



Softstarters Type PST



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 $1.5 - 7 \times I_e$
- 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

PST(B) – The advanced range

Description

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.

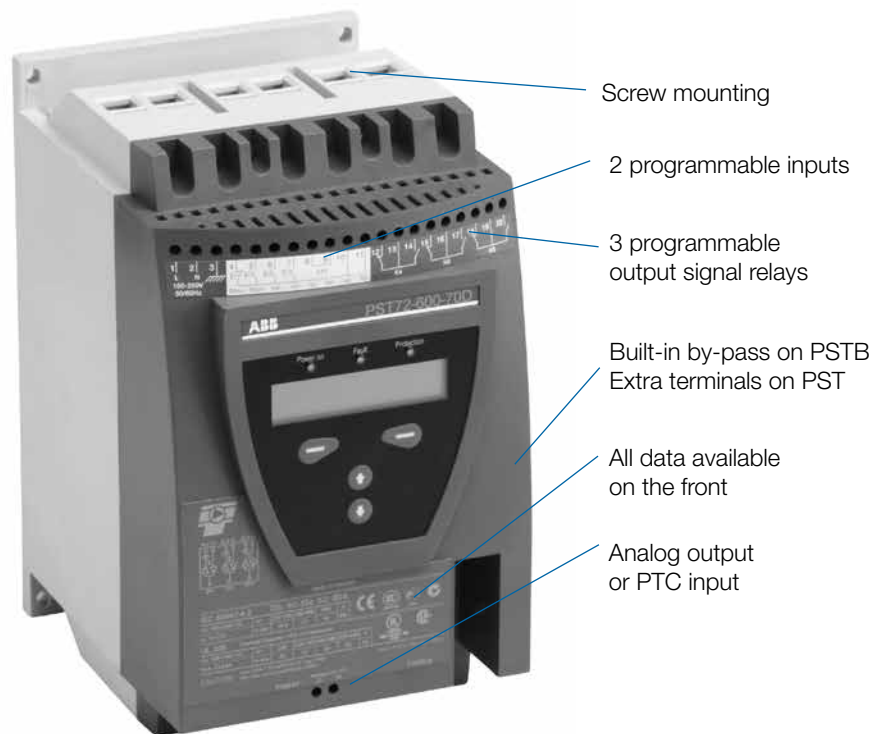
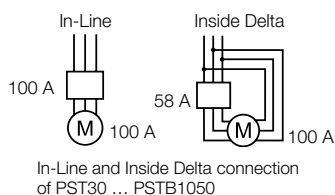
External keypad

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 5.30 - 5.31, For heavy duty applications like centrifugal fans, crushers, mixers, mills, stirrers and long conveyor belts, select a softstarter from page 5.32 - 5.33. The softstarter selection tool prosoft can also be used for a more optimized selection.



- Green on LED
- Yellow protection LED
- Red fault LED

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

| Normal start In-Line connected | Softstarter | | | | | | | | |
|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|--------|--------|
| | PST30 | PST37 | PST44 | PST50 | PST60 | PST72 | PST85 | PST105 | PST142 |
| (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 (10kA, 480-600 V, 40 °C)

Ts3

T4

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

J type fuse protection (85 kA)

175 % rating

Max rating

| | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 45 A | 50 A | 70 A | 90 A | 100 A | 110 A | 125 A | 175 A | 225 A |
| 90 A | 110 A | 150 A | 175 A | 225 A | | 250 A | 350 A | 400 A |

Minimum enclosure size ¹⁾

500 x 500 x 300 mm / 20 x 20 x 12 in

600 x 500 x 300 mm / 24 x 20 x 12 in

Fusible disconnect switch

Fusible disconnect switch for the above J fuses

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

Softstarters
Type PST



PST175 ... PST300

PSTB370 ... PSTB470

PSTB570 ... PSTB1050

Softstarter

Normal start
In-Line connected

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

| 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)

T4

MCCB (30 kA, 480-600 V, 40 °C)

T6

MCCB (42 kA, 480-600 V, 40 °C)

