



Catalog

Softstarters

Type PSR, PSE, PST and PSTB

Power and productivity
for a better world™



News

Efficient PSE Range – World's first compact softstarter with Torque control

The latest addition to the ABB softstarter family is the efficient PSE range. This softstarter has been equipped with all the most important features making it a very efficient choice. During the development process, great focus has been put into making sure that both the softstarter and the process are even more reliable. Further more, the softstarter has been equipped with built-in by-pass to reduce the wiring and a back-lit display to provide easy set-up and monitoring.

The complete range of Softstarters

The ABB softstarter portfolio now consists of 3 different ranges making it possible to find a suitable softstarter for almost all possible applications and motor sizes all the way up to 1800A. The softstarter family consists of the Compact PSR, the Efficient PSE and the Advanced PST(B) range.



Softstarters

From the moment the first electrical motors were developed, engineers have been searching for a way to avoid electrical and mechanical problems that usually occur when starting the motor. These problems include high inrush current and current spikes as well as excessive mechanical wear. One traditional way to avoid this is to use a star delta starter. This starting method in many applications is insufficient, as problems with current spikes and torque peaks will remain. In addition, it does not provide any way to perform a soft stop. A softstarter on the other hand will provide far better performance during the start and also the possibility to soft stop the motor.

ABB has been producing softstarters since the beginning of the 1980's. The valuable experience gained since the early 80's has been incorporated into the design of today's product ranges. Matching modern power electronics with smart circuitry and software, the ABB softstarters offer superior control of the current and voltage during motor start-up and stop, in addition to several state of the art design features.

The solution to both mechanical and electrical problems

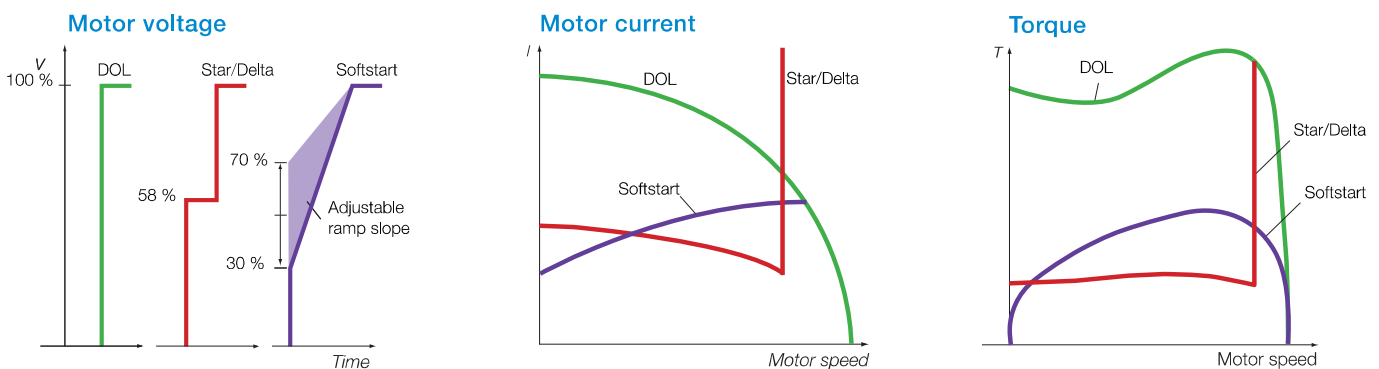
AC motors, "the workhorse of the industry", are used to drive fans, crushers, agitators, pumps, conveyors, etc. Depending on how it is installed, too often unnecessary and unwanted torque

and current peaks are an everyday reality in production plants all over the world, causing damage in several ways. Among them are:

- Electrical problems due to voltage and current transients arising from Direct-On-Line or Star-Delta starts. Such transients may overload the local supply network and cause unacceptable voltage variations that interfere with other electrical equipment connected to the network.
- Mechanical problems that address the entire drive chain, from motor to driven equipment, causing a big need for service and repair as well as unwanted down time.
- Operational problems, such as damage to products on conveyor belts.
- Water hammering and pressure surges in pipe systems when starting and stopping pumps.

The financial consequences are considerable; every technical problem and every breakdown costs money in terms of repairs as well as lost production.

The easy solution to all of these problems is to install an ABB Softstarter type PSR, PSE or PST(B). With ABB Softstarters, it is possible to start and stop smoothly while keeping mechanical and electrical stresses to a minimum.



Graphs showing the basic differences between direct-on-line starting (DOL), star-delta starting and soft starting in terms of the motor voltage (V), motor current (I) and motor torque (T).

Softstarters

ABB softstarters – The complete range

ABB offers three different ranges of softstarters to cover every customer need for solutions for motor sizes up to 1800 A. This page describes the main characteristics of the different softstarter ranges

PSR – The compact range

The PSR softstarter is the most compact of all the softstarter ranges, thereby making it possible to design compact starting equipment. The system concept with Manual Motor Starters and the PSR provides a far more compact starting solution than for instance a star delta starter.

The built-in by-pass reduces the energy loss and makes the connection easier. With only three potentiometers, the set-up couldn't be any easier. Still, the optimized ramping characteristics will ensure a very smooth start and stop for all applications.

PSE – The efficient range

The PSE softstarter is the world's first compact softstarter with both built-in electronic overload for motor protection and torque control for an excellent control of pumps. The compact design with the most important functionality integrated provides a very efficient starting solution.

The illuminated language neutral display and the four button keypad make it easy to take advantage of all the advanced functionality in the softstarter. The display will also provide all the necessary information both during ramping and continuous operation.

PST(B) – The advanced range

The PST(B) softstarter is the most advanced softstarter in the range with almost all imaginable functionality included. All the advanced protections for the motor, the softstarter and the load ensure a trouble free operation. Pre-warnings even allow problems to be detected before the motor needs to be stopped and thereby avoiding unnecessary downtime.

The torque control function has been developed and tested together with well known pump manufacturers to ensure the best possible start/stop of pumps without water hammering and pressure surges.

With the full text LCD display in your own language, pre-programmed application settings and event logging, it couldn't be easier to set-up and operate.

