

Type PST Softstarters

ABB Softstarters
Type PST



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Description

- Wide main voltage range, 200 - 690 VAC
- Wide control voltage range, 100 - 250 V, 50/60 Hz
- Current ratings 30 to 1050 A (In Line) and 52 - 1800 A (Inside Delta)
- Same unit can be used for both In Line and Inside Delta connection
- Premium adjustable Softstarter functions like start/stop ramp, kick start, jog, step down voltage and sequential starts
- Current limit adjustable between 200% to 500% of motor FLA
- Thermistor (PTC) supervision of motor winding
- Real time clock
- Logging of last 20 events with time stamp
- Prepared for Field-bus communication
- Programmable electronic overloads: Classes 10A, 10, 20 & 30
- Locked rotor protection
- Motor underload protection
- Phase imbalance protection
- Phase reversal protection



General information

Catalog number explanation

Open & enclosed

Open

PST B 370 600 - 70

Softstarter
Type PST

Bypass
No digit – No integrated bypass
B – Integrated bypass

Current rating

UL / IEC	UL / IEC
30 – 28/30	210 – 192/210
37 – 34/37	250 – 248/250
44 – 42/44	300 – 302/300
50 – 54/50	370 – 361/370
72 – 68/72	470 – 480/470
85 – 80/85	570 – 590/570
105 – 104/105	720 – 720/720
142 – 130/142	840 – 840/840
175 – 156/175	1050 – 1062/1050

Control voltage
70 – 100 - 250 V, 50/60 Hz

Line voltage
600 – 208/230/480/600 V
690 – 690 V

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Enclosed

T 100 D F 1 - 48 D A

Soft starter settings
T – Type PST Enclosed

Horsepower

010 – 10	125 – 125	800 – 800
015 – 15	150 – 150	900 – 900
020 – 20	200 – 200	1000 – 1000
025 – 25	250 – 250	1200 – 1200
030 – 30	300 – 300	1400 – 1400
040 – 40	350 – 350	1500 – 1500
050 – 50	400 – 400	1600 – 1600
060 – 60	450 – 450	1700 – 1700
075 – 75	500 – 500	1800 – 1800
100 – 100	600 – 600	

Connection type

L – Inline
D – Inside Delta

Combination type

No digit – non-combination
F – fusible disconnect
B – thermal magnetic circuit breaker
M – magnetic only breaker

Enclosure

1 – NEMA 1
2 – NEMA 12^②
3 – NEMA 3R^②
4 – NEMA 4^②
X – NEMA 4x stainless steel^②

Options^①

A – Start-stop pushbutton
B – Across the line rated (AC3) contactor with emergency bypass control
C – 2 position selector switch
D – 3 position selector switch
E – Pilot light
F – Start-stop pushbutton and pilot light
H – 2 position selector switch and pilot light
J – 3 position selector switch and pilot light
M – Shunt rated (AC1) bypass contactor
W – Isolation contactor

Fuse clip

A – 30A, 600V, Class J H – 1200A, 600V, Class L
B – 60A, 600V, Class J J – 1600A, 600V, Class L
C – 100A, 600V, Class J K – 2000A, 600V, Class L
D – 200A, 600V, Class J L – 2500A, 600V, Class L
E – 400A, 600V, Class J M – 3000A, 600V, Class L
F – 600A, 600V, Class J N – 4000A, 600V, Class L
G – 800A, 600V, Class L

Circuit Breaker Amp Ratings

D – 15 M – 70 W – 225 E – 700 N – 3000
E – 20 N – 80 X – 250 F – 800
F – 25 P – 60 Y – 300 G – 900
G – 30 R – 100 Z – 350 H – 1000
H – 35 S – 125 A – 400 J – 1200
J – 40 T – 150 B – 450 K – 1600
K – 50 U – 175 C – 500 L – 2000
L – 60 V – 200 D – 600 M – 2500

