

K SERIES HEAVY DUTY LEVEL REGULATOR

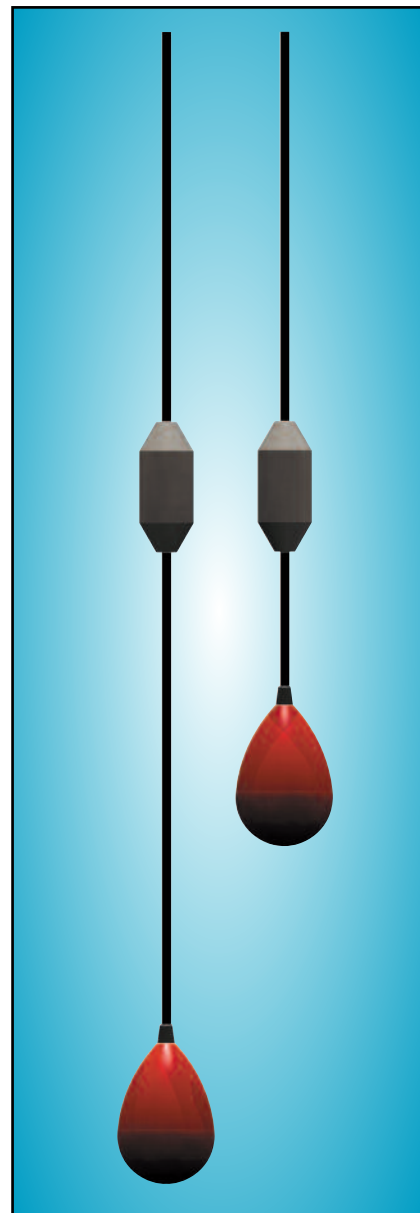
FEATURES

- LOW DIFFERENTIAL SWITCHING
- ALL DIRECTION TILT ACTION
- S.P.D.T 3 WIRE SINGLE POINT SWITCH
- POLYPROPYLENE & HYPALON CONSTRUCTION
- WIDE RANGE OF CABLE LENGTHS AVAILABLE
- STABLE REPEATABLE SWITCHING ACTION
- NO MERCURY OR LEAD COMPONENTS
- COMPACT SIZE, 75mm DIAMETER
- OPTIONAL CABLE WEIGHT AVAILABLE

APPLICATIONS

- BASIC LIQUID LEVEL CONTROL
- MULTI POINT LEVEL CONTROL
- SEWERAGE LEVEL CONTROL
- CHEMICAL LEVEL CONTROL
- HIGH & LOW LEVEL ALARMS
- SELF POWERED SIGNALLING
- PUMP PROTECTION

The K series heavy duty level regulator is a compact three-wire float switch for highly accurate and repeatable single point level sensing and control applications. It is ideal for use in water, sea water and most acids and alkali solutions. It will provide a stable switching action with a very high degree of reliability. The teardrop shape of the float makes it ideal for effluent and sewerage usage, as the float cell has no shoulders or edges for solids to build on. These float switches can be reliably and safely used in potable water systems, as they do not contain hazardous materials such as mercury or lead.



OPERATING PRINCIPLE

The K series level regulator houses a heavy ball that is balanced on the actuating arm of a high precision switch. When rising liquid level causes the float to lift and tilt, the centre of gravity of the ball moves away from the actuating axis of the switch and allows it to de-actuate. A falling liquid level allows the float to straighten up and the centre of gravity of the ball shifts back onto the switch causing it to again actuate. This simple reliable action only requires the float to tilt by 45 degrees in any direction for the switch to operate.

CONSTRUCTION

The K series heavy duty level regulator is constructed from polypropylene and high compliance three core Hypalon cable. The float chamber is a double moulded hermetically sealed cell with a double moulded barrier of solid polypropylene sealing the cable entry. The switch housed within the float cell is a precision single pole double throw device rated at 0 to 240V AC at up to 15 Amps resistive load.

HAZARDOUS APPLICATIONS

This level regulator is classed as a simple device and does not require separate certification to be used in hazardous applications. In any such installation the level regulator should be isolated by an intrinsically safe barrier, a zener barrier.

IMPORTANT SAFETY NOTE

The K series level regulators are rated for mains voltage operation. However, in the interest of safety we recommend that they are only ever operated at low voltage, preferably at 24 to 48V AC. Where mains voltage operation is unavoidable an earth leakage circuit breaker should always be installed in the control circuit. The application and wiring of this float switch should always be carried out by qualified electrical personnel and must always conform to local wiring rules.

