

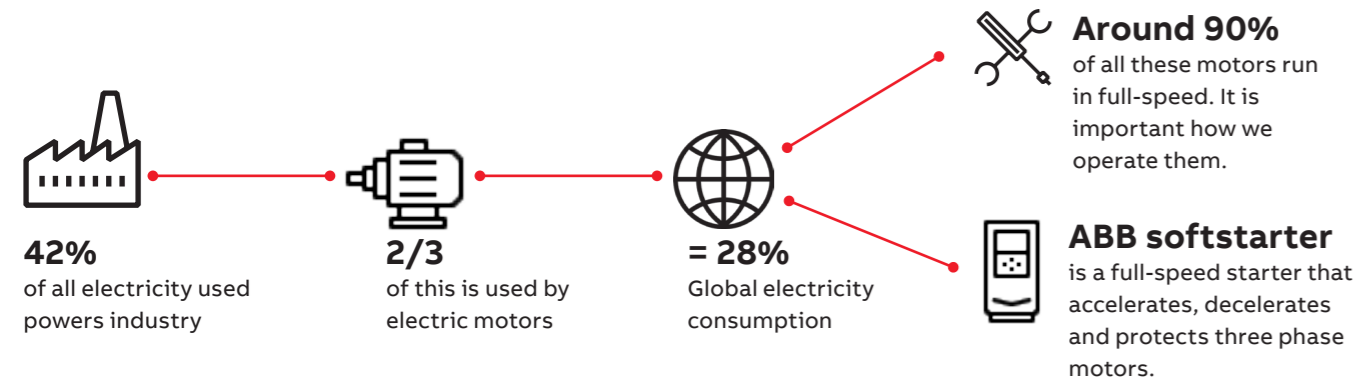


# ABB softstarters

## A part of your motor starting solution

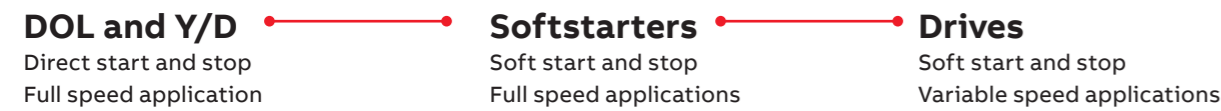
Motors use almost one third of the world's generated electricity. So it is safe to say that reliable motor operation is crucial to our modern way of life.

### Why motor starting matters

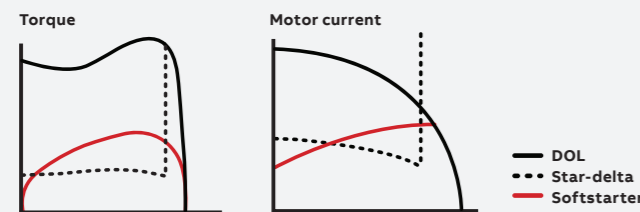


For more information, please contact your local ABB representative or visit [www.new.abb.com/low-voltage/products/softstarters](http://www.new.abb.com/low-voltage/products/softstarters)

### Motor starting solutions



Typical torque and current curves from starting a motor using DOL, star-delta and softstarter.



### Common applications for Softstarters

**Centrifugal fan**  
**Soft starting adjusted to application**  
It is possible to adjust the settings to fit almost any starting condition, from unloaded to fully loaded.

**Centrifugal pump**  
**Eliminating water hammering with torque control**  
The ABB softstarter feature torque control stop eliminates water hammering and prolongs the lifetime of the system, while reducing pump downtime.

**Compressor**  
**Full control of current with current limit**  
The feature current limit makes it possible to start the motor securely even in a weaker network, improving the availability of the equipment and system. Reducing the current means reducing the stress on cables, network and motor.

**Conveyor belt**  
**Avoid overheating with overload protection**  
ABB's overload protection feature shuts down the motor in case of overload, avoiding overheating.