MCP/MAG Only Rating

A – 3 E – 50 J – 400
B – 5 F – 100 K – 600
C – 10 G – 150 L – 800
D – 25 H – 225 M – 1200

Line voltage

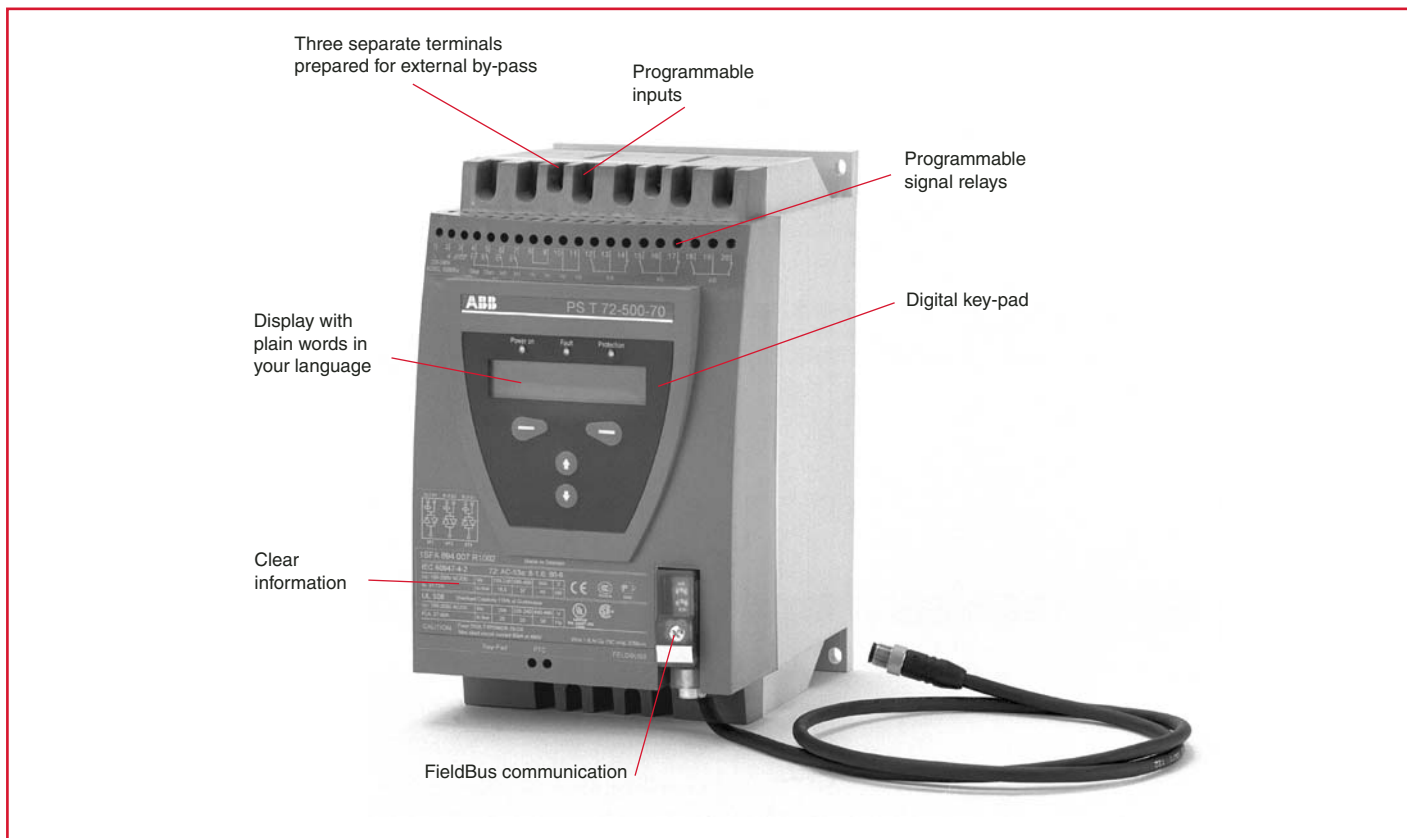
20: 208V 120V control voltage
23: 230V 120V control voltage
38: 380V 220V control voltage
41: 415V 220V control voltage
48: 480V 120V control voltage
60: 600V 120V control voltage

^① For more options, see page 6.27

^② Bypass contactor required when integrated bypass is not included.

General information

Application and description



Application

The PST range is a microprocessor based softstarter designed with the latest technology for soft start and soft stop of motors. The PST Softstarter has several advanced motor protection features as standard. The four button key pad and the logic structure of the menu makes the installation, commissioning and operation easy. It is possible to choose between 10 different languages.

