

Technical data

PST30 – 300

PSTB370 – 1050

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	PST30 – 300	PSTB370 – 1050
Rated insulation voltage U_i	690 V	690 V
Rated operational voltage U_e	208 – 690 V	208 – 690 V
Starting capacity at max rated current I_r	500% for 30 sec	500% for 30 sec
Number of starts per hour	30 ①	10 ①
Overload capability Overload Class	10 – 30	10 – 30
Service factor	115 %	115 % (PSTB370 – PSTB840) 100 % (PSTB1050)
Ambient temperature		
During operation	$\pm 0 \dots +50 \text{ }^\circ\text{C}$ ②	$\pm 0 \dots +50 \text{ }^\circ\text{C}$ ②
During storage	$-25 \dots +70 \text{ }^\circ\text{C}$	$-25 \dots +70 \text{ }^\circ\text{C}$
Altitudes Maximum altitude	4000 m ③	4000 m ③
Degree of protection Main circuit	IP10 (PST30 ... 72) IP00 (PST85 ... 300)	IP00 (all)
Supply and Control circuit	IP20	IP20
Main circuit Built in By-pass contactor	No	Yes
Cooling system - Fan cooled (thermostat controlled)	Yes	Yes
Supply circuit Control voltage – one range	100 ... 250 V, 50/60 Hz +10 %/-15 %	100 ... 250 V 50/60 Hz +10 %/-15 %
HMI for settings (Human Machine Interface) 20 segment display	Yes	Yes
Keypad with two selection keys and two navigating keys	Yes	Yes
Plain text in 12 languages (English, German, Italian, Chinese, Finnish, Swedish, French, Spanish, Dutch, Russian, Turkish & Portuguese)	Yes	Yes
Remote HMI for settings (PSTEK) (Human Machine Interface) 20 segment display	Yes	Yes
Keypad with two selection keys and two navigating keys	Yes	Yes
Plain text in 12 languages (English, German, Italian, Chinese, Finnish, Swedish, French, Spanish, Dutch, Russian, Turkish & Portuguese)	Yes	Yes
Approvals: UL, Type 1, 12, 4/4X		
Upload Parameters	Yes	Yes
Download Parameters	Yes	Yes

Signal relays

Number of programmable signal relays (Each relay can be programmed to be Run, By-pass or Event signal)
K4 – Default as Run signal
K5 – Default as By-pass signal
K6 – Default as Event signal
Rated operational voltage U_e
Rated thermal current I_{th}
Rated operational current I_e at AC-15 ($U_e = 250 \text{ V}$)

	PST30 – 300	PSTB370 – 1050
Number of programmable signal relays	3	3
K4 – Default as Run signal	Yes	Yes
K5 – Default as By-pass signal	Yes	Yes
K6 – Default as Event signal	Yes	Yes
Rated operational voltage U_e	250 V	250 V
Rated thermal current I_{th}	5 A	5 A
Rated operational current I_e at AC-15 ($U_e = 250 \text{ V}$)	1.5 A	1.5 A

Control circuit /Hardware inputs

Internal 24 V DC (10 mA closed)
Start / Stop inputs
Two extra programmable inputs (Each input can be programmed to be None, Reset, Enable, Jog, DOL or Start motor 2 (or 3)).

	PST30 – 300	PSTB370 – 1050
Internal 24 V DC (10 mA closed)	Yes	Yes
Start / Stop inputs	Yes	Yes
Two extra programmable inputs (Each input can be programmed to be None, Reset, Enable, Jog, DOL or Start motor 2 (or 3)).	Yes	Yes

Signal indication LED's

Run power on – Green
Fault - Red
Protection - Yellow

	PST30 – 300	PSTB370 – 1050
Run power on – Green	Yes	Yes
Fault - Red	Yes	Yes
Protection - Yellow	Yes	Yes

Protections

Electronic overload
Adjustable tripping classes - Class 10 A, 10, 20 and 30
Dual ramp (separate overload function for start and run)
PTC connection
Locked rotor protection
Underload protection
Phase imbalance
High current ($8 \times I_e$)
Phase reversal protection