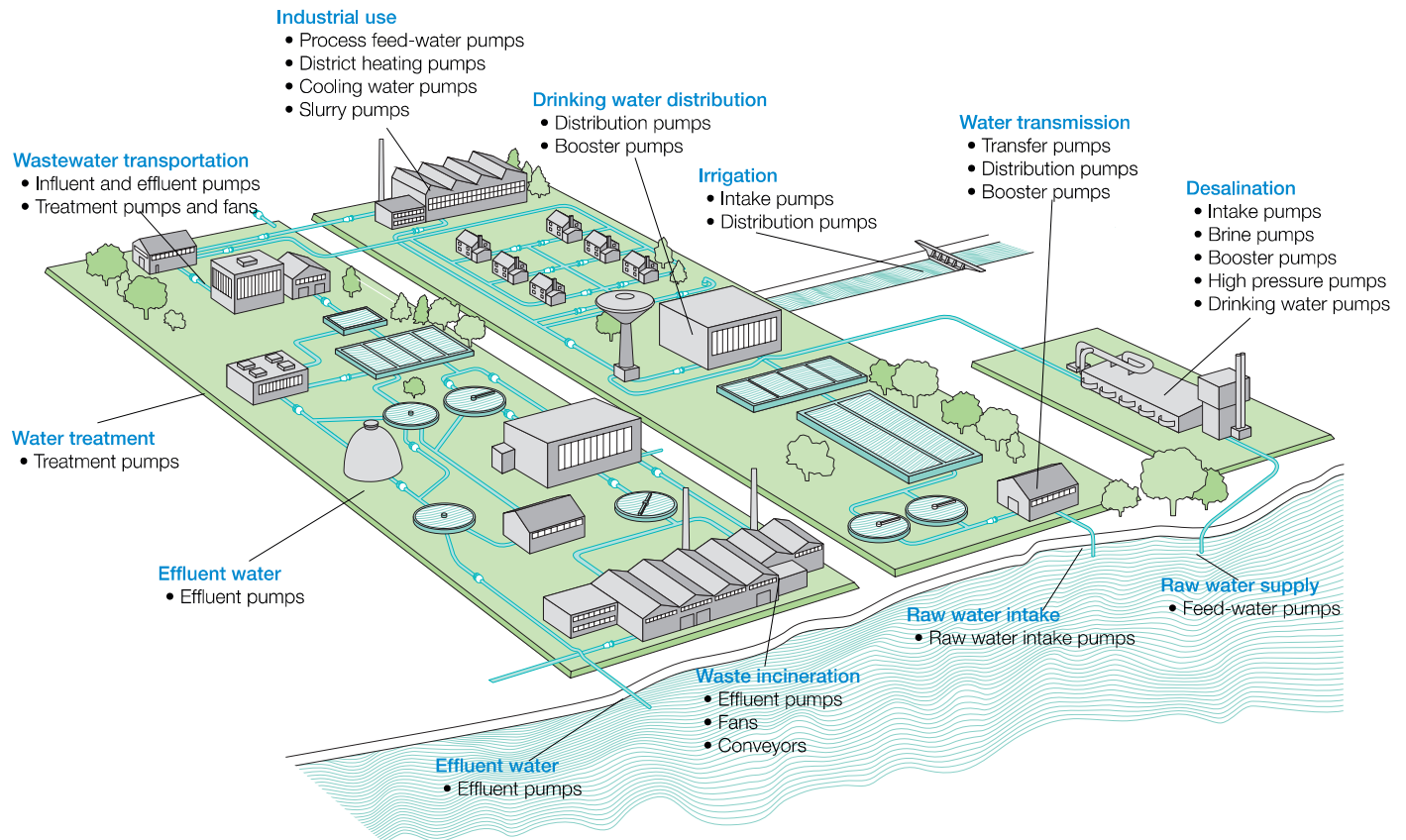
By using the ABB FieldBusPlug, you can decide at any time which bus protocol to use. The fieldbus system will allow you to set-up, control and monitor the softstarter.

PSR	PSE	PST(B)	• Standard O Optional – Not available
•	•	• 1)	Built-in by-pass 1) on PSTB
–	–	•	Inside delta connection
–	•	O	Coated PCBs
–	•	•	Display and keypad
–	•	•	Torque control
–	•	•	Settable current limit function
–	•	•	Electronic motor overload protection
–	–	•	PTC input for motor protection
–	–	•	Phase imbalance protection
–	–	•	Phase reversal protection
–	•	•	Locked rotor protection
–	•	•	Thyristor overtemperature protection
–	•	•	Underload protection
–	–	•	Programmable warning functions
–	•	•	Analog output
O	O	•	FieldBus communication
–	O	•	Event log
–	O	O	External keypad

Applications

Pumps

Water is the world's most important resource and water facilities can be found all over the world. Examples of water applications are freshwater and wastewater systems, circulating water for heating or cooling and irrigation.



Common questions:

- How to avoid voltage drops on the network when starting?
- ABB softstarter will reduce the starting current and thereby avoid the voltage drops.
- How to avoid water hammering when stopping?
- Use our softstarters equipped with an optimized stop ramp or even better with torque control.
- How to ensure high reliability in harsh environments?
- Use our softstarters equipped with coated circuit boards to better withstand those environments.
- How to protect my pumping equipment in the best possible way?
- Use ABB softstarters equipped with our special designed protections such as overload, underload, and locked rotor protection.

Applications

Fans



Common questions:

- How to avoid extended voltage drops due to long starting time?
- Use an ABB softstarter equipped with current limit to keep control of the starting current.
- How to extend the life of the driving belts?
- Our softstarters will reduce the mechanical stress during start, thus avoiding slipping belts.
- How to ensure the operation of the fan?
- A softstarter with underload protection will detect broken belts, making the operator immediately aware of the problem.

Compressors



Common questions:

- How to ensure a long life of the compressor?
- Using a softstarter for starting will reduce the accelerating torque, thereby minimizing the mechanical stress.
- How to build a compact compressor unit?
- Using a compact softstarter like PSR or PSE will allow a much more compact starting equipment than for instance a star delta starter.

Conveyor belts



Common questions:

- How to reduce the need for service and repair of the conveyor belt?
- A softstarter from ABB will cause minimal mechanical stress on the conveyor belt.
- How to avoid that the conveyor belt is running in the wrong direction?
- Use a softstarter with phase reversal protection.
- How to improve the efficiency of the conveyor belt?
- Using softstarters with high and low current warnings allows you to load on and off the conveyor belt.
- How to ensure a successful start in high inertia loads?
- A softstarter with kick start function will provide sufficient torque to be able to overcome the initial high friction from a temporarily jammed belt.

PSR – The compact range

Description



Product description

- Wide rated operational voltage 208 – 600 V
- Rated control supply voltage 24 V DC or 100 – 240 V AC
- Rated operational current 3 – 105 A
- Wide ambient temperature range, -25 to +60 °C (-13 to 140 °F)
- Built-in by-pass on all sizes, saving energy and reducing installation time
- Potentiometer settings
- Run signal relay on all devices
- TOR signal relay on PSR25 ... PSR105
- Optional fieldbus communication using Profibus, Modbus, Devicenet or CANopen
- DIN rail mounting on PSR3 ... PSR45
- Screw mounting on all sizes
- Connection kits for easy connection with ABB manual motor starters
- Sophisticated algorithm eliminating the DC-component and thereby providing excellent starting performance.

Settings

- ① Start = 1 ... 20 sec
Stop = 0 ... 20 sec - including the step down voltage.
- ② Step down = 2% reduction for each second increased stop ramp
Stop ramp 10 sec -> Step down 80% (20% reduction)
- ③ U_{ini} = 40 ... 70% results in End voltage = 30 ... 60%

The PSR range is the most compact of all the ABB softstarter ranges, thereby making it possible to fit many devices into the same enclosure. The system concept with Manual Motor Starters provides a far more compact starting solution than for example a star delta starter.

Flexible mounting

PSR softstarters from 3 to 45 A are possible to mount on a din rail, ensuring quick and easy mounting. Naturally, all sizes can be screw mounted.

Few settings

The set-up of the PSR is easily done and confirmed using the three clearly marked potentiometers on the front.

Built-in by-pass for energy saving

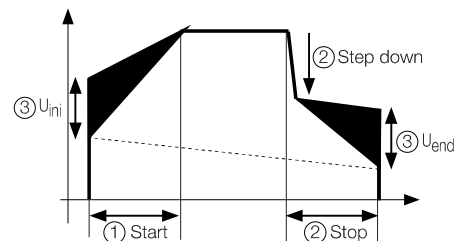
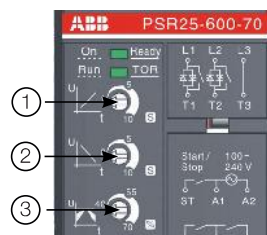
The built-in by-pass on all sizes does not only save energy; it will also ensure the most compact ABB softstarter design and reduce the installation time.

Suitable for stopping pumps

Even without using torque control, the PSR range is designed to reduce water hammering and will allow a superior stop compared to the direct stop resulting from a star delta starter or a DOL starter. See the special designed stop ramp with step down voltage below.

System concept with manual motor starters

All PSR softstarter sizes can easily be connected to the corresponding manual motor starters from ABB, using the special designed connection kits. This will both make the mounting and the connection easier and will provide a very compact starting solution containing short circuit and thermal protection, isolation function and softstarter - everything that you need.



