



Panorama

Softstarters The complete range

Why does soft starting matter?

Controlling industrial electricity. The vast majority of the world's industrial applications are driven by motors. It is estimated that 28 percent of all electricity used in one year is dedicated to run industrial motors. Controlling this important resource is what ABB's softstarters does in an excellent way.

Secure motor

Reliability

With ABB's softstarters current peaks are eliminated and the starting current is reduced significantly. The load and voltage protections keep your motor protected from load and network irregularities. More features that will improve the overall reliability of the motor are three types of current limit and earth fault protection, amongst others.



Improve installation

Efficiency

The built-in bypass will reduce both energy consumption and heat generation while running motors at full speed. It saves both time on installation, space inside the panels, and it reduces the cost of extra cooling equipment. ABB's softstarters also come with HMI's that are easy to learn, improving the efficiency of the softstarters once they are in use.



Increase application

Productivity

ABB's softstarters will reduce mechanical wear and tear and increase the productivity of your applications. With torque control damage to pump systems from problems like water hammering can be completely avoided. The continuous operation of applications can also be increased by features like jog with slow speed, pump cleaning and limp mode, which allows your application to do more.





Yantai Guhe Electric Improving water supply reliability

Manufacturing over 1,000 installation panels for pump systems annually requires the use of reliable motor starting solutions. In the past Yantai Guhe Electric experienced problems with water hammering when stopping pumps with the panels it built. However, since using ABB's softstarters with torque control this problem has been eliminated. This led to a 20 percent reduction of downtime and a 40 percent reduction of cost. Benefits as a result of using ABB's softstarters.

Why soft starting matters to Yantai Guhe Electric

Reduction of
pump system
downtime by

20%

Maintenance cost
for pump system
reduced by

40%

For more examples of ABB's softstarters helping the industry, visit: new.abb.com/low-voltage/launches/pstx

PSR – The compact range



Normal start
In-Line connected

(400 V) kW
IEC, Max. A
(440-480 V) hp
UL, Max. A

PSR3	PSR6	PSR9	PSR12	PSR16	PSR25	PSR30	PSR37	PSR45	PSR60	PSR72	PSR85	PSR105
1.5	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55
3.9	6.8	9	12	16	25	30	37	45	60	72	85	105
2	3	5	7.5	10	15	20	25	30	40	50	60	75
3.4	6.1	9	11	15.2	24.2	28	34	46.2	59.4	68	80	104

400 V, 40 °C

Using manual motor starter or MCCB, type 1 coordination will be achieved. ¹⁾

Manual motor starters (50 kA)

MS116	MS132	MS450	MS495	–
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Using gG fuses, type 1 coordination will be achieved. To achieve type 2 coordination, semiconductor fuses must be used. ¹⁾

Fuse protection (50 kA) gG Fuse

10 A	16 A	25 A	32 A	50 A	63 A	100 A	125 A	200 A	250 A
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Suitable switch fuse for the recommended semiconductor fuses. ¹⁾

Switch fuse

OS32G	OS125G	OS250
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The line contactor is not required for the softstarter itself but often used to open if OL trips. ¹⁾

Line contactor

AF9	AF12	AF16	AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116
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Overload protection is always required to protect the motor: ¹⁾

Thermal overload relay

TF42	TF65	TF96	TF140DU
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¹⁾ This is an example of short circuit coordination. For more examples see: applications.it.abb.com/SOC

Select softstarter according to load

Normal start class 10

- Bow thruster
- Centrifugal pump
- Compressor
- Conveyor belt (short)
- Elevator

Heavy duty start class 30

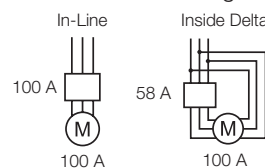
- Centrifugal fan
- Crusher
- Conveyor belt (long)
- Mill
- Mixer
- Stirrer

Select size according to the motor kW ratings.

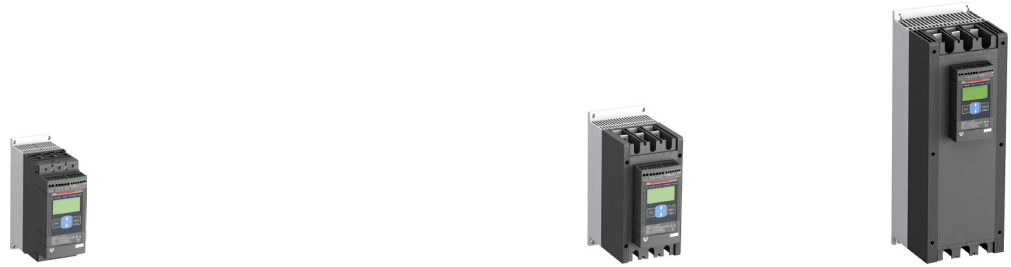
Select a softstarter **one size larger** compared to the motor kW ratings.

In-line or inside delta for PSTX

The PSTX softstarter can be connected inside the motor delta. In this case the current through the softstarter is reduced by 42 %. It will then be possible, for example, to run a 100 A motor using a 58 A softstarter.