	PST30 – 300	PSTB370 – 1050
Electronic overload	Yes	Yes
Adjustable tripping classes - Class 10 A, 10, 20 and 30	Yes	Yes
Dual ramp (separate overload function for start and run)	Yes	Yes
PTC connection	Yes	Yes
Locked rotor protection	Yes	Yes
Underload protection	Yes	Yes
Phase imbalance	Yes	Yes
High current ($8 \times I_e$)	Yes	Yes
Phase reversal protection	Yes	Yes

Warnings (pre-warning)

High current
Low current (underload)
Overload trip
Overtemp. thyristors (SCR)

	PST30 – 300	PSTB370 – 1050
High current	Yes	Yes
Low current (underload)	Yes	Yes
Overload trip	Yes	Yes
Overtemp. thyristors (SCR)	Yes	Yes

Start of several motors

Possible to set up and start three different motors

	PST30 – 300	PSTB370 – 1050
Possible to set up and start three different motors	Yes	Yes

Field bus connection

Connection for ABB FielBusPlug
AS-I (option cable)
DeviceNet (option cable)
Profibus DP (option cable)

	PST30 – 300	PSTB370 – 1050
Connection for ABB FielBusPlug	Yes	Yes
AS-I (option cable)	Yes	Yes
DeviceNet (option cable)	Yes	Yes
Profibus DP (option cable)	Yes	Yes

PSTB Integrated bypass ratings

		PSTB370	PSTB470	PSTB570	PSTB720	PSTB840	PSTB1050
Contactor type		AF300	AF300	AF460	AF580	AF750	AF750
AC3 Rating @ 480V	HP	250	250	400	500	600	600
AC3 Rating	A	302	302	480	590	720	720

① Valid for 50 % on time and 50 % off time, with $3.5 \times I_e$ for 7 seconds. If other data is required, please contact your sales office

② Above $40 \text{ }^\circ\text{C}$ up to max. $50 \text{ }^\circ\text{C}$ reduce the rated current by 0.8 % per $^\circ\text{C}$.

③ When used at high altitudes above 1000 meters, consult factory.

Technical data

Display settings

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

Description	Text on display (Eng)	Values on display	Default value
Motor FLA	Setting I _e	9.0 ... 1380 A divided into 19 overlapping ranges.	See table, page 6.38
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	2.0 ... 5.0 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	10A, 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	3.0 ... 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	0.8 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	0.5 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	Yes
Type of operation for phase loss fault	Ph Loss Op	Stop-M, Stop-A	Stop-M
Type of operation for by-pass fault	BP Fault Op	Stop-M, Stop-A, Ind	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	Reset
Function of programmable input In_1	In1	None, Reset, Enable, Jog, DOL, Start 3	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
1st sequence, time for start ramp	Start Ramp1	1...30 s, 1...120 s (Range depends on Start Range)	10 s
1st sequence, initial voltage for start ramp	Init Volt1	30...70 %	30 %
1st sequence, current limit	Curr Lim1	2.0 ... 5.0 x I _e	4.0 x I _e
1st sequence, setting current	1st Set Ie	9.0 ... 1380 A divided into 19 overlapping ranges	See table, page 6.38
2nd sequence, time for start ramp	Start Ramp2	1...30 s, 1...120 s (Range depends on Start Range)	10 s
2nd sequence, initial voltage for start ramp	Init Volt2	30...70 %	30 %
2nd sequence, current limit	Curr Lim2	2.0 ... 5.0 x I _e	4.0 x I _e
2nd sequence, setting current	2nd Set Ie	9.0 ... 1380 A divided into 19 overlapping ranges	See table, page 6.38