T7

T8

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

175 % rating

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 | | - | - | - |

Minimum enclosure size ¹⁾

760 x 760 x 300 mm / 30 x 30 x 12 in

1220 x 915 x 407 mm / 48 x 36 x 16 in

Fusible disconnect switch

Fusible disconnect switch
for the above J fuses

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

Quick guide for selection

Normal start Class 10

Ordering - see page 5.30 - 5.31

Heavy duty start class 30

Ordering - see page 5.32 - 5.33

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

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

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



PST370 ... PST470



PST570 ... PST1050

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

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

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

PST30 ... PSTB1050

Rated operational voltage U_e , 400 - 690 V

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

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

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

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

*) 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



PST370 ... PST470



PST570 ... PST1050

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

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

^{*)} 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) | Packing piece | Catalog number |
|----------------------|-----------------------------|-----------------------------------|---------------|----------------|
| PST85 ...142 | #6 - 250 MCM (1 per phase) | 13.5 (275 lb-in) | 6 | PSLK-185 |
| PST175 ...300 | #4 - 400 MCM (1 per phase) | 43 (375 lb-in) | 6 | PSLK-300 |
| PST175...300 | #4 - 500 MCM (2 per phase) | 43 (375 lb-in) | 6 | PSLK-300/2 |
| PSTB370...470 | 2/0 - 500 MCM (2 per phase) | 43 (375 lb-in) | 6 | PSLK-580/2 |
| PSTB570 ...1050 | 2/0 - 500 MCM (3 per phase) | 43 (375 lb-in) | 6 | PSLK-750/3 |



LX...



LW...



LE185



LE460



LT ... -AL



PSTEK



PSTM-2

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

| For softstarter type | Wire range AWG | Tightening torque max. Nm (lb-in) | Packing piece | Catalog number |
|----------------------|----------------------------|-----------------------------------|---------------|----------------|
| PST85 ...142 | #6 - 250 MCM (1 per phase) | 13.5 (275 lb-in) | 9 | PSLK-185-B |
| PST175 ...300 | #4 - 400 MCM (1 per phase) | 43 (375 lb-in) | 9 | PSLK-300-B |
| PST175 ...300 | #4 - 500 MCM (2 per phase) | 43 (375 lb-in) | 9 | PSLK-300/2-B |

Terminal extensions

| For softstarter type | Dimensions hole ø mm ² (in ²) | Bar mm (in) | Packing piece | Weight kg (lb) 1 piece | Catalog number |
|----------------------|--|--------------------------|---------------|------------------------|---------------------|
| PST85...142 | 8.5 (0.0132) | 17.5 x 5 (0.689 x 0.197) | 1 | 0.250 (0.551) | LX185 ¹⁾ |
| PST175...300 | 10.5 (0.0163) | 20 x 5 (0.787 x 0.197) | 1 | 0.350 (0.772) | LX300 ²⁾ |
| PSTB370...470 | 10.5 (0.0163) | 25 x 5 (0.984 x 0.197) | 1 | 0.500 (1.102) | LX460 |
| PSTB570...1050 | 13 (0.0202) | 40 x 6 (1.575 x 0.236) | 1 | 0.850 (1.874) | LX750 |

Terminal enlargements

| For softstarter type | Dimensions hole ø mm ² (in ²) | Bar mm (in) | Packing piece | Weight kg (lb) 1 piece | Catalog number |
|----------------------|--|--------------------------|---------------|------------------------|---------------------|
| PST30...72 | 6.5 (0.0101) | 15 x 3 (0.591 x 0.118) | 1 | 0.100 (0.220) | LW110 ¹⁾ |
| PST85...142 | 10.5 (0.0163) | 17.5 x 5 (0.689 x 0.197) | 1 | 0.250 (0.551) | LW185 ¹⁾ |
| PST175...300 | 10.5 (0.0163) | 20 x 5 (0.787 x 0.197) | 1 | 0.450 (0.992) | LW300 ¹⁾ |
| PSTB370...470 | 10.5 (0.0163) | 25 x 5 (0.984 x 0.197) | 1 | 0.730 (1.609) | LW460 |
| PSTB570...1050 | 13 (0.0202) | 40 x 6 (1.575 x 0.236) | 1 | 1.230 (2.712) | LW750 |

