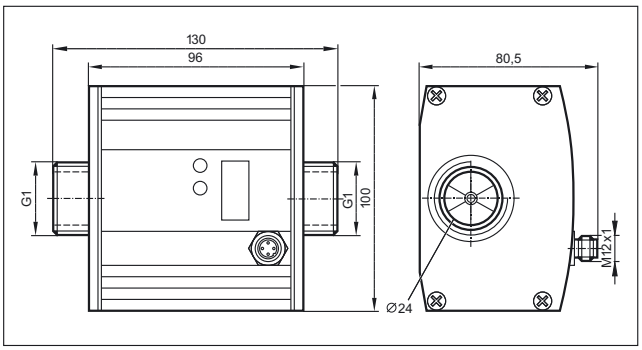
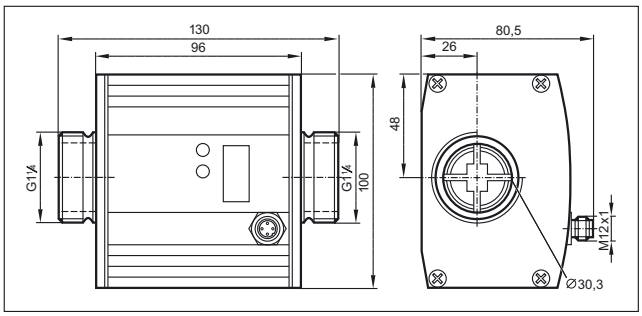


installation length with pipe adapter E40152 / E40155: 205 mm,
installation length with pipe adapter E40153 / E40156: 215 mm

76



Solid and reliable level sensors without any mechanical parts

Level sensors

High reliability due to the absence of mechanical components

Measurement technique: guided wave radar, capacitive and hydrostatic

Outputs for continuous or point level measurement

Integrated LED display for local indication of the current level

Suitable for common industrial and process fluids

IO-Link

FDA

EC 1935/ 2004

EHEDG

IP 67 IP 68 IP 69 K

WHG

Level sensors

In industrial applications where fluids or bulk material are used, storage tanks or silos are used for processing or storing media. Sensors are used to detect levels. Even critical process conditions such as emptying a hydraulic tank or the unintentional overspill of a tank are monitored using level sensors.

Advantages of electronic sensors

Deposits and wear and tear often lead to failures in particular if mechanical switches are in contact with the medium. The electronic ifm sensors can do without any mechanical parts. This makes the sensors especially robust and reliable. Another advantage of electronic sensors is the local indication of the level or the easy setting of the switching threshold simply by pressing a button.

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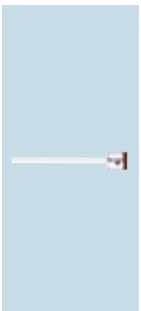
Point level sensors for oils and lubricants

Type	Process connection	Output	U_b [V]	Medium temperature [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Application water, water-based media · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	G ½ A	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	1	**LMC100**
	G ½ A	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	2	**LMC400**
	½" NPT	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	3	**LMC500**
M12 connector · Application oils, oil-based media · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	G ½ A	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	1	**LMC110**
	G ½ A	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	2	**LMC410**
	½" NPT	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	3	**LMC510**
M12 connector · Application liquids, viscous media and powders · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	½" NPT	2 x normally open / closed programmable PNP / NPN	18...30	–	100	4	**LMC502**

Electronic level sensors for oils and coolants, approval to the German Federal Water Act (WHG), section 19

Type	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U_b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / closed progr. (OUT1) 1 x normally closed (OUT-OP, overflow output) · DC PNP · Wiring diagram no. 2 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	264	195	53 / 15	12...30	0...35	0...65	200	5	**LK1222**
	472	390	53 / 30	12...30	0...35	0...65	200	5	**LK1223**
	728	585	102 / 40	12...30	0...35	0...65	200	5	**LK1224**

Electronic level sensors for oils and coolants

Type	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U_b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector (according to EN 61076-2-101) · Output function OUT1: NO / NC progr. / IO-Link OUT2: analogue 4…20 mA / 0…10 V (invertible)) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	264	195	53 / 16	18...30	0...35 / 35...65 [1]	0...70	200	6	**LK3122**
	472	390	60 / 22	18...30	0...35 / 35...60 [1]	0...70	200	6	**LK3123**
	728	585	104 / 39	18...30	0...35 / 35...55 [1]	0...70	200	6	**LK3124**
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	264	195	53 / 16	18...30	0...35 / 35...65 [1]	0...70	200	6	**LK1022**
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed progr. / IO-Link OUT2: normally open / closed progr. · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	472	390	60 / 22	18...30	0...35 / 35...60 [1]	0...70	200	6	**LK1023**
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	728	585	104 / 39	18...30	0...35 / 35...55 [1]	0...70	200	6	**LK1024**
M12 connector · Output function 2 x normally open / closed programmable · DC PNP · Wiring diagram no. 3 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	264	195	53 / 15	12...30	–	0...65	200	5	**LK7022**
	472	390	53 / 30	12...30	0...60	0...65	200	5	**LK7023**
	728	585	102 / 40	12...30	0...55	0...65	200	5	**LK7024**
M12 connector (according to EN 61076-2-101) · Output function OUT1: NO / NC programmable / IO-Link OUT2...4: NO/NC programmable · DC PNP/NPN · Connector groups 16, 17									
	264	195	53 / 16	18...30	0...35 / 35...65 [1]	0...70	200	6	**LK8122**
	472	390	60 / 22	18...30	0...3 / 35...60 [1]	0...70	200	6	**LK8123**
	728	585	104 / 39	18...30	0...35 / 35...55 [1]	0...70	200	6	**LK8124**

You can find wiring diagrams and scale drawings from page 538

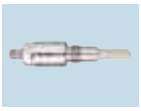
Point level sensors for oils and coolants, approval to the German Federal Water Act (WHG), section 19

Type	Probe length [mm]	Output	U_b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	132	Normally closed	10...36	0...35	0...65	200	7	**LI2141**
	273	Normally closed	10...36	0...35	0...65	200	7	**LI2142**
	481	Normally closed	10...36	0...35	0...65	200	7	**LI2143**
	132	Normally closed	10...36	0...35	0...65	200	7	**LI2241**
	273	Normally closed	10...36	0...35	0...65	200	7	**LI2242**
	481	Normally closed	10...36	0...35	0...65	200	7	**LI2243**

Point level sensors for oils and lubricants

Type	Probe length [mm]	Output	U_b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	132	normally open / closed programmable	10...36	0...35 (LI5141 + E43103: 0...65)	0...65	200	7	**LI5141**
	273	normally open / closed programmable	10...36	0...35 (LI5142 + E43100: 0...65)	0...65	200	7	**LI5142**
	481	normally open / closed programmable	10...36	0...35 (LI5143 + E43101: 0...60)	0...65	200	7	**LI5143**
	737	normally open / closed programmable	10...36	0...35 (LI5144 + E43102: 0...55)	0...65	200	7	**LI5144**

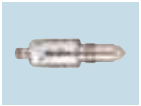
Point level sensors for oils and coolants, approval to the German Federal Water Act (WHG), section 19

Type	Process connection	Output	U_b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Application liquids · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ½ A	1 x NO / 1 x NC (WHG) PNP	18...30	-40...85 / 0...85	-40...100 / 0...100	100	8	**LMT191**
	G ½ A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	9	**LMT192**
	G ½ A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	10	**LMT194**
	G ½ A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	11	**LMT195**
	G ¾ A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	12	**LMT292**
	G 1 A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	13	**LMT392**

Point level sensors for hygienic areas

Type	Process connection	Output	U_b [V]	Medium temperature [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Application water-based media · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-40...100	100	8	**LMT100**
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	9	**LMT102**
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	10	**LMT104**
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	11	**LMT105**
	G ¾ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	12	**LMT202**
	G 1 A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	13	**LMT302**

You can find wiring diagrams and scale drawings from page 538

Type	Process connection	Output	U_b [V]	Medium temperature [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Application oils, oil-based media · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-40...100	100	8	**LMT110**
M12 connector · Application Media with low water content · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-40...100	100	8	**LMT121**

Point level sensors for the hazardous areas

Type	Process connection	Output	U_b [V]	Medium temperature [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Application oils, oil-based media, powders · Wiring diagram no. 1 · Connector groups 196, 198							
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...85	100	8	**LMT01A**
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...85	100	10	**LMT03A**
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...85	100	11	**LMT04A**

Variable level sensors, guided wave radar, hygienic areas

Type	Process connection	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U_b [V]	Medium temperature [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable or analogue (4...20 mA scaleable, invertable) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	Aseptoflex Vario	150...2000	L-40	30 / 10	18...30	-40...150	150	14	**LR2750**

Variable level sensors, guided wave radar, industrial applications

Type	Process connection	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U_b [V]	Medium temperature [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable or analogue (4...20 mA scaleable, invertable) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	G ¾ A	150...2000	L-40 / (L-60)	30 / 10 (30)	18...30	-20...100	150	15	**LR2050**

Type	Process connection	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U_b [V]	Medium temperature [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable or analogue (4...20 mA scaleable, invertable) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	3/4" NPT	150...2000	L-40	30 / 10	18...30	-20...100	150	16	**LR2350**
M12 connector (according to EN 61076-2-101) · Output function normally open / closed programmable; 4...20 mA or 0...10 V · DC PNP · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	G ¾ A	100...1600	L-40 (L-60)	30 / 10 (30)	18...30	0...80	200	17	**LR3000**
	3/4" NPT	100...1600	L-40	30 / 10	18...30	0...80	200	18	**LR3300**
M12 connector (according to EN 61076-2-101) · Output function 2 x normally open / closed programmable · DC PNP · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	G ¾ A	100...1600	L-40 (L-60)	30 / 10 (30)	18...30	0...80	200	17	**LR7000**
	3/4" NPT	100...1600	L-40	30 / 10	18...30	0...80	200	18	**LR7300**
M12 connector (according to EN 61076-2-101) · Output function 4 x normally open / closed programmable · DC PNP · Connector groups 16, 17									
	G ¾ A	100...1600	L-40 (L-60)	30 / 10 (30)	18...30	0...80	200	19	**LR8000**
	3/4" NPT	100...1600	L-40	30 / 10	18...30	0...80	200	20	**LR8300**
M12 connector (according to EN 61076-2-101) · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	G ¾ A	100...1600	L-40 (L-60)	30 / 10 (30)	18...30	0...80	–	21	**LR9020**

Compact sensors for level and temperature monitoring

Type	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U_b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: analog 0...20 mA / 0...10 V (invertable; scaleable analogue signal for temperature) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	264	195	53 / 16	18...30	0...35 / 35...65 [1]	0...70	200	22	**LT3022**
	472	390	60 / 22	18...30	0...35 / 35...60 [1]	0...70	200	22	**LT3023**
	728	585	104 / 39	18...30	0...35 / 35...55 [1]	0...70	200	22	**LT3024**

You can find wiring diagrams and scale drawings from page 538

Type	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U_b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I_{load} [mA]	Drawing no.	Order no.
M12 connector (according to EN 61076-2-101) · Output function OUT1: NO / NC programmable / IO-Link OUT2...4: NO/NC programmable · DC PNP/NPN · Connector groups 16, 17									
	264	195	53 / 16	18...30	0...35 / 35...65 [1]	0...70	200	22	**LT8022**
	472	390	60 / 22	18...30	0...35 / 35...60 [1]	0...70	200	22	**LT8023**
	728	585	104 / 39	18...30	0...35 / 35...55 [1]	0...70	200	22	**LT8024**

Sensors for hydrostatic level monitoring

Type	Measuring range [bar]	Cable length / material	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
Output function 4...20 mA analogue · Wiring diagram no. 7							
	0...0.25	5 m PUR cable	2	2.4	10...30	23	**PS3208**
	0...0.6	10 m PUR cable	4	4.8	10...30	23	**PS3407**
	0...0.6	15 m PUR cable	4	4.8	10...30	23	**PS3427**
	0...1	15 m PUR cable	5	6	10...30	23	**PS3417**
	0...0.6	30 m PUR cable	4	4.8	10...30	23	**PS3607**
	0...1	30 m PUR cable	5	6	10...30	23	**PS3617**
Output function 4...20 mA analogue · Wiring diagram no. 8							
	0...0.25	5 m FEP cable	2	2.4	10...30	24	**PS4208**
	0...0.6	10 m FEP cable	3	4	10...30	24	**PS4407**
Wiring diagram no. 8							
	0...1	15 m FEP cable	5	6	10...30	24	**PS4417**

Type	Measuring range [bar]	Cable length / material	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
Output function 4...20 mA · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	0...0.25	M12 connector	10	30	9.6...32	25	**PA3028**
	0...0.25	M12 connector	10	30	9.6...32	26	**PA3528**
Output function 4...20 mA · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	0...0.1	M12 connector	4	30	9.6...32	26	**PA3589**

Sensors for hydrostatic level monitoring ATEX category 1G/1D

Type	Measuring range [bar]	Cable length / material	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
Output function 4...20 mA analogue · Wiring diagram no. 8							
	0...0.25	5 m FEP cable	2	2.4	10...30	24	**PS308A**
	0...0.6	10 m FEP cable	4	4.8	10...30	24	**PS307A**
	0...1	15 m FEP cable	5	6	10...30	24	**PS317A**

Sensors for hydrostatic level monitoring in hygienic and wet areas

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Aseptoflex Vario	Display unit	-0.005...0.1	4	30	20...32	27	**PI2789**
	Aseptoflex Vario	Display unit	-0.0124...0.25	10	30	20...32	27	**PI2798**
	Aseptoflex Vario	Display unit	-1...1	10	30	20...32	27	**PI2799**
	Aseptoflex Vario	Display unit	-0.05...1	10	30	20...32	27	**PI2797**

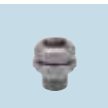
You can find wiring diagrams and scale drawings from page 538

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Aseptoflex Vario	Display unit	-0.124...2.5	20	50	20...32	27	**PI2796**
	Sealing cone G1 male	Display unit	-0.005...0.1	4	30	20...32	28	**PI2889***
	Sealing cone G1 male	Display unit	-0.124...2.5	20	50	20...32	28	**PI2896***
	Sealing cone G1 male	Display unit	-0.05...1	10	30	20...32	28	**PI2897***
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	20...32	28	**PI2898***
	Sealing cone G1 male	Display unit	-1...1	10	30	20...32	28	**PI2899***
M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 13 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Clamp DN 38 / 1½"	Display unit	-0.124...2.5	20	50	20...32	29	**PI2206**
	Clamp DN 38 / 1½"	Display unit	-0.05...1	10	30	20...32	29	**PI2207**
	Clamp DN 38 / 1½"	Display unit	-1...1	10	30	20...32	29	**PI2209**
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Aseptoflex Vario	Display unit	-0.005...0.1	4	30	18...32	30	**PG2789**
	Aseptoflex Vario	Display unit	-0.0124...0.25	10	30	18...32	30	**PG2798**
	Aseptoflex Vario	Display unit	-0.05...1	10	30	18...32	30	**PG2797**
	Aseptoflex Vario	Display unit	-1...1	10	30	18...32	30	**PG2799**
	Aseptoflex Vario	Display unit	-0.124...2.5	20	50	18...32	30	**PG2796**

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Sealing cone G1 male	Display unit	-0.124...2.5	20	50	18...32	31	**PG2896***
	Sealing cone G1 male	Display unit	-0.05...1	10	30	18...32	31	**PG2897***
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	18...32	31	**PG2898***
	Sealing cone G1 male	Display unit	-1...1	10	30	18...32	31	**PG2899***
	Sealing cone G1 male	Display unit	-0.005...0.1	4	30	18...32	31	**PG2889***

* Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!

Accessories for level sensors LK, LT, LL, LI

Type	Description	Order no.
	Flange plate · 54-52X52 D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: aluminium anodised / nut: stainless steel / Spacer: Brass / rubber ring: FPM / sealing: Tesnit	**E43007**
	Flange plate · 65-80 D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: aluminium anodised / nut: stainless steel / Spacer: Brass / rubber ring: FPM	**E43006**
	Flange plate · 73-90 D16 · for capacitive level sensors LK, LI, LT, LL · according to DIN 24557 · Housing materials: aluminium anodised / nut: stainless steel / Spacer: Brass / rubber ring: FPM / sealing: NBR	**E43001**
	Mounting adapter · G ¾ D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM / sealing: Tesnit	**E43003**
	Mounting adapter · G ¾ D16 · D16 · for capacitive level sensors LI · Housing materials: Brass nickel-plated / TPE / sealing: FKM	**E43019**
	Mounting adapter · G ¾ D22 · D22 · for climatic tube LK / LI · Housing materials: stainless steel / NBR / Tesnit / Brass	**E43008**
	Mounting adapter · ¾" NPT D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM	**E43012**
	Mounting adapter · ¾" NPT D22 · D22 · for climatic tube LK / LI · Housing materials: stainless steel / NBR / Brass	**E43014**

You can find wiring diagrams and scale drawings from page 538

Type	Description	Order no.
	Mounting adapter · G 1 D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM / sealing: Tesnit	**E43004**
	Mounting adapter · G 1 D22 · D22 · for climatic tube LK / LI · Housing materials: stainless steel / NBR / Tesnit / Brass	**E43009**
	Mounting adapter · 1" NPT D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM	**E43013**
	Climatic tube · Length: 132 mm · for capacitive level sensors LK, LI · Housing materials: PPH / NBR	**E43103**
	Climatic tube · Length: 264 mm · for capacitive level sensors LK, LI · Housing materials: PPH / NBR	**E43100**
	Climatic tube · Length: 472 mm · for capacitive level sensors LK, LI · Housing materials: PPH / NBR	**E43101**
	Climatic tube · Length: 728 mm · for capacitive level sensors LK, LI · Housing materials: PPH / NBR	**E43102**
	Mounting clamp · Ø 16 mm · for capacitive level sensors LK, LI, LT, LL · Housing materials: PP	**E43000**
	Mounting set · Ø 16 mm · for capacitive level sensors LK, LI, LT, LL · Housing materials: PP / Metal parts: steel galvanised	**E43016**
	Welding adapter · Ø 50 D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM	**E43002**
	Protective cover · for LK / LL / LR / LT sensors · Housing materials: PP	**E43910**

Parameter-setting system

Type	Description	Order no.
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	**E30398**
	USB IO-Link master · for parameter setting and analysis of units · Supported communication protocols: IO-Link (4.8, 38.4 and 230 Kbits/s) · for operation with FDT framework software "ifm Container" or software "LINERECORDER SENSOR"	**E30390**

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0011**
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0012**

Certificates

Description	Order no.
Factory calibration certificate for pressure sensors and flow sensors · Measurement points, pressure sensors: 6 measurement points in 20% steps of the final value of the measuring range (acc. to ISO 9001) · Measurement points, flow sensors: 3 or 4 measurement points, distances defined depending on the measuring range (acc. to ISO 9001)	**ZC0004**
DAkkS calibration certificate for pressure sensors · Number of measuring points: 11-point DAkkS calibration · Measurement points: in 10 % steps of the measuring range (according to directive DAkkS-DKD-R 6-1) · Minimum measurement uncertainty [bar]: 20 µbar...140 mbar (depending on the reference pressure)	**ZC0005**
Recalibration for LDP oil particle monitor · LDP100	**ZC0069**

Accessories for LMT level sensors

Type	Description	Order no.
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 / DIN 32676 · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	**E33401**
	Clamp adapter · Clamp · 2" · ISO 2852 / DIN 32676 · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	**E33402**
	Welding adapter · G ½ - Ø 26.4 mm · Housing materials: High-grade stainless steel 316Ti / 1.4571	**E43375**
	Welding adapter · G ½ - Ø 29 mm · for pipes · Housing materials: stainless steel 316L / 1.4435	**E43301**
	Welding adapter · G ½ - Ø 30 mm · for tanks · Housing materials: stainless steel 316L / 1.4435	**E43300**
	Welding adapter · G ½ - Ø 35 mm · Housing materials: stainless steel 316L / 1.4404	**E30055**

You can find wiring diagrams and scale drawings from page 538

Type	Description	Order no.
	Welding adapter · G ½ - Ø 45 mm · Housing materials: stainless steel 316L / 1.4404	**E30056**
	Adapter · G ¾ · Housing materials: stainless steel 316L / 1.4435	**E43302**
	Adapter · G 1 · Housing materials: stainless steel 316L / 1.4435	**E43303**
	Adapter · ¾" NPT · Housing materials: stainless steel 316L / 1.4404	**E43313**
	Pipe fitting · G ½ · Hygienic pipe fitting · DN25 (1") · DIN 11851 · Housing materials: stainless steel 316L / 1.4435	**E43304**
	Pipe fitting · G ½ · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · Housing materials: stainless steel 316L / 1.4435	**E43305**
	Clamp adapter · G ½ · Varivent type F · DN25 (1"), D = 50 · Housing materials: stainless steel 316L / 1.4435	**E43306**
	Clamp adapter · G ½ · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · Housing materials: stainless steel 316L / 1.4435	**E43307**
	Welding mandrel · G ½ · carries away heat during welding · Housing materials: CW614N	**E43314**
	T-piece · G ½ I - DN25 · for sensors and adapters with process connection G ½ A · Housing materials: stainless steel	**E43316**
	T-piece · G ½ I - DN40 · for sensors and adapters with process connection G ½ A · Housing materials: stainless steel	**E43317**
	T-piece · G ½ I - DN50 · for sensors and adapters with process connection G ½ A · Housing materials: stainless steel	**E43318**
	Sealing ring · Ø 26.5 mm x Ø 21.3 mm x 1.5 mm · Housing materials: NBR fibre-reinforced	**E43376**
	Pipe fitting · SMS pipe fitting · DN25 · SMS · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	**E33430**
	sealing plug · G ½ · Housing materials: stainless steel 316L / 1.4435	**E43308**

Type	Description	Order no.
	Welding adapter · G ½ - Ø 30 mm · for tanks · with leakage port · with leakage port · Housing materials: stainless steel 316L / 1.4435	**E43309**
	Welding adapter · G ½ - Ø 29 mm · for pipes · with leakage port · with leakage port · Housing materials: stainless steel 316L / 1.4435	**E43310**
	Welding adapter · G ½ · with leakage port · Housing materials: stainless steel 316L / 1.4404	**E43315**
	Clamp adapter · G ½ · with leakage port · Clamp · 1-1.5" · ISO 2852 / DIN 32676 · with leakage port · Housing materials: stainless steel 316L / 1.4435	**E43311**
	Clamp adapter · G ½ · with leakage port · Clamp · 2" · ISO 2852 / DIN 32676 · with leakage port · Housing materials: stainless steel 316L / 1.4435	**E43312**

Accessories for LMC level sensors

Type	Description	Order no.
	Welding mandrel · G ½ male · for G ½ adapter · carries away heat during welding · For installation via back thread · for non-hygienic adapters only · Alignment aid for welding an adapter · Housing materials: CW614N	**E43382**
	Mounting set · Ø 26.9 mm · for type LMC4x0 · Housing materials: PP / Metal parts: steel galvanised	**E43384**
	cover · Ø 28 mm x 50 mm · Housing materials: PVC	**E43385**
	Adapter · G1 male · Suited for installation in existing tuning fork adapters · Housing materials: adapter: stainless steel / cover: PVC	**E43383**

Accessories for level sensors LR

Type	Description	Order no.
	Flange plate · 65-80 / G ¾ · for level sensors LR · Housing materials: flange: stainless steel	**E43202**
	Flange plate · 73-90 / G ¾ · for level sensors LR · according to DIN 24557 · Housing materials: flange: stainless steel / sealing: NBR	**E43201**
	Flange plate · 73-90 / ¾" NPT · for level sensors LR · according to DIN 24557 · Housing materials: flange: stainless steel / sealing: NBR	**E43206**

You can find wiring diagrams and scale drawings from page 538

Type	Description	Order no.
	Welding adapter · G ¾ - Ø 31.8 mm · Housing materials: High-grade stainless steel 316Ti / 1.4571	**E43379**
	Launching plate · G ¾ · for level sensors LR · Housing materials: High-grade stainless steel 316Ti / 1.4571	**E43380**
	Launching plate · ¾" NPT · for level sensors LR · Housing materials: base plate: High-grade stainless steel 316Ti / 1.4571 / adapter: stainless steel	**E43381**

LR probes for standard applications

Type	Description	Order no.
	Probe · Probe length: 150 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43225**
	Probe · Probe length: 210 mm · for level sensors LR · Housing materials: stainless steel	**E43351**
	Probe · Probe length: 240 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43203**
	Probe · Probe length: 265 mm · for level sensors LR · Housing materials: stainless steel	**E43352**
	Probe · Probe length: 300 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43226**
	Probe · Probe length: 450 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43204**
	Probe · Probe length: 500 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43227**
	Probe · Probe length: 700 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43205**
	Probe · Probe length: 800 mm · for level sensors LR · Housing materials: stainless steel	**E43337**
	Probe · Probe length: 1000 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43207**
	Probe · Probe length: 1200 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43208**

Type	Description	Order no.
	Probe · Probe length: 1400 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43209**
	Probe · Probe length: 1600 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	**E43210**
	Probe · Probe length: 2000 mm · for level sensors LR · Housing materials: stainless steel	**E43353**

LR probes for hygienic areas

Type	Description	Order no.
	Probe · Probe length: 150 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	**E43345**
	Probe · Probe length: 300 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	**E43346**
	Probe · Probe length: 500 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	**E43340**
	Probe · Probe length: 700 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	**E43347**
	Probe · Probe length: 1000 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	**E43341**
	Probe · Probe length: 1500 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	**E43348**
	Probe · Probe length: 2000 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	**E43342**

LR coaxial pipes

Type	Description	Order no.
	Coaxial pipe · Length: 150 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit	**E43230**
	Coaxial pipe · Length: 210 mm · G ¾ · for level sensors LR · Housing materials: Coaxial pipe: 304 / 1.4301 / fixing bracket: 301 / 1.4310 / centring piece: PP GF30 / Seal: aramid 20 / NBR80:	**E43354**

You can find wiring diagrams and scale drawings from page 538

Type	Description	Order no.
	Coaxial pipe · Length: 240 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	**E43211**
	Coaxial pipe · Length: 265 mm · G ¾ · for level sensors LR · Housing materials: Coaxial pipe: 304 / 1.4301 / fixing bracket: 301 / 1.4310 / centring piece: PP GF30 / Seal: aramid 20 / NBR80:	**E43355**
	Coaxial pipe · Length: 300 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: NBR / centring piece: PP / fixing bracket: stainless steel	**E43228**
	Coaxial pipe · Length: 450 mm · G ¾ · for level sensors LR · Housing materials: 304 / 1.4301 / sealing: Tesnit / centring piece: PPS reinforced glass-fibre / fixing bracket: 301 / 1.4310	**E43212**
	Coaxial pipe · Length: 500 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	**E43229**
	Coaxial pipe · Length: 700 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	**E43213**
	Coaxial pipe · Length: 800 mm · G ¾ · for level sensors LR · Housing materials: Coaxial pipe: 304 / 1.4301 / fixing bracket: 301 / 1.4310 / centring piece: PP GF30 / Seal: aramid 20 / NBR80:	**E43336**
	Coaxial pipe · Length: 1000 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	**E43214**
	Coaxial pipe · Length: 1200 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	**E43215**
	Coaxial pipe · Length: 1400 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	**E43216**
	Coaxial pipe · Length: 1600 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	**E43217**
	Coaxial pipe · Length: 2000 mm · G ¾ · for level sensors LR205X · Housing materials: Coaxial pipe: 304 / 1.4301 / fixing bracket: 301 / 1.4310 / centring piece: PP GF30 / Seal: aramid 20 / NBR80:	**E43356**
	Coaxial pipe · Length: 240 mm · ¾" NPT · for level sensors LR · Housing materials: 304 / 1.4301 / centring piece: PPS fibre-reinforced / fixing bracket: 301 / 1.4310	**E43377**
	Coaxial pipe · Length: 450 mm · ¾" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	**E43218**
	Coaxial pipe · Length: 700 mm · ¾" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	**E43219**
	Coaxial pipe · Length: 1000 mm · ¾" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	**E43220**

Type	Description	Order no.
	Coaxial pipe · Length: 1200 mm · ¾" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	**E43223**
	Coaxial pipe · Length: 1400 mm · ¾" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	**E43224**
	Coaxial pipe · Length: 1600 mm · ¾" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	**E43221**
	Coaxial pipe · Length: 2000 mm · ¾" NPT · for level sensors LR · Housing materials: 304 / 1.4301 / centring piece: PPS fibre-reinforced / fixing bracket: 301 / 1.4310	**E43378**
	Coaxial pipe · Length: 700 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: NBR / centring piece: PP / fixing bracket: stainless steel	**E43333**
	Coaxial pipe · Length: 1200 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	**E43334**
	Coaxial pipe · Length: 450 mm · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	**E43320**

Hygienic adapters

Type	Description	Order no.
	Welding adapter · Ø 50 mm · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E30122**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33212**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33213**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33712**
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33713**
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33201**
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33701**

You can find wiring diagrams and scale drawings from page 538

Accessories for level sensors PA, PG, PI, PN, PS, PY

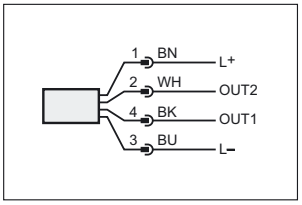
Type	Description	Order no.
	Cable clamp fastener · for submersible pressure transmitter PS3 · Housing materials: steel / plastics	**E30399**
	Filter element · for submersible pressure transmitter PS3 · for fixing on the capillary tube	**E30400**
	Splitter box · with ventilation and terminal block · for submersible pressure transmitter PS3 · Housing materials: plastics	**E30401**
	Additional weight · for submersible pressure transmitter PS3 · Housing materials: stainless steel 316Ti / 1.4571	**E30402**

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GY	grey
GN	green

1



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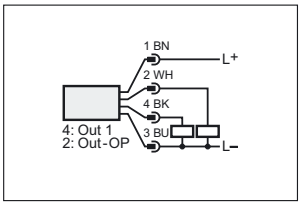

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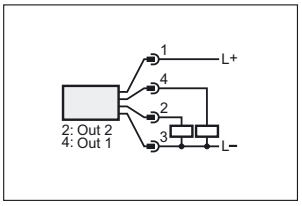

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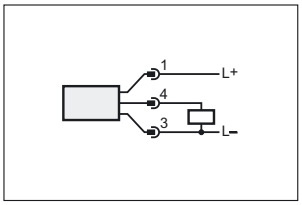

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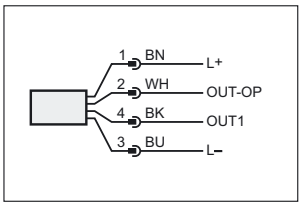

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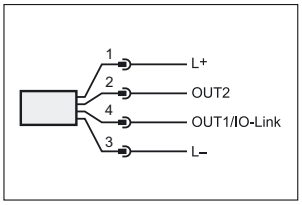

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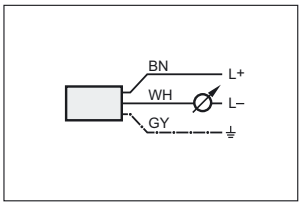

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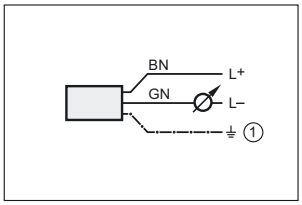
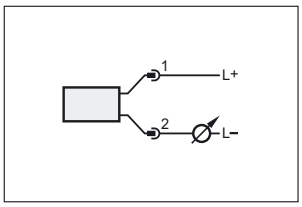


1: screen (connected to the housing)

9



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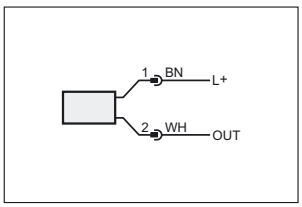
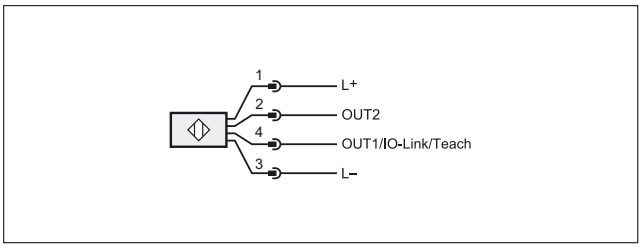


Wiring diagrams

11



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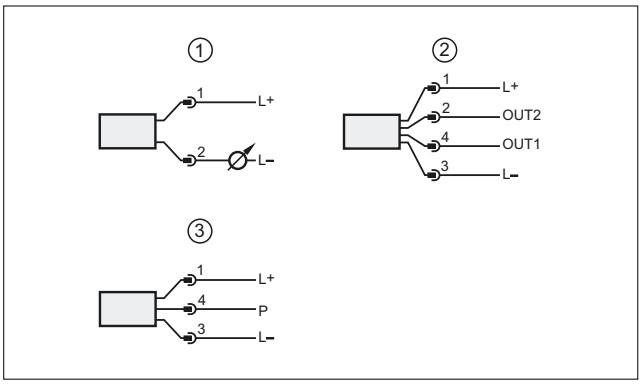
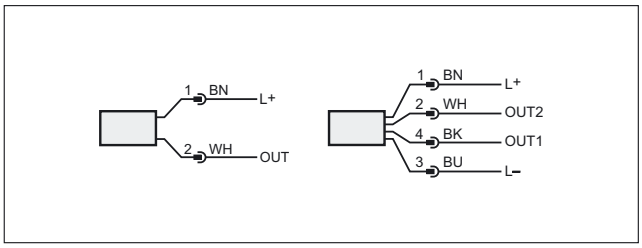


1: connection for 2-wire operation, 2: connection for 3-wire operation, 3: connection for IO-Link parameter setting (P = communication via IO-Link)

13



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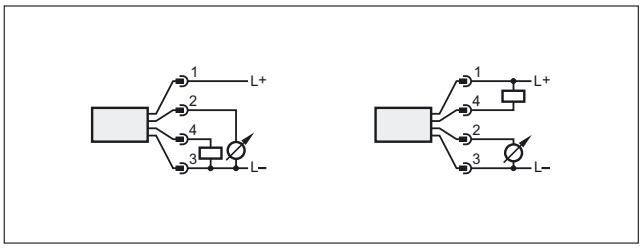

Scale drawings / drawing no. – CAD download: www.ifm.com

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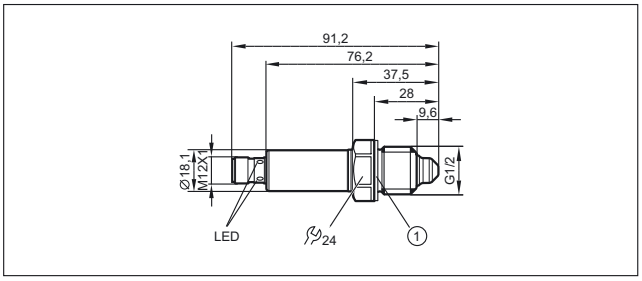

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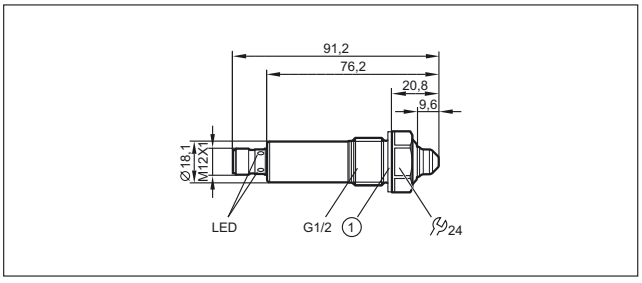

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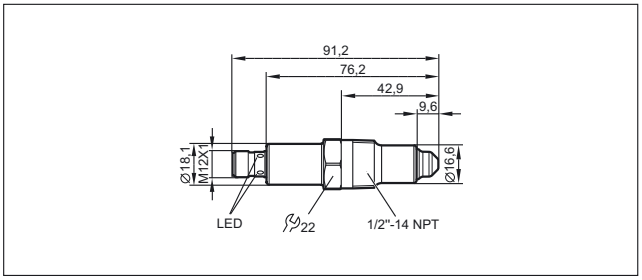

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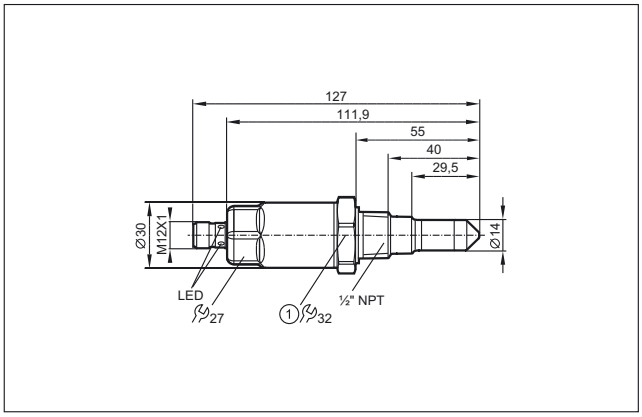

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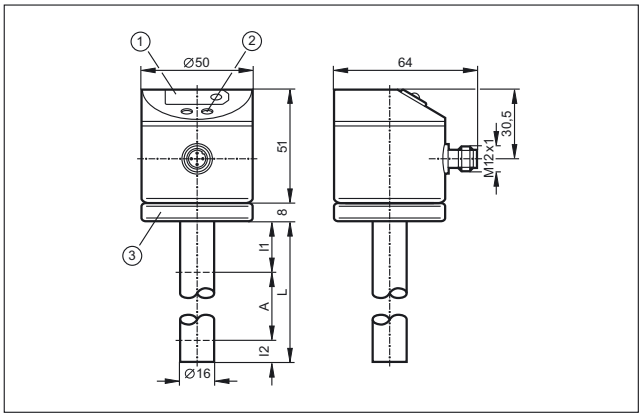
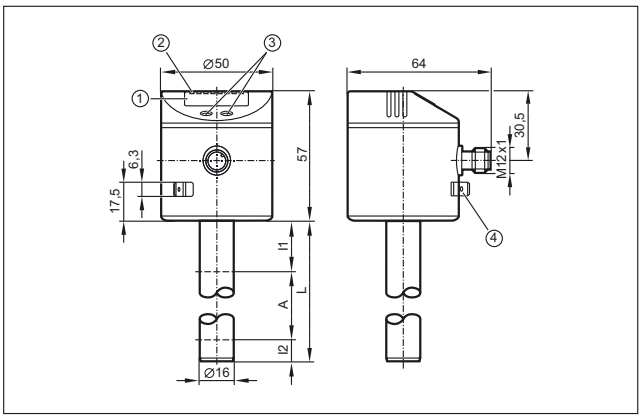


1: 7-segment LED display, 2: Programming buttons, 3: Housing connection with cable lug for cable 1.5 - 2.5 mm²

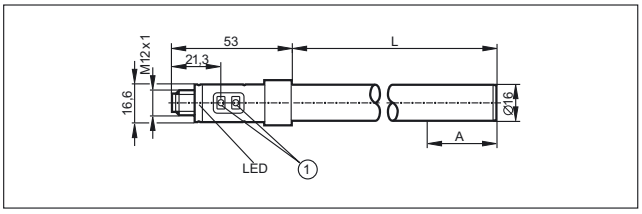
Scale drawings / drawing no. – CAD download: www.ifm.com

6



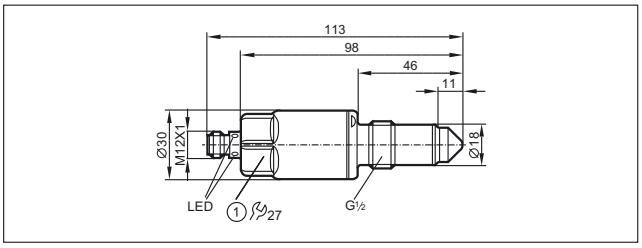
1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming buttons, 4: Housing connection (flat-pin connector 6.3 mm following DIN 46244)

7



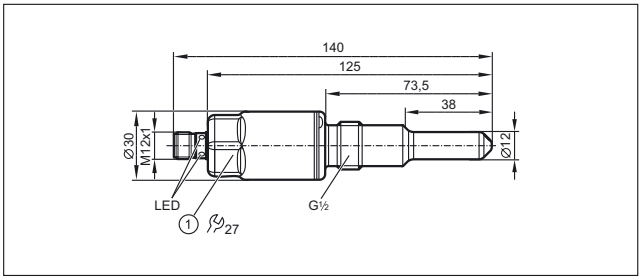
1: Programming buttons

8



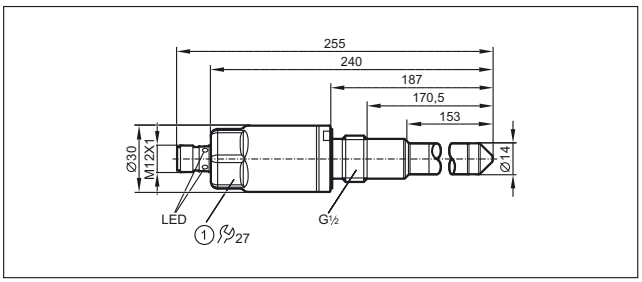
1: tightening torque 20...25 Nm

9



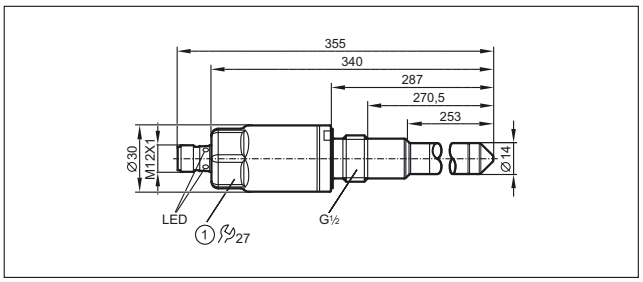
1: tightening torque 20...25 Nm

10



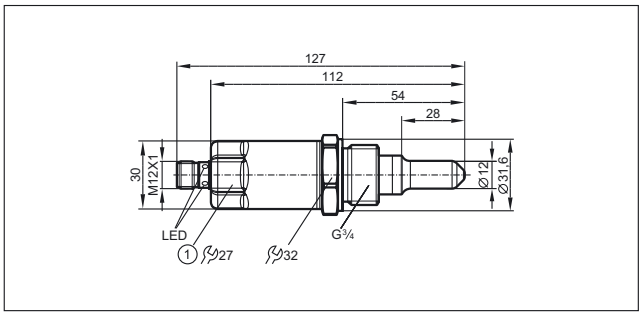
1: tightening torque 20...25 Nm

11



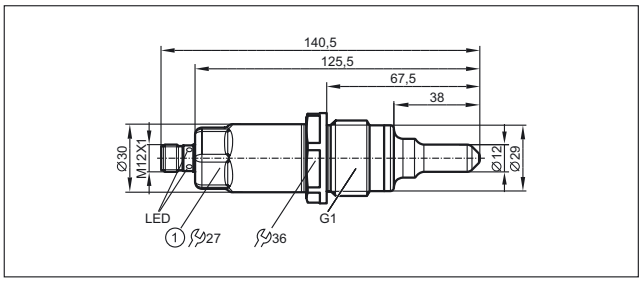
1: tightening torque 20...25 Nm

12



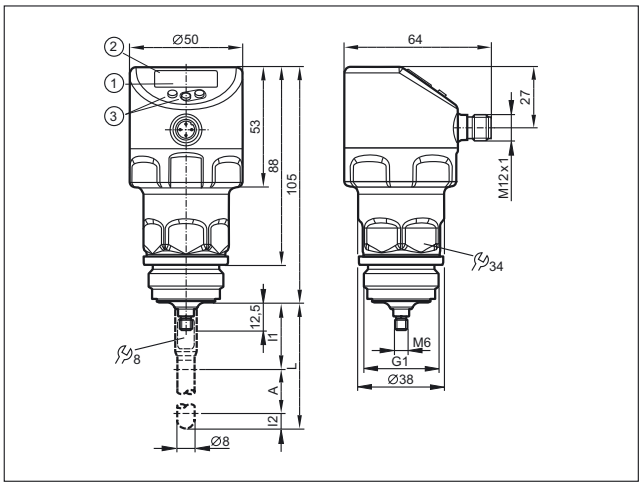
1: tightening torque 35 Nm

13



1: tightening torque 35 Nm

14



Scale drawings / drawing no. – CAD download: www.ifm.com

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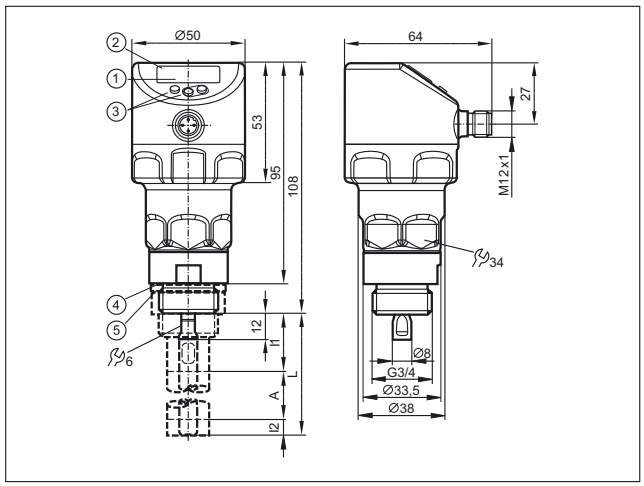

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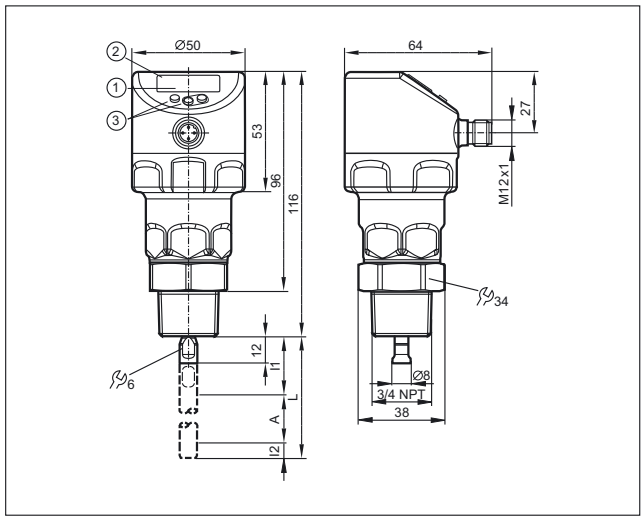

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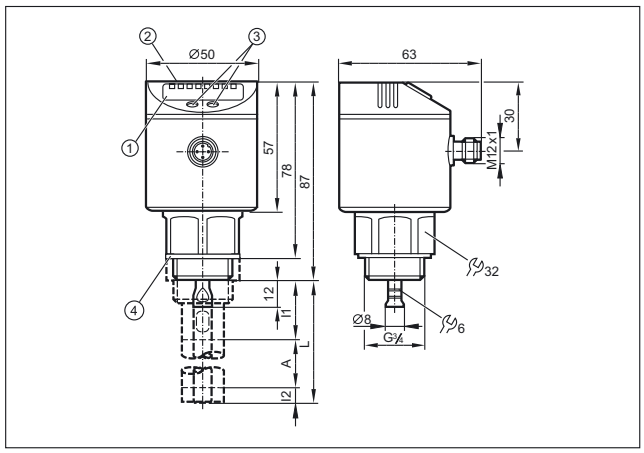
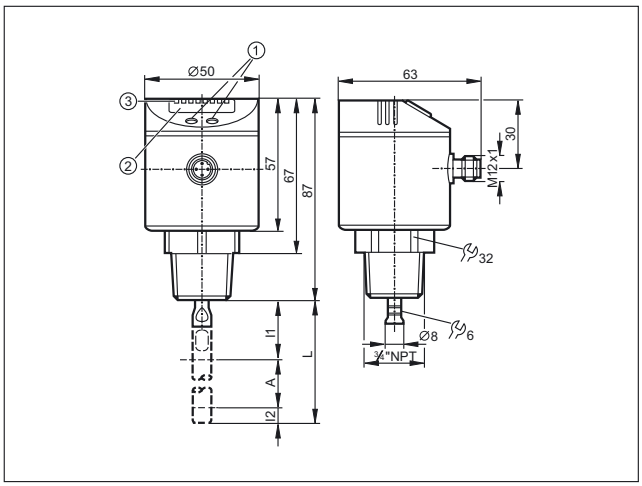


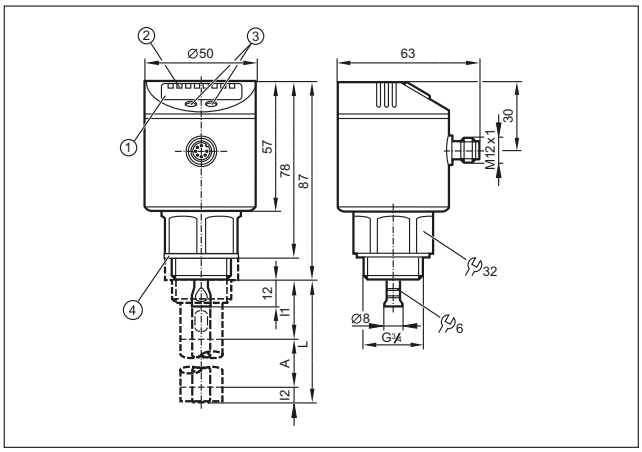
1: 4-digit alphanumeric display, 2: LEDs (display unit / switching status), 3: Programming buttons, 4: sealing, A: Active range, I1 / I2: Inactive ranges

18



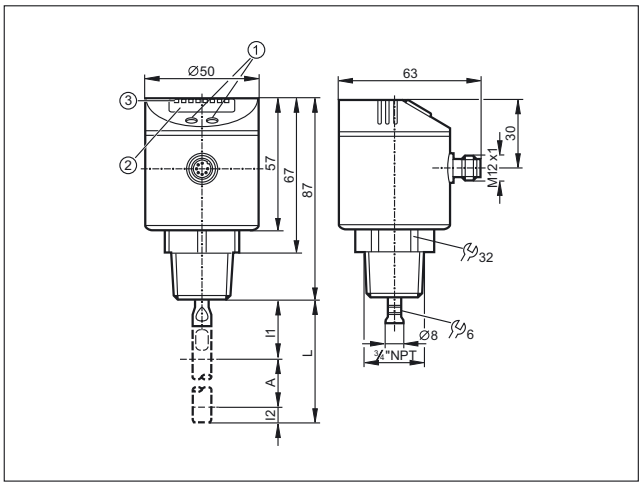
1: 4-digit alphanumeric display, 2: LEDs (display unit / switching status), 3: Programming buttons, A: Active range, I1 / I2: Inactive ranges

19



1: 4-digit alphanumeric display, 2: LEDs (display unit / switching status), 3: Programming buttons, 4: sealing, A: Active range, I1 / I2: Inactive ranges

20



Scale drawings / drawing no. – CAD download: www.ifm.com

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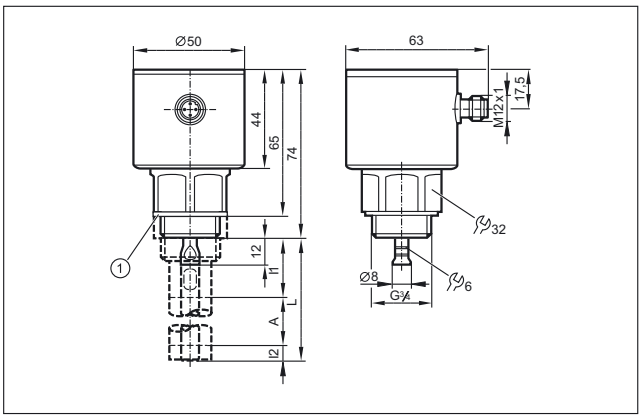

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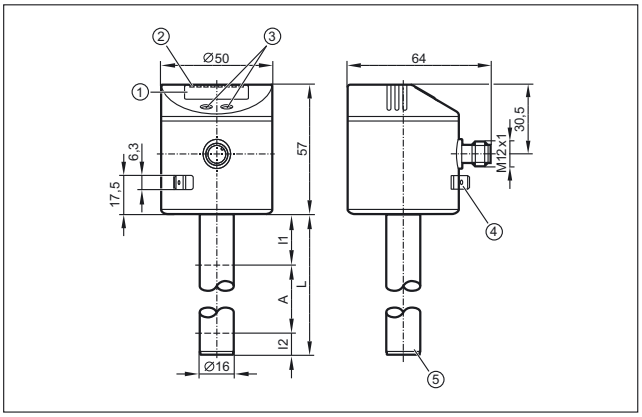
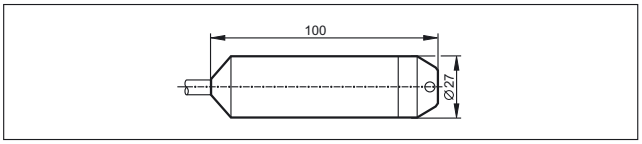


1: 4-digit alphanumeric display, 2: LEDs, 3: Programming buttons, 4: Housing connection (flat-pin connector 6.3 mm following DIN 46244), 5: Position of the temperature measuring element

23



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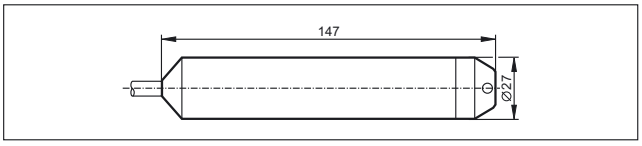

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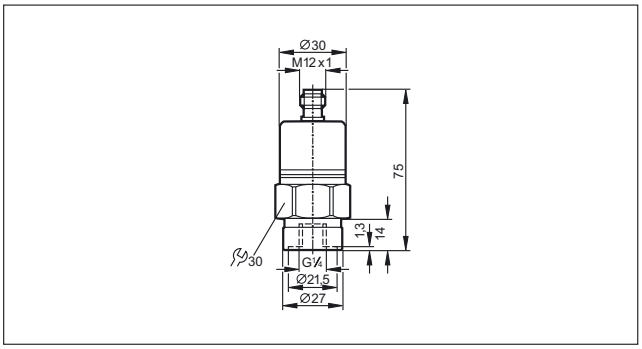

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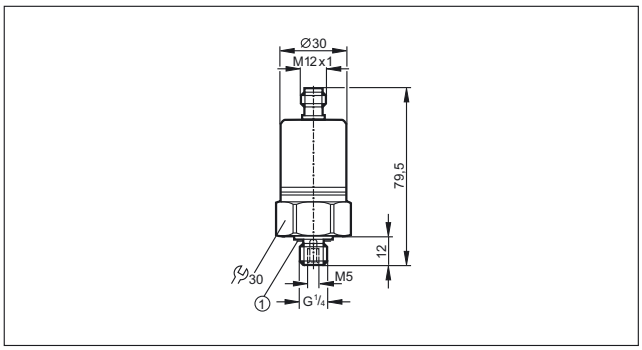
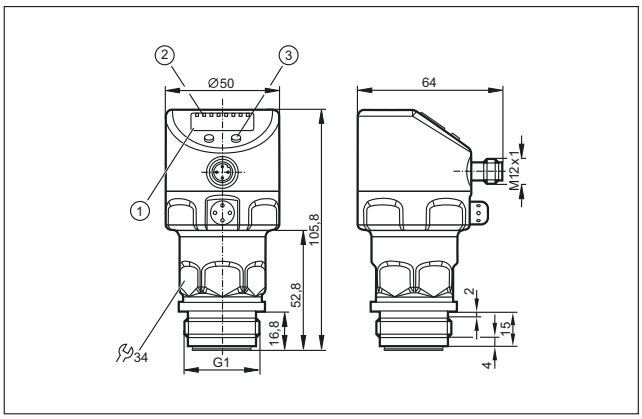


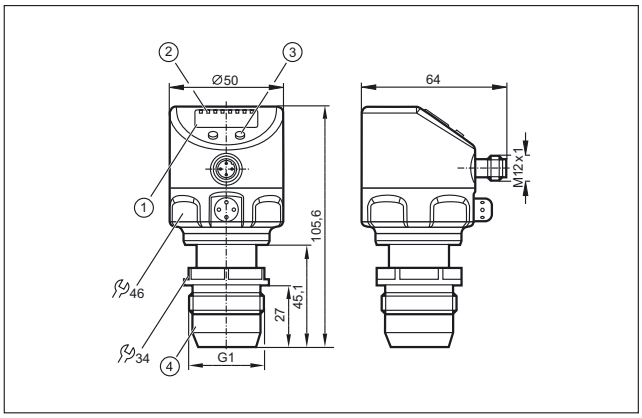
1: sealing FPM / DIN 3869-14

27



1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

28



Scale drawings / drawing no. – CAD download: www.ifm.com

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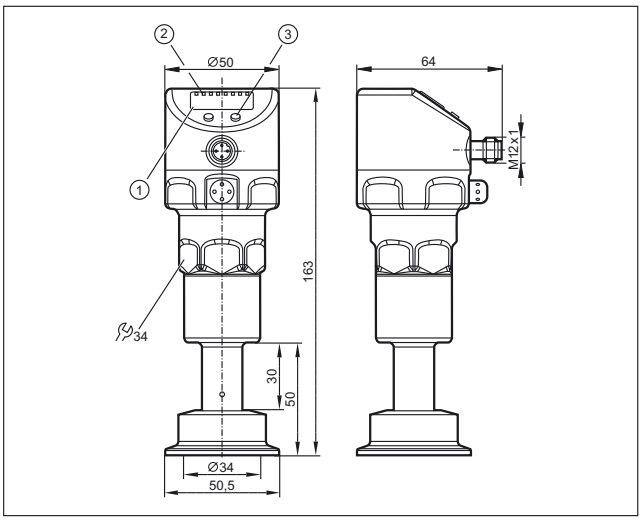
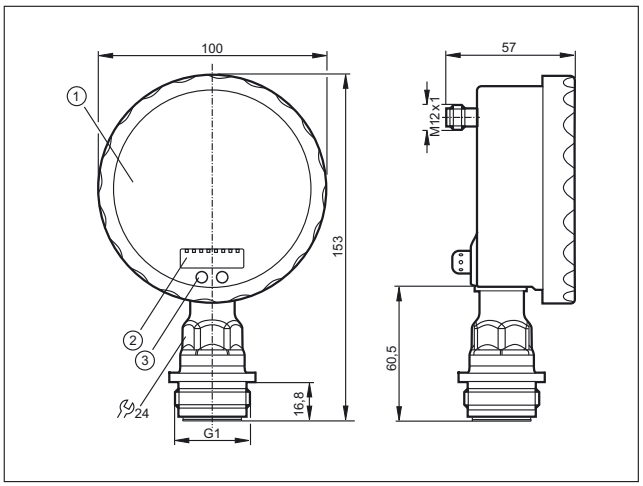


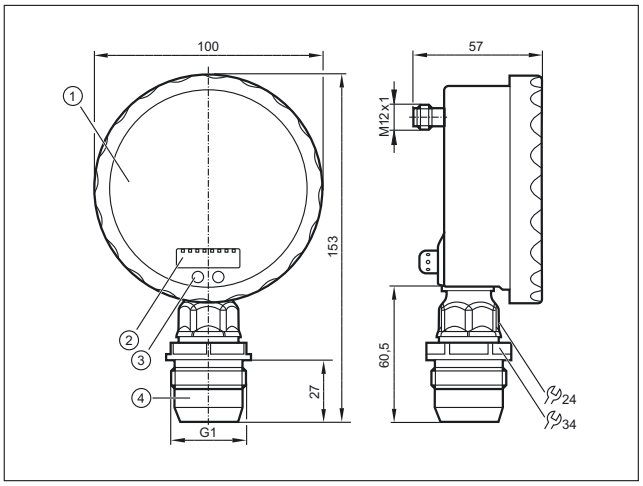
1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

30



1: Analogue display, 2: 4-digit alphanumeric display, 3: Programming button

31



1: Analogue display, 2: 4-digit alphanumeric display, 3: Touch button (programming button), 4: Sealing cone G1 male, Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!

Versatile temperature sensors – for all kinds of applications

Temperature sensors

Temperature sensors in contact with the medium for industrial and hygienic applications

Modular concept – tailor-made for all kinds of applications

Various fittings available for process connections

Robust mechanics with high vibration and shock resistance

Non-contact infrared temperature sensors for hot objects

IO-Link

FDA

3A

EHEDG

IP 67
IP 68
IP 69 K

EC 1935/
2004

Direct temperature sensors

The temperature sensors of ifm are based on a PT100 or PT1000 resistor. The measured temperature value corresponds to a change in resistance and is converted into an electrical analogue signal. A microprocessor controls the evaluation of the electrical signal. Depending on the product version, the current system temperature is indicated via LED display and provided as a switching signal, analogue signal or via IO-Link.

Indirect temperature measurement

In most cases the infrared temperature measurement is used where temperatures can only be measured indirectly, that means without contact. The reason for this can, for example, a high object temperature. The sensors detect the infrared radiation emitted by the objects and convert them into an output signal.

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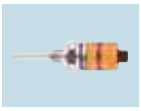
TK sensors with mechanical setting and switching outputs

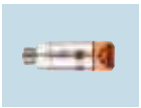
Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · Output function ⎍+⎍ · DC PNP · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	-20...140 / -4...284	G 1/4	50	9.6...32	1 / 3	1	**TK6110**
	-20...140 / -4...284	1/4" NPT	50	9.6...32	1 / 3	2	**TK6310**
M12 connector · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 2 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	-25...140 / -13...284	G 1/4	50	9.6...32	1 / 3	1	**TK7110**
M12 connector · Output function 1 x normally open / 1 x normally closed · DC PNP · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	-25...140 / -13...284	G 1/2	250	9.6...32	1 / 3	3	**TK7460**

Compact temperature sensors with display, IO-Link

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 mA / 0...10 V, scaleable) · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	M18 x 1.5	45	18...32	1 / 3	4	**TN2511**
M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	M18 x 1.5	45	18...32	1 / 3	4	**TN7511**
M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V) · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	G 1/2	30	18...32	1 / 3	5	**TN2405**
	-50...150 / -58...302	G 1/2	50	18...32	1 / 3	6	**TN2415**
	-50...150 / -58...302	G 1/2	100	18...32	1 / 3	7	**TN2435**
	-50...150 / -58...302	G 1/2	150	18...32	1 / 3	7	**TN2445**

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V) · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	G 1/4	25	18...32	1 / 3	8	**TN2105**
	-50...150 / -58...302	G 1/4	50	18...32	1 / 3	9	**TN2115**

Control monitors for temperature sensors, IO-Link

Type	Measuring range [°C]	Process connection	Display	U_b [V]	Current consumption [mA]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 mA / 0...10 V, scalable) · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	-100...600 / -148...1112	G ½ A	Display unit	18...32	50	250	10	**TR2439**
M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	-100...600 / -148...1112	G ½ A	Display unit	18...32	50	250	10	**TR7439**

Modular temperature transmitters

Type	Factory setting [°C / °F]	Process connection	U_b [V]	Ambient temperature [°C]	Measuring element	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...300 / -58...572	M12	20...32	-25...70	for Pt100 and Pt1000 measuring elements	11	**TP3232**
	-50...300 / -58...572	M12	20...32	-25...70	for Pt100 and Pt1000 measuring elements	11	**TP3237**
	-50...300 / -58...572	M12	20...32	-25...70	for Pt100 and Pt1000 measuring elements	11	**TP3231**
M12 connector · Output function 0...10 V analogue · DC · Wiring diagram no. 7 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...300 / -58...572	M12	18...32	-25...70	for Pt100 and Pt1000 measuring elements	11	**TP9237**

You can find wiring diagrams and scale drawings from page 571

Pt1000 probe sensors for industrial applications

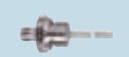
Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Wiring diagram no. 4							
	-40...150	6	160	1 x Pt 1000	1 / 3	12	**TT1250**
	-40...150	6	260	1 x Pt 1000	1 / 3	12	**TT2250**
	-40...150	6	360	1 x Pt 1000	1 / 3	12	**TT3250**
	-40...150	10	160	1 x Pt 1000	1 / 3	13	**TT1050**
	-40...150	10	260	1 x Pt 1000	1 / 3	13	**TT2050**
	-40...150	10	360	1 x Pt 1000	1 / 3	13	**TT3050**
	-40...150	10	560	1 x Pt 1000	1 / 3	13	**TT5050**

Pt100 probe sensors for industrial applications

Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	6	70	1 x Pt 100	1 / 3	14	**TT7281**
	-40...150	6	100	1 x Pt 100	1 / 3	14	**TT0281**
	-40...150	6	150	1 x Pt 100	1 / 3	14	**TT1281**
	-40...150	6	250	1 x Pt 100	1 / 3	14	**TT2281**
	-40...150	6	200	1 x Pt 100	1 / 3	14	**TT4281**
	-40...150	6	300	1 x Pt 100	1 / 3	14	**TT6281**

Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	6	350	1 x Pt 100	1 / 3	14	**TT3281**
	-40...150	6	50	1 x Pt 100	1 / 3	14	**TT9281**
	-40...150	10	160	1 x Pt 100	1 / 3	13	**TT1081**
	-40...150	10	260	1 x Pt 100	1 / 3	13	**TT2081**
	-40...150	10	360	1 x Pt 100	1 / 3	13	**TT3081**
	-40...150	10	560	1 x Pt 100	1 / 3	13	**TT5081**
	-40...125	8.2	60	1 x Pt 100	1 / 3	15	**TM9950**

Screw-in sensors for industrial applications

Type	Measuring range [°C]	Process connection	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	G ¼	25	1 x Pt 100	1 / 3	16	**TM4101**
	-40...150	G ¼	25	1 x Pt 1000	1 / 3	16	**TM5101**
	-40...150	G ½	50	1 x Pt 100	1 / 3	17	**TM4411**
	-40...150	G ½	50	1 x Pt 1000	1 / 3	17	**TM5411**
	-40...150	G ½	100	1 x Pt 100	1 / 3	17	**TM4431**
	-40...150	G ½	150	1 x Pt 100	1 / 3	17	**TM4441**
	-40...150	G ½	250	1 x Pt 100	1 / 3	17	**TM4461**

You can find wiring diagrams and scale drawings from page 571

Cable sensors for industrial applications

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
Cable 4 m · high-grade stainless steel							
	-30...180	M5	silicone cable	1 x Pt 100	3 / 8	18	**TS4759**
Cable with connector 0.15 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...250	Ø 6 mm	PTFE cable	1 x Pt 1000	11 / 37	19	**TS9256**
Cable with connector 0.5 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...90	M5 / L = 26	PUR cable	1 x Pt 100	3 / 8	20	**TS9789**
Cable with connector 2 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...90	Ø 6 mm / L = 45 mm	PUR cable	1 x Pt 100	3 / 10	21	**TS2289**
	-40...90	Ø 6 mm / L = 45 mm	PUR cable	1 x Pt 1000	3 / 10	21	**TS2269**
	-40...90	Ø 10 mm	PUR cable	1 x Pt 100	6 / 25	22	**TS2089**
	-40...90	Ø 10 mm	PUR cable	1 x Pt 1000	6 / 25	22	**TS2069**
	-50...250	Ø 6 mm	PTFE cable	1 x Pt 100	11 / 37	19	**TS2256**
	-50...250	Ø 10 mm	PTFE cable	1 x Pt 100	12 / 39	23	**TS2056**
	-40...90	M5 / L = 26	PUR cable	1 x Pt 100	3 / 8	20	**TS2789**
	-40...90	M6 / L = 26	PUR cable	1 x Pt 100	3 / 9	24	**TS2689**
	-30...180	M5 / L = 25.7	silicone cable	1 x Pt 100	3 / 8	25	**TS2759**
	-30...180	M6	silicone cable	1 x Pt 100	3 / 8	26	**TS2659**

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
Cable with connector 2.5 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...90	Ø 6 mm / L = 45 mm	PUR cable	1 x Pt 100	3 / 10	21	**TS9289**
Cable with connector 5 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...90	Ø 10 mm	PUR cable	1 x Pt 100	6 / 25	22	**TS5089**
	-40...90	Ø 6 mm / L = 45 mm	PUR cable	1 x Pt 100	3 / 10	21	**TS5289**
Cable with connector 10 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-30...180	M5 / L = 25.7	silicone cable	1 x Pt 100	3 / 8	25	**TS0759**
Cable with connector 2 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-100...600	Ø 6 mm	PTFE cable	1 x Pt 100	12 / 34	27	**TS2451**
	-100...600	Ø 6 mm	PTFE cable	1 x Pt 100	12 / 34	27	**TS2452**
	-100...600	Ø 6 mm	PTFE cable	1 x Pt 100	12 / 34	27	**TS2453**
	-100...600	Ø 6 mm	PTFE cable	1 x Pt 100	12 / 34	27	**TS2454**

Cable sensors with bolt-on sensor for industrial applications

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
Cable with connector 2 m · stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...90	12	PUR cable	1 x Pt 100	9 / 15	28	**TS2229**
Cable 2 m · stainless steel							
	-40...90	12	PUR cable	1 x Pt 100	12 / 39	29	**TS2239**

You can find wiring diagrams and scale drawings from page 571

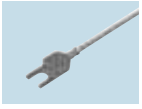
Screw-in sensor with ATEX approval 3D/3G

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
Cable 2 m · high-grade stainless steel · DC							
	-20...115	M5	silicone cable	1 x Pt 100	8 / 20	30	**TS285A**

Cable sensors with ATEX approval 3D / 3G

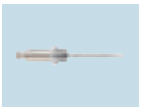
Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
Cable 3 m · high-grade stainless steel							
	-20...80	Ø 5 mm / L = 40	silicone cable	1 x Pt 100	4 / 10	31	**TS325A**

Cable sensors with bolt-on sensors with ATEX approval 3D / 3G

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
Cable 5 m · high-grade stainless steel							
	-20...80	10	silicone cable	1 x Pt 100	13 / 39	32	**TS522A**
	-20...80	18	silicone cable	1 x Pt 1000	18 / 42	33	**TS502A**

Temperature transmitters for standard applications, IO-Link

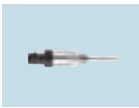
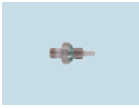
Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -	G ½	30	18...32	1 / 3	34	**TA2405**
	-50...150 / -	G ½	50	18...32	1 / 3	34	**TA2415**
	0...100 / -	G ½	50	18...32	1 / 3	34	**TA2417**

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -	G ½	100	18...32	1 / 3	34	**TA2435**
	0...100 / -	G ½	100	18...32	1 / 3	34	**TA2437**
	-50...150 / -	G ½	150	18...32	1 / 3	34	**TA2445**
	0...100 / -	G ½	150	18...32	1 / 3	34	**TA2447**
	-50...150 / -	G ¼	25	18...32	1 / 3	35	**TA2105**
	-50...150 / -	G ¼	50	18...32	1 / 3	35	**TA2115**
	-50...150 / -	G ¼	100	18...32	1 / 3	35	**TA2135**
	-50...150 / -	G ¼	150	18...32	1 / 3	35	**TA2145**

IO-Link temperature transmitters

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	36	**TA3105**
	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	36	**TA3115**
	-50...150 / -58...302	G ¼ A	200	10...30	1 / 3	36	**TA3155**
DEUTSCH connector · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	37	**TA4105**

You can find wiring diagrams and scale drawings from page 571

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
DEUTSCH connector · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	37	**TA4115**
AMP plug · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	38	**TA5105**
	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	38	**TA5115**
M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	36	**TU3105**
DEUTSCH connector · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	37	**TU4105**
AMP plug · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	38	**TU5105**
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150 / -40...302	G ¼	25	–	1 / 3	16	**TM5101**
DEUTSCH connector · high-grade stainless steel							
	-40...150 / -40...302	G 1/4	25	–	1 / 3	39	**TM6101**

Probe sensors for hygienic and wet areas

Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	6	50	1 x Pt 100	1 / 3	14	**TT9291**
	-40...150	6	100	1 x Pt 100	1 / 3	14	**TT0291**

Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	6	150	1 x Pt 100	1 / 3	14	**TT1291**
	-40...150	6	250	1 x Pt 100	1 / 3	14	**TT2291**
	-40...150	6	350	1 x Pt 100	1 / 3	14	**TT3291**

Sensors with process connection for hygienic and wet areas

Type	Measuring range [°C]	Process connection	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	Clamp 1-1.5" ISO 2852	30	1 x Pt 100	1 / 3	40	**TM4801**
	-40...150	Clamp 1-1.5" ISO 2852	50	1 x Pt 100	1 / 3	40	**TM4811**
	-40...150	Clamp 1-1.5" ISO 2852	100	1 x Pt 100	1 / 3	40	**TM4831**
	-40...150	Clamp 1-1.5" ISO 2852	150	1 x Pt 100	1 / 3	40	**TM4841**
	-40...150	Clamp 2"	30	1 x Pt 100	1 / 3	41	**TM4901**
	-40...150	Clamp 2"	50	1 x Pt 100	1 / 3	41	**TM4911**
	-40...150	Clamp 2"	100	1 x Pt 100	1 / 3	41	**TM4931**
	-40...150	Clamp 2"	150	1 x Pt 100	1 / 3	41	**TM4941**
	-40...150	G½ with sealing cone	20	1 x Pt 100	1 / 3	42	**TM4591**
	-40...150	G½ with sealing cone	30	1 x Pt 100	1 / 3	42	**TM4501**
	-40...150	G½ with sealing cone	50	1 x Pt 100	1 / 3	42	**TM4511**

You can find wiring diagrams and scale drawings from page 571

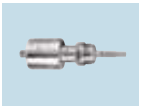
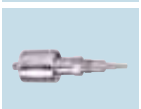
Type	Measuring range [°C]	Process connection	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	G½ with sealing cone	100	1 x Pt 100	1 / 3	42	**TM4531**
	-40...150	G½ with sealing cone	150	1 x Pt 100	1 / 3	42	**TM4541**
	-50...140	G½ with sealing cone	–	1 x Pt 100	10 / 40	43	**TM4599**

Temperature transmitters for hygienic and wet areas, IO-Link

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · DC · Connector groups 148, 153, 184, 188, 193							
	-50...200 / -	3/4" clamp (ISO 2852)	25	18...32	< 0.5 / < 2.0	44	**TA2002**
	-50...200 / -	3/4" clamp (ISO 2852)	60	18...32	< 0.5 / < 2.0	44	**TA2012**
	-50...200 / -	1.5" clamp (ISO 2852)	30	18...32	< 0.5 / < 2	45	**TA2802**
	-50...200 / -	1.5" clamp (ISO 2852)	50	18...32	< 0.5 / < 2	45	**TA2812**
	-50...200 / -	1.5" clamp (ISO 2852)	100	18...32	< 0.5 / < 2	45	**TA2832**
	-50...200 / -	1.5" clamp (ISO 2852)	150	18...32	< 0.5 / < 2	45	**TA2842**
	-50...200 / -	G½ with sealing cone	30	18...32	< 0.5 / < 2	46	**TA2502**
	-50...200 / -	G½ with sealing cone	50	18...32	< 0.5 / < 2	46	**TA2512**
	-50...200 / -	G½ with sealing cone	100	18...32	< 0.5 / < 2	46	**TA2532**
	-50...200 / -	G½ with sealing cone	150	18...32	< 0.5 / < 2	46	**TA2542**

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · DC							
	0...100 / -	G½ with sealing cone	–	18...32	10 / 40	47	**TA3597**
M12 connector · high-grade stainless steel · DC · Connector groups 148, 153, 184, 188, 193							
	-50...200 / -	Ø 6 mm	50	18...32	< 0.5 / < 2	48	**TA2212**
	-50...200 / -	Ø 6 mm	100	18...32	< 0.5 / < 2	48	**TA2232**
	-50...200 / -	Ø 6 mm	150	18...32	< 0.5 / < 2	48	**TA2242**

Self-monitoring temperature transmitters for hygienic and wet areas, IO-Link

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · Output function normally open / normally closed / heartbeat programmable, 4...20 mA analogue · DC PNP/NPN · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	0...150 / 32...302	Aseptoflex Vario	50	18...32	3 / 6	49	**TAD081**
	0...150 / 32...302	Aseptoflex Vario	87.5	18...32	3 / 6	50	**TAD181**
	0...150 / 32...302	Aseptoflex Vario	33	18...32	3 / 6	51	**TAD981**
	0...150 / 32...302	G ½ A	50	18...32	3 / 6	52	**TAD091**
	0...150 / 32...302	G ½ A	87.5	18...32	3 / 6	53	**TAD191**
	0...150 / 32...302	G ½ A	33	18...32	3 / 6	54	**TAD991**

You can find wiring diagrams and scale drawings from page 571

Temperature transmitter with display for hygienic and wet areas, IO-Link

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	G½ with sealing cone	30	18...32	1 / 3	55	**TD2507**
	-50...150 / -58...302	G½ with sealing cone	50	18...32	1 / 3	55	**TD2517**
	-50...150 / -58...302	G½ with sealing cone	100	18...32	1 / 3	55	**TD2537**
	-50...150 / -58...302	G½ with sealing cone	150	18...32	1 / 3	55	**TD2547**
	-50...150 / -58...302	G½ with sealing cone	30	18...32	1 / 3	55	**TD2501**
	-50...150 / -58...302	G½ with sealing cone	50	18...32	1 / 3	55	**TD2511**
	-50...150 / -58...302	G½ with sealing cone	100	18...32	1 / 3	55	**TD2531**
	-50...150 / -58...302	G½ with sealing cone	150	18...32	1 / 3	55	**TD2541**
	-50...150 / -58...302	1.5" clamp (ISO 2852)	30	18...32	1 / 3	56	**TD2807**
	-50...150 / -58...302	1.5" clamp (ISO 2852)	50	18...32	1 / 3	56	**TD2817**
	-50...150 / -58...302	1.5" clamp (ISO 2852)	100	18...32	1 / 3	56	**TD2837**
	-50...150 / -58...302	1.5" clamp (ISO 2852)	150	18...32	1 / 3	56	**TD2847**
	-50...150 / -58...302	1.5" clamp (ISO 2852)	30	18...32	1 / 3	56	**TD2801**
	-50...150 / -58...302	1.5" clamp (ISO 2852)	50	18...32	1 / 3	56	**TD2811**
	-50...150 / -58...302	1.5" clamp (ISO 2852)	100	18...32	1 / 3	56	**TD2831**
	-50...150 / -58...302	1.5" clamp (ISO 2852)	150	18...32	1 / 3	56	**TD2841**

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	2" clamp (ISO 2852)	30	18...32	1 / 3	57	**TD2907**
	-50...150 / -58...302	2" clamp (ISO 2852)	50	18...32	1 / 3	57	**TD2917**
	-50...150 / -58...302	2" clamp (ISO 2852)	100	18...32	1 / 3	57	**TD2937**
	-50...150 / -58...302	2" clamp (ISO 2852)	150	18...32	1 / 3	57	**TD2947**
	-50...150 / -58...302	2" clamp (ISO 2852)	30	18...32	1 / 3	57	**TD2901**
	-50...150 / -58...302	2" clamp (ISO 2852)	50	18...32	1 / 3	57	**TD2911**
	-50...150 / -58...302	2" clamp (ISO 2852)	100	18...32	1 / 3	57	**TD2931**
	-50...150 / -58...302	2" clamp (ISO 2852)	150	18...32	1 / 3	57	**TD2941**
	-50...150 / -58...302	Ø 6 mm	50	18...32	1 / 3	58	**TD2217**
	-50...150 / -58...302	Ø 6 mm	100	18...32	1 / 3	58	**TD2237**
	-50...150 / -58...302	Ø 6 mm	150	18...32	1 / 3	58	**TD2247**
	-50...150 / -58...302	Ø 6 mm	250	18...32	1 / 3	58	**TD2267**
	-50...150 / -58...302	Ø 6 mm	50	18...32	1 / 3	58	**TD2211**
	-50...150 / -58...302	Ø 6 mm	100	18...32	1 / 3	58	**TD2231**
	-50...150 / -58...302	Ø 6 mm	150	18...32	1 / 3	58	**TD2241**
	-50...150 / -58...302	Ø 6 mm	200	18...32	1 / 3	58	**TD2251**
	-50...150 / -58...302	Ø 6 mm	250	18...32	1 / 3	58	**TD2261**

You can find wiring diagrams and scale drawings from page 571

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	Ø 6 mm	200	18...32	1 / 3	58	**TD2257**
	-50...150 / -58...302	Ø 6 mm	300	18...32	1 / 3	58	**TD2271**
	-50...150 / -58...302	Ø 6 mm	300	18...32	1 / 3	58	**TD2277**
	-50...150 / -58...302	Ø 6 mm	350	18...32	1 / 3	58	**TD2291**
	-50...150 / -58...302	Ø 6 mm	350	18...32	1 / 3	58	**TD2297**

TV sensors with switching outputs, IO-Link

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed progr. · 2 switching outputs · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205							
	-50...150 / -	G 1/4	25	18...32	1 / 3	59	**TV7105**
	-50...150 / -	G 1/2	30	18...32	1 / 3	60	**TV7405**

Infrared temperature sensors

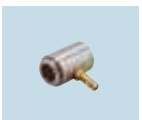
Type	Temperature range [°C]	Wave length range [µm]	Material lens	Response time [ms]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · Switching output, Analogue output · DC PNP · Wiring diagram no. 5						
	0...999.5	8...14	Infrared transparent crystal lens with anti-reflex coating	< 100	61	**TW2000**
	250...1600	1.0...1.7	tempered optical glass	< 2	62	**TW2001**
	500...2500	0.78...1.06	tempered optical glass	< 2	62	**TW2002**
	300...1600	1.0...1.7	tempered optical glass	< 2	63	**TW2011**

Type	Temperature range [°C]	Wave length range [µm]	Material lens	Response time [ms]	Drawing no.	Order no.
M12 connector · Output function ⎍ / ⎍ · 2 switching outputs · DC PNP · Wiring diagram no. 5						
	50...500	8...14	Infrared transparent crystal lens with anti-reflex coating	< 100	64	**TW7000**
	250...1250	1.0...1.7	tempered optical glass	≤ 2	65	**TW7001**
	350...1350	1.0...1.7	tempered optical glass	≤ 2	66	**TW7011**

Accessories for temperature sensors TN / TR

Type	Description	Order no.
	Angle bracket · Housing materials: PA66-	**E30421**
	Mounting clamp · Ø 34 mm · Housing materials: PBT	**E10017**
	Mounting clamp · Ø 34 mm · Housing materials: PA	**E10193**

Accessories for infrared temperature sensors

Type	Description	Order no.
	Measuring head · for infrared temperature sensors TWxx11, M30 design · Housing materials: AlMg3 black anodised / 303 / 1.4305 / lock nuts: 304 / 1.4301 / O-ring: FPM	**E35060**
	Fibre optics with stainless steel sheathing · straight · Connection to infrared temperature sensors TWxx11 · ¼"-36UNS-2A · Housing materials: stainless steel, Fibre optic: Quartz/Quartz fibre (VIS/IR)	**E35061**
	Fibre optics with stainless steel sheathing · straight · Connection to infrared temperature sensors TWxx11 · ¼"-36UNS-2A · Housing materials: stainless steel, Fibre optic: Quartz/Quartz fibre (VIS/IR)	**E35062**
	Air purge · for infrared temperature sensors TWxxxx, M30 design · for type TW · Housing materials: stainless steel / Brass / sealing ring: aluminium	**E35063**
	Cooling jacket · for infrared temperature sensors TWxxxx, M30 design · for type TW · Housing materials: 304 / 1.4301	**E35068**

You can find wiring diagrams and scale drawings from page 571

Type	Description	Order no.
	Mounting bracket · Ø 30 mm · for types M30 · Housing materials: Steel galvanised	**E35065**
	Protective tube · for infrared temperature sensors TWxxxx, M30 design · for type TW · Housing materials: stainless steel	**E35066**
	Insulating tube · for infrared temperature sensors TWxxxx, M30 design · for type TW · Housing materials: POM	**E35067**

Accessories

Type	Description	Order no.
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	**E30398**
	Teach button · for sensors PP0xE, PP052x, PP755x · for memory plug (E30398) · 0.9 m · Housing materials: stainless steel / PA / PMMA	**E30405**
	USB IO-Link master · for parameter setting and analysis of units · Supported communication protocols: IO-Link (4.8, 38.4 and 230 Kbits/s) · for operation with FDT framework software "ifm Container“ or software "LINERECORDER SENSOR"	**E30390**

Software

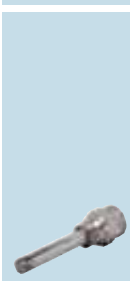
Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0011**
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	**QA0012**

Certificates

Description	Order no.
DAkkS calibration certificate for temperature sensors · Number of measuring points: 3-point DAkkS calibration · Measurement points [°C]: 65, 85, 123 (to directive DAkkS-DKD-R 5-1) · Minimum measurement uncertainty [K]: 0.1	**ZC0013**
DAkkS calibration certificate for temperature sensors · Number of measuring points: 5-point DAkkS calibration · Measurement points [°C]: 20, 65, 85, 100, 123 (to directive DAkkS-DKD-R 5-1) · Minimum measurement uncertainty [K]: 0.1	**ZC0014**

Description	Order no.
DAkkS calibration certificate for temperature sensors · Number of measuring points: n-point DAkkS calibration · Measurement points [°C]: number and positions as requested by the customer, maximum 4 points in the range from -20...150 °C (to directive DAkkS-DKD-R 5-1) · Minimum measurement uncertainty [K]: 0.1	**ZC0015**
Factory calibration certificate for temperature sensors · Number of measuring points: 3-point factory calibration · Measurement points [°C]: 65, 85, 123 (to ISO 9001) · Minimum measurement uncertainty [K]: 0.1	**ZC0016**
Factory calibration certificate for temperature sensors · Number of measuring points: 5-point factory calibration · Measurement points [°C]: 20, 65, 85, 100, 123 (to ISO 9001) · Minimum measurement uncertainty [K]: 0.1	**ZC0017**
Factory calibration certificate for temperature sensors · Number of measuring points: n-point factory calibration · Measurement points [°C]: number and positions as requested by the customer, maximum 4 points in the range from -20...150 °C (to ISO 9001) · Minimum measurement uncertainty [K]: 0.1	**ZC0018**
Factory calibration sheet for first delivery of infrared temperature sensors · TW2000 / TW2001 / TW2002 / TW2011 · Minimum measurement uncertainty [K]: ± 4	**ZC0061**
Recalibration for infrared temperature sensors · TW2000 / TW2001 / TW2011 · Minimum measurement uncertainty [K]: ± 4	**ZC0062**
Recalibration for infrared temperature sensors · TW2002 · Minimum measurement uncertainty [K]: ± 4	**ZC0063**

Thermowells for temperature sensors

Type	Description	Order no.
	Welding thermowell · Ø 35 mm · for type TA343x, TAA431, TAD191 · stainless steel 316L / 1.4404	**E30403**
	Thermowell for temperature sensors · G ½ · for type TA34xx, TAA431, TAD191 · stainless steel 316L / 1.4404	**E30393**
	Thermowell for temperature sensors · G ½ - ½" NPT · for type TA34xx, TAA4xx · stainless steel 316L / 1.4404	**E30397**
	Thermowell for temperature sensors · Ø 10 mm - G ½ · stainless steel 316L / 1.4404	**E35010**
	Thermowell for temperature sensors · Ø 10 mm - G ½ · stainless steel 316L / 1.4404	**E35020**
	Thermowell for temperature sensors · Ø 10 mm - G ½ · stainless steel 316L / 1.4404	**E35030**
	Thermowell for temperature sensors · Ø 10 mm - G ½ · stainless steel 316L / 1.4404	**E35050**

You can find wiring diagrams and scale drawings from page 571

Type	Description	Order no.
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	**E37211**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	**E37221**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	**E37810**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	**E37820**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 300 mm · stainless steel 316L / 1.4404	**E37830**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 350 mm · stainless steel 316L / 1.4404	**E37850**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	**E37910**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	**E37920**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 300 mm · stainless steel 316L / 1.4404	**E37930**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 350 mm · stainless steel 316L / 1.4404	**E37950**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 50 mm · stainless steel 316Ti / 1.4571	**E37603**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316Ti / 1.4571	**E37613**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316Ti / 1.4571	**E37623**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 250 mm · stainless steel 316Ti / 1.4571	**E37643**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 350 mm · stainless steel 316Ti / 1.4571	**E37663**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	**E37511**

Type	Description	Order no.
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	**E37521**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 50 mm · stainless steel 316Ti / 1.4571	**E37600**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316Ti / 1.4571	**E37610**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316Ti / 1.4571	**E37620**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 250 mm · stainless steel 316Ti / 1.4571	**E37640**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 50 mm · stainless steel 316Ti / 1.4571	**E37700**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316Ti / 1.4571	**E37710**
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316Ti / 1.4571	**E37720**
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 50 mm · stainless steel 316L / 1.4404	**E37411**
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	**E37421**
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	**E37431**
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 300 mm · stainless steel 316L / 1.4404	**E37430**
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 350 mm · stainless steel 316L / 1.4404	**E37450**

Adapters

Type	Description	Order no.
	Thread cover · Ø 24 mm - G ½ · Ø 24 mm · to cover the G½ thread for installation in hygienic areas · for type TR · Housing materials: stainless steel	**E30091**

You can find wiring diagrams and scale drawings from page 571

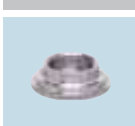
Type	Description	Order no.
	Mounting set · for direct connection of temperature sensors TT to control monitors TR · Housing materials: stainless steel	**E30017**
	Clamp fitting · Ø 6/8/10 mm - G ½ · for temperature sensors · Housing materials: stainless steel / FPM	**E30018**
	Clamp fitting · Ø 6/8/10 mm - ½" NPT · for temperature sensors · Housing materials: stainless steel / FPM	**E30025**
	Mounting adapter · M18 x 1.5 - Ø 23 mm · PVC adapter to be glued into the pipe · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: PVC	**E40148**
	Sealing ring · Ø 18 mm / Ø 23 mm · for G ½ sealing cone · Housing materials: sealing ring on sensor side: FKM / sealing ring on process side: PEEK	**E43911**
	Adapter · M18 x 1.5 - G ½ · Housing materials: stainless steel 316L / 1.4404 / O-ring: FPM (fitted)	**E30073**
	Clamp adapter · Ø 6 mm - G ½ · no dead space · Housing materials: stainless steel 316L / 1.4404 / rubber ring: PEEK	**E30144**
	Welding adapter · M18 x 1.5 - Ø 24 mm · Insertion depth of the probe of SID, SFD, TN: · 15 mm · Housing materials: stainless steel 316L / 1.4404	**E40124**
	Welding adapter · Ø 24.7 mm · for temperature sensors Ø 6 mm · Clamp fitting · Housing materials: stainless steel 316L / 1.4404	**E30108**
	Welding adapter · Ø 25 mm · for temperature sensors Ø 6 mm · Clamp fitting · Housing materials: stainless steel 316L / 1.4404 / rubber ring: PEEK	**E30407**
	Progressive ring fitting for temperature sensors · Ø 10 mm - G ½ · Housing materials: stainless steel 316Ti / 1.4571	**E30016**
	Progressive ring fitting for temperature sensors · Ø 10 mm - ½" NPT · Housing materials: stainless steel 316Ti / 1.4571	**E30024**
	Progressive ring fitting for temperature sensors · Ø 6 mm - G ½ · Housing materials: stainless steel 316Ti / 1.4571	**E30047**
	Progressive ring fitting for temperature sensors · Ø 6 mm - ¼" NPT · Housing materials: stainless steel 316Ti / 1.4571	**E30049**
	Progressive ring fitting for temperature sensors · Ø 6 mm - G ¼ · Housing materials: stainless steel 316Ti / 1.4571	**E33431**

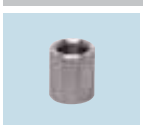
Type	Description	Order no.
	Adapter · M18 x 1.5 - G ½ · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: titanium	**E40114**
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: titanium	**E40128**
	Adapter · M18 x 1.5 - L18 · for mounting in T-pieces · Insertion depth of the probe of SID, SFD, TN: · 28.5 mm · Housing materials: nut: stainless steel 316Ti / 1.4571 / adapter: stainless steel 316L / 1.4404 / O-ring: FKM 16 x 1.5 gr 70° Shore A	**E40104**
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: stainless steel 316L / 1.4404	**E40101**
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: CW614N	**E40100**
	Adapter · M18 x 1.5 - G ¼ · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: stainless steel 316L / 1.4404	**E40099**
	Adapter · M18 x 1.5 - G ¼ · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: CW614N	**E40098**
	Adapter · M18 x 1.5 - G ½ · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: stainless steel 316L / 1.4404	**E40096**
	Adapter · M18 x 1.5 - G ½ · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: CW614N	**E40097**
	Adapter · M18 x 1.5 - ½" NPT · Insertion depth of the probe of SID, SFD, TN: · 23 mm · Housing materials: stainless steel 316L / 1.4404	**E40107**
	Adapter · M18 x 1.5 - G ½ · Housing materials: stainless steel 316L / 1.4404 / O-ring: FPM (fitted)	**E30073**
	Protective cover · with lead seal option · for pressure sensors type PK · for temperature sensors type TK · for vibration sensors type VK · Housing materials: PP transparent	**E30094**

Hygienic adapters

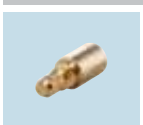
Type	Description	Order no.
Clamp adapter · 1-1.5" · Aseptoflex Vario		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33201**

You can find wiring diagrams and scale drawings from page 571

Type	Description	Order no.
Clamp adapter · 2" · Aseptoflex Vario		
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33202**
Clamp adapter · 1-1.5" · Aseptoflex Vario		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33701**
Clamp adapter · 2" · Aseptoflex Vario		
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33702**
Hygienic pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33212**
Hygienic pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33213**
Hygienic pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33712**
Hygienic pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33713**
Varivent Adapter · Type N, DN40...DN150 (1.5...6"), D = 68 · Aseptoflex Vario		
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E33222**
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33722**
SMS pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · SMS pipe fitting · DN40 (1.5") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33731**