PST(B) – The advanced range

Description



Description

- Wide rated operational voltage 208 – 690 V AC
- Wide rated control supply voltage 100 – 250 V, 50/60 Hz
- Rated operational current 30 to 1050 A (Up to 1810 A inside delta)
- Wide ambient temperature range, -25 to +50 °C (-13 to 122 °F)
- Both in line and inside delta connection
- Coated circuit boards available, for reliable operation even in harsh environments
- Full text display in 14 languages and 4 button keypad for easy set-up and operation
- Optional external keypad, IP66
- Built-in by-pass contactor on PSTB (from 370 A) for energy saving and easy installation
- Prepared for external by-pass on PST (30 – 300 A)
- Torque Control for excellent control of pumps
- Current limit, adjustable between $1.5 - 7 \times I_g$
- Fieldbus communication using Profibus, Modbus, Devicenet or CANopen
- Dual motor overload protection with classes 10A, 10, 20 and 30
- Adaptable motor underload protection to detect pumps running dry
- Adaptable locked rotor protection to detect jammed pumps
- PTC protection to protect the motor from overheating
- Adjustable kick start to start jammed pumps
- Programmable output signal relays
- Programmable pre-warning functions
- Event log with time stamp
- Analog output showing current, voltage, power factor etc.
0 – 10 V, 0 – 20 mA, 4 – 20 mA

The PST(B) softstarter is the most advanced softstarter in the ABB product portfolio and is equipped with almost all imaginable features. This makes the PST(B) ideal for almost every application.



Torque Control

The ABB torque control function is developed together with pump manufacturers to ensure the best possible pump stop, eliminating problems with water hammering and pressure surges.

By-pass for energy saving

By-passing the softstarter after reaching full voltage, will save energy and reduce the heat generation. The PST softstarters are equipped with extra terminals making the connection of an external by-pass contactor easier and allowing all protections to be active during by-pass. On the PSTB softstarters, an ABB AF-contactor is already built-in, ensuring a compact starting solution with minimal wiring during installation.

Advanced protections

The PST(B) softstarters are equipped with almost all protections imaginable for protecting the motor, the softstarter and the application. To offer more flexibility, all protections can be tailored to your specific needs.

Flexible analog output

The analog output terminals can be connected to an analog current meter to show the current during operation and thereby eliminating the need for an additional current transformer. The analog output signal can also be used as an analog input to a PLC.

Fieldbus communication

Using the ABB FieldBusPlug, all the most common fieldbus protocols are supported. Using the PLC system it is possible to set-up the softstarter, read status information and also to control the softstarter.

Display and keypad

The PST(B) softstarter is equipped with a full text display showing all information in clear text in your own language. To make it even easier to set-up, there are standard settings for many common applications, such as centrifugal pump. Selecting this will automatically provide all required settings including torque control when stopping.

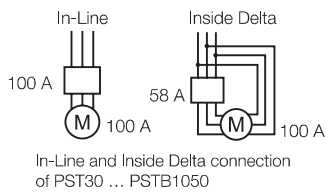
External keypad

As an option, the PST(B) softstarter can be equipped with an external keypad for easy set-up and monitoring of the unit without opening the enclosure door. The keypad can also be used to copy parameters between different softstarters.

PST(B) – The advanced range

Description

The PST Softstarter can be selected according to the rated motor power in normal duty applications like pumps, compressors, elevators, escalators, short conveyor belts and bow thrusters. See page 28-29, For heavy duty applications like centrifugal fans, crushers, mixers, mills, stirrers and long conveyor belts, select a softstarter from page 30-31. The softstarter selection tool prosoft can also be used for a more optimized selection.



- Green on LED
 - Yellow protection LED
 - Red fault LED
- Full text display in 14 languages
- User friendly keypad
- Pre set application settings



External keypad with same design as the fixed one

PST(B) – The advanced range

Overview



PST30 ... PST72



PST85 ... PST142

		Softstarter									
		PST30	PST37	PST44	PST50	PST60	PST72	PST85	PST105	PST142	
Normal start In-Line connected	(480 V) hp	20	25	30	40	40	50	60	75	100	
	(600 V) hp	25	30	40	50	50	60	75	100	125	
	UL/CSA, Max FLA	28	34	42	54	60	68	80	104	130	
Using MCCB only, type 1 coordination will be achieved		MCCB (10 kA/480-600 V, 40 °C)									
		Ts3							T4		
Using J fuses, type 1 coordination will be achieved		J type fuse protection (85 kA)									
175 % rating		45 A	50 A	70 A	90 A	100 A	110 A	125 A	175 A	225 A	
Max rating		90 A	110 A	150 A	175 A	225 A	250 A	350 A	400 A		
Minimum enclosure size ¹⁾		508 x 508 x 305 mm / 20 x 20 x 12 in					610 x 508 x 305 mm / 24 x 20 x 12 in				
Fusible disconnect switch for the above J fuses		Fusible disconnect switch									
		OS60		OS100			OS200			OS400	
The line contactor is not required for the softstarter itself but often used to open if OL trips		Line contactor									
		AF30		AF50			AF63	AF75	AF95	AF110	AF145
Overload protection is used to protect the motor from over heating		Electronic overload relay									
		Built-in									
The bypass contactor will reduce the power loss of the softstarter. All softstarters can be operated without by-pass		By-pass contactor (AC-1)									
		AF16	AF26	AF30			AF50			AF75	AF110

¹⁾ Enclosure that has two latching points minimum. For use in pollution degree 2 environment.

PST(B) – The advanced range

Overview



PST175 ... PST300



PSTB370 ... PSTB470



PSTB570 ... PSTB1050

Normal start
In-Line connected

(480 V) hp
(600 V) hp
UL/CSA, Max FLA

Softstarter									
PST175	PST210	PST250	PST300	PSTB370	PSTB470	PSTB570	PSTB720	PSTB840	PSTB1050
125	150	200	250	300	400	500	600	700	900
150	200	250	300	350	500	600	700	800	1000
156	192	248	302	361	480	590	720	840	1062

Using MCCB only, type 1
coordination will be achieved

MCCB (18 kA/480-600 V, 40 °C)			MCCB (30 kA/480-600 V, 40 °C)			MCCB (42 kA/480-600 V, 40 °C)		
T4	T5		T6H			T7H		T8

Using J or L fuses, type 1
coordination will be
achieved 175 % rating

Max rating

Minimum enclosure size ¹⁾

J or L type fuse protection (85 kA)									
250 A	300 A	400 A	500 A	600 A	800 A	1000 A	1200 A	1400 A	1800 A
	400 A	450 A	600 A	700 A	1200 A			-	-
762 x 762 x 305 mm / 30 x 30 x 12 in					1220 x 915 x 407 mm / 48 x 36 x 16 in				

Fusible disconnect switch
for the above J fuses

Fusible disconnect switch										
OS400			OS600		OS800		OS1200		-	-

The line contactor is not
required for the softstarter
itself but often used to
open if OL trips

Line contactor									
AF185	AF210	AF260	AF300	AF400	AF580	AF750	AF1350	AF1650	

Overload protection is used
to protect the motor from
over heating

Electronic overload relay									
Built-in									

The bypass contactor will
reduce the power loss of
the softstarter. All softstart-
ers can be operated without
by-pass

By-pass contactor (AC-1)									
AF145	AF185	AF210	Built-in						

¹⁾ Enclosure that has two latching points minimum. For use in pollution degree 2 environment.

How to select correct size

By using the guide here, you can quickly select a suitable softstarter for the most common applications.