PSE – The efficient range



PSE18	PSE25	PSE30	PSE37	PSE45	PSE60	PSE72	PSE85	PSE105	PSE142	PSE170	PSE210	PSE250	PSE300	PSE370
7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200
18	25	30	37	45	60	72	85	106	143	171	210	250	300	370
10	15	20	25	30	40	50	60	75	100	125	150	200	250	300
18	25	28	34	42	60	68	80	104	130	169	192	248	302	361

400 V, 40 °C

MCCB (50 kA)

XT2S160										XT4S250	T4S320	T5S400	T5S630
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Fuse protection (85 kA), Semiconductor fuses, Bussmann

170M1563	170M1564	170M1566	170M1567	170M1568	170M1569	170M1571	170M1572	170M3819	170M5809	170M5810	170M5812	170M5813	170M6812	170M6813
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Switch fuse

OS32G	OS63G	OS125G	OS250	OS400	OS630
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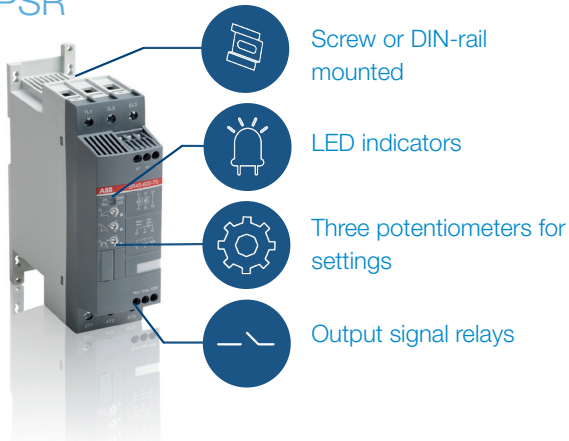
Line Contactor

AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116	AF140	AF190	AF205	AF265	AF305	AF400
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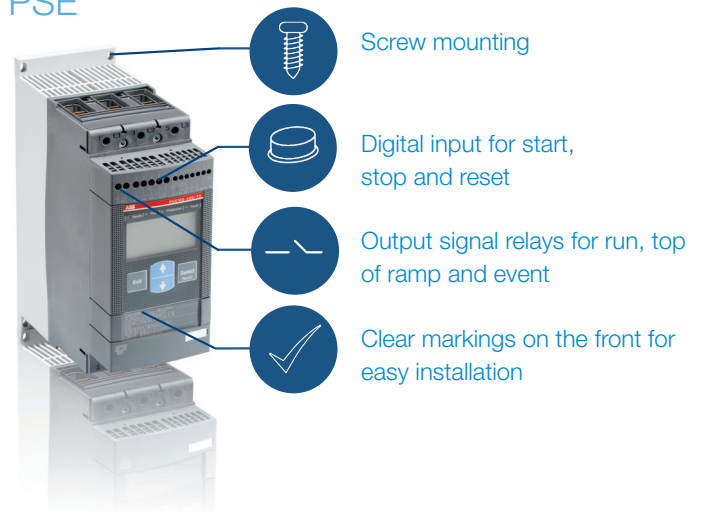
Electronic overload relay

Built-in

PSR



PSE



PSTX – The advanced range



PSTX30	PSTX37	PSTX45	PSTX60	PSTX72	PSTX85	PSTX105	PSTX142	PSTX170	PSTX210	PSTX250	PSTX300	PSTX370
15	18.5	22	30	37	45	55	75	90	110	132	160	200
30	37	45	60	72	85	106	143	171	210	250	300	370
20	25	30	40	50	60	75	100	125	150	200	250	300
28	34	42	60	68	80	104	130	169	192	248	302	361

400 V, 40 °C
MCCB (50 kA)

XT2S160						XT4S250	T4S320	T5S400	T5S630
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Fuse protection (80 kA), Semiconductor fuses, Bussmann

170M1567	170M1568	170M1569	170M1571	170M1572	170M3819	170M5810	170M5812	170M5813	170M6812	170M6813
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Switch fuse

OS32G	OS63G	OS125G	OS250	OS400	OS630
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Line contactor

AF30	AF38	AF52	AF65	AF80	AF96	AF116	AF140	AF190	AF205	AF265	AF305	AF370
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Electronic overload relay

Built-in

PSTX

Three programmable digital inputs and start and stop

Three programmable output signal relays

Clear markings on the front for easy installation and handling

Extension I/O for extra inputs and outputs

- Keyhole mounting for quick installation
- A compact motor starting solution with many features
- Built-in Modbus and Anybus for other protocols
- Chose between 15 different measurements for analog out



PSTX470	PSTX570	PSTX720 ²⁾	PSTX840 ²⁾	PSTX1050 ²⁾	PSTX1250 ²⁾
250	315	400	450	560	710
470	570	720	840	1050	1250
400	500	600	700	900	1000
480	590	720	840	1062	1250

T7S800	Contact ABB for more information
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170M6813	170M6814	Contact ABB for more information
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6630	Contact ABB for more information
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AF460	AF580	AF750	AF1350	AF1650	-
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Built-in					
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²⁾ To be released Q4 2015

Softstarter feature selection guide

	PSR	PSE	PSTX	• Standard O Opional – Not available
Secure motor reliability	-	•	•	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
-	-	•	Oversvoltage/undersvoltage protection	
-	-	•	Earth-fault protection	
Improve installation efficiency	•	•	•	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
O	O	•	Fieldbus communication	
-	O	•	Event log	
-	-	15	Multiple languages	
-	-	•	Electricity metering	
Increase application productivity	-	•	•	Torque control
	-	-	•	Torque limit
	-	•	•	Coated PCBA
	-	-	•	Limp mode
	-	-	•	Jog with slow speed forward/ reverse
	-	-	•	Motor brake
	-	-	•	Anti-backspin
	-	-	•	Sequence start
	-	-	•	Full voltage start
	-	•	•	Kick start
	-	-	•	Manual pump cleaning

Customizable display for important status information

Backlit display makes status information easy to read

Application assistant for fast and easy set-up

IP66 (1, 4x outdoor, 12) protection against water and dust



Easy to use thanks to large graphical display

Detachable HMI for easy panel door mounting

Information button for built-in help function

USB connection

Contact us

ABB AB

Low Voltage Products

SE-721 61 Västerås / Sweden

new.abb.com/low-voltage/launches/pstx



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