Type	Description	Order no.
SMS pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · SMS pipe fitting · DN50 (2") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	**E33732**
Welding adapter · D50 · Aseptoflex Vario		
	Welding adapter · Ø 50 mm · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	**E30122**
Aseptoflex Vario · Aseptoflex Vario		
	sealing plug · Aseptoflex Vario · Housing materials: adapter: stainless steel 316L / 1.4435 / sealing ring: FKM	**E30128**
Clamp adapter · 1-1.5" · G ½		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 / DIN 32676 · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	**E33401**
Clamp adapter · 2" · G ½		
	Clamp adapter · Clamp · 2" · ISO 2852 / DIN 32676 · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	**E33402**
SMS pipe fitting · DN25 · G ½		
	Pipe fitting · SMS pipe fitting · DN25 · SMS · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	**E33430**
Welding adapter · D30 · G ½		
	Welding adapter · G ½ - Ø 30 mm · for tanks · Housing materials: stainless steel 316L / 1.4435	**E43300**
Welding adapter · D29 · G ½		
	Welding adapter · G ½ - Ø 29 mm · for pipes · Housing materials: stainless steel 316L / 1.4435	**E43301**
Hygienic pipe fitting · DN25 (1") · G ½		
	Pipe fitting · G ½ · Hygienic pipe fitting · DN25 (1") · DIN 11851 · Housing materials: stainless steel 316L / 1.4435	**E43304**
Hygienic pipe fitting · DN40 (1.5") · G ½		
	Pipe fitting · G ½ · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · Housing materials: stainless steel 316L / 1.4435	**E43305**

You can find wiring diagrams and scale drawings from page 571

Type	Description	Order no.
Varivent Adapter · Type F, DN25 (1"), D = 50 · G ½		
	Clamp adapter · G ½ · Varivent type F · DN25 (1"), D = 50 · Housing materials: stainless steel 316L / 1.4435	**E43306**
Varivent Adapter · Type N, DN40...DN150 (1.5...6"), D = 68 · G ½		
	Clamp adapter · G ½ · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · Housing materials: stainless steel 316L / 1.4435	**E43307**
sealing plug · G ½		
	sealing plug · G ½ · Housing materials: stainless steel 316L / 1.4435	**E43308**
Welding adapter ball · D35 · G ½		
	Welding adapter · G ½ - Ø 35 mm · Housing materials: stainless steel 316L / 1.4404	**E30055**
Welding adapter collar · D45 · G ½		
	Welding adapter · G ½ - Ø 45 mm · Housing materials: stainless steel 316L / 1.4404	**E30056**
Welding adapter · D30 · G ½		
	Welding adapter · G ½ - Ø 30 mm · for tanks · with leakage port · with leakage port · Housing materials: stainless steel 316L / 1.4435	**E43309**
Welding adapter · D29 · G ½		
	Welding adapter · G ½ - Ø 29 mm · for pipes · with leakage port · with leakage port · Housing materials: stainless steel 316L / 1.4435	**E43310**
Clamp adapter · 1-1.5" · G ½		
	Clamp adapter · G ½ · with leakage port · Clamp · 1-1.5" · ISO 2852 / DIN 32676 · with leakage port · Housing materials: stainless steel 316L / 1.4435	**E43311**
Clamp adapter · 2" · G ½		
	Clamp adapter · G ½ · with leakage port · Clamp · 2" · ISO 2852 / DIN 32676 · with leakage port · Housing materials: stainless steel 316L / 1.4435	**E43312**
	Welding mandrel · G ½ · carries away heat during welding · Housing materials: CW614N	**E43314**

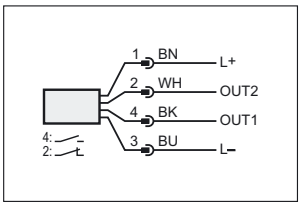
Type	Description	Order no.
Welding adapter collar · D45 · G ½		
	Welding adapter · G ½ · with leakage port · Housing materials: stainless steel 316L / 1.4404	**E43315**
Welding adapter · D50 · G ½		
	Welding adapter · G ½ · long design for deeper installation · long design for deeper installation · Housing materials: stainless steel 316L / 1.4435	**E43319**

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GY	grey

1



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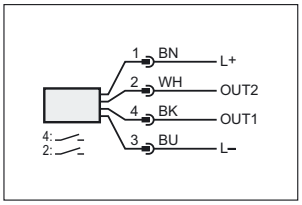

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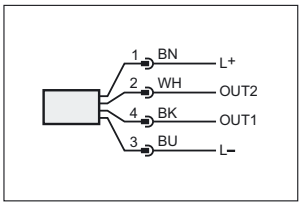

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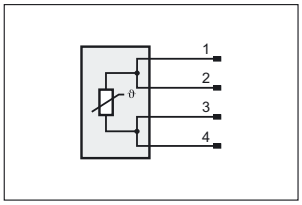

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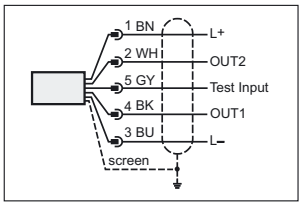

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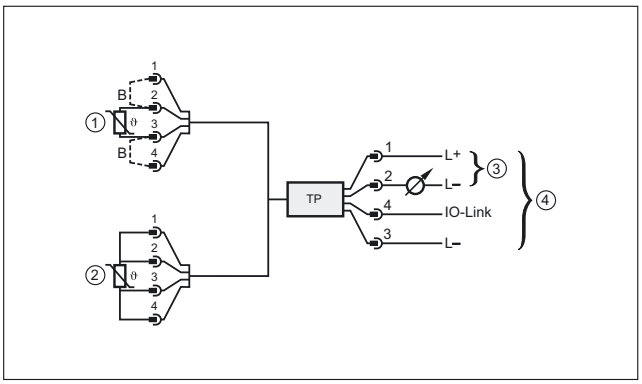
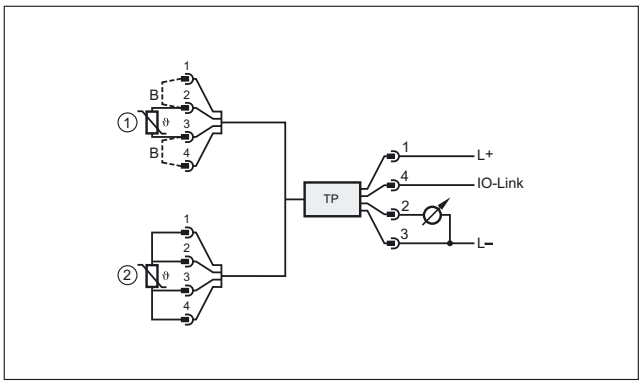


1: Two-wire sensor, 2: Four-wire sensor, 3: Operation as 2-wire temperature transmitter, 4: Operation as 3-wire unit, IO-Link communication possible, B: link

7



2: Two-wire sensor, 2: Four-wire sensor, B: link

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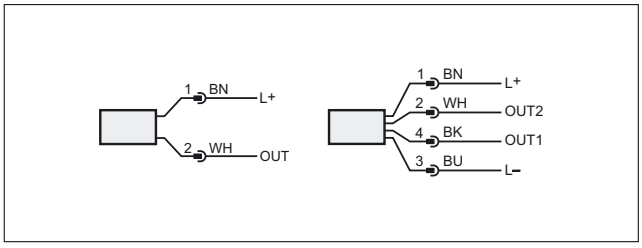
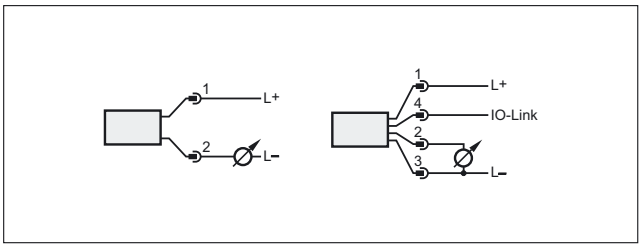


Wiring diagrams

9



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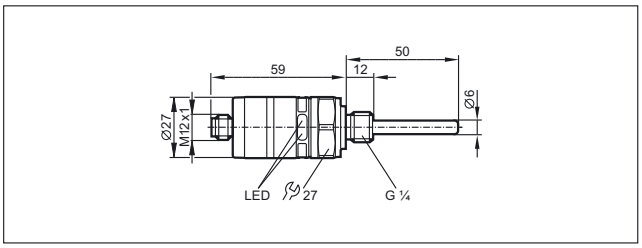

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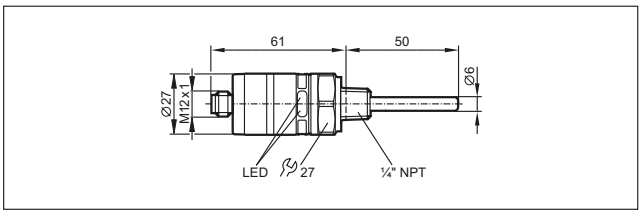

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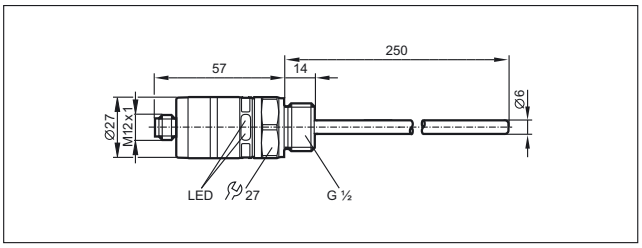

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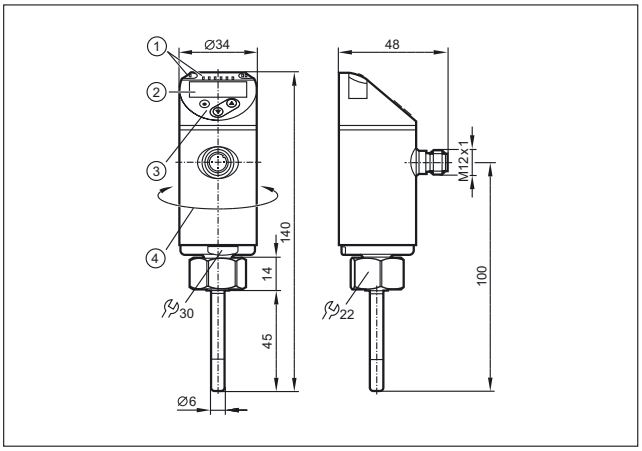
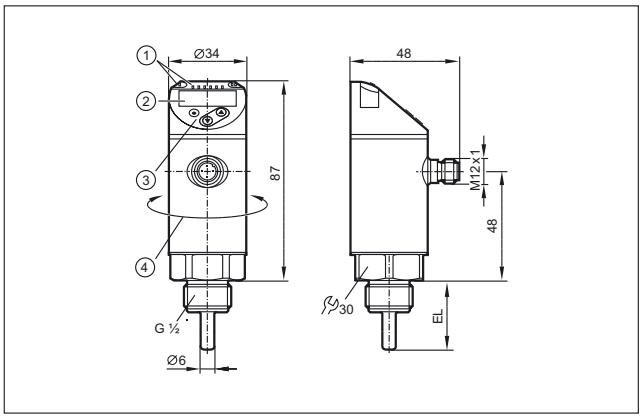


1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

5



1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

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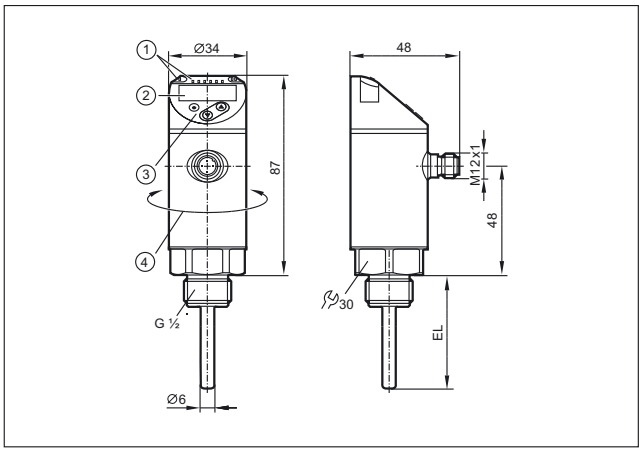
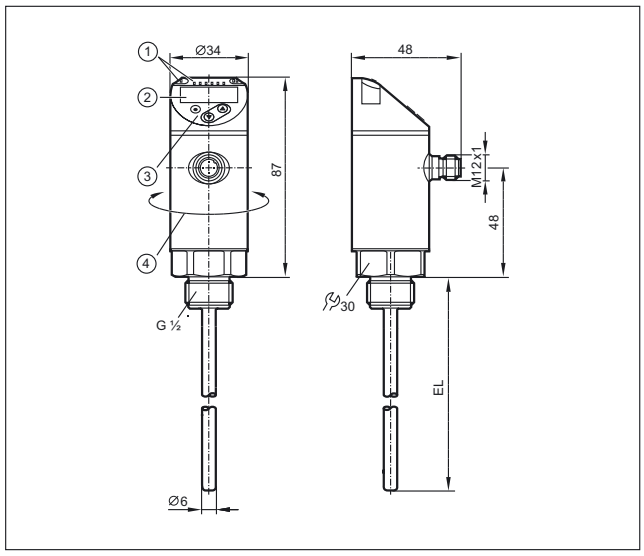


1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

Scale drawings / drawing no. – CAD download: www.ifm.com

7



1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

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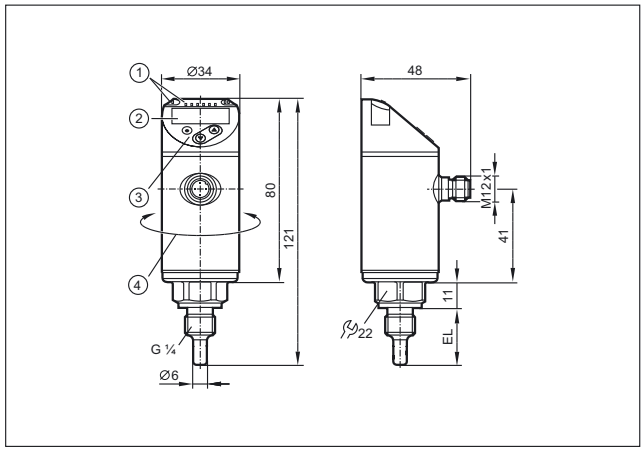

1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

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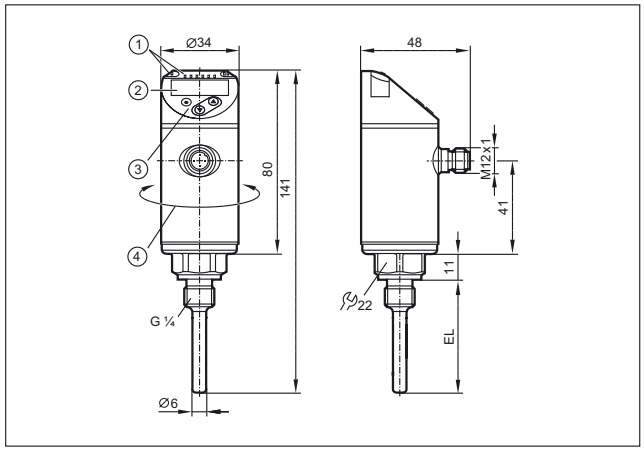

1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

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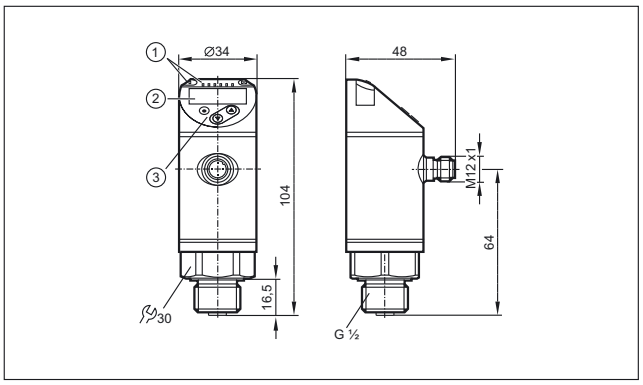

1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons

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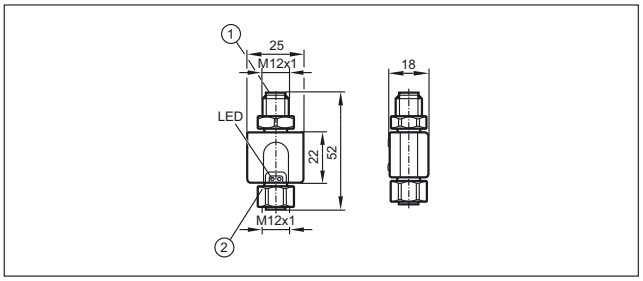
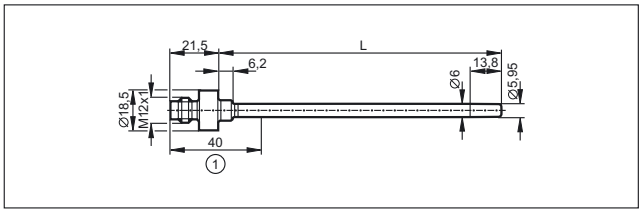


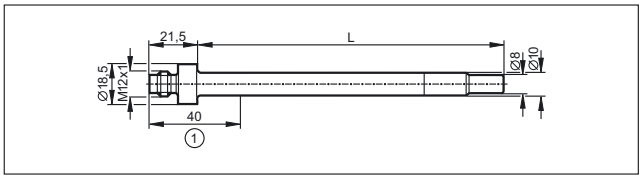
1: connection for voltage supply and output signals, 2: connection for temperature sensor

12



1: plug area, L = probe length (corresponds to installation length EL)

13



1: plug area, L = probe length (corresponds to installation length EL)

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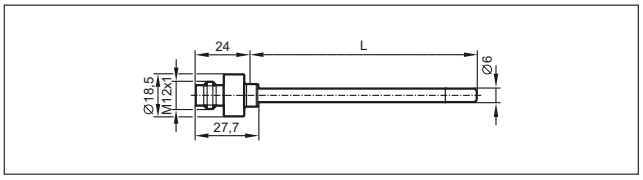

L = probe length (corresponds to installation length EL)

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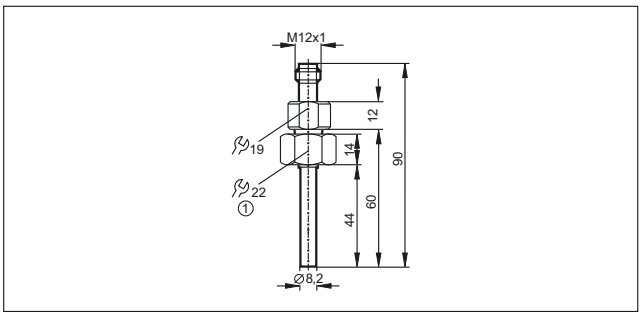
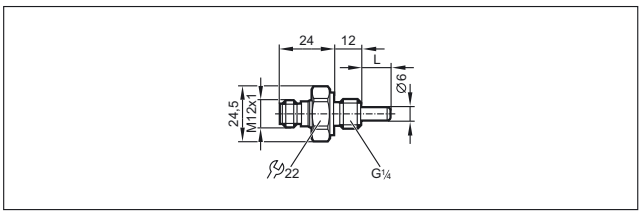
15



1: internal thread M18 x 1.5

16



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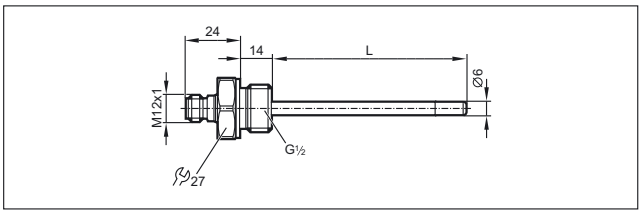

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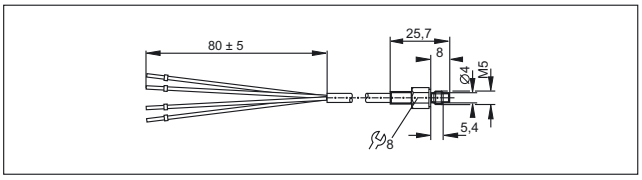

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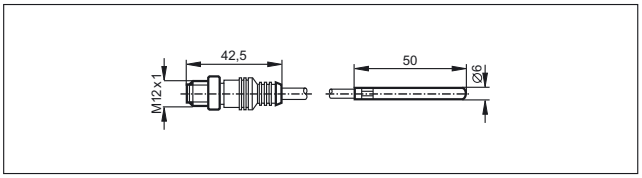

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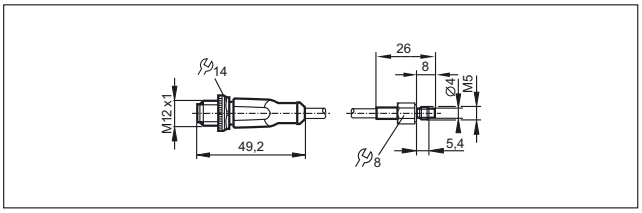
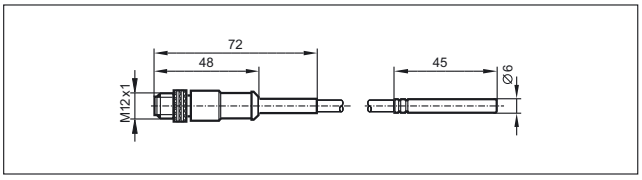


1: tightening torque 1.5 Nm

21



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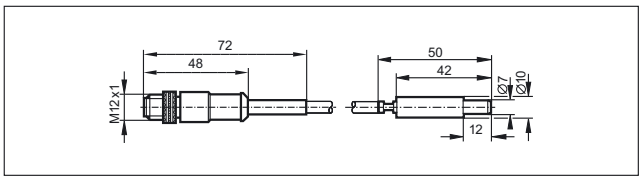

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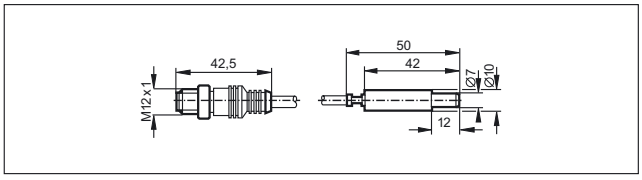

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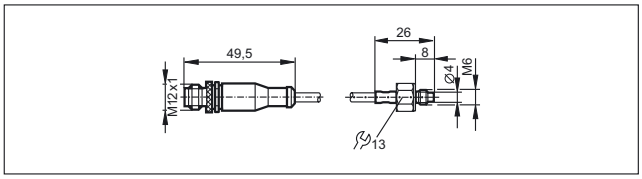

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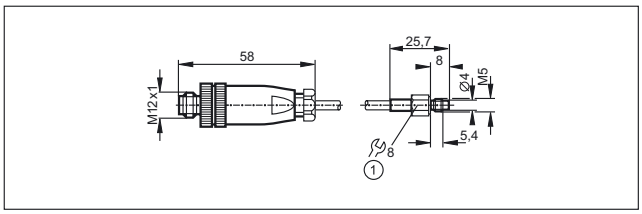

1: tightening torque 1.5 Nm

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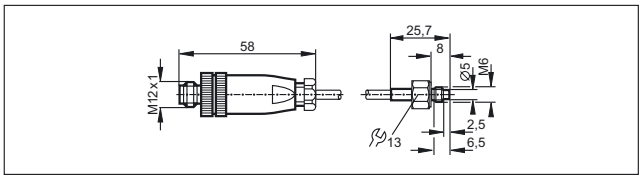

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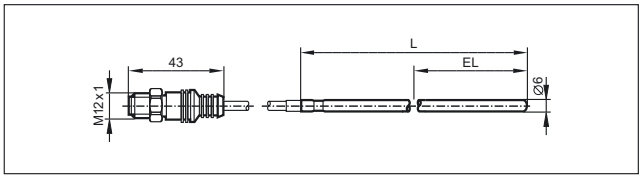

1: connection area, see remark

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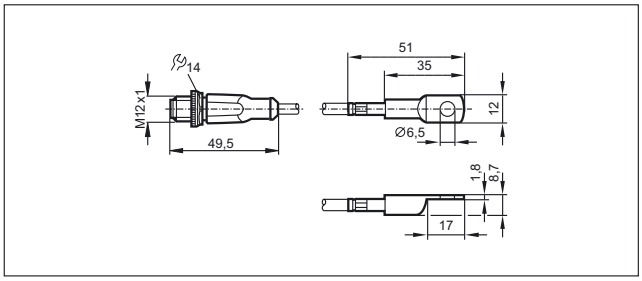

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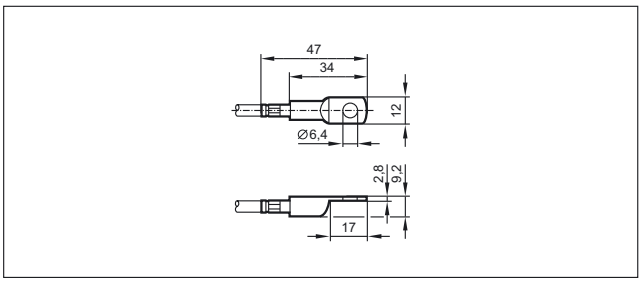

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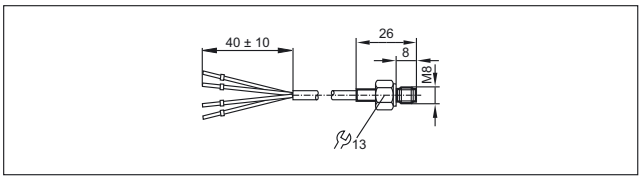

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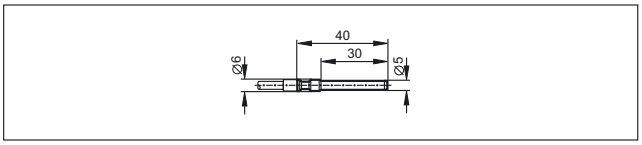

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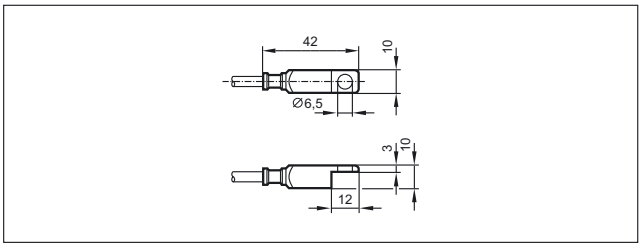

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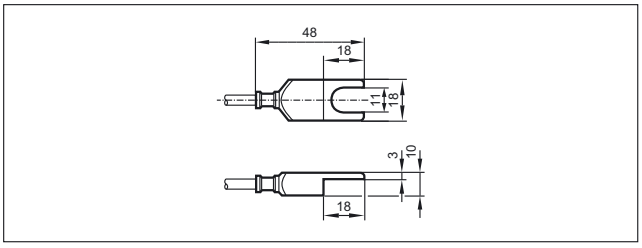

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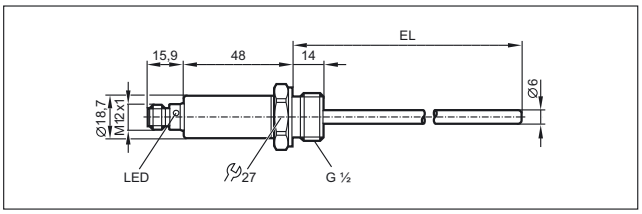

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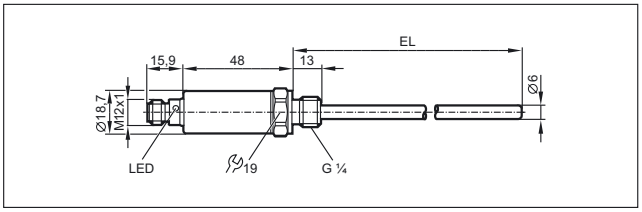

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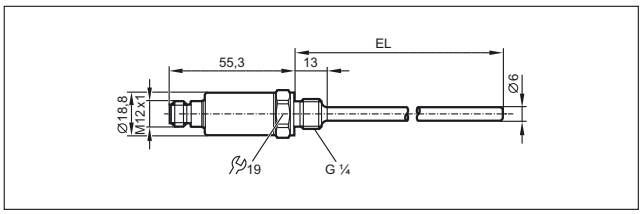

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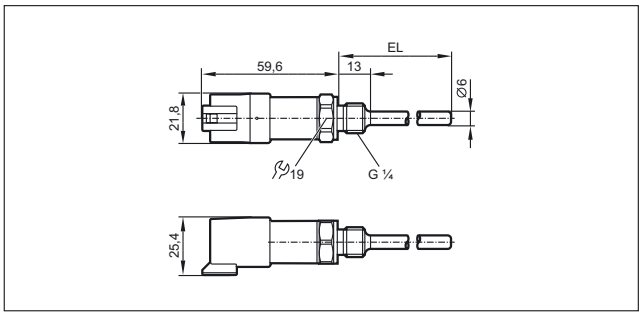

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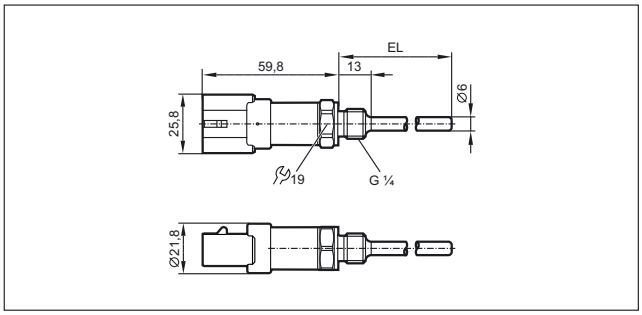

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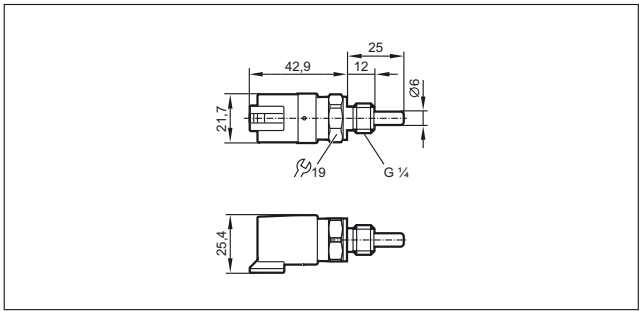

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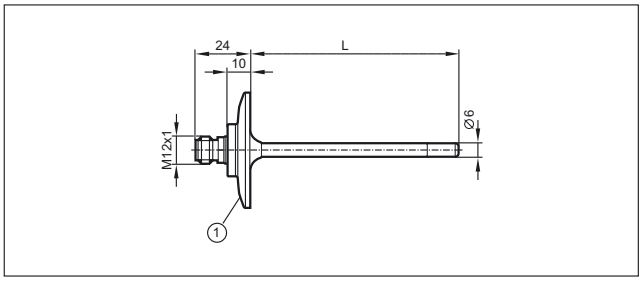

1: 1.5" clamp (ISO 2852), L = probe length (corresponds to installation length EL)

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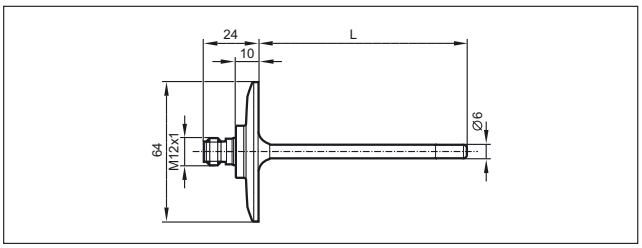

L = probe length (corresponds to installation length EL)

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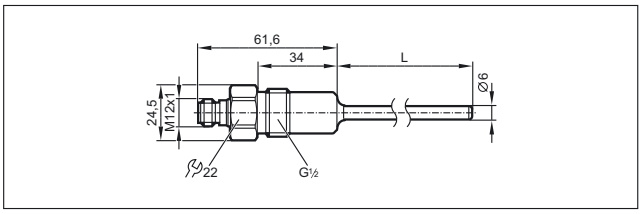

L = probe length (corresponds to installation length EL)

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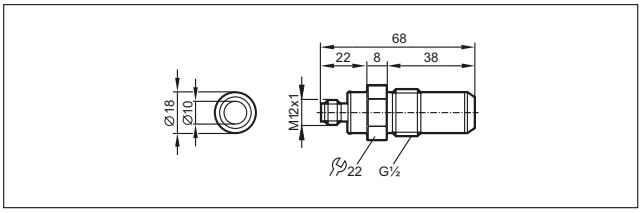

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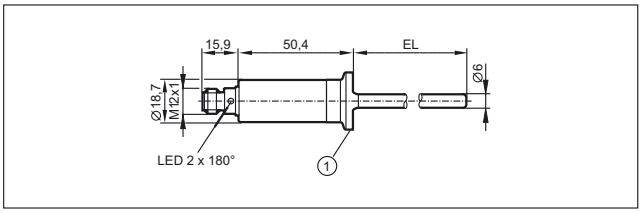

3/4" clamp (ISO 2852)

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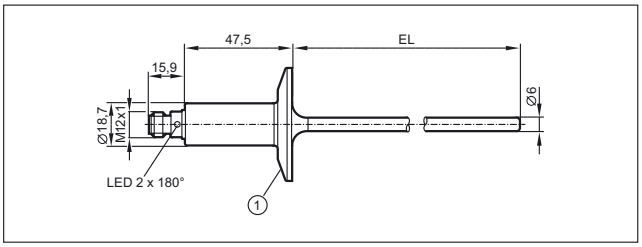

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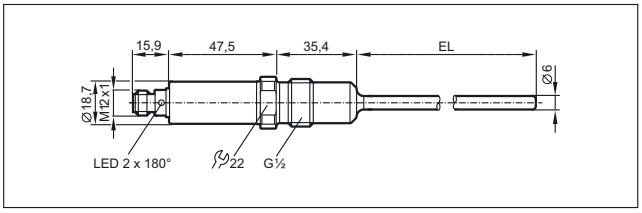

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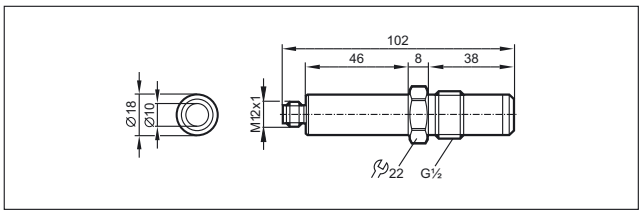

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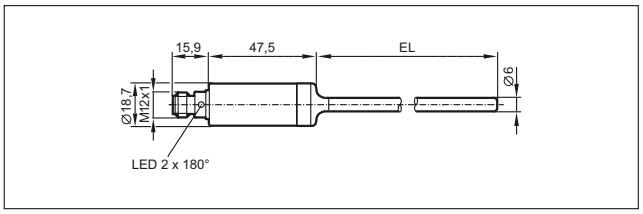

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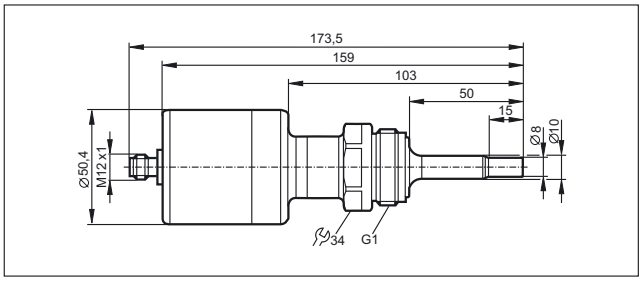

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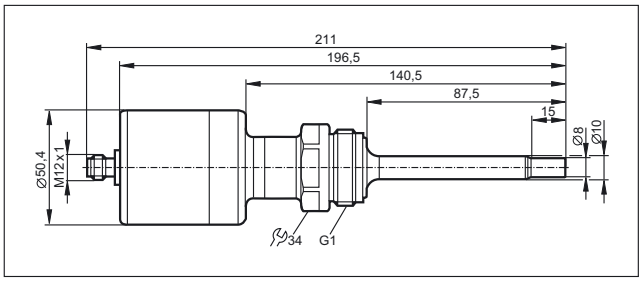

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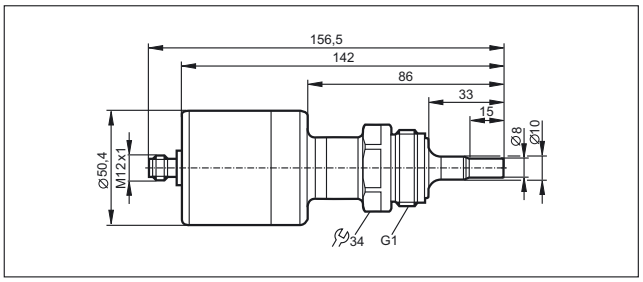

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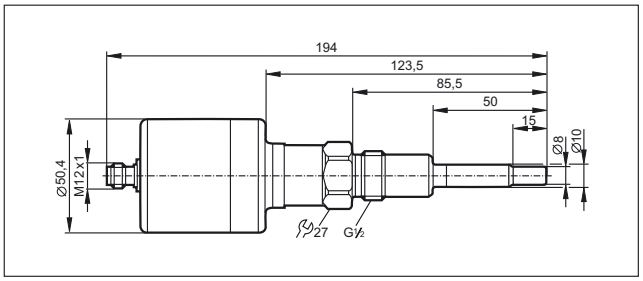
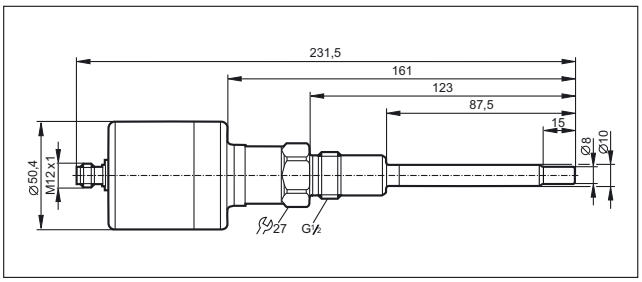


Scale drawings / drawing no. – CAD download: www.ifm.com

53



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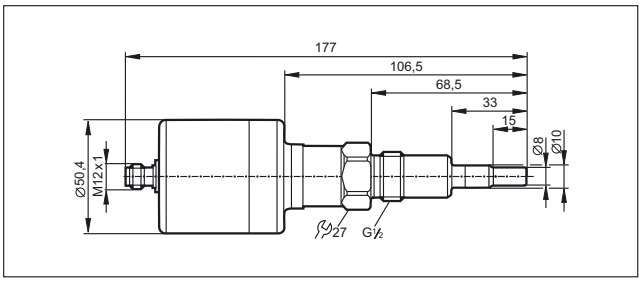

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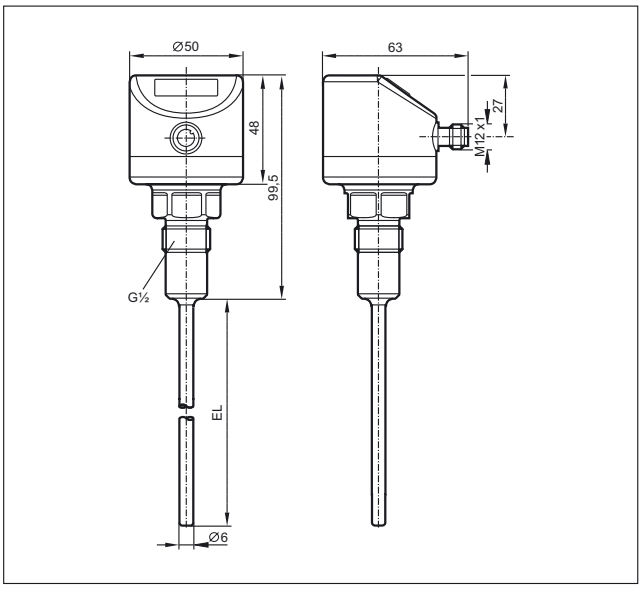
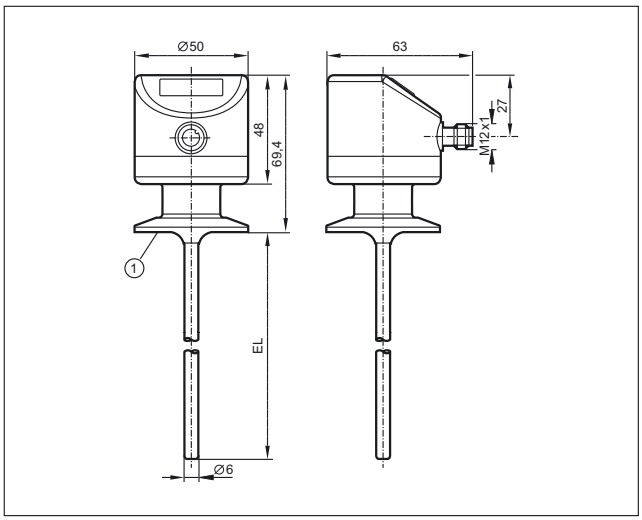


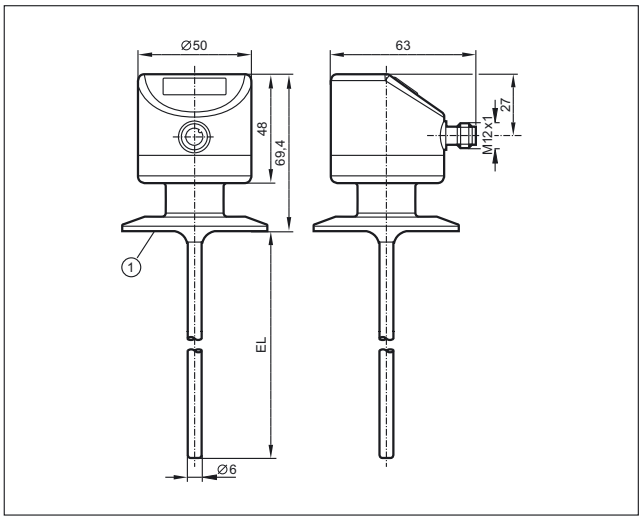
EL = Installation length

56



1: 1.5" clamp (ISO 2852), EL = Installation length

57



1: 2" clamp (ISO 2852), EL = Installation length

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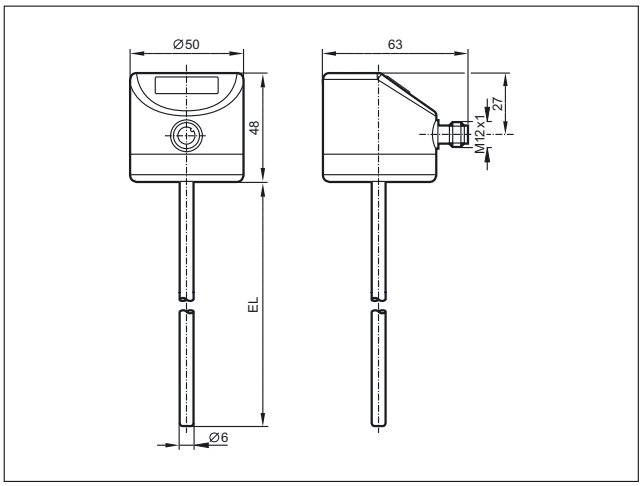
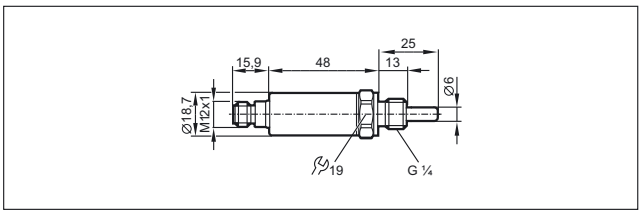


EL = Installation length

Scale drawings / drawing no. – CAD download: www.ifm.com

59



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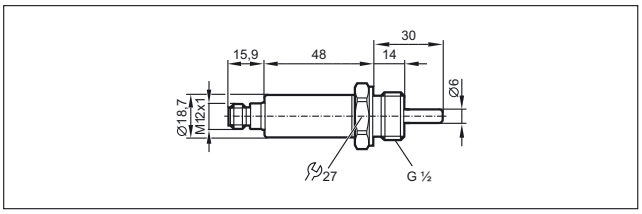

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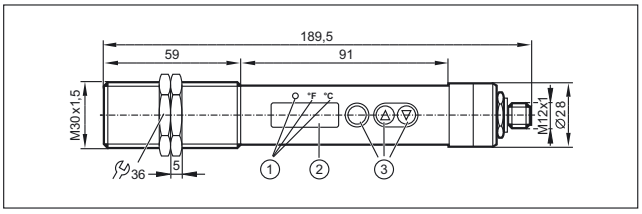

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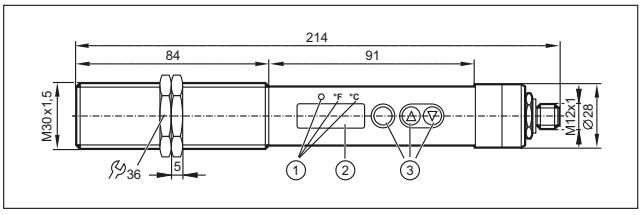

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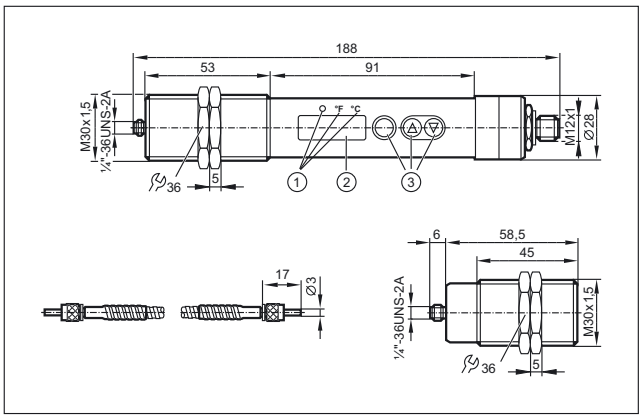

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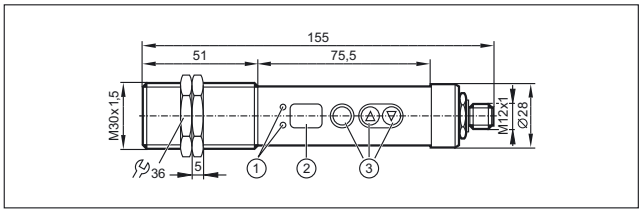
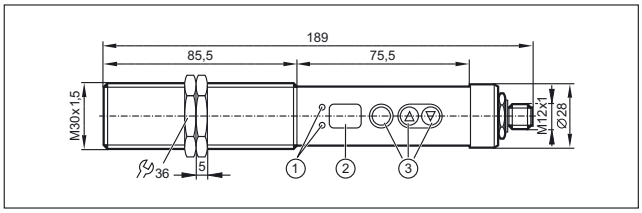


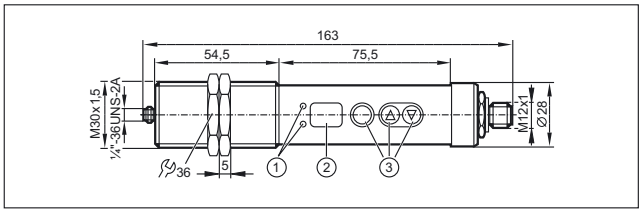
1: Programming buttons, 2: 7-segment LED display

65



1: LEDs (switching status), 2: 7-segment LED display (2 digits),
3: Programming buttons

66



1: LEDs (switching status), 2: 7-segment LED display (2 digits),
3: Programming buttons

User-friendly signal evaluation systems

Signal evaluation systems

Integrated flow, temperature and wire-break monitoring

Adjustable switch points for flow and temperature

Multicolour LED bar graph display for quick setting

Signal output using potential-free relay contacts (changeover contacts)

Connection options: Insulation displacement / screw terminals and cage clamps

Evaluation systems for flow sensors

Various evaluation systems are offered for SF/SP type flow sensors. A multi-coloured LED bar graph indicates the flow. Moreover it is signalled via LEDs and relay outputs when an adjustable medium temperature has been reached or if there is a possible wire break from the sensor to the electronics. The operating elements are on the front. The evaluation systems are available both for AC and for DC supply voltage.

Sensors and control monitors are designed and approved for use in hazardous areas for applications in potentially explosive atmospheres. Wire monitoring between sensor and evaluation system as well as medium-temperature monitoring with optical display and signalling via potential-free relay outputs are also standard.

Product selectors and further information can be found at: www.ifm.com

System overview	*Page*
Control monitors for industrial applications	*582*
Control monitors with ATEX approval	*582 - 583*
Control monitors with ATEX approval 2G	*583*
Accessories	*583*
Wiring diagrams	*583 - 584*
Scale drawings / drawing no. – CAD download: www.ifm.com	*585*

Control monitors for industrial applications

Type	U_b / Tolerance [V] / [%]	Current consumpt. [mA]	Power consumpt. [VA]	Power-on delay time [s]	Output when flow is present	Output when temperature is exceeded	Output in case of wire break	Draw-ing no.	Order no.
Combicon connector · Wiring diagram no. 3									
	90...240 AC / -5 /+10	–	4	10...80	relay energised	relay energised	relay de-energised	1	**SN0150***
Combicon connector · Wiring diagram no. 4									
	90...240 AC / -5 /+10	–	4	10...80	relay energised	–	relay de-energised	1	**SN0151***
Combicon connector · Wiring diagram no. 5									
	24 DC / +10 / -20	90	–	10...80	relay energised	relay energised	relay de-energised	1	**SR0150***
Combicon connector · Wiring diagram no. 6									
	24 DC / +10 / -10	90	–	10...80	relay energised	–	relay de-energised	1	**SR0153***
M12 connector · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	19...36 DC	70	–	10	no / nc programmable	–	–	2	**SR5900**
1/2" UNF-Connector · Wiring diagram no. 2 · Connector group 34									
	85...265 AC / -5 / +10	–	< 3.5	10	no / nc programmable	–	–	3	**SR5906***

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Control monitors with ATEX approval

Type	U_b / Tolerance [V] / [%]	Current consumpt. [mA]	Power consumpt. [VA]	Power-on delay time [s]	Output when flow is present	Output when temperature is exceeded	Output in case of wire break	Draw-ing no.	Order no.
15 terminals...2.5 mm²									
	230 AC / ± 10	–	5	30	relay energised	–	relay de-energised	4	**SN2301***
	110 AC / ± 10	–	5	30	relay energised	–	relay de-energised	4	**SN2302***

Type	U_b / Tolerance [V] / [%]	Current consumpt. [mA]	Power consumpt. [VA]	Power-on delay time [s]	Output when flow is present	Output when temperature is exceeded	Output in case of wire break	Draw-ing no.	Order no.
15 terminals...2.5 mm²									
	24 DC / ± 10	125	–	30	relay energised	–	relay de-energised	4	**SR2301***

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Control monitors with ATEX approval 2G

Type	U_b / Tolerance [V] / [%]	Current consumpt. [mA]	Power consumpt. [VA]	Power-on delay time [s]	Output when flow is present	Output when temperature is exceeded	Output in case of wire break	Draw-ing no.	Order no.
15 terminals...2.5 mm² · Wiring diagram no. 7									
	24 DC / ± 15	100	–	10	relay energised	–	–	5	**SR307A***

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Accessories

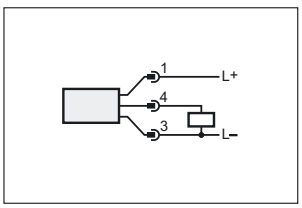
Type	Description	Order no.
	Combicon connector · with cage clamps 4 poles · Housing materials: current carrying parts: copper alloy tin-plated	**E40171**

Wiring diagrams

Core colours

BN	brown
BU	blue
BK	black
WH	white
GY	grey

1



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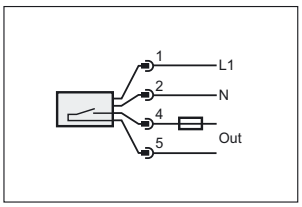
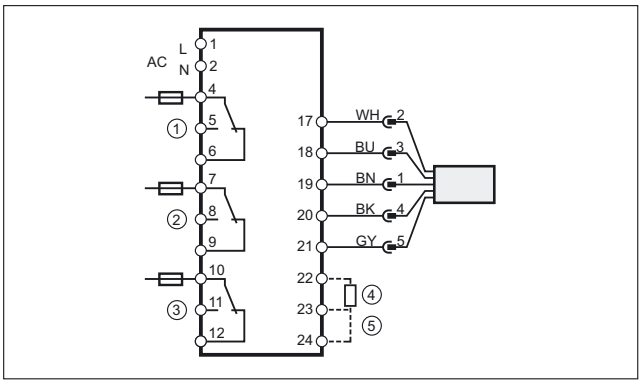


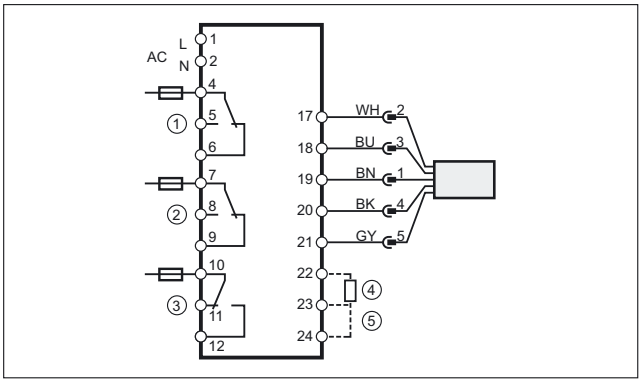
Wiring diagrams

3



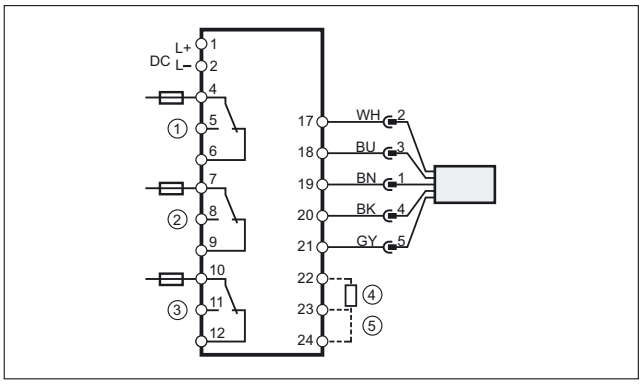
1: Flow monitoring, 2: Wire break monitoring, 3: Temperature monitoring, 4: Power-on delay time, 5: Selection liquid / gas

4



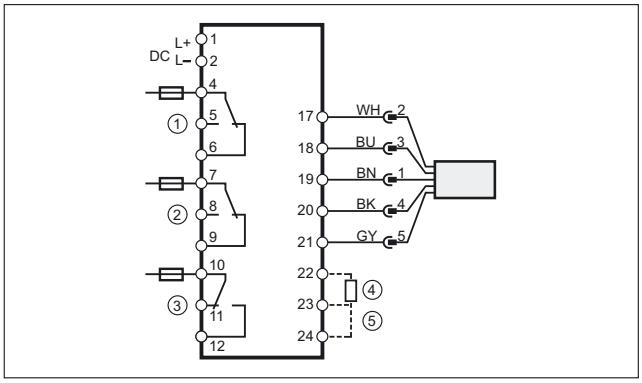
1: Flow monitoring, 2: Wire break monitoring, 3: Temperature monitoring, 4: Power-on delay time, 5: Selection liquid / gas, Note: miniature fuse to IEC60127-2 sheet 1,, ≤ 5 A (fast acting)

5



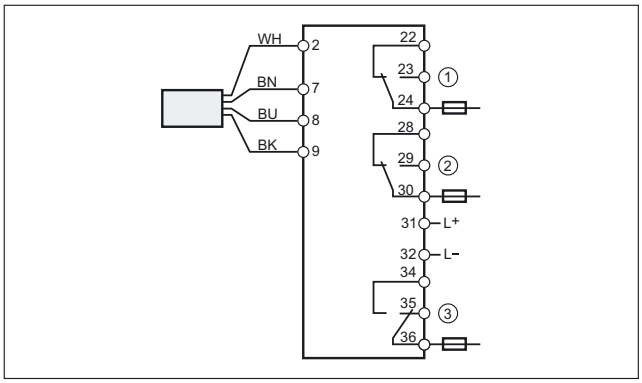
1: Flow monitoring, 2: Wire break monitoring, 3: Temperature monitoring, 4: Power-on delay time, 5: Selection liquid / gas

6



1: Flow monitoring, 2: Wire break monitoring, 3: Temperature monitoring, 4: Power-on delay time, 5: Selection liquid / gas, Note: miniature fuse to IEC60127-2 sheet 1,, ≤ 5 A (fast acting)

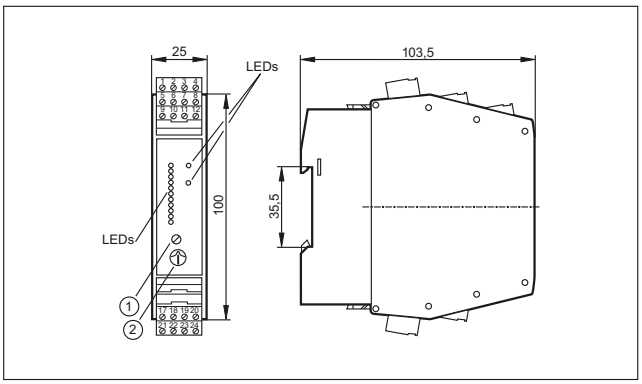
7



1: Flow monitoring, 2: Fault monitoring, 3: Temperature monitoring, Note: miniature fuse to IEC60127-2 sheet 1,, ≤ 5 A (fast acting), Place the fuse outside the hazardous area.

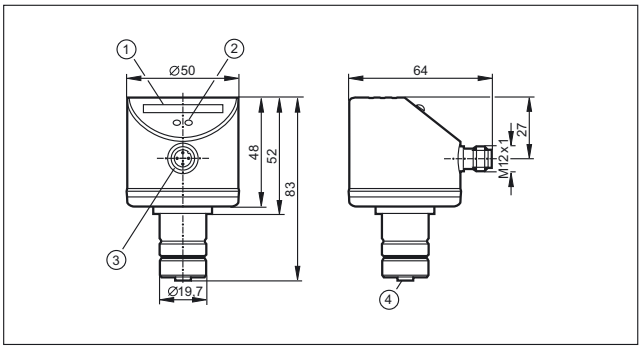
Scale drawings / drawing no. – CAD download: www.ifm.com

1



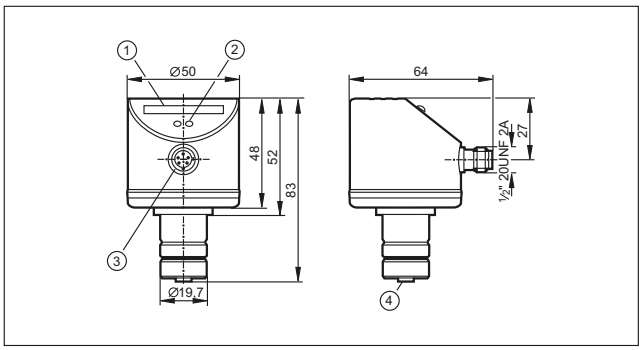
1: Potentiometer (switch point flow), 2: Potentiometer (switch point temperature)

2



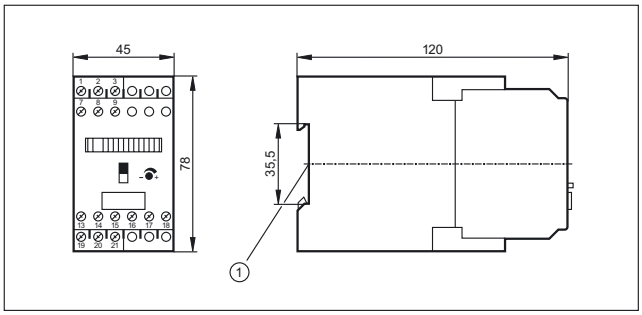
1: LED display, 2: setting pushbutton, 3: connection for voltage supply and output signals, 4: connection for flow sensor

3



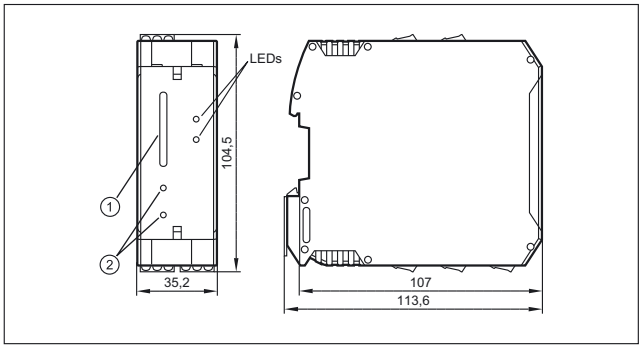
1: LED display, 2: setting pushbutton, 3: connection for voltage supply and output signals, 4: connection for flow sensor

4



1: Mounting on DIN rail

5

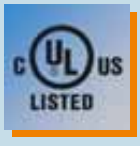


1: LED display, 2: setting pushbuttons

Reliable valve position monitoring

Feedback systems for valves and valve actuators

- **Dual inductive feedback sensors for pneumatic actuators and valves**
- **Designed for simple fit to common actuators based on VDI / VDE 3845**
- **AS-i valve sensor for quick and safe „plug & play“ installation**
- **Position feedback for rising stem valves up to 80 mm**
- **Permanent valve monitoring for condition-based maintenance**



Dual sensor for quarter-turn actuators

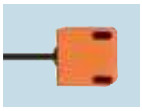
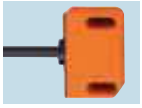
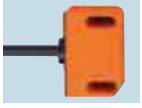
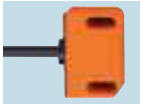
A round switching cam, also called "puck", that has at least two metal screws positioned at 90° to each other or a version that is freely adjustable to any angle is mounted to the actuator shaft. The screws are located at a different height. Two inductive sensors detect the upper or lower metal screw depending on the valve position and thus the two switch positions of the actuator. This system operates reliably with no wear at all. It is resistant to external influence and insensitive to mechanical stress such as vibration and shock.

Sensor for rising stem valves

Two or three switch points can be set via pushbuttons over a stroke of 80 mm. Thanks to a resolution of 0.2 mm, the sensor detects even very small changes in the position of the valve. The inductive measuring principle guarantees wear-free non-contact operation.

System overview	*Page*
Sensors for industrial applications	*588 - 589*
Sensors for industrial applications, AS-i system	*589*
Sensors with ATEX approval 1G / 2G and 1D	*590*
Sensors with ATEX approval 3D and / or 3G	*590*
Sensors for rising stem valves	*591*
Sensors for rising stem valves, AS-i system	*591*
Added value packages with Bürkert solenoid valve	*591*
Added value packages with Norgren Herion solenoid valve	*592*
Switching cams for sensors with quarter-turn actuators	*592*
Accessories for quarter-turn actuator sensors	*593*
Accessories for rising stem valve sensors	*593 - 594*
Accessories mounting sets	*594*
Wiring diagrams	*594 - 595*
Scale drawings / drawing no. – CAD download: www.ifm.com	*596 - 599*

Sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍/⎍ · AC/DC · Wiring diagram no. 1									
	40 x 26 x 40	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	1	**IN0110***
Terminals · Output function ⎍/⎍ · AC/DC · Wiring diagram no. 13									
	33 x 60 x 92	4 nf	PA (polyamide)	20...250	IP 67	25 / 50	350 / 100	2	**IN0131***
Cable 2 m · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 2									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	3	**IN5251**
Cable 6 m · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 2									
	40 x 26 x 26	4 nf	PC (polycarbonate)	10...36	IP 67	1300	250	3	**IN5304**
Cable 10 m · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 2									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	3	**IN5323**
M12 connector · Output function ⎍/⎍ · DC PNP/NPN · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	4	**IN5224**
M12 connector · Output function ⎍/⎍ · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	40 x 26 x 47	4 nf	PBT	10...36	IP 67	250	250	5	**IN5331**
M12 connector · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 4 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	4	**IN5225**
	40 x 26 x 47	4 nf	PBT	10...36	IP 67	1300	250	5	**IN5327**
M18 connector · Output function ⎍/⎍ · DC PNP · Wiring diagram no. 4 · Connector group 28									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	6	**IN5285**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
M18 connector · Output function ⎍⎍ / ⎍⎍ · AC/DC · Wiring diagram no. 5 · Connector group 28									
	40 x 26 x 40	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	7	**IN0108***
Rd 24 x 1/8 connector 6 pins · Output function ⎍⎍ / ⎍⎍ · DC PNP · Connector groups 38, 44, 159, 160									
	40 x 26 x 60	4 nf	PBT	10...36	IP 67	1300	250	8	**IN5334**
Terminals · Output function ⎍⎍ / ⎍⎍ · DC PNP · Wiring diagram no. 15									
	33 x 60 x 92	4 nf	PA (polyamide)	10...30	IP 67	500	100	2	**IN5409**
Terminals · Output function ⎍⎍ / ⎍⎍ · DC PNP · Wiring diagram no. 16									
	33 x 60 x 92	4 nf	PA (polyamide)	10...30	IP 67	500	100	9	**IN5410**

f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

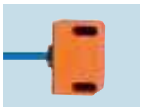
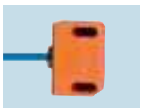
Sensors for industrial applications, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
M12 connector · AS-i · Wiring diagram no. 6 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	10	**AC2315**
M12 connector · Output function transistor PNP · AS-i · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	100	11	**AC2316**
M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	11	**AC2317**

f = flush / nf = non flush / qf = quasi-flush

You can find wiring diagrams and scale drawings from page 594

Sensors with ATEX approval 1G / 2G and 1D

Type	Dimensions [mm]	Sensing range [mm]	Material	$U_{nom.}$ at 1 KΩ [V]	U_b [V]	Internal capacit. [nF]	Internal inductance [µH]	f [Hz]	Draw-ing no.	Order no.
Cable 2 m · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 7										
	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	3	**NN5009**
Cable 10 m · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 7										
	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	140	1800	3	**NN5011**
M12 connector · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 8 · Connector group 195										
	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	12	**NN5008**
M18 connector · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 9 · Connector group 28										
	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	6	**NN5013**
Terminals · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 17										
	33 x 60 x 92	4 nf	PA (polyamide)	8.2 DC	7.5...15 DC	–	–	500	2	**NN504A**
Terminals · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 18 · Connector group --										
	33 x 60 x 92	4 nf	PA (polyamide)	8.2 DC	7.5...15 DC	–	–	500	9	**NN505A**

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 3D and / or 3G

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Draw-ing no.	Order no.
M12 connector · Output function transistor PNP · 2 inputs / 1 output · Connector groups 196, 198									
	55 x 60 x 35	4	PBT (Pocan)	26.5...31.6	IP 67	–	–	13	**AC326A**
M12 connector · Output function ⎍ / ⎍ · DC PNP · Wiring diagram no. 4 · Connector groups 196, 198									
	40 x 26 x 47	4	PBT	10...30	IP 67	1300	100	14	**IN507A**

Sensors for rising stem valves

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Cable 2 m · Output function 1...5 V analogue · DC · Wiring diagram no. 10									
	67.5 x 43 x 110	–	PA	18...36	IP 65 / IP 67	–	–	15	**IX5002**
Cable 2 m · Output function 3 x normally open · DC PNP · Wiring diagram no. 11									
	67.5 x 43 x 110	–	PA	18...36	IP 65 / IP 67	–	100	16	**IX5006**
Cable with connector 0.3 m · Output function 3 x normally open · DC PNP · Wiring diagram no. 12 · Connector groups 152, 155, 186, 192, 194, 205									
	65 x 52 x 110	–	PA	18...36	IP 65 / IP 67	–	100	17	**IX5010**
	65 x 43 x 110	0.2	PA	18...36	IP 65 / IP 67	–	100	18	**ZZ0214**

Sensors for rising stem valves, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
Cable with connector 0.15 m · AS-i · Wiring diagram no. 6 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205									
	65 x 52 x 110	–	PA	26.5...31.6	IP 65 / IP 67	–	–	17	**IX5030**

Added value packages with Bürkert solenoid valve

Type	Description	Order no.
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 20 mm · Hole spacing 80 mm · Connector	**AC0017**
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 80 mm · Connector	**AC0019**
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 130 mm · Connector	**AC0020**

You can find wiring diagrams and scale drawings from page 594

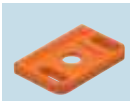
Added value packages with Norgren Herion solenoid valve

Type	Description	Order no.
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 20 mm · Hole spacing 80 mm · Connector	**AC0021**
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 80 mm · Connector	**AC0022**
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 130 mm · Connector	**AC0023**

Switching cams for sensors with quarter-turn actuators

Type	Description	Order no.
	Target puck · Ø 53 mm · adjustable · Housing materials: Target puck: PA 6 black / Metal parts: stainless steel	**E12516**
	Target puck · Ø 53 mm · Housing materials: Target puck: PA 6 black / Metal parts: stainless steel	**E12517**
	Target puck · Ø 55 mm · Inverted function · Housing colour: black · Housing materials: Target puck: PVC / screws: high-grade stainless steel / Metal ring: stainless steel	**E17205**
	Target puck · Ø 102 mm · adjustable target screws · Housing colour: black · Housing materials: Target puck: PVC / screws: stainless steel 316Ti / 1.4571	**E17119**
	Target puck · Ø 102 mm · 3 possible switching flag positions · Housing colour: black · Housing materials: Target puck: PA 6 / screws: V2A	**E17328**
	Target puck · Ø 102 mm · Housing colour: black · 8 possible switching flag positions · Housing materials: Target puck: PA 6 / screws: V2A	**E17329**
	direction indicator black · 12 x 4.8 · For target puck · Housing materials: POM	**E17295**
	direction indicator yellow · 12 x 4.8 · For target puck · Housing materials: POM	**E17296**
	Spacer · Housing materials: PA 6 black / screw: stainless steel	**E12526**

Accessories for quarter-turn actuator sensors

Type	Description	Order no.
	Spacer · 10 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	**E10579**
	Spacer · 3 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	**E10584**
	Spacer · 5 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	**E10585**
	Cable gland · M20 x 1.5 · Housing materials: PA 6.6	**E12208**
	Protective cap · M20 x 1.5 · Housing materials: PA 6.6	**E12209**
	Plug for covering the oblong holes · Housing materials: EPDM	**E12212**
	reinforcement bracket · for type IND · Housing materials: stainless steel 316Ti / 1.4571	**E11310**
	protective housing · Accessory for valve sensors · for type IND · Housing materials: stainless steel	**E11984**
	Mounting kit · MS-MEC-KU-RA--F04A · for ball valve Mecafrance ISO5211/F04 DN25 PN40 · Detection of the "ON/OFF" position by means of the IND dual sensor	**E10597**

Accessories for rising stem valve sensors

Type	Description	Order no.
	Mounting adapter · for Alfa Laval valves type SSV (Single Seat Valves) · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / target: stainless steel 316L / 1.4404 / screws: stainless steel / clamping device: stainless steel	**E12470**
	Mounting adapter · for Alfa Laval valves type LKLA-T (Butterfly Valves) · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / clamping device: stainless steel / target: stainless steel 316L / 1.4404 / screw: stainless steel / sealing: EPDM	**E12476**
	Mounting adapter · for SPX/APV valves type single seat valves · accessory for IX5010, IX5030 · Housing materials: flange: high-grade stainless steel / spacer: POM / target: stainless steel 316L / 1.4404	**E12515**
	Mounting adapter · for SPX/APV valves type butterfly valves · accessory for IX5010, IX5030 · Housing materials: flange: high-grade stainless steel / spacer: POM / target: stainless steel 316L / 1.4404 / sealing: FPM Shore hardness A 80° C	**E12501**

You can find wiring diagrams and scale drawings from page 594

Type	Description	Order no.
	Mounting adapter · for GEA single-seat valves · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / target: stainless steel 316L / 1.4404	E12478
	Mounting adapter · for Bardiani valves · accessory for IX5010, IX5030 · Housing materials: adapter: PA / target: stainless steel 316L / 1.4404	E12170

Accessories mounting sets

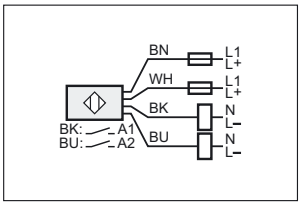
Type	Description	Drawing no.	Order no.
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	19	E12519
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	20	E12520
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	21	E12521
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	22	E12522
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	23	E12523
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	24	E12524

Wiring diagrams

Core colours

BN	brown
BU	blue
BK	black
WH	white
GY	grey

1



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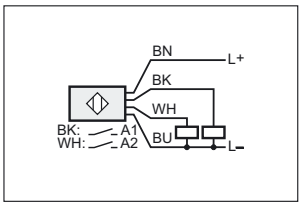

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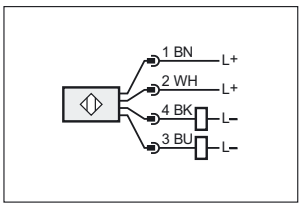

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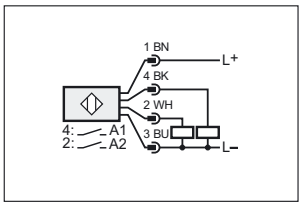

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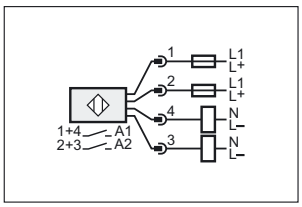

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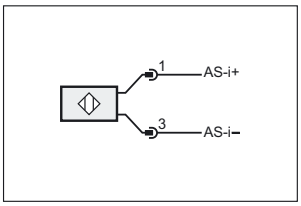

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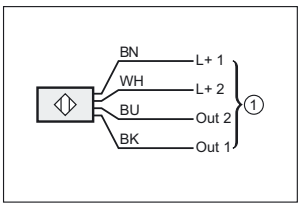
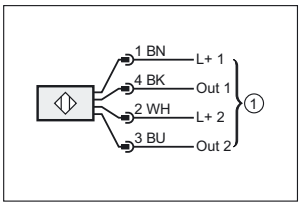


1: connection to NAMUR-amplifier

Wiring diagrams

8



1: connection to NAMUR-amplifier

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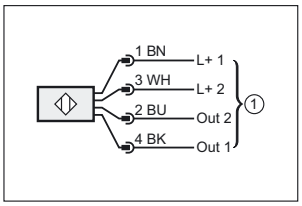

1: connection to NAMUR-amplifier

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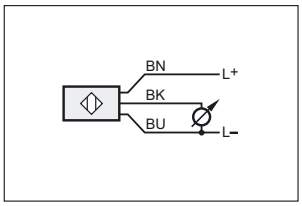

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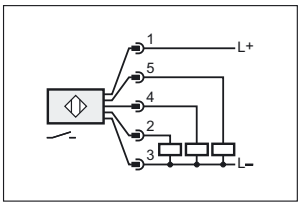

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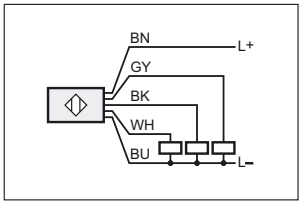

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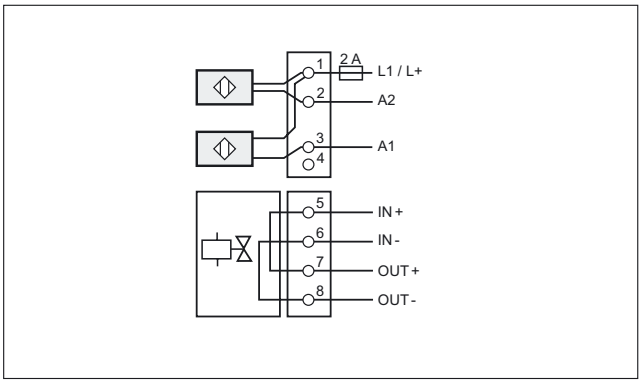

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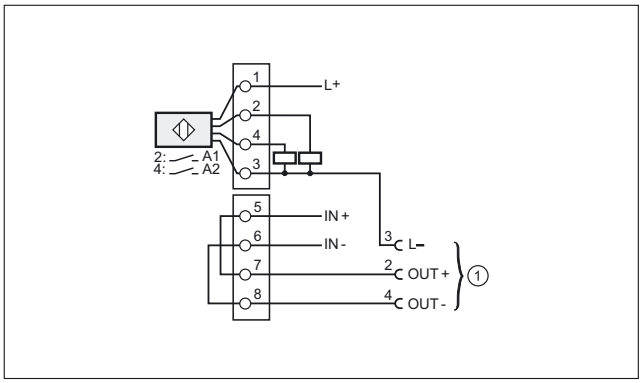

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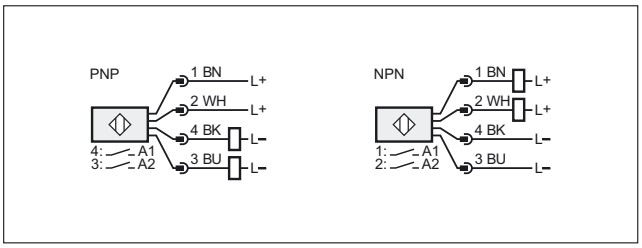

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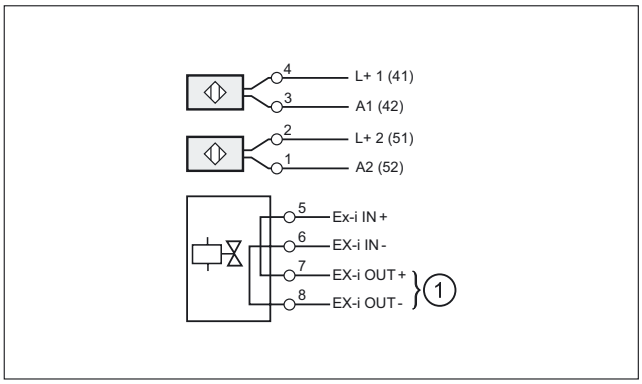

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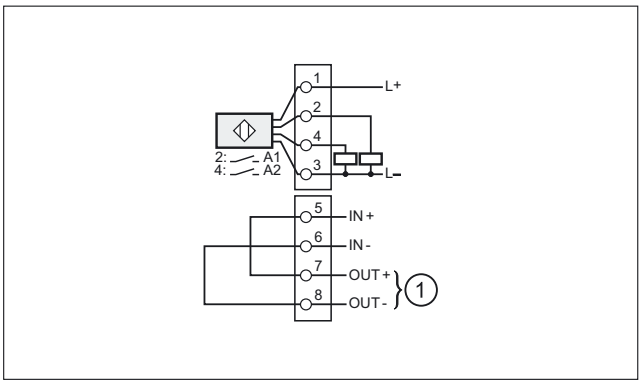
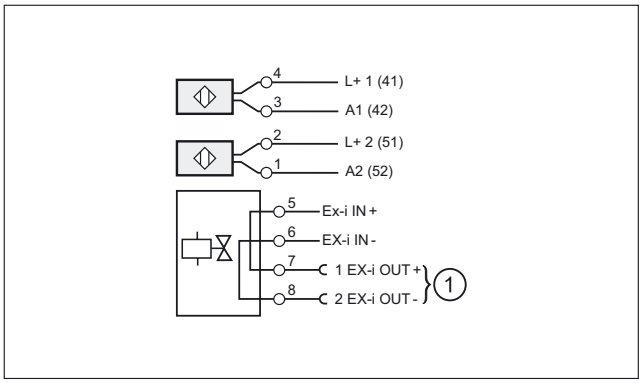


1: solenoid valve

18



Scale drawings / drawing no. – CAD download: www.ifm.com

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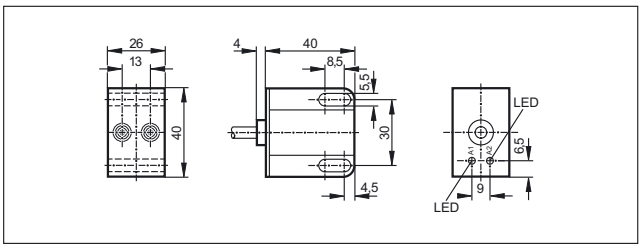

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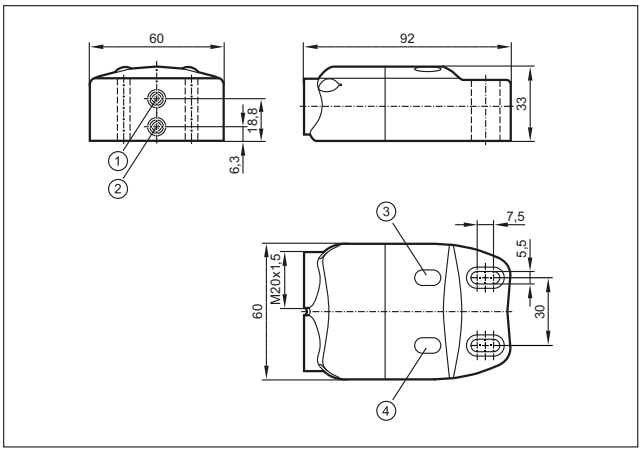
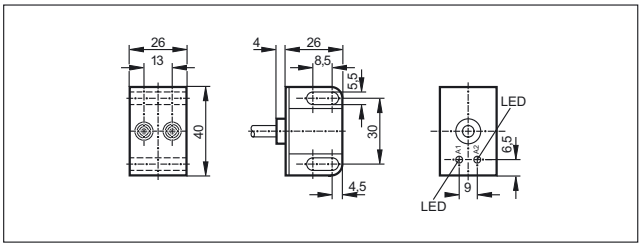


1: sensor 1, 2: sensor 2, 3: LED OUT 2, 4: LED OUT 1

3



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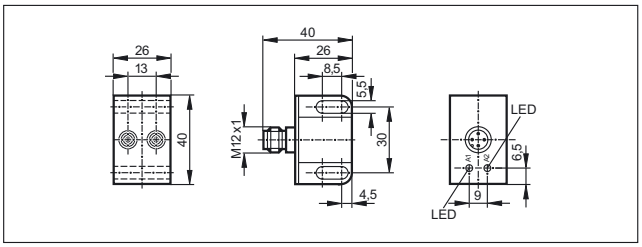

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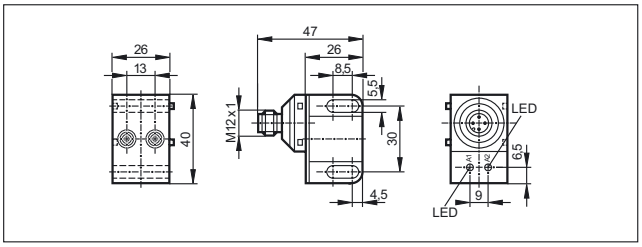

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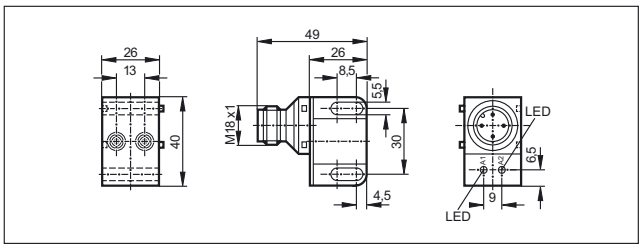

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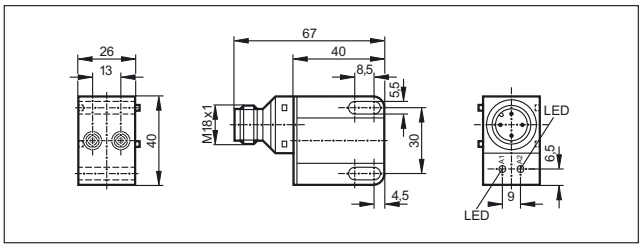

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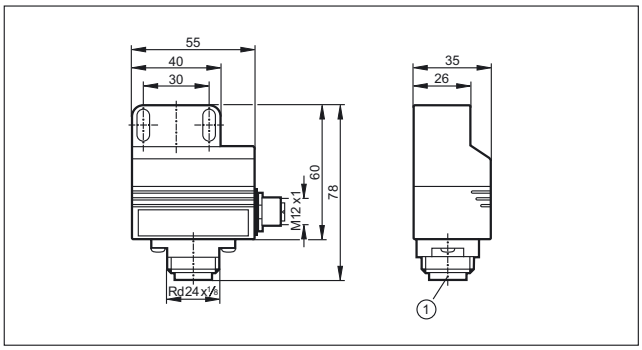

1: field connection

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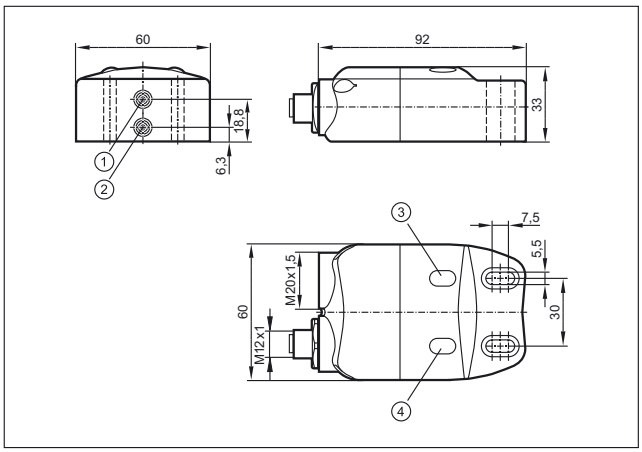
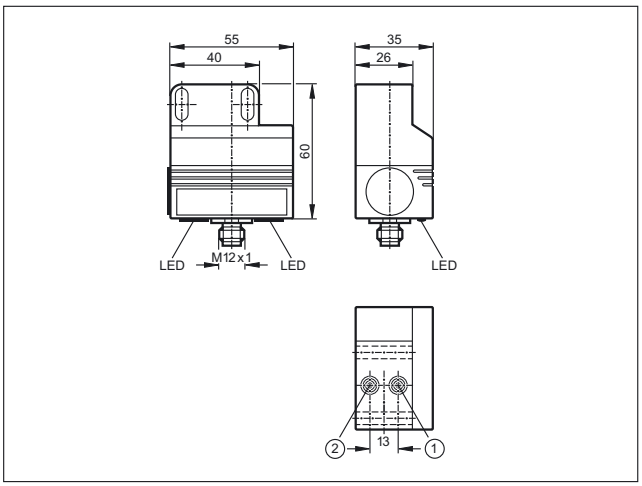


1: sensor 1, 2: sensor 2, 3: LED OUT 2, 4: LED OUT 1

Scale drawings / drawing no. – CAD download: www.ifm.com

10



1: sensor 1, 2: sensor 2

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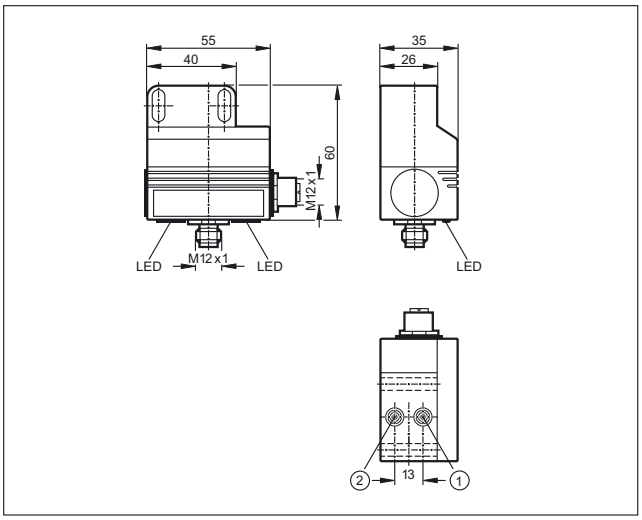

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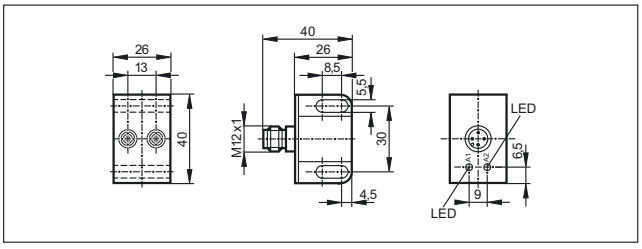

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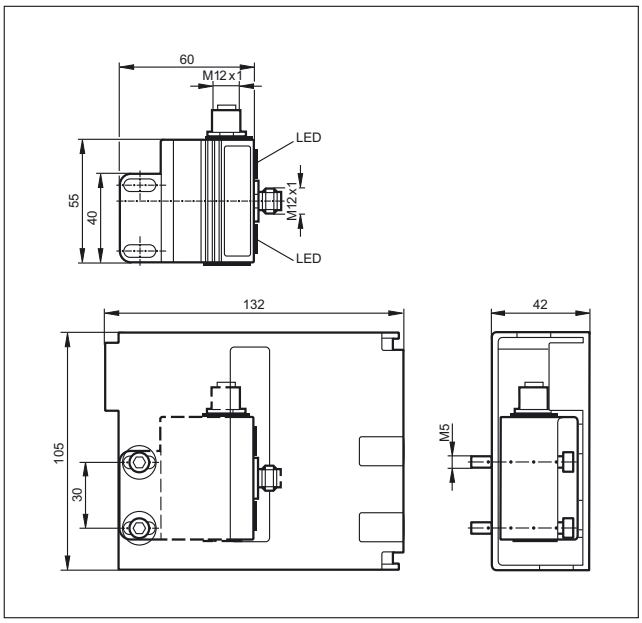

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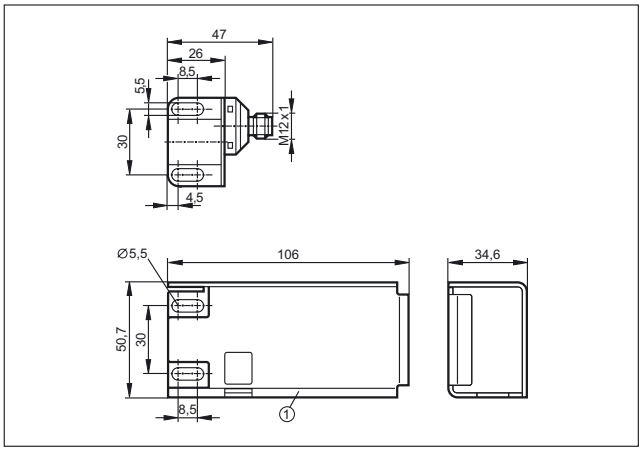

1: protective housing

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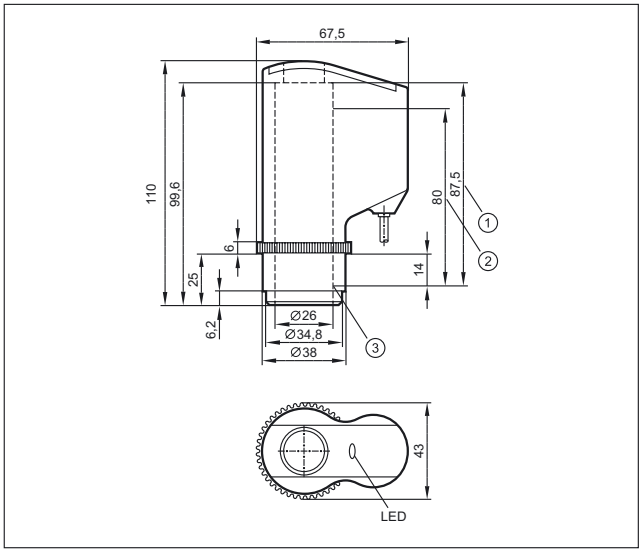
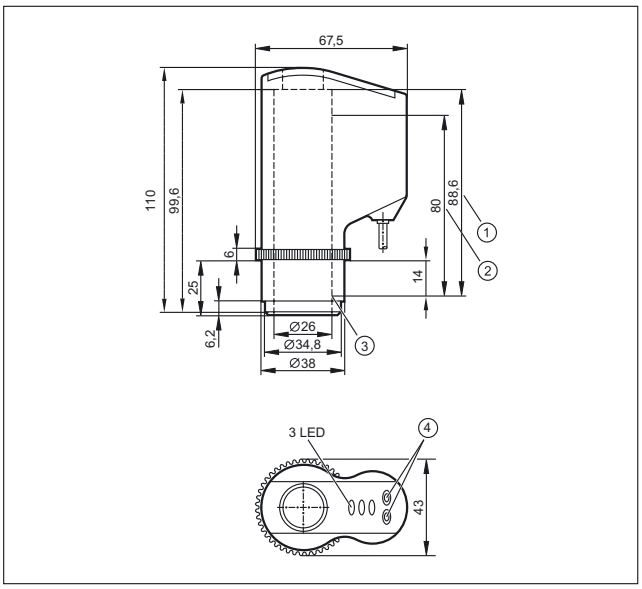


1: Max. spindle stroke, 2: Measuring range, 3: Initial value of the measuring range (zero point)

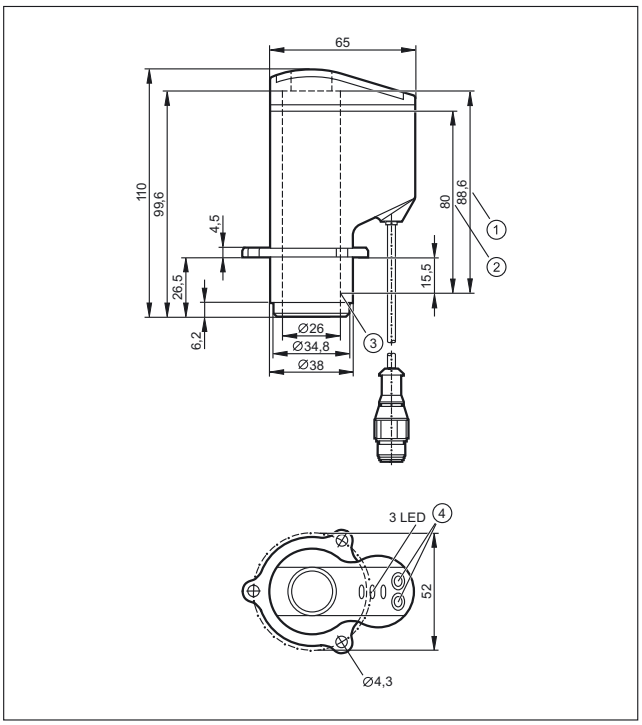
Scale drawings / drawing no. – CAD download: www.ifm.com

16



1: Max. spindle stroke, 2: Measuring distance, 3: Initial value of the measuring range (zero point), 4: Programming buttons

17



1: Max. spindle stroke, 2: Measuring distance, 3: Initial value of the measuring range (zero point), 4: Programming buttons

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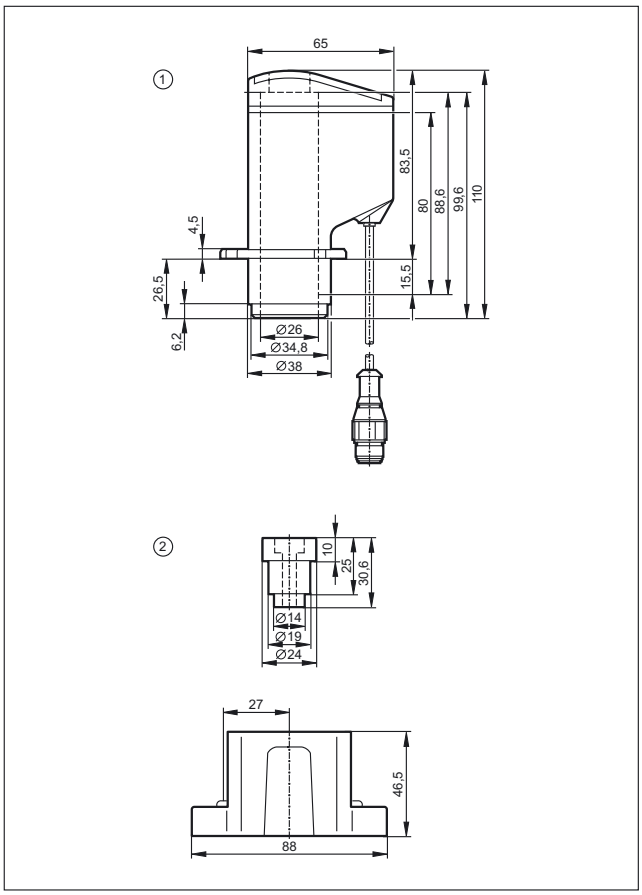
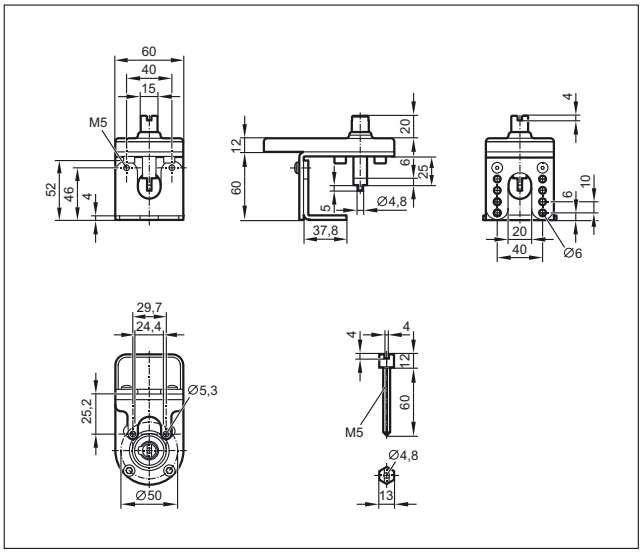


1: Valve sensor IX5010, 2: Mounting adapter E11900

19



Scale drawings / drawing no. – CAD download: www.ifm.com

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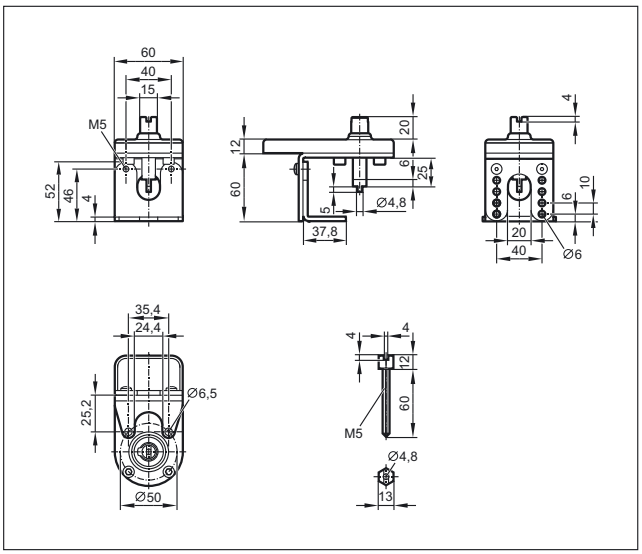

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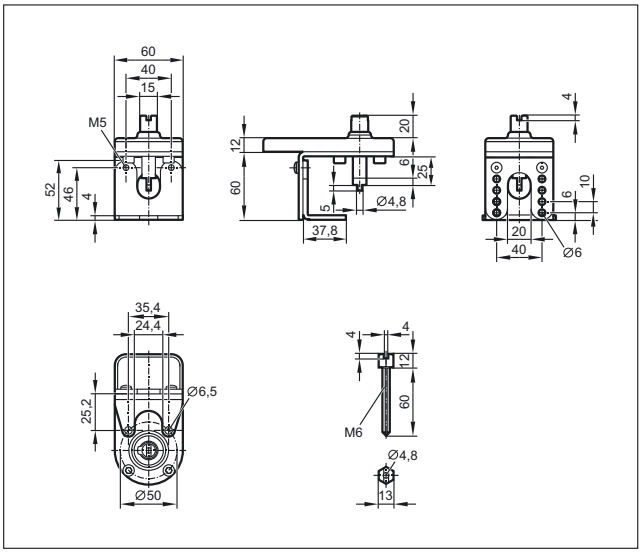

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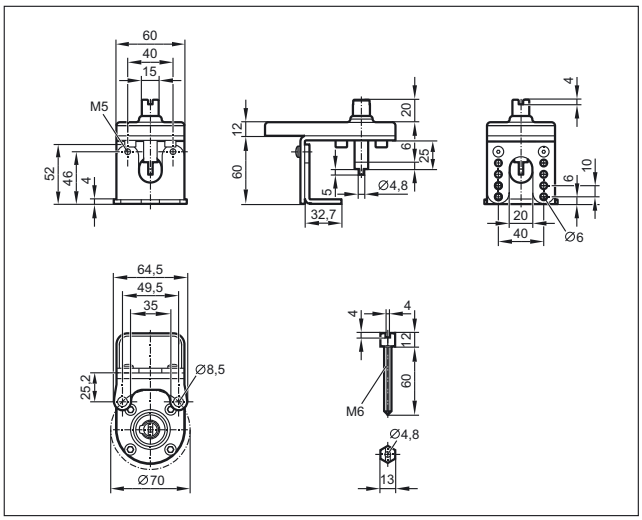

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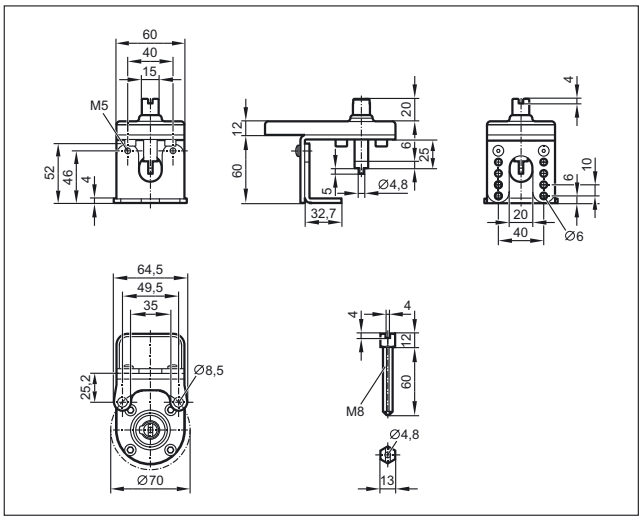

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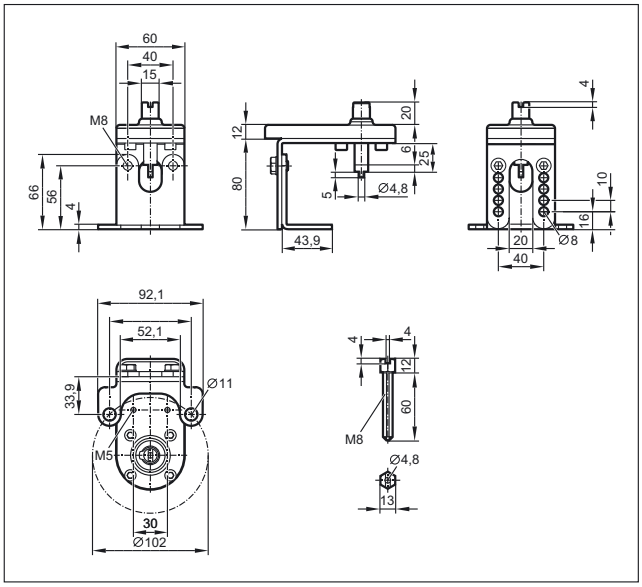


Fast and reliable communication with AS-i

Bus systems

AS-interface (AS-i = actuator sensor interface) is a manufacturer-independent standard for the connection of actuators and sensors of the first field level. It is the only wiring system accepted worldwide. With 20 million slaves installed, AS-i has been tried and tested as a low-cost feeder for all common fieldbuses for many years.