### PANORAMA

## Softstarters

Type PSR, PSE and PSTX

**FACTORY CONTROLS**  
03 5278 8222  
sales@factorycontrols.com.au  
www.factorycontrols.com.au  
65 Douro Street, North Geelong Victoria 3215



# ABB softstarters

## Overview



**THE ADVANCED RANGE PSTX**  
**Key features**

- Multiple different start and stop ramps
- Built-in bypass for energy saving and fast installation
- Detachable IP66/4X outdoor keypad
- 3 DI, 3 DO, 1 AO, PTC/PT100, Built-in Modbus
- Complete motor protection
- Extensive functionality

**Technical data**

- Operational voltage: 208-600 and 208-690 V AC (2 frames)
- Rated control supply voltage: 100-250 V AC, 50/60 Hz
- PSTX rated operational current: 30-1250 A (inside-delta: 2160 A) (6 frames)
- Three-phase controlled
- Both in-line and inside-delta connection is possible

**Certifications and approvals:**

- CE, cULus, CCC, EAC, ANCE, C-tick, ABS, DNV GL, Lloyd's Register, CCS, PRS, Class NK

**THE EFFICIENT RANGE PSE**  
**Key features**

- Soft start/stop with voltage ramp and torque ramp
- Built-in bypass for energy saving and fast installation
- Easy set-up with graphical display
- Run, TOR and event output relays, AO
- Basic motor protection and current limit

**Technical data**

- Operational voltage: 208-600 V AC (1 frame)
- Wide rated control supply voltage: 100-250 V AC, 50/60 Hz
- Rated operational current: 18-370 A (3 frames)
- Two-phase controlled

**Certifications and approvals:**

- CE, cULus, CCC, EAC, ANCE, C-tick, ABS, DNV GL, Lloyd's Register, CCS, PRS, Class NK

**THE COMPACT RANGE PSR**  
**Key features**

- Soft start/stop with linear voltage ramp
- Built-in bypass for energy saving and fast installation
- Set-up with 3 potentiometers
- Run & TOR output relays
- Few items to stock – in total only 4 frame sizes

**Technical data**

- Operational voltage: 208-600 V AC (1 frame)
- Wide rated control supply voltage: 100-240 V AC, 50/60 Hz or 24 V AC/DC
- Rated operational current: 3-105 A (4 frames)
- Two-phase controlled

**Certifications and approvals:**

- CE, cULus, CCC, EAC, ANCE, C-tick, PRS

**PSTX SOFTSTARTER HMI**  
**Key features**

- Customizable display for important status information
- Application assistant for fast and easy set-up
- IP66 (1, 4x outdoor, 12) protection against water and dust
- Easy to use with the large back-lit graphical display
- Detachable HMI for easy panel door mounting
- Set-up and firmware update the PSTX with USB connection - no need of supply or main voltage

**SOFTSTARTER Toolbox**  
**Pc tools**

- SoftstartersCare™ – Configuration tool [Link](#)
- Prosoft – Softstarters selection tool [Link](#)
- PSTX Simulator [Link](#)

**Documents**

- Softstarter catalog PSR, PSE and PSTX [Link](#)
- Softstarter catalog PSTX [Link](#)

**Case study**

- Aspro China [Link](#)
- Granutech USA [Link](#)
- Marine Technology Australia [Link](#)
- Wuxi Xinie China [Link](#)

**Web**

- Softstarter web [Link](#)
- Launch page PSTX [Link](#)

## Softstarter values, benefits, case studies and features

**SECURE MOTOR Reliability**

**Increase your motor's lifetime...**  
 With ABB's softstarters, starting currents are easily optimized to your load, application and motor size.

**...by protecting it from electrical stresses.**  
 Over ten motor protection features are included to keep your motor safe from overloads and network irregularities.

**RHOSS keeps air flowing with secured reliability**  
 RHOSS, an HVAC specialist from Italy has managed to reduce the starting currents by 60% while keeping the short starting time that a scroll compressor needs.