If a more precise selection is required, you can use prosoft, a selection software available at www.abb.com/lowvoltage

Quick guide for selection

Normal start Class 10		Heavy duty start class 30	
Ordering - see page 28 - 29		Ordering - see page 30 - 31	
Typical applications			
• Bow thruster	• Centrifugal pump	• Centrifugal fan	• Conveyor belt (long)
• Compressor	• Conveyor belt (short)	• Crusher	• Mill
• Elevator	• Escalator	• Mixer	• Stirrer
! If more than 10 starts/h Select one size larger than the standard selection			

PST(B) – The advanced range

Normal starts, class 10, In-Line, ordering details



PST30 ... PSTB1050

Rated operational voltage U_e , 208 - 600 V

Rated control supply voltage, U_s , 100 - 250 V AC, 50/60 Hz



PST30 ... PST72



PST85 ... PST142



PST175 ... PST300



PSTB370 ... PSTB470



PSTB570 ... PSTB1050

400 V kW	500 V kW	690 V kW	208 V hp	230 V hp	480 V hp	600 V hp	UL/CSA Max rated operational current I_e A	Part number *)	Weight kg (lb)
15	18.5	-	7.5	10	20	25	28	PST30-600-70□	4.80 (10.58)
18.5	22	-	10	10	25	30	34	PST37-600-70□	4.80 (10.58)
22	25	-	10	15	30	40	42	PST44-600-70□	4.80 (10.58)
25	30	-	15	20	40	50	54	PST50-600-70□	4.80 (10.58)
30	37	-	20	20	40	50	60	PST60-600-70□	5.00 (11.02)
37	45	-	20	25	50	60	68	PST72-600-70□	5.00 (11.02)
45	55	-	25	30	60	75	80	PST85-600-70□	11.20 (24.69)
55	75	-	30	40	75	100	104	PST105-600-70□	13.00 (28.66)
75	90	-	40	50	100	125	130	PST142-600-70□	13.00 (28.66)
90	110	-	50	60	125	150	156	PST175-600-70□	21.50 (47.40)
110	132	-	60	75	150	200	192	PST210-600-70□	21.50 (47.40)
132	160	-	75	100	200	250	248	PST250-600-70□	23.00 (50.71)
160	200	-	100	100	250	300	302	PST300-600-70□	23.00 (50.71)
200	257	-	125	150	300	350	361	PSTB370-600-70□	31.00 (68.34)
250	315	-	150	200	400	500	480	PSTB470-600-70□	31.00 (68.34)
315	400	-	200	250	500	600	590	PSTB570-600-70□	52.00 (114.64)
400	500	-	250	300	600	700	720	PSTB720-600-70□	55.00 (121.25)
450	600	-	300	350	700	800	840	PSTB840-600-70□	60.00 (133.28)
560	730	-	400	450	900	1000	1062	PSTB1050-600-70□	60.00 (133.28)

PST30 ... PSTB1050

Rated operational voltage U_e , 400 - 690 V

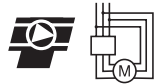
Rated control supply voltage, U_s , 100 - 250 V AC, 50/60 Hz

15	18.5	25			20	25	28	PST30-690-70□	4.80 (10.58)
18.5	22	30			25	30	34	PST37-690-70□	4.80 (10.58)
22	25	37			30	40	42	PST44-690-70□	4.80 (10.58)
25	30	45			40	50	54	PST50-690-70□	4.80 (10.58)
30	37	55			40	50	60	PST60-690-70□	5.00 (11.02)
37	45	59			50	60	68	PST72-690-70□	5.00 (11.02)
45	55	75			60	75	80	PST85-690-70□	11.20 (24.69)
55	75	90			75	100	104	PST105-690-70□	13.00 (28.66)
75	90	132			100	125	130	PST142-690-70□	13.00 (28.66)
90	110	160			125	150	156	PST175-690-70□	21.50 (47.40)
110	132	184			150	200	192	PST210-690-70□	21.50 (47.40)
132	160	220			200	250	248	PST250-690-70□	23.00 (50.71)
160	200	257			250	300	302	PST300-690-70□	23.00 (50.71)
200	257	355			300	350	361	PSTB370-690-70□	31.00 (68.34)
250	315	450			400	500	480	PSTB470-690-70□	31.00 (68.34)
315	400	560			500	600	590	PSTB570-690-70□	52.00 (114.64)
400	500	710			600	700	720	PSTB720-690-70□	55.00 (121.25)
450	600	800			700	800	840	PSTB840-690-70□	60.00 (133.28)
560	730	1000			900	1000	1062	PSTB1050-690-70□	60.00 (133.28)

*) Add code letter in Type acc. to below:
 No code letter = Normal
T = Coated PCBs

PST(B) – The advanced range

Normal starts, class 10, Inside Delta, ordering details



PST30...PSTB1050

Rated operational voltage U_e , 208 - 600 V

Rated control supply voltage, U_s , 100 - 250 V AC, 50/60 Hz



PST30 ... PST72



PST85 ... PST142



PST175 ... PST300



PSTB370 ... PSTB470



PSTB570 ... PSTB1050

400 V kW	500 V kW	690 V kW	208 V hp	230 V hp	480 V hp	600 V hp	UL/CSA Max rated operational current I_e A	Part number *)	Weight kg (lb)
25	30	-	10	15	30	40	42	PST30-600-70□	4.80 (10.58)
30	37	-	15	20	40	50	54	PST37-600-70□	4.80 (10.58)
37	45	-	20	25	50	60	72	PST44-600-70□	4.80 (10.58)
45	55	-	25	30	60	75	80	PST50-600-70□	4.80 (10.58)
55	75	-	30	40	75	100	104	PST60-600-70□	5.00 (11.02)
59	80	-	30	40	75	100	104	PST72-600-70□	5.00 (11.02)
75	90	-	40	50	100	125	130	PST85-600-70□	11.20 (24.69)
90	110	-	50	60	125	150	156	PST105-600-70□	13.00 (28.66)
132	160	-	60	75	150	200	192	PST142-600-70□	13.00 (28.66)
160	200	-	75	100	200	250	248	PST175-600-70□	21.50 (47.40)
184	250	-	100	100	250	300	302	PST210-600-70□	21.50 (47.40)
220	295	-	125	150	300	350	361	PST250-600-70□	23.00 (50.71)
257	355	-	150	200	400	500	480	PST300-600-70□	23.00 (50.71)
355	450	-	200	250	500	600	590	PSTB370-600-70□	31.00 (68.34)
450	600	-	250	300	600	700	720	PSTB470-600-70□	31.00 (68.34)
540	700	-	300	350	700	800	840	PSTB570-600-70□	52.00 (114.64)
710	880	-	400	500	1000	1200	1247	PSTB720-600-70□	55.00 (121.25)
800	1000	-	500	600	1200	1500	1454	PSTB840-600-70□	60.00 (133.28)
1000	1250	-	600	700	1500	1800	1839	PSTB1050-600-70□	60.00 (133.28)

PST30 ... PSTB1050

Rated operational voltage U_e , 400 - 690 V

Rated control supply voltage, U_s , 100 - 250 V AC, 50/60 Hz

25	30	45			30	40	42	PST30-690-70□	4.80 (10.58)
30	37	55			40	50	54	PST37-690-70□	4.80 (10.58)
37	45	59			50	60	72	PST44-690-70□	4.80 (10.58)
45	55	75			60	75	80	PST50-690-70□	4.80 (10.58)
55	75	90			75	100	104	PST60-690-70□	5.00 (11.02)
59	80	110			75	100	104	PST72-690-70□	5.00 (11.02)
75	90	132			100	125	130	PST85-690-70□	11.20 (24.69)
90	110	160			125	150	156	PST105-690-70□	13.00 (28.66)
132	160	220			150	200	192	PST142-690-70□	13.00 (28.66)
160	200	257			200	250	248	PST175-690-70□	21.50 (47.40)
184	250	315			250	300	302	PST210-690-70□	21.50 (47.40)
220	295	400			300	350	361	PST250-690-70□	23.00 (50.71)
257	355	500			400	500	480	PST300-690-70□	23.00 (50.71)
355	450	600			500	600	590	PSTB370-690-70□	31.00 (68.34)
450	600	800			600	700	720	PSTB470-690-70□	31.00 (68.34)
540	700	960			700	800	840	PSTB570-690-70□	52.00 (114.64)
710	880	1200			1000	1200	1247	PSTB720-690-70□	55.00 (121.25)
800	1000	1400			1200	1500	1454	PSTB840-690-70□	60.00 (133.28)
1000	1250	1700			1500	1800	1839	PSTB1050-690-70□	60.00 (133.28)

*) Add code letter in Type acc. to below:
 No code letter = Normal
 T = Coated PCBs