The product portfolio includes AS-i components for different areas: from packaging and conveying via silo applications, machine tools, robotics and automation to the food industry and mobile vehicles.

Safe

The sophisticated AS-i technology and the extended diagnostic possibilities provide high reliability and machine uptime. „Safety at Work“ is the AS-Interface expansion by safety-related components. Safety components up to SIL 3 to IEC 61508 and EN ISO 13849 - 1 / PL e can be connected to AS-i.

Simple

Due to the standardised system, the low wiring complexity and the quick connection technology, AS-i enables simple „Plug & Play“. The reduction of terminals leads to reduced documentation.

Data and energy are jointly transmitted via a two-wire cable. The reverse polarity protected insulation displacement technology helps avoid errors. The modularity and the tree structure smoothly fit to the way the plant is put together.

Cost-optimised

It’s the end result that matters: Wiring complexity, documentation and set-up times are significantly reduced. The decentralisation of the AS-i participants leads to smaller and less expensive control cabinets. Simple diagnostics and a clear system design ensure high machine uptime and avoid downtimes.

	AS-Interface controllers / gateways	602 - 606
	AS-Interface power supplies / earth fault monitors	608 - 609
	AS-Interface I/O modules	610 - 629
	AS-Interface AirBoxes for pneumatics	630 - 633
	AS-Interface sensors	634 - 636
	AS-Interface devices for valves and valve actuators	638 - 640
	AS-Interface expansion	642 - 643
	AS-Interface Safety at Work	644 - 650
	IO-Link components	652 - 656

AS-Interface controllers / gateways

AS-i controller and gateways have AS-i master functionality and are thus an elementary part of AS-i networks. These components are usually in a control cabinet and ensure data communication. A wide product range provides suitability for different applications. An integrated CoDeSys-programmable PLC allows that the AS-i controllers can also be used as supplementary or independent control system.

System overview	*Page*
Controllers, gateways and software	*602 - 603*
Controllers / Gateways	*603 - 604*
AS-i manuals	*604*
Scale drawings / drawing no. – CAD download: www.ifm.com	*605 - 606*

Controllers, gateways and software

Type	Number of AS-i masters	Description	Drawing no.	Order no.
	1	AS-i DP controller E · AS-i PLC with Profibus-DP interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	1	**AC1365**
	2	AS-i DP controller E · AS-i PLC with Profibus-DP interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	1	**AC1366**
	1	AS-i controller E · AS-i controller freely programmable · Profibus DP interface · Ethernet programming interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	1	**AC1355**
	2	AS-i controller E · AS-i controller freely programmable · Profibus DP interface · Ethernet programming interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	1	**AC1356**
	1	AS-i DeviceNet controller E · AS-i controller with DeviceNet interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	2	**AC1318**
	2	AS-i DeviceNet controller E · AS-i controller with DeviceNet interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	2	**AC1324**
	1	AS-i CANopen Controller E · AS-i controller with CANopen interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	3	**AC1331**
	2	AS-i CANopen Controller E · AS-i controller with CANopen interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	4	**AC1332**
	1	AS-i controller E · AS-i controller freely programmable · Full master functions · Graphic display · Ethernet programming interface · Housing materials: aluminium / steel sheet galvanised	5	**AC1357**

Type	Number of AS-i masters	Description	Drawing no.	Order no.
	2	AS-i controller E · AS-i controller freely programmable · Full master functions · Graphic display · Ethernet programming interface · Housing materials: aluminium / steel sheet galvanised	6	**AC1358**

Controllers / Gateways

Type	Number of AS-i masters	Description	Drawing no.	Order no.
	1	SmartLink DP · AS-i gateway / Profibus DP · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	7	**AC1375**
	–	AS-i data decoupling module · Combicon connection · Housing materials: Makrolon	8	**AC1250**
	2	AS-i DP gateway · Full master functions · Graphic display · Profibus DP interface · Housing materials: aluminium / steel sheet galvanised	1	**AC1376**
	1	AS-i Profinet gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profinet RT device class B · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	9	**AC1401**
	2	AS-i Profinet gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profinet RT device class B · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	9	**AC1402**
	1	AS-i Profibus gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profibus DP (DPV0 + DPV1) · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	10	**AC1411**
	2	AS-i Profibus gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profibus DP (DPV0 + DPV1) · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	10	**AC1412**
	1	AS-i EtherNet/IP gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	9	**AC1421**
	2	AS-i EtherNet/IP gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	9	**AC1422**

You can find scale drawings from page 605

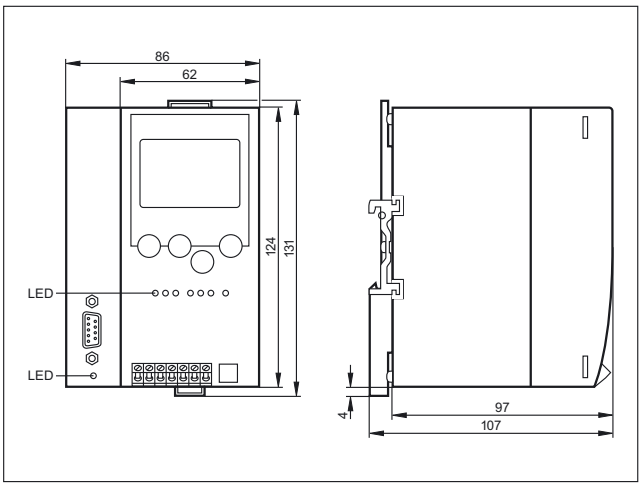
Type	Number of AS-i masters	Description	Drawing no.	Order no.
	1	SmartPLC DataLine with EtherNet/IP device interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	**AC1423**
	1	SmartPLC DataLine with Profinet device interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	**AC1403**
	1	SmartPLC DataLine with EtherCAT slave interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	**AC1433**
	2	SmartPLC DataLine with Profinet device interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	**AC1404**
	2	SmartPLC DataLine with EtherNet/IP device interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	**AC1424**
	2	SmartPLC DataLine with EtherCAT slave interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	**AC1434**

AS-i manuals

Type	Description	Order no.
	ecolog asi system · AS-Interface Manual (German)	**AC0115**
	ecolog asi system · AS-Interface Manual (English)	**AC0116**

Scale drawings / drawing no. – CAD download: www.ifm.com

1



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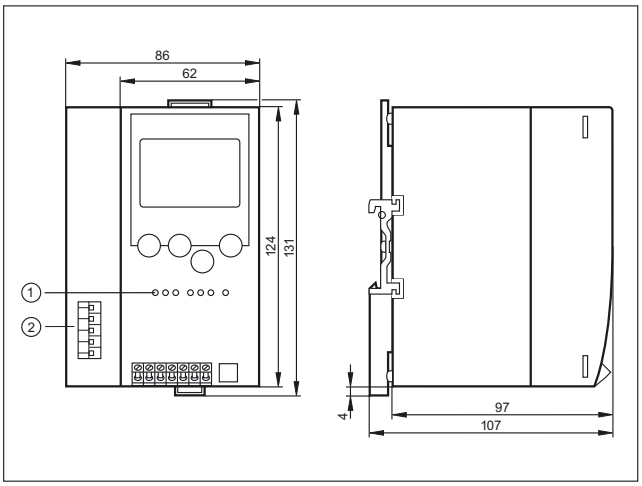
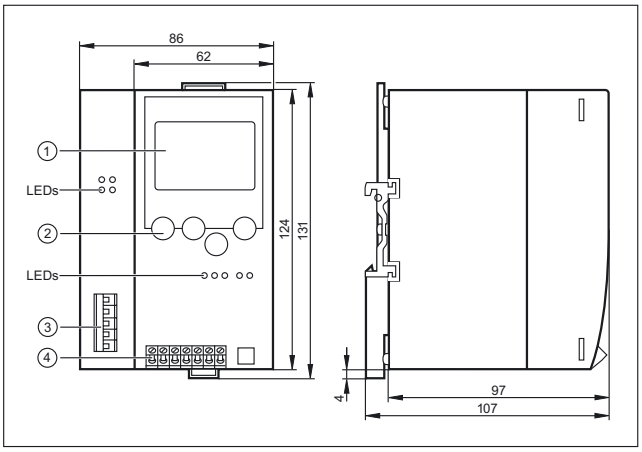


1: LED, 2: DeviceNet interface

3



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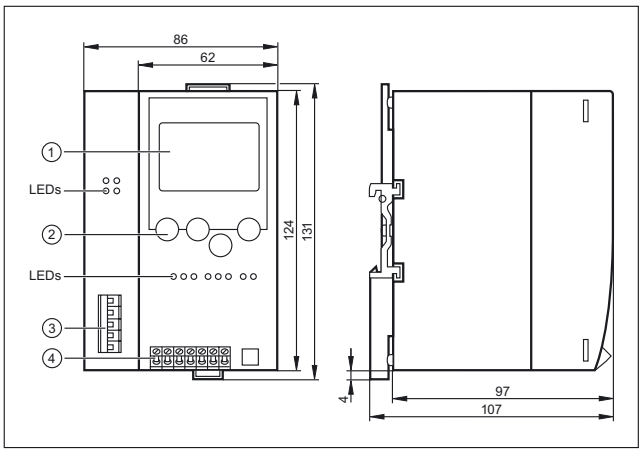

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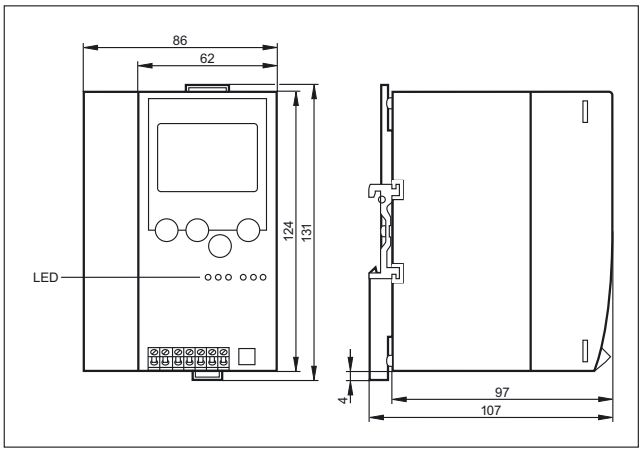

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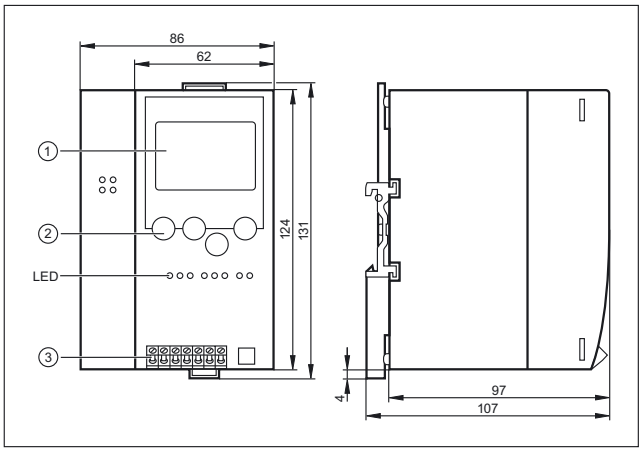
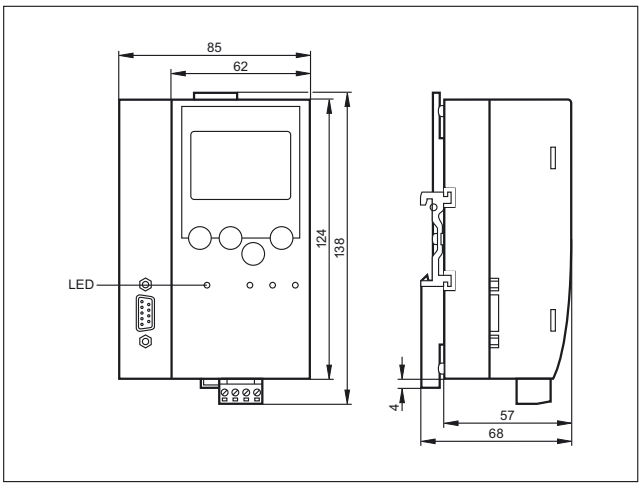


1: display, 2: control keys, 3: Ethernet interface

Scale drawings / drawing no. – CAD download: www.ifm.com

7



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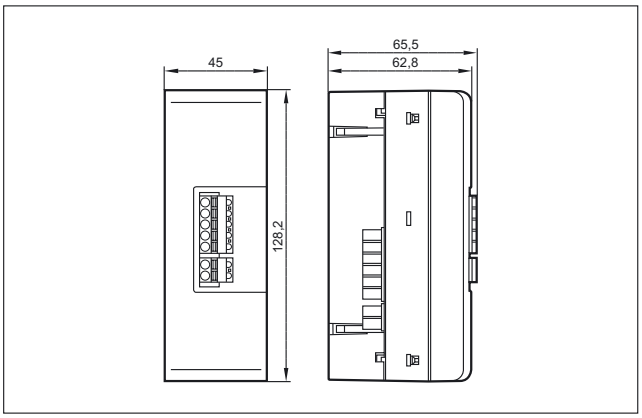

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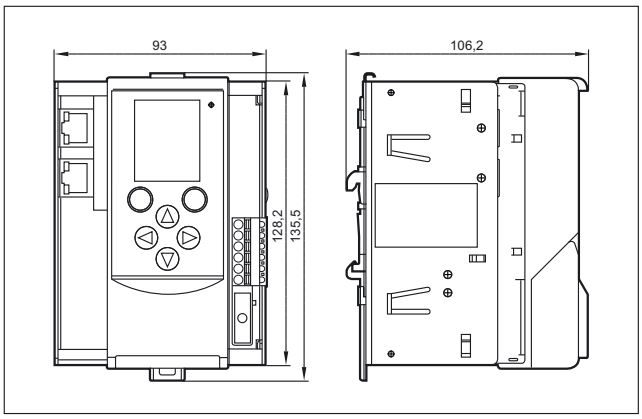

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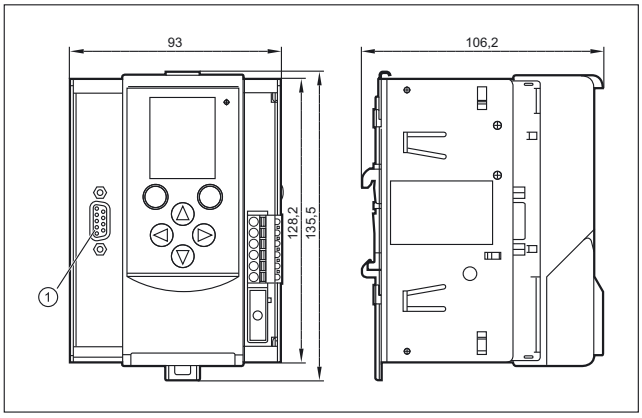
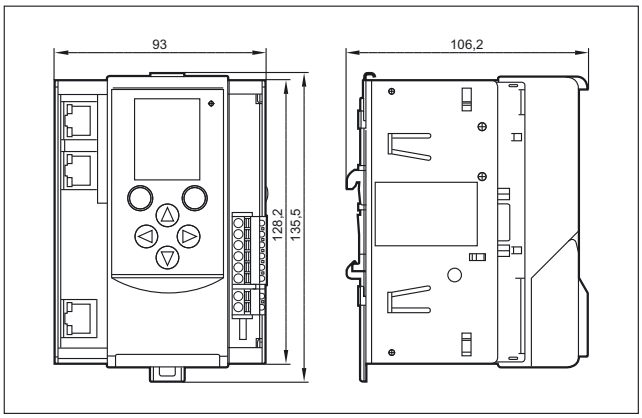


Sub-D (9-pole)

11



AS-Interface power supplies / earth fault monitors

AS-i needs special AS-i power supplies for the communication and the voltage supply of the AS-i modules and the connected inputs and outputs (partly). They supply an unearthed voltage that is in particular suitable for communication insensitive to interference, in particular in industrial environments. By means of earth fault monitors the installation can be monitored for earthing problems.

System overview	Page
AS-i power supplies	608
Insulation monitors	608
Scale drawings / drawing no. – CAD download: www.ifm.com	609

AS-i power supplies

Type	Output current AS-i [A]	Description	Drawing no.	Order no.
	2.8	Power supply · AS-i power supply 115/230 V AC · Integrated data decoupling · NEC Class II Power Source · steel sheet	1	**AC1256**
	4	Power supply · DC convertor 24 V DC for AS-i system voltage · Integrated data decoupling · steel sheet	2	**AC1257**
	4	Power supply · AS-i power supply 115/230 V AC · Integrated data decoupling · steel sheet	1	**AC1254**
	8	Power supply · AS-i power supply 115/230 V AC · Integrated data decoupling · steel sheet	3	**AC1258**
	8	Power supply · Three-phase AS-i power supply 380...480 V AC · Integrated data decoupling · steel sheet	4	**AC1253**

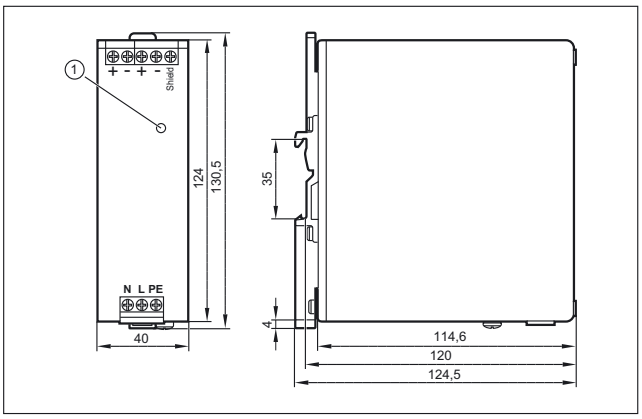
Insulation monitors

Type	Description	Drawing no.	Order no.
	AS-i insulation monitor · Detection of asymmetric insulation faults · Screw terminal	5	**AC2211**
	AS-i insulation monitor · Detection of symmetric and asymmetric insulation faults · Screw terminal	5	**AC2212**

Product selectors and further information can be found at: www.ifm.com

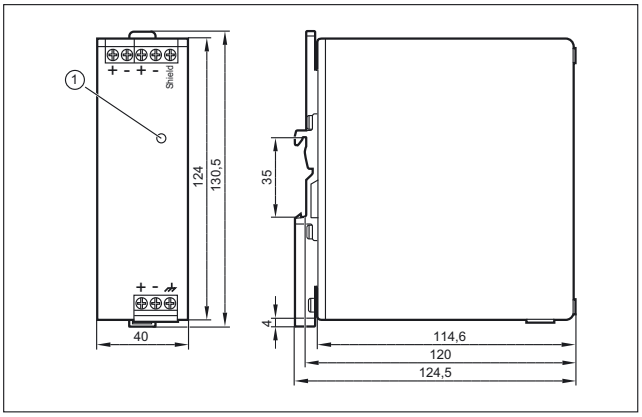
Scale drawings / drawing no. – CAD download: www.ifm.com

1



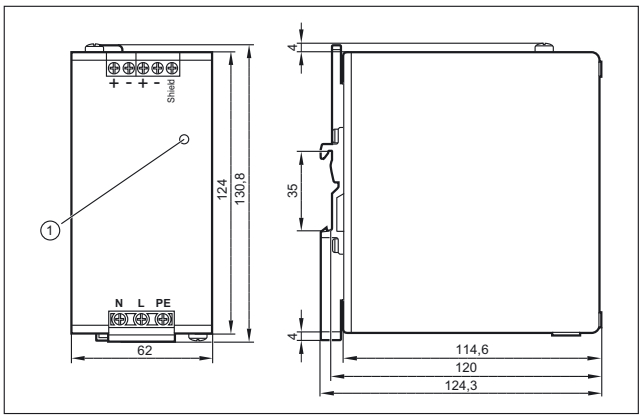
1: LED AS-i ok

2



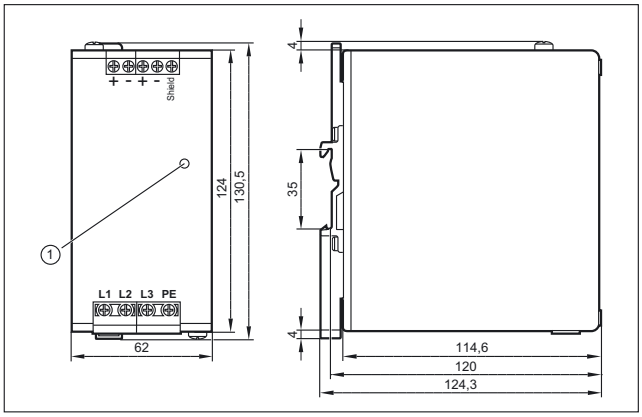
1: LED AS-i ok

3



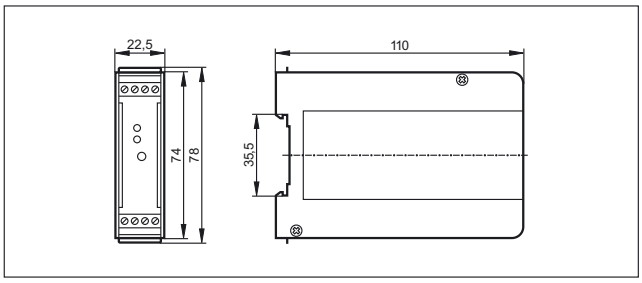
1: LED AS-i ok

4



1: LED AS-i ok

5



AS-Interface I/O modules

The I/O modules are decentralised input and output modules of the AS-i interface for the connection of your digital and analogue inputs and outputs. Different applications have various requirements on the I/O modules regarding protection rating, resistance and materials used. The product range covers PCB solutions, control cabinet modules and I/O modules with protection rating IP69K.

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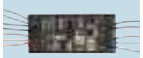
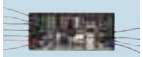
I/O modules for control cabinets

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 inputs	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 with extended addressing mode · Digital inputs · Combicon connection · PA	1	**AC2250**
	4 inputs	Active AS-i module · String mounting possible · Addressing socket · Input supply from external PELV voltage source · Version 2.1 with extended addressing mode · Digital inputs · Combicon connection · PA	1	**AC2254**
	4 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 · Digital outputs · Combicon connection · PA	1	**AC2252**
	4 inputs / 2 outputs / relay	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 with extended addressing mode · Digital inputs · Combicon connection · PA	1	**AC2256**
	4 inputs / 2 outputs / relay	Active AS-i module · String mounting possible · Addressing socket · Input supply from external PELV voltage source · Version 2.1 with extended addressing mode · Digital inputs and outputs · Combicon connection · PA	1	**AC2255**

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 inputs / 3 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 with extended addressing mode · Digital inputs and outputs · Combicon connection · PA	1	**AC2264**
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 · Digital inputs and outputs · Combicon connection · PA	1	**AC2251**
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · External sensor supply PELV · Version 2.1 · Digital inputs and outputs · Combicon connection · PA	1	**AC2257**
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · External sensor supply PELV · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Digital inputs and outputs · Combicon connection · PA	2	**AC2267**
	4 inputs / 4 outputs / relay	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 · Combicon connection · PA 6.6	3	**AC2258**
	4 inputs / 4 outputs / relay	Active AS-i module · String mounting possible · Addressing socket · Input supply from external PELV voltage source · Version 2.1 · Combicon connection · PA 6.6	3	**AC2259**
	4 inputs / 4 outputs	Active AS-i module · PCB size 105 x 45 x 17 mm · Wire length 0.2 m · Digital inputs and outputs	4	**AC2709**
	4 inputs / 3 outputs	Active AS-i module · AS-i slave with extended addressing mode · PCB size 105 x 45 x 17 mm · Wire length 0.2 m · Digital inputs and outputs	4	**AC2739**
	2 inputs / 1 LED output	Active AS-i module · Only suited for mechanical contacts · Wire length 0.1 m	5	**AC2729**
	3 inputs / 3 outputs	Active AS-i module · AS-i version 2.1 with extended addressing mode	6	**AC2731**
	4 inputs / 4 outputs	Active AS-i module · AS-i slave with extended addressing mode · Only for operation with AS-i masters with the profile M4 · 12 x 0.2 m · housing: PC potted	7	**AC2750**
	4 inputs / 3 outputs	Active AS-i module · AS-i slave with extended addressing mode · 11 x 0.2 m · housing: PC potted	8	**AC2751**
	4 inputs / 4 outputs	Active AS-i module · AS-i slave with extended addressing mode · Only for operation with AS-i masters with the profile M4 · housing: PC potted	9	**AC2752**
	4 inputs / 3 outputs	Active AS-i module · AS-i slave with extended addressing mode · housing: PC potted	10	**AC2753**
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · plastics / PC GF20	11	**AC3200**
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · plastics / PC GF20	11	**AC3201**
	4 inputs	Active AS-i module · String mounting possible · Version 2.11 and 3.0 with extended addressing mode · plastics / PC GF20	12	**AC3202**

You can find scale drawings from page 624

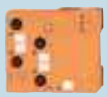
Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 outputs	Active AS-i module · String mounting possible · Versions 2.11 and 3.0 · plastics / PC GF20	13	**AC3203**
	4 inputs	Active AS-i module · String mounting possible · Version 2.11 and 3.0 with extended addressing mode · plastics / PC GF20	12	**AC3204**
	4 analogue inputs 4...20 mA	Active AS-i module · Supply either from AS-i or an external 24 V source · Combicon connector for sensor connection · PC GF20	14	**AC3216**
	4 analogue inputs 0...10 V	Active AS-i module · Supply either from AS-i or an external 24 V source · Combicon connector for sensor connection · PC GF20	14	**AC3217**
	4 analogue outputs 0...20 mA	Active AS-i module · Supply either from AS-i or an external 24 V source · Combicon connector for actuator connection · PC GF20	15	**AC3218**
	4 analogue outputs 0...10 V	Active AS-i module · Supply either from AS-i or an external 24 V source · Combicon connector for actuator connection · PC GF20	15	**AC3219**
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · plastics / PC GF20	16	**AC3220**
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · plastics / PC GF20	16	**AC3221**
	4 inputs Pt100	Active AS-i module · Combicon connection · PC GF20	17	**AC3222**

Field modules IP 67 AS-Interface

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4-way splitter box	ClassicLine splitter box module · Three orientations of the flat cable are possible · AS-i and AUX splitter box for the connection of intelligent sensors/actuators · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5200**
	4 inputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5205**
	4 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5215**
	4 analogue inputs 4...20 mA	Active ClassicLine module · 4 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · Three orientations of the flat cable are possible · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5216**

Type	Inputs / outputs	Description	Drawing no.	Order no.
	3 outputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5203**
	4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5208**
	4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital outputs 2 A · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5213**
	2 outputs / 2 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital outputs and inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5214**
	2 inputs / 2 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital inputs and outputs (2 A) · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5211**
	2 outputs / 2 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Outputs supplied from AS-i · Digital outputs and inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5224**
	4 inputs / 3 outputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · inputs externally supplied · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC5292**
	8 digital inputs (2 slaves)	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC5210**
	4 inputs / 4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC5209**
	4 inputs / 4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital inputs and outputs (2 A) · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC5212**
	4 inputs / 3 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Version 2.11 and 3.0 with extended addressing mode · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC5204**
	4 inputs / 4 outputs	Active ClassicLine module · Only for operation with AS-i masters with the profile M4 · Addressing socket · Three orientations of the flat cable are possible · Version 3.0 with extended addressing mode · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC5235**

You can find scale drawings from page 624

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 inputs / 4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Digital inputs and outputs (2 A) · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC5236**
	4 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5245**
	4 inputs / 4 outputs	Active ClassicLine module · Only for operation with AS-i masters with the profile M4 · Addressing socket · Three orientations of the flat cable are possible · Version 3.0 with extended addressing mode · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC5275**
	4 inputs / 4 outputs	Active ClassicLine module · Version 3.0 with extended addressing mode · Addressing socket · Only for operation with AS-i masters with the profile M4 · Three orientations of the flat cable are possible · inputs externally supplied · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC5293**
	2 outputs / 2 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Digital inputs and outputs (2 A) · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5234**
	2 analogue outputs 4...20 mA	Active ClassicLine module · Electrical isolation · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5218**
	2 pushbuttons / 2 LED displays	Active module upper parts AS-i illuminated pushbutton module · Power supply via AS-i cable · A/B slave · Pushbutton functions: normally open / normally closed · PBT	20	**AC2088**
	2 pushbuttons / 2 LED displays	Active module upper parts AS-i illuminated pushbutton module · Power supply via AS-i cable · Colour inserts changeable · PBT	21	**AC2086**
	4 inputs 4...20 mA	Active ClassicLine module · AS-i profile S-7.3 · 4 analogue inputs 4...20 mA · IR addressing possible · For the connection of 2-wire, 3-wire or 4-wire sensors · Sockets M12 x 1 · PBT	22	**AC2516**
	4 inputs 0...10 V	Active ClassicLine module · AS-i profile S-7.3 · 4 analogue inputs 0...10 V · IR addressing possible · For the connection of 2-wire, 3-wire or 4-wire sensors · Sockets M12 x 1 · PBT	22	**AC2517**
	2 inputs 4...20 mA	Active ClassicLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · Addressing socket · Three orientations of the flat cable are possible · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5222**
	2 inputs 4...20 mA	Active ClassicLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 4-wire sensors · Electrical isolation · Addressing socket · Three orientations of the flat cable are possible · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5223**

Type	Inputs / outputs	Description	Draw-ing no.	Order no.
	2 IO-Link ports	Active ClassicLine module · 2 IO-Link ports · For the connection of IO-Link sensors and actuators, binary sensors and binary actuators · Addressing socket · Three orientations of the flat cable are possible · Only for operation with AS-i masters with the profile M4 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5225**
	4 analogue inputs 4...20 mA	Active ClassicLine module · 4 analogue inputs 4...20 mA · For the connection of 2-wire, 3-wire or 4-wire sensors · Electrical isolation · Three orientations of the flat cable are possible · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5226**
	2 digital inputs / 1 analogue input / 1 analogue output	Active ClassicLine module · Only for operation with AS-i masters with the profile M4 · Electrical isolation · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC5230**
	4 inputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC505A**
	4 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC515A**
	4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC508A**
	2 inputs / 2 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Digital inputs and outputs (2 A) · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC507A**
	2 outputs / 2 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC514A**
	2 inputs 4...20 mA	Active ClassicLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	**AC522A**
	4 inputs / 4 outputs	Active ClassicLine module · Only for operation with AS-i masters with the profile M4 · Addressing socket · Three orientations of the flat cable are possible · Version 3.0 with extended addressing mode · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	**AC535A**

You can find scale drawings from page 624

CompactLine modules

Type	Inputs / outputs	Description	Drawing no.	Order no.
	2 inputs 4...20 mA	Active CompactLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · IR addressing possible · high-grade stainless steel · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / screws in the lower part: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	23	**AC2402**
	2 inputs 4...20 mA	Active CompactLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 4-wire sensors · Electrical isolation · IR addressing possible · high-grade stainless steel · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / screws in the lower part: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	23	**AC2403**
	4-way splitter box	Passive compact module · AS-i splitter box for the connection of intelligent sensors/actuators · Sockets M12 x 1 · PA 6.6 / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	24	**AC2413**
	4 inputs	Active CompactLine module · fully potted housing · IR addressing possible · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	25	**AC2410**
	4 inputs	Active CompactLine module · IR addressing possible · Version 2.11 and 3.0 with extended addressing mode · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	25	**AC2457**
	4 inputs	Active CompactLine module · IR addressing possible · Metal parts from stainless steel · Digital inputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated / O-Ring : EPDM	25	**AC2451**
	4 outputs	Active CompactLine module · IR addressing possible · Digital outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	26	**AC2417**
	2 inputs / 2 outputs	Active CompactLine module · 60 x 118.2 x 27 · IR addressing possible · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	26	**AC2411**
	2 inputs / 2 outputs	Active CompactLine module · IR addressing possible · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	26	**AC2458**
	4 inputs / 4 outputs	Active CompactLine module · 60 x 152 x 27 · IR addressing possible · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	27	**AC2412**
	4 inputs / 4 outputs	Active CompactLine module · IR addressing possible · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	27	**AC2459**

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 inputs / 4 outputs	Active CompactLine module · IR addressing possible · External sensor supply PELV · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	27	**AC2466**
	4 inputs / 4 outputs	Active CompactLine module · IR addressing possible · Metal parts from stainless steel · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated / O-Ring : EPDM	27	**AC2452**
	4 inputs / 4 outputs	Active CompactLine module · IR addressing possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	27	**AC2471**
	4 inputs	Active CompactLine module · AS-i connection via M12 connector · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / O-Ring : Viton	28	**AC2464**
	4 inputs / 4 outputs	Active CompactLine module · AS-i and AUX connection via M12 connector · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / O-Ring : Viton	29	**AC2465**
	2 outputs / 2 inputs	Compact M8 AS-i module · 90.5 x 30 x 23.5 · Digital inputs and outputs supplied via AS-i · AS-i connection via M12 connector · Version 2.11 and 3.0 with extended addressing mode · M8 ecolink interface · Sockets M8 x 1 · PBT	30	**AC2482**
	4 inputs	Compact M8 AS-i module · 90.5 x 30 x 23.5 · Digital inputs · AS-i connection via M12 connector · Version 2.11 and 3.0 with extended addressing mode · M8 ecolink interface · Sockets M8 x 1 · PBT	30	**AC2484**
	8 inputs	Compact M8 AS-i module · 134.5 x 30 x 23.5 · Digital inputs · AS-i connection via M12 connector · Version 3.0 with extended addressing mode · M8 ecolink interface · Only for operation with AS-i masters with the profile M4 · Sockets M8 x 1 · PBT	31	**AC2488**
	4-way splitter box	Passive compact module · Metal parts from stainless steel · Sockets M12 x 1 · PA 6.6 / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / Piercing contacts: CuSn6 surface nickel and tin-plated / screws: stainless steel	24	**AC2453**
	4 inputs / 4 outputs; bidirectional	Active CompactLine module · IR addressing possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Metal parts from stainless steel · Sockets M12 x 1 · PA 6.6 / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / Piercing contacts: CuSn6 surface nickel and tin-plated / screws: stainless steel	27	**AC2454**
	4 inputs / 4 outputs; bidirectional	Active CompactLine module · IR addressing possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Metal parts from stainless steel · Sockets M12 x 1 · PA 6.6 / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / Piercing contacts: CuSn6 surface nickel and tin-plated / screws: stainless steel	27	**AC2455**
	4 inputs	Active CompactLine module · Metal parts from stainless steel · IR addressing possible · Version 2.11 and 3.0 with extended addressing mode · Sockets M12 x 1 · PA 6.6 / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / Piercing contacts: CuSn6 surface nickel and tin-plated / screws: stainless steel	25	**AC2456**

You can find scale drawings from page 624

Type	Inputs / outputs	Description	Drawing no.	Order no.
	2 outputs / 2 inputs	Active CompactLine module · 60 x 118.2 x 27 · IR addressing possible · Metal parts from stainless steel · Version 2.11 and 3.0 with extended addressing mode · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	26	**AC2485**
	4 inputs	Active CompactLine module · IR addressing possible · Version 2.11 and 3.0 with extended addressing mode · Metal parts from stainless steel · Digital inputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	25	**AC2486**
	4 outputs	Active CompactLine module · IR addressing possible · Metal parts from stainless steel · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Digital outputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	26	**AC2487**

Universal modules AS-Interface

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 inputs	Active module upper part AS-universal module · Digital inputs · Connection via cage clamps · PA6 GF30 / stainless steel	32	**AC2032**
	4 inputs / 4 outputs	Universal module · Digital inputs and outputs · Connection via cage clamps · PA6 GF30 / stainless steel	33	**AC2035**
	2 inputs 4...20 mA	Active AS-i module IP 65 · 2 analogue inputs 4...20 mA · AS-i profile S-7.3 · For the connection of 2-wire, 3-wire or 4-wire sensors · Connection via cage clamps · PBT	34	**AC2616**
	2 inputs 0...10 V	Active AS-i module IP 65 · 2 analogue inputs 0...10 V · AS-i profile S-7.3 · For the connection of 2-wire, 3-wire or 4-wire sensors · Connection via cage clamps · PBT	34	**AC2617**
	2 outputs 0...20 mA	Active AS-i module IP 65 · 2 analogue outputs 0...20 mA · AS-i profile S-7.3 · For the connection of 2-wire actuators or 4-wire actuators with separate 24 V supply · Connection via cage clamps · PBT	34	**AC2618**
	2 outputs 0...10 V	Active AS-i module IP 65 · 2 analogue outputs 0...10 V · AS-i profile S-7.3 · For the connection of 2-wire actuators or 4-wire actuators with separate 24 V supply · Connection via cage clamps · PBT	34	**AC2619**
	4 inputs Pt100	Active AS-i module IP 65 · 4 analogue inputs temperature Pt100 · AS-i profile S-7.3 · Connection via cage clamps · PBT	33	**AC2620**

Field modules IP 69K and accessories

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 inputs / 3 outputs	Active ProcessLine module · Version 2.1 with extended addressing mode · Protection rating IP 69K · high-grade stainless steel · Digital inputs and outputs · Sockets M12 x 1 · high-grade stainless steel / Makrolon / O-ring: EPDM	35	**AC2904**

Type	Inputs / outputs	Description	Drawing no.	Order no.
	8 digital inputs (2 slaves)	Active ProcessLine module · Version 2.1 with extended addressing mode · Protection rating IP 69K · high-grade stainless steel · Digital inputs · Sockets M12 x 1 · high-grade stainless steel / Makrolon / O-ring: EPDM	36	**AC2910**
	8-way splitter box	Passive splitter box AS-i ProcessLine · Protection rating IP 69K · high-grade stainless steel · AS-i and AUX splitter box for the connection of intelligent sensors/actuators · Sockets M12 x 1 · high-grade stainless steel / Makrolon	37	**AC2900**
	4 inputs 4...20 mA	Active AS-i module · 4 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · Threaded bush: stainless steel 316L / 1.4404 / Makrolon / O-ring: EPDM	38	**AC2916**
	4 inputs 4...20 mA	Active AS-i module · 4 analogue inputs 4...20 mA · For the connection of 2-wire, 3-wire or 4-wire sensors · Electrical isolation · Threaded bush: stainless steel 316L / 1.4404 / Makrolon / O-ring: EPDM	38	**AC2923**
	AS-i / 24 V	FC splitter · V4A · AS-i voltage and external auxiliary voltage via the M12 socket · Metal parts: stainless steel 316L / 1.4404 / Blanks: FPM / O-ring: EPDM	39	**E70354**
	AS-i	FC splitter · AS-i voltage via M12 socket · Metal parts: stainless steel 316L / 1.4404 / O-ring: EPDM / socket: PP GF30 / blade seal: TPE	40	**E70454**
	AS-i / 24 V	FC splitter · Metal parts: stainless steel 316L / 1.4404 / Blanks: FPM / O-ring: EPDM	41	**E70377**

Module lower parts

Type	Inputs / outputs	Description	Drawing no.	Order no.
	FC coupling module	Module lower part flat cable · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT	42	**AC5000**
	FC-E coupling module with external power supply	FC-E coupling module · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT	42	**AC5003**
	FC coupling module	Module lower part flat cable · with addressing plug · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT	43	**AC5010**
	FC-E coupling module with external power supply	FC-E coupling module · with addressing plug · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT	43	**AC5011**
	FC coupling module	Module lower part flat cable · stainless steel · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT / stainless steel	42	**AC5014**
	FC-E coupling module with external power supply	FC-E coupling module · stainless steel · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT / stainless steel	42	**AC5015**

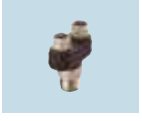
You can find scale drawings from page 624

Combicon connectors

Type	Description	Order no.
	Combicon connector · with screw terminals 4-pole · Housing materials: current carrying parts: copper alloy tin-plated	**E70230**
	Combicon connector · with screw terminals 4-pole · Housing materials: current carrying parts: copper alloy tin-plated	**E70231**
	Combicon connector · with cage clamps 4 poles · Housing materials: current carrying parts: copper alloy tin-plated	**E70232**
	Combicon connector · with cage clamps 4 poles · Housing materials: current carrying parts: copper alloy tin-plated	**E70233**
	Combicon connector · with insulation displacement terminals 4-pole (0.75...1 mm^2) · Housing materials: current carrying parts: copper alloy tin-plated	**E70236**

Flat cable splitters and accessories

Type	Description	Order no.
	Quad M12 · AS-i and external voltage via M12 socket · Sockets M12 x 1 · Housing materials: PA66 / socket: stainless steel 316L / 1.4404 / screws: stainless steel 316L / 1.4404 / nut: stainless steel 316L / 1.4404 / O-Ring : NBR / Flat cable seal: NBR	**E70588**
	Quad splitter · Distribution of the AS-i voltage or the external 24 V supply · Housing materials: PA66 / screws: stainless steel 316L / 1.4404 / nuts: stainless steel 316L / 1.4404 / Flat cable seal: NBR	**E70600**
	FC splitter · Distribution of the AS-i voltage or the external 24 V supply · Housing materials: PA 6 GF35 Grivory	**E70381**
	FC splitter · high-grade stainless steel · ATEX approval · Group II, category 3D/3G · AS-i voltage and external auxiliary voltage via the M12 socket · Housing materials: Metal parts: stainless steel 316L / 1.4404 / Blanks: FPM / O-ring: EPDM	**E7354A**
	FC splitter · ATEX approval · Group II, category 3D/3G · Distribution of the AS-i voltage or the external 24 V supply · Housing materials: Metal parts: stainless steel 316L / 1.4404 / Blanks: FPM / O-ring: EPDM	**E7377A**
	FC insulation displacement connector · AS-i voltage via M12 socket · Keyway bottom left · Housing materials: PA66 - GF25	**E70485**
	FC insulation displacement connector · AS-i voltage via M12 socket · Keyway top right · Housing materials: PA66 - GF25	**E70486**
	FC insulation displacement connector · AS-i and external voltage via M12 socket · Housing materials: PA66 - GF25	**E70487**

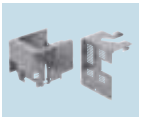
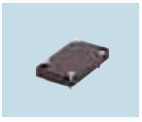
Type	Description	Order no.
	FC splitter · Distribution of the AS-i voltage or the external 24 V supply · Housing materials: PBT / screw: stainless steel / Contact pins: gold-plated	**E70581**
	FC insulation displacement connector · Distribution of the AS-i voltage and the external 24 V supply to M12 socket · 1 m · Housing materials: housing: PBT PC / cable: PUR / connector housing: PUR	**E70582**
	FC insulation displacement connector · AS-i voltage via M12 socket · Keyway top right · Housing materials: PBT PC	**E70585**
	FC insulation displacement connector · AS-i voltage via M12 socket · Keyway bottom left · Housing materials: PBT PC	**E70586**
	FC insulation displacement connector · Socket M12 - AS-i flat cable · Housing materials: sealing: NBR / housing: PA / O-ring: FPM / screws: stainless steel / nut: Brass nickel-plated / Contact pins: bronze gold-plated	**AC5005**
	FC insulation displacement connector · Socket M12 - AS-i flat cable · 2 connection directions possible in case of angled connectors · Housing materials: sealing: EPDM / housing: PA / O-ring: EPDM / screws: stainless steel / nut: stainless steel / Contact pins: bronze gold-plated	**E70471**
	FC insulation displacement connector · Socket M12 - AS-i flat cable · Housing materials: PA	**E70096**
	FC insulation displacement connector · Distribution of the AS-i voltage and the external 24 V supply to M12 socket · 1 m · Housing materials: housing: PA 6 GF35 Grivory / Socket: PUR	**E70481**
	FC insulation displacement connector · Distribution of the AS-i voltage to M12 socket · 0.6 m · Housing materials: housing: PA66 - GF25	**E70483**
	FC insulation displacement connector · Transition from flat cable to round cable · Cable length 2 m · 2 m · Housing materials: PA 6 GF35 Grivory / round cable: PUR / core insulation: PVC	**E70498**
	FC insulation displacement connector · Transition from flat cable to round cable · Cable length 5 m · 5 m · Housing materials: PA 6 GF35 Grivory / round cable: PUR / core insulation: PVC	**E70499**
	Flat cable insulation displacement connector	**E79995**
	FC insulation displacement connector · straight / angled	**E79998**
	Splitter box · 8 way · Cable · 25 m · Housing materials: high-grade stainless steel	**E11847**
	Y splitter · M12 plug - 2 M8 sockets · Free from halogen · Free from silicone · Gold-plated contacts · Housing materials: PUR	**E10802**

You can find scale drawings from page 624

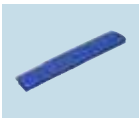
Type	Description	Order no.
	Passive AS-i bus termination · Improvement of the signal quality · Extension of the cable without additional repeater · Monitoring of the supply voltage by means of LEDs	**E70580**
	Protective cap · M8 · for CompactM8 modules · Housing materials: ULTRAMID black	**E73005**
	Protective cap · M12 · for M12 sockets of ClassicLine modules, CompactLine modules and AirBoxes · Housing materials: PA black	**E73004**
	Protective cap · M12 · for M12 socket to cover the unused inputs and outputs on the module; for unused inputs of splitter boxes · for ProcessLine modules · Housing materials: PP	**E70297**
	Connector for analogue modules · for AC5222, AC5223, AC2516, AC2566 · Housing materials: PVC	**E75222**
	Hutschienenhalter · for PCB module AC2750...53 · Housing materials: screws: galvanised / DIN rail adapter: AlMgSi0.5 F22 / mounting clip: C100S+QT galvanised	**E70432**
	Cable clip for fixing the AS-i flat cable · flat cable · Housing materials: 301 / 1.4310	**E70442**
	Combicon connector · 1x4-pole twin connector with cage clamp connection · type 1.5/4-ST BK 0.2…1.5 mm² (AWG 24…16) · Double terminal · Housing materials: current carrying parts: copper alloy tin-plated	**E70440**
	Wall passage · M12 connector · Housing materials: Brass nickel-plated / sealing: FKM	**E73008**
	Wall passage · M12 connector · Housing materials: stainless steel 303/1.4305 / sealing: EPDM	**E73009**
	DIN rail adapter · for CompactM8 modules · Housing materials: Mounting plate: stainless steel / DIN rail clip: stainless steel / Threaded bush: high-grade st. steel	**E73006**
	DIN rail adapter · for CompactM8 modules · Housing materials: Mounting plate: stainless steel / DIN rail clip: stainless steel / Threaded bush: high-grade st. steel	**E73007**

Accessories lower parts and addressing units

Type	Description	Order no.
	AS-i addressing unit · AS-i version 3.0 with extended addressing mode	**AC1154**

Type	Description	Order no.
	Addressing cable · for AS-i slaves · 1.6 m	**E70213**
	Addressing cable	**E70423**
	Addressing cable · 1 m · black	**E70211**
	Programming cable for controller E · Western connector RJ11 6 poles / D-Sub socket 9 poles · 1.55 m · grey	**E70320**
	Screw terminal insert for AC5101/AC5031 for additional 24 V supply	**AC5007**
	impact protection housing · for ATEX ClassicLine modules and ATEX AirBoxes · Housing materials: housing: stainless steel / button head hexagon socket screw: stainless steel	**E7000A**
	Use of the lower part as branching box · Housing materials: plastics	**AC3000**
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · PUR, halogen-free · yellow	**E74100**
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · PUR, halogen-free · black	**E74110**
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · EPDM, halogen-free · yellow	**E74000**
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · EPDM, halogen-free · black	**E74010**
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · TPE · yellow	**E74200**
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · TPE · black	**E74210**
	AS-i flat cable · Reverse polarity protection due to special shape · for the food industry · for use of insulation displacement technology · 100 m · TPE-PVC compound · yellow	**E74300**
	AS-i flat cable · Reverse polarity protection due to special shape · for the food industry · for use of insulation displacement technology · 100 m · TPE-PVC compound · black	**E74310**

You can find scale drawings from page 624

Type	Description	Order no.
	JOKARI flat cable stripping tool	**E70062**
	Flat cable blank · Length: 60 mm · to cover the unused cable entry · for FC splitter E70354 · Housing materials: silicone rubber blue	**E70299**
	Flat cable blank · Length: 60 mm · to cover the unused cable entry · for CompactLine modules (AC24xx), ClassicLine modules (AC52xx) or AirBoxes (AC52xx) · Housing materials: EPDM black	**E70399**
	Heat-shrink cap · for sealing the flat cable ends · Housing materials: plastics	**E70113**
	Flat cable seal · Housing materials: ULTRAMID / sealing: NBR	**E70413**
	Cable clip for fixing the AS-i flat cable · Housing materials: PA 6.6	**E70067**
	Torque wrench	**E70390**

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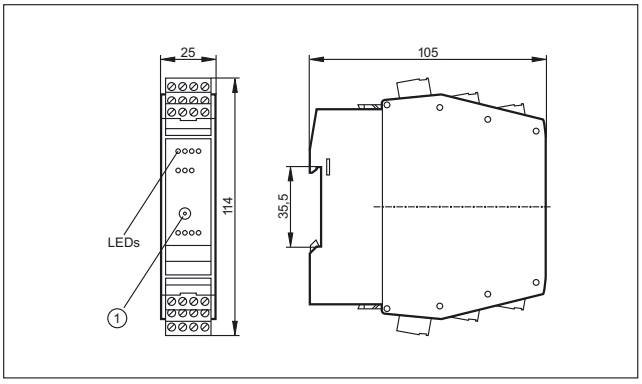

1: Addressing socket

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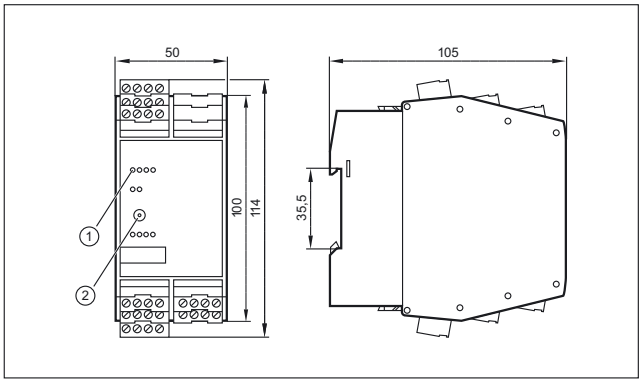

1: LED, 2: Addressing socket

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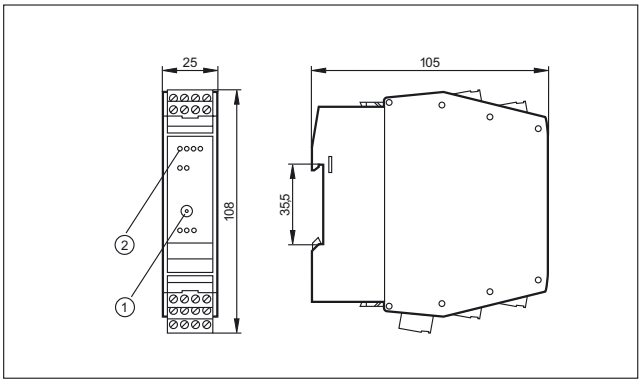

1: Addressing socket, 2: LED

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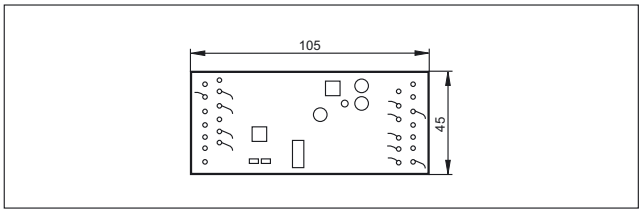

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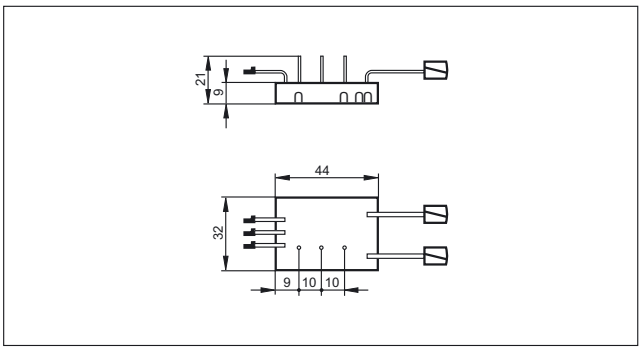

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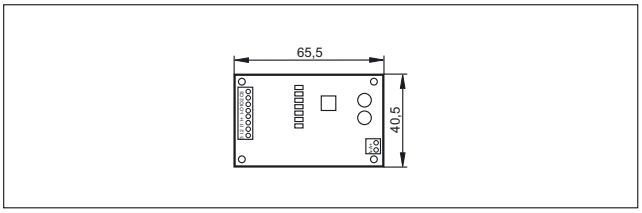

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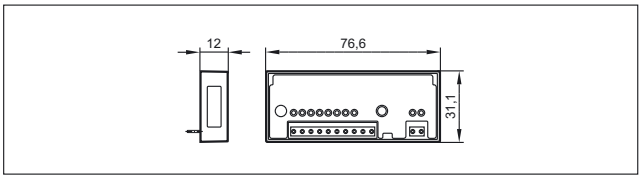

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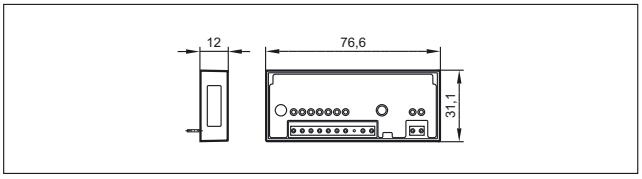

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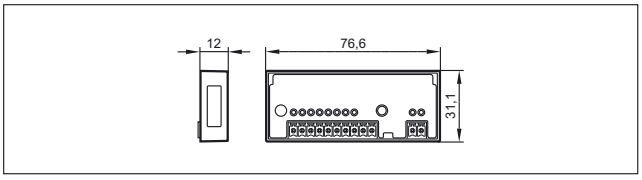

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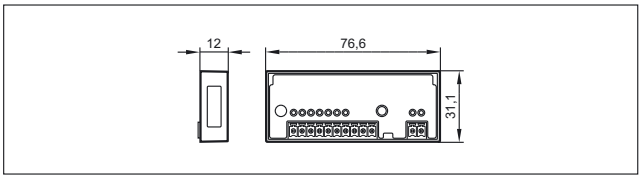

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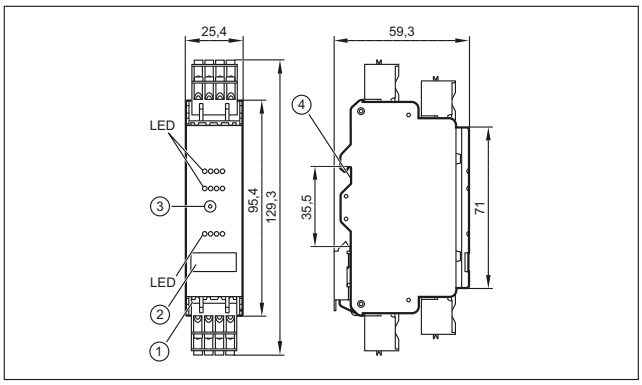
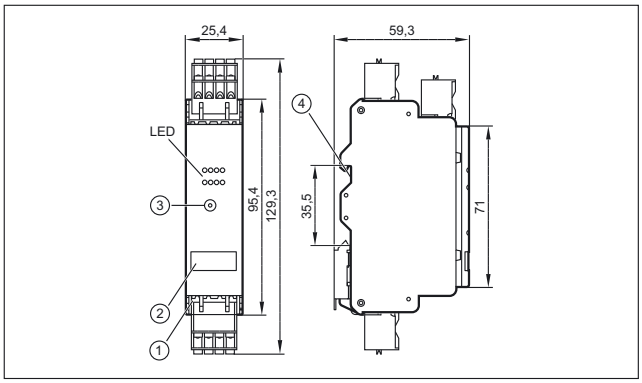


1: Plug with cage clamp connection, 2: label, 3: Addressing socket, 4: DIN rail adapter

12



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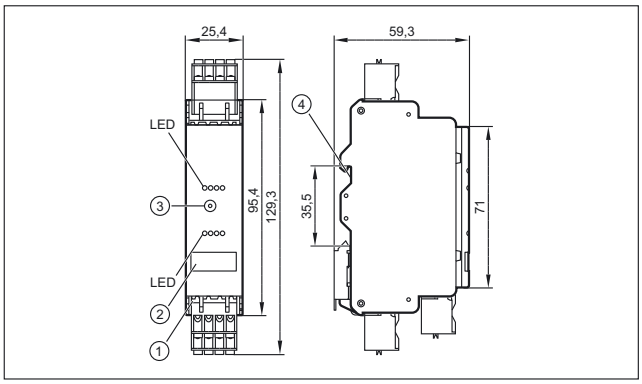

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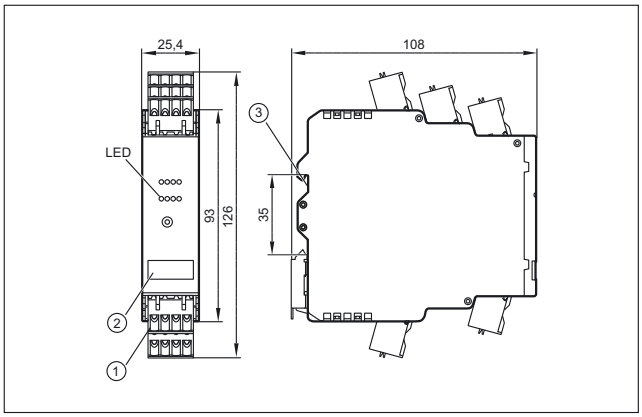

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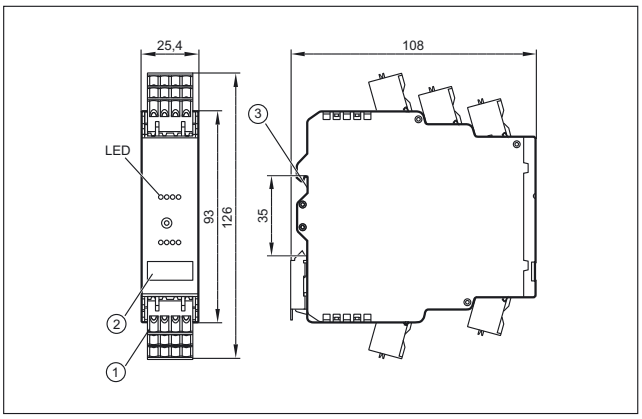

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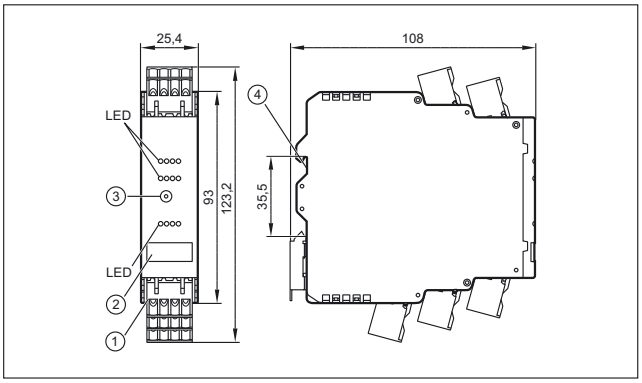

1: Plug with cage clamp connection, 2: label, 3: Addressing socket, 4: Mounting on DIN rail

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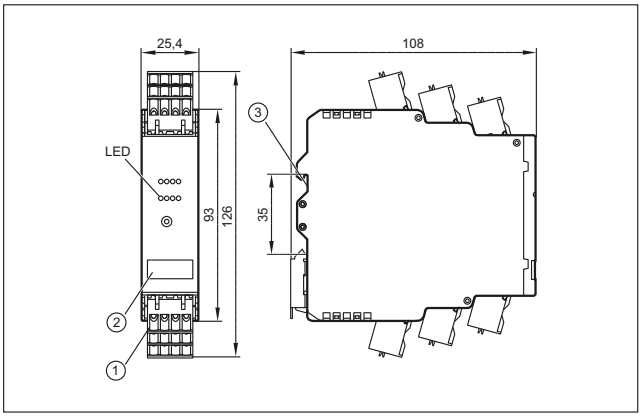

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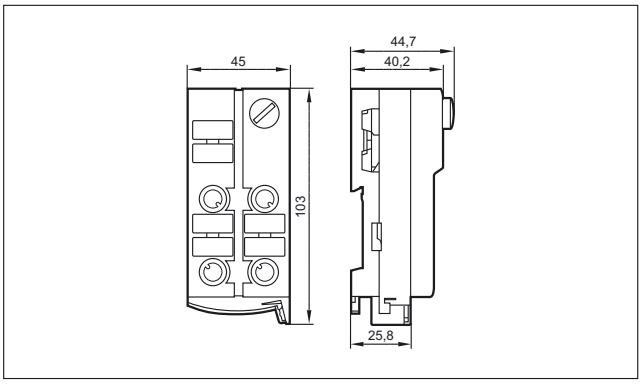

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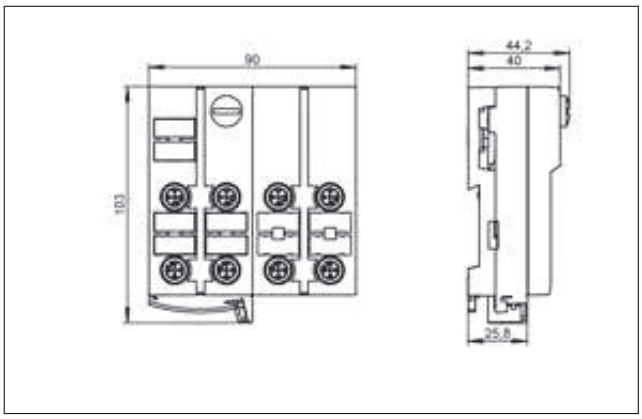

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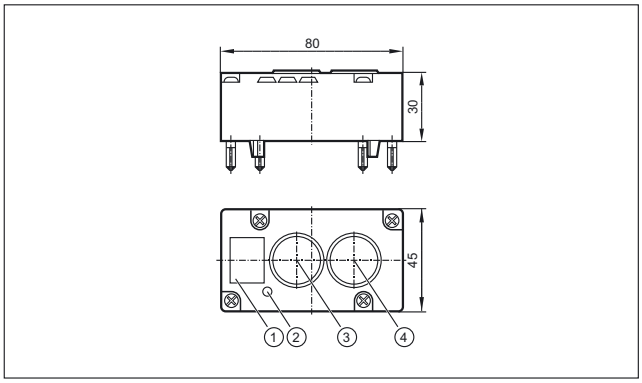

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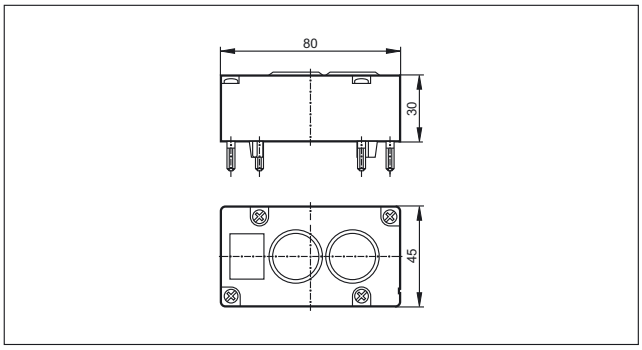

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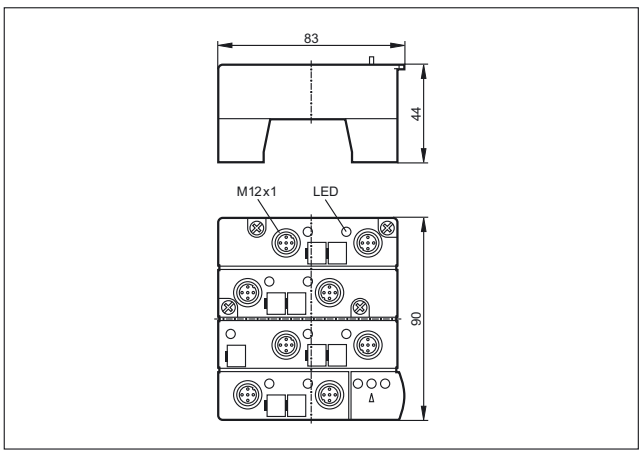

Scale drawings / drawing no. – CAD download: www.ifm.com

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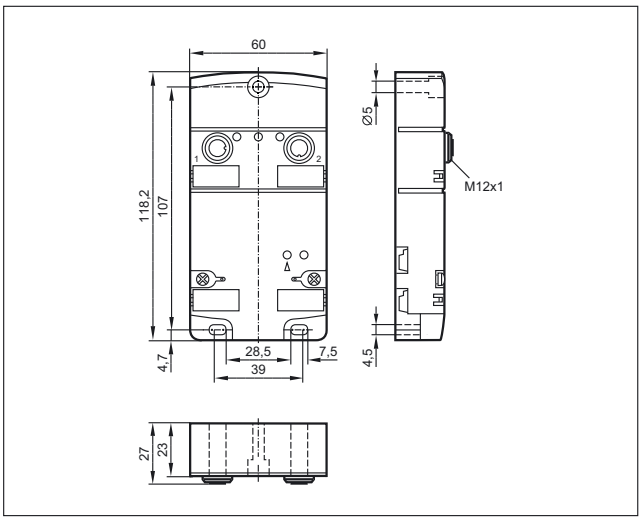

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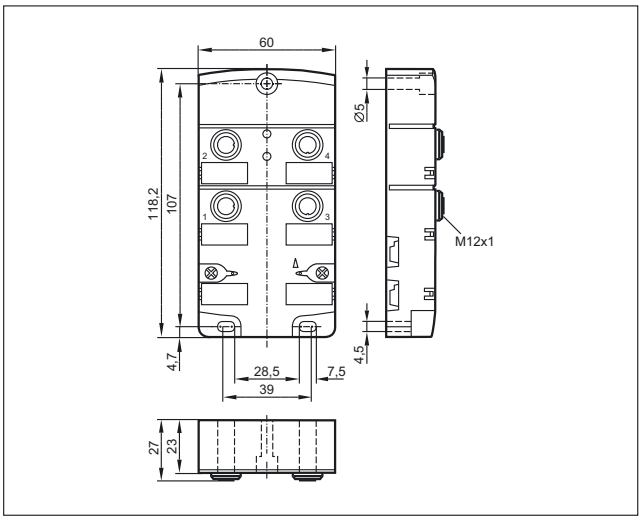

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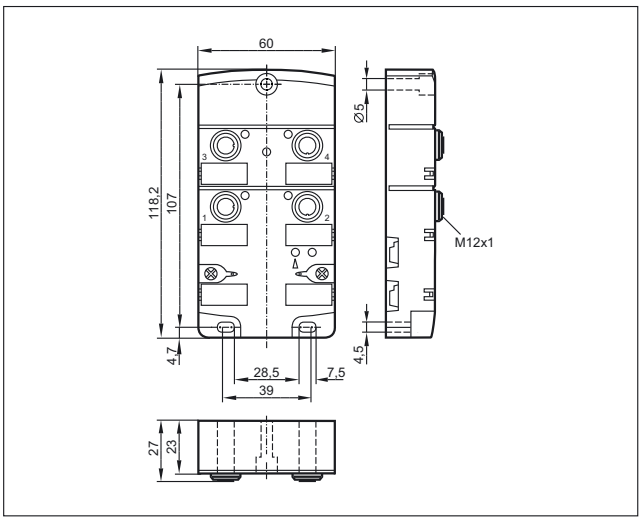

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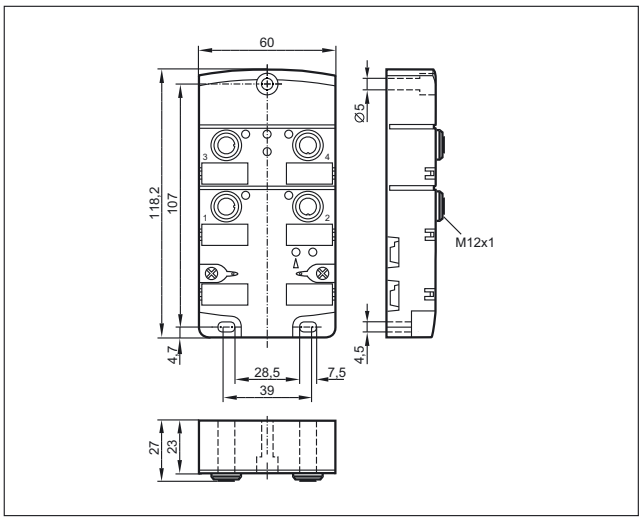

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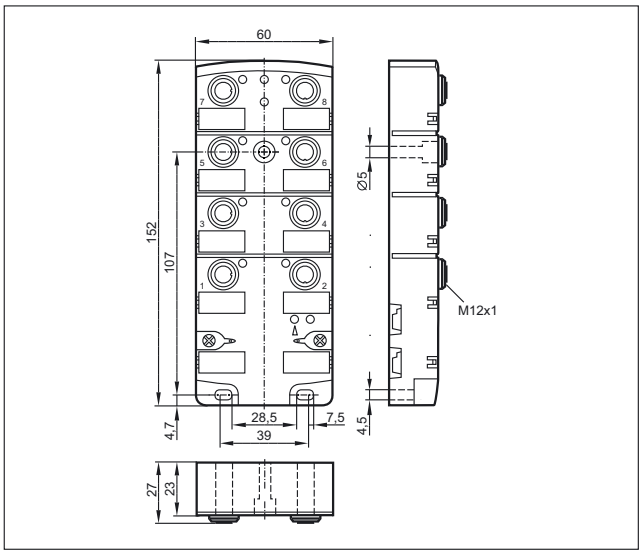

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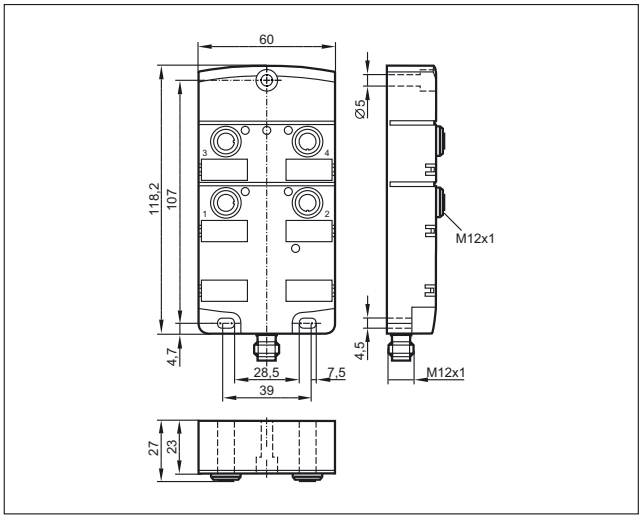

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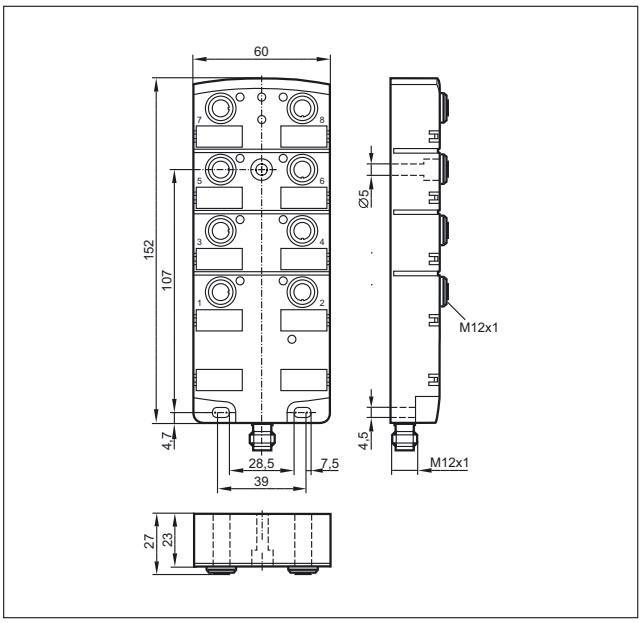

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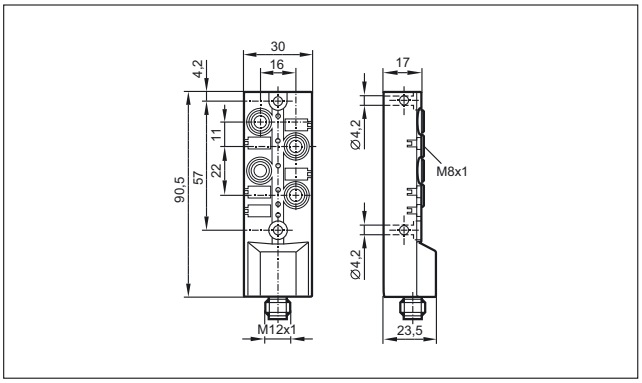

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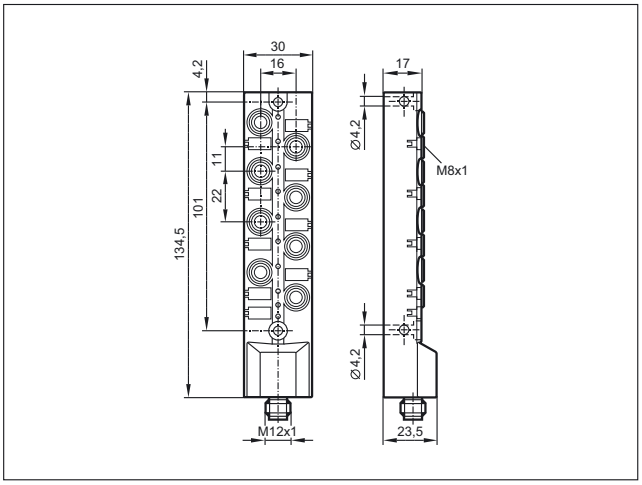

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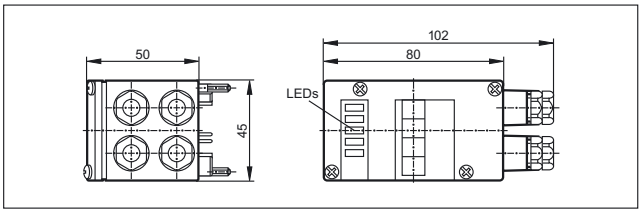

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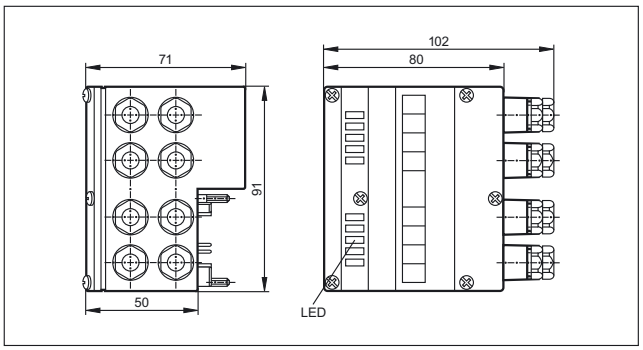

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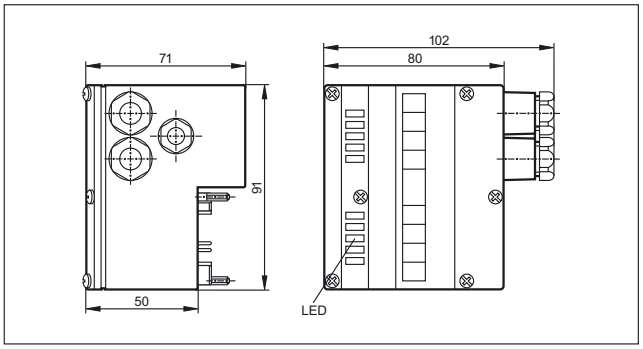

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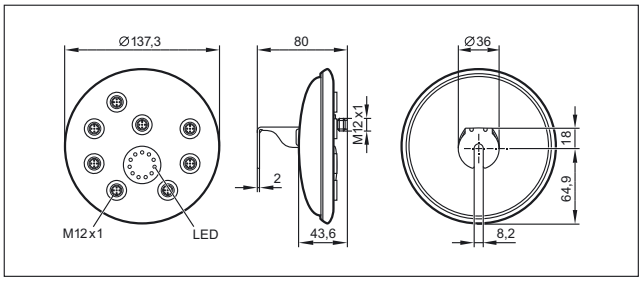

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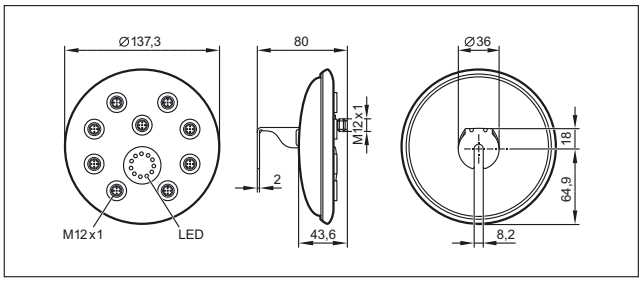

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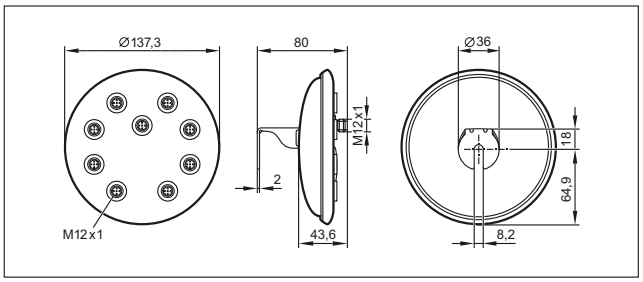

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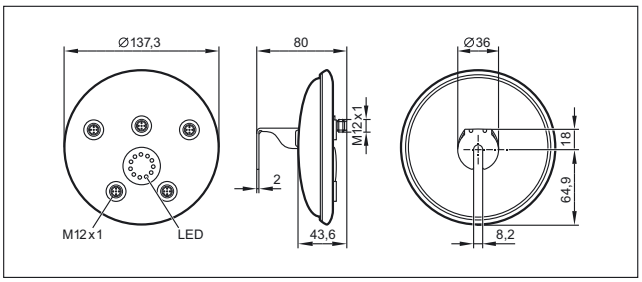

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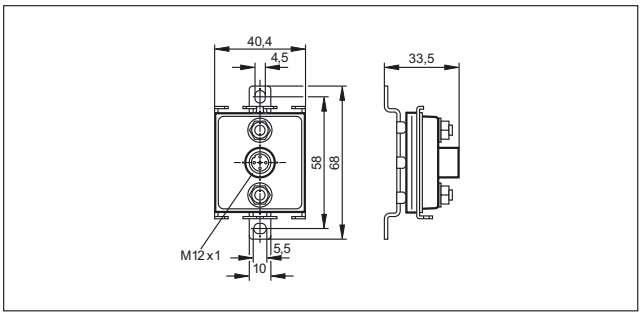

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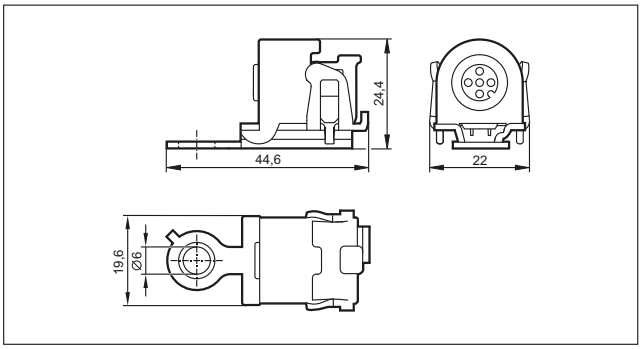

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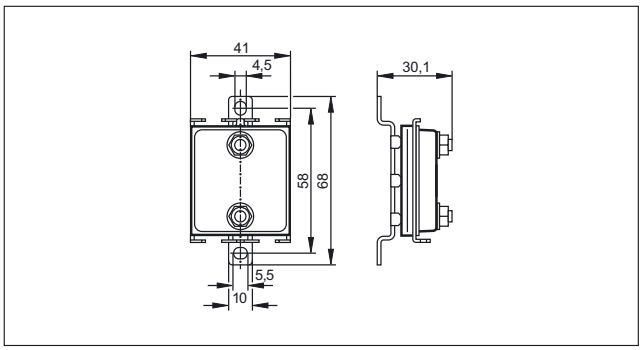

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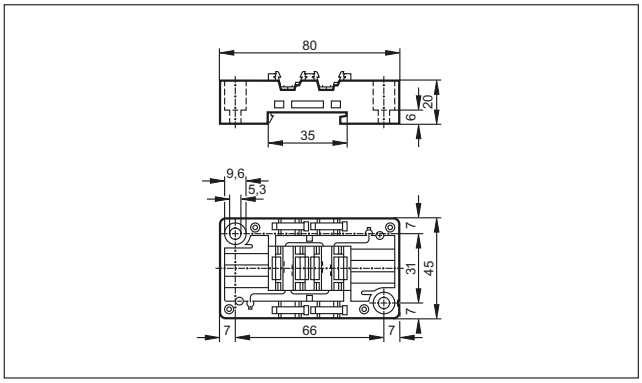

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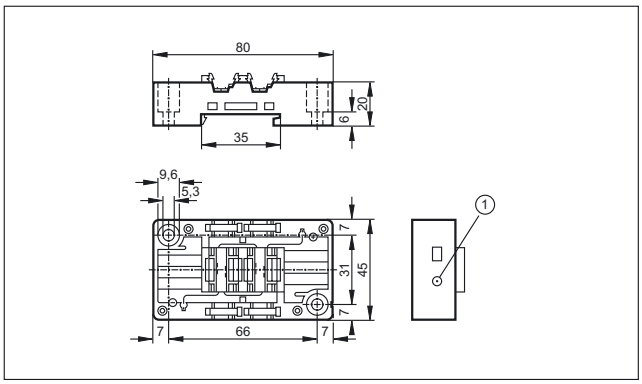

1: Addressing socket

AS-Interface AirBoxes for pneumatics

The AS-i AirBoxes are compact pneumatic valves, complemented by digital feedback inputs. They are integrated in a ClassicLine housing and are compatible in terms of space and mounting. The AS-i connection is carried out via the common flat cable or round cable lower parts. 3/2-way, 4/2-way, 5/2-way and 5/3-way valves are available.