TECHNICAL DATA

CABLE SPECIFICATIONS

Cable type	Heavy Duty EPR/CSP Flexible Hypalon Rubber
Outer sheathing	CSP Hypalon, Oil Resistant & Flame Retarded to VDE 0472
Inner sheathing	R-EP-90 Special Elastomer Insulation
Cores	3 Cores, each 0.75mm Sq. tinned copper
Cable diameter	7.5mm Nominal
Core colours	Blue (Common) Black (Normally Closed) Brown (Normally Open)
Cable voltage rating Uo/U	600 V / 1kV
AC test voltage	2.5kV
Cable current carrying capacity	18 Amps Continuous at a temperature of 30.5°C
Cable maximum tensile strength	30 N
Minimum bending radii	40mm
Maximum ambient operating temperature	80°C
Minimum permissible ambient temperature	-40°C
Minimum permissible ambient temperature for fully flexible operation	-25°C
Cable maximum permissible short circuit temperature	250°C
Standards of cable construction	Meets or exceeds AS1125, AS3191, AS3116 and DIN/VDE0282
Cable lengths available	1, 3, 4, 6, 10, 15, 20, 30, 50 Metres standard. Against special order switches to 1000 Metres can be supplied

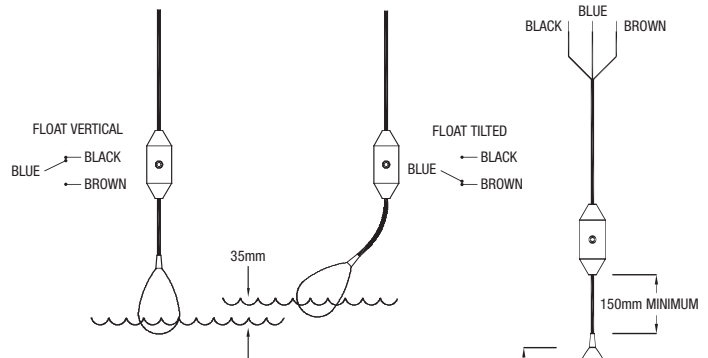
ENVIRONMENTAL LIMITATIONS

Maximum submergence	30meters,300kPa Static pressure
Maximum liquid temperature	60°C
Minimum liquid temperature	-20°C
Liquid specific gravity	>0.82
Liquid Ph	1 to 14
Smallest diameter well that the switch can operate in	Within a 160mm inside diameter vertically mounted pipe
Liquid level change for switch to operate	35mm
Closest switching point to tank floor	50mm
Smallest opening through which the switch will fit	75mm diameter
Minimum distance between float and closest tethering point or cable weight	150mm
Suitability for use in Diesel Fuel	Can be used, but some swelling and softening of the cable & boot may occur
Suitability for use in Sodium Hypochlorite	Fully Compatible
Suitability for sea water use	Fully Compatible
Suitability for use in Octane (Petrol)	Not suitable
Suitability for use in potable water	Fully Compatible

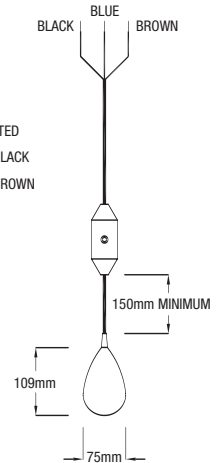
SWITCH SPECIFICATIONS

Switch type	Single Pole Double Throw
Contact gap	0.5mm
Contact material	Silver Alloy
Contact resistance	15m Ohms (initial value)
Rated voltage AC	0 to 240V AC
Rated voltage DC	0 to 250V DC
Current rating AC resistive	15 A at 250V AC, 15A at 125V DC
Motor load current rating AC	1.5 A at 250V AC, 2.5A at 125V AC (1/4HP)
Current rating DC Resistive	15 Amps at 14V DC, 6 Amps at 30V DC
Maximum lamp load AC	1.25 Amps at 250V AC
Maximum lamp load DC	1.5 Amps at 30V DC
Minimum operating load	100mA at 12V, or 60mA at 24V
Maximum operating frequency, electrical	24 operations per minute
Insulation resistance	100M Ohms minimum at 500 V DC
Dielectric strength between contacts	1000 V AC at 50 to 60Hz for 1 minute
Life expectancy Mechanical	20,000,000 operations minimum
Life expectancy Electrical	500,000 operations minimum
Approved standards	UL508 E41515, CSA C22.2 No55 (File No LR21642)

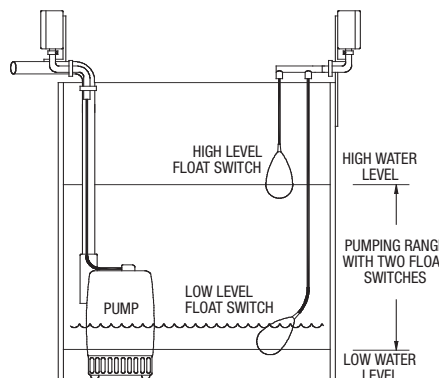
OPERATION



DIMENSIONS



TYPICAL INSTALLATION



MADE IN AUSTRALIA BY



Ph: 03 5278 8222 Fax: 03 5278 9761
65 Douro Street, North Geelong VIC 3215
www.factorycontrols.com.au

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