PST(B) – The advanced range

Heavy Duty, class 30, In-Line, ordering details



PST30...PSTB1050

Rated operational voltage U_e , 208 - 600 V

Rated control supply voltage, U_s , 100 - 250 V AC, 50/60 Hz



PST30 ... PST72



PST85 ... PST142



PST175 ... PST300



PSTB370 ... PSTB470



PSTB570 ... PSTB1050

400 V kW	500 V kW	690 V kW	208 V hp	230 V hp	480 V hp	600 V hp	UL/CSA Max rated operational current I_e A	Part number *)	Weight kg (lb)
11	15	-	5	7.5	15	20	25	PST30-600-70□	4.80 (10.58)
15	18.5	-	7.5	10	20	25	28	PST37-600-70□	4.80 (10.58)
18.5	22	-	10	10	25	30	34	PST44-600-70□	4.80 (10.58)
22	25	-	10	15	30	40	42	PST50-600-70□	4.80 (10.58)
25	30	-	15	20	40	50	54	PST60-600-70□	5.00 (11.02)
30	37	-	20	20	40	50	60	PST72-600-70□	5.00 (11.02)
37	45	-	20	25	50	60	68	PST85-600-70□	11.20 (24.69)
45	55	-	25	30	60	75	80	PST105-600-70□	13.00 (28.66)
55	75	-	30	40	75	100	104	PST142-600-70□	13.00 (28.66)
75	90	-	40	50	100	125	130	PST175-600-70□	21.50 (47.40)
90	110	-	50	60	125	150	156	PST210-600-70□	21.50 (47.40)
110	132	-	60	75	150	200	192	PST250-600-70□	23.00 (50.71)
132	160	-	75	100	200	250	248	PST300-600-70□	23.00 (50.71)
160	200	-	100	100	250	300	302	PSTB370-600-70□	31.00 (68.34)
200	257	-	125	150	300	350	361	PSTB470-600-70□	31.00 (68.34)
250	315	-	150	200	400	500	480	PSTB570-600-70□	52.00 (114.64)
315	400	-	200	250	500	600	590	PSTB720-600-70□	55.00 (121.25)
400	500	-	250	300	600	700	720	PSTB840-600-70□	60.00 (133.28)
450	600	-	300	350	700	800	840	PSTB1050-600-70□	60.00 (133.28)

PST30...PSTB1050

Rated operational voltage U_e , 400 - 690 V

Rated control supply voltage, U_s , 100 - 250 V AC, 50/60 Hz

11	15	18.5			15	20	25	PST30-600-70□	4.80 (10.58)
15	18.5	25			20	25	28	PST37-600-70□	4.80 (10.58)
18.5	22	30			25	30	34	PST44-600-70□	4.80 (10.58)
22	25	37			30	40	42	PST50-600-70□	4.80 (10.58)
25	30	45			40	50	54	PST60-600-70□	5.00 (11.02)
30	37	55			40	50	60	PST72-600-70□	5.00 (11.02)
37	45	59			50	60	68	PST85-600-70□	11.20 (24.69)
45	55	75			60	75	80	PST105-600-70□	13.00 (28.66)
55	75	90			75	100	104	PST142-600-70□	13.00 (28.66)
75	90	132			100	125	130	PST175-600-70□	21.50 (47.40)
90	110	160			125	150	156	PST210-600-70□	21.50 (47.40)
110	132	184			150	200	192	PST250-600-70□	23.00 (50.71)
132	160	220			200	250	248	PST300-600-70□	23.00 (50.71)
160	200	257			250	300	302	PSTB370-600-70□	31.00 (68.34)
200	257	355			300	350	361	PSTB470-600-70□	31.00 (68.34)
250	315	450			400	500	480	PSTB570-600-70□	52.00 (114.64)
315	400	560			500	600	590	PSTB720-600-70□	55.00 (121.25)
400	500	710			600	700	720	PSTB840-600-70□	60.00 (133.28)
450	600	800			700	800	840	PSTB1050-600-70□	60.00 (133.28)

*) Add code letter in Type acc. to below:
 No code letter = Normal
T = Coated PCBs

PST(B) – The advanced range

Heavy Duty, class 30, Inside Delta, ordering details



PST30...PSTB1050

Rated operational voltage U_e , 208 - 600 V

Rated control supply voltage, U_c , 100 - 250 V AC, 50/60 Hz



PST30 ... PST72



PST85 ... PST142



PST175 ... PST300



PSTB370 ... PSTB470



PSTB570 ... PSTB1050

400 V kW	500 V kW	690 V kW	208 V hp	230 V hp	480 V hp	600 V hp	UL/CSA Max rated operational current I_n A	Part number *)	Weight kg (lb)
18.5	25	-	7.5	10	25	30	34	PST30-600-70□	4.80 (10.58)
25	30	-	10	15	30	40	42	PST37-600-70□	4.80 (10.58)
30	37	-	15	20	40	50	54	PST44-600-70□	4.80 (10.58)
37	45	-	20	25	50	60	72	PST50-600-70□	4.80 (10.58)
45	55	-	25	30	60	75	80	PST60-600-70□	5.00 (11.02)
55	75	-	30	40	75	100	104	PST72-600-70□	5.00 (11.02)
59	80	-	40	40	75	100	104	PST85-600-70□	11.20 (24.69)
75	90	-	40	50	100	125	130	PST105-600-70□	13.00 (28.66)
90	110	-	50	60	125	150	156	PST142-600-70□	13.00 (28.66)
132	160	-	60	75	150	200	192	PST175-600-70□	21.50 (47.40)
160	200	-	75	100	200	250	248	PST210-600-70□	21.50 (47.40)
184	250	-	100	100	250	300	302	PST250-600-70□	23.00 (50.71)
220	295	-	125	150	300	350	361	PST300-600-70□	23.00 (50.71)
257	355	-	150	200	400	500	480	PSTB370-600-70□	31.00 (68.34)
355	450	-	200	250	500	600	590	PSTB470-600-70□	31.00 (68.34)
450	600	-	250	300	600	700	720	PSTB570-600-70□	52.00 (114.64)
540	700	-	300	350	700	800	840	PSTB720-600-70□	55.00 (121.25)
710	880	-	400	500	1000	1200	1247	PSTB840-600-70□	60.00 (133.28)
800	1000	-	500	600	1200	1500	1454	PSTB1050-600-70□	60.00 (133.28)

PST30...PSTB1050

Rated operational voltage U_e , 400 - 690 V

Rated control supply voltage, U_c , 100 - 250 V AC, 50/60 Hz

18.5	25	37			25	30	34	PST30-690-70□	4.80 (10.58)
25	30	45			30	40	42	PST37-690-70□	4.80 (10.58)
30	37	55			40	50	54	PST44-690-70□	4.80 (10.58)
37	45	59			50	60	72	PST50-690-70□	4.80 (10.58)
45	55	75			60	75	80	PST60-690-70□	5.00 (11.02)
55	75	90			75	100	104	PST72-690-70□	5.00 (11.02)
59	80	110			75	100	104	PST85-690-70□	11.20 (24.69)
75	90	132			100	125	130	PST105-690-70□	13.00 (28.66)
90	110	160			125	150	156	PST142-690-70□	13.00 (28.66)
132	160	220			150	200	192	PST175-690-70□	21.50 (47.40)
160	200	257			200	250	248	PST210-690-70□	21.50 (47.40)
184	250	315			250	300	302	PST250-690-70□	23.00 (50.71)
220	295	400			300	350	361	PST300-690-70□	23.00 (50.71)
257	355	500			400	500	480	PSTB370-690-70□	31.00 (68.34)
355	450	600			500	600	590	PSTB470-690-70□	31.00 (68.34)
450	600	800			600	700	720	PSTB570-690-70□	52.00 (114.64)
540	700	960			700	800	840	PSTB720-690-70□	55.00 (121.25)
710	880	1200			1000	1200	1247	PSTB840-690-70□	60.00 (133.28)
800	1000	1400			1200	1500	1454	PSTB1050-690-70□	60.00 (133.28)