System overview	Page
Pneumatic solutions (quick mounting)	*630 - 631*
Pneumatic solutions (ATEX)	*631*
Pneumatic solutions (screw mounting)	*632*
Accessories pneumatic components	*632*
Scale drawings / drawing no. – CAD download: www.ifm.com	*633*

Pneumatic solutions (quick mounting)

Type	Inputs / outputs	Description	Drawing no.	Order no.
	2 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Addressing socket · AS-i profile S-3.F.F · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC5227**
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC5228**
	4 inputs / 2 outputs; AirBox supply via external 24 V DC	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC5243**
	4 inputs / 1 output ; AirBox supply via AS-i	AS-i AirBox · 5/2-way slide valve free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	2	**AC5246**
	4 inputs / 1 output; AirBox supply via external voltage 24 V DC	AS-i AirBox · 5/2-way slide valve free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	2	**AC5249**
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 5/2-way bistable slide valve free from overlapping · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC5251**

Type	Inputs / outputs	Description	Draw-ing no.	Order no.
	4 inputs / 2 outputs; AirBox supply via external 24 V DC	AS-i AirBox · 5/2-way bistable slide valve free from overlapping · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC5253**
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 5/3-way slide valve free from overlapping · closed · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC5270**
	4 inputs / 2 outputs; AirBox supply via external 24 V DC	AS-i AirBox · 5/3-way slide valve free from overlapping · closed · Three orientations of the flat cable are possible · AS-i flat cable connection · Addressing socket · Version 2.11 and 3.0 with extended addressing mode · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC5271**

Pneumatic solutions (ATEX)

Type	Inputs / outputs	Description	Draw-ing no.	Order no.
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Digital inputs · Addressing socket · AS-i profile S-7.F.F · Versions 2.11 and 3.0 · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC542A**
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC528A**
	4 inputs / 1 output ; AirBox supply via AS-i	AS-i AirBox · 5/2-way slide valve free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	2	**AC546A**
	2 inputs / 1 output; AirBox supply via AS-i	AS-i AirBox · 5/2-way slide valve free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Digital inputs · Addressing socket · AS-i profile S-3.F.F · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC246A**
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 5/2-way bistable slide valve free from overlapping · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC551A**
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 5/3-way slide valve free from overlapping · closed · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	**AC570A**

You can find scale drawings from page 633

Pneumatic solutions (screw mounting)

Type	Inputs / outputs	Description	Drawing no.	Order no.
	2 x 2 inputs / 2 outputs	AS-i AirBox · Connection to the pneumatic system by tube fittings · Manual override by pressing/releasing or pressing/turning/locking · 2 x 2 digital inputs · 2 pneumatic outputs · Sockets M12 x 1 · housing: PBT / Metal parts: stainless steel / sealing: Viton	3	**AC2055**
	2 inputs / 1 output NO/NC selectable (monostable)	AS-i AirBox · Connection to the pneumatic system by tube fittings · 1 x 2 or 2 x 1 digital inputs · 1 pneumatic output (NO/NC selectable) · Sockets M12 x 1 · housing: PBT / Metal parts: stainless steel / sealing: Viton	4	**AC2057**

Accessories pneumatic components

Type	Description	Order no.
	Silencer · Housing materials: connection piece: PP / filter: PE	**E75232**
	Push-in T-fitting · Housing materials: housing: Nickel-plated brass / PA66 / tooth lock washer: stainless steel	**E75227**
	Push-in L-fitting · Housing materials: housing: PA66 / release ring: polyoxymethylene / tooth lock washer: stainless steel / form ring: acrylonitrile butadiene caoutchouc	**E75228**
	Push-in L-fitting · Diameter reduction from Ø8 mm to Ø6 mm · Housing materials: housing: Nickel-plated brass / PA66 / tooth lock washer: stainless steel	**E75229**
	Sealing plug for AirBox · Housing materials: housing: PA66	**E75231**

Scale drawings / drawing no. – CAD download: www.ifm.com

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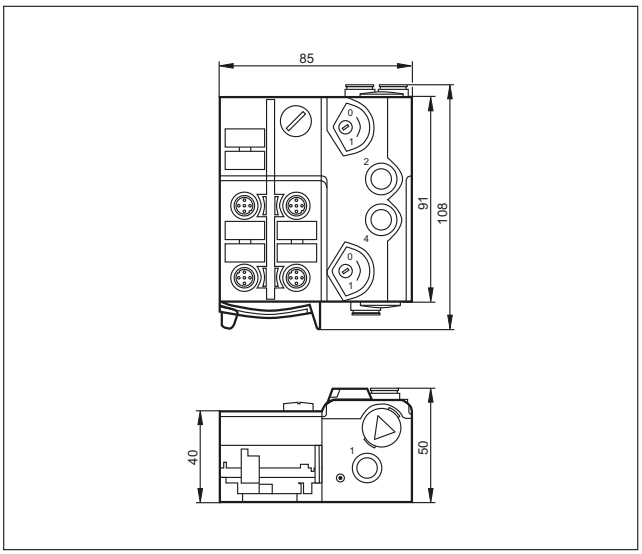

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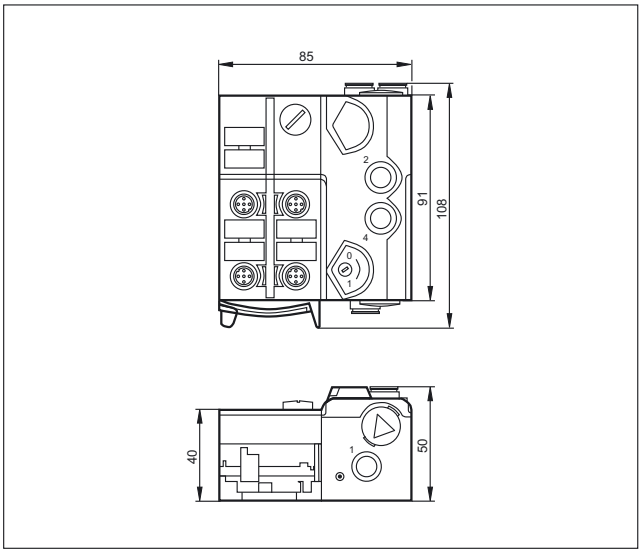

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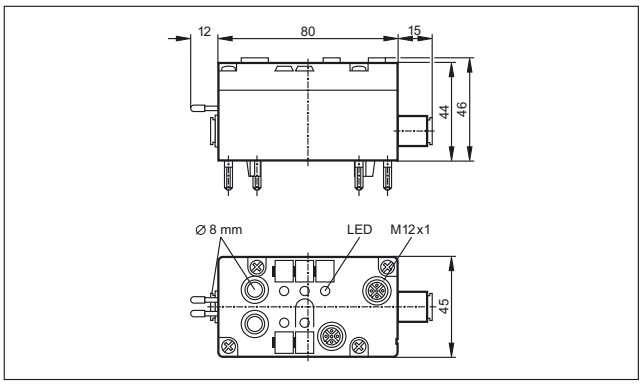

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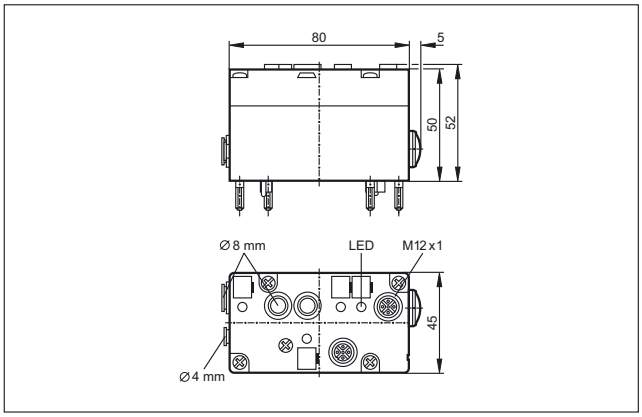

AS-Interface sensors

The bus connection is already integrated in the intelligent AS-i sensors. So they can be directly connected to the yellow cable. In addition to the pure sensor information, further diagnostic data are available via the AS-interface, which can be transmitted and evaluated at a low cost.

System overview	Page
AS-i sensors	634 - 635
Scale drawings / drawing no. – CAD download: www.ifm.com	635 - 636

AS-i sensors

Type	Description	Drawing no.	Order no.
	Inductive sensor · M12 x 1 · Sensing range 4 mm · Gold-plated contacts · Connector, Gold-plated contacts · stainless steel / active face: LCP uncoloured	1	IFC247
	Inductive sensor · M12 x 1 · Sensing range 7 mm · Gold-plated contacts · Connector, Gold-plated contacts · stainless steel / active face: LCP uncoloured	2	IFC248
	Inductive sensor · M18 x 1 · Sensing range 8 mm · Gold-plated contacts · Connector, Gold-plated contacts · threaded sleeve: stainless steel / active face: LCP uncoloured / lock nuts: Brass	3	IGC234
	Inductive sensor · M18 x 1 · Sensing range 12 mm · Gold-plated contacts · Connector, Gold-plated contacts · threaded sleeve: stainless steel / active face: LCP uncoloured / lock nuts: Brass	4	IGC235
	Inductive sensor · M30 x 1.5 · Sensing range 14 mm · Gold-plated contacts · Connector, Gold-plated contacts · stainless steel / active face: LCP uncoloured	5	IIC220
	Inductive sensor · M30 x 1.5 · Sensing range 22 mm · Gold-plated contacts · Connector, Gold-plated contacts · stainless steel / active face: LCP uncoloured	6	IIC221
	Inductive sensor · Sensing range 15 mm · 5 positions of the sensing face selectable · Connector, rotatable, locking · PBT / PPE	7	IM5118
	Read/write head · With integrated AS-i slave profile 7.4 · M12 connector · rotatable · PA	8	DTA100
	Read head · with integrated AS-i slave profile 7.3 · M12 connector · rotatable · PA	8	DTA101
	Read/write head · With integrated AS-i slave profile 7.4 · M12 connector · 5 positions of the sensing face selectable · rotatable, locking · PA	7	DTA200

Product selectors and further information can be found at: www.ifm.com

Type	Description	Drawing no.	Order no.
	Read head · with integrated AS-i slave profile 7.3 · M12 connector · 5 positions of the sensing face selectable · rotatable, locking · PA	7	**DTA201**
	Read/write head · With integrated AS-i slave profile 7.4 · M12 connector · rotatable · housing: PPE / Metal parts: diecast zinc / brass nickel-plated	9	**DTA300**
	Read head · with integrated AS-i slave profile 7.3 · M12 connector · rotatable · housing: PPE / Metal parts: diecast zinc / brass nickel-plated	9	**DTA301**

Scale drawings / drawing no. – CAD download: www.ifm.com

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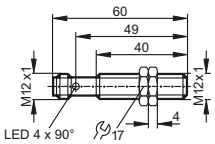

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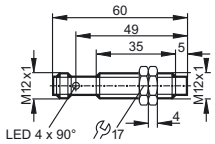

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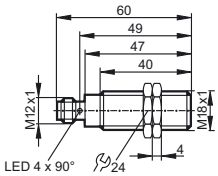

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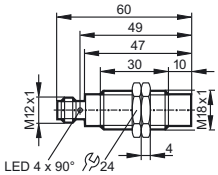

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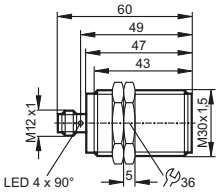

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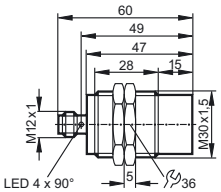

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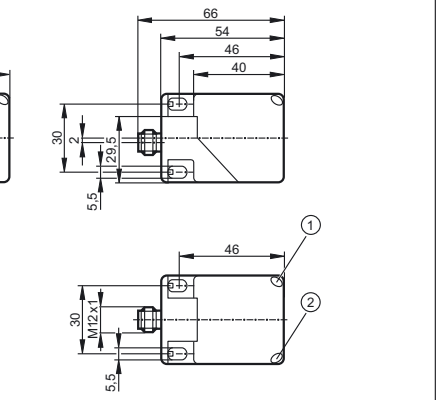
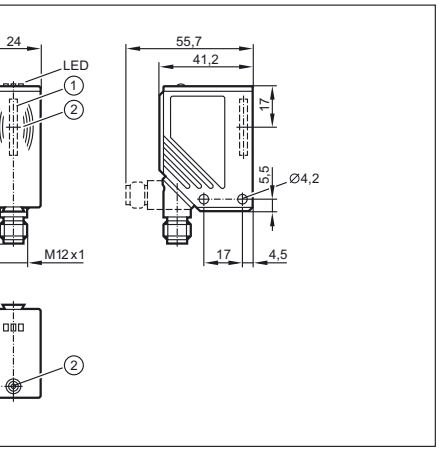


1: LED yellow, 2: LED green

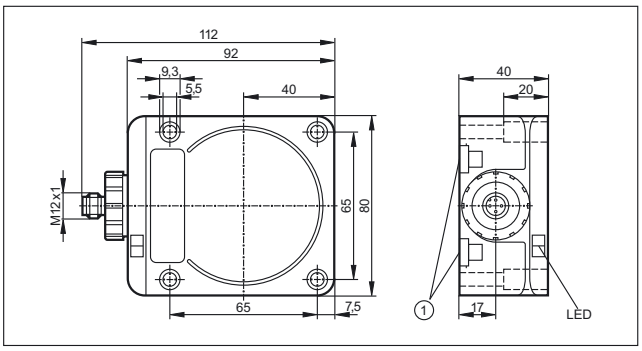
8



1: integrated antenna, 2: tag positioning mark (middle of the antenna)

Scale drawings / drawing no. – CAD download: www.ifm.com

9



1: Mounting on DIN rail

AS-Interface devices for valves and valve actuators

The valve controls for pneumatic quarter-turn actuators can be directly mounted to most quarter-turn actuators by means of the standardised mechanical interface. They contain two inductive sensors for position feedback, one or two outputs for the control of the pilot valve, and an AS-i slave.

System overview	*Page*
Sensors with ATEX approval 3D and / or 3G	*638*
Sensors for industrial applications, AS-i system	*638 - 639*
Wiring diagrams	*639*
Scale drawings / drawing no. – CAD download: www.ifm.com	*639 - 640*

Sensors with ATEX approval 3D and / or 3G

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 196, 198									
	55 x 60 x 35	4	PBT	26.5...31.6	IP 5x	–	–	1	**AC327A**
M12 connector · Output function transistor PNP · 2 inputs / 1 output · Connector groups 196, 198									
	55 x 60 x 35	4	PBT	26.5...31.6	IP 5x	–	–	1	**AC336A**

Sensors for industrial applications, AS-i system

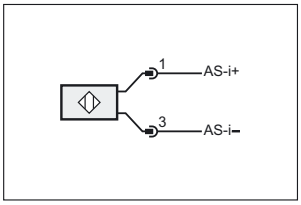
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
M12 connector · Output function transistor PNP · AS-i · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	100	2	**AC2310**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f AC / DC [Hz]	I_{load} AC / DC [mA]	Drawing no.	Order no.
M12 connector · AS-i · Wiring diagram no. 1 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	3	**AC2315**
M12 connector · Output function transistor PNP · AS-i · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	100	2	**AC2316**
M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202									
	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	2	**AC2317**

f = flush / nf = non flush / qf = quasi-flush

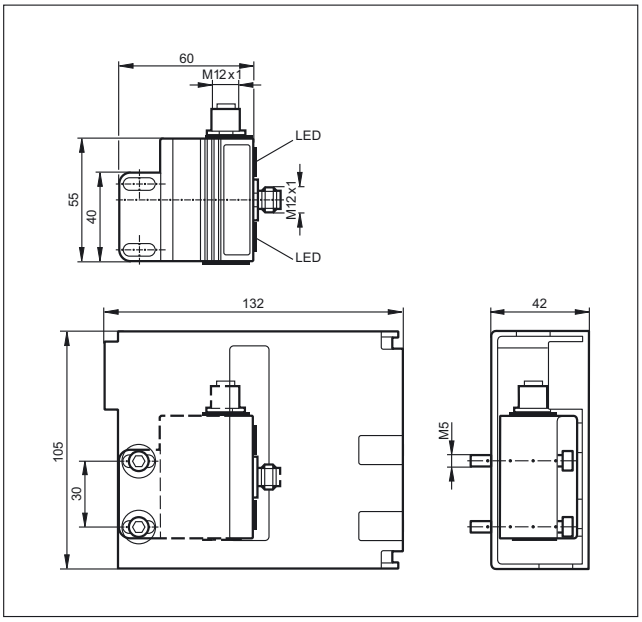
Wiring diagrams

1



Scale drawings / drawing no. – CAD download: www.ifm.com

1



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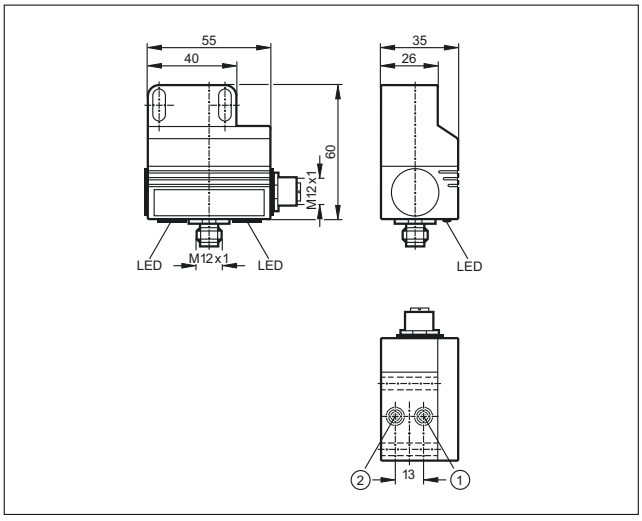
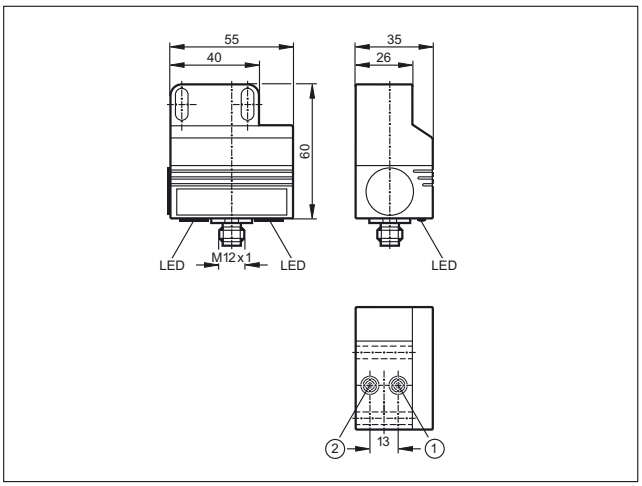


1: sensor 1, 2: sensor 2

Scale drawings / drawing no. – CAD download: www.ifm.com

3



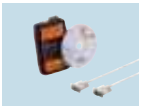
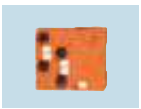
1: sensor 1, 2: sensor 2

AS-Interface expansion

There are different ways to extend the AS-i cable. The specified one hundred metres can be extended up to 1000 metres in extreme cases.

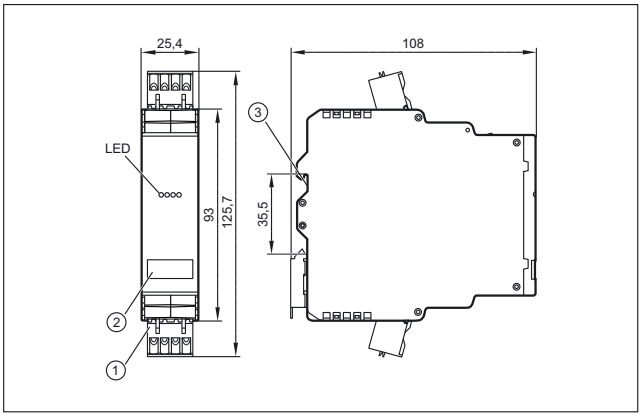
System overview	Page
AS-i repeaters	642
Scale drawings / drawing no. – CAD download: www.ifm.com	642 - 643

AS-i repeaters

Type	Description	Drawing no.	Order no.
	AS-i repeater · Extension of the AS-i network by another 100 m · One additional AS-i power supply necessary · Combicon connection · PC GF20	1	**AC3225**
	Passive AS-i bus termination · Extension of the cable to a maximum of 200 m without additional repeater · Improvement of the signal quality · Monitoring of the supply voltage by means of LEDs	2	**AC1147**
	eASI-Tester · Local diagnosis of the AS-i network · Creation of test reports for AS-i networks · User-friendly diagnosis and evaluation via the connected PC	3	**AC1145**
	AS-i tuner diagnostic module · Extension of the cable to a maximum of 200 m without additional repeater · Monitoring of the message quality · Display of critical states by "traffic light" LEDs · PBT	4	**AC1146**

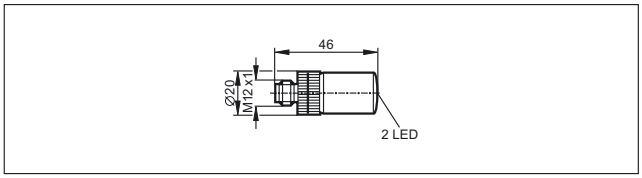
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: Plug with cage clamp connection, 2: label, 3: Mounting on DIN rail

2



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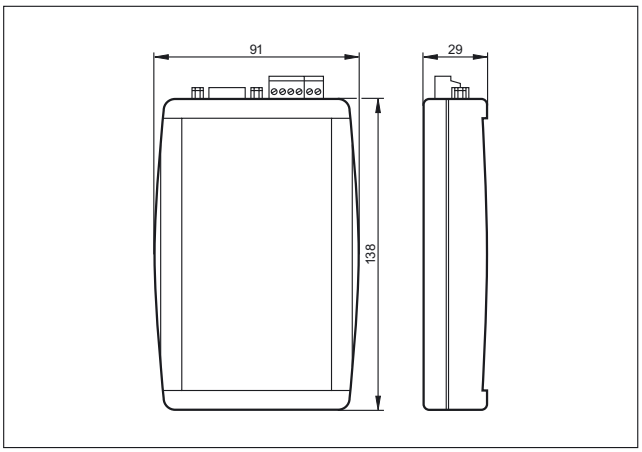

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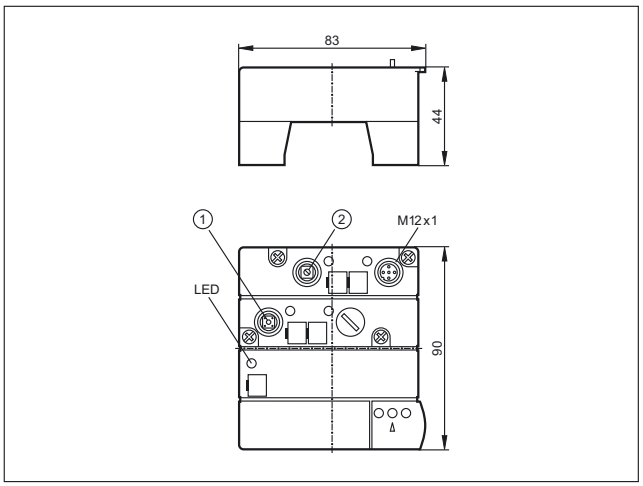

1: tune button, 2: mode selector

AS-Interface Safety at Work

The sophisticated AS-i technology and the extended diagnostic possibilities provide high reliability and machine uptime.
"Safety at Work" is the extension of the AS-interface by safety-related components. Safety components up to the highest control category 4 to EN 954-1, SIL 3 to IEC 61508 and EN ISO 13849 - 1 / PL e can be connected to AS-i.

System overview	*Page*
Safety at Work	*644 - 646*
Accessories Safety at Work	*646 - 647*
AS-i manuals	*647*
Scale drawings / drawing no. – CAD download: www.ifm.com	*647 - 650*

Safety at Work

Type	Description	Drawing no.	Order no.
	AS-i safety monitor · Basic version · 1-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	**AC001S**
	AS-i safety monitor · Basic version · 2-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	**AC002S**
	AS-i safety monitor · Extended functionality · 1-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	**AC003S**
	AS-i safety monitor · Extended functionality · 2-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	**AC004S**
	AS-i safety monitor · Extended functionality and integrated safe slave for triggering a safe AS-i output · 2-channel · Configuration and setup by configuration software ASIMON V3.0 · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	2	**AC032S**
	AS-i safety monitor · 2 safe semi-conductor outputs · SIL 3 to EN 62061, IEC 61508 / SIL 3 and EN ISO 13849 - 1 / PL e · Chip card to save the configuration data · Configuration and setup by configuration software ASIMON V3 G2 · USB 2.0 interface · Chip card and Combicon screw terminals supplied with the device · Screw terminal	3	**AC041S**
	Safe active AS-i module · Performance Level e to EN ISO 13849-1 et IEC 61508 / SIL 3 for the connection of mechanical contacts · Combicon connection · PA · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	4	**AC009S**
	Safe active AS-i output module · SIL 3 to EN 62061, IEC 61508 / SIL 3 and EN ISO 13849 - 1 / PL e · for the safe triggering of actuators · Combicon connection · PA · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	5	**AC030S**
	AS-i Safety at Work · Safe AS-i input module 2SI - 2LO · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 62061: SILcl 3	6	**AC505S**

Type	Description	Drawing no.	Order no.
	AS-i Safety at Work · Safe AS-i input module 4SI / 2DO T / 2LO · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 3 · ISO 13849-1: PL d · IEC 62061: SILcl 2	6	**AC506S**
	AS-i Safety at Work · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3 · IEC 62061: SILcl 3	6	**AC507S**
	AS-i Safety at Work · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 3 · ISO 13849-1: PL d · IEC 62061: SILcl 2	6	**AC509S**
	Illuminated E-STOP · front mounting · reset by turning · 2 NC contacts / 1 red LED · fool-proof E-STOP to EN ISO 13850	7	**E7007S**
	Illuminated E-STOP with integrated AS-i connection · fool-proof E-STOP to EN ISO 13850 · Pull to reset · AS-i interface via AS-i flat cable IP 67 · PC GF20 · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	8	**AC010S**
	Key-release E-STOP with integrated AS-i connection · Connector M12 x 1 · AS-i interface via AS-i flat cable IP 67 · fool-proof E-STOP to EN ISO 13850 · Reset by key operation · PC GF20 · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	9	**AC011S**
	safe AS-i e-stop operating unit with integrated AS-i connection · AS-i interface via M12 x 1 connector · fool-proof E-STOP to EN ISO 13850 · Pull to reset · interchangeable button inserts · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	10	**AC012S**
	AS-i safety PCB · Connection of mechanical contact and LED components · Certification to ISO 13849-1: PL e and IEC 61508 / SIL 3 · Complies with the requirements: · IEC 61508: SIL 3	11	**AC015S**
	AS-i Profinet gateway with safe preprocessing · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profinet RT device class B · LCD colour display · Integrated safety and non safety PLC · Configuration and setup by CODESYS V3 configuration software · aluminium powder-coated / steel sheet galvanised / Makrolon · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	12	**AC402S**
	AS-i Profibus gateway · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profibus DP (DPV0 + DPV1) · LCD colour display · Configuration and setup by CODESYS V3 configuration software · aluminium powder-coated / steel sheet galvanised / Makrolon · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	13	**AC412S**
	AS-i EtherNet/IP gateway with safe preprocessing · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Integrated safety and non safety PLC · Configuration and setup by CODESYS V3 configuration software · aluminium powder-coated / steel sheet galvanised / Makrolon · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	12	**AC422S**
	Fail-safe inductive sensor · M12 connector, Gold-plated contacts · PPE / diecast zinc · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	14	**GM504S**
	Fail-safe inductive sensor · M12 connector, Gold-plated contacts · PPE / diecast zinc · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	14	**GM505S**
	Fail-safe inductive sensor · M18 x 1 · M12 connector, Gold-plated contacts · high-grade stainless steel / PBT · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	15	**GG505S**
	Fail-safe inductive sensor · M30 x 1.5 · M12 connector, Gold-plated contacts · PEEK / high-grade stainless steel / O-ring: EPDM · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	16	**GI505S**
	Safety switch with guard locking · Normally closed principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	17	**AC901S**

You can find scale drawings from page 647

Type	Description	Drawing no.	Order no.
	Safety switch with guard locking · Normally open principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	17	**AC902S**
	Safety switch with guard locking · Normally closed principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply from AS-i · M12 connector · thermoplastic reinforced glass-fibre	18	**AC903S**
	Safety switch with guard locking · Normally open principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply from AS-i · M12 connector · thermoplastic reinforced glass-fibre	18	**AC904S**

Accessories Safety at Work

Type	Description	Order no.
	AS-i Safety at Work · Programming software for AS-i safety monitor AC001S / AC002S / AC003S / AC004S / AC032S · Version 3.0 · Configuration, set-up and diagnostics of the AS-i safety monitor	**E7040S**
	Software ASIMON V3 G2 · Configuration, set-up and diagnostics of the AS-i safety monitor · AC041S	**E7050S**
	USB interface cable for the connection of the safety monitor AC041S to the PC · cable length 1.8 m · 1.8 m	**E7051S**
	Chip card to save the configuration data of the AS-i safety monitor AC041S · 256 K	**E7052S**
	Safe contact expander without delay · 2 independent channels · 4 contact blocks (NO) per channel · 1 feedback circuit (NC) per channel · Mounting on DIN rail · Screw terminal	**E7053S**
	Connection cable PC / AS-i safety monitor · Parameter setting cable PC / AS-i safety monitor · Western connector RJ 45 8 poles / D-Sub socket 9 poles · 2.5 m	**E7001S**
	Connection cable AS-i safety monitor / AS-i safety monitor · Download cable AS-i safety monitor / AS-i safety monitor · Western connector RJ 45 8 poles · 0.3 m	**E7002S**
	EMERGENCY STOP label IP66 4 languages DE, UK, FR, IT · EMERGENCY STOP label 4 languages for a safe illuminated EMERGENCY STOP button with integrated AS-i interface AC010S / AC011S / AC012S · 50 x 50 mm	**E7003S**
	EMERGENCY STOP protective collar · EMERGENCY STOP protective collar for safe E-STOP AC010S / AC011S / AC012S · Housing materials: PC GF20 RAL 1004	**E7004S**
	bridging plug for safety modules · Housing materials: PUR	**E7005S**

Type	Description	Order no.
	bridging plug for safety modules · Housing materials: PUR	**E7008S**
	Bulkhead connector · straight · M20 - M12 · M12 connector · 0.07 m · Housing materials: polyamide	**E7006S**
	Bolt for safety guards · for heavy doors · For right or left hinged doors without escape release · No additional door handle required · screw mounting onto common aluminium profiles and machine panels · Housing materials: diecast aluminium yellow	**E7901S**
	Bolt for safety guards · for heavy doors · For right or left hinged doors without escape release · No additional door handle required · screw mounting onto common aluminium profiles and machine panels · Housing materials: glass-fibre reinforced plastic yellow	**E7902S**
	Actuator S standard straight · With rubber bush, overtravel 5 mm · Suitable for a maximum pull force of 2500 N for the door switches AC901S - AC904S	**E7903S**
	Actuator S standard angled · With rubber bush, overtravel 5 mm · Suitable for a maximum pull force of 2500 N for the door switches AC901S - AC904S	**E7904S**
	Hinged actuator left / right · For left or right hinged doors, overtravel 5 mm	**E7905S**
	Hinged actuator top / bottom · For top and bottom hinged doors, overtravel 5 mm	**E7906S**

AS-i manuals

Type	Description	Order no.
	ecolog asi system · AS-Interface Manual (German)	**AC0115**
	ecolog asi system · AS-Interface Manual (English)	**AC0116**

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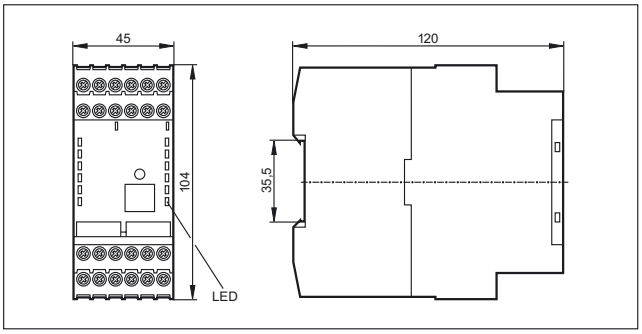
1



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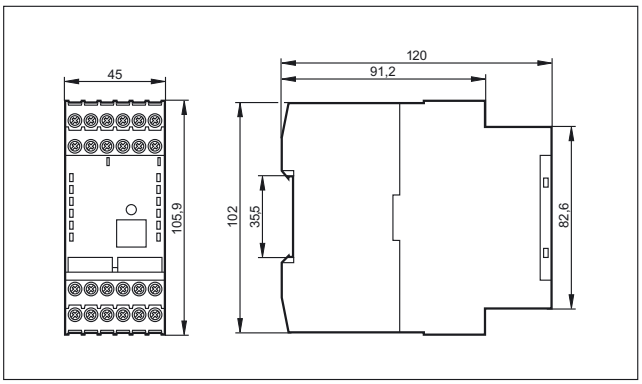

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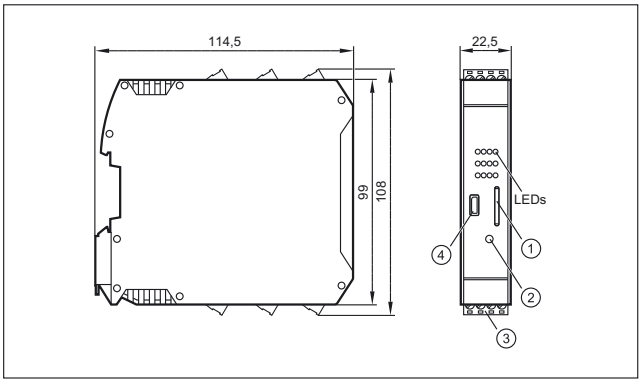
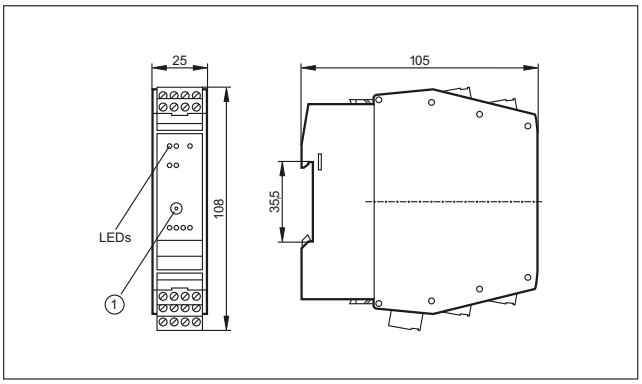


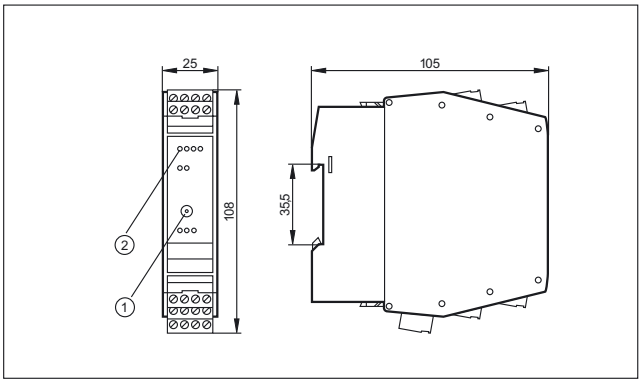
1: Chip card, 2: service button, 3: Combicon connector with screw terminals, 4: Micro USB interface

4



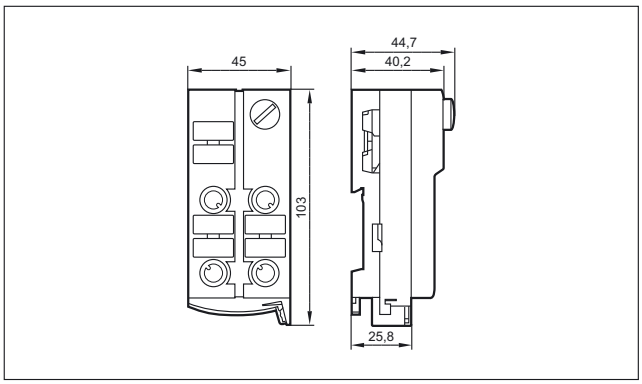
1: Addressing socket

5



1: Addressing socket, 2: LED

6



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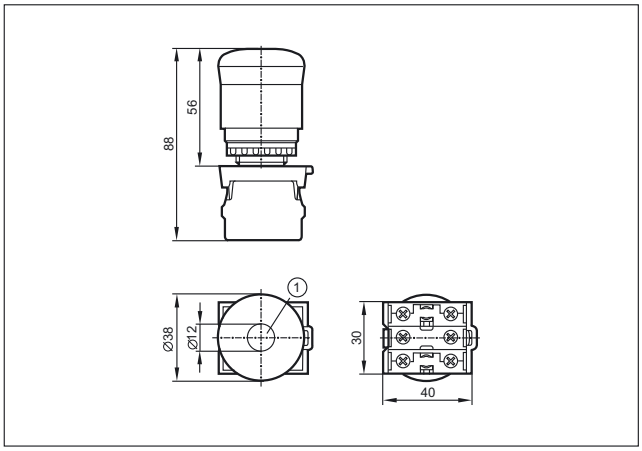

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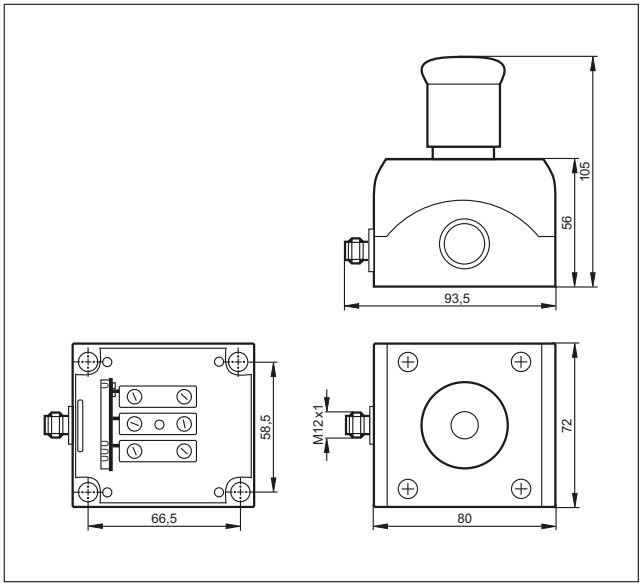
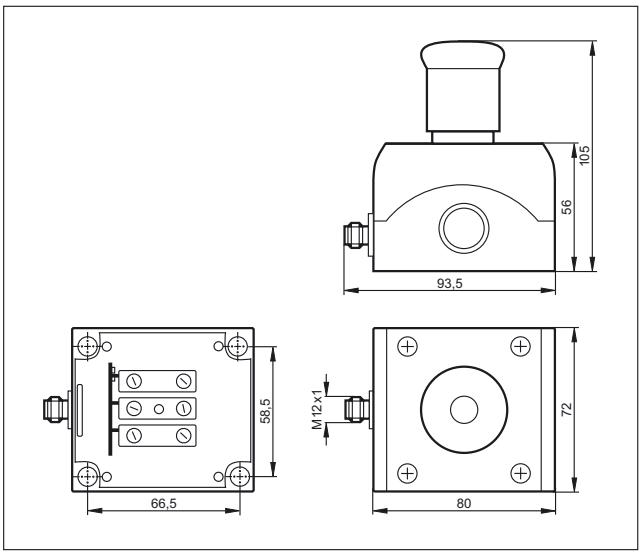


Scale drawings / drawing no. – CAD download: www.ifm.com

9



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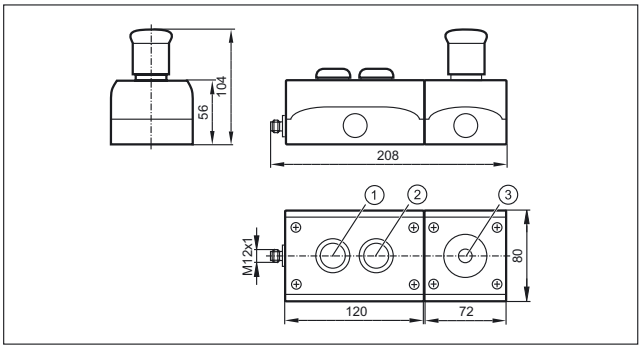
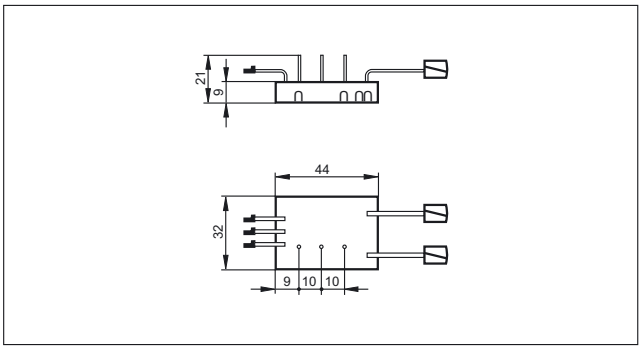
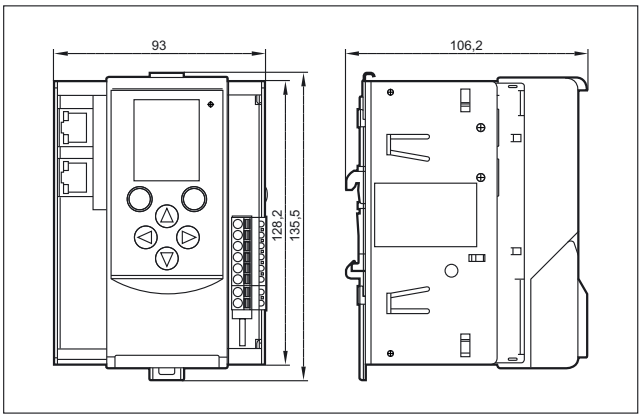


11



12



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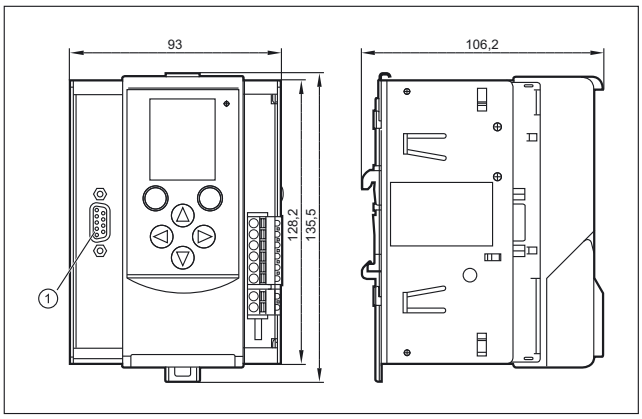

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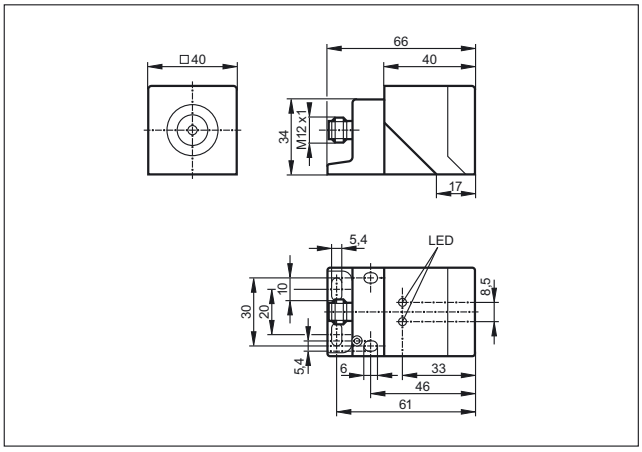

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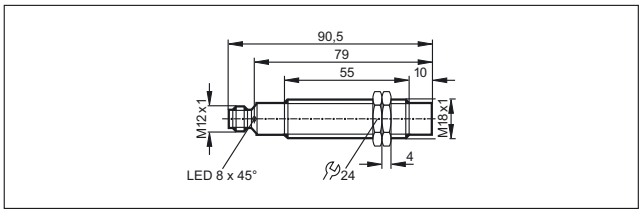

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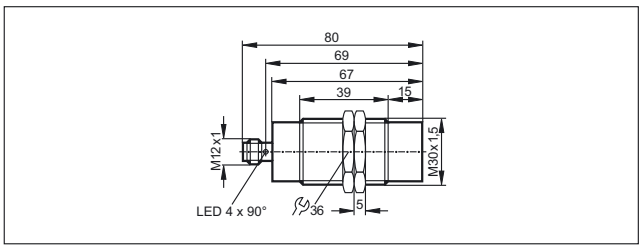

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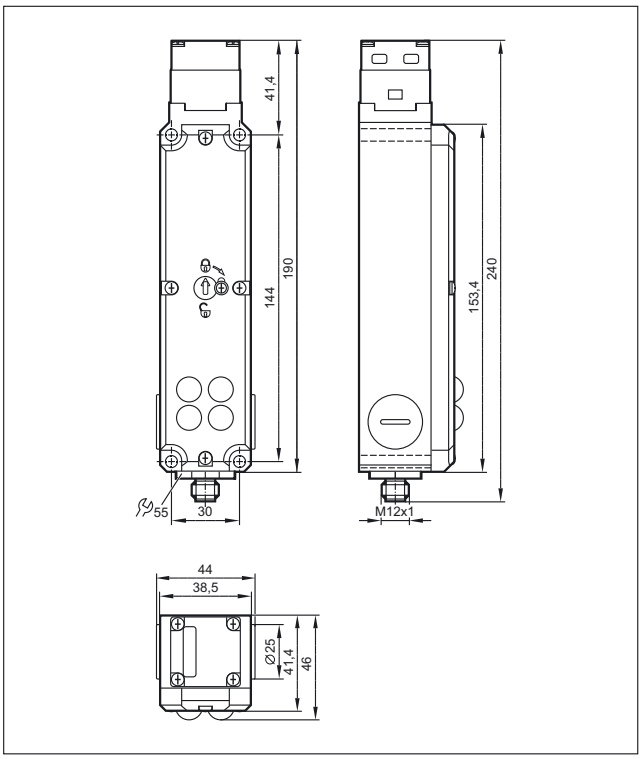
17



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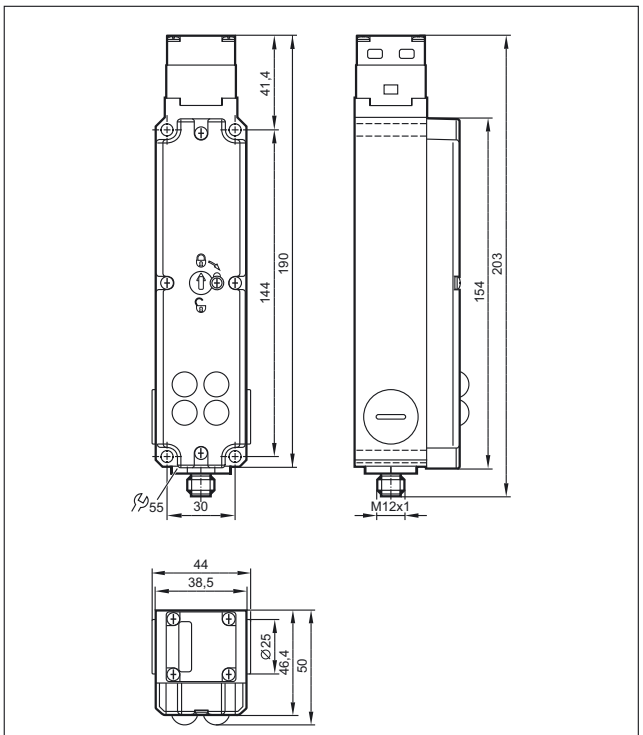

IO-Link components

IO-Link is a manufacturer-independent point-to-point communication system used to connect sensors and actuators to an automation system.
An IO-Link system consists of an IO-Link master and several IO-Link devices.
The IO-Link master represents the interface to the controller or fieldbus level and communicates with the connected IO-Link devices.
IO-Link is capable of processing switching signals of binary sensors, process values of analogue sensors and their parameters in a purely digital form based on a 24 V signal. This eliminates measuring value errors associated with the transmission and conversion of analogue signals.
IO-Link can be used to transfer several process values or parameters of a device simultaneously via one unscreened standard cable. IO-Link is an internationally standardised fieldbus and controller independent interface.

System overview	Page
IO-Link components	652 - 653
Accessories and software	653 - 654
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IO-Link components

Type	Inputs / outputs	Description	Drawing no.	Order no.
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · M12 connector · housing: polyamide grey / socket: Stainless steel 303	1	**AL1101**
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · M12 connector · housing: polyamide grey / socket: Stainless steel 303	1	**AL1121**
	max. 8 IO-Link ports / max. 16 digital inputs / max. 8 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · M12 connector · housing: polyamide grey / socket: Stainless steel 303	2	**AL1103**
	max. 8 IO-Link ports / max. 16 digital inputs / max. 8 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · M12 connector · housing: polyamide grey / socket: Stainless steel 303	2	**AL1123**
	6 x 2 outputs	Active CompactLine module (IO-Link device) · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · Sockets M12 x 1 · housing: polyamide grey / socket: Stainless steel 303	3	**AL2230**
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	1	**AL1100**
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	1	**AL1120**
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	4	**AL1200**
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	4	**AL1220**

Type	Inputs / outputs	Description	Drawing no.	Order no.
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	5	**AL1202**
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	5	**AL1222**
	max. 8 IO-Link ports / max. 16 digital inputs / max. 8 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	2	**AL1102**
	max. 8 IO-Link ports / max. 16 digital inputs / max. 8 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	2	**AL1122**
	4 x 2 inputs	Active CompactLine module (IO-Link device) · 4 way · Supply via IO-Link M12 connector · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / O-Ring : Viton	6	**AL2400**
	6 x 2 outputs	Active CompactLine module (IO-Link device) · I/O modules for field applications · Sockets M12 x 1 · housing: polyamide / socket: Brass nickel-plated	3	**AL2330**
	8 x 2 inputs	Active CompactLine module (IO-Link device) · 8 way · Supply via IO-Link M12 connector · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / O-Ring : Viton	7	**AL2401**
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · housing: PA / socket: Brass nickel-plated	8	**AL1000**
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with Profibus interface · I/O modules for field applications · Sockets M12 x 1 · housing: PA / socket: Brass nickel-plated	9	**AL1010**
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · Sockets M12 x 1 · housing: PA / socket: Brass nickel-plated	8	**AL1020**
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with EtherCat interface · I/O modules for field applications · Sockets M12 x 1 · housing: PA / socket: Brass nickel-plated	8	**AL1030**
	8 IO-Link ports / 10 digital inputs / 2 digital inputs or outputs	IO-Link master with Profinet interface · I/O modules for use in the control cabinet · IO-Link master 8 ports A and B variable · LineRecorder Agent embedded · 2 Ethernet ports with integrated switch · Additional binary inputs and outputs can be configured · Housing for DIN rail mounting · Screw terminal · housing: polyamide	10	**AY1000**
	8 IO-Link ports / 10 digital inputs / 2 digital inputs or outputs	IO-Link master with EtherNet/IP interface · I/O modules for use in the control cabinet · IO-Link master 8 ports A and B variable · LineRecorder Agent embedded · 2 Ethernet ports with integrated switch · Additional binary inputs and outputs can be configured · Housing for DIN rail mounting · Screw terminal · housing: polyamide	10	**AY1020**

Accessories and software

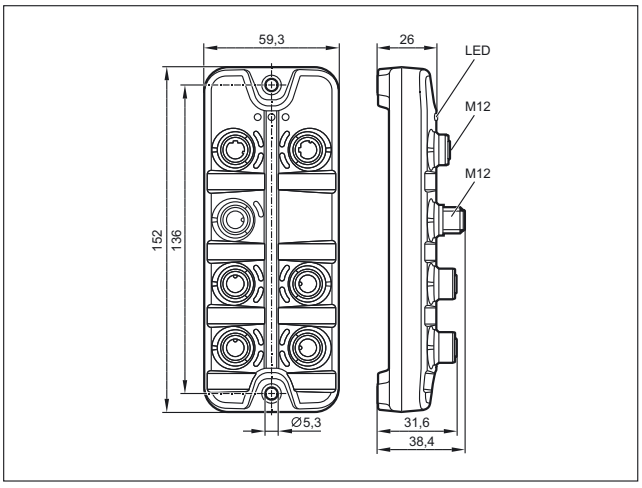
Type	Description	Order no.
	App for parameter setting and set-up of IO-Link sensors · Single user licence included (article no. E71400) · Version 1.1.0 · Data carrier: USB stick	**AP3002**

You can find scale drawings from page 654

Type	Description	Order no.
	App for parameter setting and set-up of up to 5 O2I multicode readers · Single user licence included (article no. E71400) · Version 1.0.2 · Data carrier: USB stick	AP3022
	App for parameter setting and set-up of the 3D camera O3D2nn · Single user licence included (article no. E71400) · Version 1.0.0 · Data carrier: USB stick	AP3032
	App for parameter setting and set-up up of the RFID read/write head · Single user licence included (article no. E71400) · Version 1.0.0 · Data carrier: USB stick	AP3042
	App for collecting and saving process data from AS-i IO-Link modules (AC5225) and analogue AS-i input slaves · Single user licence included (article no. E71400) · Version 1.0.1 · Data carrier: USB stick	AP3052
	App for the management of 999 AS-i configurations without special hardware · Single user licence included (article no. E71400) · Version 1.0.0 · Data carrier: USB stick	AP3062
	Protective cap · M12 · for M12 socket · IO-Link master · IO-Link device · Housing materials: end cap: Stainless steel 303 / sealing: EPDM	E12542

Scale drawings / drawing no. – CAD download: www.ifm.com

1



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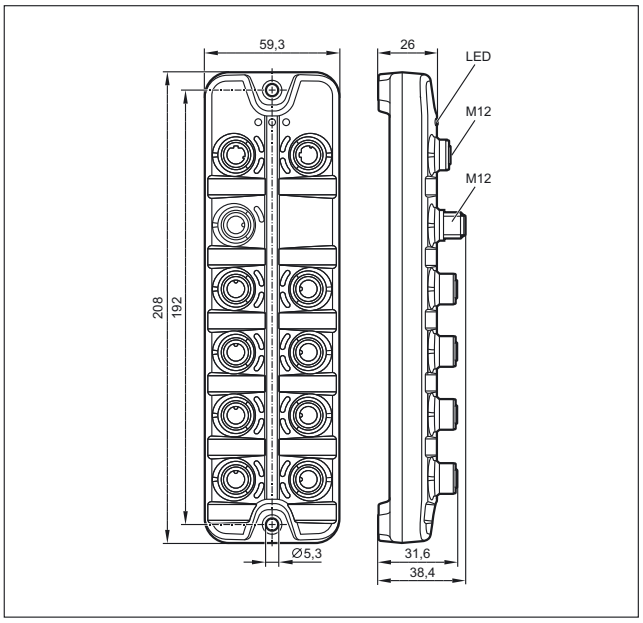

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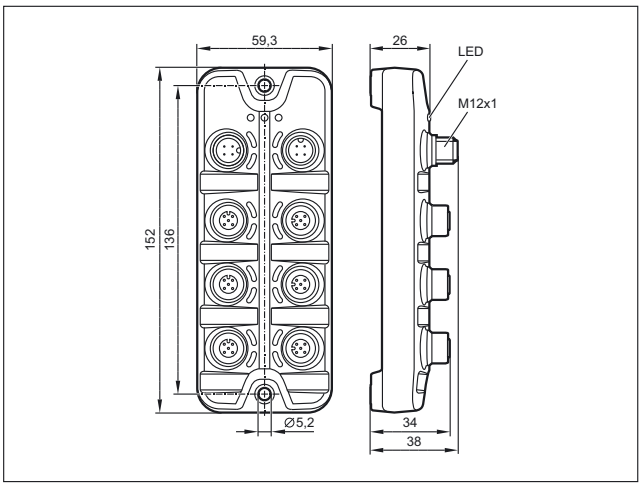

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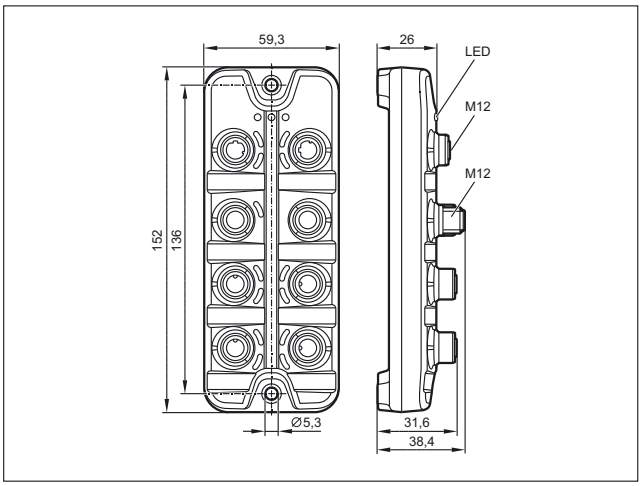

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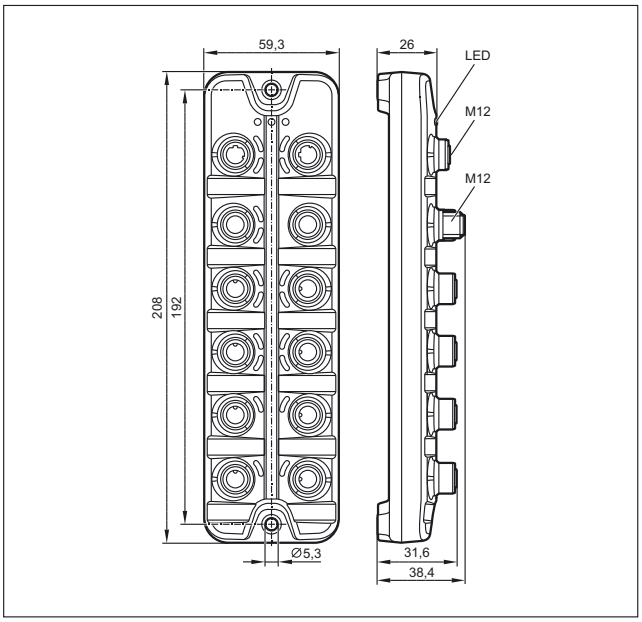

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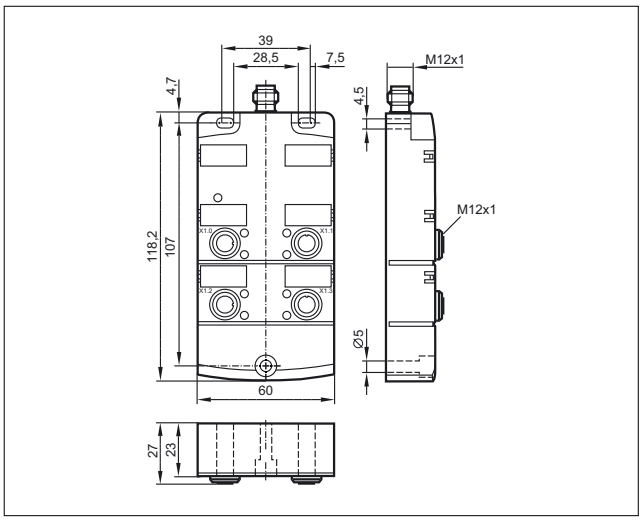

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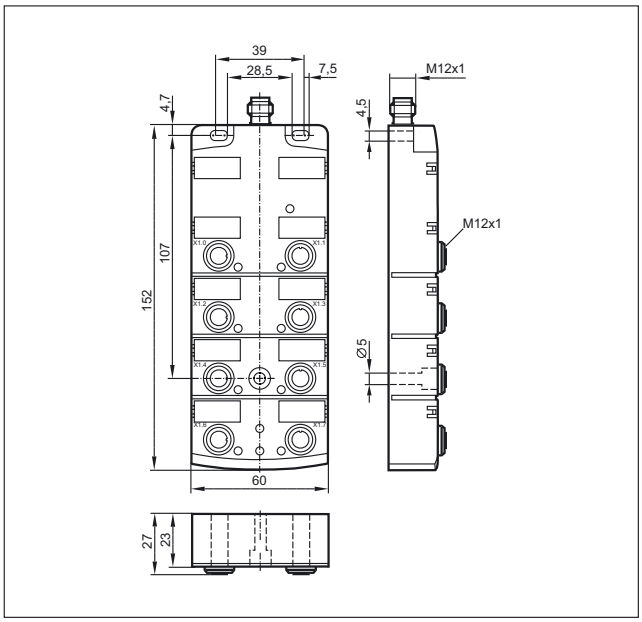

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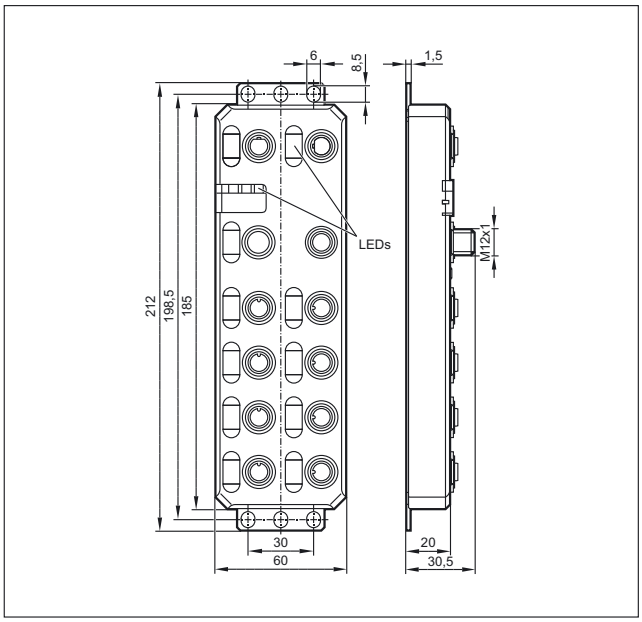

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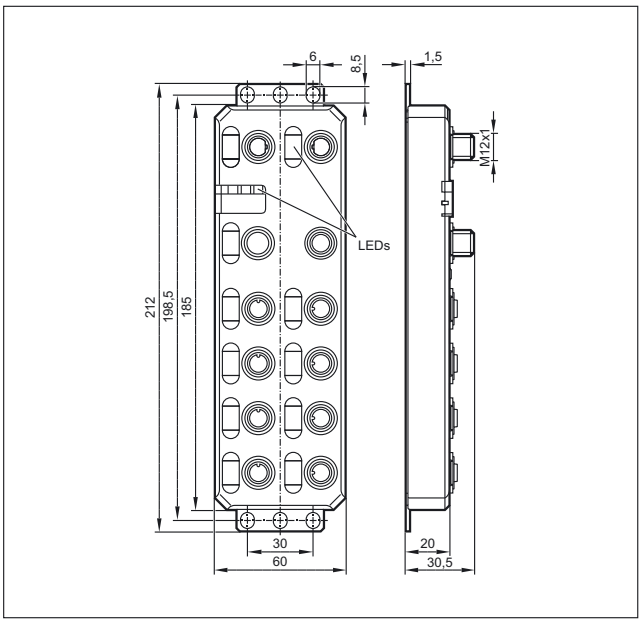

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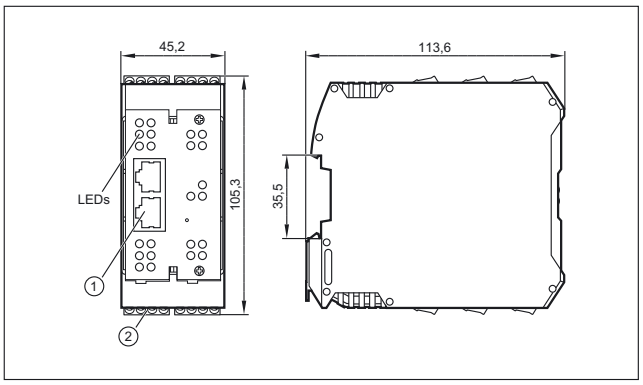


1: Ethernet interface, 2: screw terminals

Multicode readers and RFID for clear identification

Multicode readers

ifm multicode readers handle not only the ECC200 Data Matrix code, but also many more 2D and 1D codes. Code reading is not dependent on the orientation of the code to the sensor. The industrially compatible mounting and wiring technology as well as the standardised process interfaces enable easy and quick integration into the industrial control system.

RF identification systems

ifm offers different RFID systems using different frequencies, ranges, interfaces and data volumes.

LF 125 kHz system with AS-Interface

ifm offers the first RFID system for AS-Interface worldwide. Up to 31 read/write heads can be connected to one AS-i master. Antenna, electronics and AS-i interface are integrated in a compact housing.

LF 125 kHz / HF 13.56 MHz system with different fieldbus interfaces

The RFID evaluation unit DTE10x with integrated fieldbus interfaces and web server is widely used in production to mark tools, for quality assurance, to monitor production steps, in conveying and in automation technology.

RFID compact unit suitable for mobile use

The robust RFID compact unit with CANopen interface has been developed for identification tasks in agricultural machines, municipal vehicles and construction machines.

UHF system with Ethernet

The ultra low and low range antennas achieve selectivities of a few centimetres. The mid-range antenna is chosen for applications in the near / far field with reading ranges of up to 2 m. The wide range antenna attains reading ranges of up to 10 m.

	RFID 125 kHz	*660 - 665*
	RFID 13.56 MHz	*666 - 673*
	RFID UHF	*674 - 677*
	1D/2D code readers	*678 - 683*

RFID 125 kHz

RFID systems based on 125 kHz for production and conveying technology, identification of workpiece carriers and products.

- System DTS 125 with AS-Interface
- System DTE 100 with Profibus DP
- System DTE 101 with Profinet
- System DTE 102 with Ethernet/IP

System overview	*Page*
RFID system 125 kHz with AS-Interface	*660 - 661*
ID tags 125 kHz for system DTS 125	*661 - 662*
Handheld readers for system DTS 125	*662*
Fixing components	*662*
DTE 100 RFID system with Profibus DP	*662*
DTE 101 RFID system with ProfiNet	*663*
DTE102 RFID system with EtherNet/IP	*663*
DTE103 RFID system with EtherCAT	*663*
DTE104 RFID system with Ethernet TCP/IP	*663*
RFID antennas 125 kHz for system DTE100, DTE101, DTE102, DTE104	*663*
RFID tags 125 kHz for antenna ANT512	*664*
Accessories DTE100	*664*
Connection technology	*664*
Scale drawings / drawing no. – CAD download: www.ifm.com	*665*

RFID system 125 kHz with AS-Interface

Type	Dimensions [mm]	Travel speed read / write [m/s]	Process interface	Draw-ing no.	Order no.
M12 connector · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202					
	55 x 24 x 41	read: ≤ 0.5 (distance to the ID tag 15 mm) write: only static	AS-i	1	**DTA100**
	55 x 24 x 41	read: ≤ 0.5 (distance to the ID tag 15 mm)	AS-i	1	**DTA101**
	40 x 40 x 54	read: ≤ 0.5 (distance to the ID tag 30 mm) write: only static	AS-i	2	**DTA200**

Type	Dimensions [mm]	Travel speed read / write [m/s]	Process interface	Drawing no.	Order no.
M12 connector · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202					
	40 x 40 x 54	read: ≤ 0.5 (distance to the ID tag 30 mm)	AS-i	2	**DTA201**
	92 x 80 x 40	read: ≤ 0.5 (distance to the ID tag 40 mm) write: only static	AS-i	3	**DTA300**
	92 x 80 x 40	read: ≤ 0.5 (distance to the ID tag 40 mm)	AS-i	3	**DTA301**

ID tags 125 kHz for system DTS 125

Type	Description	Order no.
	ID tag · ID-TAG/M5x16.5/01 · M5 x 16.5 mm · Screw mounting · Housing materials: PA black (RAL 9005)	**E80301**
	ID tag · ID-TAG/M18x1/01 · M18 x 1 · Screw mounting · in metal · Housing materials: threaded sleeve: PBT orange	**E80311**
	ID tag · ID-TAG/D12x2/01 · Ø 12 x 2 mm · Housing materials: PPS black	**E80312**
	ID tag · ID-TAG/D20x2.15/01 · Ø 20 x 2.15 mm · Housing materials: polycarbonate black	**E80317**
	ID tag · ID-TAG/D30x2.15/01 · Ø 30 x 2.15 mm · Housing materials: polycarbonate black	**E80318**
	ID tag · ID-TAG/D50x2.2/01 · Ø 50 x 2.2 mm · Housing materials: polycarbonate black	**E80319**
	ID tag · ID-TAG/D26x4/01 · Ø 26 x 4 mm · Housing materials: PA High Temperature	**E80322**
	ID tag · ID-TAG/M5x16.5/01 · M5 x 16.5 mm · Screw mounting · Housing materials: PA black (RAL 9005)	**E80345**
	ID tag · ID-TAG/ISO-Card/01 · 54 x 86 x 1 mm · Housing materials: PVC white	**E80320**
	ID tag · ID-TAG/TRIANGLE HOUSING/01 · with ID tag E80345 · Housing materials: PBT orange (RAL 2003) / PA black (RAL 9005)	**E80346**

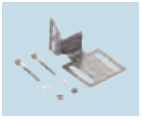
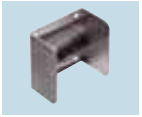
You can find scale drawings from page 665

Type	Description	Order no.
	ID tag · ID-TAG/TRIANGLE HOUSING/01 · with ID tag E80301 · Housing materials: PBT orange (RAL 2003) / PA black (RAL 9005)	**E80302**

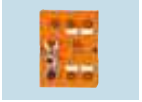
Handheld readers for system DTS 125

Type	Description	Order no.
	RFID Handheld Reader USB · suitable for use in PCs or notebooks · 125 kHz · 1.8 m · Housing materials: PS	**E80321**

Fixing components

Type	Description	Order no.
	Angle bracket · Housing materials: stainless steel	**E80304**
	Mounting set · Clamp mounting · aluminium profile · for type OC · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20901**
	Mounting bracket · with integrated snap-on rail · for type IDC · Housing materials: stainless steel	**E10730**
	Mounting set · Clamp mounting · aluminium profile · for type OC · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20901**
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	**E21088**

DTE 100 RFID system with Profibus DP

Type	Description	Drawing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12	4	**DTE100**

DTE 101 RFID system with ProfiNet

Type	Description	Drawing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12	5	**DTE101**

DTE102 RFID system with EtherNet/IP

Type	Description	Drawing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12	5	**DTE102**

DTE103 RFID system with EtherCAT

Type	Description	Drawing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-4H orange / Upper part: TPE / lower part: GD-AlSi12	5	**DTE103**

DTE104 RFID system with Ethernet TCP/IP

Type	Description	Drawing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12	5	**DTE104**

RFID antennas 125 kHz for system DTE100, DTE101, DTE102, DTE104

Type	Description	Drawing no.	Order no.
	Read/write head · M12 connector · 5 positions of the sensing face selectable · Housing materials: housing: PA / Metal parts: stainless steel	2	**ANT512**

You can find scale drawings from page 665

RFID tags 125 kHz for antenna ANT512

Type	Description	Order no.
	ID tag · ID-TAG/30X2.5/05 - 256 bit · Ø 30 x 2.5 mm · Housing materials: PA 6 black	**E80360**
	ID tag · ID-TAG/30X2.5/05 - 2048 bit · Ø 30 x 2.5 mm · Housing materials: PA 6 black	**E80361**

Accessories DTE100

Type	Description	Order no.
	Terminating resistor plug · straight · Free from silicone · Free from halogen · Gold-plated contacts · Housing materials: PUR	**E12315**
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 10 m · Housing materials: PUR	**E12317**
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	**E12319**
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	**E12321**

Connection technology

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	**E11898**
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: TPU / PA	**E12090**
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	**E12204**
	Jumper · straight / straight · Ethernet · 20 m · Housing materials: PUR / PC	**E12205**

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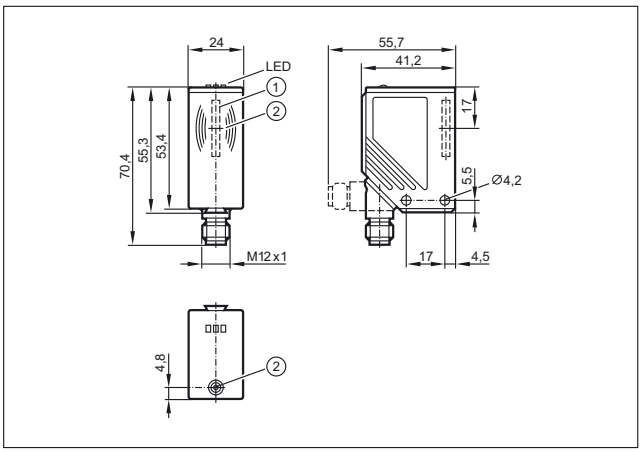
1



1: integrated antenna, 2: tag positioning mark (middle of the antenna)

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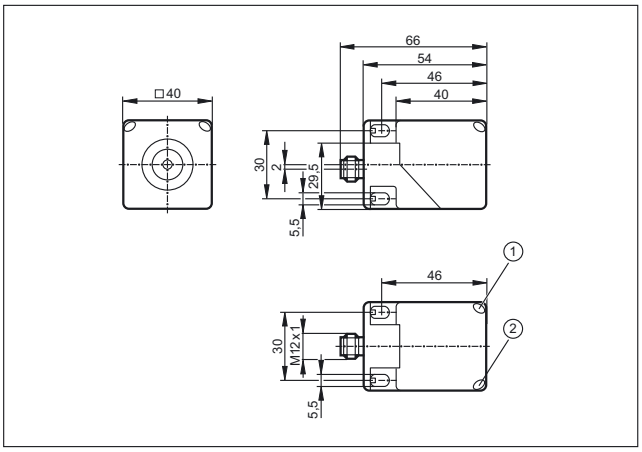
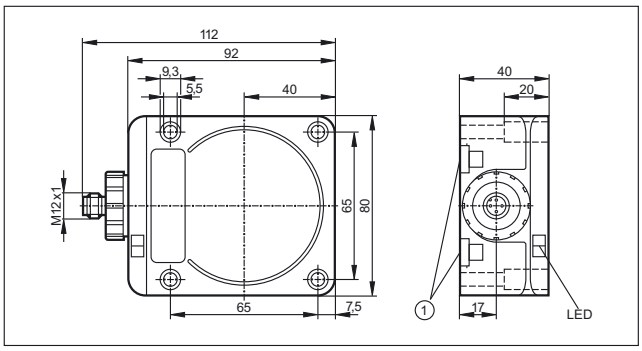


1: LED yellow, 2: LED green

3



1: Mounting on DIN rail

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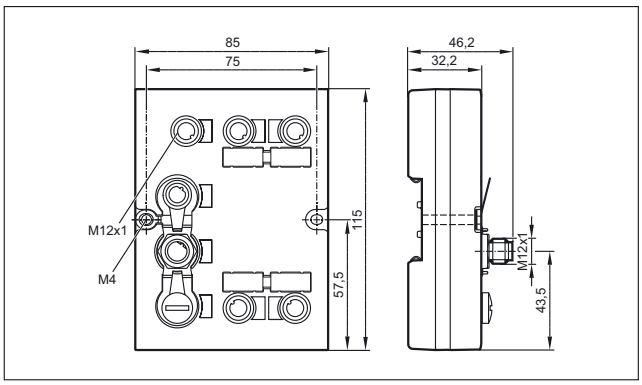

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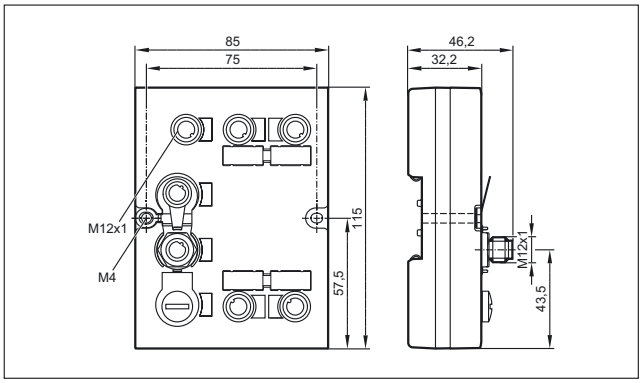

RFID 13.56 MHz

Flexible system for production, assembly and handling technology. Ensures fast data transmission and supports the ISO 15693 standard.

- DTE100 system with Profibus DP

- DTE101 system with Profinet

- DTE102 system with EtherNet/IP

- DTE104 system with EtherNetTCP/IP

System overview	*Page*
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DTE 100 RFID system with Profibus DP

Type	Description	Draw-ing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12	1	**DTE100**

DTE 101 RFID system with ProfiNet

Type	Description	Drawing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12	2	**DTE101**

DTE102 RFID system with EtherNet/IP

Type	Description	Drawing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12	2	**DTE102**

DTE103 RFID system with EtherCAT

Type	Description	Drawing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-4H orange / Upper part: TPE / lower part: GD-AlSi12	2	**DTE103**

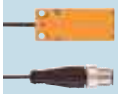
DTE104 RFID system with Ethernet TCP/IP

Type	Description	Drawing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12	2	**DTE104**

RFID antennas 13.56 MHz for system DTE100, DTE101, DTE102, DTE104

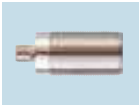
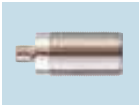
Type	Description	Drawing no.	Order no.
	Read/write head · M12 connector · Housing materials: housing: stainless steel / Top: PPS	3	**ANT410**

You can find scale drawings from page 672

Type	Description	Drawing no.	Order no.
	Read/write head · M12 connector · Housing materials: housing: stainless steel / Top: PPS	4	**ANT411**
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	5	**ANT420**
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	6	**ANT421**
	Read/write head · M12 connector · Housing materials: housing: stainless steel / Top: PPS	7	**ANT430**
	Read/write head · M12 connector · Housing materials: housing: stainless steel / Top: PPS	8	**ANT431**
	Read/write head · M12 connector · 5 positions of the sensing face selectable · Housing materials: housing: PA / Metal parts: stainless steel	9	**ANT513**
	Read/write head · M12 connector · Cable with connector · 1 m · Housing materials: PBT / TPE-U / stainless steel	10	**ANT515**
	Read/write head · M12 connector · Cable with connector · 2 m · Housing materials: PBT / TPE-U / stainless steel	10	**ANT516**

RFID systems DTM424, DTM425, DTM434, DTM435 for mobile machines

Type	Description	Drawing no.	Order no.
Type M18 x 1 · M12 connector · CANopen interface			
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	11	**DTM424**
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	12	**DTM425**
Type M18 x 1 · M12 connector · J1939 interface			
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	11	**DTM426**
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	12	**DTM427**

Type	Description	Drawing no.	Order no.
Type M30 x 1.5 · M12 connector · CANopen interface			
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	13	**DTM434**
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	14	**DTM435**
Type M30 x 1.5 · M12 connector · J1939 interface			
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	13	**DTM436**
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	14	**DTM437**

RFID tags 13.56 MHz for antennas ANT513, ANT410, ANT411, ANT430, ANT431, DTM424, DTM425, DTM434, DTM435

Type	Description	Order no.
	ID tag · ID-TAG/D12x2.3/06	**E80341**
	ID tag · Ø 34 x 6 mm · Housing materials: PPS	**E80342**
	ID tag · ID-TAG/D12x2.3/06 · 90 x 34 x 7 mm · Housing materials: ABS	**E80343**
	ID tag · ID-TAG/D16x3/06 · Ø 16 x 3 mm · Housing materials: PPS	**E80344**
	ID tag · ID-TAG/M5x16.5/01 · M5 x 16.5 mm · Screw mounting · Housing materials: PA black (RAL 9005)	**E80347**
	ID tag · ID-TAG/D20x3/06 · Ø 20 x 3 mm · Housing materials: PPA	**E80349**
	ID tag · ID-TAG/D40x31/06 · 40 x 31 x 5 mm · Housing materials: PC	**E80387**
	ID tag · ID-TAG/D12x2.3/06 · Ø 12.3 x 2.3 mm · Housing materials: PPA black	**E80388**

You can find scale drawings from page 672

Type	Description	Order no.
	ID tag · ID-TAG/30X2.8/03 - 16 Kbit · Ø 30 x 2.8 mm · Housing materials: PA 6 black	**E80370**
	ID tag · ID-TAG/D50x3.0/0 FRAM-16 Kbit · Ø 50 x 3 mm · Housing materials: PPA black	**E80383**
	ID tag · ID-TAG/D50x3.0/0 1024bit · Ø 50 x 3 mm · Housing materials: PPA black	**E80384**
	ID tag · ID-TAG/30X2.8/03 - 64 Kbit · Ø 30 x 2.8 mm · Housing materials: PA 6	**E80380**
	ID tag · ID-TAG/30X2.5/06 - 896 bit · Ø 30 x 2.5 mm · Housing materials: PA 6 black	**E80371**
	ID tag · ID-TAG/R20X2.5/06 - 896 Bit · Ø 20 x 2.5 mm · Housing materials: PPA	**E80377**
	ID tag · ID-TAG/4.35X3.6/03 - 896 bit · Ø 4.3 x 3.6 mm · Housing materials: PPA GF30	**E80381**
	ID tag · ID-TAG/Label 65X30/03 - 896 bit	**E80382**
	ID tag · ID-TAG/Label 80x50/03 - 896 bit	**E80379**
	ID tag · ID-TAG/D22x4 · Ø 4 x 22 mm · Housing materials: glass	**E80385**
	ID tag · ID-TAG/51x51/06 · 51 x 51 x 6.5 mm · Housing materials: PPS	**E80400**
	Antenna adapter to increase the ranges · Housing materials: PVC	**E80390**
	Antenna adapter to increase the ranges · Housing materials: PVC	**E80391**
	Antenna adapter for a wider sensing field · Housing materials: POM	**E80392**
	ID tag · ID-TAG/HOLDER/01 · Housing materials: PPS black	**E80401**

Type	Description	Order no.
	ID tag · ID-TAG/TRIANGLE HOUSING/01 · with ID tag E80345 · Housing materials: PBT orange (RAL 2003) / PA black (RAL 9005)	**E80348**

Accessories DTE100

Type	Description	Order no.
	Terminating resistor plug · straight · Free from silicone · Free from halogen · Gold-plated contacts · Housing materials: PUR	**E12315**
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 10 m · Housing materials: PUR	**E12317**
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	**E12319**
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	**E12321**

Accessories DTM

Type	Description	Order no.
	BasicDisplay XL · 4.3" colour display · 6 freely programmable backlit function keys · Navigation key for cursor function · CAN interface · Programming according to IEC 61131-3 · 8...32 V DC	**CR0452**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · For applications in particularly harsh environments · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVM036**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · For applications in particularly harsh environments · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	**EVM038**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · Housing materials: housing: TPU black / sealing: FKM	**EVC492**
	Jumper · angled / angled · Free from silicone · Free from halogen · Gold-plated contacts · 5 m · Housing materials: housing connector: TPU orange / housing socket: TPU black transparent / sealing: FKM	**EVC039**
	Jumper · angled / straight · Free from silicone · Free from halogen · Gold-plated contacts · 5 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC069**

You can find scale drawings from page 672

Connection technology

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	**E11898**
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: TPU / PA	**E12090**
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	**E12204**
	Jumper · straight / straight · Ethernet · 20 m · Housing materials: PUR / PC	**E12205**

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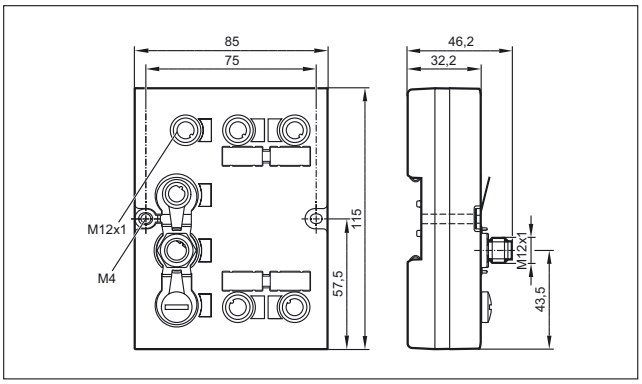

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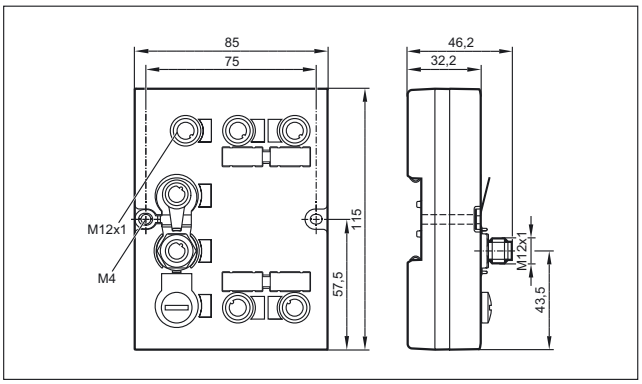

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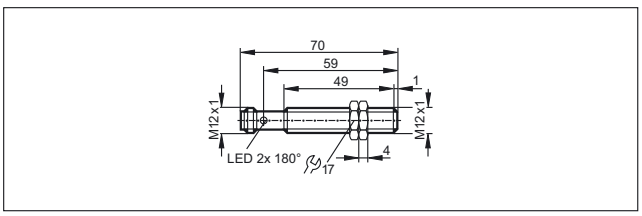

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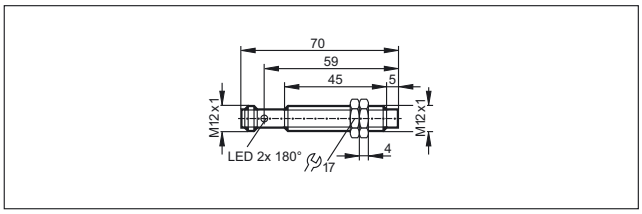

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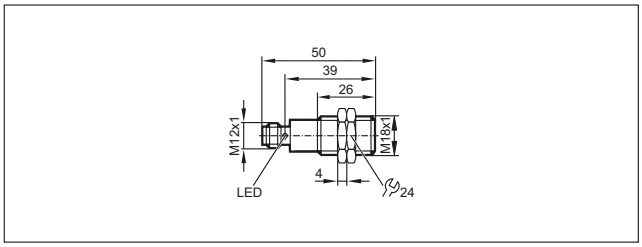

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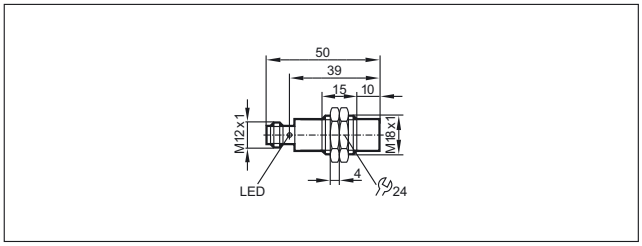

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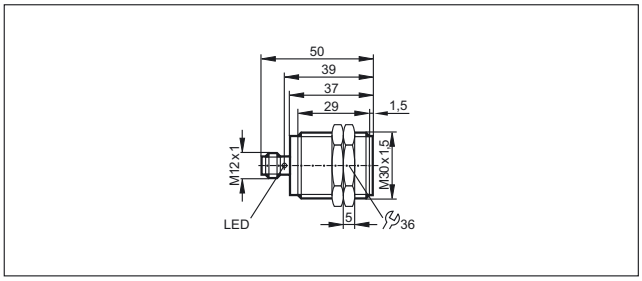

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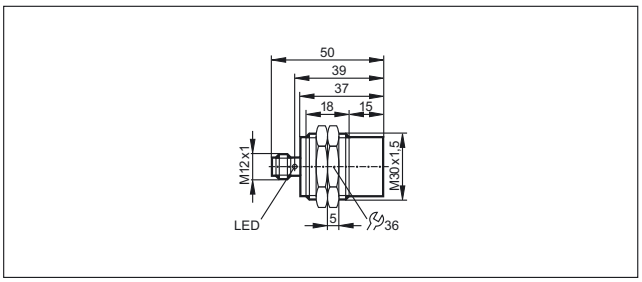

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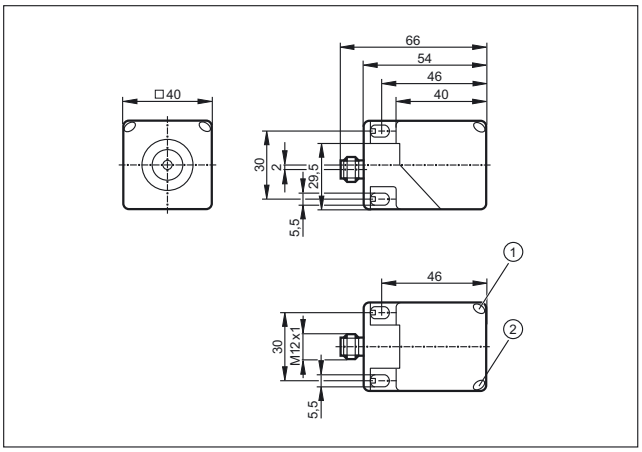
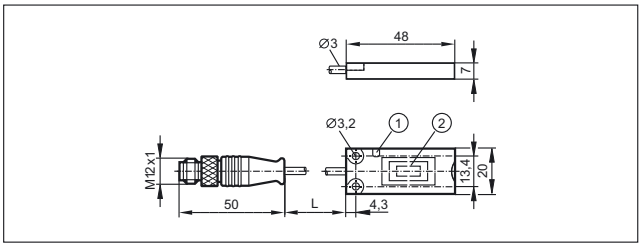


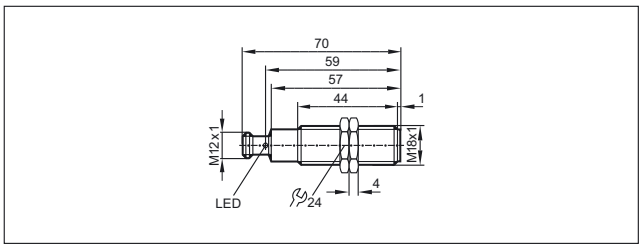
1: LED yellow, 2: LED green

10



1: LED, 2: sensing face

11



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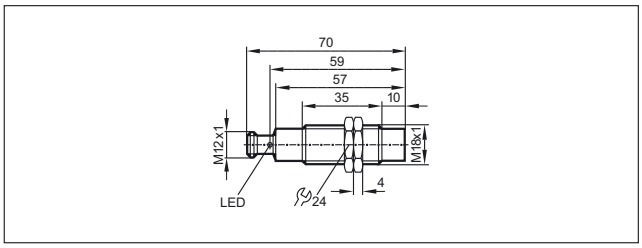

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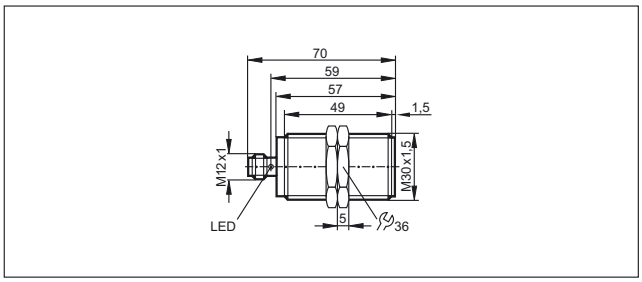

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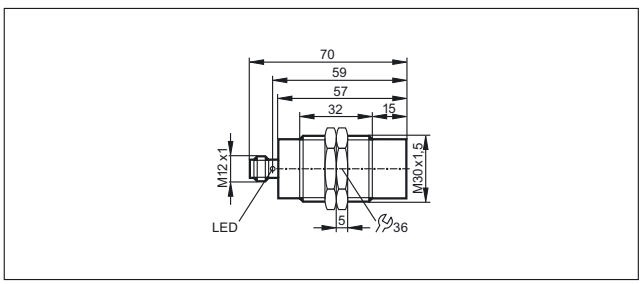

RFID UHF

The system is optimised for applications in production control, asset management, material flow control, track & trace and supply chain management:

- System DTE 800 for EU/ETSI
- System DTE 810 with Ethernet/IP
- System DTE 900 for US/FCC
- System DTE 910 with Ethernet/IP

System overview

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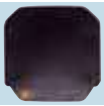
RFID UHF readers	*674*
RFID UHF antennas	*675*
ID tags UHF	*675*
Accessories for UHF systems	*675 - 676*
Scale drawings / drawing no. – CAD download: www.ifm.com	*676 - 677*

RFID UHF readers

Type	Dimensions [mm]	Operating frequency [MHz]	Trans-mission power [mW ERP]	Number of antenna inputs	Process interface	Output	Draw-ing no.	Order no.
M12 connector · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	233.5 x 270 x 68	865-868 (ETSI)	2000	4	EtherNet/IP	–	1	**DTE810**
	233.5 x 270 x 68	902...928 (FCC)	2000	4	EtherNet/IP	–	1	**DTE910**
	233.5 x 270 x 68	916...927	2000	4	EtherNet/IP	–	1	**DTE920**
M12 connector · Connector group --								
	138.1 x 63 x 156	865-868 (ETSI)	266	–	Ethernet TCP/IP	–	2	**DTE820**

RFID UHF antennas

Type	Dimensions [mm]	Operating frequency [MHz]	Antenna gain [cBic]	Max. input power [mW]	Protection	Draw-ing no.	Order no.
TNC socket							
	63 x 28 x 90	865...928	-30	1000	IP 67	3	**ANT805**
	63 x 28 x 90	865...870	-15	500	IP 67	3	**ANT810**
	126 x 37 x 156	865...928	-12 (866 MHz) / -10 (915 MHz)	–	IP 67	4	**ANT815**
	126 x 37 x 156	865...870	2.5	–	IP 67	4	**ANT820**
	271 x 270 x 42	865...870	8.5	–	IP 65	5	**ANT830**
	63 x 28 x 90	902...928 (FCC)	-15	500	IP 67	3	**ANT910**
	271 x 270 x 42	902...928 (FCC)	8.3	–	IP 65	5	**ANT930**

ID tags UHF

Type	Description	Order no.
	ID tag · ID-TAG/D55x13/04 · Ø 55 x 13 mm · Housing materials: PA 6	**E80351**
	ID tag · ID-TAG/R30X10/04 · Ø 30 x 10 mm · Housing materials: PU black	**E80353**
	ID tag · ID-TAG/R40X10/04 · 40 x 32 x 8 mm · Housing materials: nylon black	**E80354**

Accessories for UHF systems

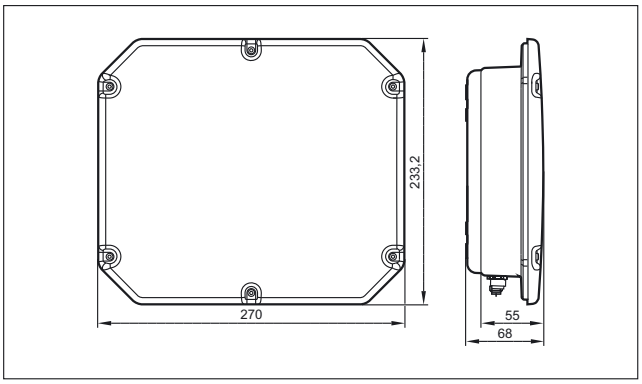
Type	Description	Order no.
	Jumper · straight / straight · For RFID antenna · 3 m	**E80330**

You can find scale drawings from page 676

Type	Description	Order no.
	Jumper · straight / straight · For RFID antenna · 6 m	**E80331**
	Jumper · straight / straight · For RFID antenna · 10 m	**E80332**
	Jumper · straight / straight · For RFID antenna · 15 m	**E80333**
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	**E11898**
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	**E12204**
	Clamp · for RFID UHF readers DTE800/DTE900 and antennas ANT830/ANT930 · Housing materials: fixture: steel sheet galvanised / screws: stainless steel / Fixing strap: stainless steel	**E80340**

Scale drawings / drawing no. – CAD download: www.ifm.com

1



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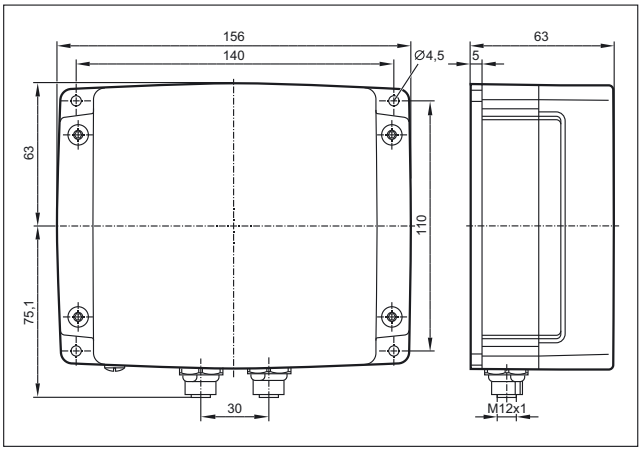

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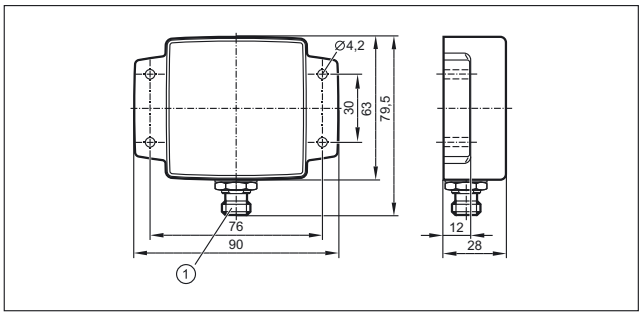
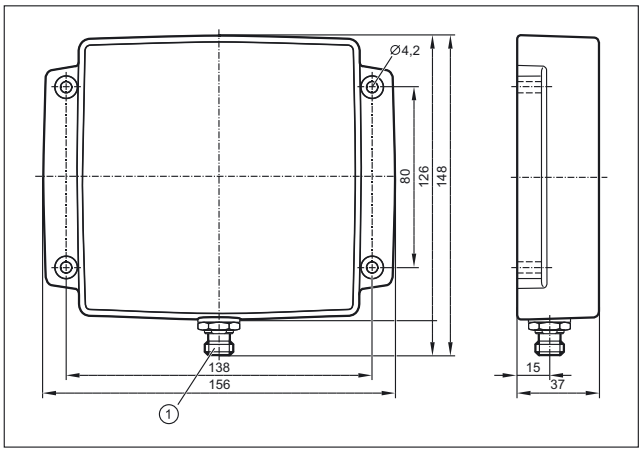


1: TNC socket

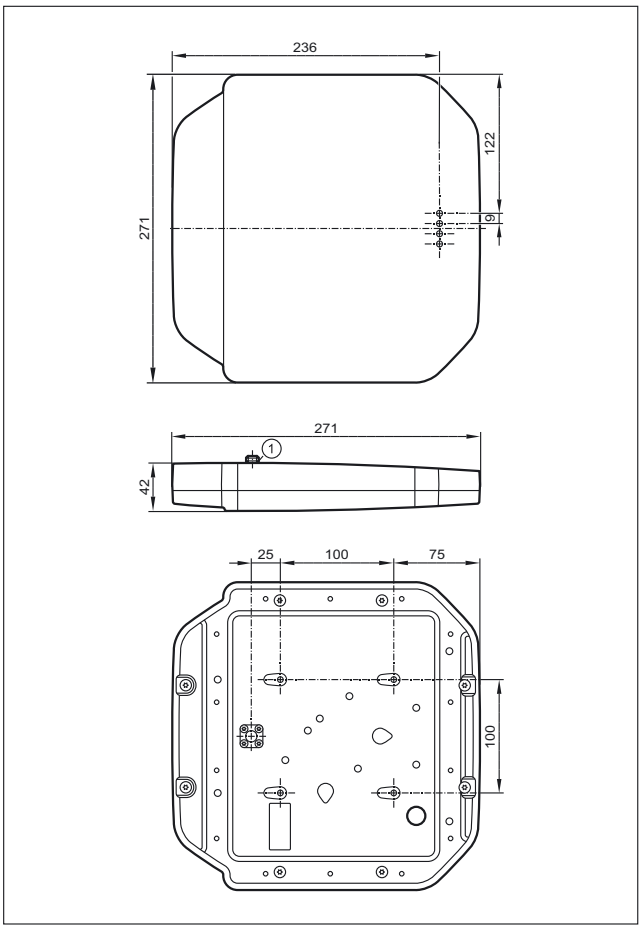
4



1: TNC socket

Scale drawings / drawing no. – CAD download: www.ifm.com

5



1: TNC socket

1D/2D code readers

Photoelectric multicode reader for 1D bar codes and 2D codes.Versions with infra-red light and red light as well as different field of view sizes are available.