Terminal nut washer

| For softstarter type | Req. qty | Packing piece | Weight kg (lb) 1 piece | Catalog number |
|----------------------|----------|---------------|------------------------|---------------------|
| PST85...142 | 1 | 2 | 0.200 (0.441) | LE185 ¹⁾ |
| PST175...300 | 3 | 2 | 0.300 (0.661) | LE300 ²⁾ |
| PSTB370...470 | 6 | 6 | 0.600 (1.323) | LE460 |
| PSTB570...1050 | 6 | 6 | 0.750 (1.653) | LE750 |

Terminal shrouds

| For softstarter type | Suitable for | Req. qty | Packing piece | Weight kg (lb) 1 piece | Catalog number |
|----------------------|---------------------------------------|----------|---------------|------------------------|---------------------------|
| PST85...142 | Compression lugs and cable connectors | 1 pc | 2 | 0.220 (0.485) | LT185-AL |
| PST175...300 | Compression lugs and cable connectors | 1 pc | 2 | 0.800 (1.764) | LT460-AL |
| PST175...300 | Compression lugs and cable connectors | 3 pcs | 2 | 0.280 (0.617) | LT300-AL ^{2) 3)} |
| PSTB370...470 | Compression lugs and cable connectors | 2 pcs | 2 | 0.800 (1.764) | LT460-AL |
| PSTB570...1050 | Compression lugs and cable connectors | 2 pcs | 2 | 0.825 (1.819) | LT750-AL |

External keypad including a 3m cable

| For softstarter type | Packing piece | Weight kg (lb) 1 piece | Catalog number |
|-------------------------------|---------------|------------------------|----------------|
| PST30...300 PSTB370...1050 | 1 | 0.400 (0.882) | PSTEK |

Marine Kit

| For softstarter type | Packing piece | Weight kg (lb) 1 piece | Catalog number |
|----------------------|---------------|------------------------|----------------|
| PST85...142 | 1 | 0.240 (0.529) | PSTM-2 |

Fieldbus plug - ABB Fieldbus Plug suitable for all sizes. See page 5.40 - 5.43

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.

PST(B) – The advanced range

Technical data

Softstarters
Type PST

| | | |
|---|---|---|
| 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_e 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 | PST85...PSTB1050 |
| main circuit | IP10 | IP00 |
| Supply and control circuit | IP20 | |
| Main circuit | PST30...300 | PSTB370...1050 |
| Built-in By-pass contactor | No | Yes |
| Cooling system - Fan cooled | Yes (thermostat controlled) | |
| HMI for settings (Human Machine Interface) | | |
| Display | Full text | |
| Languages | English, German, Italian, Dutch, Chinese, Finnish, Swedish, French, Spanish, Russian, Portuguese, 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 | |

| | |
|--|---|
| 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 ($8 \times I_e$) | 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 |

¹⁾ Valid for 50 % on time and 50 % off time. $3.5 \times I_e$ 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.

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

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

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 page 5.37 |
| 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