*) Add code letter in Type acc. to below:
 No code letter = Normal
T = Coated PCBs

PST(B) – The advanced range

Accessories

Terminal lug kits for Al and Cu cables

For PST(B)85...1050 without external bypass (line/load lugs and terminal nut washer)

For softstarter type	Wire range AWG	Tightening torque max. Nm (lb-in)	Part number	Pack ^{no} piece
PST85 ...142	#4 - 300 MCM (1 per phase)	13.5 (275 lb-in)	PSLK-185	6
PST175 ...300	#4 - 400 MCM (1 per phase)	43 (375 lb-in)	PSLK-300	6
PST175...300	#4 - 500 MCM (2 per phase)	43 (375 lb-in)	PSLK-300/2	6
PSTB370...470	2/0 - 500 MCM (2 per phase)	43 (375 lb-in)	PSLK-580/2	6
PSTB570 ...1050	2/0 - 500 MCM (3 per phase)	43 (375 lb-in)	PSLK-750/3	6

For PST85...300 with external bypass (line/load lugs and terminal nut washer)

PST85 ...142	#4 - 300 MCM (1 per phase)	13.5 (275 lb-in)	PSLK-185-B	9
PST175 ...300	#4 - 400 MCM (1 per phase)	43 (375 lb-in)	PSLK-300-B	9
PST175 ...300	#4 - 500 MCM (2 per phase)	43 (375 lb-in)	PSLK-300/2-B	9

Terminal extensions

For softstarter type	Dimensions hole ϕ mm ² (in ²)	bar mm (in)	Part number	Pack ^{no} piece	Weight kg (lb) 1 piece
PST85...142	8.5 (0.0132)	17.5 x 5 (0.689 x 0.197)	LX185 ¹⁾	1	0.250 (0.551)
PST175 ...300	10.5 (0.0163)	20 x 5 (0.787 x 0.197)	LX300 ²⁾	1	0.350 (0.772)
PSTB370...470	10.5 (0.0163)	25 x 5 (0.984 x 0.197)	LX460	1	0.500 (1.102)
PSTB570...1050	13 (0.0202)	40 x 6 (1.575 x 0.236)	LX750	1	0.850 (1.874)

Terminal enlargements

For softstarter type	Dimensions hole ϕ mm ² (in ²)	bar mm (in)	Part number	Pack ^{no} piece	Weight kg (lb) 1 piece
PST30...72	6.5 (0.0101)	15 x 3 (0.591 x 0.118)	LW110 ¹⁾	1	0.100 (0.220)
PST85...142	10.5 (0.0163)	17.5 x 5 (0.689 x 0.197)	LW185 ¹⁾	1	0.250 (0.551)
PST175...300	10.5 (0.0163)	20 x 5 (0.787 x 0.197)	LW300 ¹⁾	1	0.450 (0.992)
PSTB370...470	10.5 (0.0163)	25 x 5 (0.984 x 0.197)	LW460	1	0.730 (1.609)
PSTB570...1050	13 (0.0202)	40 x 6 (1.575 x 0.236)	LW750	1	1.230 (2.712)

Terminal nut washer

For softstarter type	Req. qty	Part number	Pack ^{no} piece	Weight kg (lb) 1 piece
PST85...142	1	LE185 ¹⁾	2	0.200 (0.441)
PST175...300	3	LE300 ²⁾	2	0.300 (0.661)
PSTB370...470	6	LE460	6	0.600 (1.323)
PSTB570...1050	6	LE750	6	0.750 (1.653)

Terminal shrouds

For softstarter type	Suitable for	Req. qty	Part number	Pack ^{no} piece	Weight kg (lb) 1 piece
PST85...142	Compression lugs and cable connectors	1 pc and 1 pc	LT185-AL	2	0.220 (0.485)
PST175...300	Compression lugs and cable connectors	3 pcs	LT460-AL	2	0.800 (1.764)
PSTB370...470	Compression lugs and cable connectors	2 pcs	LT300-AL ^{2) 3)}	2	0.280 (0.617)
PSTB570...1050	Compression lugs and cable connectors	2 pcs	LT460-AL	2	0.800 (1.764)
			LT750-AL	2	0.825 (1.819)

External keypad including a 3m cable

For softstarter type	Part number	Pack ^{no} piece	Weight kg (lb) 1 piece
PST30...300 PSTB370...1050	PSTEK	1	0.400 (0.882)

Marine Kit

For softstarter type	Part number	Pack ^{no} piece	Weight kg (lb) 1 piece
PST85...142	PSTM-2	1	0.240 (0.529)

Fieldbus plug - ABB Fieldbus Plug suitable for all sizes. See page 38-41

¹⁾ Only fits on the motor side.

²⁾ Use two sets of the accessories on the line side and one set on the motor side.

³⁾ The LT300-AL is not compatible with PSLK-300/2 cable connector.



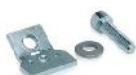
LX...



LW...



LE185



LE460



LT ... -AL



PSTEK



PSTM-2

PST(B) – The advanced range

Technical data

Rated insulation voltage U_i	690 V	
Rated operational voltage U_e	208...600 V, 400...690 V + 10 % / -15 % 50/60 Hz \pm 5%	
Rated control supply voltage U_s	100...250 V +10% / -15% 50/60 Hz \pm 5%	
Rated control circuit voltage U_c	Internal or external 24 V DC	
Starting capacity at I_r	3 x I_g for 15 sec.	
Number of starts per hour	PST30...300 30 ¹⁾	PSTB370...1050 10 ¹⁾
Overload capability		
Overload class	10	
Service factor	PST(B)30...840 115 %	PSTB1050 100 %
Ambient temperature		
during operation	\pm 0 ... +50 °C (32 to 122 °F) ²⁾	
during storage	-25 ... +70 °C (-13 to 158 °F)	
Maximum altitude	4000 m ³⁾	
Degree of protection	PST30...72 IP10	PST85...PSTB1050 IP00
main circuit	IP20	
Supply and control circuit	IP20	
Main circuit	PST30...300 No	PSTB370...1050 Yes
Built-in By-pass contactor	Yes (thermostat controlled)	
Cooling system - Fan cooled		
HMI for settings (Human Machine Interface)		
Display	Full text	
Languages	English, German, Italian, Dutch, Chinese, Finnish, Swedish, French, Spanish, Russian, Portugese, Turkish, Polish and Czech	
Keypad	2 selection keys and 2 navigating keys	
Signal relays		
Number of programmable signal relays	3 (each relay can be programmed to be Run, By-pass or Event signal)	
K4	Default as Run signal	
K5	Default as TOR (By-pass) signal	
K6	Default as Event signal	
Rated operational voltage, U_e	250 V AC / 24 V DC	
Rated thermal current I_{th}	5 A	
Rated operational current I_e at AC-15 ($U_e=250$ V)	1.5 A	
Analog output		
Output signal reference	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	
Type of output signal	I Amp, U Volt, P kW, P hp, Q kVAR, S kVA, TmpMot, TmpSCR, cosPhi	

¹⁾ Valid for 50 % on time and 50 % off time. 3.5 x I_r for 7 sec., if other data is required, contact your sales office.

²⁾ Above 40 °C (104 °F) up to max. 50 °C (122 °F) reduce the rated current with 0.8 % per °C (0.44 % per °F).