System overview	*Page*
Multicode reader	*678 - 679*
Multicode reader with text recognition	*679*
Illumination units	*679 - 680*
Software	*680*
Panel PC for Multicode Reader	*680*
Fixing components	*680 - 681*
Protective panes and diffusers	*682*
Connection technology	*682*
Wiring diagrams	*682*
Scale drawings / drawing no. – CAD download: www.ifm.com	*683*

Multicode reader

Type	Dimensions [mm]	Max. field of view size [mm]	Type of light LED	Motion speed int. / ext. lighting [m/s]	Process interface	Draw-ing no.	Order no.
Multicode Reader · M12 plug, 8 poles · M12 socket, 4 poles · Connector groups 16, 17, 157, 183							
	60 x 42 x 53.5	64 x 48	red light	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	1	**O2I300**
	60 x 42 x 53.5	132 x 94	red light	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	1	**O2I302**
	60 x 42 x 59	400 x 300	red light	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	2	**O2I304**
	60 x 42 x 53.5	64 x 48	infrared	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	1	**O2I301**
	60 x 42 x 53.5	132 x 94	infrared	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	1	**O2I303**

Type	Dimensions [mm]	Max. field of view size [mm]	Type of light LED	Motion speed int. / ext. lighting [m/s]	Process interface	Draw-ing no.	Order no.
Multicode Reader · M12 plug, 8 poles · M12 socket, 4 poles · Connector groups 16, 17, 157, 183							
	60 x 42 x 59	400 x 300	infrared	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	2	**O2I305**

Multicode reader with text recognition

Type	Dimensions [mm]	Max. field of view size [mm]	Type of light LED	Motion speed int. / ext. lighting [m/s]	Process interface	Draw-ing no.	Order no.
Multicode Reader · M12 plug, 8 poles · M12 socket, 4 poles · Connector groups 16, 17, 157, 183							
	60 x 42 x 53.5	–	red light	3 / 5	Ethernet	1	**O2I350**
	60 x 42 x 53.5	–	red light	3 / 5	Ethernet	1	**O2I352**
	60 x 42 x 59	–	red light	3 / 5	Ethernet	2	**O2I354**
	60 x 42 x 53.5	–	infrared	3 / 5	Ethernet	1	**O2I351**
	60 x 42 x 53.5	–	infrared	3 / 5	Ethernet	1	**O2I353**
	60 x 42 x 59	–	infrared	3 / 5	Ethernet	2	**O2I355**

Illumination units

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I_0 normal light intensity [mA]	I_0 high light intensity [mA]	Trigger	Draw-ing no.	Order no.
M12 connector · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	42 x 42 x 31	Red	–	180	90	External; 24 V PNP to IEC61131-1	3	**O2D909**
	42 x 42 x 32.2	Red	–	180	90	External; 24 V PNP to IEC61131-1	4	**O2D913**
PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Ø 122 / L = 20.5	Infrared	–	800	1400	external; 24 V PNP	5	**O2D917**

You can find wiring diagrams and scale drawings from page 682

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I_0 normal light intensity [mA]	I_0 high light intensity [mA]	Trigger	Draw-ing no.	Order no.
PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	116 x 13 x 18	Infrared	–	185	325	external; 24 V PNP	6	**O2D922**
	200 x 13 x 18	Infrared	–	415	640	external; 24 V PNP	7	**O2D925**

Software

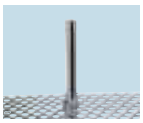
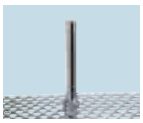
Type	Description	Number of connections	Order no.
	Operating software · O2I · for multicode reader · Create and manage application-specific configurations Monitor mode for set-up and service Service reports for statistical evaluations	–	**E2I200**
	Multicode reader OPC server · Software · German/English	25	**E2I210**
	Multicode reader OPC server · Software · German/English	50	**E2I211**
	Multicode reader OPC server · Software · German/English	75	**E2I212**
	Multicode reader OPC server · Software · German/English	100	**E2I213**

Panel PC for Multicode Reader

Type	Description	Order no.
	Touch Panel PC · 12.1" colour display · Intel Atom CPU 1.6 GHz · 2 GByte RAM · Windows Embedded Standard 7 SP1 (32 bits)	**E2D400**

Fixing components

Type	Description	Order no.
	Mounting set · O2D, O2M, O2I, O2V · Clamp mounting · rod mounting Ø 12 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	**E2D110**
	Mounting set · O2D, O2M, O2I, O2V · Clamp mounting · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	**E2D112**

Type	Description	Order no.
	Mounting set · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	**E2D114**
	Mounting set · Clamp mounting · for 4 bar lights 10x75 mm · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	**E2D116**
	Mounting set · Ring light · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	**E2D201**
	clamp · Ø 12 mm; M10 · Free-standing M10 · Housing materials: clamp: stainless steel	**E20946**
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: stainless steel	**E21110**
	clamp · Ø 14 mm; M12 · free-standing M12 · Housing materials: clamp: stainless steel	**E20948**
	clamp · Ø 14 mm · rod mounting Ø 14 mm · Housing materials: clamp: stainless steel	**E21109**
	mounting rod · Ø 12 · Length: 200 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21112**
	mounting rod · Ø 12 · Length: 300 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E21113**
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20938**
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E20940**
	mounting rod · Ø 14 / M12 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	**E20939**
	mounting rod · Ø 14 / M12 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	**E20941**
	Connection piece · Ø 20 mm · for the connection of two clamps with Ø 20 mm · Housing materials: stainless steel 316L / 1.4404	**E21076**

You can find wiring diagrams and scale drawings from page 682

Protective panes and diffusers

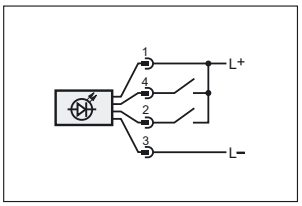
Type	Description	Order no.
	Plastic diffuser · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA	**E21165**
	Plastic protective pane for the food industry · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA	**E21166**
	Glass protective pane · O2D / O2I · Housing materials: housing: diecast zinc black / lens: float glass	**E21168**
	Laser protection pane plastic · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA / filter: polycarbonate	**E21169**

Connection technology

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	**E11898**
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: TPU / PA	**E12090**
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	**E12204**
	Jumper · straight / straight · Ethernet · 20 m · Housing materials: PUR / PC	**E12205**

Wiring diagrams

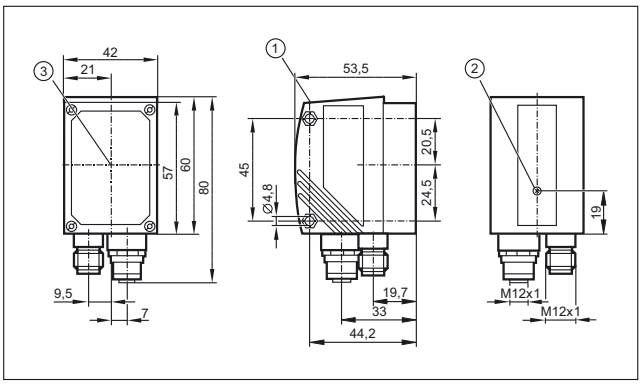
1



1: Trigger, 2: Operating mode "high light intensity"

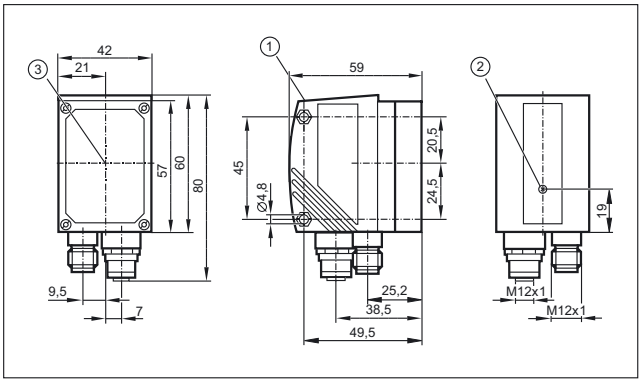
Scale drawings / drawing no. – CAD download: www.ifm.com

1



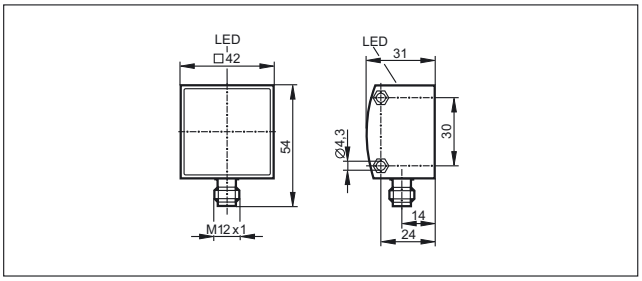
1: display, 2: Focus adjustment screw, 3: Centre of the lens axes

2



1: display, 2: Focus adjustment screw, 3: Centre of the lens axes

3



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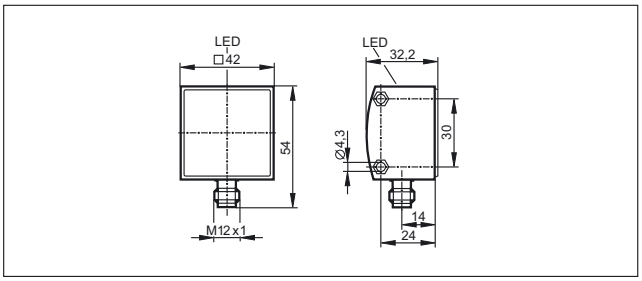

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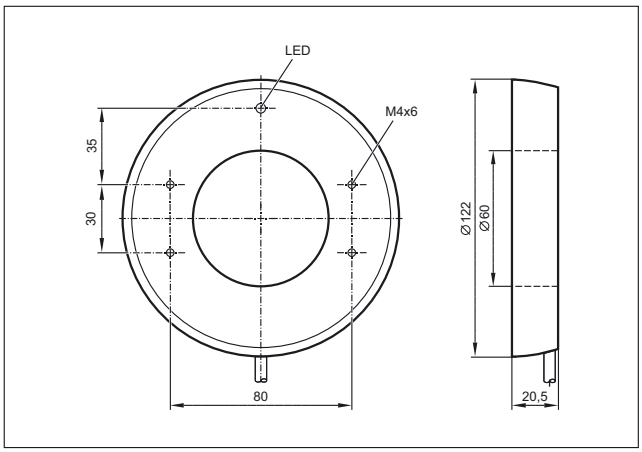

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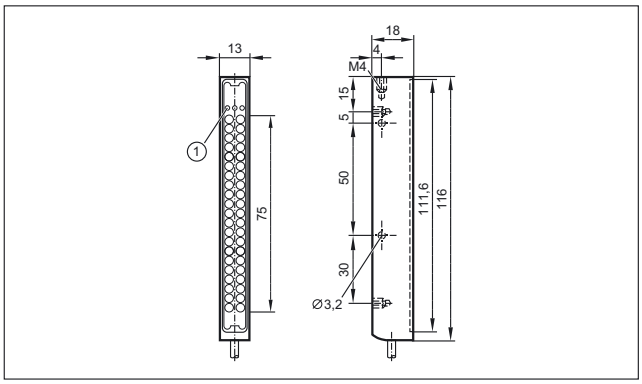
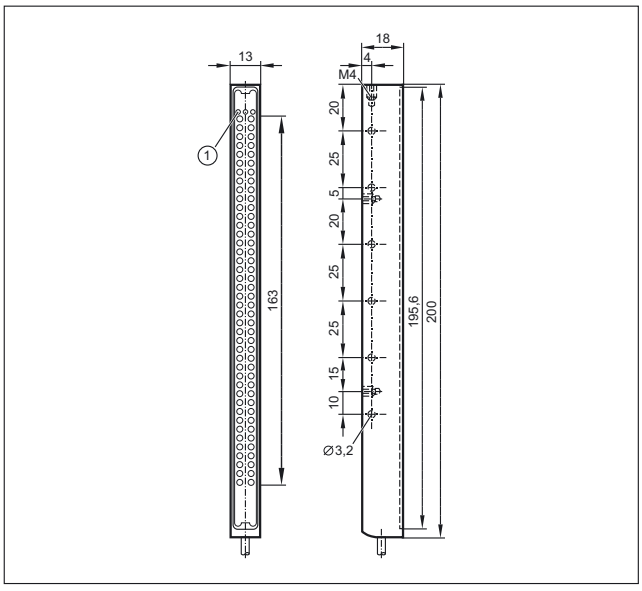


1: LED

7



1: LED

Early damage detection – Down-time prevention

Systems for vibration monitoring – the optimum solution for every requirement.

Vibration monitoring

Monitoring of overall vibration according to ISO 10816. Detects resulting damage at an early stage. Avoids consequential damage and increases life-time.

Condition monitoring

Early detection of potential faults and their causes based on individual vibration characteristics and other influencing factors.

Machine protection

Avoids damage to machine components, tools or workpieces via permanent monitoring and very short response times. The integration into the PLC makes it possible to adjust the vibration monitoring to the process of the machine or the plant.

Oil quality under control

The quality of oil is decisive for many machines for their precision and life span. The combined oil humidity and temperature sensor is designed for permanent monitoring and signalling of measurement data via analogue outputs. This makes it possible to avoid damage caused by inappropriate lubrication and to plan ideal maintenance intervals.

Vibration monitoring systems 686 - 691

Systems for oil quality monitoring 692 - 694

Vibration monitoring systems

efector octavis is a simple to implement vibration monitoring system which detects vibration data and automatically determines the machine diagnosis directly on the machine.

The machine condition is forwarded to the PLC or to SCADA systems.

It fulfils the main requirements for modern machine monitoring: compatibility, modularity, and transferable configuration.

System overview	*Page*
Vibration sensors for vibration monitoring of machines and plants to ISO 10816 type VK	*686*
Accessories VK	*686*
Vibration transmitters for vibration monitoring of machines and plants to ISO 10816 type VT	*687*
Vibration transmitter with ATEX approval 3D/3G	*687*
Compact vibration sensors type VN	*687*
Accessories VN	*687 - 688*
Diagnostic electronics – control cabinet modules for vibration diagnosis type VSE	*688*
Accessories VSE	*688*
Connection cables VSE	*689*
Vibration sensors for connection to external diagnostic electronics VSE – type VSA / VSP	*689*
Accessories VSA	*690*
Scale drawings / drawing no. – CAD download: www.ifm.com	*690 - 691*

Vibration sensors for vibration monitoring of machines and plants to ISO 10816 type VK

Type	Description	Drawing no.	Order no.
	M8 x 1.25 · Vibration monitor to DIN ISO 10816 · Measuring range RMS: 0...25 mm/s · Switching output NC DC PNP and analogue output 4...20 mA · 2 Inputs / outputs total · Measuring range 0...25 RMS mm/s · Frequency range 10...1000 Hz · Ambient temperature -25...80 °C · M12 connector · Operating voltage 18...32 V DC · IP 67	1	**VKV021**
	M8 x 1.25 · Vibration monitor to DIN ISO 10816 · Measuring range RMS: 0...50 mm/s · Switching output NC DC PNP and analogue output 4...20 mA · 2 Inputs / outputs total · Measuring range 0...50 RMS mm/s · Frequency range 10...1000 Hz · Ambient temperature -25...80 °C · M12 connector · Operating voltage 18...32 V DC · IP 67	1	**VKV022**

Accessories VK

Type	Description	Order no.
	Protective cover · with lead seal option · for pressure sensors type PK · for temperature sensors type TK · for vibration sensors type VK · Housing materials: PP transparent	**E30094**

Vibration transmitters for vibration monitoring of machines and plants to ISO 10816 type VT

Type	Description	Drawing no.	Order no.
	set screw · Vibration transmitter to ISO 10816 · Measuring range RMS: 0...25 mm/s · Analogue output 4...20 mA · 2-wire connection technology · 1 Inputs / outputs total · Frequency range 10...1000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 9.6...32 V DC · IP 67 / IP 68 / IP 69K	2	**VTV122**
	set screw · Vibration transmitter to ISO 10816 · Measuring range RMS: 0...50 mm/s · Analogue output 4...20 mA · 2-wire connection technology · 1 Inputs / outputs total · Frequency range 10...1000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 9.6...32 V DC · IP 67 / IP 68 / IP 69K	2	**VTV121**

Vibration transmitter with ATEX approval 3D/3G

Type	Description	Drawing no.	Order no.
	set screw · Vibration transmitter to ISO 10816 · Measuring range RMS: 0...25 mm/s · Analogue output 4...20 mA · 2-wire connection technology · ATEX approval · Group II, category 3D/3G · 1 Inputs / outputs total · Frequency range 10...1000 Hz · Ambient temperature -20...60 °C · M12 connector · Operating voltage 9.6...32 V DC · IP 67	2	**VTV12A**

Compact vibration sensors type VN

Type	Description	Drawing no.	Order no.
	Mounting set M5 / M8 · Vibration sensor to ISO 10816 · Parameter setting via pushbuttons · 3 Inputs / outputs total, configurable · Analogue input 4...20 mA · Measuring range 0...500 mm/s · Frequency range 2...1000 Hz · 4-digit alphanumeric display · Ambient temperature -30...60 °C · M12 connector · M8 connector · Operating voltage 9.6...30 V DC · IP 67	3	**VNB001**
	Mounting set M5 / M8 · Vibration sensor to ISO 10816 · Parameter setting via pushbuttons · 3 Inputs / outputs total, configurable · Analogue input 0/4...20 mA · Measuring range 0...25 g · Frequency range 0...6000 Hz · 4-digit alphanumeric display · Ambient temperature -30...60 °C · M12 connector · M8 connector · Operating voltage 9.6...30 V DC · IP 67	3	**VNB211**

Accessories VN

Type	Description	Order no.
	USB adapter cable · straight / straight · 5 m	**E30136**
	Adapter · ¼" 28 UNF x M5 · Housing materials: stainless steel	**E30137**
	Power supply · 2 m · Housing materials: PPE	**E30080**

You can find scale drawings from page 690

Type	Description	Order no.
	Y connection cable · 2 way · Free from halogen · 0.25 m · Housing materials: TPU	**E12405**

Diagnostic electronics – control cabinet modules for vibration diagnosis type VSE

Type	Description	Draw-ing no.	Order no.
	Diagnostic electronics for vibration sensors · Mounting on DIN rail · Integrated history memory with real-time clock · Counter function · TCP/IP Ethernet interface · Active wire break detection and self-test (only MEMS) of the connected acceleration sensors · Parameter setting via PC software VES004 · 8 Inputs / outputs total, configurable · Frequency range 0 / 2 /10...12000 Hz · Ambient temperature 0...70 °C · Operating voltage 24 V DC ± 20 % · IP 20	4	**VSE002**
	Diagnostic electronics for vibration sensors · Mounting on DIN rail · Integrated history memory with real-time clock · Counter function · TCP/IP Ethernet interface · Active wire break detection and self-test (only MEMS) of the connected acceleration sensors · Parameter setting via PC software VES004 · 16 Inputs / outputs total, configurable · Frequency range 0...12000 Hz · Ambient temperature 0...70 °C · Operating voltage 24 V DC ± 20 % · IP 20	5	**VSE100**
	Diagnostic electronics for vibration sensors · Mounting on DIN rail · Parameter setting via PC software VES004 · TCP/IP Ethernet interface · Profinet IO data interface · 8 Inputs / outputs total, configurable · Ambient temperature 0...60 °C · Operating voltage 24 V DC ± 20 % · IP 20	6	**VSE150**

Accessories VSE

Type	Description	Number of connections	Order no.
	Parameter setting software VSExxx and VNBxxx · Version 1.21	–	**VES004**
	octavis OPC server · Software · German/English	25	**VOS001**
	octavis OPC server · Software · German/English	50	**VOS002**
	octavis OPC server · Software · German/English	75	**VOS003**
	octavis OPC server · Software · German/English	100	**VOS004**
	octavis OPC server · Software · German/English	1000	**VOS005**

Connection cables VSE

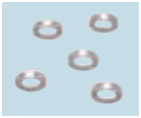
Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR	**EC2080**
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 5 m · Housing materials: PUR	**E30112**

Vibration sensors for connection to external diagnostic electronics VSE – type VSA / VSP

Type	Description	Drawing no.	Order no.
	Accelerometer · M8 x 1.25 · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...6000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 7.2...10.8 V DC · IP 68 / IP 69K	7	**VSA001**
	Accelerometer · for connection to external diagnostic electronics type VSE · Measuring range ± 3.3 g · Frequency range 0...1000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 9 V DC · IP 68 / IP 69K	7	**VSA101**
	Accelerometer · M8 x 1.25 · for connection to external diagnostic electronics type VSE · Measuring range ± 250 g · Frequency range 0...6000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 9 V DC · IP 68 / IP 69K	7	**VSA201**
	Accelerometer · M16 x 1.5 · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...10000 Hz · Ambient temperature -30...85 °C · PUR cable with M12 connector, 0.8 m · Operating voltage 9 V DC · IP 67	8	**VSA002**
	Accelerometer · M16 x 1.5 · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...10000 Hz · Ambient temperature -30...85 °C · PUR cable, 6 m · Operating voltage 9 V DC · IP 67	8	**VSA006**
	Accelerometer · Mounting screw · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...10000 Hz · Ambient temperature -30...100 °C · PUR cable, 3 m · Operating voltage 9 V DC · IP 67	9	**VSA004**
	Accelerometer · Mounting screw · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...10000 Hz · Ambient temperature -30...100 °C · PUR cable, 10 m · Operating voltage 9 V DC · IP 67	9	**VSA005**
	Accelerometer · set screw · for connection to external diagnostic electronics type VSE · Measuring range ± 50 g · Frequency range 2...10000 Hz · Ambient temperature -55...125 °C · M12 connector · Operating voltage 10...12 V DC · IP 67	10	**VSP001**
	Accelerometer · M8 x 1.25 · for connection to external diagnostic electronics type VSE · Measuring range ± 50 g · Frequency range 1.5...16000 Hz · Ambient temperature -55...130 °C · M12 connector · Operating voltage 10...12 V DC · IP 67	11	**VSP003**
	Accelerometer · M8 x 1.25 · ATEX approval · IECEx approval · Group II, category 1D · Group II, category 1G · For connection to VSExxx type external diagnostic electronics via safety barrier · Measuring range ± 50 g · Frequency range 2...10000 Hz · Ambient temperature -55...90 °C · PUR cable, 10 m · Operating voltage 10...12 V DC · IP 68	12	**VSP01A**
	Accelerometer · M8 x 1.25 · ATEX approval · IECEx approval · group 1, M1 · For connection to VSExxx type external diagnostic electronics via safety barrier · Measuring range ± 50 g · Frequency range 2...10000 Hz · Ambient temperature -55...90 °C · PUR cable, 10 m · Operating voltage 10...12 V DC · IP 68	12	**VSP02A**
	Accelerometer · M8 x 1.25 · for connection to VNB211 vibration sensors · Measuring range ± 25 g · Frequency range 0...6000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 7.2...30 V DC · IP 68 / IP 69K	7	**VNA001**

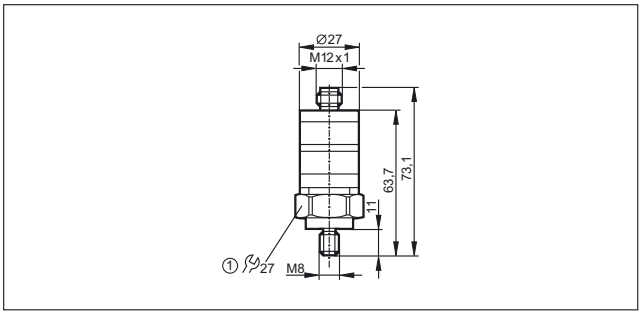
You can find scale drawings from page 690

Accessories VSA

Type	Description	Order no.
	conical washer · Ø 8.4 / 15 mm · for vibration sensors VSA001, VSA101, VSA201 · Housing materials: stainless steel 316Ti / 1.4571	**E30115**
	Adapter · M8-M8 · for vibration sensors VSA001, VSA101, VSA201 · Electrical isolation · Housing materials: PEEK	**E30132**

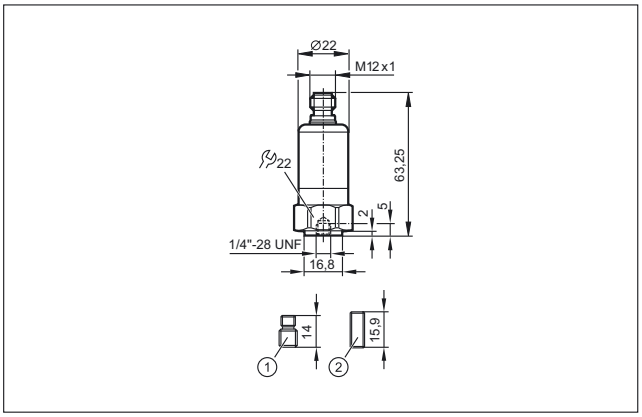
Scale drawings / drawing no. – CAD download: www.ifm.com

1



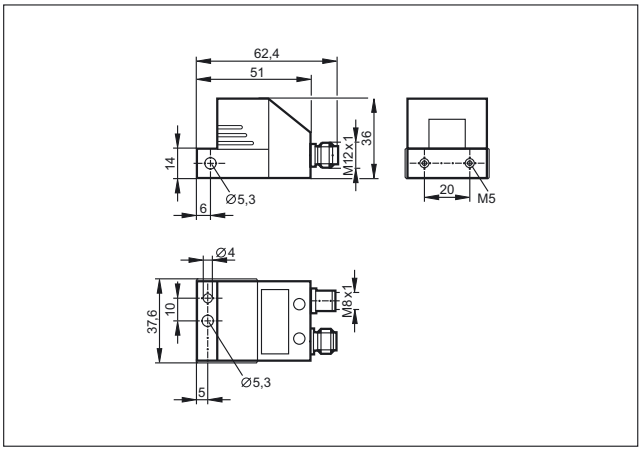
1: tightening torque 15 Nm

2



1: Threaded adapter 1/4"-28 UNF / M8 x 1.25 mm, 2: Threaded adapter 1/4"-28 UNF, tightening torque 8 Nm

3



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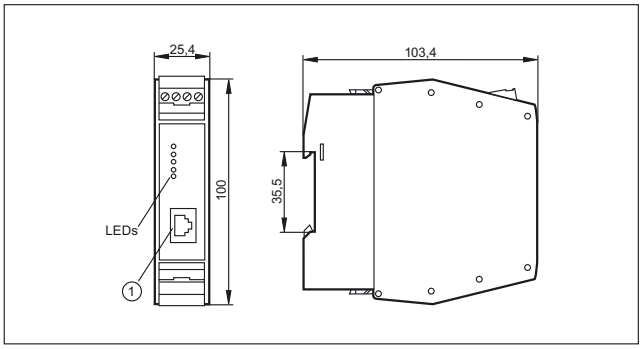
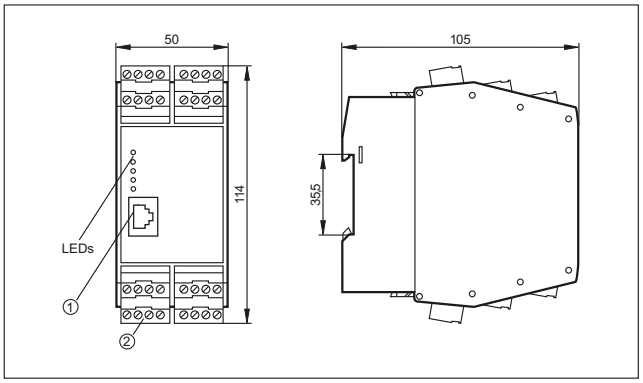


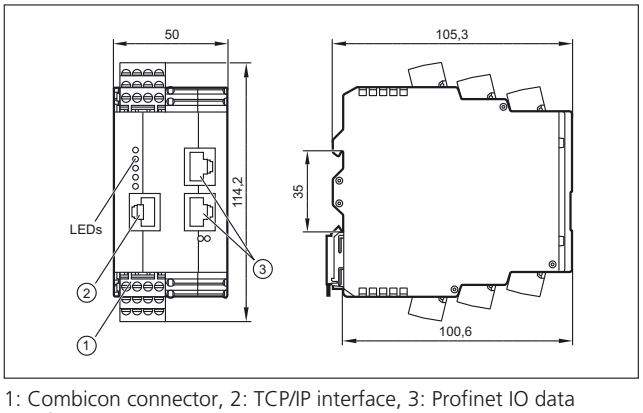
1: Ethernet interface

5



1: Ethernet interface, 2: Combicon plug with screw terminals (optional)

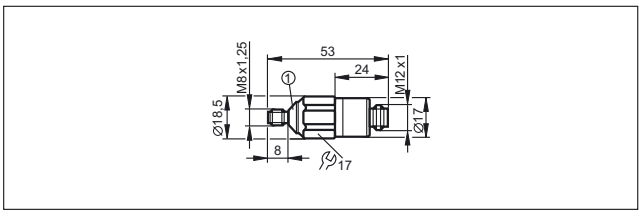
6



1: Combicon connector, 2: TCP/IP interface, 3: Profinet IO data interface

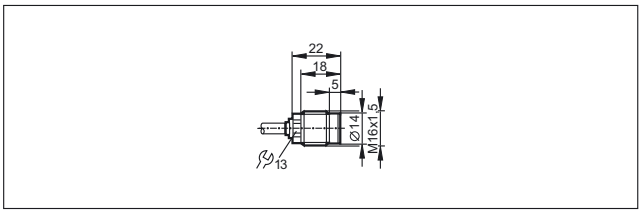
Scale drawings / drawing no. – CAD download: www.ifm.com

7



1: conical angle = 90°

8



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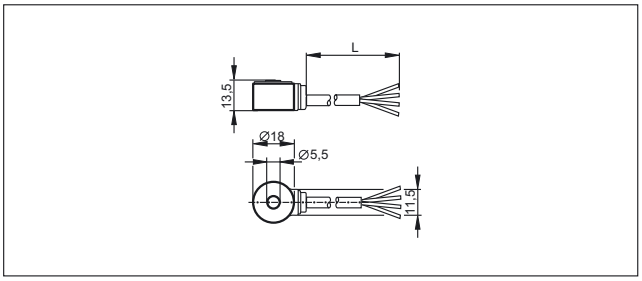

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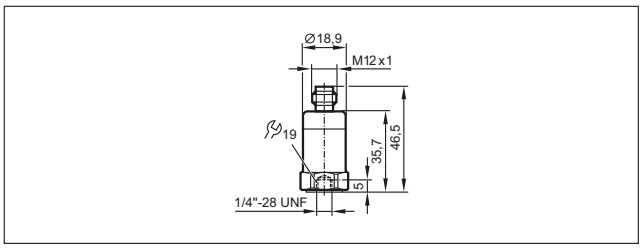

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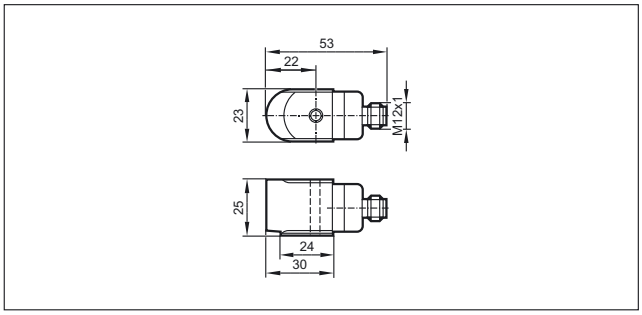

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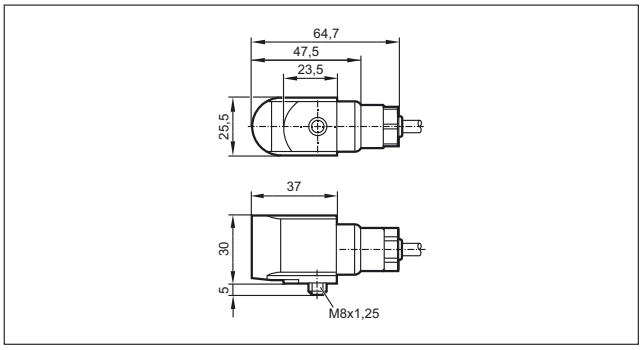


Systems for oil quality monitoring

For an early detection of too high a water content in lubricants and oils it is useful to continuously monitor the relative moisture in the media using a sensor.
The sensor measures the relative moisture in the oil in the range of 0...100 % by means of a capacitive measuring element. Besides the relative moisture the sensor also provides the medium temperature as an analogue signal.
LDP100 monitors the degree of cleanliness or the level of contamination in fluids. Compatible media are mineral oils, ester oils and biodegradable oils. The calibration is made in accordance with ISO 11943.
The purity classes are indicated on the LCD display and provided via analogue output and CAN bus

System overview	*Page*
Oil particle sensor	*692*
Oil moisture sensor	*692*
Accessories for LDP oil particle monitor	*693*
Accessories for oil moisture sensor LDH	*693*
Wiring diagrams	*693*
Scale drawings / drawing no. – CAD download: www.ifm.com	*694*

Oil particle sensor

Type	Process connection	Pressure rating [bar]	Protection	Medium temperature oil [°C]	Ambient temperature [°C]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA (can be configured); digital alarm output · Wiring diagram no. 1 · Connector groups 14, 15, 16, 17							
	Minimess M16 x 2	420	IP 67	-10...80	-10...60	1	**LDP100**

Oil moisture sensor

Type	Process connection	Pressure rating [bar]	Protection	Medium temperature oil [°C]	Ambient temperature [°C]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · Wiring diagram no. 2 · Connector groups 15, 16, 17							
	G ¾	50	IP 67	-20...85	-20...85	2	**LDH100**

Accessories for LDP oil particle monitor

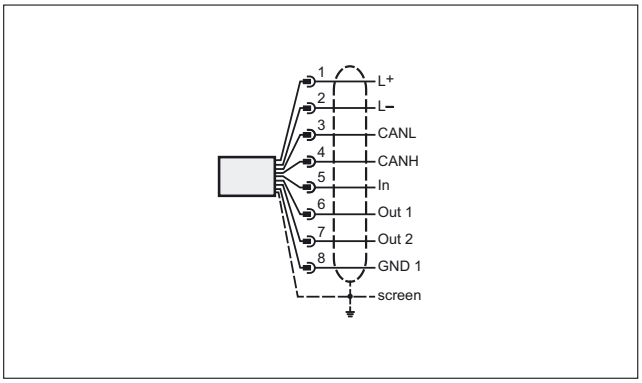
Type	Description	Order no.
	Screw couplings with cover plate · Blende 0.18 mm · Housing materials: socket housing: steel / surface characteristics: zinc/nickel grey / sealing: NBR	**E43330**
	Screw couplings with cover plate · Blende 0.3 mm · Housing materials: socket housing: steel / surface characteristics: zinc/nickel grey / sealing: NBR	**E43331**
	Jumper · straight / straight · CAN adapter cable: M12 plug, 5-pole / M12 socket, 8-pole · Gold-plated contacts · 0.15 m · Housing materials: PUR	**E43332**
	BasicDisplay · 2.8" colour display · 5 freely programmable backlit function keys · Navigation key for cursor function · CAN interface · Programming according to IEC 61131-3 · 8...32 V DC	**CR0451**

Accessories for oil moisture sensor LDH

Type	Description	Order no.
	Adapter block · D33 / G ¾ · for oil moisture sensor LDH100 · Housing materials: aluminium	**E43400**

Wiring diagrams

1



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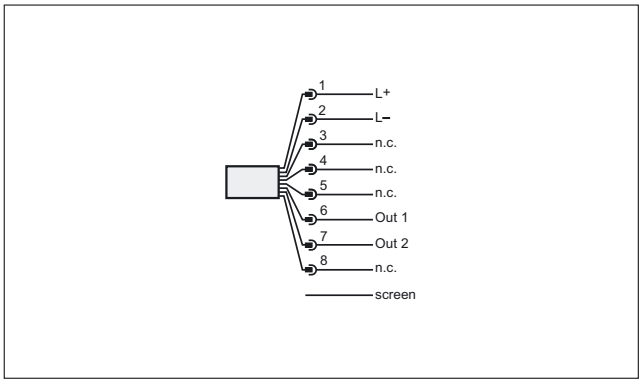

In: Switching input (low level activates measuring cycle), Out 1: Analogue output, Out 2: Switching output, GND 1: Signal ground Out 1

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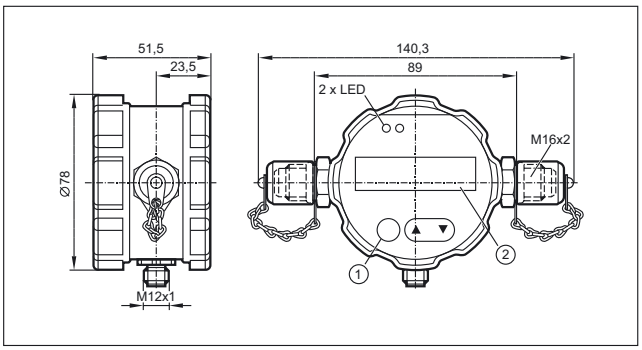
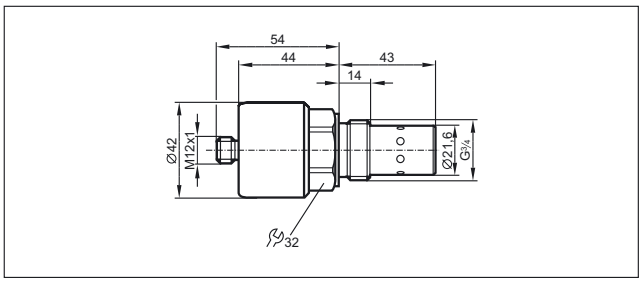
1



1: Programming buttons, 2: display

2



Robust electronics for use in harsh environments

Control technology for mobile applications

Life today cannot be imagined without electronics in motor vehicles and mobile machines. Many necessary and convenient functions would be impossible without electronic systems. In contrast to electronics in consumer goods and „normal" industrial applications such as packaging machines and conveyors, the requirements for components for mobile applications are much higher.

Electronic requirements

The extreme mechanical stress caused by impacts and shocks as well as operation at low and high ambient temperatures require careful selection of electronic components. The direct influence of dirt, humidity and water often cannot be excluded in field applications. Therefore, the devices require high protection rating and a special choice of materials.

In addition to mechanical and environmental influences, electrical interference affecting the whole system as well as individual devices must be taken into account. A wide supply voltage range and adapted protection measures allow reliable operation of the devices even in cases of large voltage fluctuations caused by the battery/generator system and high conducted interference. Strong conducted or radiated interference must not influence the function either.

For device networking, the CAN bus has become the successful standard in the last few years. For the large volume of car production, special, optimised and adapted protocols are used, whereas the CANopen protocol has become indispensable in mobile machines. Manufacturer-specific and industry-specific protocols such as diagnostic engine data according to SAE J 1939 can be coupled to the machine process via gateways.

	Basic control systems	698 - 703
	Mobile controllers	704 - 710
	I/O modules	712 - 717
	Dialogue modules / displays	718 - 721
	Cameras	722 - 727
	Diagnostic and service units	728 - 730
	Signal converters	732 - 733
	Sensors	734 - 751

Basic control systems

The ecomat*mobile* Basic control system has a modular design, is easy to install and to operate and is cost-optimised.

Besides pure control functions it provides solutions for wiring and protection.

In addition, a graphical visualisation module ensures the indication of system messages and simple display instruments.

System overview	*Page*
BasicController	*698*
Starter set ecomatmobile Basic	*698*
BasicRelay	*699*
BasicDisplay	*699*
BasicDisplay XL	*699*
Accessories for the mini control system Basic	*699 - 702*
Scale drawings / drawing no. – CAD download: www.ifm.com	*702 - 703*

BasicController

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	20	12 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	8 x Digital 8 x PWM	2 x CAN	1	**CR0401**
	24	12 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	12 x Digital 2 x PWM-I 10 x PWM	2 x CAN	2	**CR0403**
	16	8 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	8 x Digital 8 x PWM-I 8 x PWM 4 x H bridge	2 x CAN	3	**CR0411**
	14	8 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	6 x Relay	2 x CAN	4	**CR0431**

Starter set ecomatmobile Basic

Type	Description	Order no.
	Starter set ecomatmobile Basic	**EC0400**

BasicRelay

Type	Inputs / outputs	Description	Drawing no.	Order no.
	–	BasicRelay · Locations for 6 automotive relays and 10 automotive fuses ((6.3 mm) · 2 supply rails and 6 power distributors · freely wirable	5	**CR0421**

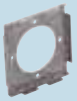
BasicDisplay

Type	Display	Operating elements	Inputs / outputs	Interfaces	Drawing no.	Order no.
5 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	2.8" colour display 320 x 240 pixels	5 Pushbuttons 1 Navigation key for cursor function	–	1 x CAN	6	**CR0451**
	2.8" colour display 320 x 240 pixels	5 Pushbuttons 1 Navigation key for cursor function	–	1 x CAN	6	**CR9221**

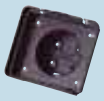
BasicDisplay XL

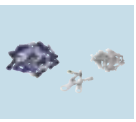
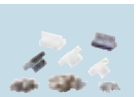
Type	Display	Operating elements	Inputs / outputs	Interfaces	Drawing no.	Order no.
6 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	4.3" colour display 480 x 272 pixels	6 Pushbuttons 1 Navigation key for cursor function	–	1 x CAN	7	**CR0452**
	4.3" colour display 480 x 272 pixels	6 Pushbuttons 1 Navigation key for cursor function	–	1 x CAN	7	**CR9222**

Accessories for the mini control system Basic

Type	Description	Order no.
	cover · for BasicController CR04xx and BasicRelay CR042x · incl. cable seal	**EC0401**
	cover · for BasicController CR04xx · Built-in display recess for BasicDisplay CR0451 · incl. cable seal	**EC0402**
	Mounting frame · for BasicDisplay CR0451 · panel · Housing materials: stainless steel	**EC0403**

You can find scale drawings from page 702

Type	Description	Order no.
	Mounting frame · for BasicDisplay XL CR0452 · panel · Housing materials: stainless steel	**EC0404**
	RAM mount set · Ball size 1" (B) · e.g. for BasicDisplay · for use as a desktop unit · Housing materials: Mounting arm: aluminium black anodised / Mounting plate: aluminium black anodised / ball: rubber / Display carrier: plastics black	**EC0405**
	RAM mount set · Ball size 1" (B) · e.g. for BasicDisplay XL · for use as a desktop unit · Housing materials: Mounting arm: aluminium black anodised / Mounting plate: aluminium black anodised / ball: rubber / Display carrier: plastics black	**EC0406**
	Display carrier · RAM mount system · Ball size 1" (B) · e.g. for BasicDisplay · for use as a desktop unit · Housing materials: plastics black	**EC0407**
	Display carrier · RAM mount system · Ball size 1" (B) · e.g. for BasicDisplay XL · for use as a desktop unit · Housing materials: plastics black	**EC0408**
	Mounting plate · RAM mount system · Ball size 1" (B) · e.g. for BasicDisplay or BasicDisplay XL · for use as a desktop unit · Housing materials: Mounting plate: aluminium black anodised / ball: rubber	**EC0409**
	Mounting arm · 95 mm · RAM mount system · Ball size 1" (B) · e.g. for BasicDisplay or BasicDisplay XL · for use as a desktop unit · Housing materials: Mounting arm: aluminium black anodised	**EC0410**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · Housing materials: housing: TPU black / sealing: FKM	**EVC492**
	Jumper · wired · for 2 BasicControllers CR04xx · CAN interface · Power supply · 0.5 m	**EC0451**
	Jumper · wired · for 1 BasicController CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 0.1 m	**EC0452**
	Jumper · wired · for 2 BasicControllers CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 0.5 m	**EC0453**
	Jumper · wired · for 1 BasicController CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 5 m	**EC0454**
	Jumper · wired · for 1 BasicController CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 10 m	**EC0458**
	Jumper · wired · for 2 BasicControllers CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 5 m	**EC0455**
	Contacts and contact housings · for BasicController CR04xx · wirable · utilising all connections to a BasicController	**EC0456**

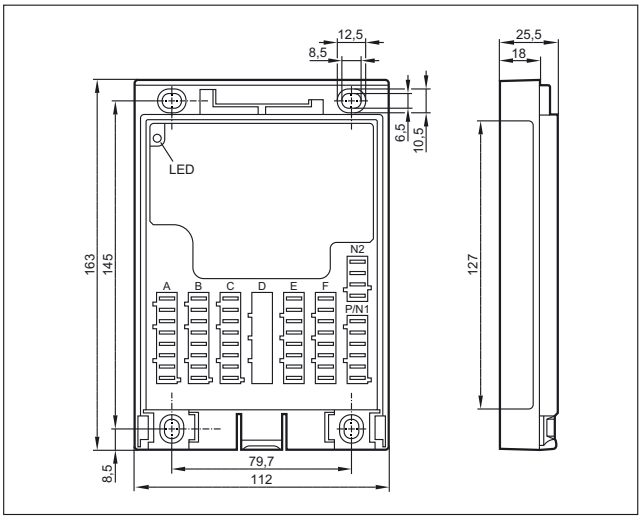
Type	Description	Order no.
	Set of contacts · for BasicRelay CR0421 · wirable · utilising all connections to a BasicRelay	**EC0457**
	Standard timer contact housing · for BasicController CR04xx · CAN1 and supply P/N1 · Coding · wirable · Housing materials: PA white	**EC0460**
	Standard timer contact housing · for BasicController CR04xx · CAN2 N2 · Coding · wirable · Housing materials: PA white	**EC0461**
	Standard timer contact housing · for BasicController CR04xx · Inputs A/B/C · Coding · wirable · Housing materials: PA grey	**EC0462**
	Standard timer contact housing · for BasicController CR04xx · Outputs D/E/F · Coding · wirable · Housing materials: PA white	**EC0463**
	Standard timer contact · for standard timer contact housing · 0.2...0.5 mm² / Ø 1.0...1.6 mm · Housing materials: tin-plated	**EC0459**
	Standard timer contact · for standard timer contact housing · 0.5...1.0 mm² / Ø 1.4...2.3 mm · Housing materials: tin-plated	**EC0468**
	Standard timer contact · for standard timer contact housing · 1.0...2.5 mm² / Ø 2.1...3.1 mm · Housing materials: tin-plated	**EC0469**
	Standard power timer contact · for standard timer contact housing · 1.25...2.5 mm² / Ø 2.1...3.1 mm · Housing materials: tin-plated	**EC0470**
	Contacts and contact housings · for BasicController relay CR0431 · wirable · utilising all connections to a BasicController relay	**EC0464**
	Connecting material for power supply · for BasicController relay CR0431 · wirable	**EC0465**
	Set of relays and fuses for 12 V DC systems · for BasicController relay CR0431	**EC0466**
	Set of relays and fuses for 24 V DC systems · for BasicController relay CR0431	**EC0467**
	CANfox · CAN/RS232-USB interface · Programming and diagnosis of CAN systems · 5 V DC (via USB interface)	**EC2112**
	Adapter cable · for CAN interface CANfox · CAN adapter: DIN connector, 6 poles / M12 connector, 5 poles · RS-232 adapter: DIN connector, 6 poles / Sub-D plug, 9 poles · Cable length 1 m	**EC2113**

You can find scale drawings from page 702

Type	Description	Order no.
	Set of programming cables · for CAN interface CANfox · Cable BasicController: DIN connector, 6-pole / standard timer contact housing, 6-pole · Cable BasicDisplay: DIN connector, 6-pole / M12 socket, 5-pole · CAN interface · Voltage supply via individual wires with end ferrules · Cable length 1 m · 1 m	**EC2114**
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · German version · incl. the DVD "Software, tools and documentation"	**CP9006**
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · English version · incl. the DVD "Software, tools and documentation"	**CP9008**

Scale drawings / drawing no. – CAD download: www.ifm.com

1



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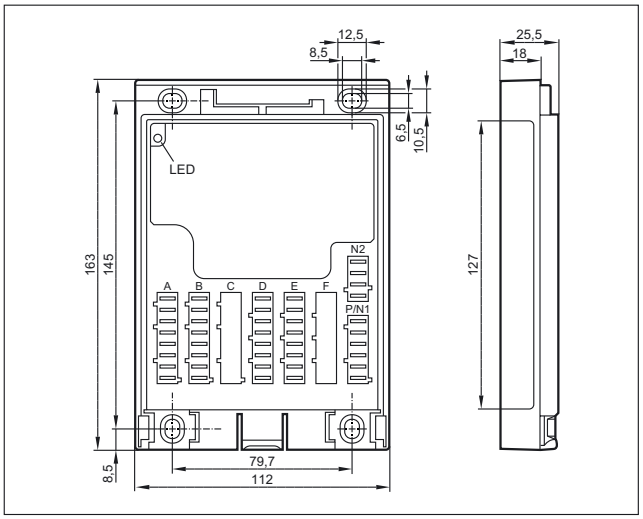

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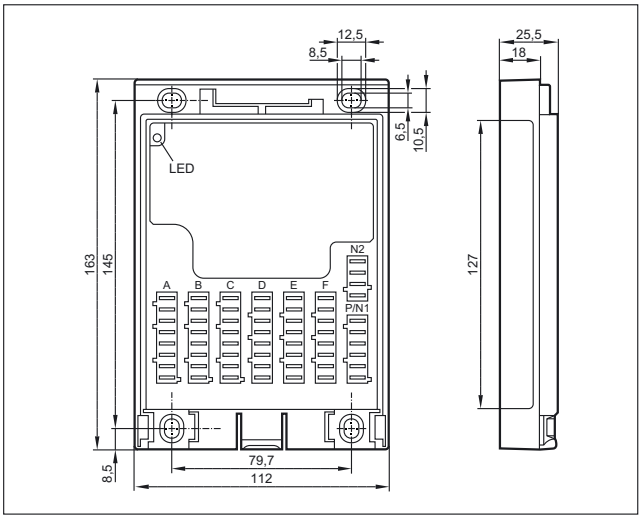

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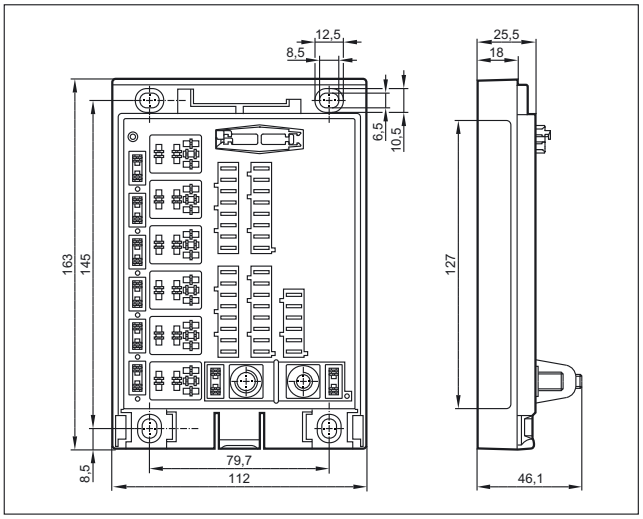

Scale drawings / drawing no. – CAD download: www.ifm.com

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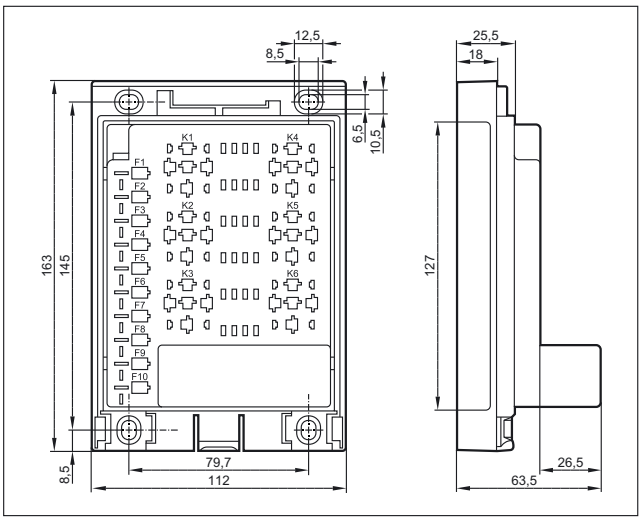

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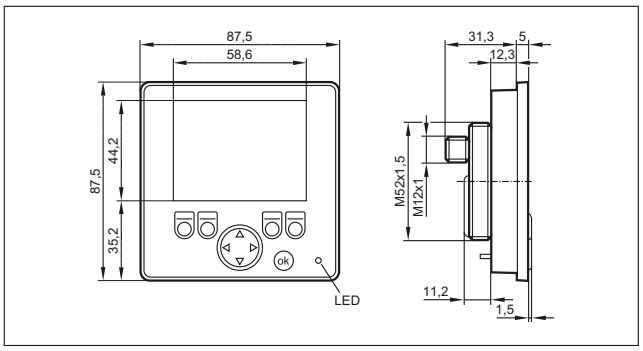

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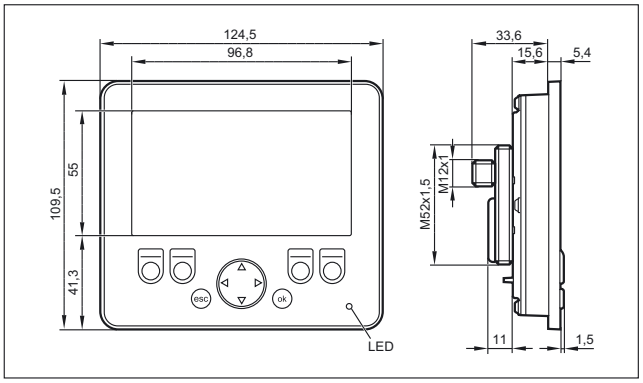


Mobile controllers

The platform of the ecomat*mobile* control system: the powerful controller family. Free programmability and the variety of configuration options enable use in a wide range of different applications.

System overview	*Page*
32 bit ecomatController	*704*
SmartController 32 bits	*704 - 705*
32-bit ClassicController	*705*
32-bit ExtendedController	*705*
32 bit ISOBUS controller	*705 - 706*
CabinetController for use in control cabinets	*706*
Connection technology for control systems	*706*
Accessories and software	*707*
Connection technology for control systems	*707 - 708*
Scale drawings / drawing no. – CAD download: www.ifm.com	*709 - 710*

32 bit ecomatController

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	60	32 x Digital 16 x analogue (U/I) 8 x frequency 4 x Resistor	27 x Digital 1 x analogue (0...10 V) 18 x PWM-I, 27 x PWM 3 x H bridge	4 x CAN 1 x Ethernet 1 x RS-232	1	**CR711S**

SmartController 32 bits

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	32	16 x Digital 4 x analogue (U/I) 4 x frequency 2 x Resistor	16 x Digital 2 x analogue (0.2...10 V) 2 x PWM-I 12 x PWM	2 x CAN	2	**CR2530**

Product selectors and further information can be found at: www.ifm.com

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	64	32 x Digital 8 x analogue (U/I) 8 x frequency 4 x Resistor	32 x Digital 4 x analogue (0.2...10 V) 4 x PWM-I 24 x PWM	3 x CAN	3	**CR2532**

32-bit ClassicController

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	32	16 x Digital 16 x analogue (U/I) 16 x frequency	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	4	**CR0032**
	32	16 x Digital 12 x analogue (U/I) 12 x frequency 4 x Resistor	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	5	**CR0033**
	64	32 x Digital 16 x analogue (U/I) 16 x frequency 6 x Resistor	32 x Digital 2 x analogue (0.2...10 V) 18 x PWM-I, 28 x PWM 2 x H bridge	5 x CAN 1 x RS-232 1 x USB	6	**CR0133**

32-bit ExtendedController

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	80	32 x Digital 32 x analogue (U/I) 32 x frequency	48 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	2 x 2 x CAN 1 x RS-232 1 x USB	6	**CR0234**
	80	40 x Digital 36 x analogue (U/I) 36 x frequency 4 x Resistor	40 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	2 x 2 x CAN 1 x RS-232 1 x USB	6	**CR0235**

32 bit ISOBUS controller

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	32	16 x Digital 12 x analogue (U/I) 12 x frequency 4 x Resistor	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	5	**CR0053**
	64	32 x Digital 16 x analogue (U/I) 16 x frequency 6 x Resistor	32 x Digital 2 x analogue (0.2...10 V) 18 x PWM-I, 28 x PWM 2 x H bridge	5 x CAN 1 x RS-232 1 x USB	6	**CR0153**

You can find scale drawings from page 709

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	80	40 x Digital 36 x analogue (U/I) 36 x frequency 4 x Resistor	40 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	2 x 2 x CAN 1 x RS-232 1 x USB	6	**CR0253**
	32	16 x Digital 12 x analogue (U/I) 12 x frequency 4 x Resistor	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	5	**CR0063**
	64	32 x Digital 16 x analogue (U/I) 16 x frequency 6 x Resistor	32 x Digital 2 x analogue (0.2...10 V) 18 x PWM-I, 28 x PWM 2 x H bridge	5 x CAN 1 x RS-232 1 x USB	6	**CR0163**
	80	40 x Digital 36 x analogue (U/I) 36 x frequency 4 x Resistor	40 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	2 x 2 x CAN 1 x RS-232 1 x USB	6	**CR0263**

CabinetController for use in control cabinets

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	42	24 x Digital 8 x analogue (U/I) 4 x frequency	18 x Digital 8 x PWM 6 x PNP 10 A	2 x CAN 1 x RS-232	7	**CR0303**

Connection technology for control systems

Type	Description	Order no.
	Cable with connector · AMP 81-pole · B-coded · 47 cores · wired · Cable length 2.5 m	**EC0720**
	Cable with connector · AMP 81-pole · A-coded · 58 cores · wired · Cable length 2.5 m	**EC0710**
	Cable with connector · AMP 81-pole · B-coded · 73 cores · wired · Cable length 2.5 m	**EC0721**
	Cable with connector · AMP 81-pole · A-coded · 81 cores · wired · Cable length 2.5 m	**EC0711**
	Connector AMP 81-pole · A-coded · wirable · with contacts (Junior Power Timer)	**EC0701**
	Connector AMP 81-pole · B-coded · wirable · with contacts (Junior Power Timer)	**EC0702**

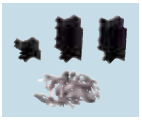
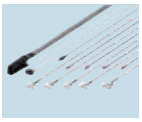
Accessories and software

Type	Description	Order no.
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · German version · incl. the DVD "Software, tools and documentation"	**CP9006**
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · English version · incl. the DVD "Software, tools and documentation"	**CP9008**
	Maintenance for PC with WINDOWS or LINUX operating system · USB stick	**CP9030**
	Maintenance for ifm displays with LINUX · USB stick	**CP9031**
	System Startup Virtual Terminal Client · USB stick · for ClassicController ISOBUS	**CP9200**
	System Startup TaskController Client · USB stick · for mobile controllers	**CP9201**

Connection technology for control systems

Type	Description	Order no.
	Connector AMP 55-pole · wirable · with contacts (Junior Power Timer)	**EC2013**
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Cores sealed individually · Core cross-section 1 mm²	**EC2084**
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Cores sealed individually · Core cross-section 1 mm²	**EC2097**
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC2086**
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Core cross-section 1 mm²	**EC2046**
	Cable with connector · AMP 6-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC1520**
	Cable with connector · AMP 10-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC1521**

You can find scale drawings from page 709

Type	Description	Order no.
	Cable with connector · AMP 14-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC1522**
	Cable with connector · AMP 18-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC1523**
	Cable with connector · AMP 18-pole · wired · partially wired · for input signals · Cable length 1.2 m · Core cross-section 1 mm²	**EC1524**
	Cable with connector · AMP 18-pole · wired · fully wired · Cable length 2.5 m · Core cross-section 1 mm²	**EC1533**
	Plug set for CabinetModule CR2012 / CR2014 · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 18 pins incl. Crimp contacts (Junior Power Timer)	**EC2053**
	Plug set for CabinetController CR0301 / CR0302 · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 10 pins, 3 x 18 pins incl. Crimp contacts (Junior Power Timer)	**EC2075**
	Plug set for CabinetModule CR201x · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 14 pins, 2 x 18 pins incl. Crimp contacts (Junior Power Timer)	**EC2089**
	Plug set · wirable · consisting of: · AMP Crimp housing 2 x 6 pins, 2 x 10 pins, 3 x 18 pins incl. Crimp contacts (Junior Power Timer)	**EC2090**
	RS-232 Programming adapter · with gender changer for pin-socket conversion	**EC2076**
	programming cable · cable length 2 m interface 9-pole D-SUB (female) · AMP 6-pole · Test input (AMP connector, pin 5) connected to VBB via link	**EC2091**
	programming cable · e.g. for ClassicController CR0032 or ExtendedController CR0232 · wired	**EC2096**
	Load-Dump-Module · 12 V DC	**EC2015**
	Load-Dump-Module · 24 V DC	**EC2016**
	Spring terminal box · e.g. for starter set	**EC2032**

Scale drawings / drawing no. – CAD download: www.ifm.com

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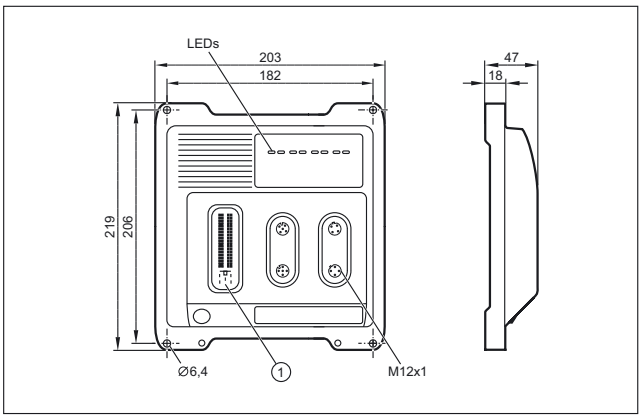

1: Connector AMP 81-pole, A-coded

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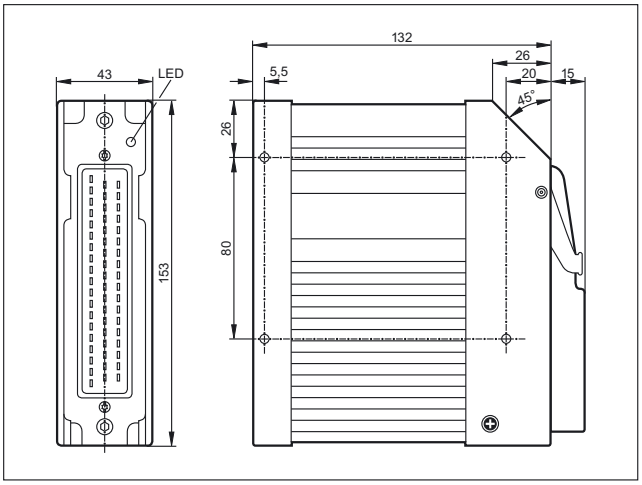

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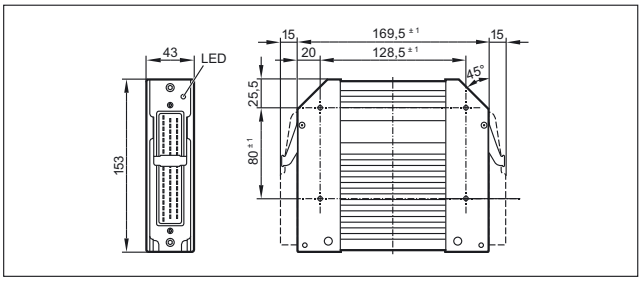

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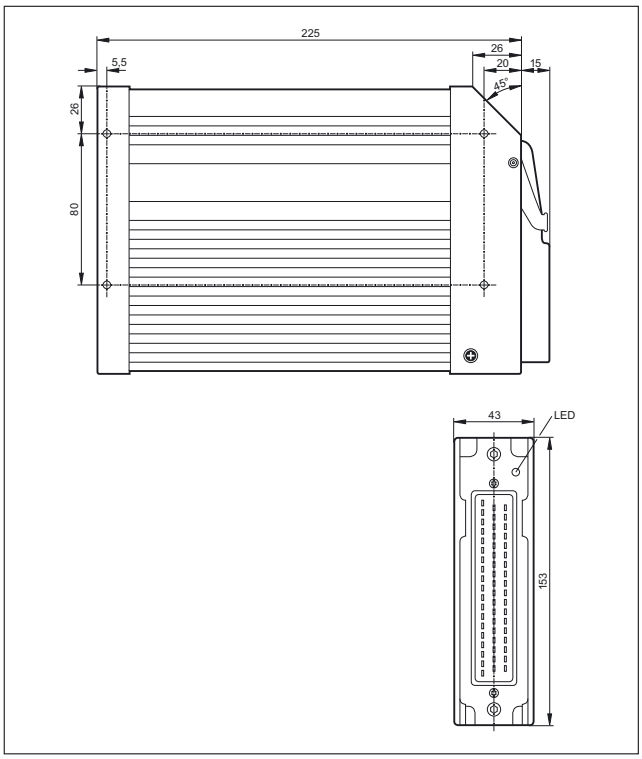

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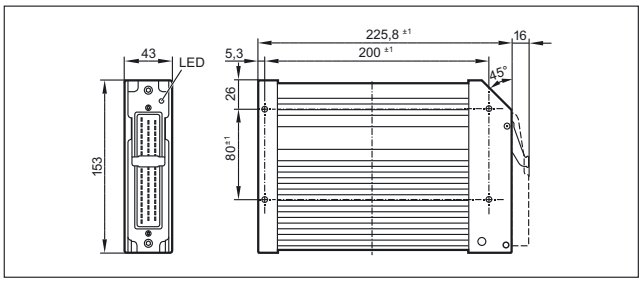

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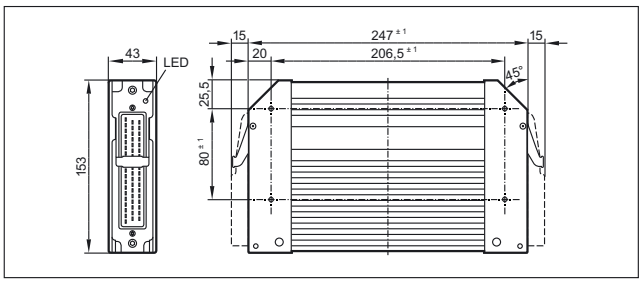

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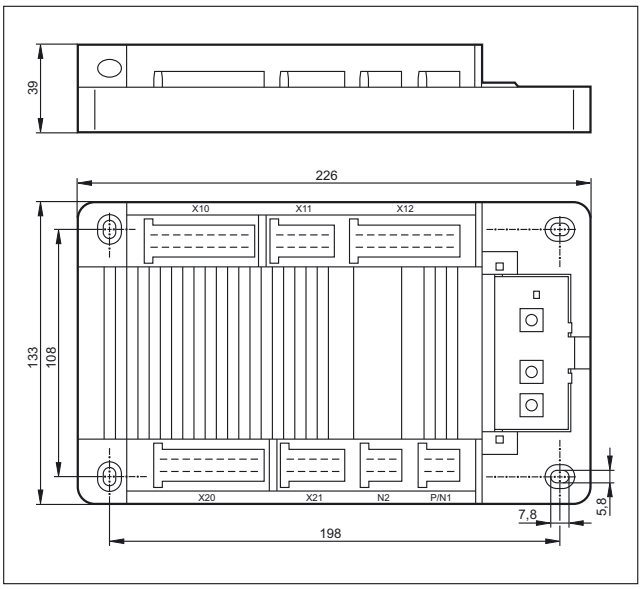
7

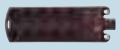


I/O modules

Decentralised I/O modules for use in CANopen bus systems. Considerably reduced wiring, they are mounted where the signals are generated.
The flexible configuration of the inputs and outputs enables universal use and reduces the costs for stockholding.

System overview	*Page*
ioControl	*712*
CompactModules metal	*713*
SmartModules	*713*
CabinetModules	*713*
Accessories for I/O modules	*713 - 716*
Scale drawings / drawing no. – CAD download: www.ifm.com	*717*

ioControl

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
Programming according to IEC 61131-3 · DEUTSCH connector						
	16	16 x Digital 8 x analogue (U/I) 4 x frequency 4 x Resistor	–	2 x CAN	1	**CR2050**
Configurable output functions, Programming according to IEC 61131-3 · DEUTSCH connector						
	16	–	16 x Digital 8 x PWM-I 16 x PWM	2 x CAN	1	**CR2051**
Configurable input / output functions, Programming according to IEC 61131-3 · DEUTSCH connector						
	16	8 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	8 x Digital 8 x PWM-I 8 x PWM	2 x CAN	1	**CR2052**

CompactModules metal

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
CAN parameters adjustable via coding switch, Configurable input / output functions · M12 connector						
	8	–	8 x Digital 4 x PWM-I 4 x PWM	1 x CAN	2	**CR2031**
	16	8 x Digital 4 x analogue (U/I)	8 x Digital 4 x PWM	1 x CAN	3	**CR2032**
	12	8 x Digital 4 x analogue (U/I)	4 x Digital 4 x PWM	1 x CAN	4	**CR2033**

SmartModules

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
Configurable input / output functions · 55-pole connec.						
	30	15 x Digital 4 x analogue (U/I)	15 x Digital 3 x PWM 4 x PNP 10 A 4 x H bridge	1 x CAN	5	**CR2520**

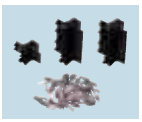
CabinetModules

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw-ing no.	Order no.
CAN parameters adjustable via coding switch, Configurable input / output functions · Connector						
	16	16 x Digital 4 x analogue (0...10 V)	4 x Digital 2 x PWM	1 x CAN	6	**CR2012**
	16	16 x Digital 4 x analogue (0...5 V)	4 x Digital 2 x PWM	1 x CAN	6	**CR2014**
	32	16 x Digital 4 x analogue (U/I) 4 x frequency	16 x Digital 4 x PWM	1 x CAN	7	**CR2016**

Accessories for I/O modules

Type	Description	Order no.
	label tag · 20 x 9 mm · Housing materials: plastics white	**E70424**

You can find scale drawings from page 717

Type	Description	Order no.
	Protective cap · M12 · for M12 sockets of CompactModule Metal · Housing materials: PA black	**EC2098**
	Connector AMP 55-pole · wirable · with contacts (Junior Power Timer)	**EC2013**
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Cores sealed individually · Core cross-section 1 mm²	**EC2084**
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Cores sealed individually · Core cross-section 1 mm²	**EC2097**
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC2086**
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Core cross-section 1 mm²	**EC2046**
	Plug set for CabinetModule CR2012 / CR2014 · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 18 pins incl. Crimp contacts (Junior Power Timer)	**EC2053**
	Plug set for CabinetModule CR201x · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 14 pins, 2 x 18 pins incl. Crimp contacts (Junior Power Timer)	**EC2089**
	Plug set · wirable · consisting of: · AMP Crimp housing 2 x 6 pins, 2 x 10 pins, 3 x 18 pins incl. Crimp contacts (Junior Power Timer)	**EC2090**
	Cable with connector · AMP 6-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC1520**
	Cable with connector · AMP 10-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC1521**
	Cable with connector · AMP 14-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC1522**
	Cable with connector · AMP 18-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm²	**EC1523**
	Cable with connector · AMP 18-pole · wired · partially wired · for input signals · Cable length 1.2 m · Core cross-section 1 mm²	**EC1524**
	Cable with connector · AMP 18-pole · wired · fully wired · Cable length 2.5 m · Core cross-section 1 mm²	**EC1533**

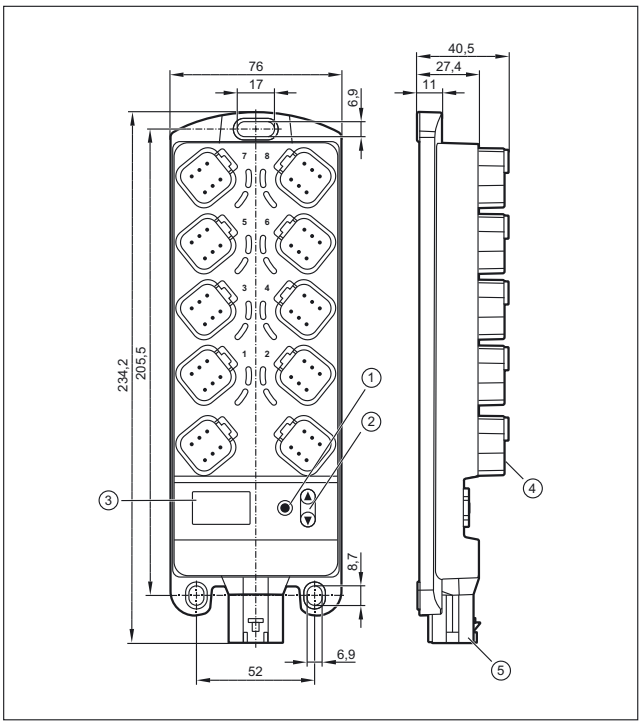
Type	Description	Order no.
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 2 m · 5-pole · Housing materials: PUR	**E11596**
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 5 m · 5-pole · Housing materials: PUR	**E11597**
	Terminating resistor socket · straight · Gold-plated contacts · M12 connector · 5-pole · Housing materials: TPU	**E11589**
	Terminating resistor plug · straight · Gold-plated contacts · M12 connector · 5-pole · Housing materials: TPU	**E11590**
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 2 m · 5-pole · Housing materials: PUR	**E11598**
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 5 m · 5-pole · Housing materials: PUR	**E11599**
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 0.3 m · 5-pole · Housing materials: PUR	**E11591**
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 1 m · 5-pole · Housing materials: PUR	**E11592**
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 2 m · 5-pole · Housing materials: PUR	**E11593**
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 5 m · 5-pole · Housing materials: PUR	**E11594**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · 5-pole · Housing materials: housing: TPU black / sealing: Viton	**EVC492**
	Cable plug · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 6 m · 5-pole · Housing materials: housing: TPU black	**E12215**
	Wirable plug · straight · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	**E11506**
	Wirable socket · straight · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	**E11511**
	Wirable plug · straight · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 4-pole · Housing materials: PA	**E11504**

You can find scale drawings from page 717

Type	Description	Order no.
	Wirable plug · angled · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 4-pole · Housing materials: PA	**E11505**
	Wirable plug · angled · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	**E11860**
	Wirable plug · angled · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	**E11507**
	Load-Dump-Module · 12 V DC	**EC2015**
	Load-Dump-Module · 24 V DC	**EC2016**
	Plug for Danfoss PWM valves · wirable · terminals	**EC2056**
	Plug for Danfoss PWM valves · M12 connector	**EC2088**
	Adapter cable for CAN devices with M12 connector (5 pole) · e.g. CANmem, CANremote or inclination sensors	**EC2062**

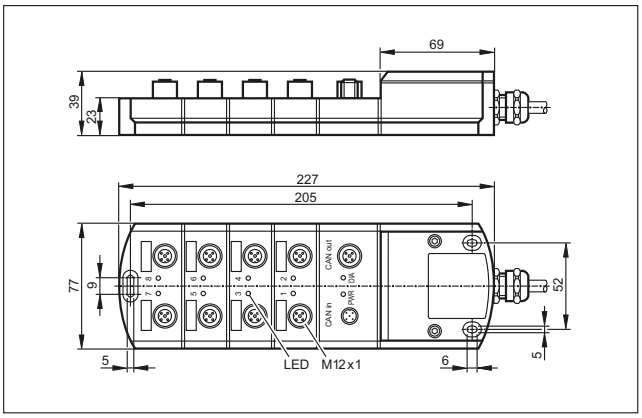
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1+2: Programming buttons, 3: 4-digit 10-segment display,
4: DEUTSCH connector, 5: AMP plug

2



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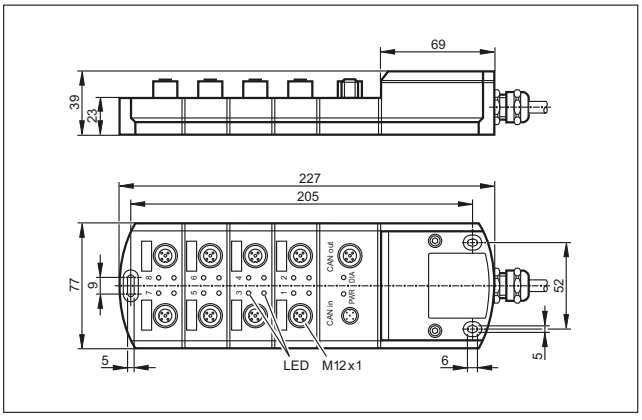

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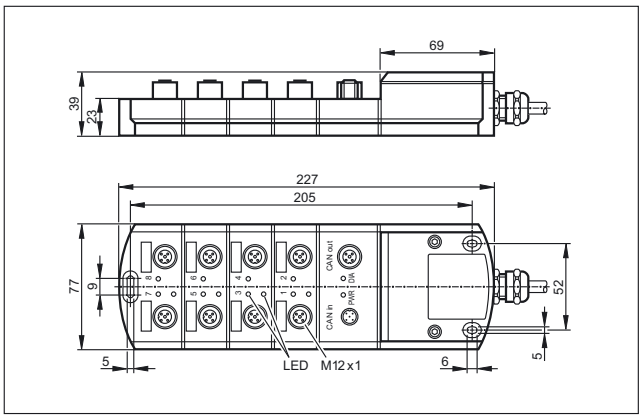

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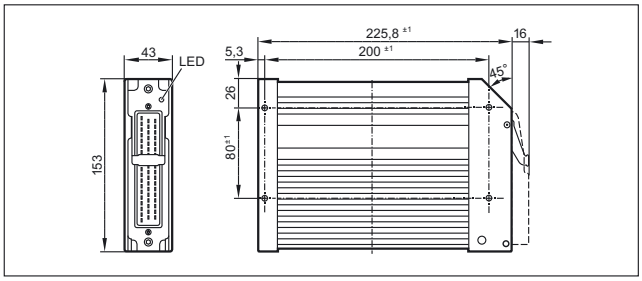

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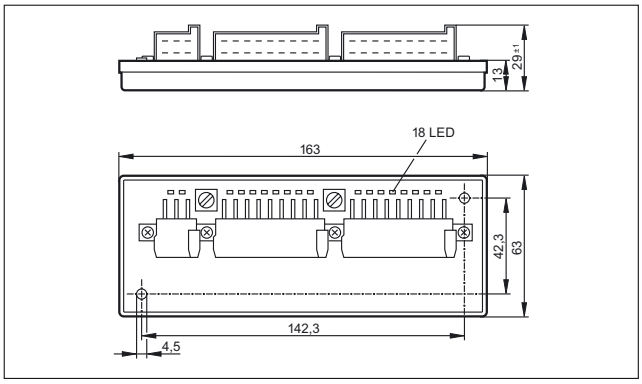

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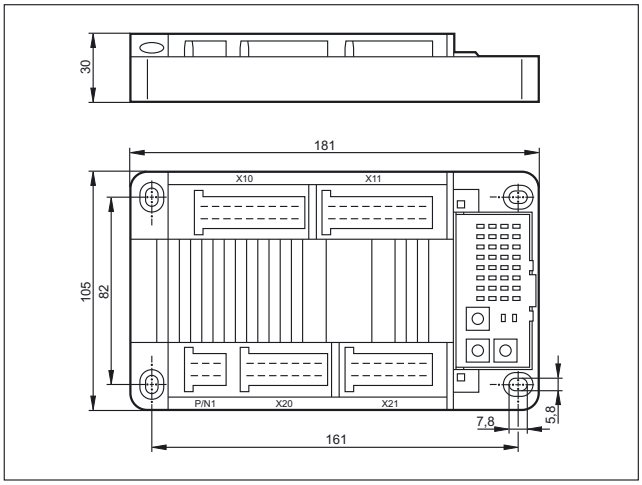


Dialogue modules / displays

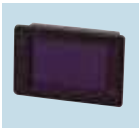
Displays with graphics capabilities, free programming to IEC 61131 and various interfaces are features of the dialogue modules.
The convenient user interface for service and machine handling – the dialogue modules of the ecomat*mobile* control system.

System overview	*Page*
PDM360 NG with 7" display	*718 - 719*
PDM360 NG with 7" display, optical bonding	*719*
PDM360 NG with 12" display	*719 - 720*
Accessories for displays	*720*
Connection technology for displays	*721*
Scale drawings / drawing no. – CAD download: www.ifm.com	*721*

PDM360 NG with 7" display

Type	Display	Operating elements	Inputs / outputs	Interfaces	Drawing no.	Order no.
Real-time clock, 8 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	8 Pushbuttons	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	1	**CR1083**
	7" colour display 800 x 480 pixels	8 Pushbuttons	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	1	**CR1087**
Real-time clock, 9 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Encoder with pushbutton	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	2	**CR1080**
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	3	**CR1081**
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton 1 Touch screen	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	3	**CR1082**

Product selectors and further information can be found at: www.ifm.com

Type	Display	Operating elements	Inputs / outputs	Interfaces	Draw-ing no.	Order no.
Real-time clock, 9 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Encoder with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	2	**CR1084**
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	3	**CR1085**

PDM360 NG with 7" display, optical bonding

Type	Display	Operating elements	Inputs / outputs	Interfaces	Draw-ing no.	Order no.
Real-time clock, 9 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Encoder with pushbutton	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	2	**CR9223**
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	3	**CR9224**
Real-time clock, 8 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	8 Pushbuttons	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	1	**CR9225**
Real-time clock, 9 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Encoder with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	2	**CR9226**
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	3	**CR9227**

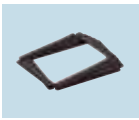
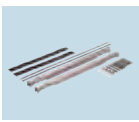
PDM360 NG with 12" display

Type	Display	Operating elements	Inputs / outputs	Interfaces	Draw-ing no.	Order no.
Real-time clock, Programming according to IEC 61131-3 · M12 connector						
	12" colour display 1024 x 768 pixels	13 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	4	**CR1200**

You can find scale drawings from page 721

Type	Display	Operating elements	Inputs / outputs	Interfaces	Draw-ing no.	Order no.
Real-time clock, Programming according to IEC 61131-3 · M12 connector						
	12" colour display 1024 x 768 pixels	13 Pushbuttons 1 Navigation key with pushbutton 1 Touch screen	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	4	**CR1201**

Accessories for displays

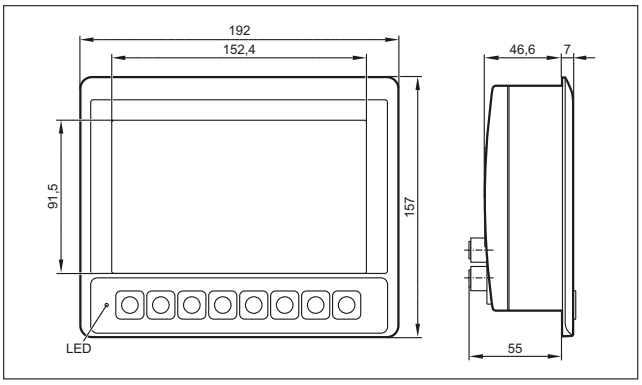
Type	Description	Order no.
	Mounting plate · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	**EC1410**
	Mounting arm short · 90 mm · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	**EC1411**
	Mounting arm standard · 144 mm · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	**EC1412**
	Mounting arm long · 231 mm · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	**EC1413**
	RAM mount set 1 · 144 mm · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	**EC1414**
	Load-Dump-Module · 12 V DC	**EC2015**
	Load-Dump-Module · 24 V DC	**EC2016**
	Mounting frame and vibration absorber · for process and dialogue modules PDM360 NG · panel · Housing materials: steel sheet	**EC2110**
	Seal and vibration absorber · for process and dialogue modules PDM360 NG · panel · Housing materials: TPE black	**EC2115**
	Installation kit · for process and dialogue modules PDM360 NG-12 · panel · Housing materials: steel sheet	**EC2117**

Connection technology for displays

Type	Description	Order no.
	Wirable plug · straight · shieldable · Free from silicone · Free from halogen · wirable · Gold-plated contacts · B-coded · M12 connector · Housing materials: diecast zinc nickel-plated	**E12355**
	Jumper · for process and dialogue modules PDM360 NG · USB socket for installation in control panel or dashboard · 1.5 m	**EC2099**
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	**E11898**

Scale drawings / drawing no. – CAD download: www.ifm.com

1



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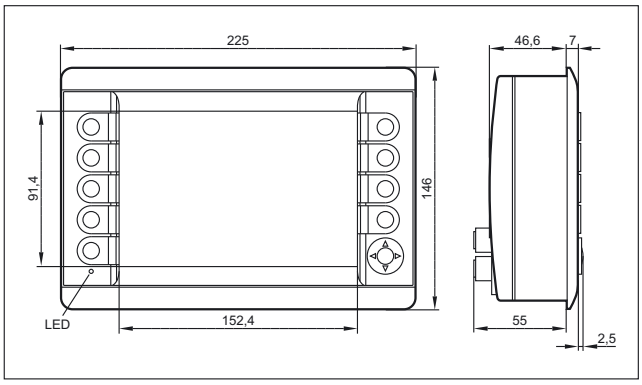

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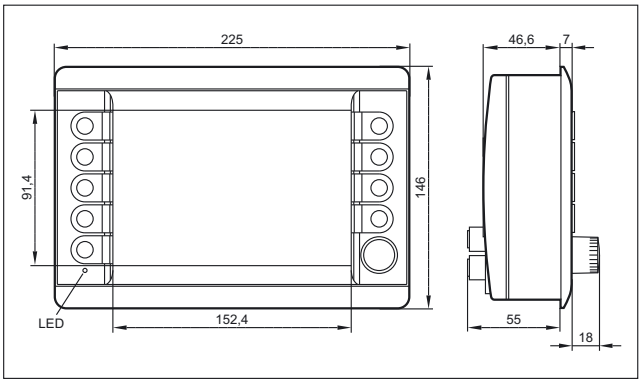

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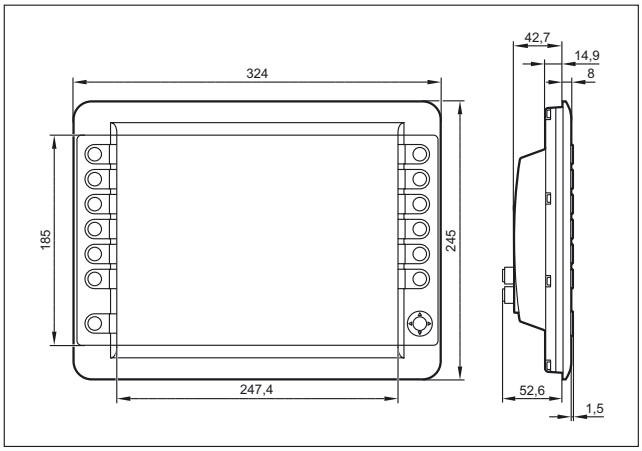


Cameras

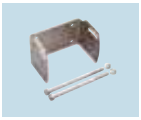
In almost all mobile machines, users today use displays for indicating machine information. At the same time camera systems monitor the operating areas. Here, the new camera system O2M is used. Designed for extreme operating conditions.