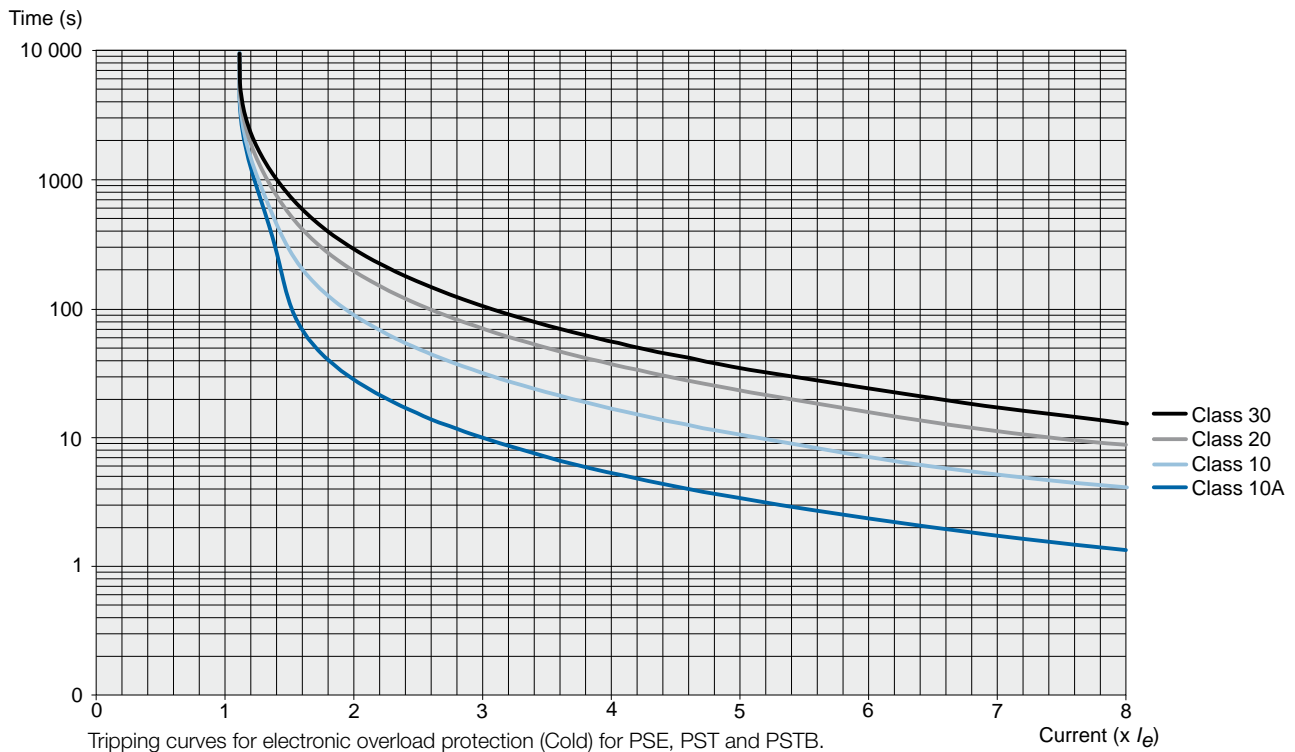
Technical data

Softstarters
Type PST

| 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

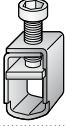
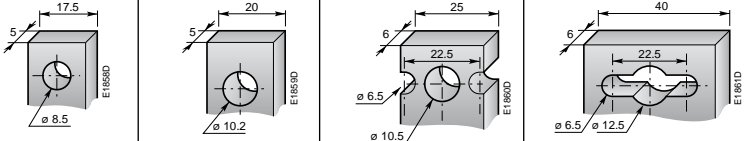
All units have an integrated electronic overload protection possible to set on four different tripping classes. Below you find a curve for each tripping class in cold state. These tripping curves are valid for PSE, PST and PSTB.



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 |
| Solid/stranded | 2 x mm ² (AWG) | | | | | | 6 ... 35 (10-2) | | | See accessories |
| Tightening torque (recommended) | Nm (lb-in) | | | | | | 6.0 (53.10) | | | 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

Softstarters
Type PST

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⁾ | | | Supply circuit power requirements ¹⁾ VA/VA pull in |
|-----------------------------|-------------------------------------|--------------------|------------------------------------|-------------------|--|----------|------|--|
| | Type | Current range A | without by-pass ²⁾ W | with by-pass W | Bussman Fuses, DIN43 620 | | | |
| | | | | | A | Type | Size | |
| 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.

$$P_{tot} = 3 \times I_{op} + VA \text{ value}$$

Example: PST 60 running at 52 A

$$P_{tot} = 3 \times 52 + 5 = 161 \text{ W}$$

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.