Technical data

Display settings

Tripping curves

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

Description	Text on display (Eng)	Values on display	Default value
Time for start ramp	Start Ramp	1...30 s, 1...120 s (Range depends on Start Range)	10 s
Initial voltage for start ramp	Init Volt	30 ... 70 %	30 %
Current limit	Curr Lim	2.0 ... 5.0 x I _e	4.0 x I _e
Motor FLA	Set I _e	9.0 ... 1380 A divided into 19 overlapping ranges	See table, page 6.38
Language to use on display	Language	US/UK, FI, SE, PT, NL, IT, FR, ES, DE, CN	US/UK
Time for display automatic turn off	LCD Auto Off	1 ... 255 min	15 min
Password for display	Password	No, 1 ... 255	1
Type of date presentation	Date Type	ISO, CE, US	ISO
Year	Date Year	2001...2060	Individual
Month	Date Month	1 ...12	Individual
Day	Date Day	1 ... 31	Individual
Hour	Time Hour	0 ... 23	Individual
Minutes	Time Min	0 ... 59	Individual

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Tripping curves for the integrated electronic overload

All units have an integrated electronic overload possible to set on four different tripping classes. Below, you will find a curve for each tripping class in cold state.

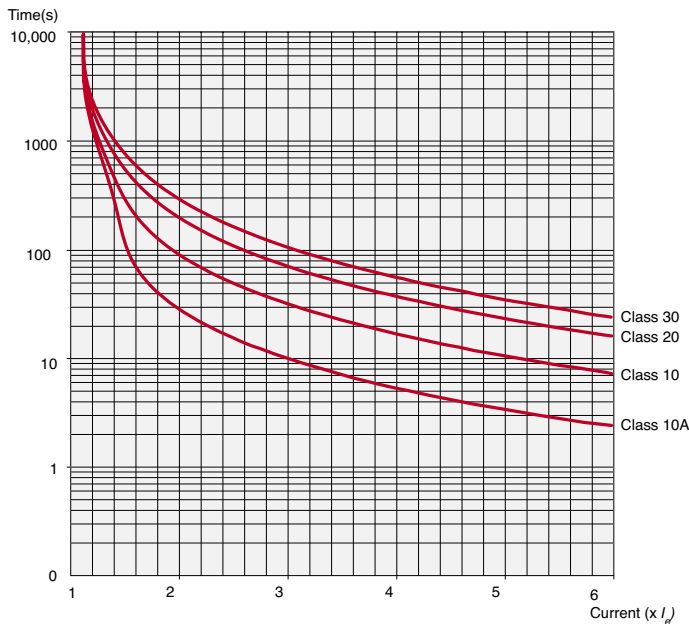


ABB FieldBusPlug

Controlling possibilities when using different field buses

Item	ASI	DeviceNet	Profibus DP
Simple control (start/stop etc)	X	X	X
Complete control	—	X	X
Simple status information	X	X	X
Detailed status information	—	X	X
Possibilities to write parameters	—	X	X
Possibilities to read parameters	—	X	—

For more detailed information, please refer to the AC1006.9 Installation and Maintenance manual, available at ABB Inc. web site. See the Resources section at the bottom of the Softstarters product page at www.abb-control.com/html/products/soft_strs.html. Click on the Literature Library File Downloads link which will take you to the Softstarters section of the Literature Library. Right click on AC1006.9 to download the manual. If you need help or advice, please contact your local ABB office.

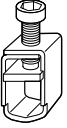
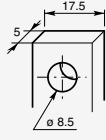
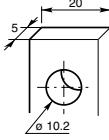
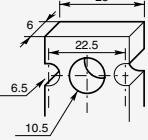
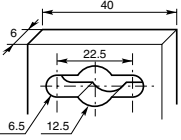
Technical data