System overview	*Page*
3D sensors for mobile machines	*722*
Accessories	*723*
Connection cables for industrial imaging	*723 - 724*
Camera systems for PDM360 color and PDM360 NG	*724*
Connection technology for displays	*725*
Accessories	*725*
Connection technology for displays	*726*
Scale drawings / drawing no. – CAD download: www.ifm.com	*726 - 727*

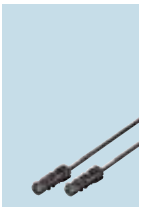
3D sensors for mobile machines

Type	Image resolution	Angle of aperture [°]	Additional functions	Interfaces	Draw-ing no.	Order no.
M12 connector						
	64 x 16 pixels	70 x 23	CAN output	Video signal analogue	1	**O3M151**
	64 x 16 pixels	95 x 32	CAN output	Video signal analogue	2	**O3M161**
	640 x 480 pixels	90	CAN output	Video signal analogue	3	**O3M251**
	720 x 576 pixels	120	CAN output	Video signal analogue	4	**O3M261**

Accessories

Type	Description	Order no.
	IR illumination unit · Device interfaces: MCI · Angle of aperture 70° x 23° (horizontal x vertical) · IR illumination unit for the operation of O3M15x and O3M25x · Connector · Housing materials: diecast aluminium	**O3M950**
	IR illumination unit · Device interfaces: MCI · Angle of aperture 95° x 32° (horizontal x vertical) · IR illumination unit for the operation of O3M16x and O3M26x · Connector · Housing materials: diecast aluminium	**O3M960**
	CANfox · CAN/RS232-USB interface · Programming and diagnosis of CAN systems · 5 V DC (via USB interface)	**EC2112**
	Set of programming cables · for CAN interface CANfox · Cable BasicController: DIN connector, 6-pole / standard timer contact housing, 6-pole · Cable BasicDisplay: DIN connector, 6-pole / M12 socket, 5-pole · CAN interface · Voltage supply via individual wires with end ferrules · Cable length 1 m	**EC2114**
	Operating software · O3Mxxx · O3D3xx	**E3D300**
	Mounting set · O3M · U-shaped fixture, adjustable · screw mounting onto common aluminium profiles and machine panels · Housing materials: fixture: stainless steel	**E3M100**
	Weather protection · O3M · mounting via screws · Housing materials: stainless steel black	**E3M101**
	Mounting set · O3M · U-shaped fixture, adjustable · screw mounting onto common aluminium profiles and machine panels · Housing materials: fixture: stainless steel black	**E3M102**
	Mounting set · O3M · Clamp mounting · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	**E3M103**

Connection cables for industrial imaging

Type	Description	Order no.
	Jumper · Connector · Connection between mobile 3D camera / sensor and illumination unit · 0.25 m	**E3M120**
	Jumper · Connector · Connection between mobile 3D camera / sensor and illumination unit · 1 m	**E3M121**
	Jumper · Connector · Connection between mobile 3D camera / sensor and illumination unit · 2 m	**E3M122**
	Jumper · Connector · Connection between mobile 3D camera / sensor and illumination unit · 3 m	**E3M123**

You can find scale drawings from page 726

Type	Description	Order no.
	Socket · straight · M12 connector · Gold-plated contacts · Power supply for illumination unit · 2 m · Housing materials: PUR	**E3M131**
	Socket · straight · M12 connector · Gold-plated contacts · Power supply for illumination unit · 5 m · Housing materials: PUR	**E3M132**
	Socket · straight · M12 connector · Gold-plated contacts · Power supply for illumination unit · 10 m · Housing materials: PUR	**E3M133**
	Jumper · straight / angled · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 5 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	**E3M151**
	Jumper · straight / angled · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 11 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	**E3M152**
	Jumper · straight / angled · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 16 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	**E3M153**
	Jumper · straight / angled · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 21 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	**E3M154**
	Extension cable · straight / straight · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 5 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	**E3M159**
	Jumper · straight · M12 connector · Gold-plated contacts · For mobile 3D Smart sensor with analogue PAL video output · For connection of a video grabber · 1 m · Housing materials: PUR black	**E3M160**

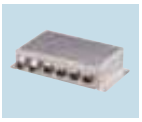
Camera systems for PDM360 color and PDM360 NG

Type	Image resolution	Angle of aperture [°]	Additional functions	Interfaces	Drawing no.	Order no.
M16 connector						
	720 x 480	78	lens heating	Video signal analogue	5	**O2M200**
	720 x 480	78	Integrated mirror function lens heating	Video signal analogue	5	**O2M201**
	720 x 480	115	lens heating	Video signal analogue	5	**O2M202**
	720 x 480	115	Integrated mirror function lens heating	Video signal analogue	5	**O2M203**

Connection technology for displays

Type	Description	Order no.
	Adapter cable · straight / straight · M16 - M12 · Gold-plated contacts · Free from silicone · 0.6 m · Housing materials: housing: PVC / sealing: EPDM	**E2M200**
	Adapter cable · straight / straight · Y adapter cable M12 plug / 2 x M16 socket · Gold-plated contacts · Free from silicone · 0.95 m · Housing materials: housing: PVC / sealing: EPDM	**E2M201**
	Jumper · straight / straight · M16 - M16 · Gold-plated contacts · Free from silicone · 5 m · Housing materials: housing: PVC / sealing: EPDM	**E2M203**
	Jumper · straight / straight · M16 - M16 · Gold-plated contacts · Free from silicone · 16 m · Housing materials: housing: PVC / sealing: EPDM	**E2M205**
	Jumper · straight / straight · M16 - M16 · Gold-plated contacts · Free from silicone · 21 m · Housing materials: housing: PVC / sealing: EPDM	**E2M206**

Accessories

Type	Description	Order no.
	Video splitter · M16 connector · Housing materials: housing: stainless steel 316/1.4401	**E2M250**
	Socket · straight · Free from halogen · M16 connector · 3.85 m · Housing materials: housing: diecast zinc / sealing: PBT	**E2M251**
	Socket · straight · wirable · Free from halogen · M16 connector · Housing materials: housing: diecast zinc / sealing: PBT	**E2M252**
	protective housing · O2M2 · Housing materials: housing: 1.4301	**E2M212**
	Mounting bracket · O2M2 · Housing materials: housing: ABS reinforced glass-fibre / PC / PA	**E2M211**
	Vibration damper · O2M2 · Housing materials: Absorber: rubber / set screw: steel M6 x 15 mm	**E2M213**
	Mounting set · O2M2 · Housing materials: fixture: ABS	**E2M210**

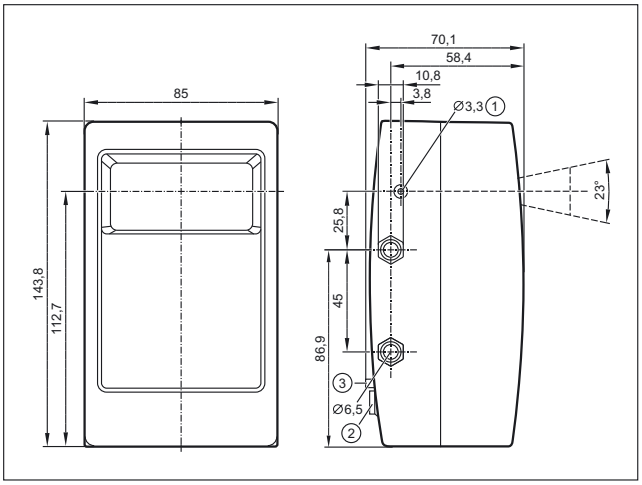
You can find scale drawings from page 726

Connection technology for displays

Type	Description	Order no.
	Ethernet switch · 5 ports · Autosensing · Autocrossing · 10/100Base-TX · Redundant voltage supply · 10...30 V DC	**EC2095**
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	**E11898**
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 2 m · Housing materials: TPU	**E21138**
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 5 m · Housing materials: TPU	**E21139**
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 10 m · Housing materials: TPU	**E21137**

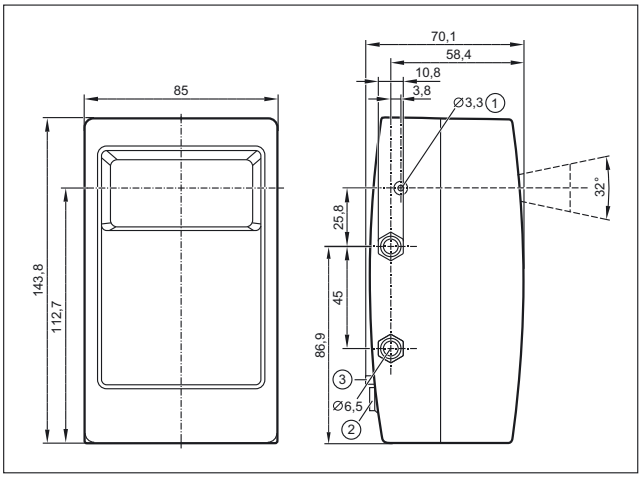
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: Reference socket, 2: Connections

2



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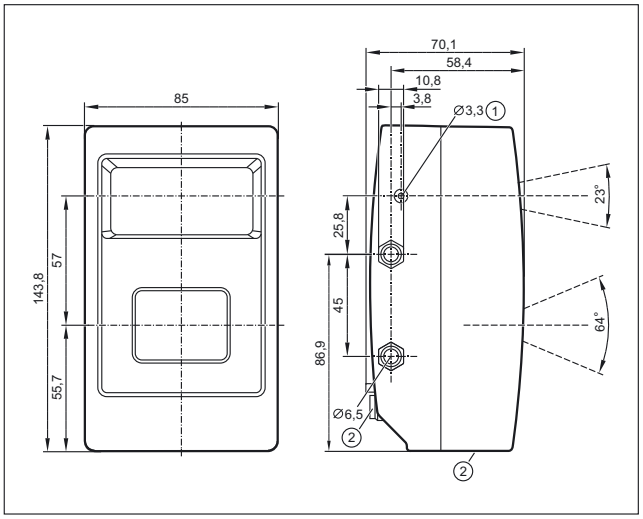

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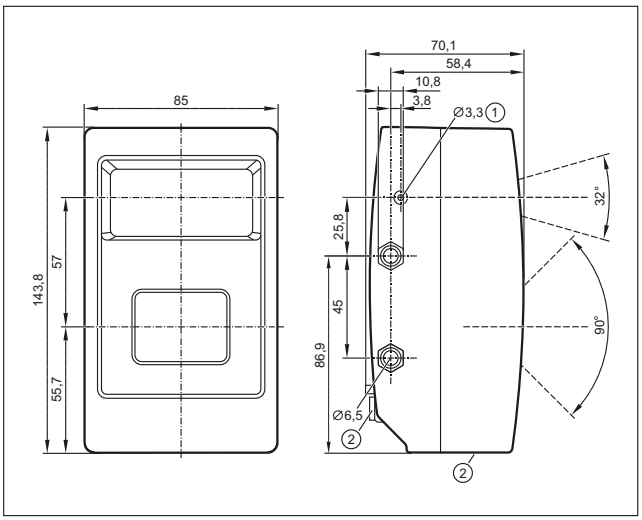
4



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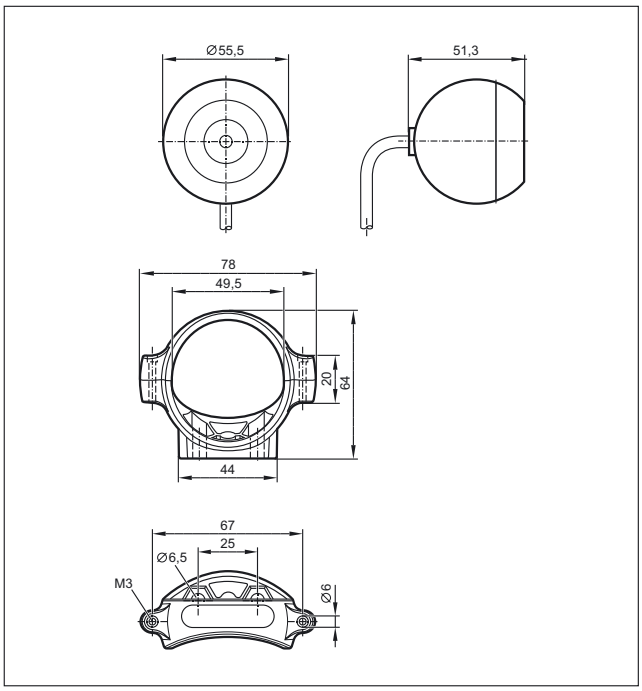

Diagnostic and service units

Detection of diagnostic data – the basis for a powerful and low-cost remote maintenance and monitoring concept.
Reduced service costs and standstill times in cases of failure are essential advantages of this modern technology.

System overview	*Page*
Remote maintenance	*728*
CAN interface and diagnosis	*728 - 729*
Accessories for remote maintenance	*729*
CAN cables	*729*
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Remote maintenance

Type	Description	Drawing no.	Order no.
M12 connector, 5-pole · FME connector, GSM antenna · SMA socket, GPS antenna			
	CAN 3G/GPS radio modem · GSM/GPRS/EDGE (850/900/1800/1900 MHz) · UMTS/HSDPA (800/850/900/1700/1900/2100 MHz) · for the transfer of SMS messages and data packages · with GPS/Glonass receiver for location tracking · Shock sensor · aluminium powder-coated	1	**CR3114**

CAN interface and diagnosis

Type	Description	Drawing no.	Order no.
	CANfox · CAN/RS232-USB interface · Programming and diagnosis of CAN systems · 5 V DC (via USB interface)	2	**EC2112**
	Adapter cable · for CAN interface CANfox · CAN adapter: DIN connector, 6 poles / M12 connector, 5 poles · RS-232 adapter: DIN connector, 6 poles / Sub-D plug, 9 poles · Cable length 1 m	3	**EC2113**
	Real-time clock for CAN systems · Automotive relay housing · CAN interface · Parameter setting to IEC 61131 · Digital output · plastics:	4	**CR3020**
	CAN interface · polyamide	5	**CR3130**

Type	Description	Drawing no.	Order no.
	CAN interface · polyamide	6	**CR3131**
	Wifi / Bluetooth planar antenna · with integrated amplifier · Cable length 3 m · flat design for mounting on all plain surfaces · RP SMA plug	7	**EC2118**

Accessories for remote maintenance

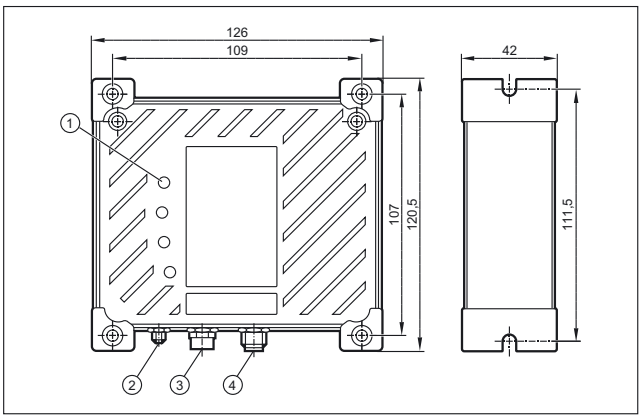
Type	Description	Order no.
	GSM/GPS combined antenna · GSM 850/900/1800/1900 · UMTS 1920...2170 MHz · with integrated amplifier · Cable length 3 m · FME socket (GSM) · SMA plug (GPS) · flat design for mounting on all plain surfaces · e.g. for CANremote CR3114 · thread M16 x 1.5	**EC2116**

CAN cables

Type	Description	Order no.
	Adapter cable for CAN devices with M12 connector (5 pole) · e.g. CANmem, CANremote or inclination sensors	**EC2062**
	Wirable socket · straight · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	**E11511**

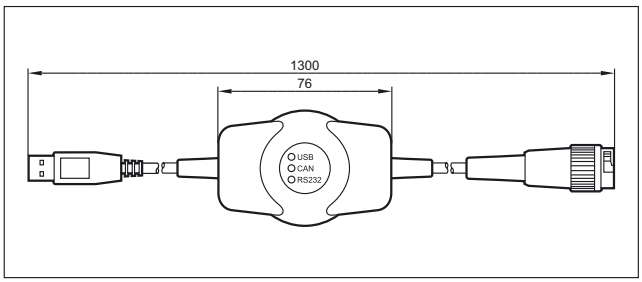
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: LEDs, 2: SMA socket, GPS antenna, 3: FME connector, GSM antenna, 4: M12 connector, 5-pole

2



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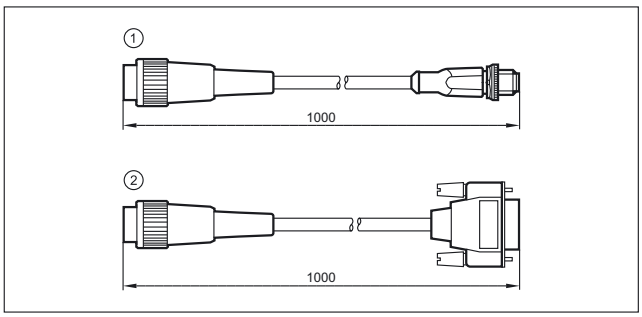
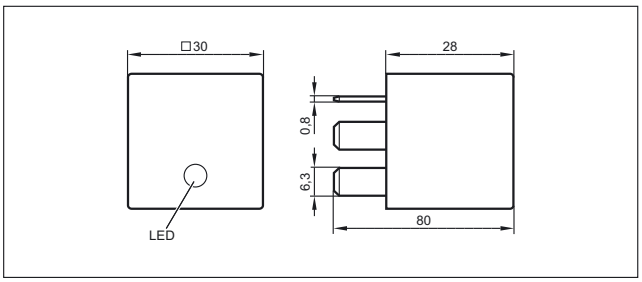


1: CAN adapter, 2: RS-232 adapter

Scale drawings / drawing no. – CAD download: www.ifm.com

4



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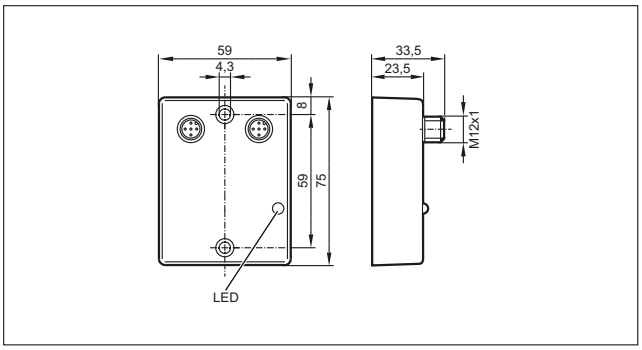

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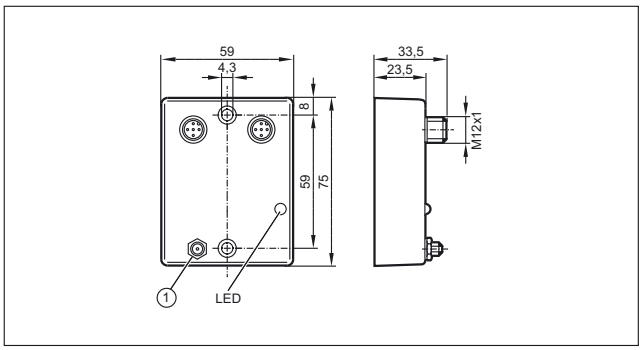
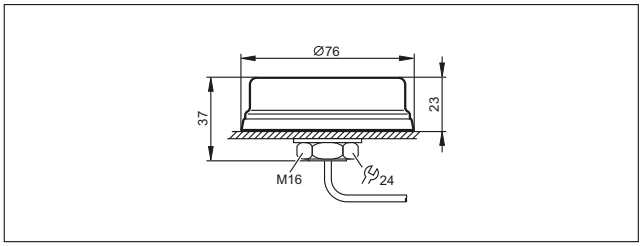


1: RP SMA socket

7



Signal converters

The solution provider for special applications. Signal converter to adapt sensor and actuator signals to the inputs and outputs of the controller or CANopen modules.

System overview	*Page*
Converters and PWM modules	*732*
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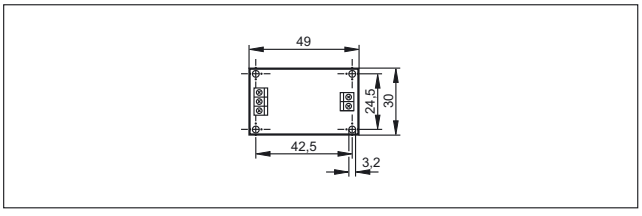
Converters and PWM modules

Type	Description	Drawing no.	Order no.
	PWM / analogue module · PCB · Input 24 V DC PWM signal · Output 0...5 V DC	1	**CR3001**
	PWM / analogue module · PCB · Input 24 V DC PWM signal · Output 0...10 V DC	1	**CR3002**
	PWM / analogue module · Housing · Input 24 V DC PWM signal · Output 0...5 V DC	2	**CR3003**
	PWM / analogue module · Housing · Input 24 V DC PWM signal · Output 0...10 V DC	2	**CR3004**
	PWM / analogue module · Housing · Input 24 V DC PWM signal · Output 4...20 mA	2	**CR3008**
	DC/DC converter · Input 18...36 V DC · Output 10 V DC	3	**EC2025**

Scale drawings / drawing no. – CAD download: www.ifm.com

1



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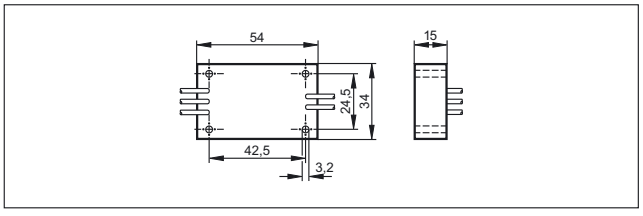

Scale drawings / drawing no. – CAD download: www.ifm.com

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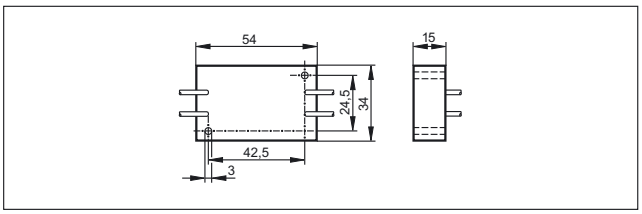

Sensors

From CAN-bus compatible or analogue inclination sensors to inductive proximity switches and pressure sensors for mobile applications.
The sensors of the ecomat*mobile* system are reliable even under the extreme conditions of use in a mobile machine.

System overview	*Page*
Absolute multiturn-encoders (CANopen) for mobile applications	*734*
RFID systems DTM424, DTM425, DTM434, DTM435 for mobile machines	*735*
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Inclination sensors	*736*
Tilt sensors	*736*
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Full metal sensors for industrial applications	*738 - 739*
Sensors for mobile applications	*739*
Electronic pressure sensors for mobile applications	*739 - 742*
Temperature transmitters for mobile applications	*742 - 743*
Accessories for sensors for mobile applications	*743 - 744*
Connection technology for sensors for mobile use	*744 - 747*
Wiring diagrams	*747*
Scale drawings / drawing no. – CAD download: www.ifm.com	*748 - 751*

Absolute multiturn-encoders (CANopen) for mobile applications

Type	Resolution	U_b [V]	f [kHz]	I_{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Drawing no.	Order no.
M12 connector · Output function CANopen interface · Connector group 205									
	4096	9...30	–	–	10	-40...85	axial	1	**RM9000**
	4096	9...30	–	–	10	-40...85	axial	2	**RM9001**

RFID systems DTM424, DTM425, DTM434, DTM435 for mobile machines

Type	Description	Drawing no.	Order no.
Type M18 x 1 · M12 connector · CANopen interface			
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	3	**DTM424**
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	4	**DTM425**
Type M18 x 1 · M12 connector · J1939 interface			
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	3	**DTM426**
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	4	**DTM427**
Type M30 x 1.5 · M12 connector · CANopen interface			
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	5	**DTM434**
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	6	**DTM435**
Type M30 x 1.5 · M12 connector · J1939 interface			
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	5	**DTM436**
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	6	**DTM437**

CAN inclination sensors

Type	Angular range [°]	Number of axes	Resolution / accuracy [°]	Interfaces	Wiring diagr. no.	Drawing no.	Order no.
2 x M12 connection (CAN-In / CAN-Out)							
	0...360° / ± 180°	2	0.001 / ≤ ± 0.5°	1 x CAN	–	7	**JN2100**
	± 45°	2	0.001 / ± 0.01°	1 x CAN	–	7	**JN2101**

You can find wiring diagrams and scale drawings from page 747

Inclination sensors

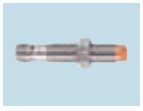
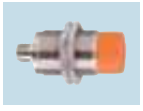
Type	Angular range [°]	Supply voltage	Output signal	Repeatability [°]	Drawing no.	Order no.
Cable						
	±90°	15...30 V DC	1 x analogue (0...10 V)	0.1°	8	**EC2019**
	±90°	8...30 DC	1 x analogue (0.5...4.5 V)	0.1°	8	**EC2045**
Cable with M12 connector						
	±20°	11...15 V DC	1 x analogue (4...20 mA)	0.1°	8	**EC2060**
	±90°	20...30 V DC	1 x analogue (4...20 mA)	0.1°	8	**EC2082**

Tilt sensors

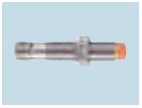
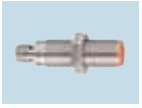
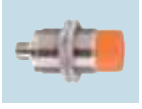
Type	Angular range [°]	Supply voltage	Output signal	Repeatability [°]	Drawing no.	Order no.
Cable						
	2.5...5.5°	10...30 V DC	1 x Digital	0.2°	9	**EC2061**

Inductive sensors for mobile applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 6 m · Output function ⎍ · DC PNP · Wiring diagram no. 1									
	M12 / L = 79	4 f	stainless steel	10...60	IP 67 / IP 69K	400	200	10	**IFM209**
	M12 / L = 79	7 nf	High-grade st. steel	10...60	IP 67 / IP 69K	300	200	11	**IFM210**
	M18 / L = 81	8 f	stainless steel	10...60	IP 67 / IP 69K	200	200	12	**IGM206**
	M18 / L = 81	12 nf	stainless steel	10...60	IP 67 / IP 69K	200	200	13	**IGM207**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 6 m · Output function ⎍ · DC PNP · Wiring diagram no. 1									
	M30 / L = 81	12 f	stainless steel	10...60	IP 67 / IP 69K	100	200	14	**IIM210**
	M30 / L = 81	22 nf	stainless steel	10...60	IP 67 / IP 69K	100	200	15	**IIM211**
Cable 6 m · Output function ⎍ · 3-wire DC PNP; 2-wire DC PNP/NPN · Wiring diagram no. 11									
	M12 / L = 79	4 f	stainless steel	10...36	IP 67 / IP 69K	400	100	10	**IFM207**
	M12 / L = 79	7 nf	stainless steel	10...36	IP 67 / IP 69K	300	100	11	**IFM208**
	M18 / L = 81	8 f	stainless steel	10...36	IP 67 / IP 69K	200	100	12	**IGM202**
	M18 / L = 81	12 nf	stainless steel	10...36	IP 67 / IP 69K	200	100	13	**IGM203**
	M30 / L = 81	12 f	stainless steel	10...36	IP 67 / IP 69K	100	100	14	**IIM202**
	M30 / L = 81	22 nf	stainless steel	10...36	IP 67 / IP 69K	100	100	15	**IIM203**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 2 · Connector groups 202, 203, 204									
	M12 / L = 70	4 f	High-grade st. steel	10...60	IP 67 / IP 69K	400	200	16	**IFM205**
	M12 / L = 70	7 nf	stainless steel	10...60	IP 67 / IP 69K	300	200	17	**IFM206**
	M18 / L = 70	8 f	stainless steel	10...60	IP 67 / IP 69K	200	200	18	**IGM204**
	M18 / L = 70	12 nf	stainless steel	10...60	IP 67 / IP 69K	200	200	19	**IGM205**
	M30 / L = 70	12 f	stainless steel	10...60	IP 67 / IP 69K	100	200	20	**IIM208**
	M30 / L = 70	22 nf	stainless steel	10...60	IP 67 / IP 69K	100	200	21	**IIM209**

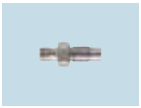
You can find wiring diagrams and scale drawings from page 747

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · 3-wire DC PNP; 2-wire DC PNP/NPN · Wiring diagram no. 12 · Connector groups 202, 203, 204									
	M12 / L = 70	4 f	High-grade st. steel	10...36	IP 67 / IP 69K	400	100	16	**IFM203**
	M12 / L = 70	7 nf	High-grade st. steel	10...36	IP 67 / IP 69K	300	100	17	**IFM204**
	M18 / L = 70	8 f	stainless steel	10...36	IP 67 / IP 69K	200	100	18	**IGM200**
	M18 / L = 70	12 nf	stainless steel	10...36	IP 67 / IP 69K	200	100	19	**IGM201**
	M30 / L = 70	12 f	stainless steel	10...36	IP 67 / IP 69K	100	100	20	**IIM200**
	M30 / L = 70	22 nf	stainless steel	10...36	IP 67 / IP 69K	100	100	21	**IIM201**

f = flush / nf = non flush / qf = quasi-flush

Full metal sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 93	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	22	**MFH200**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 93	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	22	**MFH201**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	23	**MFH202**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	23	**MFH203**

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	23	**MFH204**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M14 / L = 53	2 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	24	**M9H200**

f = flush / nf = non flush / qf = quasi-flush

Sensors for mobile applications

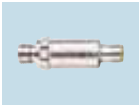
Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable with connector 0.15 m · Output function ⎍ · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	40 x 12 x 26	60	PBT	10...30	IP 67	–	200	25	**MN5200**

Electronic pressure sensors for mobile applications

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
AMP Superseal · Output function 0...10 V analogue · Wiring diagram no. 5								
	G ¼ A	–	0...400	1000	1700	16...32	26	**PU5600**
	G ¼ A	–	0...250	625	1200	16...32	26	**PU5601**
	G ¼ A	–	0...100	250	1000	16...32	26	**PU5602**
	G ¼ A	–	0...25	65	600	16...32	26	**PU5603**
	G ¼ A	–	0...10	25	300	16...32	26	**PU5604**
	G ¼ A	–	0...600	1500	2500	16...32	26	**PU5660**

You can find wiring diagrams and scale drawings from page 747

Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
DEUTSCH connector DT04-3P · Output function 0...10 V analogue · Wiring diagram no. 6								
	G ¼ A	–	0...400	1000	1700	16...32	27	**PU5700**
	G ¼ A	–	0...250	625	1200	16...32	27	**PU5701**
	G ¼ A	–	0...100	250	1000	16...32	27	**PU5702**
	G ¼ A	–	0...25	65	600	16...32	27	**PU5703**
	G ¼ A	–	0...10	25	300	16...32	27	**PU5704**
	G ¼ A	–	0...600	1500	2500	16...32	27	**PU5760**
AMP Superseal · Output function 4...20 mA analogue · Wiring diagram no. 7								
	G ¼ A	–	0...400	1000	1700	8...32	26	**PT5600**
	G ¼ A	–	0...250	625	1200	8...32	26	**PT5601**
	G ¼ A	–	0...100	250	1000	8...32	26	**PT5602**
	G ¼ A	–	0...25	65	600	8...32	26	**PT5603**
	G ¼ A	–	0...10	25	300	8...32	26	**PT5604**
	G ¼ A	–	0...600	1500	2500	8...32	26	**PT5660**
DEUTSCH connector DT04-3P · Output function 4...20 mA analogue · Wiring diagram no. 8								
	G ¼ A	–	0...400	1000	1700	8...32	27	**PT5700**
	G ¼ A	–	0...250	625	1200	8...32	27	**PT5701**
	G ¼ A	–	0...100	250	1000	8...32	27	**PT5702**

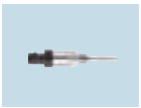
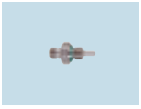
Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
DEUTSCH connector DT04-3P · Output function 4...20 mA analogue · Wiring diagram no. 8								
	G ¼ A	–	0...25	65	600	8...32	27	**PT5703**
	G ¼ A	–	0...10	25	300	8...32	27	**PT5704**
	G ¼ A	–	0...600	1500	2500	8...32	27	**PT5760**
DEUTSCH connector DT04-3P · Wiring diagram no. 6								
	G ¼	–	0...400	1000	1700	8...32	27	**PU8700**
	G ¼	–	0...250	625	1200	8...32	27	**PU8701**
	G ¼	–	0...100	250	1000	8...32	27	**PU8702**
	G ¼	–	0...25	65	600	8...32	27	**PU8703**
	G ¼	–	0...10	25	300	8...32	27	**PU8704**
	G ¼	–	0...160	400	1100	8...32	27	**PU8712**
	G ¼	–	0...40	100	800	8...32	27	**PU8743**
	G ¼	–	0...600	1500	2500	8...32	27	**PU8760**
M12 connector · Output function 4...20 mA analogue · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A	–	0...600	1500	2500	8...32	28	**PT5560**
	G ¼ A	–	0...400	1000	1700	8...32	28	**PT5500**
	G ¼ A	–	0...250	625	1200	8...32	28	**PT5501**

You can find wiring diagrams and scale drawings from page 747

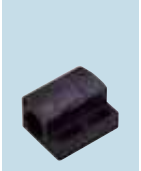
Type	Process connection	Display	Measuring range [bar]	$P_{overload}$ max. [bar]	$P_{bursting}$ min. [bar]	U_b DC [V]	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A	–	0...100	250	1000	8...32	28	**PT5502**
	G ¼ A	–	0...25	65	600	8...32	28	**PT5503**
	G ¼ A	–	0...10	25	300	8...32	28	**PT5504**
M12 connector · Output function 0...10 V analogue · Wiring diagram no. 10 · Connector group 202								
	G ¼ A	–	0...400	600	1600	16...36	29	**PT9550**
	G ¼ A	–	0...250	400	1000	16...36	29	**PT9551**
	G ¼ A	–	0...100	200	1000	16...36	29	**PT9552**
	G ¼ A	–	0...25	60	600	16...36	29	**PT9553**
	G ¼ A	–	0...10	25	300	16...36	29	**PT9554**

Temperature transmitters for mobile applications

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	30	**TA3105**
	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	30	**TA3115**
	-50...150 / -58...302	G ¼ A	200	10...30	1 / 3	30	**TA3155**
DEUTSCH connector · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	31	**TA4105**

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U_b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
DEUTSCH connector · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	31	**TA4115**
AMP plug · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	32	**TA5105**
	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	32	**TA5115**
M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	30	**TU3105**
DEUTSCH connector · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	31	**TU4105**
AMP plug · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	32	**TU5105**
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150 / -40...302	G ¼	25	–	1 / 3	33	**TM5101**
DEUTSCH connector · high-grade stainless steel							
	-40...150 / -40...302	G 1/4	25	–	1 / 3	34	**TM6101**

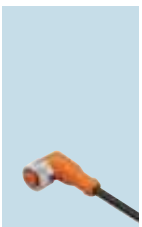
Accessories for sensors for mobile applications

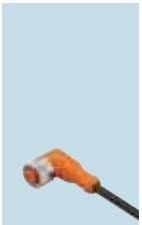
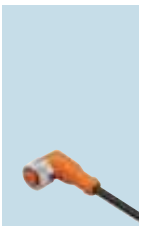
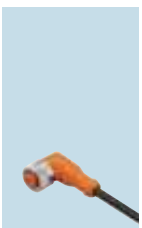
Type	Description	Order no.
	Mounting clamp · Ø 12 mm · with end stop · for type M12 · Housing materials: PC	**E11047**
	Mounting clamp · Ø 18 mm · with end stop · for type M18 · Housing materials: PC	**E11048**

You can find wiring diagrams and scale drawings from page 747

Type	Description	Order no.
	Mounting clamp · Ø 30 mm · with end stop · for type M30 · Housing materials: PC	E11049
	Angle bracket · for type M12 · Housing materials: stainless steel	E10735
	Angle bracket · for type M18 · Housing materials: stainless steel	E10736
	Angle bracket · for type M30 · Housing materials: stainless steel	E10737

Connection technology for sensors for mobile use

Type	Description	Order no.
	Jumper · straight / straight · Free from silicone · Free from halogen · Gold-plated contacts · 0.3 m · Housing materials: housing: TPU orange / sealing: FKM	EVC010
	Jumper · straight / straight · Free from silicone · Free from halogen · Gold-plated contacts · 1 m · Housing materials: housing: TPU orange / sealing: FKM	EVC012
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC004
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC005
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC006
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC001
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC002
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC003
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC526
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC527

Type	Description	Order no.
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC528**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC529**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC530**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC531**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC532**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC533**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC534**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC535**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC536**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC537**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC538**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC539**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC540**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC541**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC542**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC543**

You can find wiring diagrams and scale drawings from page 747

Type	Description	Order no.
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC544**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC545**
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC546**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC547**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC548**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	**EVC549**
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: PUR	**E11596**
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: PUR	**E11597**
	Terminating resistor socket · straight · Gold-plated contacts · M12 connector · Housing materials: TPU	**E11589**
	Terminating resistor plug · straight · Gold-plated contacts · M12 connector · Housing materials: TPU	**E11590**
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: PUR	**E11598**
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: PUR	**E11599**
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 0.3 m · Housing materials: PUR	**E11591**
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 1 m · Housing materials: PUR	**E11592**
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 2 m · Housing materials: PUR	**E11593**

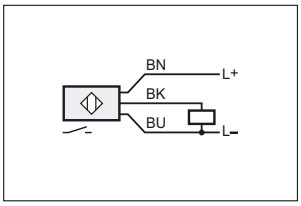
Type	Description	Order no.
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 5 m · Housing materials: PUR	**E11594**
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · Housing materials: housing: TPU black / sealing: FKM	**EVC492**
	Cable plug · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 6 m · Housing materials: housing: TPU black	**E12215**

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white

1



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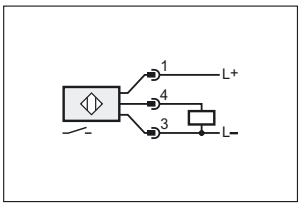

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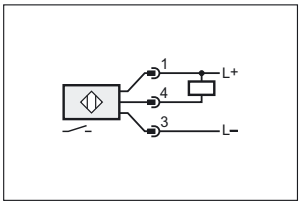

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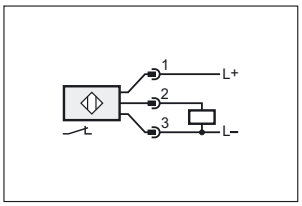

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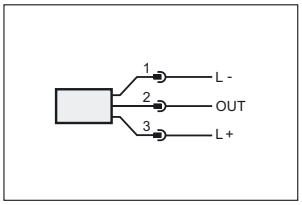

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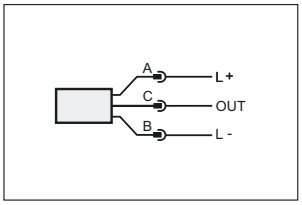

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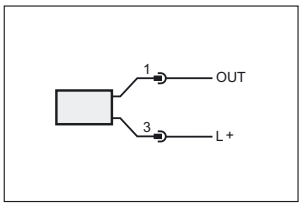

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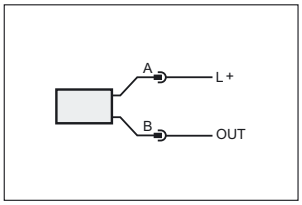

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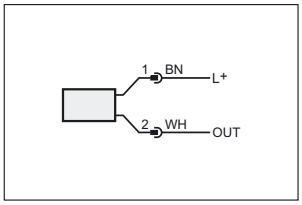

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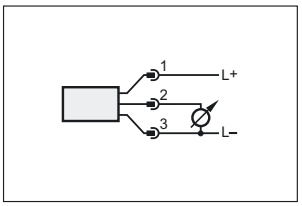

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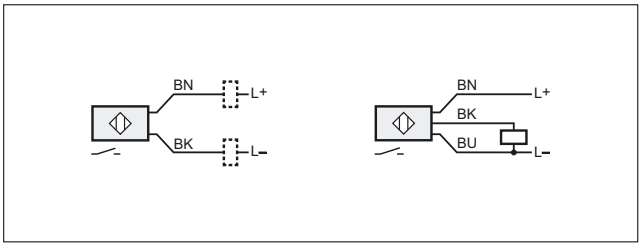

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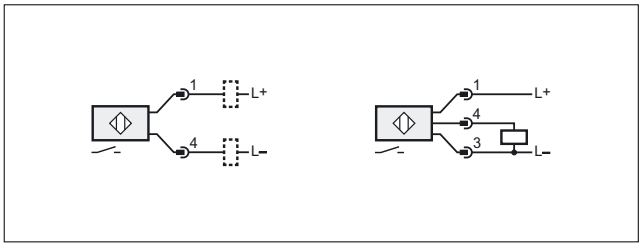

Scale drawings / drawing no. – CAD download: www.ifm.com

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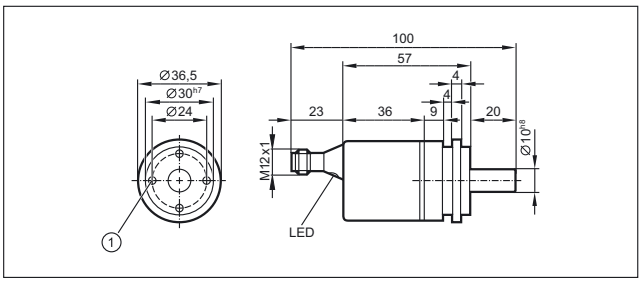

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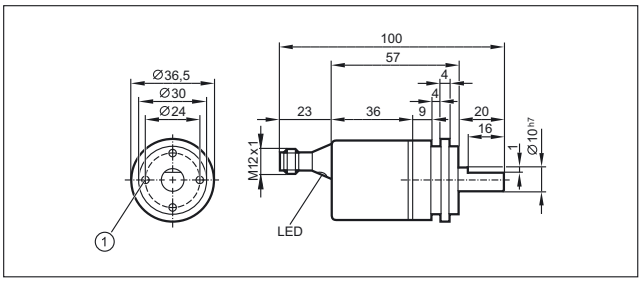

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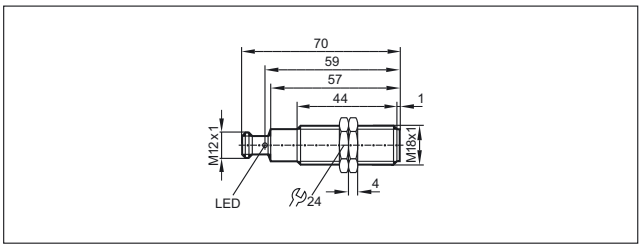

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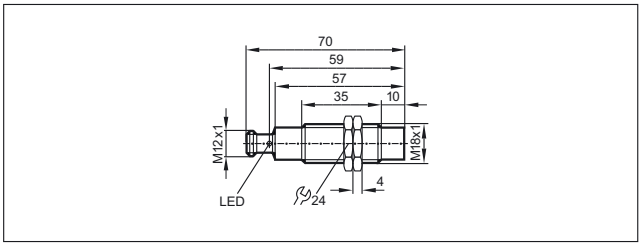

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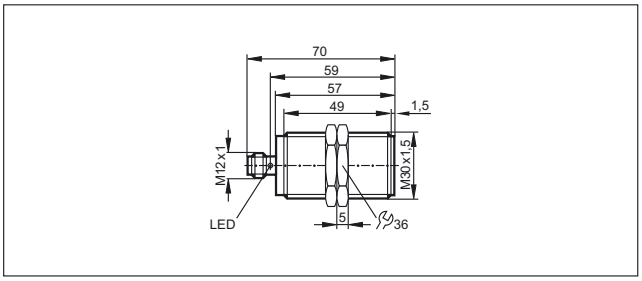

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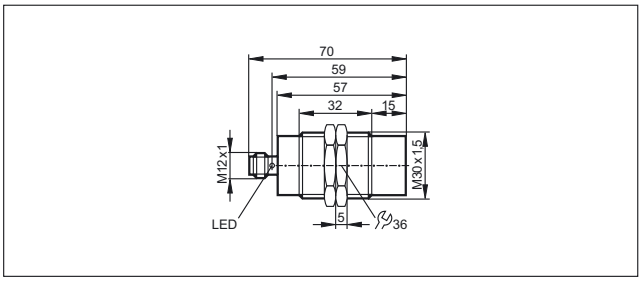

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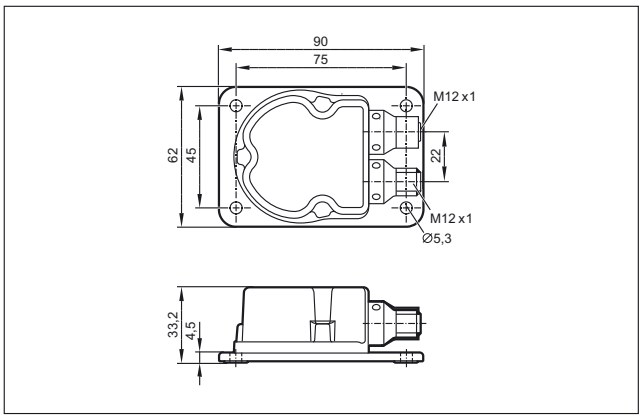

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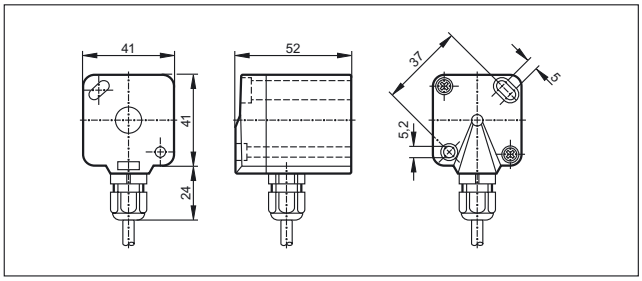

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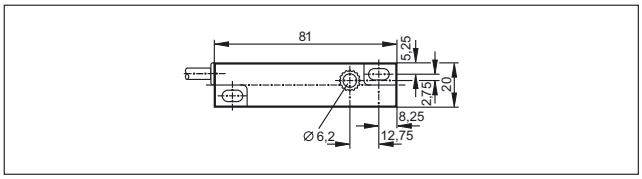

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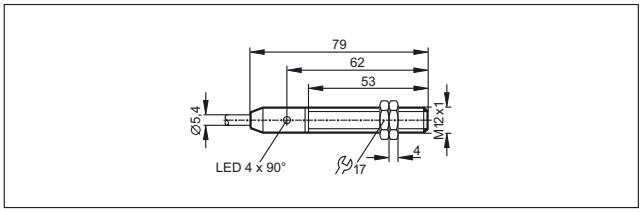

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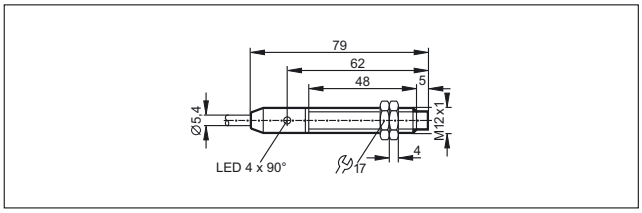

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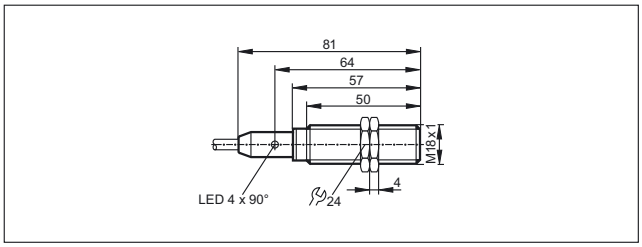

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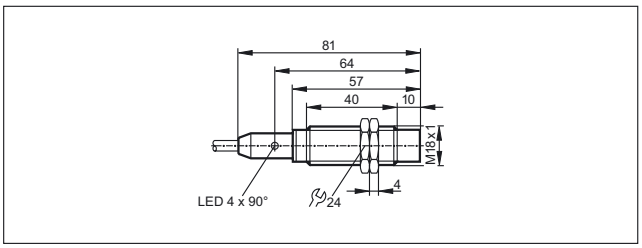

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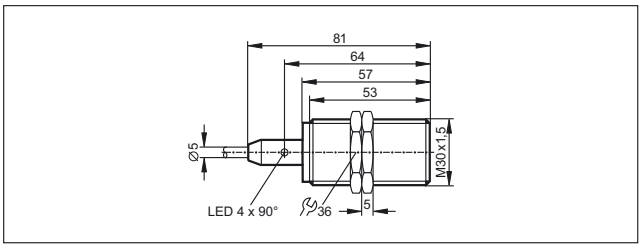

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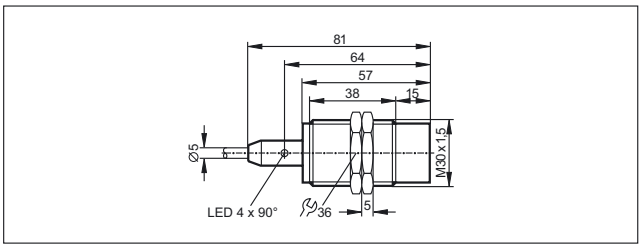

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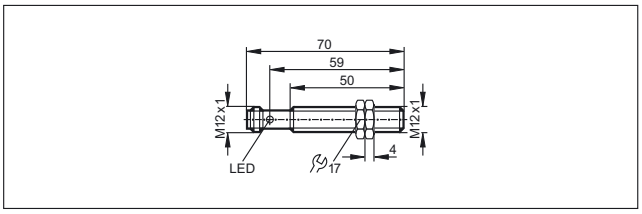

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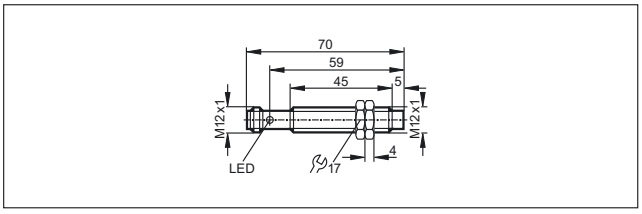

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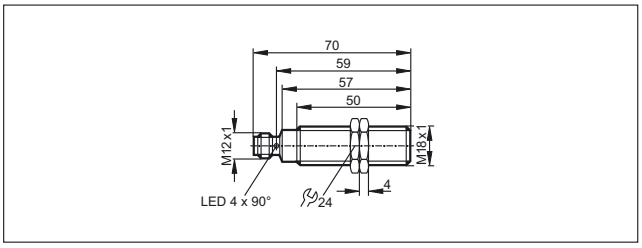

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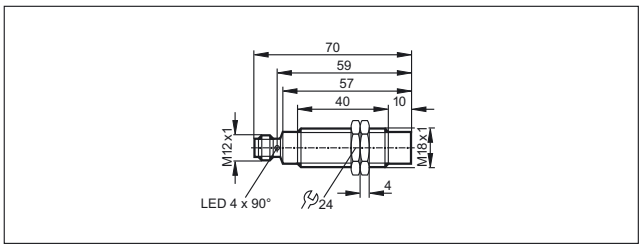

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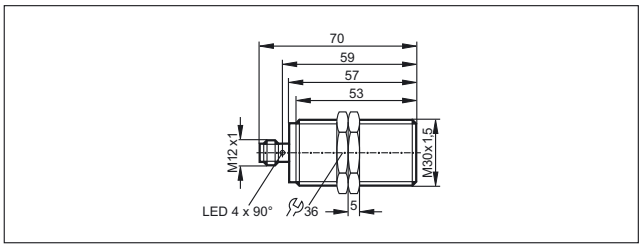

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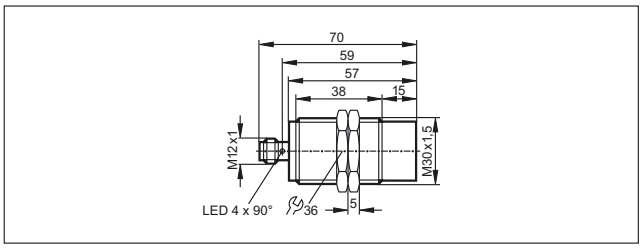

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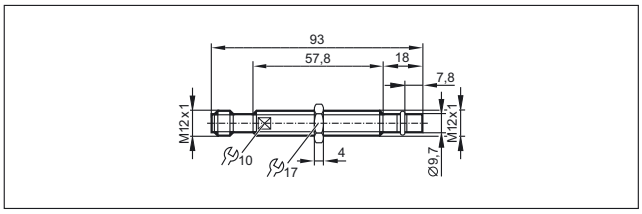

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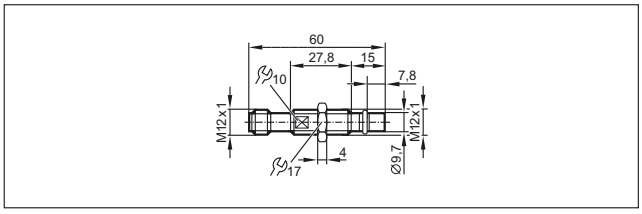

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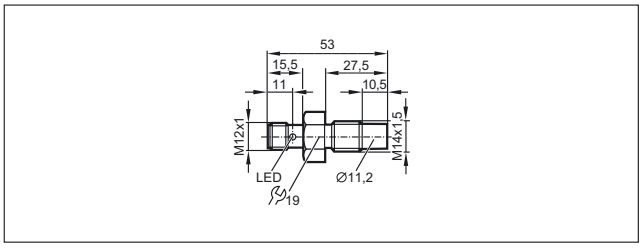

Scale drawings / drawing no. – CAD download: www.ifm.com

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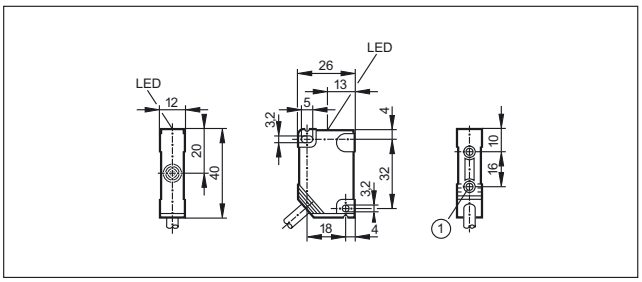
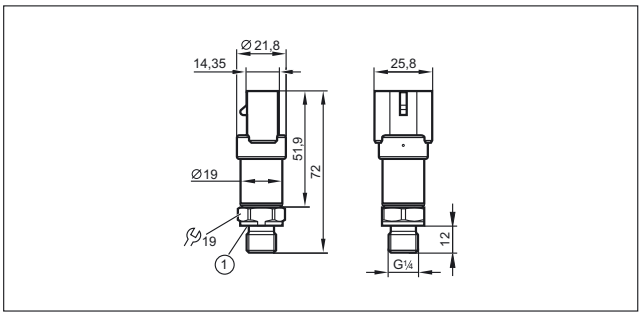


1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

26



1: sealing FKM / DIN 3869

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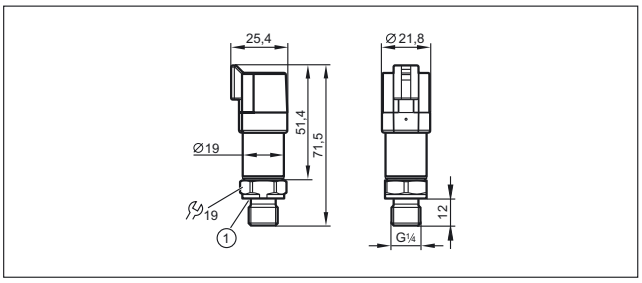

1: sealing FKM / DIN 3869

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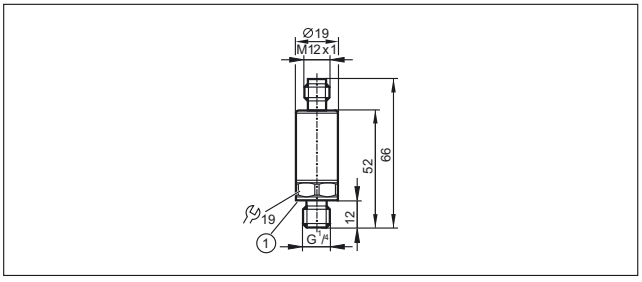

1: sealing

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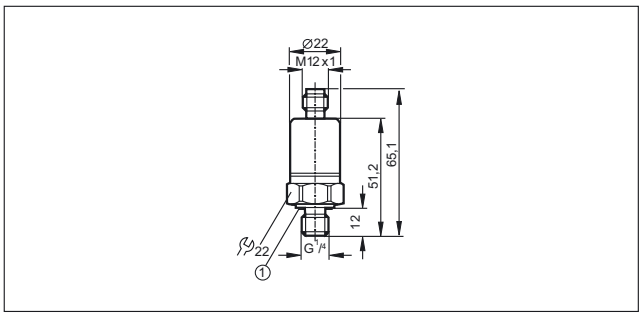
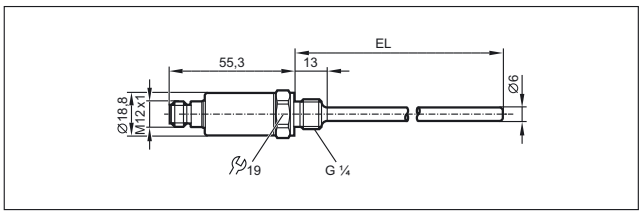


1: FKM seal / DIN 3869-14, tightening torque 25 Nm

30



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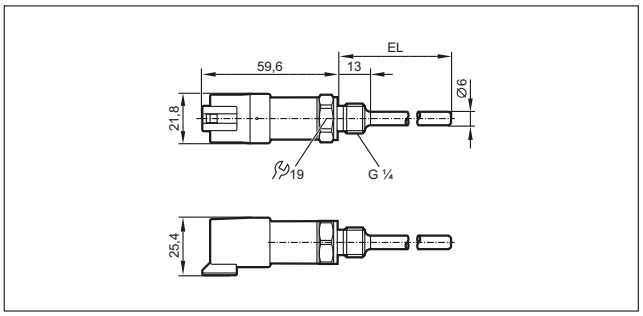

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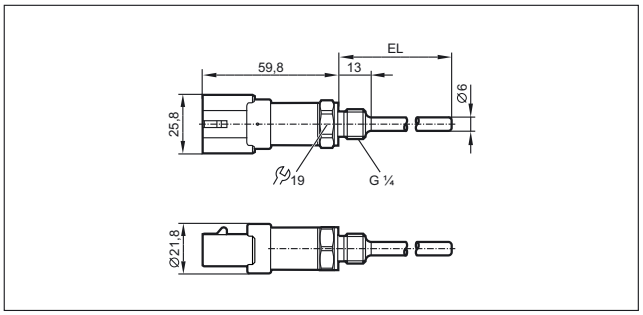

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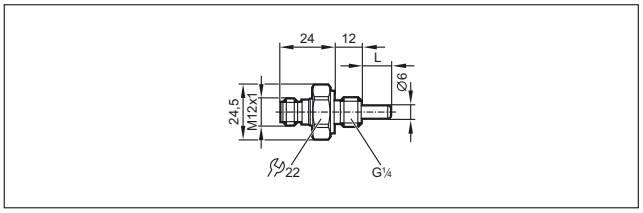

Scale drawings / drawing no. – CAD download: www.ifm.com

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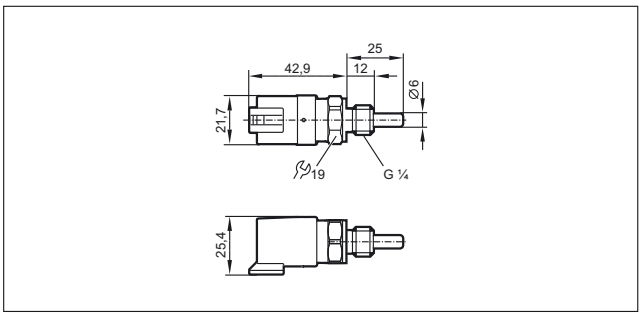

High-quality connectors for multiple applications

Connection technology

To match the large range of different sensor designs, ifm offers a great variety of high-quality connectors. The choice of types covers common M8, M12, M18 types through to valve plugs. The „ecolink" connectors (order no. EVxxxx) offer additional quality features.

ecolink – a new dimension in connection technology

Due to the special installation of a mechanical end stop, the O-ring is always correctly compressed and so permanently maintains its sealing function. The connector remains securely positioned on the unit even in case of extreme vibration and impacts. The innovative design and a transparent black housing ensure that, even in bright lighting conditions, the LEDs are more clearly visible than with the clear transparent versions.

For industrial applications

High-quality materials suited to the requirements in industrial environments. Largely resistant to oils, fats and coolants.

For hygienic and wet areas

PVC housing and cable, gold-plated contacts and high-grade stainless steel nuts are the optimum choice for long life.

For hazardous areas

Connection technology for ATEX categories 1D, 2D, 3D and 1G, 3G. With the EC type examination certificate for components from DEKRA EXAM, the connection technology meets strictest requirements.

For welding applications

Halogen-free PUR cables prevent burning-in of weld spatter; teflon-coated coupling nuts prevent weld spatter sticking. The cables are also suited for drag chains and torsional movements.

For sensors in robust applications

The saw tooth contoured vibration protection secures against strong shocks and vibrations. The high protection rating, wide temperature range and high-quality housing materials (high-grade stainless steel, TPU) ensure permanent safe connection in harsh environments.

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	Splitter boxes	836 - 855
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Sockets

Sockets are mainly used for the connection of sensors. High-quality socket contacts and materials ensure reliable electrical connections.
In addition to a wide range of standard products ifm also offers versions without silicone and halogen, versions for hygienic areas, for applications in contact with coolants and lubricants, as well as for welding applications.

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M8 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 1 · Socket M8, 3-pole, 3-wire · Wiring diagram no. 1									
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC141**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 1 · Socket M8, 3-pole, 3-wire · Wiring diagram no. 1									
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC142**
	10 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC143**
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC144**
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC145**
	10 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC146**
Group 2 · Socket M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	**EVC147**
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	**EVC148**
	10 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	**EVC149**
Group 3 · Wirable socket M8, 3-pole · Wiring diagram no. 3									
	wirable	–	PA / Brass	...45 AC ...70 DC	-25...90	IP 68	–	–	**E11552**
Group 4 · Socket M8, 4-pole, 4-wire · Wiring diagram no. 4									
	2 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC150**
	5 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC151**
	10 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC152**
	2 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVC153**

You can find wiring diagrams and scale drawings from page 780

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 4 · Socket M8, 4-pole, 4-wire · Wiring diagram no. 4									
	5 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVC154**
	10 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVC155**
Group 5 · Wirable socket M8, 4-pole · Wiring diagram no. 5									
	wirable	–	PA / Brass	...45 AC ...70 DC	-25...90	IP 68	–	–	**E11553**

M12 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 6 · Socket M12, 5-pole, 2-wire · Wiring diagram no. 6									
	2 m black PUR cable	2 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC164**
	5 m black PUR cable	2 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC165**
	10 m black PUR cable	2 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC166**
	2 m black PUR cable	2 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC161**
	5 m black PUR cable	2 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC162**
	10 m black PUR cable	2 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC163**
Group 7 · socket M12, 2-pole + PE, 3-wire · Wiring diagram no. 7									
	2 m orange PVC cable	3 x AWG 22 (3 x 0.34 mm²), Ø 5 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	8	**E10865**
	5 m orange PVC cable	3 x AWG 22 (3 x 0.34 mm²), Ø 5 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	8	**E10866**
	2 m orange PVC cable	3 x AWG 22 (3 x 0.34 mm²), Ø 5 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	9	**E10867**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 7 · socket M12, 2-pole + PE, 3-wire · Wiring diagram no. 7									
	5 m orange PVC cable	3 x AWG 22 (3 x 0.34 mm²), Ø 5 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	9	**E10868**
Group 8 · Wirable socket M12, 4-pole · Wiring diagram no. 5									
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	10	**E11509**
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	11	**E11508**
Group 9 · Wirable socket M12, 4-pole, LED, PNP · Wiring diagram no. 8									
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / Brass	10...30 DC	-25...85	IP 68	green / yellow	12	**E11510**
	wirable	...0.75 mm² (Ø 4...6 mm)	PA	10...30 DC	-40...85	IP 67	green / yellow	11	**E10136**
Group 10 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC004**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC005**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC006**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC001**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC002**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC003**
Group 11 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	**EVC007**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	**EVC008**

You can find wiring diagrams and scale drawings from page 780

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 11 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9									
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	**EVC009**
Group 12 · Wirable socket M12, 5-pole · Wiring diagram no. 10									
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	14	**E11512**
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / Brass	125 AC/DC	-25...85	IP 68	–	15	**E11511**
Group 13 · Socket M12, 5-pole, 5-wire · Wiring diagram no. 11									
	2 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC073**
	5 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC074**
	10 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC075**
	2 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC070**
	5 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC071**
	10 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC072**
Group 14 · Socket M12, 8-pole, 6-wire · Wiring diagram no. 12									
	5 m black PUR cable	6 x 0.34 mm², Ø 6 mm	TPU / diecast zinc	60 AC/DC	-25...85	IP 68	–	16	**E10976**
	10 m black PUR cable	6 x 0.34 mm², Ø 6 mm	TPU / diecast zinc	60 AC/DC	-25...85	IP 68	–	16	**E10977**
Group 15 · socket M12, 8-pole, 7-wire + screen · Wiring diagram no. 13									
	2 m black PUR cable	7 x 0.25 mm² + screen	TPU / diecast zinc	60 AC/DC	-25...85	IP 67	–	16	**E20738**
	5 m black PUR cable	7 x 0.25 mm² + screen	TPU / diecast zinc	60 AC/DC	-25...85	IP 67	–	16	**E20838**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 16 · Socket M12, 8/7-pole, 8-wire · Wiring diagram no. 14									
	2 m black PUR cable	8 x 0.25 mm², Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 67	–	17	**E11231**
	5 m black PUR cable	8 x 0.25 mm², Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 67	–	17	**E11232**
	2 m black PUR cable	8 x 0.25 mm², Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 68	–	18	**E11950**
	5 m black PUR cable	8 x 0.25 mm², Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 68	–	18	**E11807**
	10 m black PUR cable	8 x 0.25 mm², Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 68	–	18	**E11311**
Group 17 · Socket M12, 8/7-pole, 8-wire · Wiring diagram no. 15									
	5 m black PUR cable	8 x 0.25 mm²	TPU / Brass	30 AC 36 DC	-40...80	IP 68	–	17	**E12168**
	10 m black PUR cable	8 x 0.25 mm²	TPU / Brass	30 AC 36 DC	-40...80	IP 68	–	17	**E12169**
	5 m black PUR cable	8 x 0.25 mm²	TPU / Brass	30 AC 36 DC	-40...80	IP 67	–	18	**E12166**
	10 m black PUR cable	8 x 0.25 mm²	TPU / Brass	30 AC 36 DC	-40...80	IP 67	–	18	**E12167**
Group 18 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 16									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	**EVC644**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	**EVC645**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	**EVC646**
Group 19 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	2 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC706**

You can find wiring diagrams and scale drawings from page 780

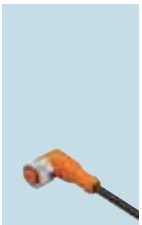
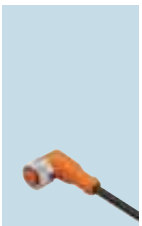
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 19 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC707**
	10 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC708**
	20 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC709**
	50 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC710**
	2 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC711**
	5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC712**
	10 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC713**
	20 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC714**
	50 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC715**
Group 20 · Socket M12, 12-pole, 12-wire · Wiring diagram no. 17									
	5 m black PUR cable	12 x 0.25 mm², Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	20	**E12457**
	10 m black PUR cable	12 x 0.25 mm², Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	20	**E12505**
	15 m black PUR cable	12 x 0.25 mm², Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	20	**E12506**
	5 m black PUR cable	12 x 0.25 mm², Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	21	**E12502**
	10 m black PUR cable	12 x 0.25 mm², Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	21	**E12503**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 20 · Socket M12, 12-pole, 12-wire · Wiring diagram no. 17									
	15 m black PUR cable	12 x 0.25 mm², Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	21	**E12504**

M12 sockets for industrial applications with screen

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 21 · Socket M12, halogen-free, screened, screen not connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 18									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC526**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC527**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC528**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC529**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC530**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC531**
Group 22 · Socket M12, halogen-free, screened, screen not connected to the socket, 5-pole, 5-wire · Wiring diagram no. 19									
	2 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC532**
	5 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC533**
	10 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC534**
	2 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC535**
	5 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC536**

You can find wiring diagrams and scale drawings from page 780

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 22 · Socket M12, halogen-free, screened, screen not connected to the socket, 5-pole, 5-wire · Wiring diagram no. 19									
	10 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC537**
Group 23 · Socket M12, halogen-free, screened, screen connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 20									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	7	**EVC538**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	7	**EVC539**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	7	**EVC540**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	6	**EVC541**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	6	**EVC542**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	6	**EVC543**
Group 24 · Socket M12, halogen-free, screened, screen connected to the socket, 5-pole, 5-wire · Wiring diagram no. 21									
	2 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	7	**EVC544**
	5 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	7	**EVC545**
	10 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	7	**EVC546**
	2 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	6	**EVC547**
	5 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	6	**EVC548**
	10 m black PUR cable	5 x 0.25 mm², Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	6	**EVC549**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 25 · Socket M12, halogen-free, screened, screen not connected to the socket, 4-pole, 4-wire · Wiring diagram no. 18									
	5 m black PUR cable	4 x 0.34 mm², Ø 5 mm	TPU / Brass	50 AC 60 DC	-25...85	IP 67	–	22	**E12339**
	10 m black PUR cable	4 x 0.34 mm², Ø 5 mm	TPU / Brass	50 AC 60 DC	-40...85	IP 67	–	22	**E12340**

M16 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 26 · socket M16, 14-pole, 10-wire · Wiring diagram no. 22									
	5 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 9.2 mm	PUR / Brass	30 DC	-25...80	IP 67	–	23	**E11226**
	10 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 10 mm	PUR / Brass	30 DC	-25...80	IP 67	–	23	**E11227**
Group 27 · Socket M16, 14-pole, 12-wire · Wiring diagram no. 23									
	2 m black PUR cable	2 x 0.34 mm² + 9 x 0.25 mm², Ø 7.5 mm	PUR / Brass	30 DC	-25...90	IP 67	–	24	**E11645**
	5 m black PUR cable	2 x 0.34 mm² + 9 x 0.25 mm², Ø 7.5 mm	PUR / Brass	30 DC	-25...90	IP 67	–	24	**E11697**

M18 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 28 · Wirable socket M18, 4-pole · Wiring diagram no. 5									
	wirable	...0.75 mm² (Ø 6...8 mm)	PA	20...250 AC/DC	-40...85	IP 65	–	25	**E10013**
	wirable	...0.75 mm² (Ø 6...8 mm)	PA / ULTRAMID	20...250 AC/DC	-40...85	IP 65	–	26	**E10137**

You can find wiring diagrams and scale drawings from page 780

M23 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 29 · Socket M23, 12-pole, 12-wire · Wiring diagram no. 24									
	5 m black PUR cable	8 x 0.5 mm² + 3 x 1.0 mm², Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	27	**E11739**
	10 m black PUR cable	8 x 0.5 mm² + 3 x 1.0 mm², Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	27	**E11740**
	15 m black PUR cable	8 x 0.5 mm² + 3 x 1.0 mm², Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	27	**E11741**
	5 m black PUR cable	8 x 0.5 mm² + 3 x 1.0 mm², Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	28	**E11736**
	10 m black PUR cable	8 x 0.5 mm² + 3 x 1.0 mm², Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	28	**E11737**
	15 m black PUR cable	8 x 0.5 mm² + 3 x 1.0 mm², Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	28	**E11738**
Group 30 · Wirable M23 socket, 12 poles									
	wirable	...1 mm² (Ø 10...14 mm)	Brass	10...30 DC	-25...90	IP 65	–	29	**E10448**
	wirable	...1 mm² (Ø 10...14 mm)	Brass	10...30 DC	-25...90	IP 65	–	30	**E10447**
Group 31 · Socket M23, 19-pole, 19-wire · Wiring diagram no. 34									
	5 m black PUR cable	16 x 0.5 mm² + 3 x 1.0 mm², Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	31	**E11745**
	10 m black PUR cable	16 x 0.5 mm² + 3 x 1.0 mm², Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	31	**E11746**
	15 m black PUR cable	16 x 0.5 mm² + 3 x 1.0 mm², Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	31	**E11747**
	5 m black PUR cable	16 x 0.5 mm² + 3 x 1.0 mm², Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	32	**E11742**
	10 m black PUR cable	16 x 0.5 mm² + 3 x 1.0 mm², Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	32	**E11743**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 31 · Socket M23, 19-pole, 19-wire · Wiring diagram no. 34									
	15 m black PUR cable	16 x 0.5 mm² + 3 x 1.0 mm², Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	32	**E11744**
Group 32 · Wirable socket M23, 19-pole									
	wirable	...1 mm² (Ø 10...14 mm)	Brass	10...30 DC	-25...90	IP 65	–	–	**E10887**
	wirable	...1 mm² (Ø 10...14 mm)	Brass	10...30 DC	-25...90	IP 65	–	–	**E10886**

1/2" sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 33 · socket 1/2", 2-pole + PE, 3-wire · Wiring diagram no. 25									
	2 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	33	**E10190**
	5 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	33	**E10200**
	2 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	34	**E10189**
	5 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	34	**E10191**
	10 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	33	**E10261**
Group 34 · socket 1/2", 5-pole, 4-wire · Wiring diagram no. 26									
	5 m black PUR cable	4 x 0.34 mm², Ø 4.7 mm	TPU / Brass	300 AC	-25...90	IP 67	–	35	**E11248**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.7 mm	TPU / Brass	300 AC	-25...90	IP 67	–	35	**E11249**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.7 mm	TPU / Brass	300 AC	-25...90	IP 67	–	36	**E11250**

You can find wiring diagrams and scale drawings from page 780

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 34 · socket 1/2", 5-pole, 4-wire · Wiring diagram no. 26									
	10 m black PUR cable	4 x 0.34 mm², Ø 4.7 mm	TPU / Brass	300 AC	-25...90	IP 67	–	36	**E11251**

7/8" sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 35 · socket 7/8", 2-pole + PE, 3-wire									
	2 m black PVC cable	3 x 0.75 mm², Ø 5.2 mm	TPU / diecast zinc	250 AC	-40...80	IP 68	–	37	**E20428**
Group 36 · socket 7/8", 3-pole, 3-wire									
	2 m black PVC cable	3 x 0.5 mm², Ø 5.4 mm	TPU	10...30 DC	-40...80	IP 68	–	37	**E20430**

DIN sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 37 · socket DIN A (DIN EN 175301-803) · Wiring diagram no. 27									
	wirable	...1.5 mm² (Ø 6...8 mm)	PA	45 AC 70 DC	-40...125	IP 65	–	38	**E10058**

RD24 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 38 · socket Rd24, 6-pole + PE · Wiring diagram no. 28									
	wirable	...2.5 mm² (Ø 10...12 mm)	PBT	250 AC 300 DC	-40...100	IP 67	–	39	**E70142**
	wirable	...2.5 mm² (Ø 6...8 mm)	PBT / PA	250 AC 300 DC	-40...100	IP 67	–	40	**E11043**

Connectors weld slag resistant

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 137 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	2 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVW004**
	5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVW005**
	10 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVW006**
	2 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVW001**
	5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVW002**
	10 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVW003**
Group 138 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9									
	2 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	**EVW007**
	5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	**EVW008**
	10 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	**EVW009**
Group 139 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 29									
	2 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	**EVW167**
	5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	**EVW168**
	10 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	**EVW169**

You can find wiring diagrams and scale drawings from page 780

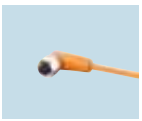
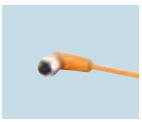
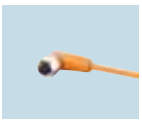
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 140 · Socket M12, 5/4-pole, 5-wire · Wiring diagram no. 11									
	2 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVW013**
	5 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVW014**
	10 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVW015**
Group 141 · Socket M12, 5/4-pole, 5-wire · Wiring diagram no. 11									
	2 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVW010**
	5 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVW011**
	10 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVW012**

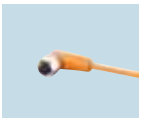
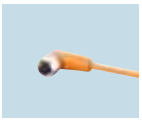
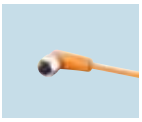
Connectors for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 145 · Socket M8, 3-pole, 3-wire · Wiring diagram no. 1									
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	41	**EVT122**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	41	**EVT123**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	41	**EVT124**
	25 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	41	**EVT125**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	42	**EVT126**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	42	**EVT127**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 145 · Socket M8, 3-pole, 3-wire · Wiring diagram no. 1									
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	42	**EVT128**
	25 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	42	**EVT129**
Group 146 · Socket M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	43	**EVT130**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	43	**EVT131**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	43	**EVT132**
	25 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	43	**EVT133**
Group 147 · Socket M8, 4-pole, 4-wire · Wiring diagram no. 4									
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT134**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT135**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT136**
	25 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT137**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	45	**EVT138**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	45	**EVT139**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	45	**EVT140**
	25 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	45	**EVT141**

You can find wiring diagrams and scale drawings from page 780

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 148 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT067**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT004**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT005**
	25 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT006**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT064**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT001**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT002**
	25 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT003**
Group 149 · Wirable socket M12, 4-pole · Wiring diagram no. 5									
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...85	IP 67	–	48	**E11862**
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...90	IP 67	–	49	**E11861**
Group 150 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9									
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	**EVT069**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	**EVT007**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	**EVT008**
	25 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	**EVT009**

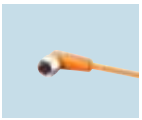
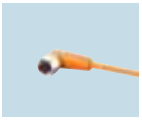
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 151 · Wirable socket M12, 5/4-pole, LED, PNP · Wiring diagram no. 30									
	wirable	...0.75 mm² (Ø 4...6 mm)	PBT / high-grade st. steel	10...30 DC	-25...85	IP 67 / IP 69K	green / yellow	51	**E11863**
Group 152 · Socket M12, 5-pole, 5-wire · Wiring diagram no. 11									
	5 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT013**
	10 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT014**
	25 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT015**
	5 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT010**
	10 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT011**
	25 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT012**
Group 153 · Socket M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 4									
	5 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF001**
	10 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF002**
	25 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF003**
	5 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF004**
	10 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF005**
	25 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF006**

You can find wiring diagrams and scale drawings from page 780

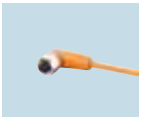
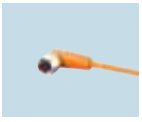
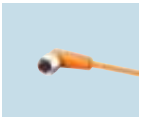
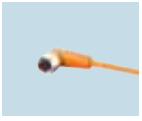
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 154 · Socket M12, 5/4-pole, 4-wire, LED, PNP · halogen-free · Wiring diagram no. 9									
	5 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	**EVF007**
	10 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	**EVF008**
	25 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	**EVF009**
Group 155 · Socket M12, 5-pole, 5-wire · halogen-free · Wiring diagram no. 11									
	5 m grey MPPE cable	5 x 0.34 mm², Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF010**
	10 m grey MPPE cable	5 x 0.34 mm², Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF011**
	25 m grey MPPE cable	5 x 0.34 mm², Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF012**
	5 m grey MPPE cable	5 x 0.34 mm², Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF013**
	10 m grey MPPE cable	5 x 0.34 mm², Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF014**
	25 m grey MPPE cable	5 x 0.34 mm², Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF015**

M12 cable sockets for hygienic and wet areas with screen

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 184 · Socket M12, screened, screen not connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 18									
	2 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT381**
	5 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT382**
	10 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT383**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 184 · Socket M12, screened, screen not connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 18									
	25 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT384**
	2 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT385**
	5 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT386**
	10 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT387**
	25 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT388**
Group 186 · Socket M12, screened, screen not connected to the socket, 5-pole, 5-wire · Wiring diagram no. 19									
	2 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT389**
	5 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT390**
	10 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT391**
	25 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT392**
	2 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT393**
	5 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT394**
	10 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT395**
	25 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT396**
Group 188 · Socket M12, screened, screen connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 20									
	2 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT397**

You can find wiring diagrams and scale drawings from page 780

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 188 · Socket M12, screened, screen connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 20									
	5 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT398**
	10 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT399**
	25 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT400**
	2 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT401**
	5 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT402**
	10 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT403**
	25 m orange PVC cable	4 x 0.34 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT404**
Group 190 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 29									
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	52	**EVT461**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	52	**EVT462**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	52	**EVT463**
	25 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	52	**EVT464**
Group 192 · Socket M12, screened, screen connected to the socket, 5-pole, 5-wire · Wiring diagram no. 21									
	2 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT405**
	5 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT406**
	10 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT407**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 192 · Socket M12, screened, screen connected to the socket, 5-pole, 5-wire · Wiring diagram no. 21									
	25 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT408**
	2 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT409**
	5 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT410**
	10 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT411**
	25 m orange PVC cable	5 x 0.25 mm², Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT412**
Group 193 · Socket M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 4									
	2 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF480**
	5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF481**
	10 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF482**
	20 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF483**
	50 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVF484**
	2 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF485**
	5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF486**
	10 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF487**
	20 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF488**

You can find wiring diagrams and scale drawings from page 780

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 193 · Socket M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 4									
	50 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVF489**
Group 194 · Wirable socket M12, 5-pole · Wiring diagram no. 10									
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / high-grade st. steel	60 AC/DC	-25...85	IP 67	–	53	**E11865**
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...90	IP 67	–	54	**E11864**

Connectors for hazardous areas

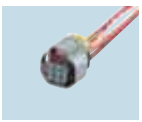
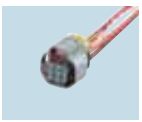
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 195 · Socket M12, 5/4 poles, 4 wires, cat. 1D / 1G · Wiring diagram no. 4									
	2 m blue PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	**ENC04A**
	5 m blue PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	**ENC05A**
	10 m blue PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	**ENC06A**
	2 m blue PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	**ENC01A**
	5 m blue PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	**ENC02A**
	10 m blue PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	**ENC03A**
Group 196 · Socket M12, 5/4 poles, 4 wires, cat. 2D / 3G · Wiring diagram no. 4									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	55	**EVC04A**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	55	**EVC05A**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	55	**EVC06A**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 196 · Socket M12, 5/4 poles, 4 wires, cat. 2D / 3G · Wiring diagram no. 4									
	25 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	55	**EVC14A**
Group 197 · socket M12, 5 poles, 5 wires, cat. 1D / 1G · Wiring diagram no. 11									
	2 m blue PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	**ENC10A**
	5 m blue PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	**ENC11A**
	10 m blue PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	**ENC12A**
	25 m blue PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	**ENC13A**
	50 m blue PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	**ENC14A**
	2 m blue PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	**ENC07A**
	5 m blue PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	**ENC08A**
	10 m blue PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	**ENC09A**

Connectors for robust applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 199 · Socket DEUTSCH Stecker DT, 6-pole, 2-wire · Wiring diagram no. 31									
	1 m black PUR cable	2 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	**E12549**
	2 m black PUR cable	2 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	**E12550**
	5 m black PUR cable	2 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	**E12551**

You can find wiring diagrams and scale drawings from page 780

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 200 · Socket DEUTSCH Stecker DT, 6-pole, 2-wire · Wiring diagram no. 32									
	1 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	**E12543**
	2 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	**E12544**
	5 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	**E12545**
Group 201 · Socket AMP, 6-wire · Wiring diagram no. 33									
	2 m black PVC cable	4 x 2.5 mm² (Ø 2.8 mm) + 2 x 0.5 mm² (Ø 1.5 mm)	PBT	12...24 DC	-40...100	–	–	57	**E12565**
	5 m black PVC cable	4 x 2.5 mm² (Ø 2.8 mm) + 2 x 0.5 mm² (Ø 1.5 mm)	PBT	12...24 DC	-40...100	–	–	57	**E12566**
Group 202 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVM004**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVM005**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVM006**
	25 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVM012**
	50 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVM010**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVM001**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVM002**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVM003**
	25 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVM014**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 203 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVM007**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVM008**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVM009**
Group 204 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 29									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	60	**EVM068**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	60	**EVM069**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	60	**EVM070**
Group 205 · Socket M12, 5-pole, 5-wire · Wiring diagram no. 11									
	2 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVM036**
	5 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVM037**
	10 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVM038**
	2 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	50 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVM039**
	5 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	50 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVM040**
	10 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	50 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVM041**

You can find wiring diagrams and scale drawings from page 780

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GN/YE	green/yellow
GY	grey
GN	green
YE	yellow
PK	pink
screen	Screen
OG	orange
VT	purple
RD	red
GY/PK	GY/PK
RD/BU	RD/BU
RD/BK	red/black
RD/WH	red/white

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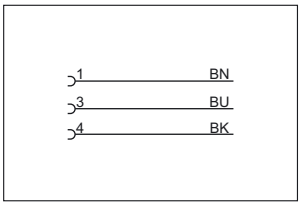

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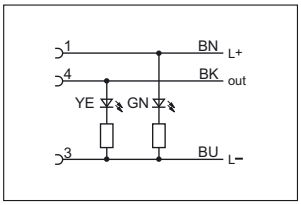

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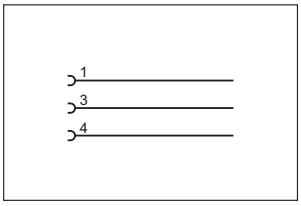

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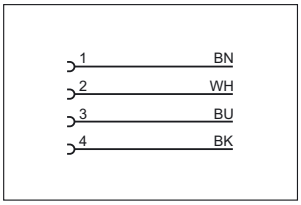

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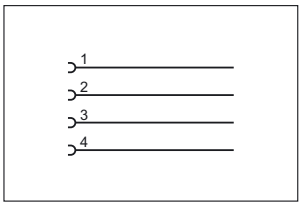

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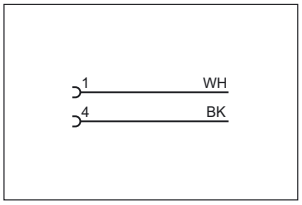

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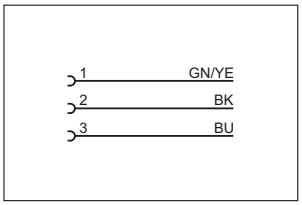

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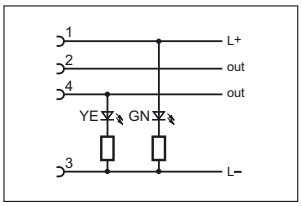

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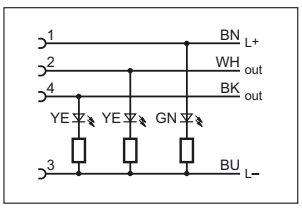

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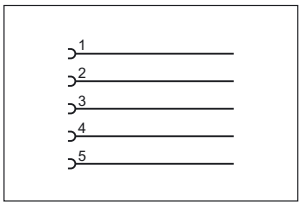

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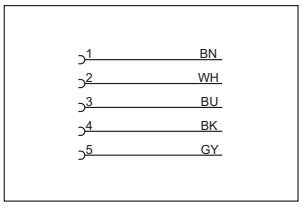

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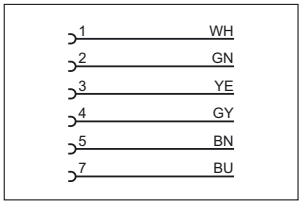

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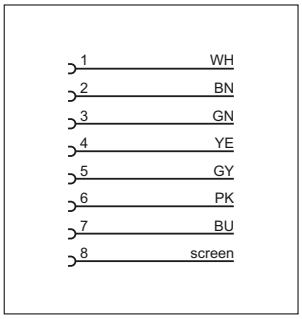

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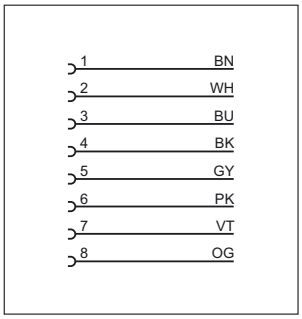

Colours to DIN EN 60947-5-2

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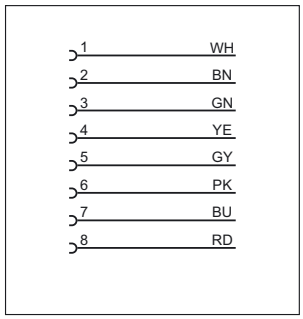

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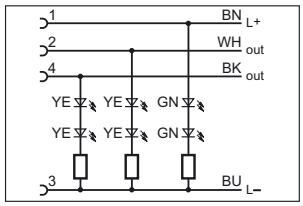

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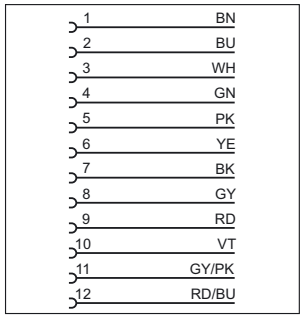

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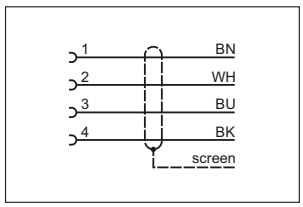

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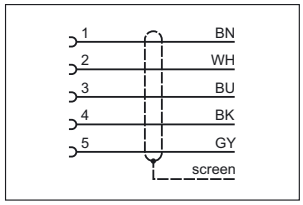

Product selectors and further information can be found at: www.ifm.com

Wiring diagrams

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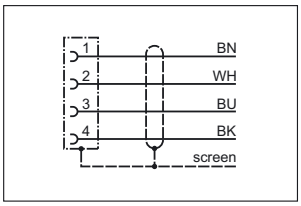

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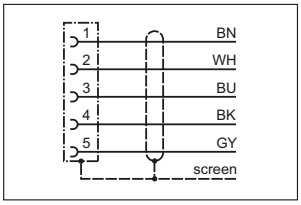

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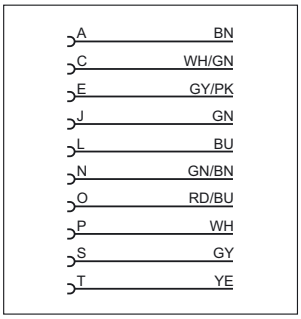

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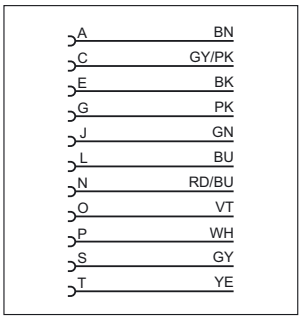

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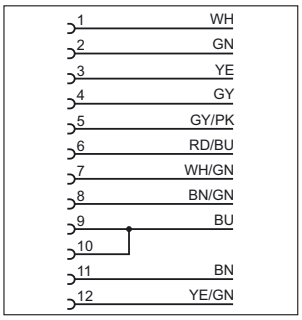

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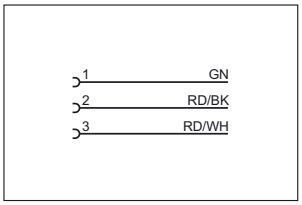

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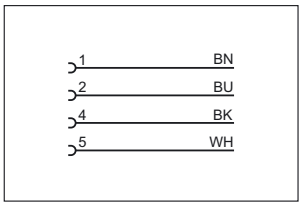

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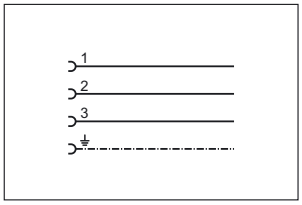

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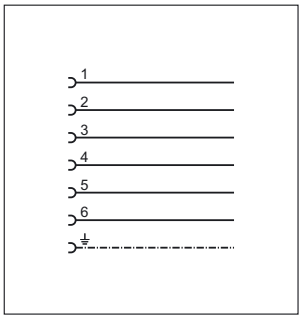

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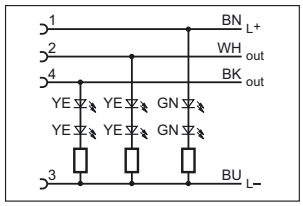

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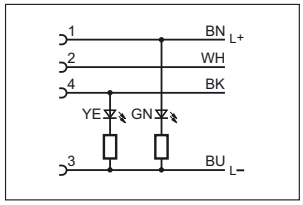

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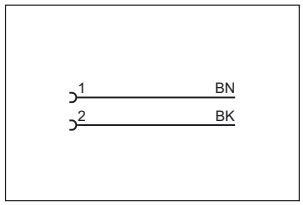

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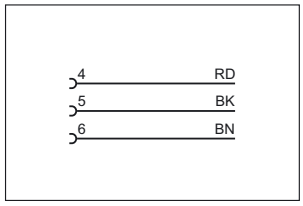

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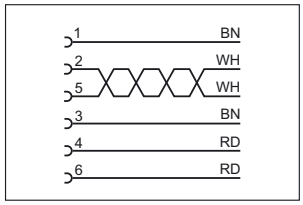

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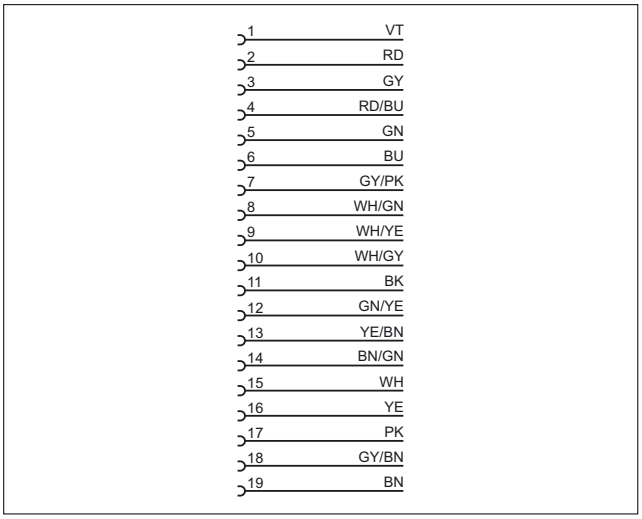

Scale drawings / drawing no. – CAD download: www.ifm.com

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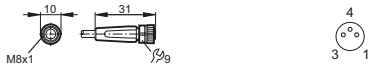

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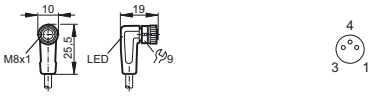

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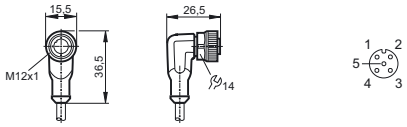

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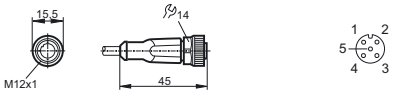

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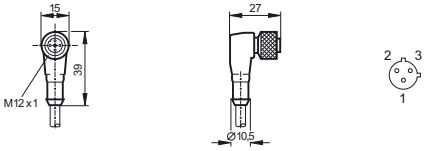

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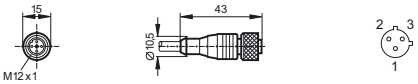

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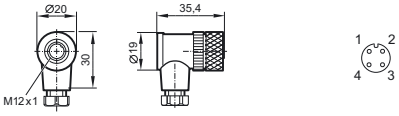

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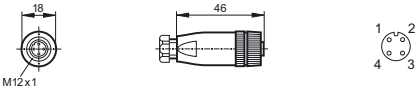

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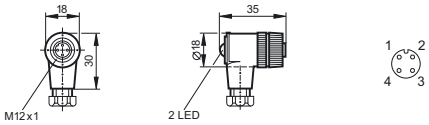

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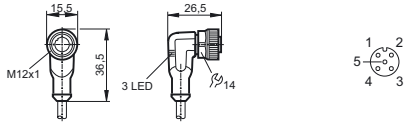

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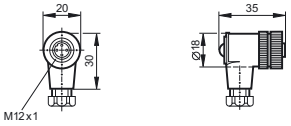

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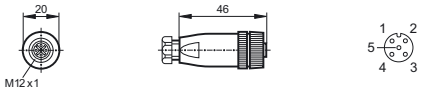

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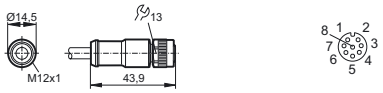

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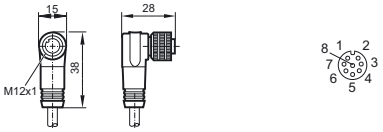

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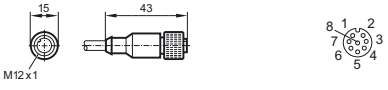

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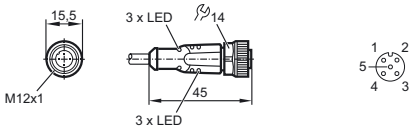

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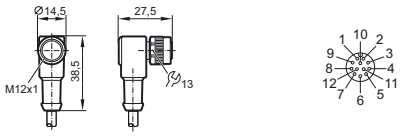

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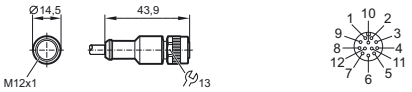

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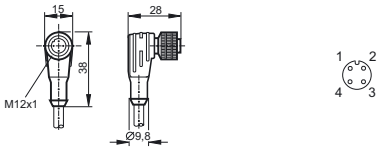

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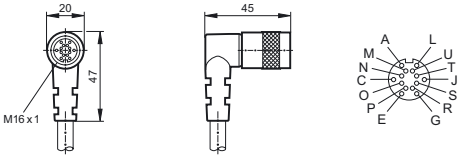

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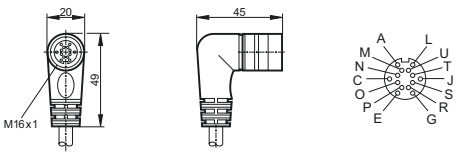

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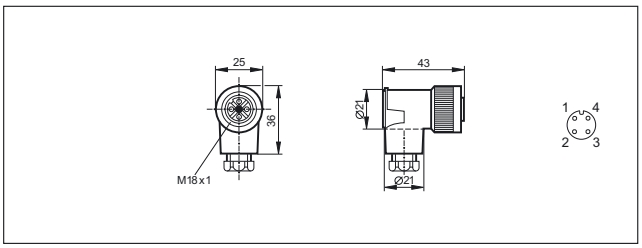

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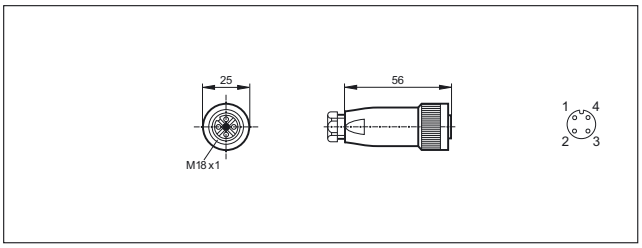

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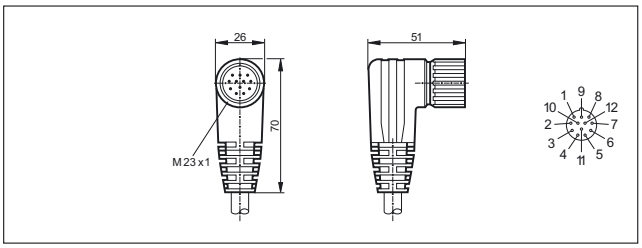

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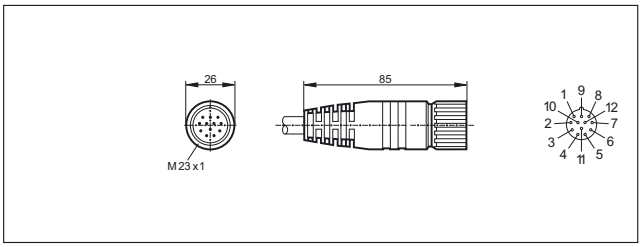

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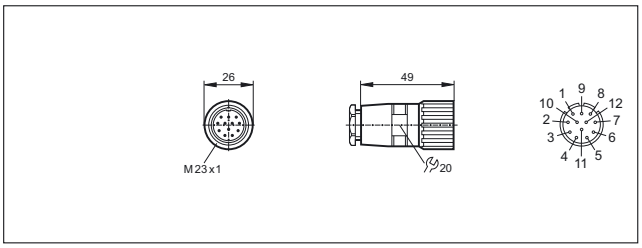

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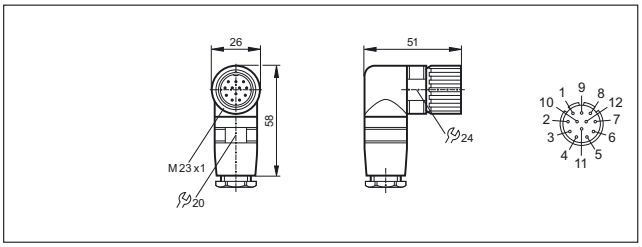

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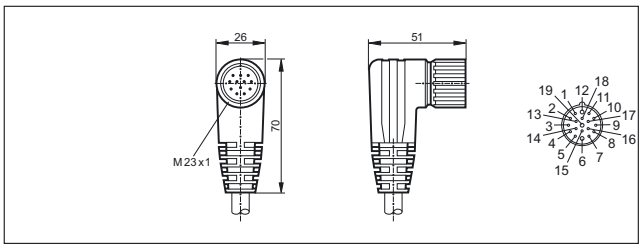

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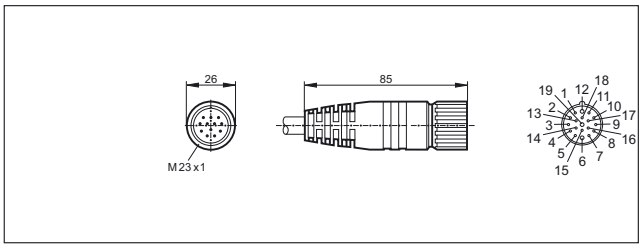

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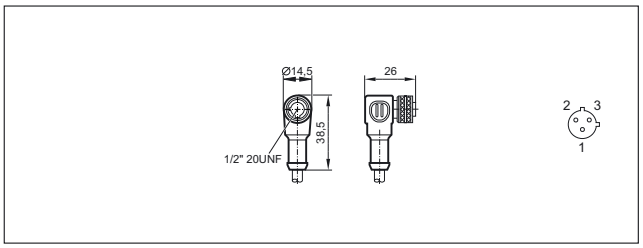

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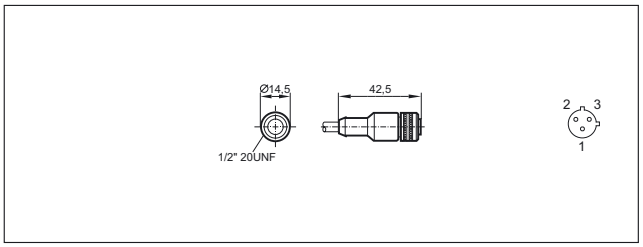

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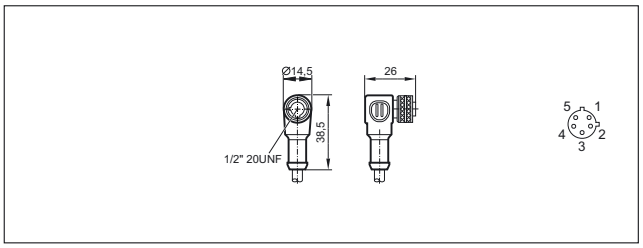

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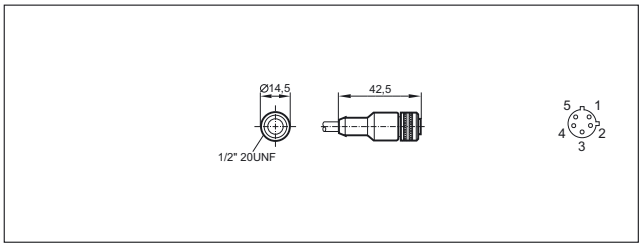

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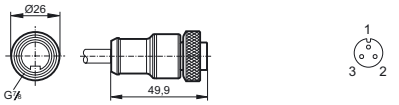

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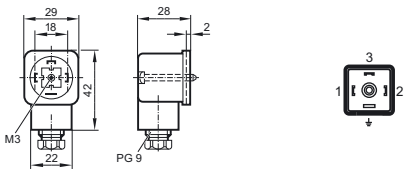

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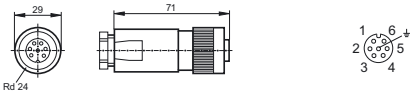

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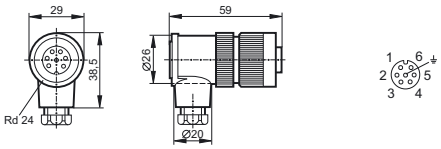

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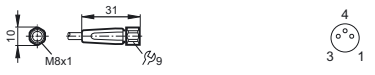

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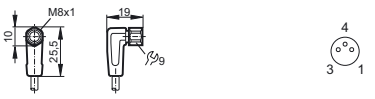

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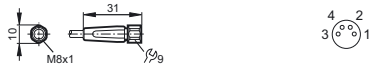

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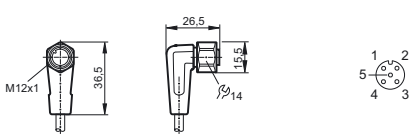

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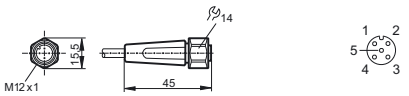

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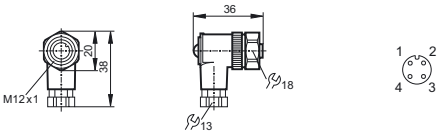

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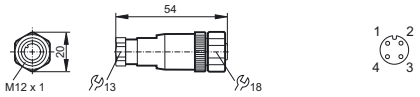

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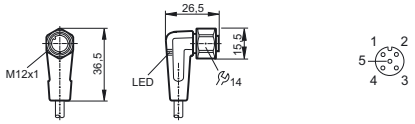

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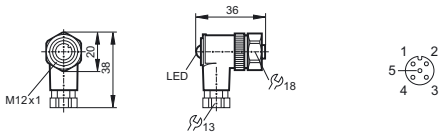

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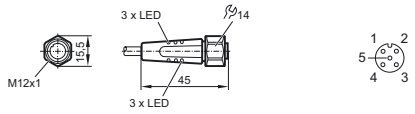

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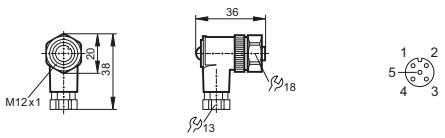

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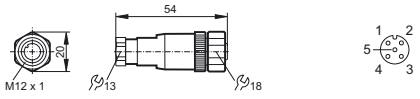

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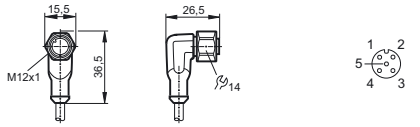

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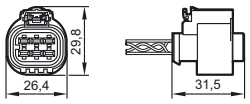

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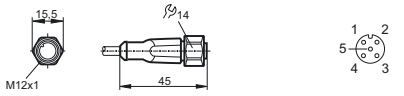

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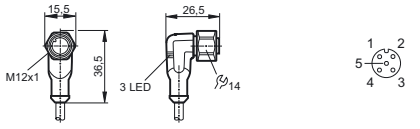

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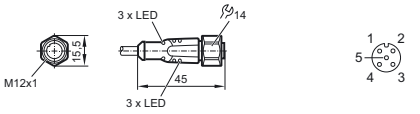


Plugs

Plugs are mainly used for the connection to splitter boxes and modules. High-quality pin contacts and materials ensure reliable electrical connections.
In addition to a wide range of standard products ifm also offers versions without silicone and halogen, versions for hygienic areas, for applications in contact with coolants and lubricants, as well as for welding applications.