**Starting currents reduced by 60%**



Softstarter Features	PSR	PSE	PSTX
Current limit	—	●	●
Current limit ramp and dual current limit	—	—	●
Electronic motor overload protection	—	●	●
Dual overload protection	—	—	●
Underload protection	—	●	●
Power factor underload protection	—	—	●
Locked rotor protection	—	●	●
Current/Voltage imbalance protection	—	—	●
Phase reversal protection	—	—	●
Customer defined protection	—	—	●
Motor heating	—	—	●
PTC/PT100 input for motor protection	—	—	●
Overvoltage/undervoltage protection	—	—	●
Earth-fault protection	—	—	●

● = standard, O = option, — = not available

**IMPROVE INSTALLATION Efficiency**

**Reduce your installation time and panel size...**  
 ABB's softstarters are easy to install thanks to their compact design and many built-in features.

**...by having everything that you need built in.**  
 Built-in bypass saves energy and space while reducing heat generation: a complete motor starting solution in one unit — designed and verified by ABB.

**Xylem - South Africa ABB's softstarters providing efficiency to the mining industry**  
 Xylem Reducing the number of components by 80%, shortened installation time by 60%. Costs cut to half has helped Xylem sell twice as many panels with softstarters as before.

**Total panel costs reduced by 50%**



Softstarter Features	PSR	PSE	PSTX
Built-in bypass	●	●	●
Inside-delta connection possible	—	—	●
Graphical display and keypad	—	●	●
Detachable keypad	—	—	●
Motor runtime and start count	—	—	●
Programmable warning functions	—	—	●
Diagnostics	—	—	●
Overload time-to-trip	—	—	●
Overload time-to-cool	—	—	●
Analog output	—	●	●
Fieldbus communication	O	O	●
Event log	—	O	●
Multiple languages	—	—	17
Electricity metering	—	—	●

● = standard, O = option, — = not available

**INCREASE APPLICATION Productivity**

**Reduce the number of production stops...**  
 ABB's softstarters reduce mechanical stress on your application which increases uptime.

**...by letting the softstarter do more than just starting.**  
 Torque control, pump cleaning, motor break and many more features enables you to use your process to its full potential.

**Yantai Guhe cuts costs by stopping pumps**  
 Increasing application productivity at Yantai Guhe, a leading Chinese pump manufacturer, increasing productivity by solved water hammering with PSE and are now saving costs and winning orders.

**Reduced maintenance costs by 40%**



Softstarter Features	PSR	PSE	PSTX
Torque control	—	●	●
Torque limit	—	—	●
Coated PCBA	—	●	●
Limp mode	—	—	●
Jog with slow speed forward/ reverse	—	—	●
Dynamic brake	—	—	●
Stand still brake	—	—	●
Sequence start	—	—	●
Full voltage start	—	—	●
Kick start	—	●	●
Automatic pump cleaning	—	—	●

● = standard, O = option, — = not available

Normal start overview: PSR, PSE and PSTX

Frame size	PSR	A													B				C				D				E				F																																														
		PSR3	PSR6	PSR9	PSR12	PSR16	PSR25	PSR30	PSR37	PSR45	PSR60	PSR72	PSR85	PSR105	PSR142	PSR170	PSR210	PSR250	PSR300	PSR370	PSR470	PSR570	PSR720	PSR840	PSR1050	PSR1250																																																			
	PSE	PSE18													PSE25				PSE30				PSE37				PSE45				PSE60				PSE72				PSE85				PSE105																																		
	PSTX	PSTX30													PSTX37				PSTX45				PSTX60				PSTX72				PSTX85				PSTX105																																										
UL	IEC	(400 V) kW	1.5	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	250	315	400	450	560	710	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100	125	150	200	250	300	400	500	600	700	900	1000	3.4	6.1	9	11	15.2	24.2	28	34	46.2	59.4	68	80	104	130	169	192	248	302	361	480	590	720	840	1062	1250

Available communication protocols	PSR	PSE	PSTX
Modbus RTU	●	●	●
PROFIBUS	●	●	●
DeviceNet	●	●	●
EtherNet/IP	—	—	●
PROFINET	—	—	●
Modbus TPC	—	●	●

● = Standard, — = not available