PST30 – 300

PSTB370 – 1050

Softstarters
Type PST

Cross section of connectable cables

		Type of 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	10 ... 95	See page 6.31	See page 6.31	See page 6.31	See page 6.31
Solid/Stranded	1 x mm ²	6 ... 35	See page 6.31	See page 6.31	See page 6.31	See page 6.31
Tightening torque (recommended), Nm		6.0	See page 6.31	See page 6.31	See page 6.31	See page 6.31
Connection bar		No				
Width and thickness	mm	–	–	–	–	–
Hole diameter	mm	–	8.5	10.2	10.5	12.5
Tightening torque (recommended), Nm		–	9	18	40	49
Supply and control circuit						
Connection clamp		Yes	Yes	Yes	Yes	Yes
Solid/Stranded	1 x mm ²	2.5	2.5	2.5	2.5	2.5
Solid/Stranded	1 x mm ²	1.5	1.5	1.5	1.5	1.5
Tightening torque (recommended), Nm		0.5	0.5	0.5	0.5	0.5

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Fuse ratings and power losses

For softstarter	Recommended ABB Overload protection		Max power loss at rated I _e W	Maximum fuse ratings - main circuit			Ferraz fuses		Power requirements supply circuit VA/VA pull in
	Type	Current range A		Bussmann fuses A	Type	Holder	A	Type	
PST									
PST30	Integrated	9... 35	100	80	170M1366	170H1007	100	6.6 URB 000 D08V 0100	5
PST37	Integrated	12...46	120	125	170M1368	170H1007	160	6.6 URB 000 D08V 0160	5
PST44	Integrated	15...58	140	160	170M1369	170H1007	200	6.6 URD 30 D08A 0200	5
PST50	Integrated	15...58	160	160	170M1369	170H1007	200	6.6 URD 30 D08A 0200	5
PST72	Integrated	23...86	230	250	170M1371	170H1007	315	6.6 URD 30 D08A 0315	5
PST85	Integrated	30...115	270	315	170M1372	170H1007	400	6.6 URD 30 D08A 0400	10
PST105	Integrated	38...144	325	400	170M3019	170H3004	400	6.6 URD 30 D08A 0400	10
PST142	Integrated	45...173	435	450	170M3020	170H3004	500	6.6 URD 30 D08A 0500	10
PST175	Integrated	60...230	540	500	170M3021	170H3004	550	6.6 URD 30 D08A 0550	15
PST210	Integrated	75...288	645	630	170M5012	170H3004	630	6.6 URD 31 D08A 0630	15
PST250	Integrated	75...288	765	700	170M5013	170H3004	630	6.6 URD 31 D08A 0630	15
PST300	Integrated	90...345	920	900	170M5015	170H3004	900	6.6 URD 31 D11A 0900	15
PSTB – 600V									
PSTB370	Integrated	120...460	90	700	170M5013	170H3004	630	6.6 URD 31 D08A 0630	20/480
PSTB470	Integrated	150...575	110	900	170M5015	170H3004	900	6.6 URD 31 D11A 0900	20/480
PSTB570	Integrated	180...690	105	900	170M5015	170H3004	900	6.6 URD 31 D11A 0900	25/900
PSTB720	Integrated	225...863	110	1250	170M5018	170H3004	1250	6.6 URD 33 D11A 1250	25/860
PSTB840	Integrated	300...1160	170	1500	170M5018	170H3004	1600	6.6 URD 33 D11A 1250	25/860
PSTB1050	Integrated	360...1380	170	1800	170M6020	170H3004	2000	6.6 URD 233 PLAF 2000	25/860
PSTB – 690V									
PSTB370	Integrated	120...460	90	700	170M5013	170H3004	630	6.6 URD 31 D08A 0630	20/480
PSTB470	Integrated	150...575	110	900	170M5015	170H3004	900	6.6 URD 31 D11A 0900	20/480
PSTB570	Integrated	180...690	105	900	170M5015	170H3004	900	6.6 URD 31 D11A 0900	25/900
PSTB720	Integrated	225...863	110	1250	170M6018	170H3004	1250	6.6 URD 33 D11A 1250	25/860
PSTB840	Integrated	300...1150	170	1500	170M6018	170H3004	1600	6.6 URD 33 TTFA 1600	25/860
PSTB1050	Integrated	360...1380	170	1600	170M6019	170H3004	1600	6.6 URD 33 TTFA 1600	25/860