System overview

	Page
M8 cable plugs for industrial applications	*788*
M12 cable plugs for industrial applications	*788 - 789*
Connectors for hygienic and wet areas	*789 - 790*
Wiring diagrams	*791*
Scale drawings / drawing no. – CAD download: www.ifm.com	*791 - 792*

M8 cable plugs for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 39 · Wirable plug M8, 3-pole · Wiring diagram no. 1									
	wirable	–	PA / Brass	50 V AC 75 V DC	-25...90	IP 68	–	–	**E11550**
Group 40 · Wirable plug M8, 4-pole · Wiring diagram no. 2									
	wirable	–	PA / Brass	60 AC 75 DC	-25...90	IP 68	–	–	**E11551**

M12 cable plugs for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 41 · Cable plug M12, 4-pole, 4-wire · Wiring diagram no. 3									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC079**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC080**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 41 · Cable plug M12, 4-pole, 4-wire · Wiring diagram no. 3									
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC081**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC076**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC077**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC078**
Group 42 · Wirable plug M12, 4-pole · Wiring diagram no. 2									
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / Brass	250 AC/DC	-25...85	IP 68	–	3	**E11505**
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	4	**E11504**
Group 43 · Cable plug M12, 5-pole, 5-wire · Wiring diagram no. 4									
	2 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVC095**
	2 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC094**
Group 44 · Wirable plug M12, 5-pole · Wiring diagram no. 5									
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / Brass	125 AC/DC	-25...85	IP 68	–	7	**E11507**
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	8	**E11506**

Connectors for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 156 · Cable plug M12, 4-pole, 4-wire · Wiring diagram no. 3									
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	9	**EVT071**

You can find wiring diagrams and scale drawings from page 791

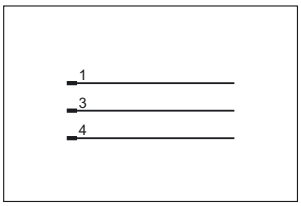
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 156 · Cable plug M12, 4-pole, 4-wire · Wiring diagram no. 3									
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	9	**EVT072**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	9	**EVT073**
Group 157 · Cable plug M12, 4-pole, 4-wire · halogen-free · Wiring diagram no. 6									
	2 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVF518**
	5 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVF519**
	10 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVF520**
	20 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVF521**
	50 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVF522**
Group 158 · Wirable plug M12, 4-pole · Wiring diagram no. 2									
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...85	IP 67	–	11	**E11858**
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...85	IP 67	–	12	**E11857**
Group 159 · Cable plug M12, 5-pole, 5-wire · Wiring diagram no. 4									
	2 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	13	**EVT074**
Group 160 · Wirable plug M12, 5-pole · Wiring diagram no. 5									
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / high-grade st. steel	60 AC/DC	-25...85	IP 67	–	14	**E11860**
	wirable	...0.75 mm² (Ø 4...6 mm)	PA / high-grade st. steel	125 AC/DC	-25...85	IP 67	–	15	**E11859**

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GY	grey
OG	orange
YE	yellow

1



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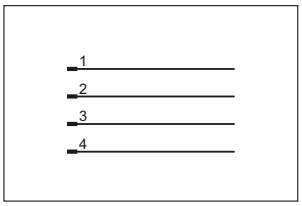

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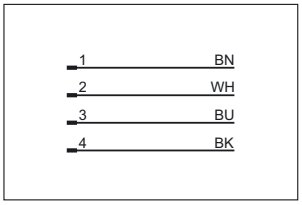

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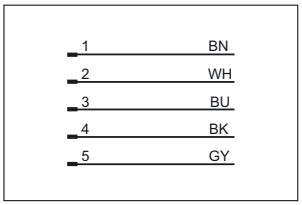

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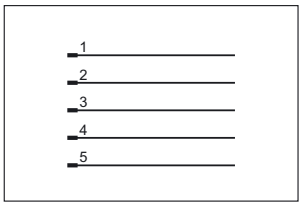

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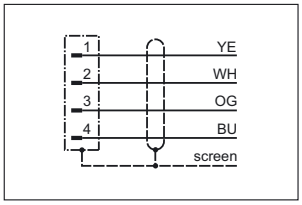

Scale drawings / drawing no. – CAD download: www.ifm.com

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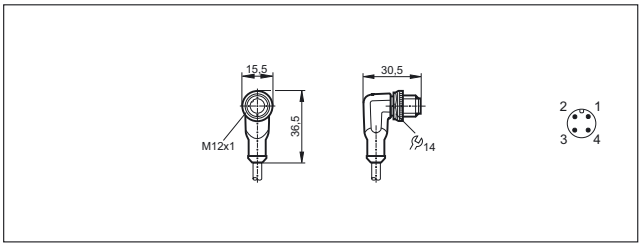

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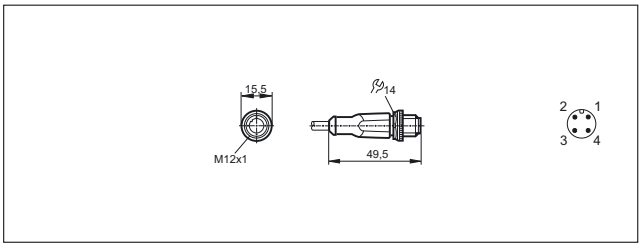

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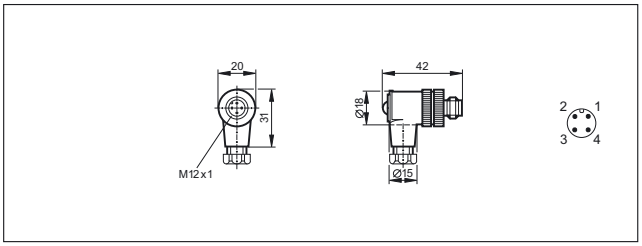

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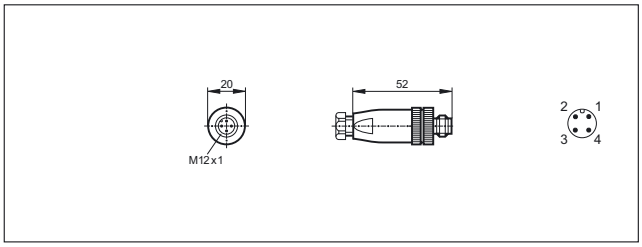

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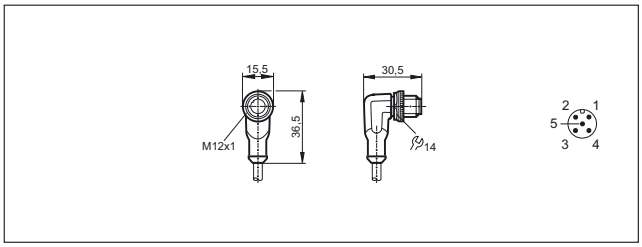

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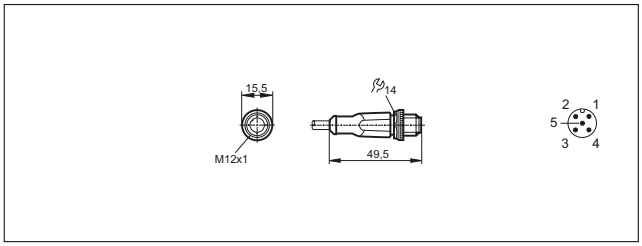

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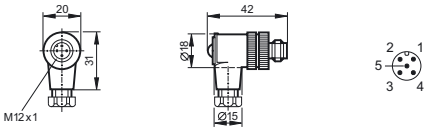

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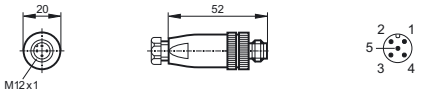

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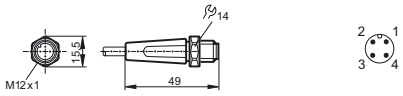

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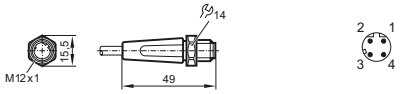

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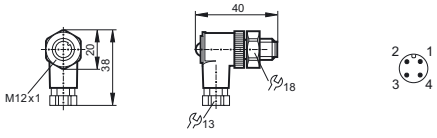

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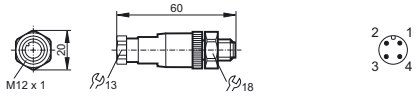

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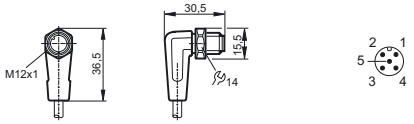

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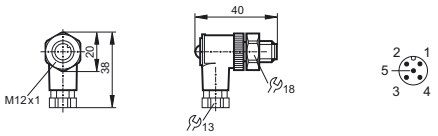

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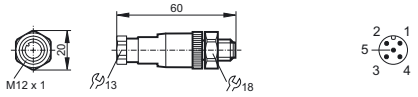

Jumper cables

Connection cables feature a plug and a socket. They are used for the connection of sensors to splitter boxes and modules.

High-quality contacts and materials ensure reliable electrical connections.

In addition to a wide range of standard products ifm also offers versions without silicone and halogen, versions for hygienic areas, for applications in contact with coolants and lubricants, as well as for welding applications.

System overview

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M8 – M8 jumpers for industrial applications	*794 - 797*
M8 socket – M12 plug jumpers for industrial applications	*798 - 800*
M8 plug - M12 socket jumpers for industrial applications	*800 - 802*
M12 – M12 jumpers for industrial applications	*802 - 809*
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Jumpers weld slag resistant	*811 - 813*
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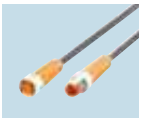
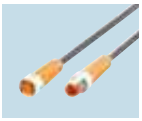
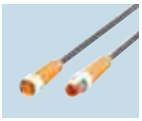
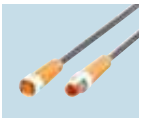
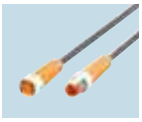
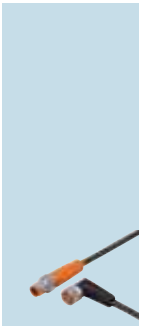
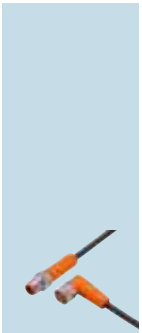
M8 – M8 jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 45 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC275**
	0.6 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC276**
	1 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC277**
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC278**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 45 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC279**
	0.3 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC265**
	0.6 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC266**
	1 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC267**
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC268**
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC269**
Group 46 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	0.3 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	**EVC280**
	0.6 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	**EVC281**
	1 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	**EVC282**
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	**EVC283**
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	**EVC284**
Group 47 · Jumper , plug: M8, 4-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	**EVC305**
	0.6 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	**EVC306**
	1 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	**EVC307**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 47 · Jumper , plug: M8, 4-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	**EVC308**
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	**EVC309**
	0.3 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC315**
	0.6 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC316**
	1 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC317**
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC318**
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC319**
Group 48 · Jumper , plug: M8, 3-pole, socket: M8, 4-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVC260**
	0.6 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVC261**
	1 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVC262**
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVC263**
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVC264**
	0.3 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC270**
	0.6 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC271**
	1 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC272**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 48 · Jumper , plug: M8, 3-pole, socket: M8, 4-pole, 3-wire · Wiring diagram no. 1									
	2 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC273**
	5 m black PUR cable	3 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVC274**
Group 49 · Jumper , plug: M8, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC300**
	0.6 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC301**
	1 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC302**
	2 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC303**
	5 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	**EVC304**
	0.3 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	**EVC310**
	0.6 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	**EVC311**
	1 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	**EVC312**
	2 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	**EVC313**
	5 m black PUR cable	4 x 0.25 mm², Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	**EVC314**

You can find wiring diagrams and scale drawings from page 828

M8 socket – M12 plug jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 50 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	**EVC230**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	**EVC231**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	**EVC232**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	**EVC233**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	**EVC234**
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVC215**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVC216**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVC217**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVC218**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	**EVC219**
Group 51 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	**EVC225**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	**EVC226**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	**EVC227**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	**EVC228**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 51 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	**EVC229**
Group 52 · Jumper , plug: M12, 3-pole, socket: M8, 4-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	**EVC210**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	**EVC211**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	**EVC212**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	**EVC213**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	**EVC214**
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	**EVC220**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	**EVC221**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	**EVC222**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	**EVC223**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	**EVC224**
Group 53 · Jumper , plug: M12, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	**EVC235**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	**EVC236**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	**EVC237**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 53 · Jumper , plug: M12, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	**EVC238**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	**EVC239**
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	**EVC240**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	**EVC241**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	**EVC242**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	**EVC243**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	**EVC244**

M8 plug - M12 socket jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 54 · Jumper , plug: M8, 3-pole, socket: M12, 5/4-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	**EVC245**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	**EVC246**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	**EVC247**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	**EVC248**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	**EVC249**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 55 · Jumper , plug: M8, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	**EVC255**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	**EVC256**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	**EVC257**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	**EVC258**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	**EVC259**
Group 56 · Jumper , plug: M8, 3-pole, socket: M12, 5-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	**EVC250**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	**EVC251**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	**EVC252**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	**EVC253**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	**EVC254**
Group 57 · Jumper , plug: M8, 4-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 3									
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	**EVC285**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	**EVC286**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	**EVC287**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	**EVC288**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 57 · Jumper , plug: M8, 4-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 3									
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	**EVC289**
Group 58 · Jumper , plug: M8, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	**EVC295**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	**EVC296**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	**EVC297**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	**EVC298**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	**EVC299**
Group 59 · Jumper , plug: M8, 4-pole, socket: M12, 5-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	**EVC290**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	**EVC291**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	**EVC292**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	**EVC293**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	**EVC294**

M12 – M12 jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 60 · Jumper , plug: M12, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	**EVC045**

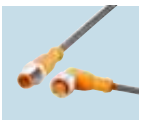
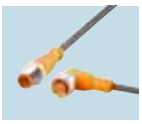
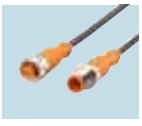
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 60 · Jumper , plug: M12, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1									
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	**EVC046**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	**EVC047**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	**EVC048**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	**EVC049**
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	**EVC040**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	**EVC041**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	**EVC042**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	**EVC043**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	**EVC044**
Group 62 · Jumper , plug: M12, 3-pole, socket: M12, 5-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	0.3 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	**EVC050**
	0.6 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	**EVC051**
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	**EVC052**
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	**EVC053**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	**EVC054**

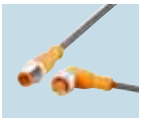
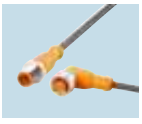
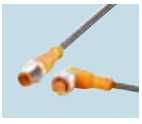
You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 64 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC015**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC016**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC017**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC018**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC019**
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC010**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC011**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC012**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC013**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC014**
Group 66 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	**EVC020**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	**EVC021**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	**EVC022**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	**EVC023**

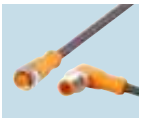
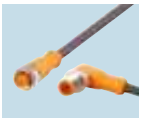
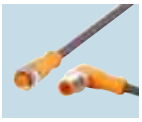
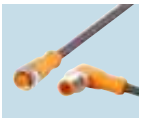
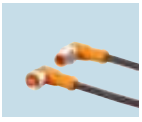
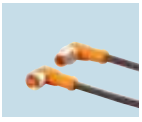
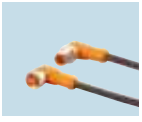
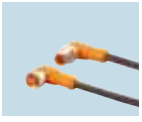
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 66 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	**EVC024**
Group 67 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC025**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC026**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC027**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC028**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC029**
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC030**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC031**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC032**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC033**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC034**
Group 68 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	**EVC035**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	**EVC036**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	**EVC037**

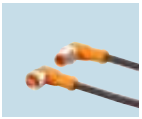
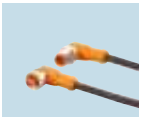
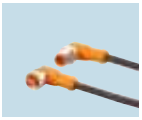
You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 68 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	**EVC038**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	**EVC039**
Group 69 · Jumper , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 5									
	0.3 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVC060**
	0.6 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVC061**
	1 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVC062**
	2 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVC063**
	5 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVC064**
	0.3 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVC055**
	0.6 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVC056**
	1 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVC057**
	2 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVC058**
	5 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVC059**
	0.3 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EVC065**
	0.6 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EVC066**

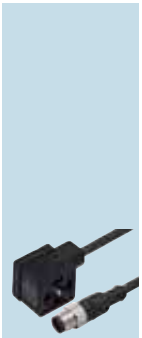
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 69 · Jumper , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 5									
	1 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EVC067**
	2 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EVC068**
	5 m black PUR cable	5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EVC069**
Group 70 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	0.25 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC716**
	0.5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC717**
	1 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC718**
	2 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC719**
	5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC720**
	10 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC721**
	20 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	**EVC722**
	0.25 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC723**
	0.5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC724**
	1 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC725**
	2 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC726**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 70 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC727**
	10 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC728**
	20 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	**EVC729**
	0.25 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC730**
	0.5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC731**
	1 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC732**
	2 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC733**
	5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC734**
	10 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC735**
	20 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	**EVC736**
	0.25 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC737**
	0.5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC738**
	1 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC739**
	2 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC740**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 70 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	5 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC741**
	10 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC742**
	20 m black PUR cable	4 x 1.00 mm², Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	**EVC743**

Valve - plug jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 71 · Jumper , plug: M12, 3-pole, valve plug: Housing A, 4-pole, 3-wire, LED · Wiring diagram no. 6									
	0.3 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	**E11416**
	0.6 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	**E11417**
	1 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	**E11418**
	2 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	**E11419**
	5 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	**E11420**
Group 72 · Jumper , plug: M12, 3-pole, valve plug: Housing B, 3-pole, 3-wire, LED · Wiring diagram no. 7									
	0.3 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	**E11421**
	0.6 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	**E11422**
	1 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	**E11423**
	2 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	**E11424**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 72 · Jumper , plug: M12, 3-pole, valve plug: Housing B, 3-pole, 3-wire, LED · Wiring diagram no. 7									
	5 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	**E11425**
Group 73 · Jumper , plug: M12, 3-pole, valve plug: Housing B (industrial standard), 3-pole, 3-wire, LED · Wiring diagram no. 7									
	0.3 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	**E11431**
	0.6 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	**E11432**
	1 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	**E11433**
	2 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	**E11434**
	5 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	**E11435**
Group 74 · Jumper , plug: M12, 3-pole, valve plug: Housing C, 4-pole, 3-wire, LED · Wiring diagram no. 6									
	0.3 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	**E11426**
	0.6 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	**E11427**
	1 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	**E11428**
	2 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	**E11429**
	5 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	**E11430**
Group 75 · Jumper , plug: M12, 3-pole, valve plug: Housing C (industrial standard), 4-pole, 3-wire, LED · Wiring diagram no. 6									
	0.3 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	**E11436**
	0.6 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	**E11437**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 75 · Jumper , plug: M12, 3-pole, valve plug: Housing C (industrial standard), 4-pole, 3-wire, LED · Wiring diagram no. 6									
	1 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	**E11438**
	2 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	**E11439**
	5 m black PUR cable	3 x 0.5 mm², Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	**E11440**

Jumpers weld slag resistant

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 142 · Jumper , plug: M12, 4-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 3									
	0.3 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	**EVW036**
	0.5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	**EVW022**
	1 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	**EVW030**
	2 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	**EVW031**
	5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	**EVW034**
	10 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	**EVW035**
	0.3 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	**EVW037**
	0.5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	**EVW023**
	1 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	**EVW024**
	2 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	**EVW025**

You can find wiring diagrams and scale drawings from page 828

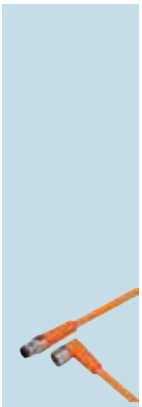
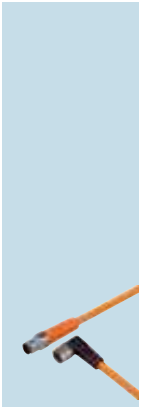
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 142 · Jumper , plug: M12, 4-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 3									
	5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	**EVW028**
	10 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	**EVW029**
Group 143 · Jumper , plug: M12, 5-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 5									
	0.3 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVW054**
	0.6 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVW055**
	1 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVW056**
	2 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVW057**
	5 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVW058**
	10 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EVW059**
	0.3 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVW048**
	0.6 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVW049**
	1 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVW050**
	2 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVW051**
	5 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVW052**
	10 m grey PUR cable	5 x 0.34 mm², Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EVW053**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 144 · Jumper , plug: M12, 4-pole, socket: M12, 5-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	1 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	41	**EVW038**
	2 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	41	**EVW039**
	5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	41	**EVW041**
	10 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	41	**EVW042**
	1 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	**EVW043**
	2 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	**EVW044**
	3 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	**EVW045**
	5 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	**EVW046**
	10 m grey PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	**EVW047**

Jumpers for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 161 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	**EVT142**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	**EVT143**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	**EVT144**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	**EVT145**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 161 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	**EVT146**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	**EVT147**
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT148**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT149**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT150**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT151**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT152**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	**EVT153**
Group 163 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	**EVT154**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	**EVT155**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	**EVT156**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	**EVT157**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	**EVT158**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	**EVT159**

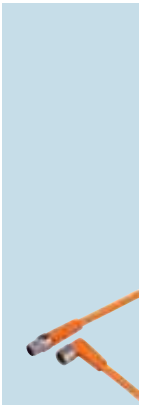
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 165 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT160**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT161**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT162**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT163**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT164**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	**EVT165**
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT166**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT167**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT168**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT169**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT170**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	**EVT171**
Group 166 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	**EVT172**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	**EVT173**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	**EVT174**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 166 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	**EVT175**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	**EVT176**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	**EVT177**
Group 167 · Jumper , plug: M8, 3-pole, socket: M8, 4-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	**EVT279**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	**EVT280**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	**EVT281**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	**EVT203**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	**EVT204**
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	**EVT283**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	**EVT284**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	**EVT285**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	**EVT211**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	**EVT286**
Group 168 · Jumper , plug: M8, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	51	**EVT260**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 168 · Jumper , plug: M8, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1									
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	51	**EVT261**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	51	**EVT262**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	51	**EVT263**
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	**EVT265**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	**EVT266**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	**EVT267**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	**EVT268**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	**EVT269**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	**EVT270**
Group 169 · Jumper , plug: M8, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	**EVT178**
	0.6 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	**EVT179**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	**EVT180**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	**EVT181**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	**EVT182**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	**EVT183**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 169 · Jumper , plug: M8, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	**EVT184**
	0.6 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	**EVT185**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	**EVT186**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	**EVT187**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	**EVT188**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	**EVT189**
	0.3 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVT190**
	0.6 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVT191**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVT192**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVT193**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVT194**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	**EVT195**
	0.3 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	**EVT196**
	0.6 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	**EVT197**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	**EVT198**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 169 · Jumper , plug: M8, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3									
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	**EVT199**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	**EVT200**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	**EVT201**
Group 170 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3									
	0.3 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVF040**
	0.6 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVF041**
	1 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVF042**
	2 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVF043**
	5 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVF044**
	10 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVF045**
	0.3 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF046**
	0.6 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF047**
	1 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF048**
	2 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF049**
	5 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF050**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 170 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3									
	10 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF051**
Group 171 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · halogen-free · Wiring diagram no. 4									
	0.3 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVF052**
	0.6 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVF053**
	1 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVF054**
	2 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVF055**
	5 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVF056**
	10 m grey MPPE cable	4 x 0.34 mm², Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVF057**

Jumpers for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 172 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	**EVT236**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	**EVT237**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	**EVT238**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	**EVT239**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	**EVT240**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 172 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	**EVT242**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	**EVT243**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	**EVT244**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	**EVT245**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	**EVT246**
Group 173 · Jumper , plug: M12, 3-pole, socket: M12, 5/4/3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	**EVT028**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	**EVT029**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	**EVT030**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	**EVT031**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	**EVT032**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	**EVT033**
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	**EVT022**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	**EVT023**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	**EVT024**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	**EVT025**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 173 · Jumper , plug: M12, 3-pole, socket: M12, 5/4/3-pole, 3-wire · Wiring diagram no. 1									
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	**EVT026**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	**EVT027**
Group 174 · Jumper , plug: M12, 3-pole, socket: M12, 5/4/3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	**EVT034**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	**EVT035**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	**EVT036**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	**EVT037**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	**EVT038**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	**EVT039**
Group 175 · Jumper , plug: M12, 3-pole, socket: M12, 5/4/3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	**EVT079**
	0.6 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	**EVT110**
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	**EVT111**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	**EVT112**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	**EVT113**
	10 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	**EVT114**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 176 · Jumper , plug: M12, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	**EVT248**
	0.6 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	**EVT249**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	**EVT250**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	**EVT251**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	**EVT290**
	0.3 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	**EVT253**
	0.6 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	**EVT254**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	**EVT255**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	**EVT256**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	**EVT257**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	**EVT258**
Group 177 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVT046**
	0.6 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVT047**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVT048**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVT049**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 177 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVT050**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVT051**
	0.3 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVT040**
	0.6 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVT041**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVT042**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVT043**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVT044**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVT045**
Group 178 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	0.3 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVT052**
	0.6 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVT053**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVT054**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVT055**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVT056**
	10 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	**EVT057**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 179 · Jumper , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 5									
	0.3 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	**EVT058**
	0.6 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	**EVT059**
	1 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	**EVT060**
	2 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	**EVT061**
	5 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	**EVT062**
	10 m orange PVC cable	5 x 0.34 mm², Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	**EVT063**
Group 180 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3									
	0.25 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	**EVF490**
Group 181 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 8									
	0.5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	**EVF491**
	1 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	**EVF492**
	2 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	**EVF493**
	5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	**EVF494**
	10 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	**EVF495**
	20 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	**EVF496**

You can find wiring diagrams and scale drawings from page 828

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 182 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3									
	0.25 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF497**
	0.5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF498**
	1 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF499**
	2 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF500**
	5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF501**
	10 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF502**
	20 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	**EVF503**
	0.25 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	**EVF504**
	0.5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	**EVF505**
	1 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	**EVF506**
	2 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	**EVF507**
	5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	**EVF508**
	10 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	**EVF509**
	20 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	**EVF510**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 182 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3									
	0.25 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	**EVF511**
	0.5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	**EVF512**
	1 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	**EVF513**
	2 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	**EVF514**
	5 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	**EVF515**
	10 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	**EVF516**
	20 m grey MPPE cable	4 x 1.00 mm², Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	**EVF517**
Group 183 · Jumper , plug: M12, 4-pole, 4-wire · halogen-free · Wiring diagram no. 9									
	0.25 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	**EVF528**
	0.5 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	**EVF529**
	1 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	**EVF530**
	2 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	**EVF531**
	5 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	**EVF532**
	10 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	**EVF533**
	20 m grey MPPE cable	4 x 0.34 mm², Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	**EVF534**

You can find wiring diagrams and scale drawings from page 828

Jumpers for hazardous areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 198 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	**EVC09A**
	0.6 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	**EVC10A**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	**EVC11A**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	**EVC07A**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	**EVC12A**
	10 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	**EVC13A**

Wiring diagrams

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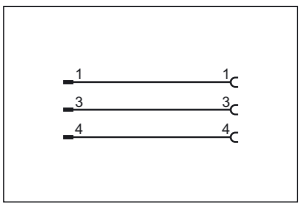

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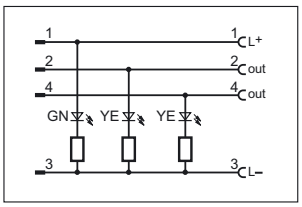

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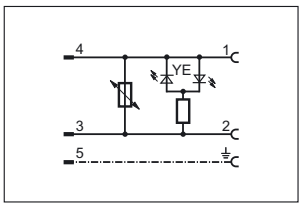

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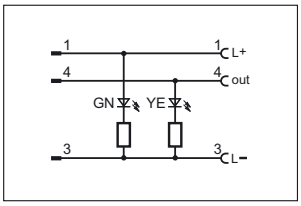

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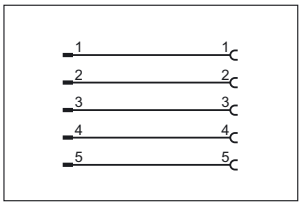

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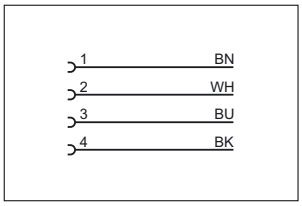

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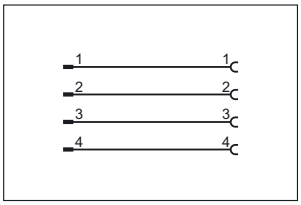

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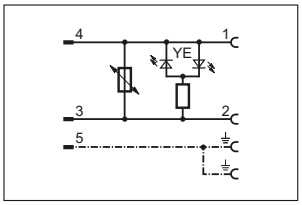

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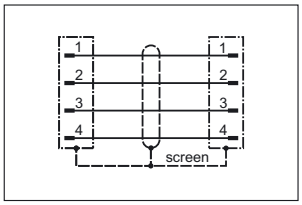

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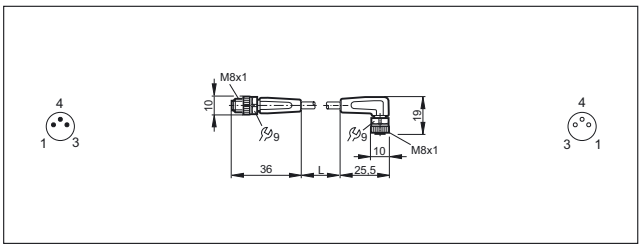

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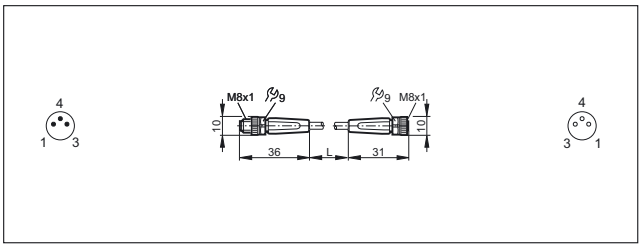

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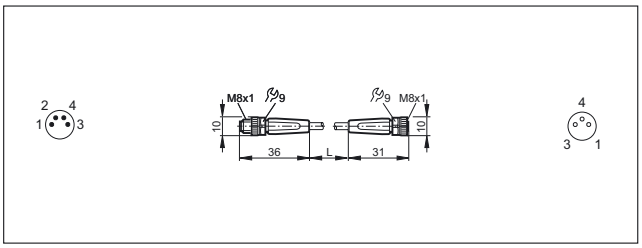

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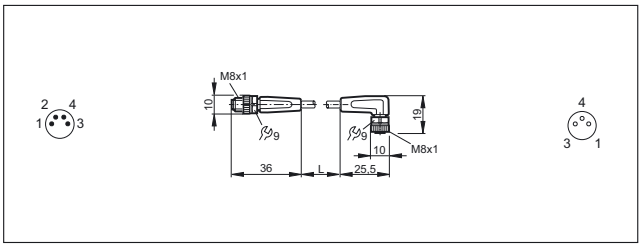

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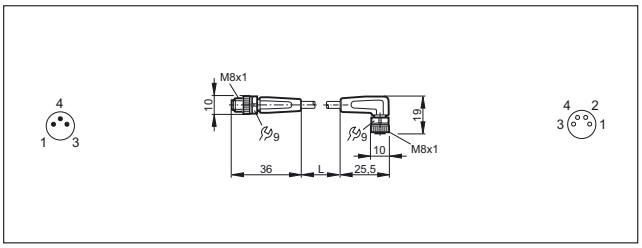

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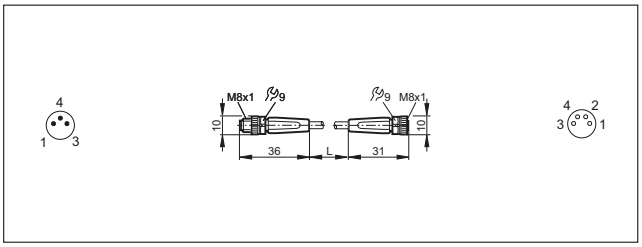

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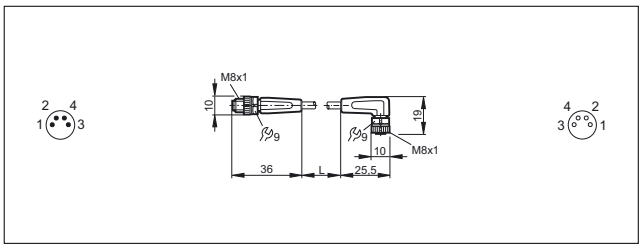

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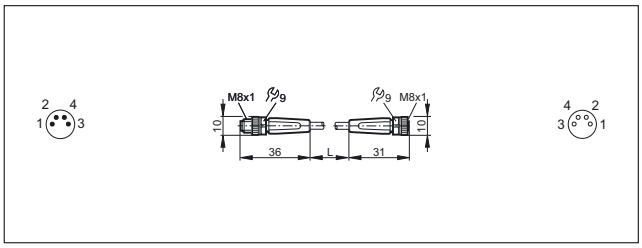

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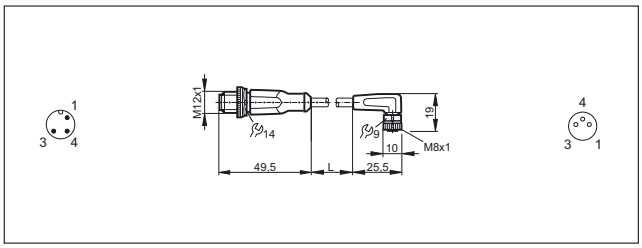

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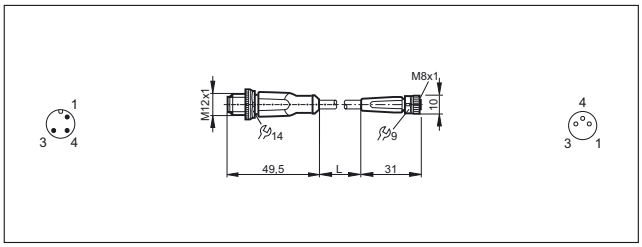

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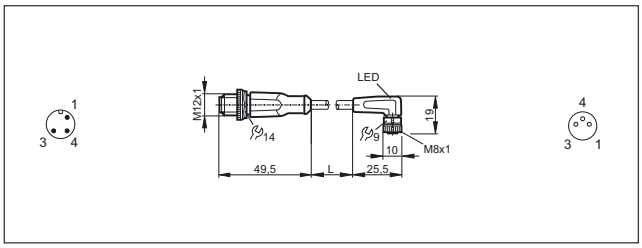

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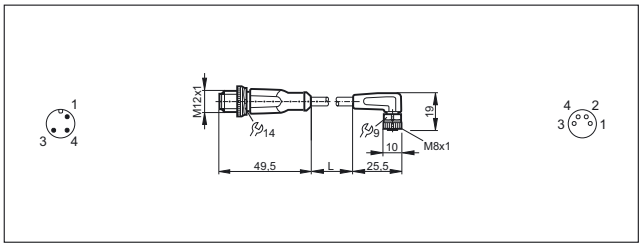

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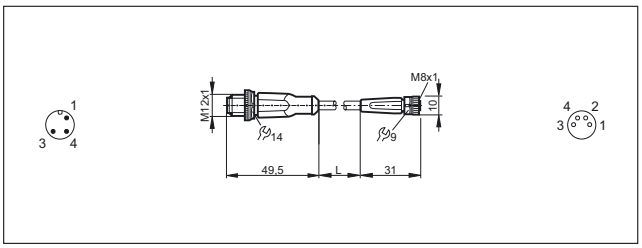

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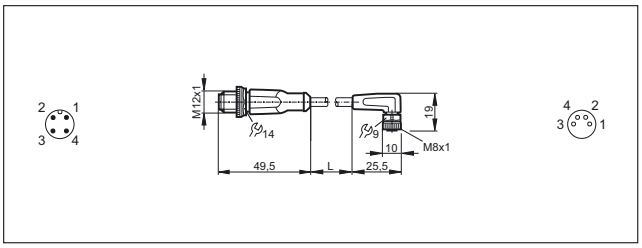

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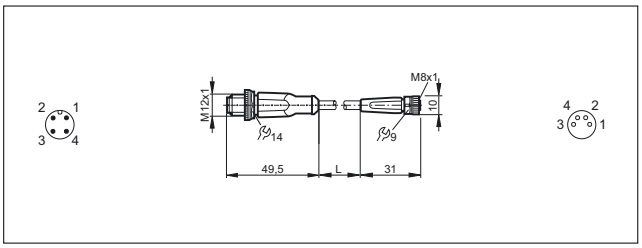

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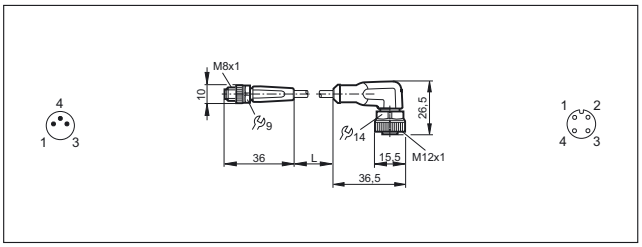

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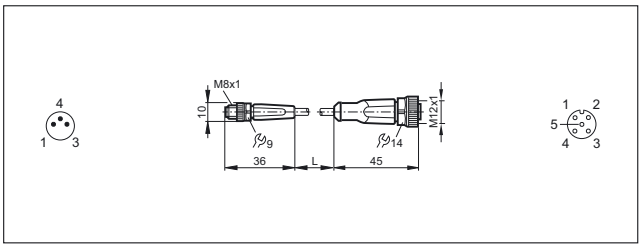

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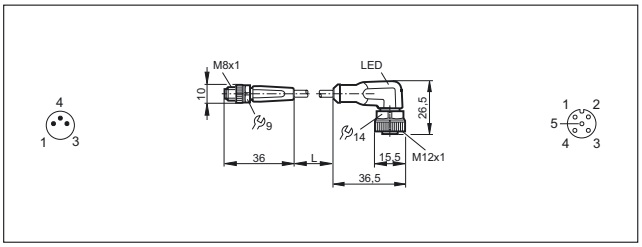

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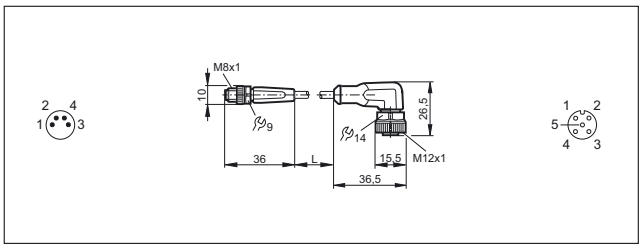

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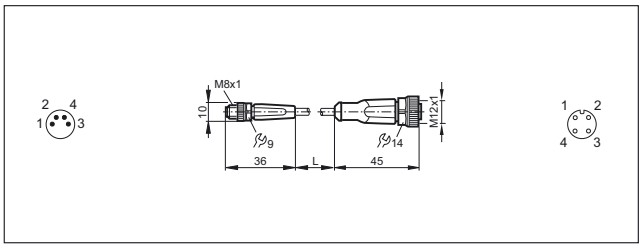

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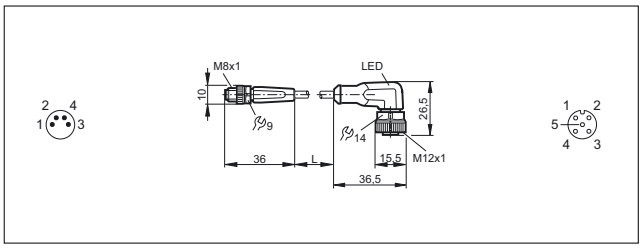

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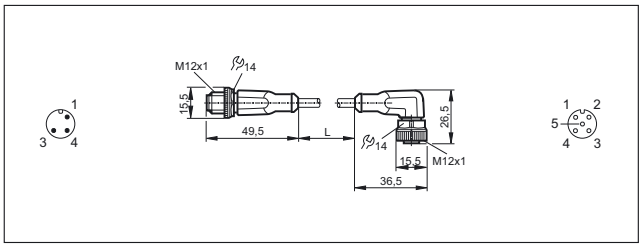

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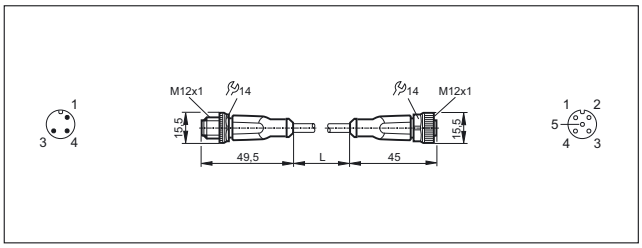

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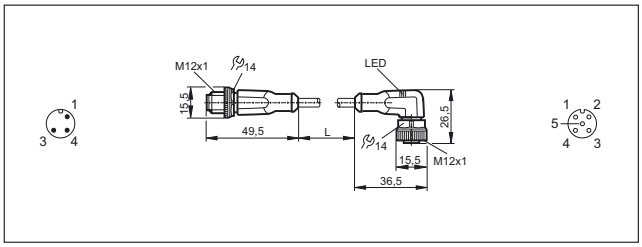

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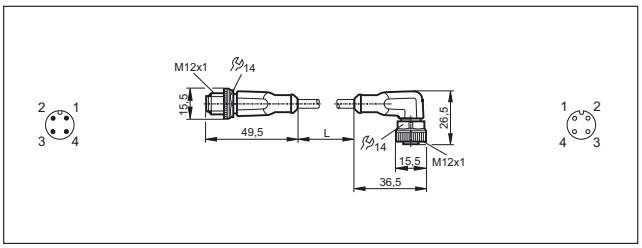

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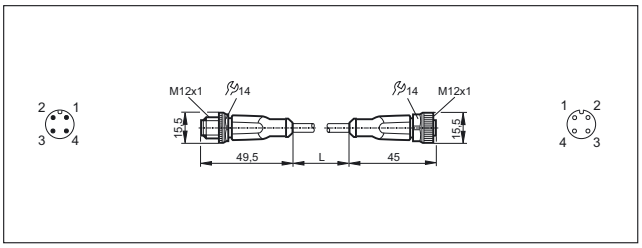

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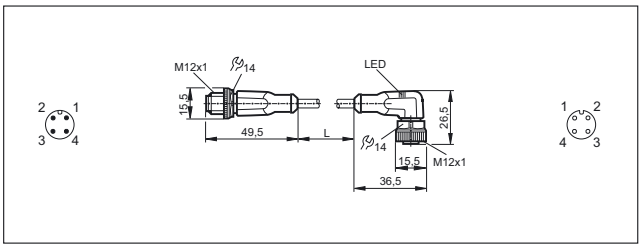

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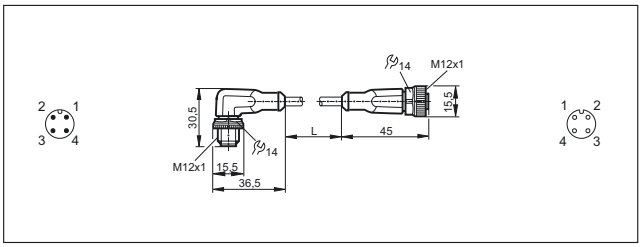

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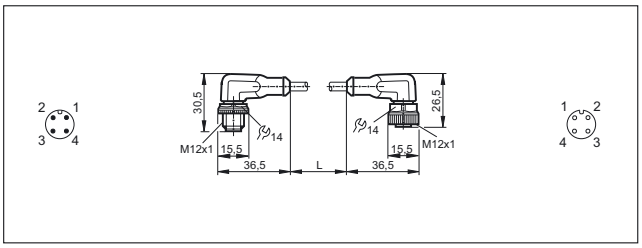

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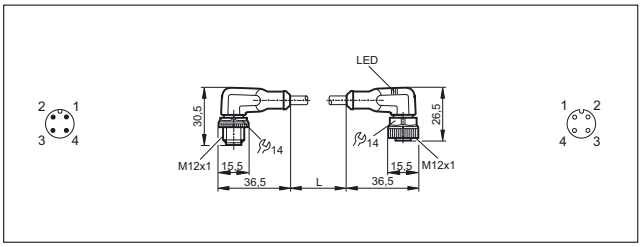

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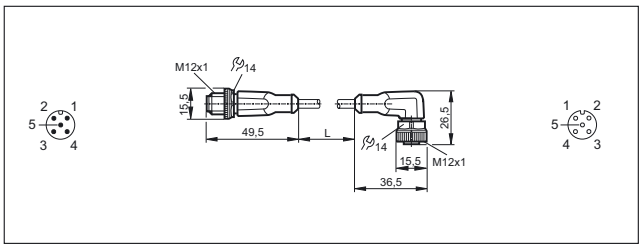

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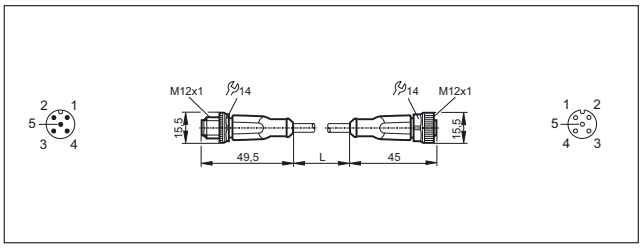

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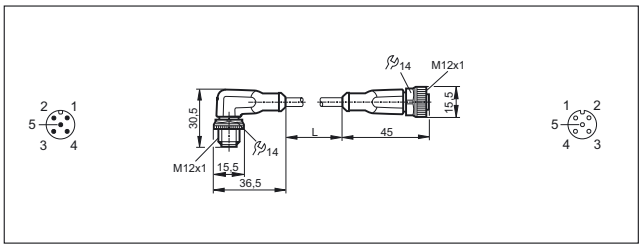

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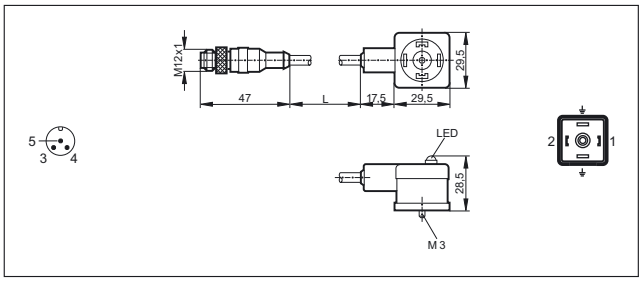

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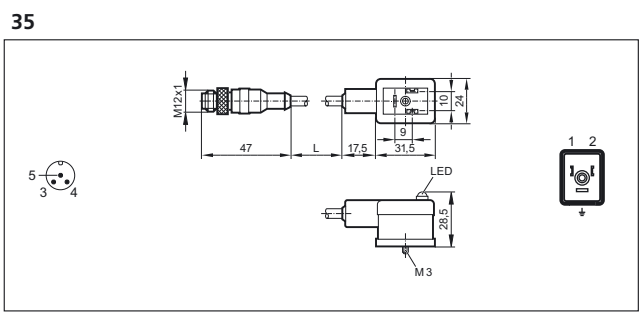

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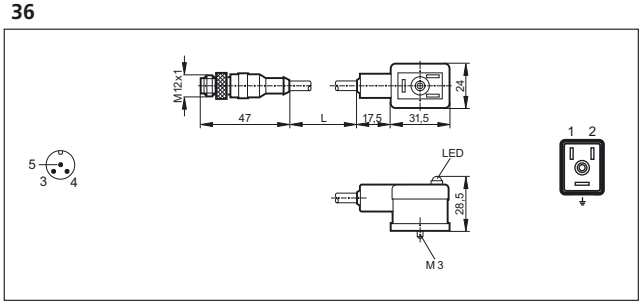

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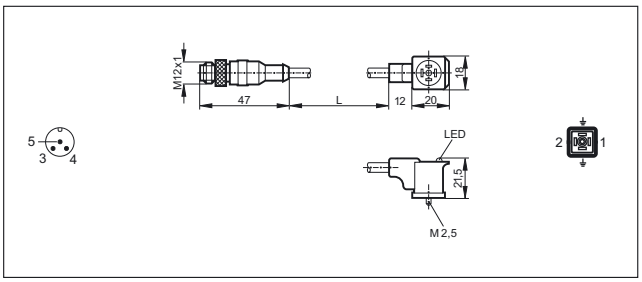

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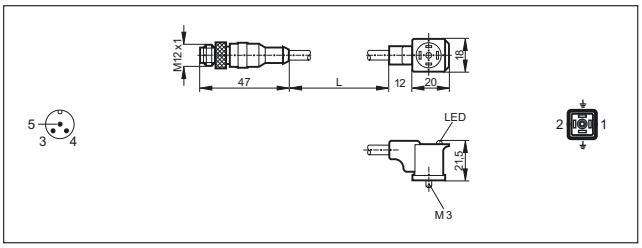

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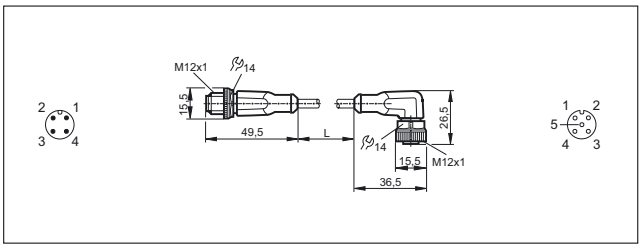

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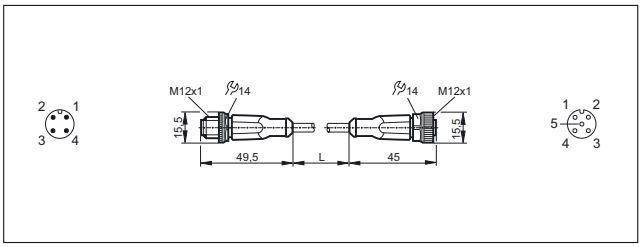

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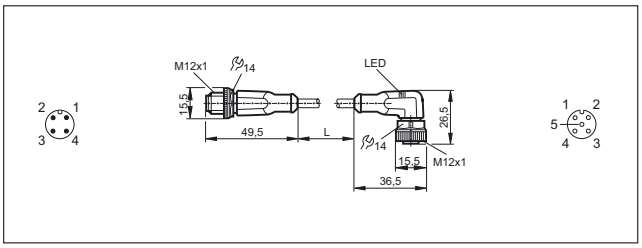

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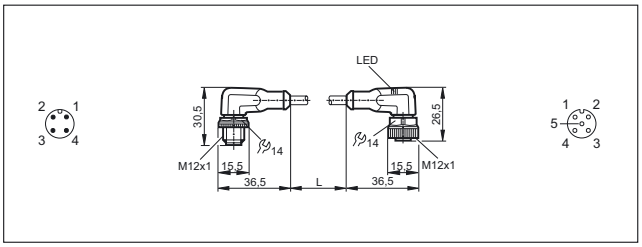

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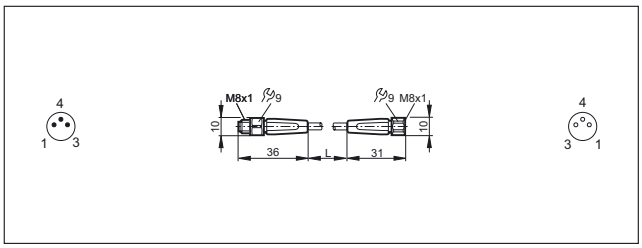

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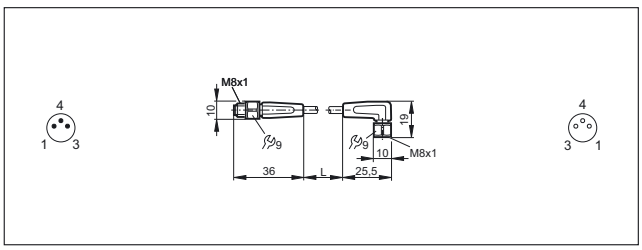

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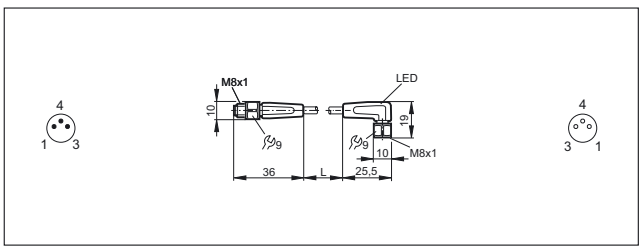

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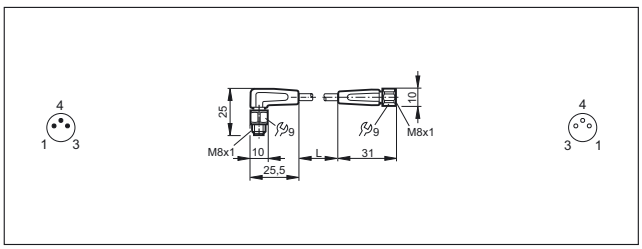

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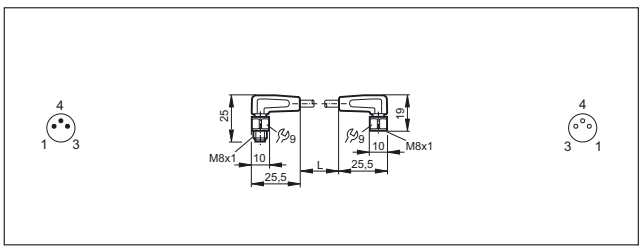

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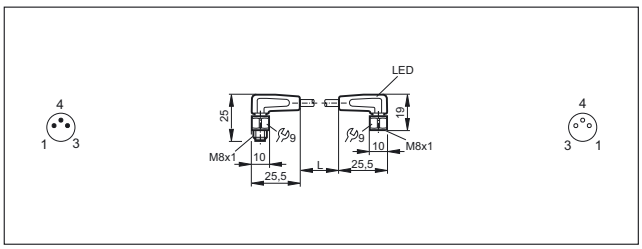

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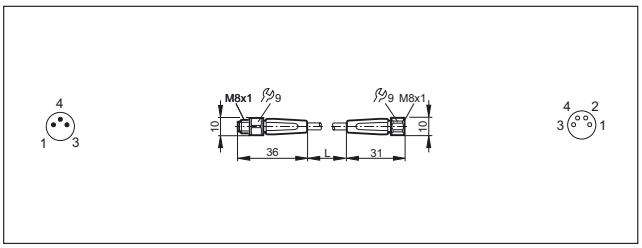

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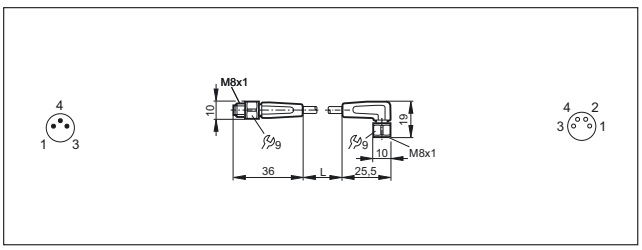

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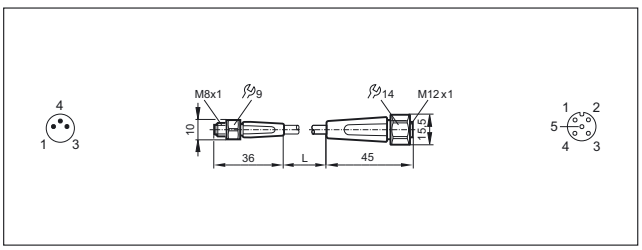

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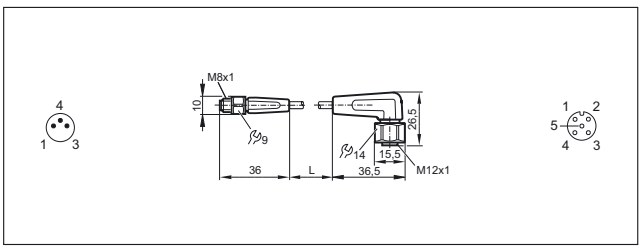

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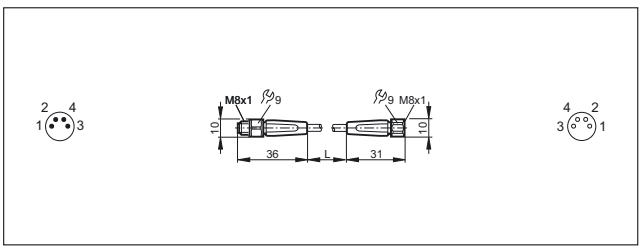

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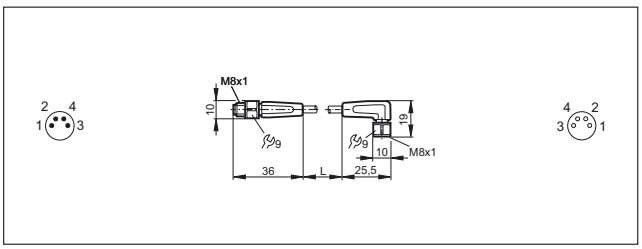

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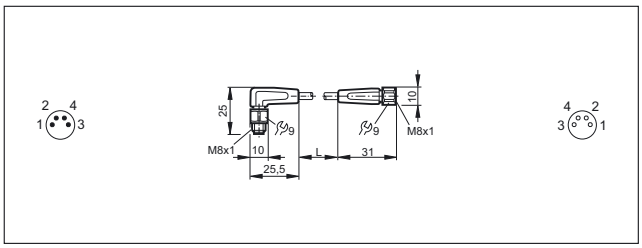

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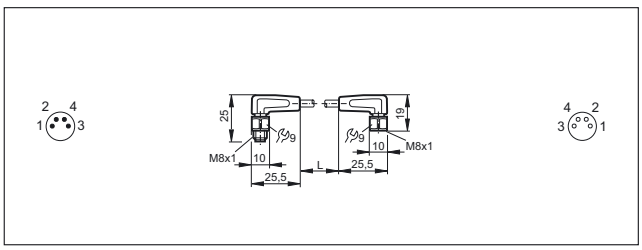

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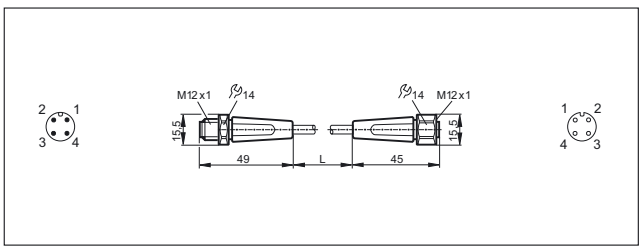

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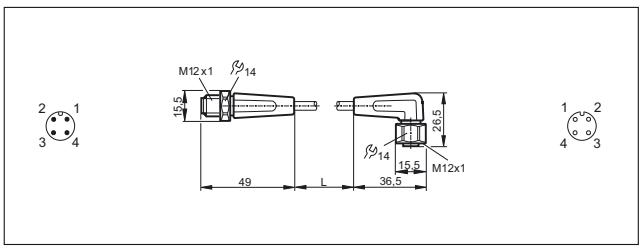

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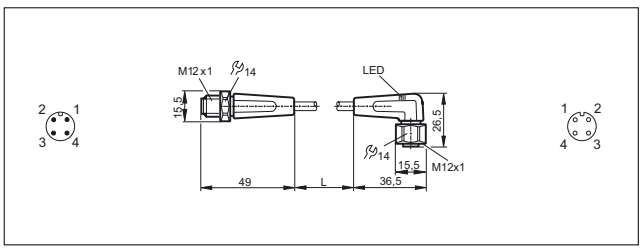

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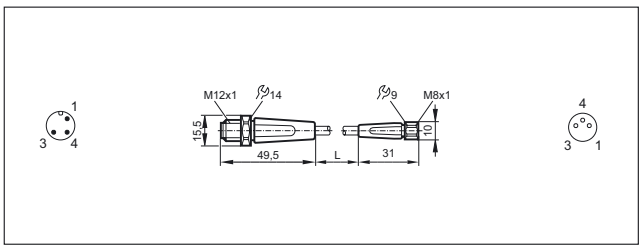

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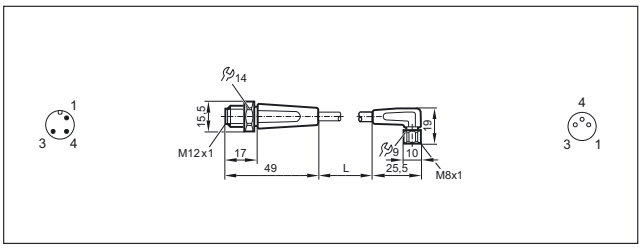

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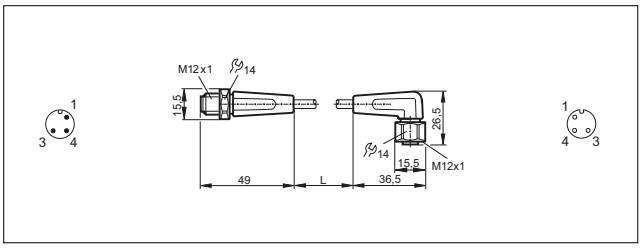

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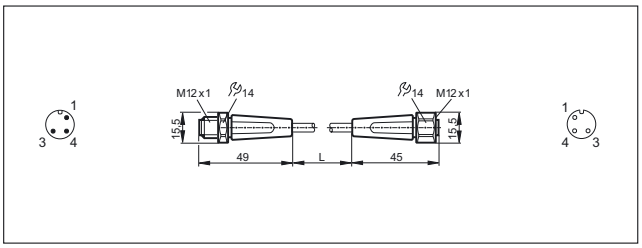

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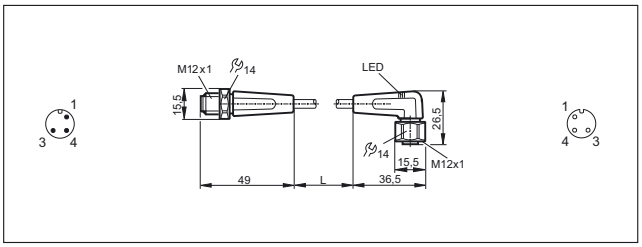

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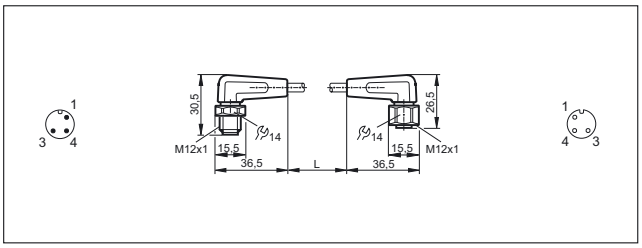

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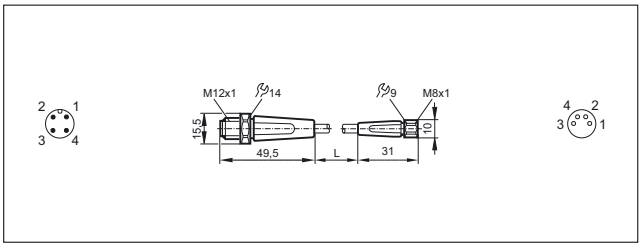

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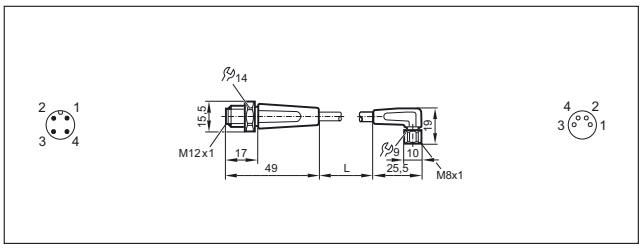

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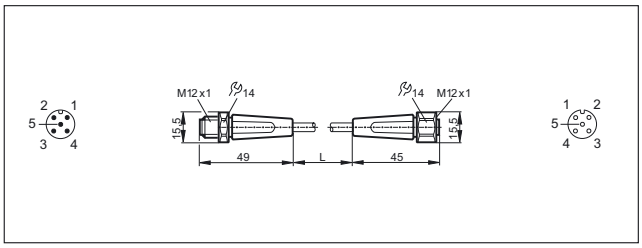

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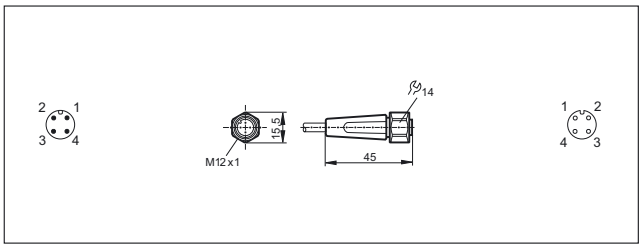

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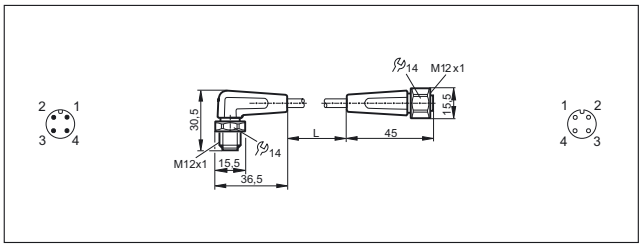

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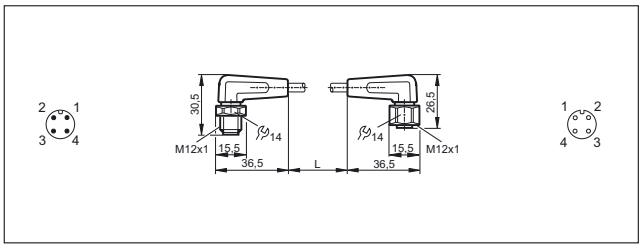

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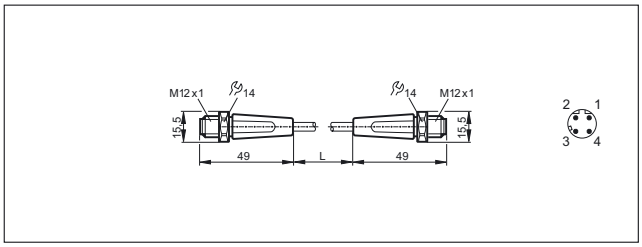

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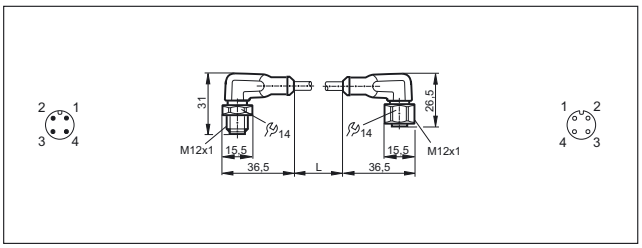


Splitter boxes

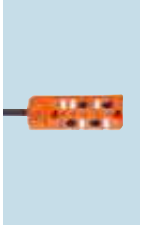
Splitter boxes enable the connection of several sensors and the transmission of the corresponding signals and supply voltages via a multi-wire cable.

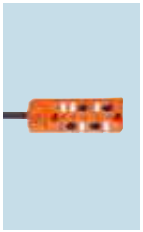
This considerably reduces installation and wiring complexity.

In addition to splitter boxes with potted cable, versions with central connector are also available.

System overview	Page
Splitter boxes for industrial applications	*836 - 843*
Splitter boxes for hygienic and wet areas	*843 - 844*
Wiring diagrams	*844 - 850*
Scale drawings / drawing no. – CAD download: www.ifm.com	*850 - 855*

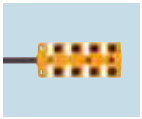
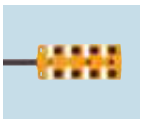
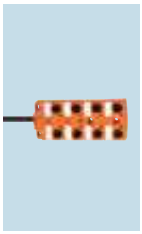
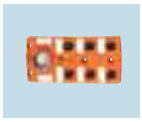
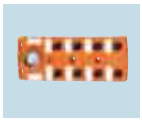
Splitter boxes for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 76 · M12 splitter box for 1 signal · Wiring diagram no. 1									
	5 m black PUR cable	4 x 0.25 mm², Ø 5 mm	TPU / Brass	10...55 DC	-25...80	IP 67	–	1	**E10437**
Group 77 · splitter box M8, 3-pole, LED · Wiring diagram no. 20									
	5 m black PUR cable	4 x 0.34 mm² + 2 x 0.75 mm², Ø 6.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	2	**EBC048**
	10 m black PUR cable	4 x 0.34 mm² + 2 x 0.75 mm², Ø 6.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	2	**EBC049**
Group 78 · splitter box M8, 3-pole, LED · Wiring diagram no. 21									
	M12 connector	–	PBT-GF 20	10...30 DC	-25...80	IP 67 / IP 68	green / 4 x yellow	3	**EBC050**
Group 79 · splitter box M8, 4-pole, LED · Wiring diagram no. 22									
	5 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 7.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	4	**EBC051**
	10 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 7.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	4	**EBC052**

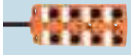
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 80 · splitter box M8, 4-pole, LED · Wiring diagram no. 23									
	M16 connector	–	PBT-GF 20	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	5	**EBC053**
Group 81 · splitter box M8, 3-pole, LED · Wiring diagram no. 24									
	5 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 7.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	6	**EBC054**
	10 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	6	**EBC055**
Group 82 · splitter box M8, 4-pole, LED · Wiring diagram no. 25									
	5 m black PUR cable	16 x 0.34 mm² + 2 x 0.75 mm², Ø 8.5 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 16 x yellow	7	**EBC056**
	10 m black PUR cable	16 x 0.34 mm² + 2 x 0.75 mm², Ø 8.5 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 16 x yellow	7	**EBC057**
Group 83 · splitter box M8, 3-pole, LED · Wiring diagram no. 26									
	5 m black PUR cable	4 x 0.34 mm² + 2 x 0.75 mm², Ø 6.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	2	**EBC058**
	10 m black PUR cable	4 x 0.34 mm² + 2 x 0.75 mm², Ø 6.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	2	**EBC059**
Group 84 · splitter box M8, 3-pole, LED · Wiring diagram no. 27									
	M12 connector	–	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	3	**EBC060**
Group 85 · splitter box M8, 4-pole, LED · Wiring diagram no. 28									
	5 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 7.4 mm	PBT-GF 20	10...30 DC	-20...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	4	**EBC061**
	10 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 7.4 mm	PBT-GF 20	10...30 DC	-20...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	4	**EBC062**
Group 86 · splitter box M8, 4-pole, LED · Wiring diagram no. 29									
	M16 connector	–	PBT-GF 20	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	5	**EBC063**

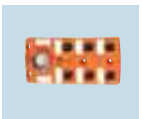
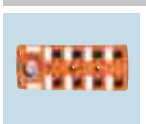
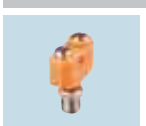
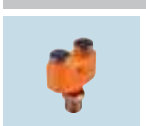
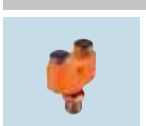
You can find wiring diagrams and scale drawings from page 844

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 87 · splitter box M8, 3-pole, LED · Wiring diagram no. 30									
	5 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	6	**EBC064**
	10 m black PUR cable	8 x 0.34 mm² + 2 x 0.75 mm², Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	6	**EBC065**
Group 88 · splitter box M8, 4-pole, LED · Wiring diagram no. 31									
	5 m black PUR cable	16 x 0.34 mm² + 2 x 0.75 mm², Ø 8.5 mm	PBT-GF 20	10...30 DC	-20...80	IP 65 / IP 67 / IP 68	green / 16 x yellow	7	**EBC066**
	10 m black PUR cable	16 x 0.34 mm² + 2 x 0.75 mm², Ø 8.5 mm	PBT-GF 20	10...30 DC	-20...80	IP 65 / IP 67 / IP 68	green / 16 x yellow	7	**EBC067**
Group 89 · M12 splitter box for 1 signal · Wiring diagram no. 2									
	5 m black PUR cable	4 x 0.34 mm² + 3 x 1 mm², Ø 7.5 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	8	**EBC013**
	10 m black PUR cable	4 x 0.34 mm² + 3 x 1 mm², Ø 7.5 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	8	**EBC025**
Group 90 · M12 splitter box for 1 signal, LED · Wiring diagram no. 32									
	5 m black PUR cable	4 x 0.34 mm² + 3 x 1 mm², Ø 7.5 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 4 x yellow	9	**EBC015**
	10 m black PUR cable	4 x 0.34 mm² + 3 x 1 mm², Ø 7.5 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 4 x yellow	9	**EBC027**
Group 91 · M12 splitter box for 1 signal · Wiring diagram no. 3									
	5 m black PUR cable	6 x 0.34 mm² + 3 x 1 mm², Ø 7.8 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	10	**EBC017**
	10 m black PUR cable	6 x 0.34 mm² + 3 x 1 mm², Ø 7.8 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	10	**EBC029**
Group 92 · M12 splitter box for 1 signal, LED · Wiring diagram no. 33									
	5 m black PUR cable	6 x 0.34 mm² + 3 x 1 mm², Ø 7.8 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 6 x yellow	11	**EBC019**
	10 m black PUR cable	6 x 0.34 mm² + 3 x 1 mm², Ø 7.8 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 6 x yellow	11	**EBC031**

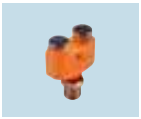
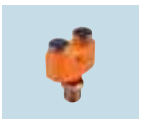
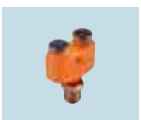
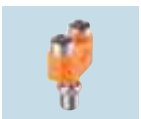
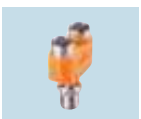
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 93 · M12 splitter box for 1 signal · Wiring diagram no. 4									
	5 m black PUR cable	8 x 0.34 mm² + 3 x 0.75 mm², Ø 8.2 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	12	**EBC021**
	10 m black PUR cable	8 x 0.34 mm² + 3 x 0.75 mm², Ø 8.2 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	12	**EBC033**
Group 94 · M12 splitter box for 1 signal, LED · Wiring diagram no. 34									
	5 m black PUR cable	8 x 0.34 mm² + 3 x 0.75 mm², Ø 8.2 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	13	**EBC023**
	10 m black PUR cable	8 x 0.34 mm² + 3 x 0.75 mm², Ø 8.2 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	13	**EBC035**
Group 95 · M12 splitter box for 1 signal · Wiring diagram no. 5									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	14	**EBC001**
Group 96 · M12 splitter box for 1 signal, LED · Wiring diagram no. 35									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 4 x yellow	15	**EBC002**
Group 97 · M12 splitter box for 1 signal · Wiring diagram no. 6									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	16	**EBC005**
Group 98 · M12 splitter box for 1 signal, LED · Wiring diagram no. 36									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 6 x yellow	17	**EBC006**
Group 99 · M12 splitter box for 1 signal · Wiring diagram no. 7									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	18	**EBC009**
Group 100 · M12 splitter box for 1 signal, LED · Wiring diagram no. 37									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 8 x yellow	19	**EBC010**

You can find wiring diagrams and scale drawings from page 844

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 101 · M12 splitter box for 2 signals · Wiring diagram no. 8									
	5 m black PUR cable	8 x 0.34 mm² + 3 x 1.0 mm², Ø 8.2 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	8	**EBC014**
	10 m black PUR cable	8 x 0.34 mm² + 3 x 1.0 mm², Ø 8.2 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	8	**EBC026**
Group 102 · M12 splitter box for 2 signals, LED · Wiring diagram no. 38									
	5 m black PUR cable	8 x 0.34 mm² + 3 x 1.0 mm², Ø 8.2 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	20	**EBC016**
	10 m black PUR cable	8 x 0.34 mm² + 3 x 1.0 mm², Ø 8.2 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	20	**EBC028**
Group 103 · M12 splitter box for 2 signals · Wiring diagram no. 39									
	5 m black PUR cable	12 x 0.34 mm² + 3 x 1.0 mm², Ø 8.8 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	10	**EBC018**
	10 m black PUR cable	12 x 0.34 mm² + 3 x 1.0 mm², Ø 8.8 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	10	**EBC030**
Group 104 · M12 splitter box for 2 signals, LED · Wiring diagram no. 40									
	5 m black PUR cable	12 x 0.34 mm² + 3 x 1.0 mm², Ø 8.8 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 12 x yellow	21	**EBC020**
	10 m black PUR cable	12 x 0.34 mm² + 3 x 1.0 mm², Ø 8.8 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 12 x yellow	21	**EBC032**
Group 105 · M12 splitter box for 2 signals · Wiring diagram no. 41									
	5 m black PUR cable	16 x 0.34 mm² + 3 x 0.75 mm², Ø 9.7 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	12	**EBC022**
	10 m black PUR cable	16 x 0.34 mm² + 3 x 0.75 mm², Ø 9.7 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	12	**EBC034**
Group 106 · M12 splitter box for 2 signals, LED · Wiring diagram no. 42									
	5 m black PUR cable	16 x 0.34 mm² + 3 x 1.0 mm², Ø 9.7 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 16 x yellow	22	**EBC024**
	10 m black PUR cable	16 x 0.34 mm² + 3 x 1.0 mm², Ø 9.7 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 16 x yellow	22	**EBC036**

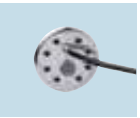
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 107 · M12 splitter box for 2 signals · Wiring diagram no. 9									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	23	**EBC003**
Group 108 · M12 splitter box for 2 signals, LED · Wiring diagram no. 43									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 8 x yellow	24	**EBC004**
Group 109 · M12 splitter box for 2 signals · Wiring diagram no. 10									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	25	**EBC007**
Group 110 · M12 splitter box for 2 signals, LED · Wiring diagram no. 44									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 12 x yellow	26	**EBC008**
Group 111 · M12 splitter box for 2 signals · Wiring diagram no. 11									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	27	**EBC011**
Group 112 · M12 splitter box for 2 signals, LED · Wiring diagram no. 45									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 16 x yellow	28	**EBC012**
Group 113 · Y splitter , 5-pole · Wiring diagram no. 12									
	M12 connector	–	PUR / diecast zinc	60 DC	-25...85	IP 67	–	29	**E12481**
Group 114 · Y splitter M12-plug / 2x M8-socket, 4/3-pole · Wiring diagram no. 13									
		–	PA / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	30	**EBC112**
Group 115 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 13									
		–	PA / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EBC113**
Group 116 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 16									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EBC114**

You can find wiring diagrams and scale drawings from page 844

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 117 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 14									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EBC115**
Group 118 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 15									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EBC116**
Group 119 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 17									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EBC117**
Group 120 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 18									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	**EBC118**
Group 121 · splitter box M8, 3-pole, LED · Wiring diagram no. 48									
	5 m black PUR cable	10 x 0.34 mm² + 2 x 0.75 mm², Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 10 x yellow	35	**EBC136**
	10 m black PUR cable	10 x 0.34 mm² + 2 x 0.75 mm², Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 10 x yellow	35	**EBC137**
Group 122 · splitter box M8, 4-pole, LED · Wiring diagram no. 46									
	M12 connector	–	PBT-GF 20	15...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	34	**EBC138**
Group 123 · splitter box M8, 4-pole, LED · Wiring diagram no. 47									
	M12 connector	–	PBT-GF 20	15...30 DC	-25...80	IP 67 / IP 68	green / 10 x yellow	36	**EBC139**
Group 124 · Y splitter M12-plug / 2 x M12-socket, 4/5-pole · Wiring diagram no. 13									
		–	PA / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EBT006**
Group 125 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 16									
		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBT007**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 126 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 14									
		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBT008**
Group 127 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 15									
		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBT009**
Group 128 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 19									
		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBT010**
Group 129 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 18									
		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBT011**

Splitter boxes for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 130 · splitter box M12, LED · Wiring diagram no. 42									
	10 m black PUR / PVC cable	3 x 0.75 mm^2 + 16 x 0.34 mm^2, Ø 11 mm	high-grade stainless steel	10...36 DC	-5...70	IP 69K	green / 16 x yellow	37	**E11775**
Group 131 · Y splitter M12-plug / 2 x M12-socket, 4/5-pole · halogen-free · Wiring diagram no. 13									
		–	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	32	**EBF006**
Group 132 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 16									
		–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBF007**
Group 133 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 14									
		–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBF008**
Group 134 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 15									
		–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBF009**

You can find wiring diagrams and scale drawings from page 844

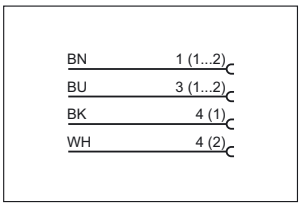
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 135 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 19									
		–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBF010**
Group 136 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 18									
		–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	**EBF011**

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GN	green
GY	grey
YE	yellow
PK	pink
RD	red
VT	purple
GN/YE	green/yellow

1



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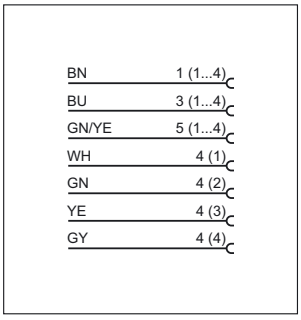

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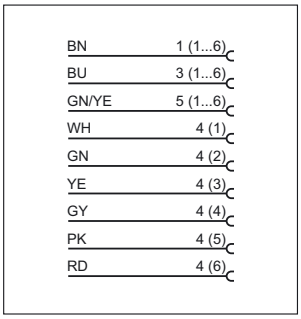

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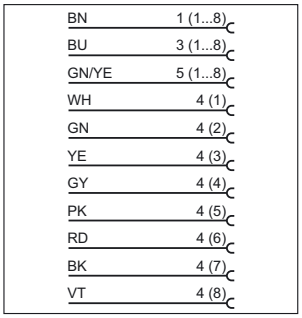

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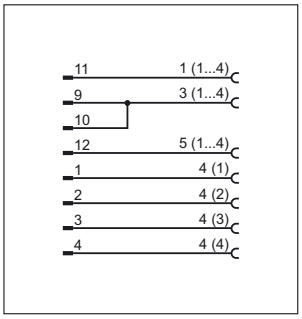

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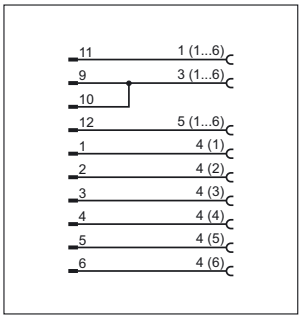