³⁾ When used at high altitudes above 1000 meters (3281 ft) up to 4000 meters (13123 ft) you need to derate the rated current using the following formula.

$$\left[\% \text{ of } I_e = 100 \cdot \frac{x - 1000}{150} \right] \quad x = \text{actual altitude for the softstarter in meter}$$

$$\left[\% \text{ of } I_e = 100 \cdot \frac{x - 3280}{497} \right] \quad x = \text{actual altitude for the softstarter in feet}$$

Control circuit	
Number of inputs	2 (start, stop)
Number of additional programmable inputs	2 (Each input can be programmed to be either; Non, Reset, Enable, Jog, DOL- On, Start motor 2, Start motor 3 or FB-Dis)

Signalling indication LED	
Power on	Green
Fault	Red
Protection	Yellow

Protections	
Electronic overload	Yes (Class 10A, 10, 20, 30)
Dual overload	Yes (separate overload function for start and run)
PTC connection	Yes
Locked rotor protection	Yes (Level and delay adjustable)
Underload protection	Yes (Level and delay adjustable)
Phase imbalance	Yes (Level and delay adjustable)
High current (8 x I_r)	Yes
Phase reversal protection	Yes

Warnings (pre-warning)	
High current	Yes (Level and delay adjustable)
Low current (underload)	Yes (Level and delay adjustable)
Overload trip	Yes (Level and delay adjustable)
Overtemp, thyristor (SCR)	Yes

Start of several motors	
Possible to set-up and start three different motors	Yes (Different parameter sets)

Field bus connection	
Connection for ABB FieldBusPlug	Yes

PTC input	
Switch off resistance	2825 ohm \pm 20%
Switch on resistance	1200 ohm \pm 20%

External keypad	
Display	LCD type
Ambient temperature	
During operation	\pm 0 ... +50 °C (32 to 122 °F)
During storage	-25 ... +70 °C (-13 to 158 °F)
Degree of protection	IP66

PSTB Integrated by-pass ratings

Softstarter	PSTB370	PSTB470	PSTB570	PSTB720	PSTB840	PSTB1050
Integrated contactor	AF300		AF460	AF580	AF750	
AC-3 rating (A)	305		460	580	750	

PST(B) – The advanced range

Technical data

Major possible settings and the displayed text and the set default values

Description	Text on display	Values on display	Default value
Setting current for overload, locked rotor etc.	Setting I _e	9.0 ... 1207 A divided into 19 overlapping ranges.	See table, page 37
Time for start ramp	Start Ramp	1 ... 30 s, 1 ... 120 s (Range depends on Start Range)	10 s
Time for stop ramp	Stop Ramp	0 ... 30 s, 0 ... 120 s (Range depends on Stop Range)	0 s
Initial voltage for start ramp	Init Volt	30 ... 70 %	30 %
End voltage for stop ramp	End Volt	30 ... 70 %	30 %
Step down voltage	Step Down	30 ... 100 %	100 %
Level of the current limit.	Current Lim	1.5 ... 7.0 x I _e	4.0 x I _e
Selection of Kick start	Kick Start	Yes, No	No
Level of Kick start if selected	Kick Level	50 ... 100 %	50 %
Time for Kick start if selected	Kick Time	0.1 ... 1.5 s	0.2
Selectable range for start ramp	Start Range	1 ... 30 s, 1 ... 120 s	1 ... 30 s
Selectable range for stop ramp	Stop Range	0 ... 30 s, 0 ... 120 s	0 ... 30 s
Overload protection	Overload	No, Normal, Dual	Normal
Overload Class	OL Class	10 A, 10, 20, 30	10
Overload Class, Dual type, Start Class	OL Class S	10A, 10, 20, 30	10
Overload Class, Dual type, Run Class	OL Class R	10A, 10, 20, 30	10
Type of operation for overload protection	OL Op	Stop-M, Stop-A, Ind	Stop-M
Locked rotor protection	Locked Rotor	Yes, No	No
Trip level for locked rotor protection	Lock R Lev	0.5 ... 8.0 x I _e	4.0 x I _e
Trip time for locked rotor protection	Lock R Time	0.2 ... 10 s	1.0 s
Type of operation for locked rotor protection	Lock R Op	Stop-M, Stop-A, Ind	Stop-M
Underload protection	Underload	Yes, No	No
Trip level for Underload protection	Underl Lev	0.4 ... 0.8 x I _e	0.5 x I _e
Trip time for Underload protection	Underl Time	1 ... 30 s	10 s
Type of operation for Underload protection	Underl Op	Stop-M, Stop-A, Ind	Stop-M
Phase imbalance protection	Phase Imb	Yes, No	No
Trip level for phase imbalance protection	Ph Imb Lev	10 ... 80 %	80 %
Type of operation for phase imbalance protection	Ph Imb Op	Stop-M, Stop-A, Ind	Stop-M
High current protection	High I	Yes, No	No
Type of operation for high current protection	High I Op	Stop-M, Stop-A, Ind	Stop-M
Phase reversal protection	Phase Rev	Yes, No	No
Type of operation for phase reversal protection	Ph Rev Op	Stop-M, Stop-A, Ind	Stop-M
PTC protection	PTC	Yes, No	No
Type of operation for PTC protection	PTC Op	Stop-M, Stop-A	Stop-M
An external Bypass contactor is used	Ext ByPass	Yes, No	No
High current warning	Warn I=High	Yes, No	No
Trip level for high current warning	Wa I=H Lev	0.5 ... 5.0 x I _e	1.2 x I _e
Low current warning	Warn I=Low	Yes, No	No
Trip level for low current warning	Wa I=L Lev	0.4 ... 1.0 x I _e	0.8 x I _e
Overload warning	Warn OL	Yes, No	No
Trip level for overload warning	Wa OL Lev	40 ... 99 %	90 %
Thyristor overload warning	Warn SCR OL	Yes, No	No
Type of operation for phase loss fault	Ph Loss Op	Stop-M, Stop-A	Stop-M
Type of operation for by-pass doesn't close	BP open Op	Stop-M, Stop-A	Stop-M
Type of operation for by-pass doesn't open	BP closed Op	Stop-M, Stop-A	Stop-M
Type of operation for fieldbus fault	FB Fault Op	Stop-M, Stop-A	Stop-M
Type of operation for frequency fault	Freq F Op	Stop-M, Stop-A	Stop-M
Type of operation for heat sink over temperature fault	HS Temp Op	Stop-M, Stop-A	Stop-M
Type of operation for thyristor short circuit fault	SCR SC Op	Stop-M, Stop-A	Stop-M
Function of programmable input In_0	In0	None, Reset, Enable, Jog, DOL, Start 2, FB-Dis	Reset
Function of programmable input In_1	In1	None, Reset, Enable, Jog, DOL, Start 3, FB-Dis	Reset
Function of programmable relay output K4	Relay K4	Run, TOR, Event	Run
Function of programmable relay output K5	Relay K5	Run, TOR, Event	TOR
Function of programmable relay output K6	Relay K6	Run, TOR, Event	Event
Control of the softstarter with fieldbus	Fieldb Ctrl	Yes, No	No
Number of sequences for sequence start.	No of Seq	No, 2, 3	No
Language to use on display	Language	US/UK, FI, SE, PT, NL, IT, FR, ES, DE, CN, RU, TR, PL, CZ	US/UK

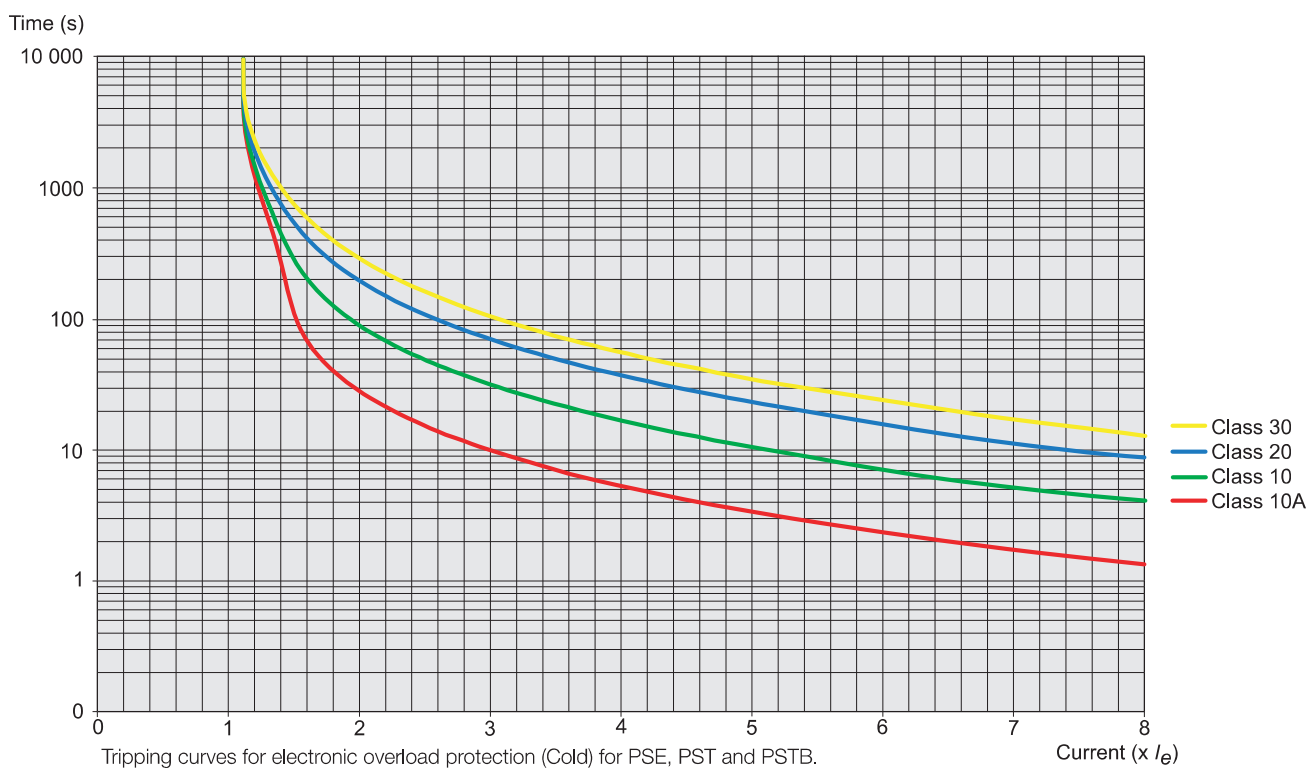
PST(B) – The advanced range

Technical data

Description	Text on display	Values on display	Default value
Password for display	Password	No, 1 ... 255	
Start mode	Start Mode	Volt, Torque	Volt
Stop mode	Stop Mode	Volt, Torque	Volt
Torque limit	Torque limit	20 ... 200 %	150 %
Analog output	Analogue Out	Yes, No	No
Analog output, reference	Anl Ref	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	4 ... 20 mA
Analog output, type of value	Anl Type	I Amp, U Volt, P kW, P hp, Q kVAR, S kVA, TmpMot, TmpSCR, cosPhi	I Amp

Tripping curves for the integrated electronic overload protection

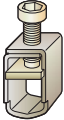
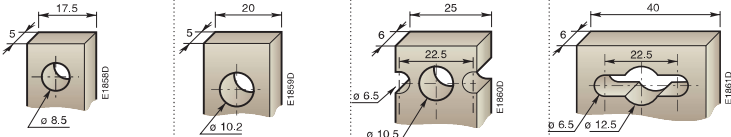
All units have an integrated electronic overload protection possible to set on four different tripping classes. Below you find a curve for each tripping class in cold state. These tripping curves are valid for PSE, PST and PSTB



PST(B) – The advanced range

Technical data

Cross section of connection cables

		Softstarter PST30 ... 72	PST85 ... 142	PST175 ... 300	PSTB370 ... 470	PSTB570 ... 1050
Main circuit						
Available terminals:	L1, L2, L3	Yes	Yes	Yes	Yes	Yes
	T1, T2, T3	Yes	Yes	Yes	Yes	Yes
(For external by-pass)	B1, B2, B3	Yes	Yes	Yes	No	No
Connection clamp						
						
Solid/stranded	1 x mm ² (AWG)	10 ... 95 (8...3/0)	See accessories			See accessories
Solid/stranded	2 x mm ² (AWG)	6 ... 35 (10...2)	See accessories			See accessories
Tightening torque (recommended)	Nm (lb-in)	6.0 (53.10)	See accessories			See accessories
Connection bar						
						
Width and thickness	mm (in)	–	17.5 x 5 (0.689 x 0.197)	20 x 5 (0.787 x 0.197)	25 x 6 (0.984 x 0.236)	40 x 6 (1.575 x 0.236)
Hole diameter	mm (in)	–	8.5 (0.335)	10.2 (0.402)	10.5 (0.413)	6.5, 12.5 (0.256, 0.492)
Tightening torque (recommended)	Nm (lb-in)	–	18 (159.3)	28 (247.8)	35 (309.8)	45 (398.3)
Supply and control circuit						
Connection clamp						
				Yes		
Solid/stranded	1 x mm ² (AWG)			2.5 (14)		
Solid/stranded	2 x mm ² (AWG)			1.5 (16)		
Tightening torque (recommended)	Nm (lb-in)			0.5 (4.43)		

PST(B) – The advanced range

Technical data

Fuse ratings and power losses

For Softstarter Type	Recommended ABB Overload protection		Max power loss at rated I_e		Max semi-conductor fuse rating - main circuit Coordination type 2 (65 kA) ³⁾ Bussman Fuses, DIN43 620			Supply circuit power requirements ¹⁾ VA/VA pull in
	Type	Current range A	without by-pass ²⁾	with by-pass	A	Type	Size	
			W	W				
PST								
PST30	Integrated	9...35	100	9.5	80	170M1566	000	5
PST37	Integrated	11...43	120	10.5	125	170M1568	000	5
PST44	Integrated	13...51	140	13.5	160	170M1569	000	5
PST50	Integrated	15...58	160	13.5	160	170M1569	000	5
PST60	Integrated	18...69	190	15.5	200	170M1570	000	5
PST72	Integrated	22...83	230	17	250	170M1571	000	5
PST85	Integrated	25...98	270	30.5	315	170M1572	000	10
PST105	Integrated	32...120	325	35	400	170M3819	1	10
PST142	Integrated	43...163	435	37	450	170M5809	2	10
PST175	Integrated	53...201	540	62	500	170M5810	2	15
PST210	Integrated	63...241	645	67	630	170M5812	2	15
PST250	Integrated	75...288	765	67	700	170M5813	2	15
PST300	Integrated	90...345	920	90	900	170M6813	3	15
PSTB 600 V								
PSTB370	Integrated	111...425	N/A	90	700	170M5813	2	20/480
PSTB470	Integrated	141...540	N/A	110	900	170M6813	3	20/480
PSTB570	Integrated	171...655	N/A	105	900	170M6813	3	25/900
PSTB720	Integrated	216...828	N/A	110	1250	170M8554	3	25/860
PSTB840	Integrated	252...966	N/A	170	1500	170M8556	3	25/860
PSTB1050	Integrated	315...1207	N/A	170	1800	170M8558	3	25/860
PSTB 690 V								
PSTB370	Integrated	111...425	N/A	90	700	170M5813	2	20/480
PSTB470	Integrated	141...540	N/A	110	900	170M6813	3	20/480
PSTB570	Integrated	171...655	N/A	105	900	170M6813	3	25/900
PSTB720	Integrated	216...828	N/A	110	1250	170M8554	3	25/860
PSTB840	Integrated	252...966	N/A	170	1500	170M8556	3	25/860
PSTB1050	Integrated	315...1207	N/A	170	1600	170M8557	3	25/860

¹⁾ For the supply circuit use a maximum 6 A time-delay fuse or an MCB with type C characteristics.

²⁾ Calculated power loss at operational current (I_{op}) without by-pass.

P_{tot} = 3 x I_{op} + VA value

Example: PST 60 running at 52 A

P_{tot} = 3 x 52 + 5 = 161 W

³⁾ Max fuse rating independent of In-Line or Inside Delta connection. In Inside Delta connections of PST, the fuses can be placed outside of the delta. For PSTB the fuses shall be placed inside the delta. Contact ABB for more information.