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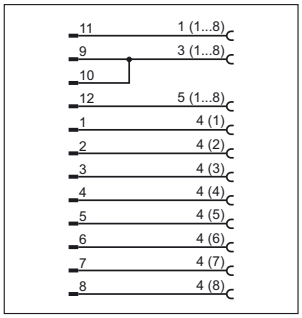

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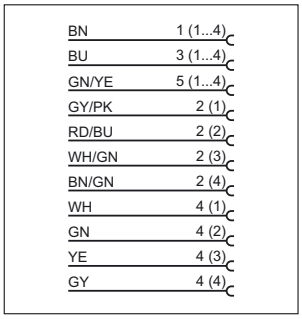

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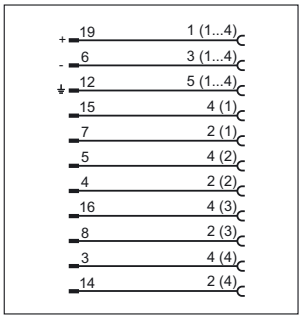

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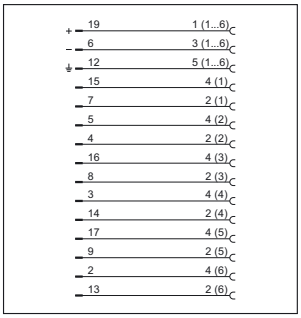

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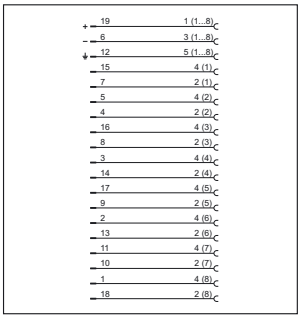

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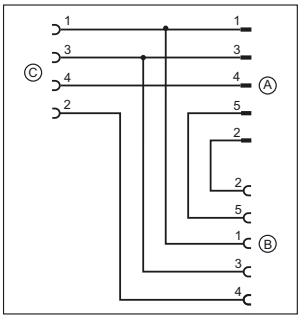
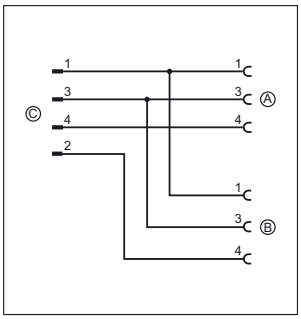


Product selectors and further information can be found at: www.ifm.com

Wiring diagrams

13



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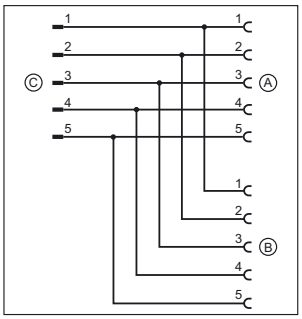

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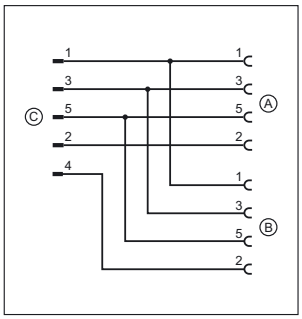

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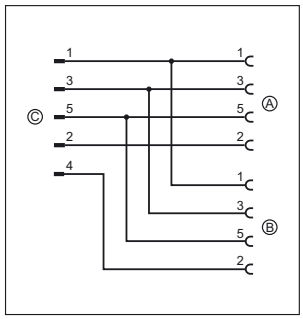

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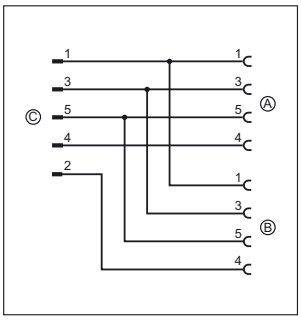

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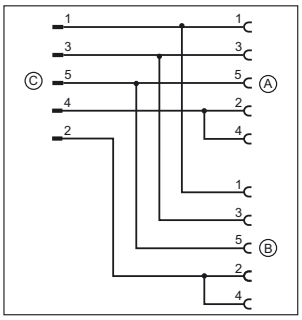

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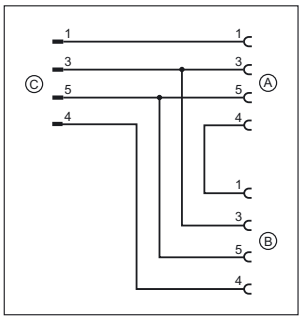

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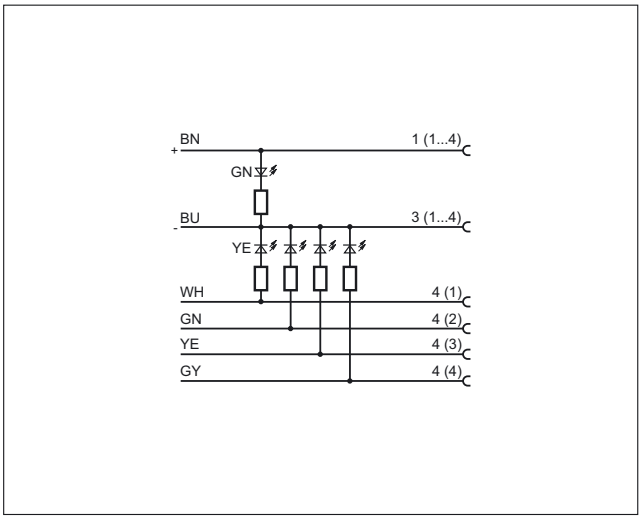

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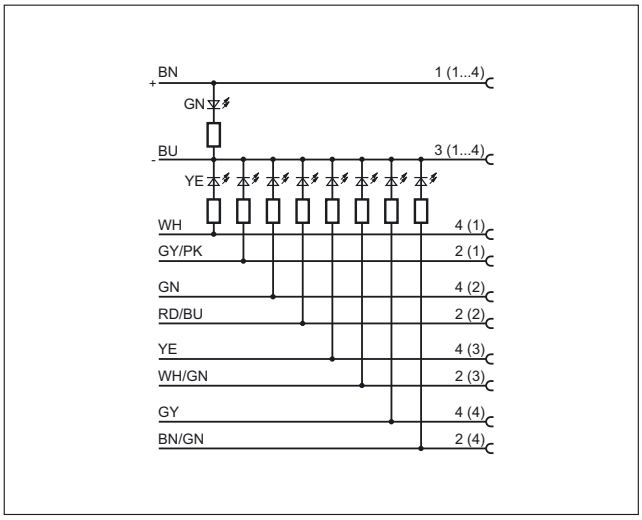

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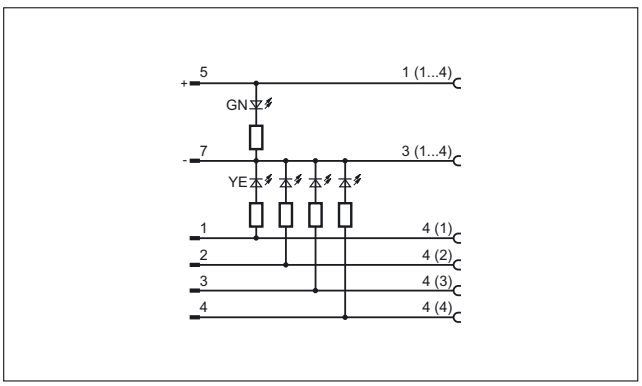

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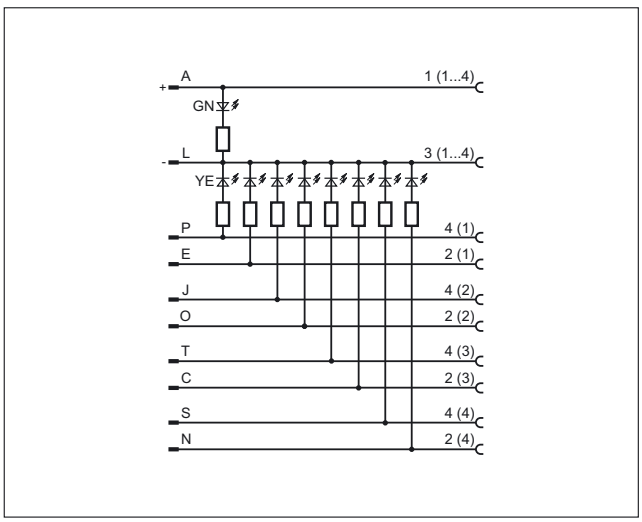

Wiring diagrams

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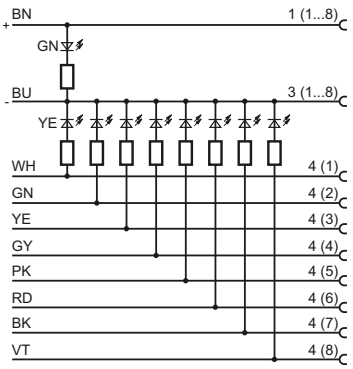

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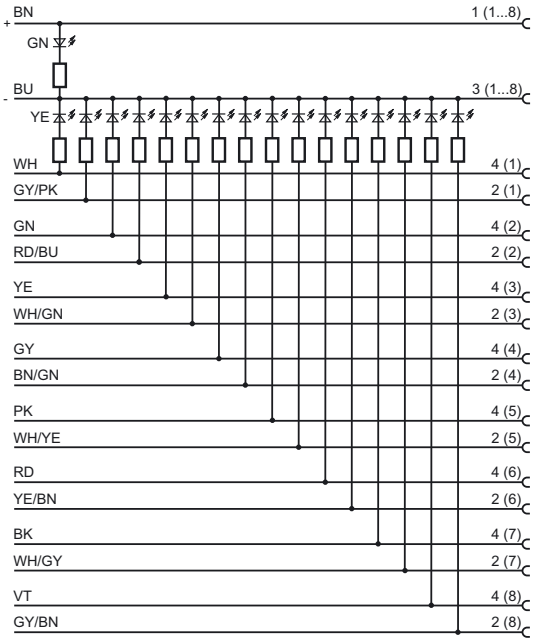

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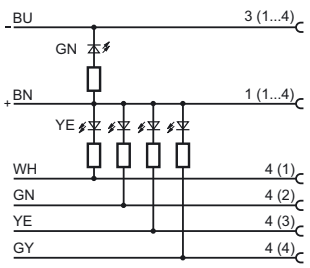

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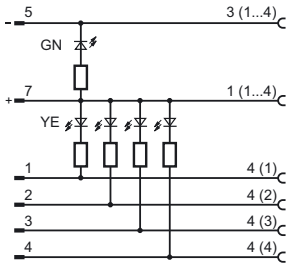

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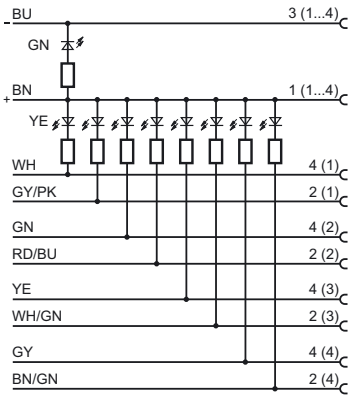

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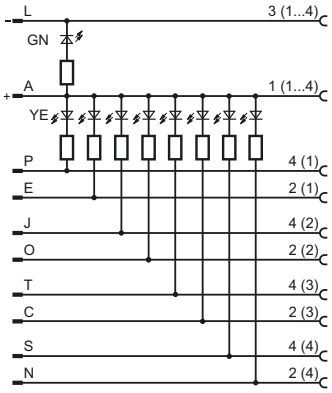

Wiring diagrams

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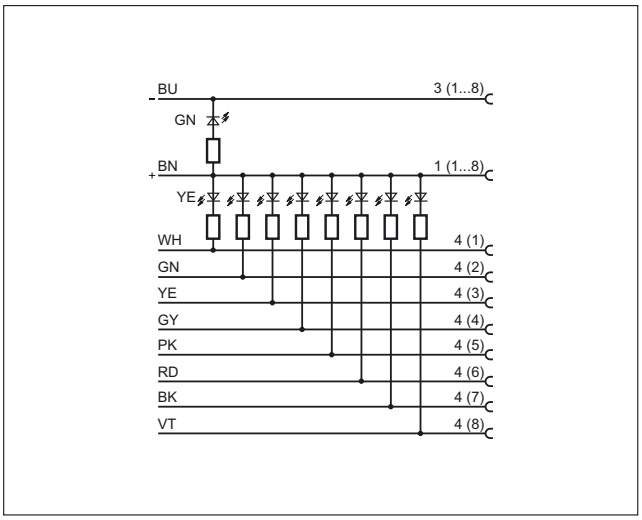

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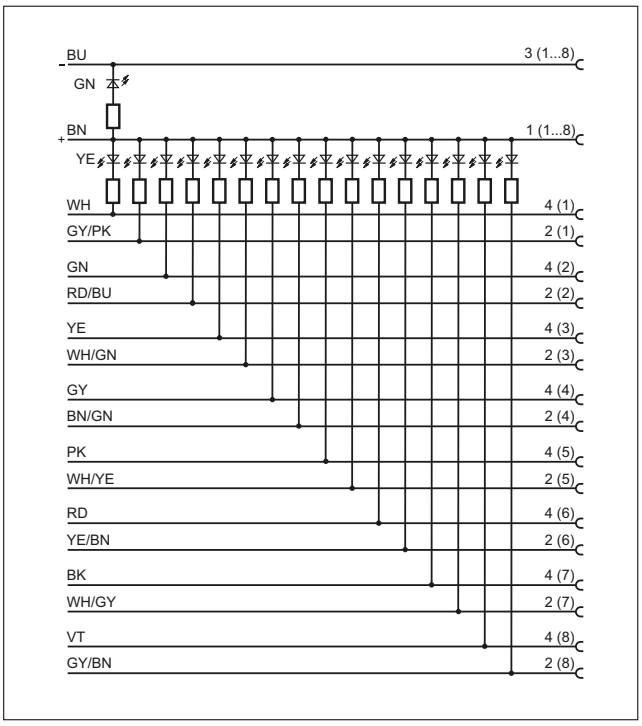

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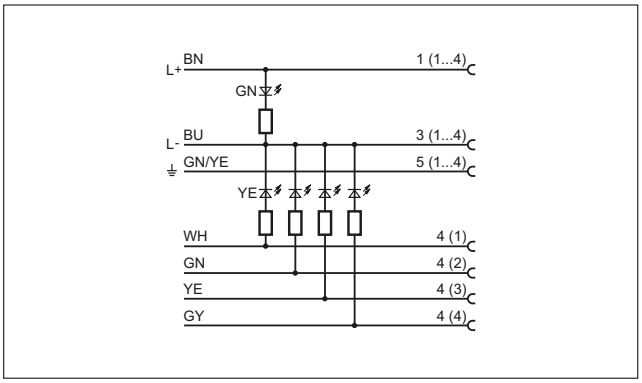

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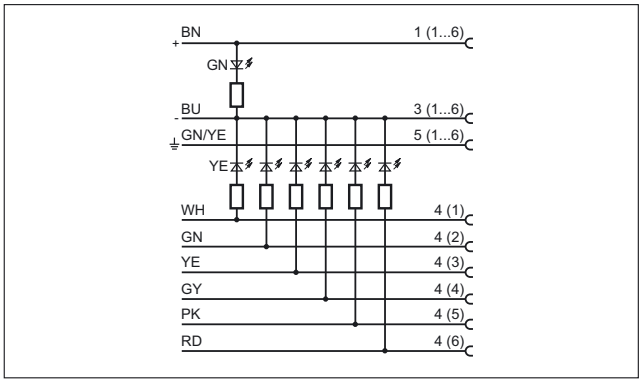

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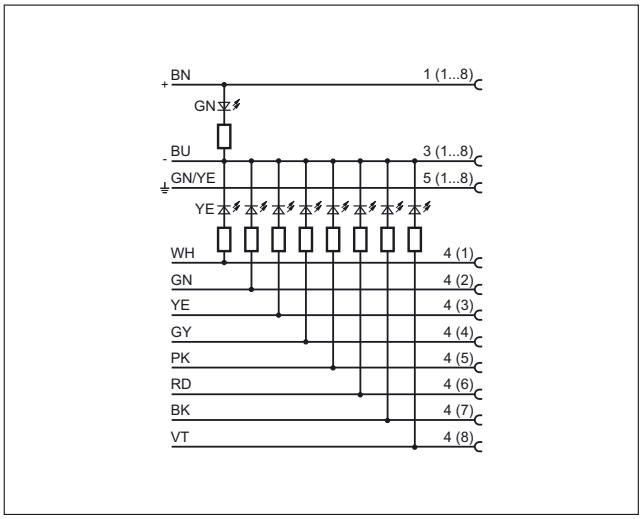

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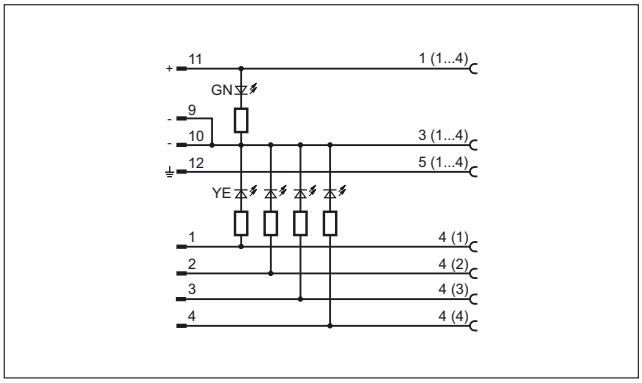

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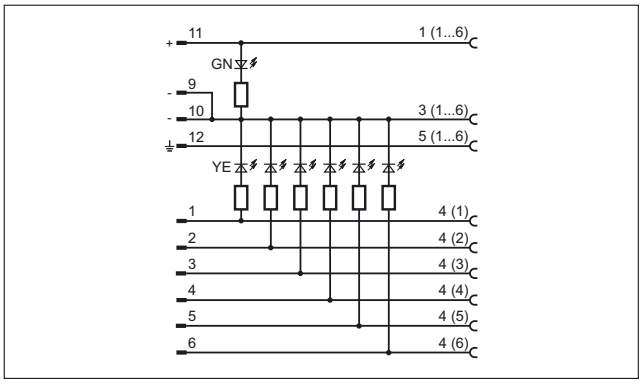

Wiring diagrams

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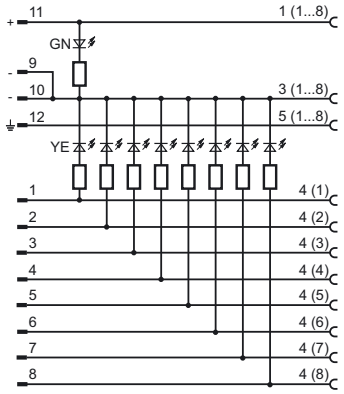

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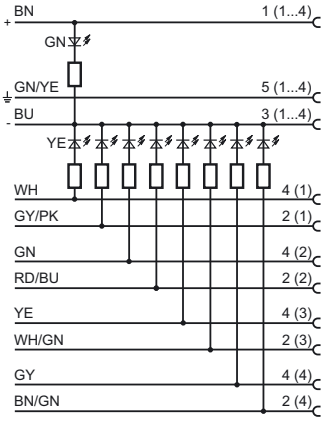
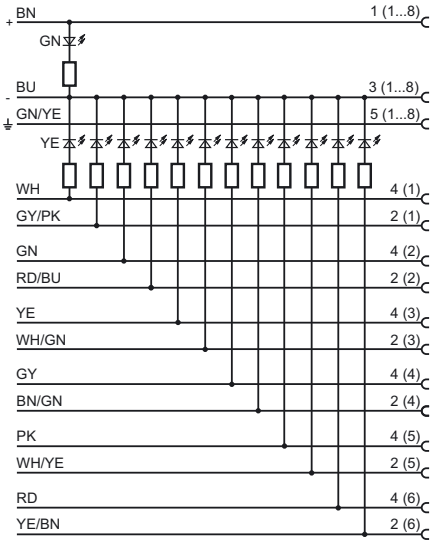


39

BN	1 (1...6)
BU	3 (1...6)
GN/YE	5 (1...6)
GY/PK	2 (1)
RD/BU	2 (2)
WH/GN	2 (3)
BN/GN	2 (4)
WH/YE	2 (5)
YE/BN	2 (6)
WH	4 (1)
GN	4 (2)
YE	4 (3)
GY	4 (4)
PK	4 (5)
RD	4 (6)

40



41

BN	1 (1...8)
BU	3 (1...8)
GN/YE	5 (1...8)
GY/PK	2 (1)
RD/BU	2 (2)
WH/GN	2 (3)
BN/GN	2 (4)
WH/YE	2 (5)
YE/BN	2 (6)
WH/GY	2 (7)
GY/BN	2 (8)
WH	4 (1)
GN	4 (2)
YE	4 (3)
GY	4 (4)
PK	4 (5)
RD	4 (6)
BK	4 (7)
VT	4 (8)

Wiring diagrams

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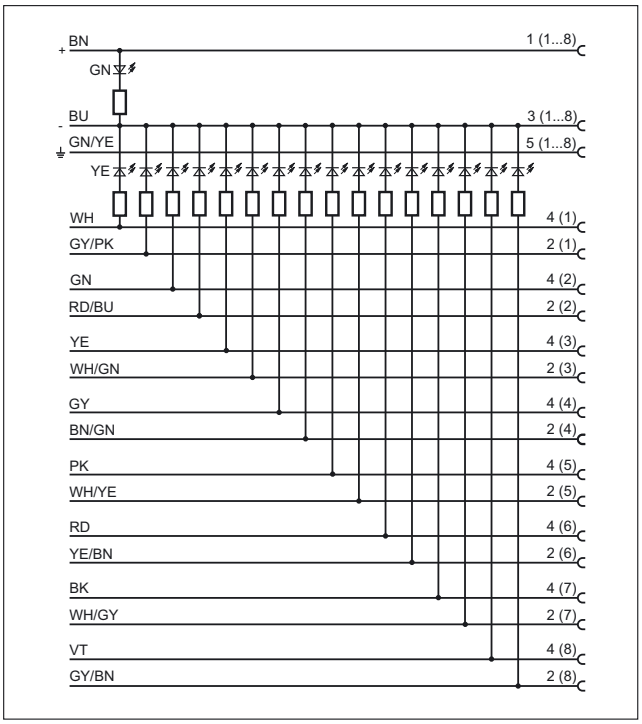

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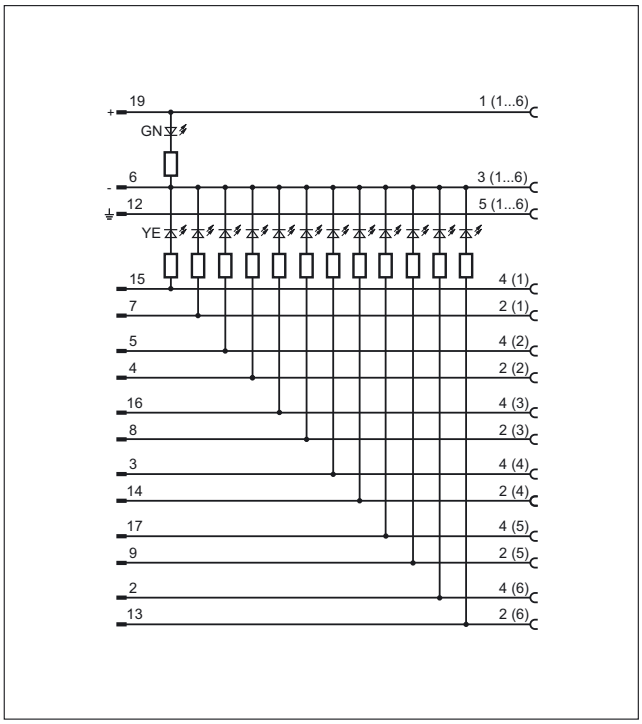

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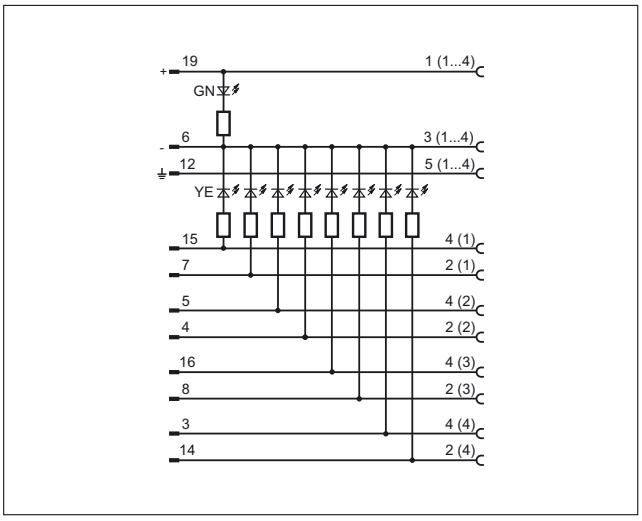

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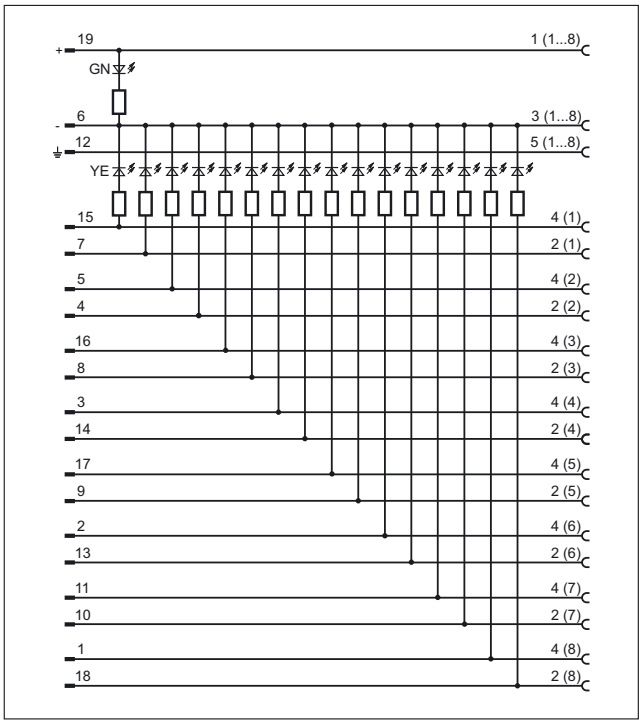

Wiring diagrams

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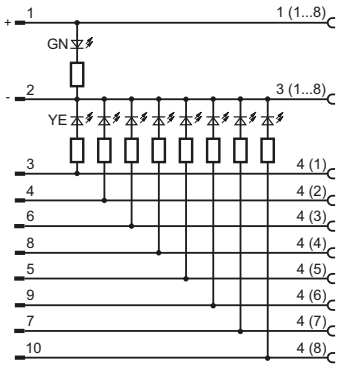

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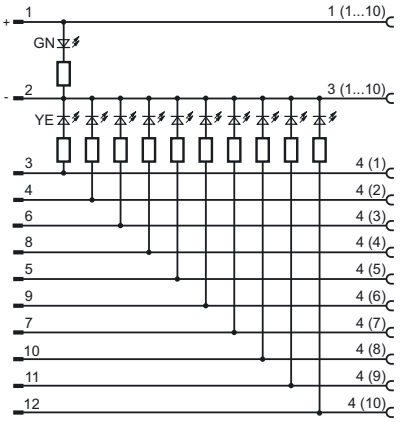

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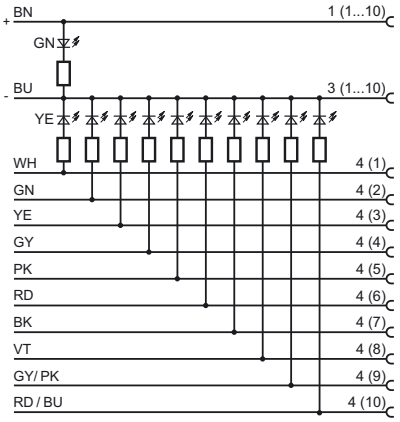

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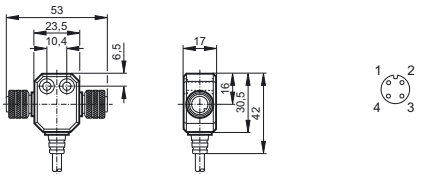

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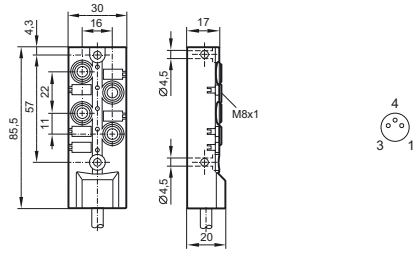

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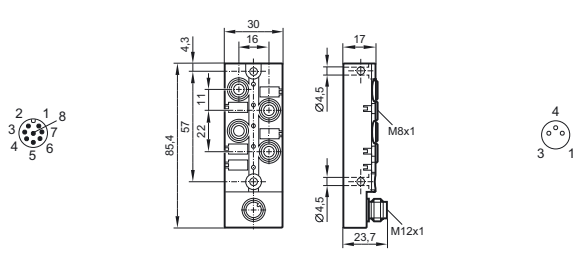

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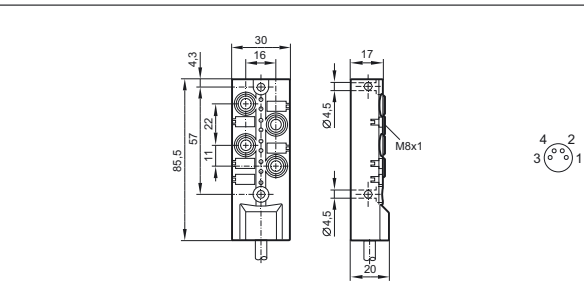

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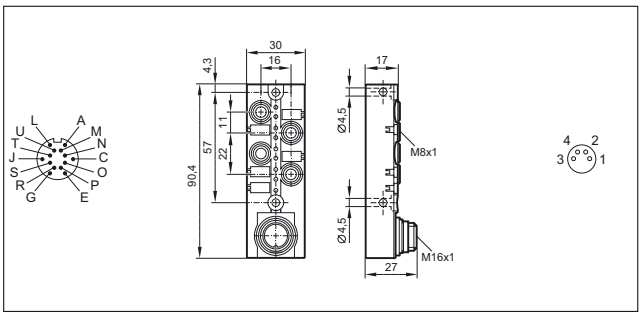

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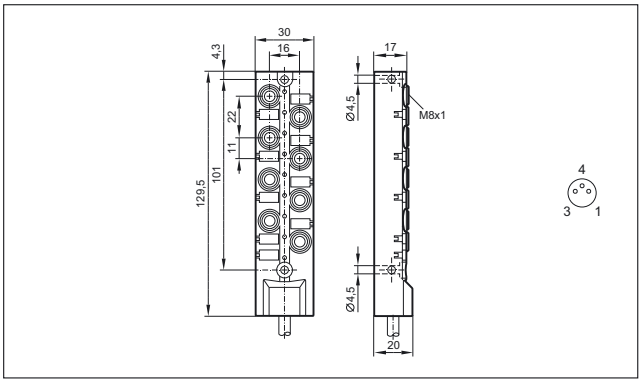

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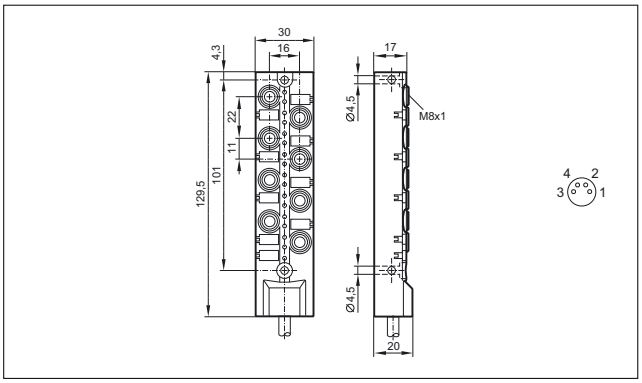

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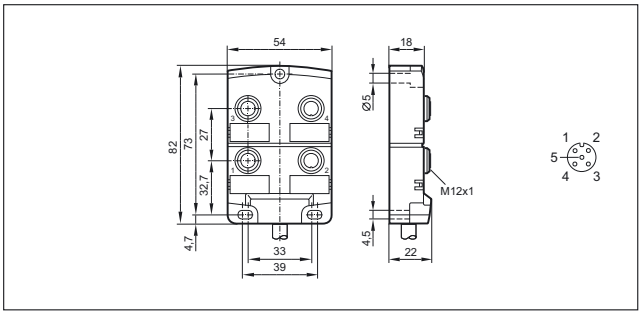

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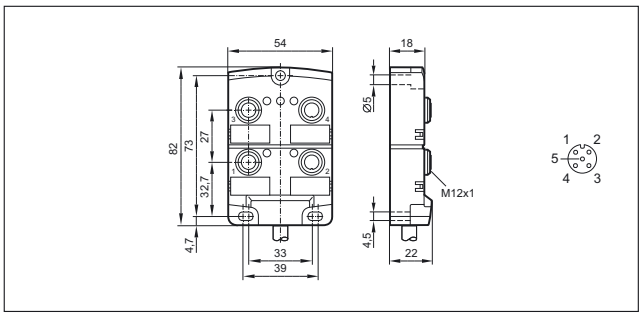

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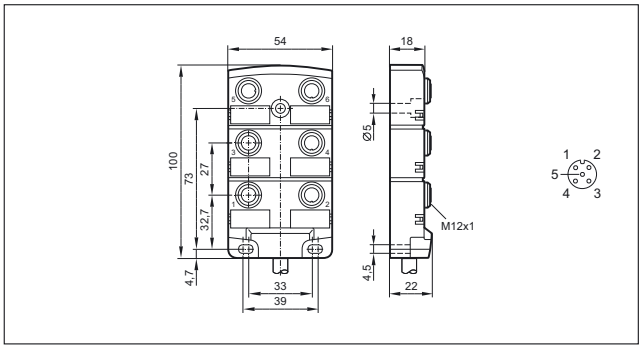

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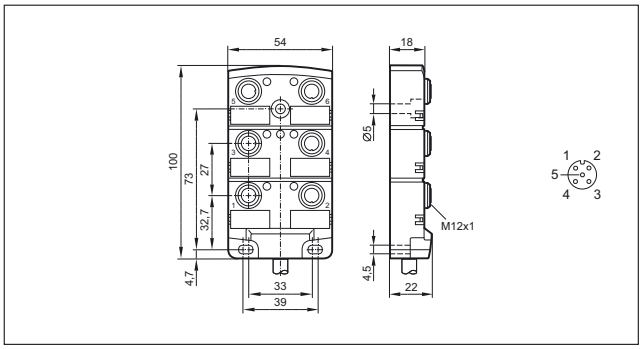

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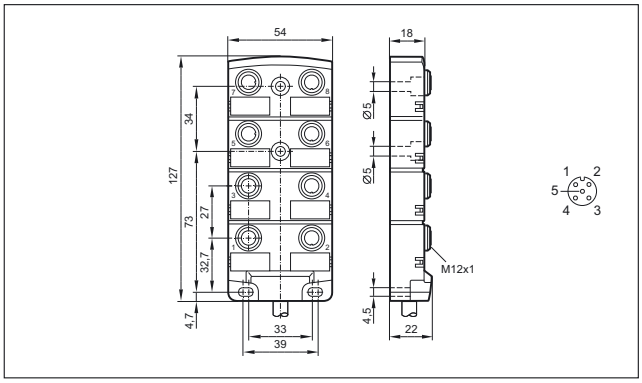

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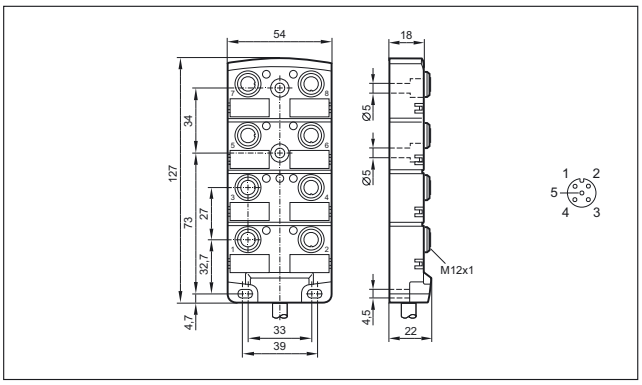

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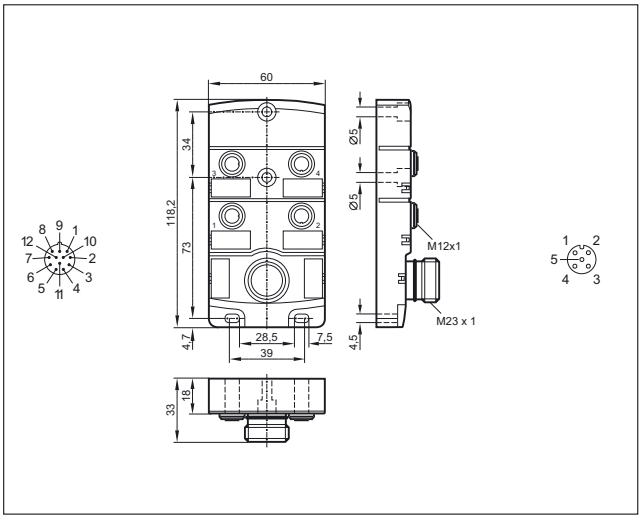

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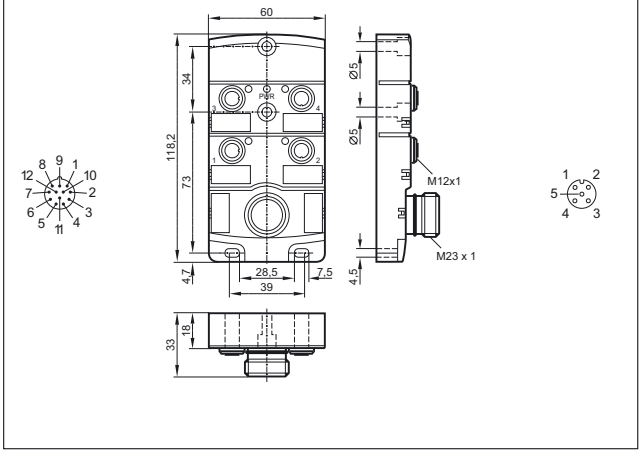

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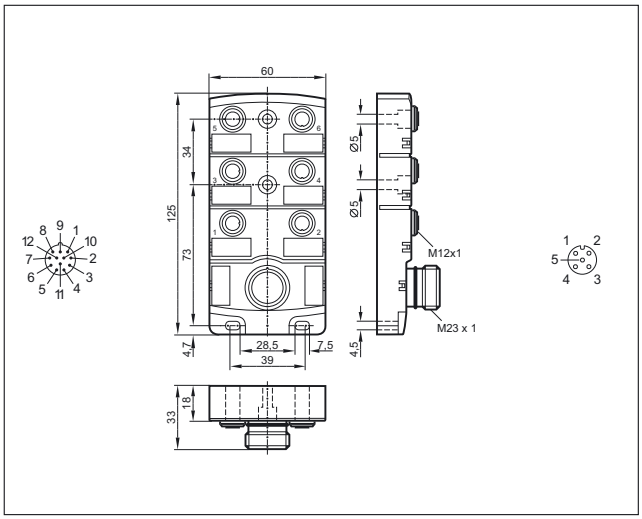

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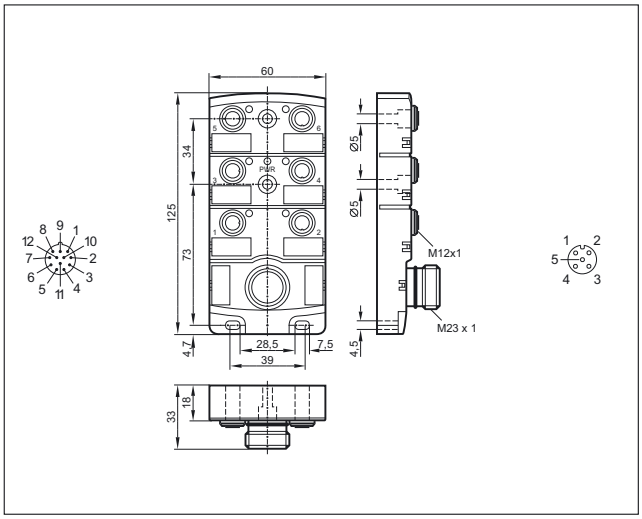

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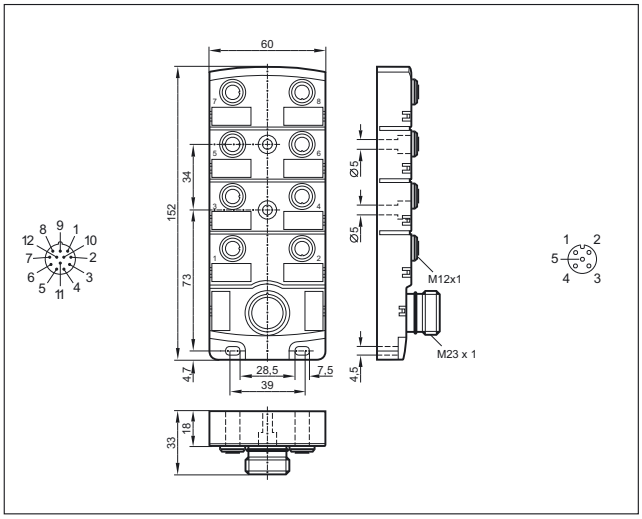

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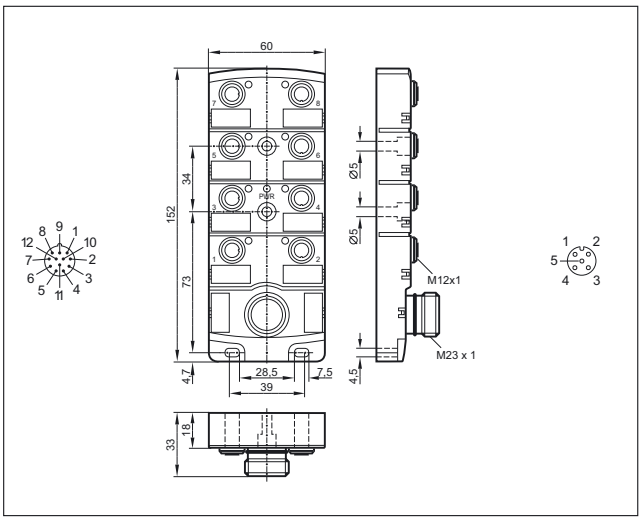

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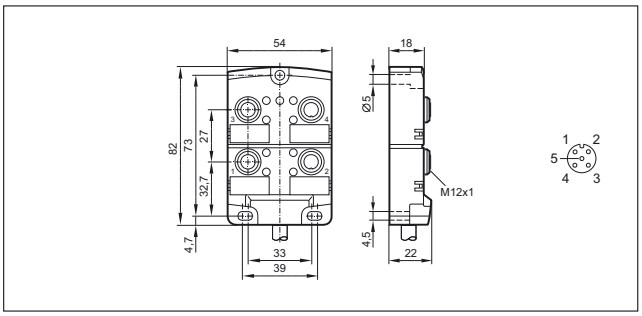

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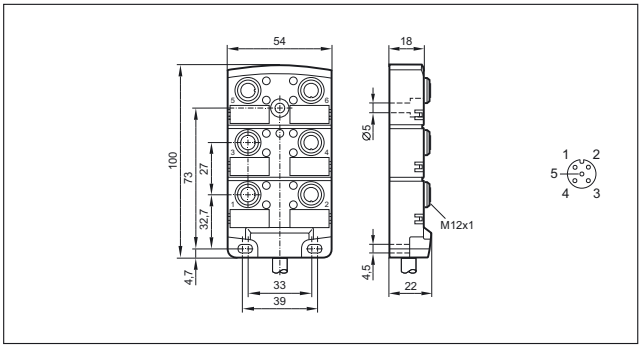

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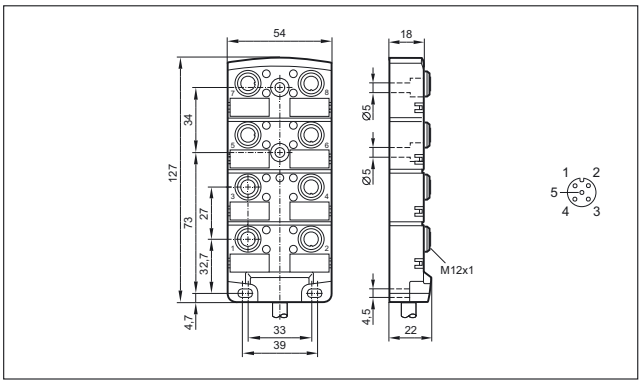

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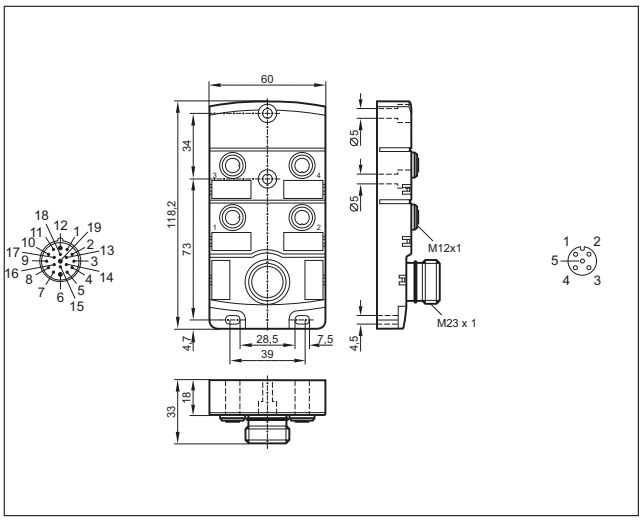

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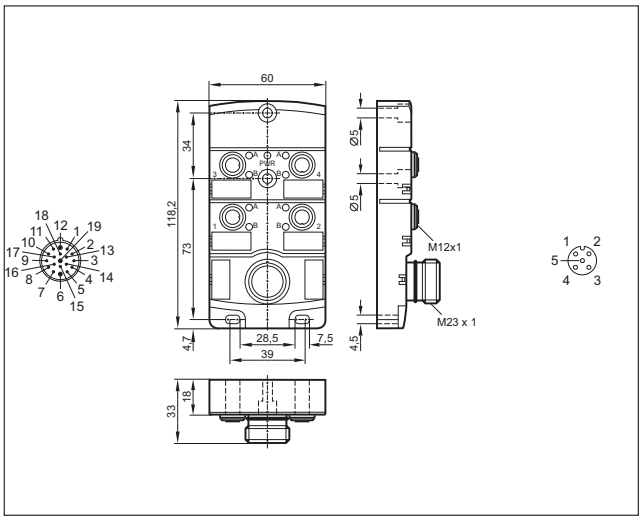

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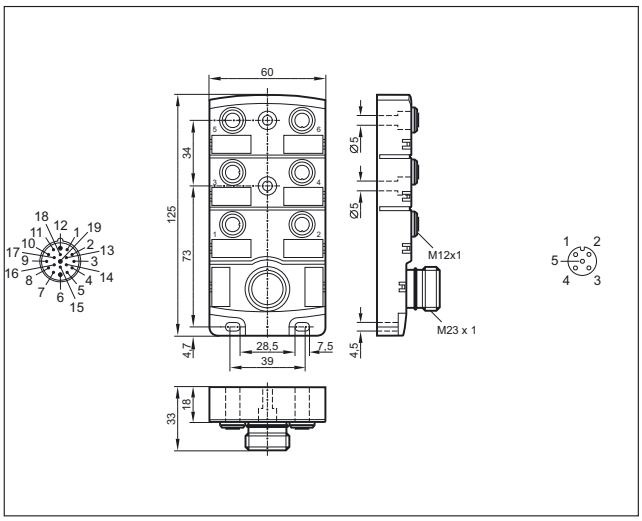

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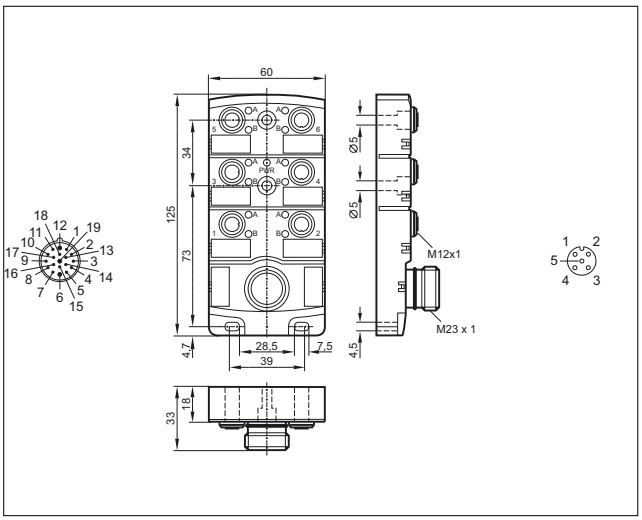

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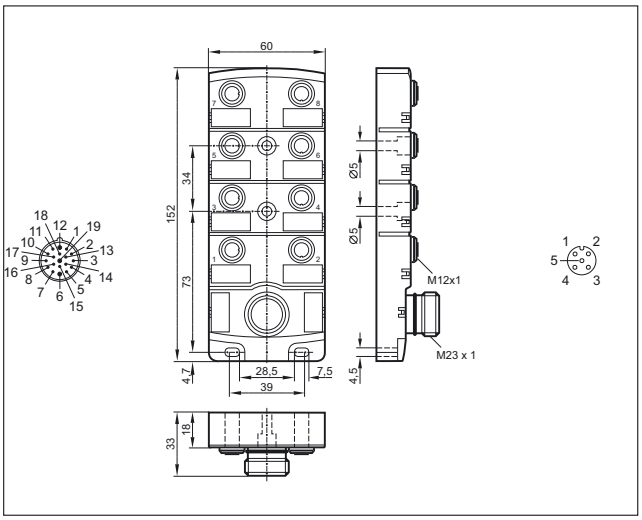

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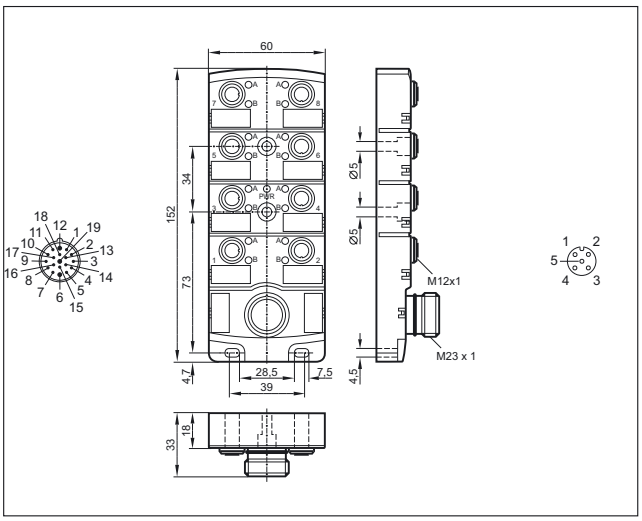

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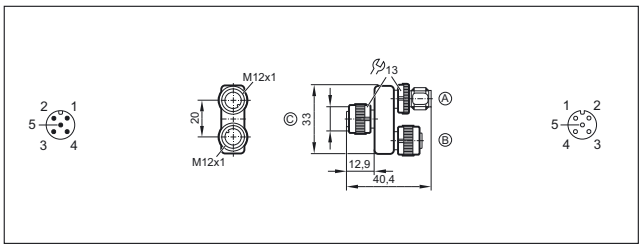

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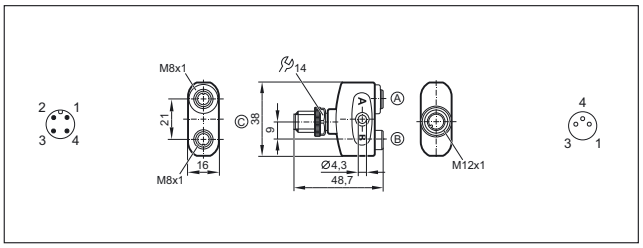

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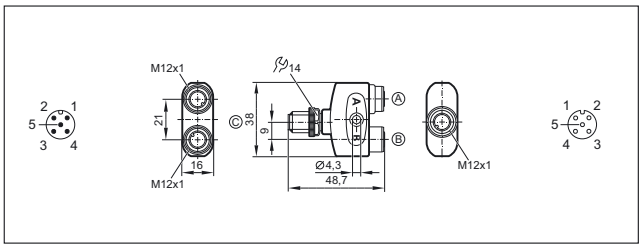

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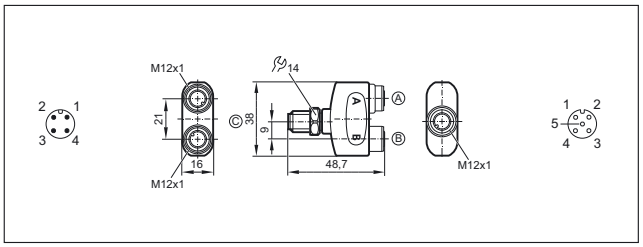

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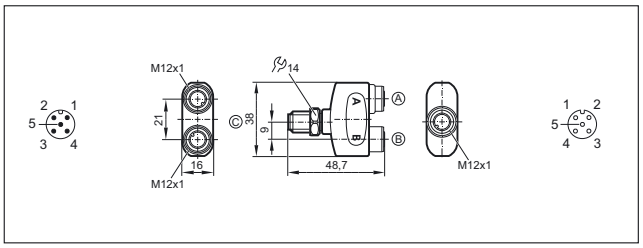

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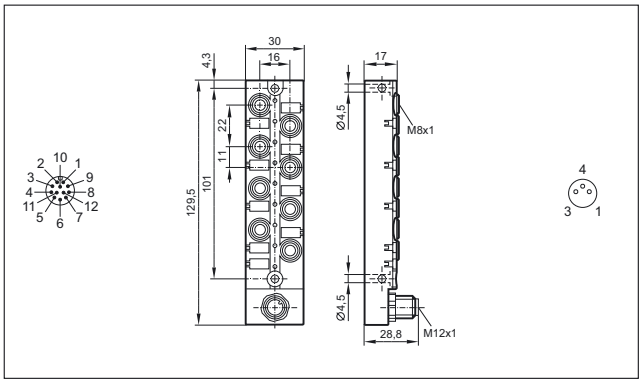

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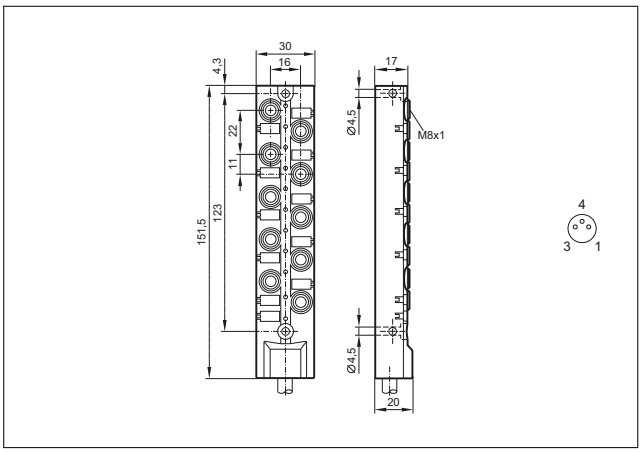

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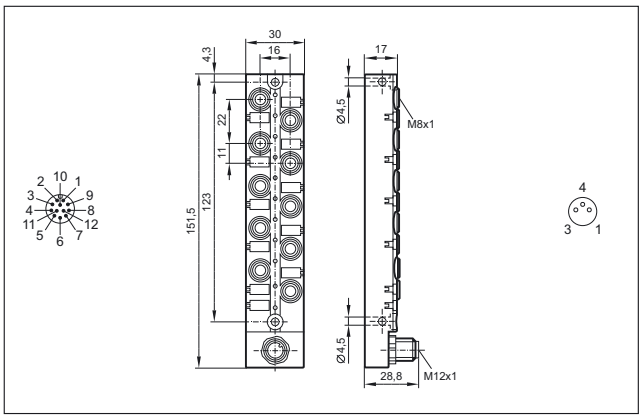

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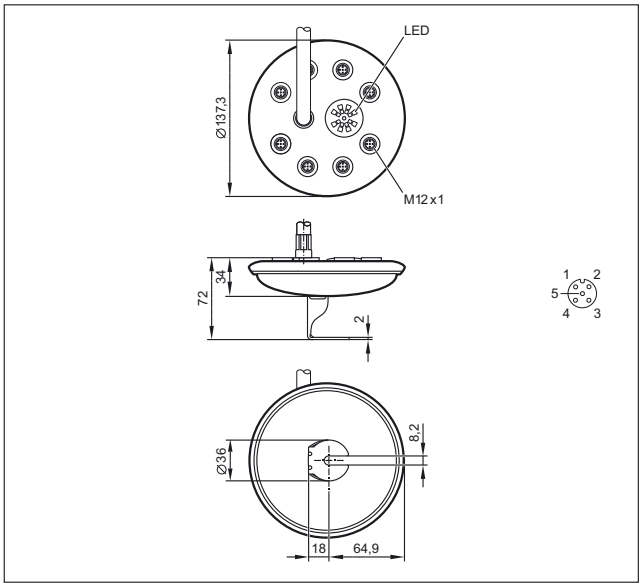
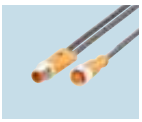
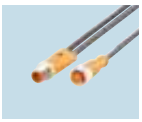


Y-splitters

Y connection cables are used for the distribution of signals and the connection of two units to a connector.

System overview	*Page*
M12 – M12 jumpers for industrial applications	*856 - 857*
Jumpers for hygienic and wet areas	*857 - 858*
Connection cables for industrial applications	*858 - 859*
Wiring diagrams	*859*
Scale drawings / drawing no. – CAD download: www.ifm.com	*860*

M12 – M12 jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 60 · Y connection cable , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 1									
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC431**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC432**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	**EVC433**
	1 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC434**
	2 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC435**
	5 m black PUR cable	4 x 0.34 mm², Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	**EVC436**
Group 62 · Y connection cable , plug: M12, 4-pole, socket: M12, 5-pole, 5-wire, LED, PNP · Wiring diagram no. 6									
	1 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	**EVC437**

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 62 · Y connection cable , plug: M12, 4-pole, socket: M12, 5-pole, 5-wire, LED, PNP · Wiring diagram no. 6									
	2 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	**EVC438**
	5 m black PUR cable	3 x 0.34 mm², Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	**EVC439**
Group 64 · Y connection cable , 5-wire · B-port generator · Wiring diagram no. 7									
	1 m black PUR cable	2 x 0.34 mm² + 5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	24 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC693**
	2 m black PUR cable	2 x 0.34 mm² + 5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	24 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC694**
	5 m black PUR cable	2 x 0.34 mm² + 5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	24 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC695**
	10 m black PUR cable	2 x 0.34 mm² + 5 x 0.34 mm², Ø 4.9 mm	TPU / Brass	24 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	**EVC696**

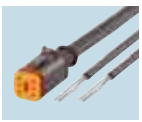
Jumpers for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 161 · Y connection cable , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 1									
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVT329**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVT330**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	5	**EVT331**
	1 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVT332**
	2 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVT333**
	5 m orange PVC cable	4 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	6	**EVT334**

You can find wiring diagrams and scale drawings from page 859

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 163 · Y connection cable , plug: M12, 4-pole, socket: M12, 5-pole, 5-wire, LED, PNP · Wiring diagram no. 6									
	1 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	7	**EVT335**
	2 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	7	**EVT336**
	5 m orange PVC cable	3 x 0.34 mm², Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	7	**EVT337**

Connection cables for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 184 · Y connection cable , socket: Y, 6-pole, 6-wire · Wiring diagram no. 2									
	1 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	**E12546**
	2 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	**E12547**
	5 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	**E12548**
Group 186 · Y connection cable , socket: Y, 6-pole, 4-wire · Wiring diagram no. 3									
	1 m black PUR cable	2 x 2 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	**E12552**
	2 m black PUR cable	2 x 2 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	**E12553**
	5 m black PUR cable	2 x 2 x 0.50 mm², Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	**E12554**
Group 188 · Jumper , socket: Y/M12, 6/3-pole, 3-wire · Wiring diagram no. 4									
	1 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA / Brass	12...24 DC	-40...80	IP 67	–	9	**E12558**
	2 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA / Brass	12...24 DC	-40...80	IP 67	–	9	**E12559**

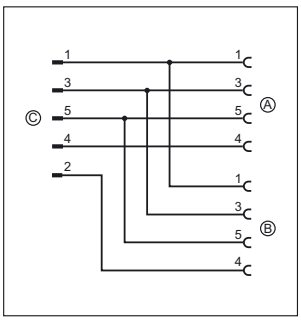
Type	Cable	Wire specification	Material housing / nut	U [V]	T_a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 188 · Jumper , socket: Y/M12, 6/3-pole, 3-wire · Wiring diagram no. 4									
	5 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA / Brass	12...24 DC	-40...80	IP 67	–	9	**E12560**
Group 190 · Y connection cable , socket: Y/M12, 6/3-pole, 6-wire · Wiring diagram no. 5									
	1 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA / Brass	12...24 DC	-40...80	IP 67	–	10	**E12561**
	2 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA / Brass	12...24 DC	-40...80	IP 67	–	10	**E12562**
	5 m black PUR cable	3 x 0.50 mm², Ø 5.4 mm	PA / Brass	12...24 DC	-40...80	IP 67	–	10	**E12563**

Wiring diagrams

Core colours

BK	black
BN	brown
RD	red

1



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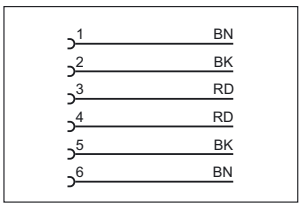

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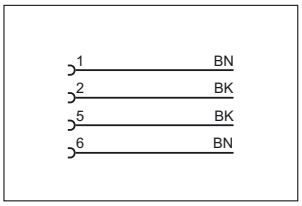

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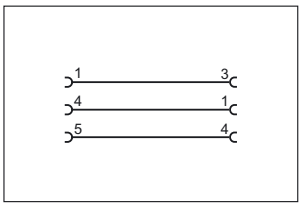

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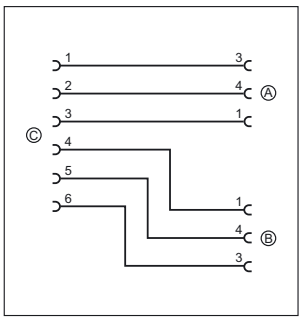

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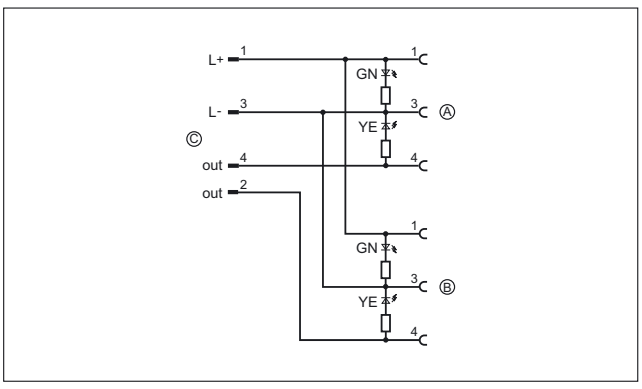

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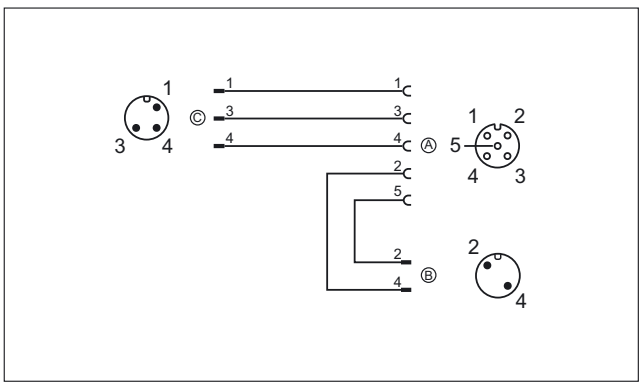

Scale drawings / drawing no. – CAD download: www.ifm.com

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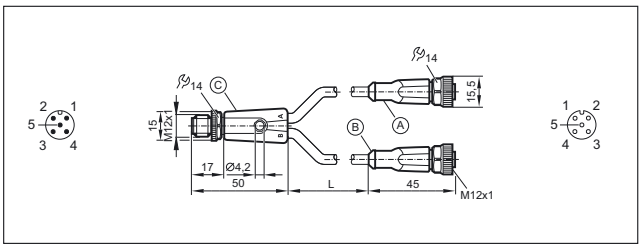

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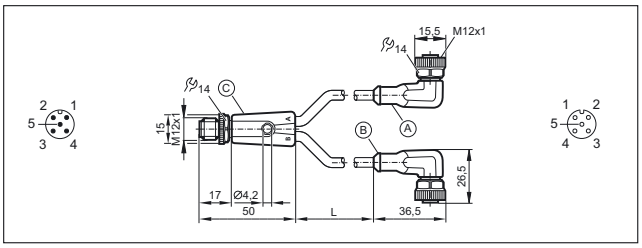

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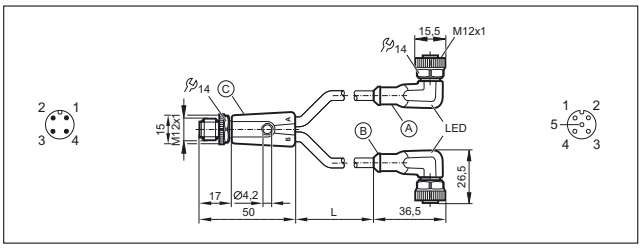

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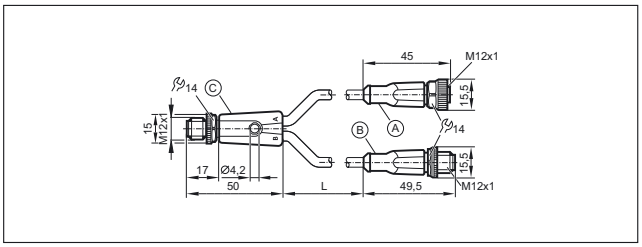

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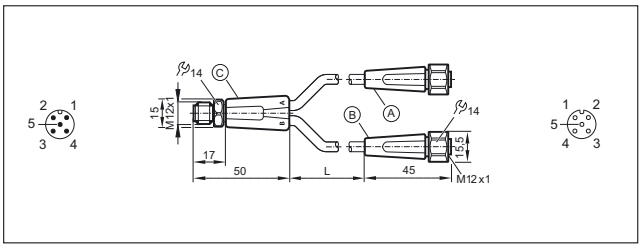

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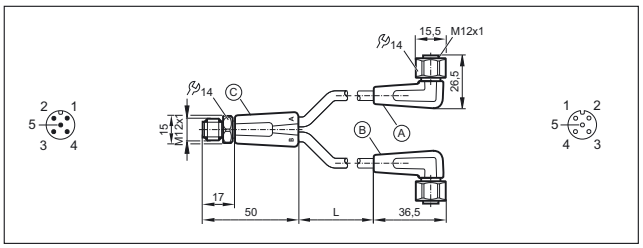

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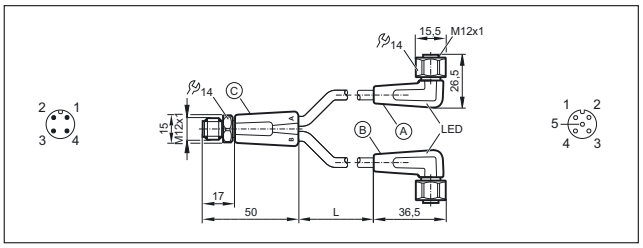

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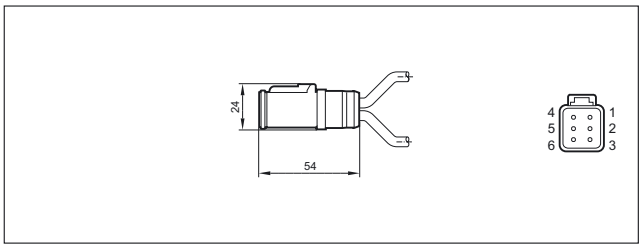

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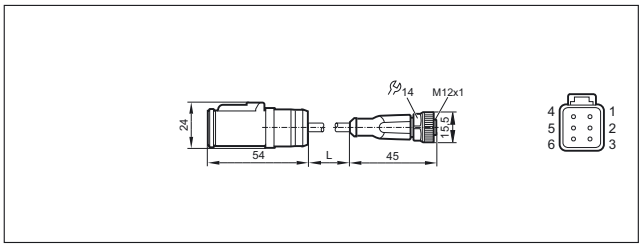

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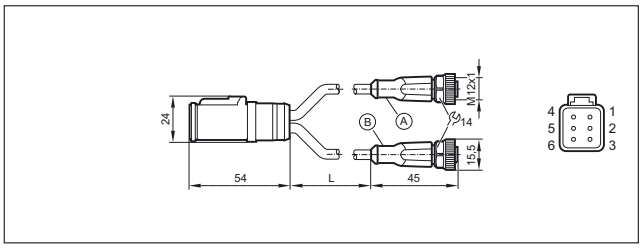

Switched-mode power supplies

Switched-mode power supplies

Primary switched-mode power supplies are a compact and economical solution to supply sensors and actuators. As opposed to conventional transformer power supplies with regulated output voltage, primary switched-mode power supplies need no heavy transformers so that there are fewer iron and copper losses. They are therefore distinguished by a very high degree of efficiency of up to 95 %. Due to the operating principle using high frequency transformers, switched-mode power supplies are much smaller and lighter than transformer power supplies that provide the same power. Nevertheless they ensure electrical separation. Moreover, they offer a wide standard input voltage range, e.g. 100...240 or 323...576 V AC. This makes them fit for worldwide use.

ifm switched-mode power supplies have a regulated output voltage of typ. 24 V DC with a tolerance of ± 2 %. Apart from few exceptions, the output voltage can be set between 24 V and 28 V to compensate, for example, for a voltage drop on long cables. Between no load and full load they ensure a stable supply voltage and thus operational reliability in case of supply voltage fluctuations.

Power reserves

Switched-mode power supplies from ifm are rated for permanent operation in the specified performance limits. This allows the power supplies to be used at full load over almost the complete temperature range. Moreover they feature an excess gain of 20 % while reaching 100 % switch-on time.

Mains fluctuations and interference are compensated for. Even mains voltage dips of a few milliseconds are bridged while the output voltage is completely maintained.

An inrush current limitation actively reduces the peak inrush current and thus enables the use of common automatic circuit breakers.

The outputs are protected against short circuits and overload.

24 V DC power supplies 864 - 869

AS-i power supplies 870 - 872

24 V DC power supplies

These high-quality 24V switched-mode power supplies excel by their wide range of performance. Flexible one-phase or three-phase primary voltages with wide-range inputs can be used worldwide. Degrees of efficiency of up to 94 percent ensure that the control cabinet only heats up slightly. The units are protected against over-voltage and permanent short circuit.

System overview	*Page*
Power supplies / switching amplifiers with one output	*864*
Power supplies / switching amplifiers with 2 inputs and 2 outputs	*864*
Switched-mode power supplies, single phase, in compact plastic housing	*865*
Standard switched-mode power supplies, single phase, in robust metal housing	*865*
Standard switched-mode power supplies, two-phase, in robust metal housing	*865*
Standard switched-mode power supplies, three-phase, in robust metal housing	*866*
Accessories	*866 - 867*
Scale drawings / drawing no. – CAD download: www.ifm.com	*867 - 869*

Power supplies / switching amplifiers with one output

Type	Current [mA]	Output voltage [V]	Nominal voltage [V]	Output	Drawing no.	Order no.
	–	24 DC SELV, ± 10 %, 300 mA	110...240 AC	relay (1 changeover contact)	1	**DN0210**

Power supplies / switching amplifiers with 2 inputs and 2 outputs

Type	Current [mA]	Output voltage [V]	Nominal voltage [V]	Output	Drawing no.	Order no.
	–	24 DC SELV, ± 10 %, 2 x ≤ 150 mA	110...240 AC	2 relays (1 changeover contact per channel)	2	**DN0220**

Switched-mode power supplies, single phase, in compact plastic housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Drawing no.	Order no.
	1.25	24...28	115 / 230 AC	120 (230 V AC; 24 V DC; 1.25 A)	84	3	**DN1030**
	2.5	24...28	115 / 230 AC	90 (230 V AC; 24 V DC; 2.5 A)	88	3	**DN1031**
	4.1	24...28 DC (±2%)	115 / 230 AC	> 40 (230 V AC; 24 V DC / 4.1 A)	90	4	**DN1022**

Standard switched-mode power supplies, single phase, in robust metal housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Drawing no.	Order no.
	3.3	24...28 DC	115 / 230 AC	30 (120 V AC; 60 Hz) / 128 (230 V AC; 50 Hz)	88	5	**DN4011**
	5	24...28 DC	115 / 230 AC	80 (120 V AC; 60 Hz) / 78 (230 V AC; 50 Hz)	89.4	5	**DN4012**
	10	24...28 DC	115 / 230 AC	46 (120 V AC; 60 Hz) / 47 (230 V AC; 50 Hz)	91	6	**DN4013**
	20	24...28 DC	115 / 230 AC	26 (120 V AC; 60 Hz) / 26 (230 V AC; 50 Hz)	92.7	7	**DN4014**
	40	24...28 DC	115 / 230 AC	27 (120 V AC; 60 Hz) / 27 (230 V AC; 50 Hz)	93.6	8	**E84016**

Standard switched-mode power supplies, two-phase, in robust metal housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Drawing no.	Order no.
	5	24...28 DC	2 x 400 AC	27 (400 V AC; 50 Hz) / 48 (480 V AC; 60 Hz)	90.4	9	**DN4032**

You can find scale drawings from page 867

Standard switched-mode power supplies, three-phase, in robust metal housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Draw-ing no.	Order no.
	10	24...28 DC	3 x 400 AC	34 (400 V AC; 50 Hz) / 54 (480 V AC; 60 Hz)	92.8	10	**DN4033**
	20	24...28 DC	3 x 400 AC	22 (400 V AC; 50 Hz) / 22 (480 V AC; 60 Hz)	95	11	**DN4034**
	30	24...28 DC (±2%)	3 x 400...500 AC	> 10	93	12	**DN2036**
	40	24...28 DC	3 x 400 AC	25 (400 V AC; 50 Hz) / 25 (480 V AC; 60 Hz)	95.3	13	**E84036**

Accessories

Type	Description	Order no.
	Supply module, standard · rail TH35 (to EN 60715) · Input current (max. total current) 40 A · for circuit protecion modules DF12xx · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	**DF1100**
	Supply module, IO-Link · rail TH35 (to EN 60715) · Input current (max. total current) 40 A · for circuit protection modules DF22xx · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	**DF2100**
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 2 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	**DF1212**
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 4 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	**DF1214**
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 6 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	**DF1216**
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 1 x 8 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 18...30 V DC · IP 20	**DF1208**
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 1 x 10 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 18...30 V DC · IP 20	**DF1210**
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 2 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	**DF2212**
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 4 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	**DF2214**

Type	Description	Order no.
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 6 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	**DF2216**
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 1 x 8 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 18...30 V DC · IP 20	**DF2208**
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 1 x 10 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 18...30 V DC · IP 20	**DF2210**

Scale drawings / drawing no. – CAD download: www.ifm.com

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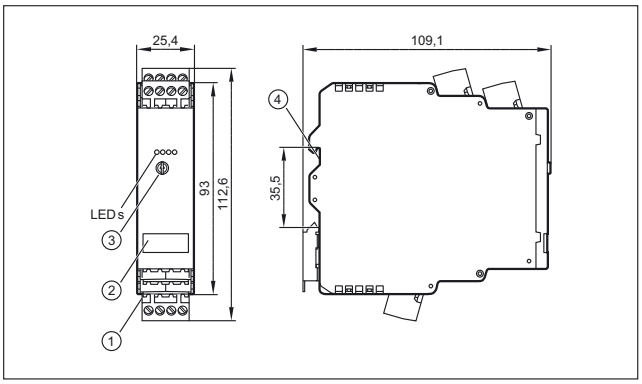
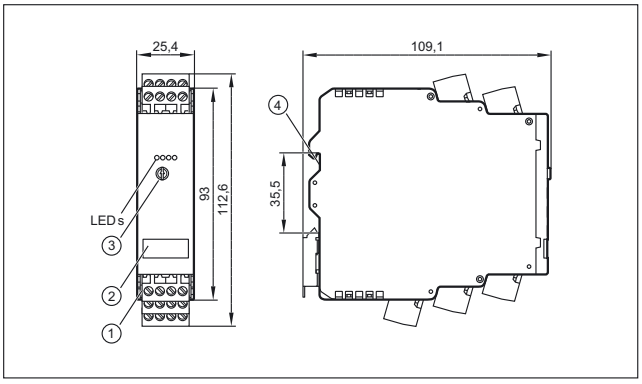


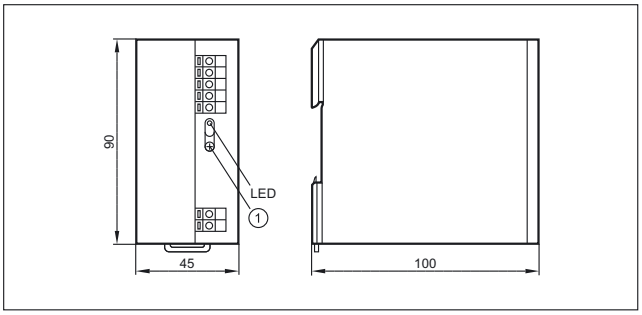
1: plug-in screw terminals, 2: label, 3: potentiometer, 4: Mounting on DIN rail

2



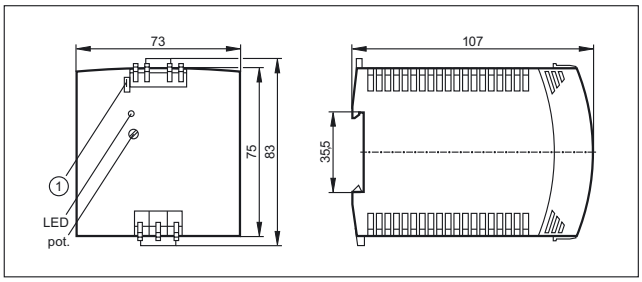
1: plug-in screw terminals, 2: label, 3: potentiometer, 4: Mounting on DIN rail

3



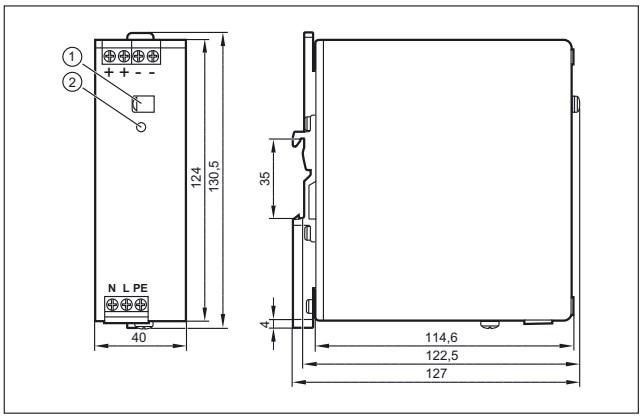
1: potentiometer

4



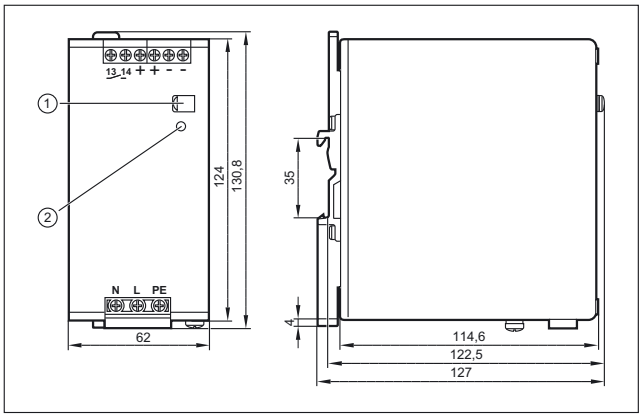
1: Jumper "single/parallel operation"

5



1: Potentiometer 24...28 V DC, 2: LED DC ok

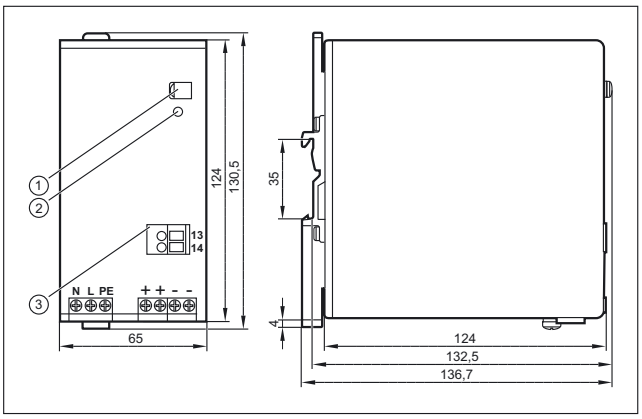
6



1: Potentiometer 24...28 V DC, 2: LED DC ok

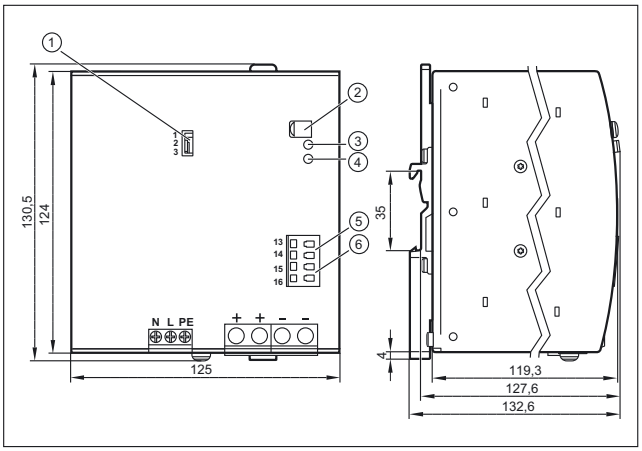
Scale drawings / drawing no. – CAD download: www.ifm.com

7



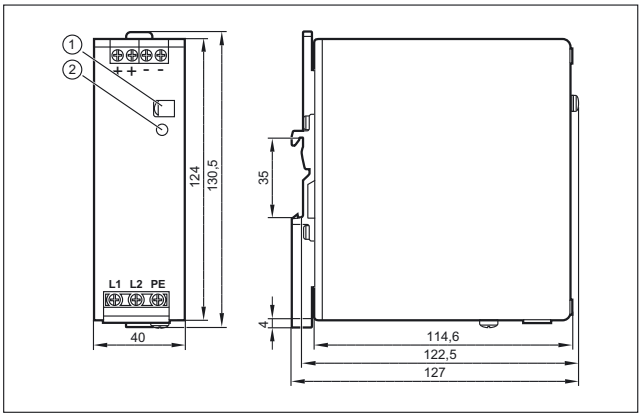
1: Potentiometer 24...28 V DC, 2: LED DC ok, 3: Terminals DC OK signal

8



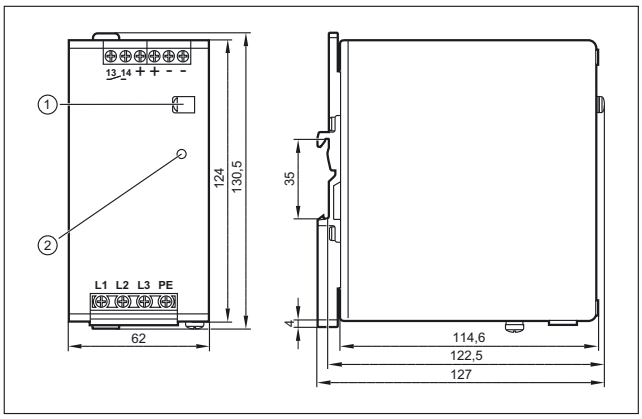
1: Jumper "single/parallel operation", 2: Potentiometer 24...28 V DC, 3: LED DC ok, 4: LED Overload, 5: Terminals DC OK signal, 6: Terminals shut down input

9



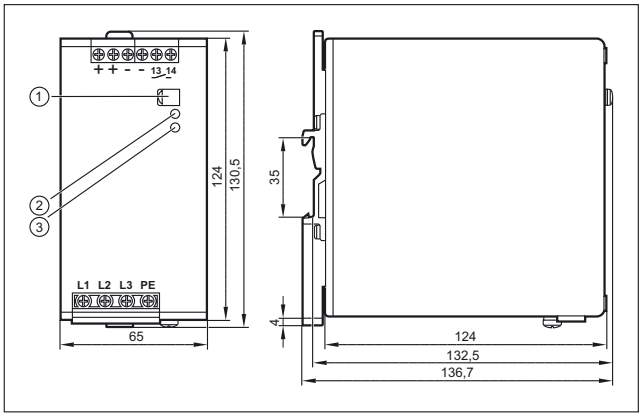
1: Potentiometer 24...28 V DC, 2: LED DC ok

10



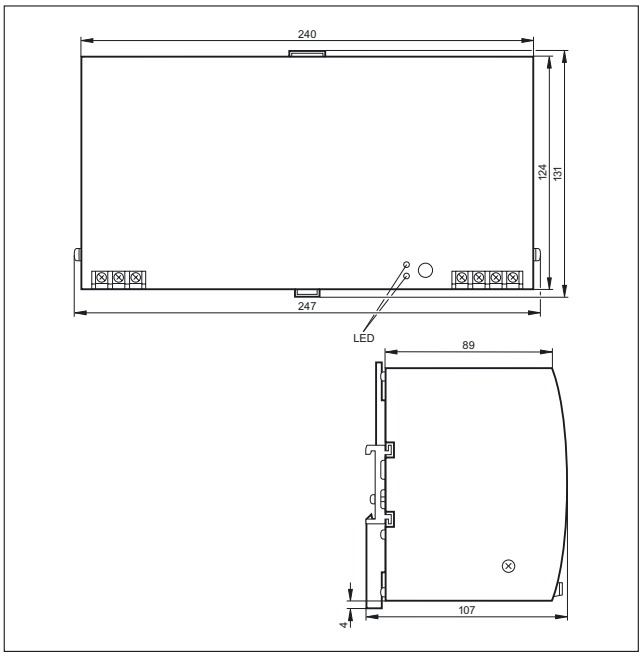
1: Potentiometer 24...28 V DC, 2: LED DC ok

11



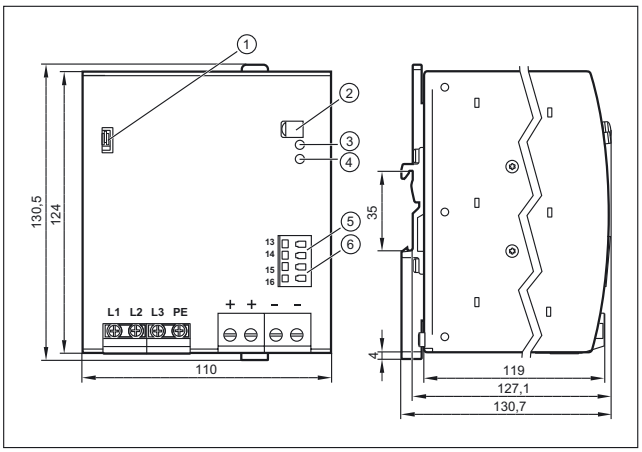
1: Potentiometer 24...28 V DC, 2: LED DC ok, 3: LED Overload

12



Scale drawings / drawing no. – CAD download: www.ifm.com

13



1: Jumper "single/parallel operation", 2: Potentiometer 24...28 V DC,
3: LED DC ok, 4: LED Overload, 5: Terminals DC OK signal,
6: Terminals shut down input

AS-i power supplies

All AS-i power supplies are primary switched-mode power supplies with a high degree of efficiency. The robust DIN rail housing can be easily integrated in large control cabinets as well as in local boxes. The primary voltage range stretches from 24 V DC via 230 V AC up to 400 V AC three-phase and can consequently be adapted to the local conditions.

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AS-i switched-mode power supplies, single phase, in robust metal housing	*870*
AS-i switched-mode power supplies, single phase, in compact plastic housing	*870*
AS-i switched-mode power supplies, three -phase, in robust metal housing	*871*
DC / DC converter (24 V / AS-i), in robust metal housing	*871*
Scale drawings / drawing no. – CAD download: www.ifm.com	*871 - 872*

AS-i switched-mode power supplies, single phase, in robust metal housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Drawing no.	Order no.
	2.8	30.5 DC	115 / 230 AC	98 (120 V AC; 60 Hz) / 96 (230 V AC; 50 Hz)	86.9	1	**AC1256**
	4	30.5 DC	115 / 230 AC	70 (120 V AC; 60 Hz) / 70 (230 V AC; 50 Hz)	88	1	**AC1254**
	8	30.5 DC	115 / 230 AC	44 (120 V AC; 60 Hz) / 42 (230 V AC; 50 Hz)	89.4	2	**AC1258**

AS-i switched-mode power supplies, single phase, in compact plastic housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Drawing no.	Order no.
	1.9	29.5...31.6 DC	100...240 AC	90 (230 V AC)	88	3	**AC1221**

AS-i switched-mode power supplies, three -phase, in robust metal housing

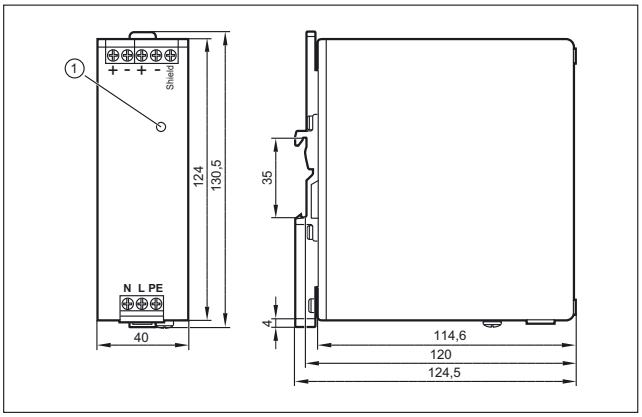
Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Drawing no.	Order no.
	8	30.5 DC	3 x 400 AC	34 (400 V AC; 50 Hz) / 53 (480 V AC; 60 Hz)	92	4	**AC1253**

DC / DC converter (24 V / AS-i), in robust metal housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Drawing no.	Order no.
	4	30.5 DC	24 DC	6 (24 V DC)	90.5	5	**AC1257**

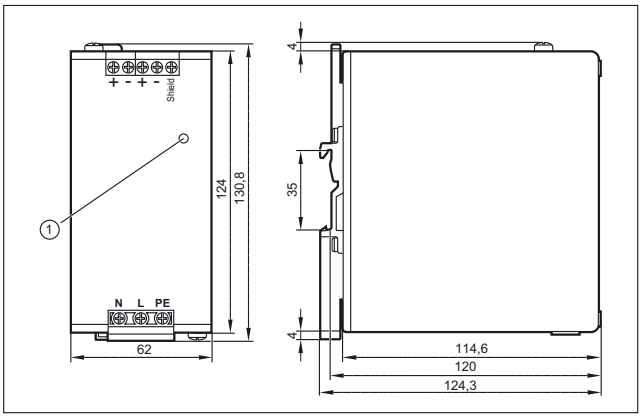
Scale drawings / drawing no. – CAD download: www.ifm.com

1



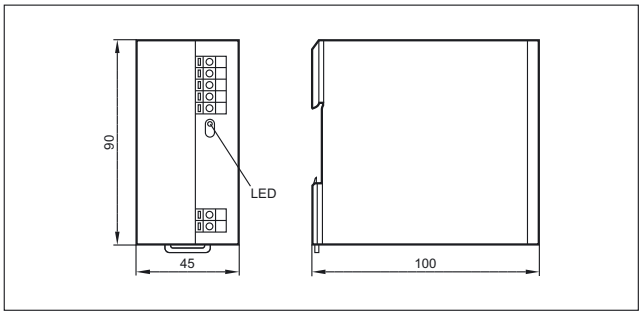
1: LED AS-i ok

2



1: LED AS-i ok

3



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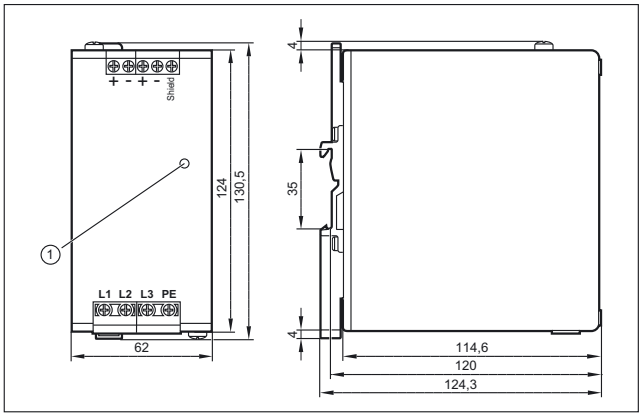

1: LED AS-i ok

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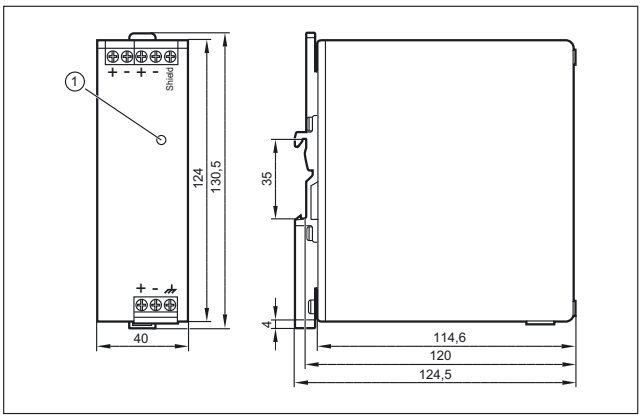
5



1: LED AS-i ok

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