The PST Softstarter can be used with or without a by-pass contactor. The larger sizes, PSTB370 – PSTB1050, include a built-in by-pass contactor.

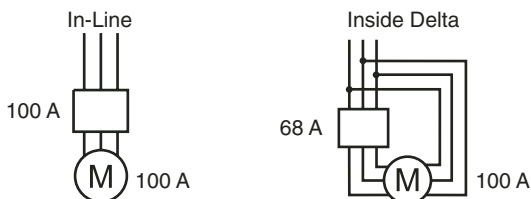
The PST Softstarter can be selected according to the rated motor power in normal duty applications like pumps, compressors, elevators, escalators, short conveyor belts and bow thrusters.

For Class 30 applications such as centrifugal fans, crushers, mixers, mills, stirrers and long conveyor belts, we recommend to upsize one horsepower rating.

Digital display

Your business is going global. Shouldn't your motor control go global, too? The PST display gives you information presented in plain words – in your language. You can choose between almost a dozen languages including English, German, Italian, Chinese, Finnish, Swedish, French, Spanish, Dutch, and Portuguese. On the PST display, you get all the information you need to set up, adjust and trouble-shoot. This makes the PST extremely easy to handle and reduces the risk of misinterpretations.

At any time, you can read output current, output voltage, number of starts, total run time and motor temperature on the display. If a fault should occur, this is also indicated on the display. The fault messages are presented in clear text in the selected language.



In-Line and Inside Delta connection of PST30 - 1050



General information

Application and description

Four button keypad

The PST employs the same basic user concept as today's advanced mobile telephones. Using the four buttons on the keypad, you can easily adjust your own start and stop profile and motor protection functions for any type of application. There are standard settings for many common applications including pumps, conveyors, fans, mixers and compressors for quick and easy set up.

You can also set the advanced warning parameters to allow potential problems to be identified before real problems occur. A password protection function is available to prevent unauthorized changes to the programming.

Starting several motors

6 You can store as many as three different starting parameter sets for optimal sequence start of three different motors. You can use this function for two or three speed motors as well.

Integrated advanced motor protection

Inside the PST Softstarter, you will find useful features for advanced motor and softstarter protection, including: programmable overload protection, high current, underload, phase imbalance, phase reversal, thyristor overload protection, and bypass monitoring to ensure proper by-pass operation.

Programmable signal relays

All PST units have three programmable signal relays where each relay can signal Run, Top of Ramp or Event. The Event setting can be used to signal fault protections or warnings. The supervisory functions monitor not only software and critical softstarter functionality but also phase loss and out of frequency range.

Integrated by-pass contactor

On the larger sizes (PSTB370 – PSTB1050), there is an integrated ABB AF contactor. This gives you advantages in terms of cost-saving, (less investment in fans, cables, time), space saving (more compact soft starter; no fan that takes up space), and last but not least, energy saving. With a by-pass contactor you can reduce the power losses during normal run by 90% or more.

For the smaller PST below 370A, which are not equipped with built-in contactors, the units have double connections for the main terminals on the line side. The extra terminals are used to connect an external by-pass contactor in order to enable the integrated protection functions.



PSTB1050 with integrated by-pass contactor.

Fieldbus communication

The PST Softstarter has a built-in interface on the front for connection of the ABB FieldBusPlug used for fieldbus communication. Through this interface, it is possible to control the softstarter, achieve status information, upload and download parameters. The interface between the softstarter and the FieldBusPlug is always the same. Independently of PST Softstarter size or delivery date, it is possible to connect to any fieldbus protocol later on since this is defined in the FieldBusPlug itself. The following protocols are currently available: AS-I, DeviceNet and Profibus DP. To connect the PST Softstarter to a fieldbus system, you need the accessories described on pages 6.33 to 6.34 as well as specific software for PLC set-up, which is available on the ABB web site; see the Resources section at the bottom of the Softstarter product page at www.abb-control.com/html/products/soft_strs.html.

Type PST, Open In-Line, Inside Delta 7.5 – 1800 HP

Softstarters
Type PST

Connected In-Line



PST72-600-70



PST142-600-70



PST175-600-70



PST370-600-70



PST570-600-70

Maximum motor current		Maximum horsepower					Weight (lbs.)	Catalog number	List price
UL	IEC	208V	240V	380V	480V	600V			
28	30	7.5	10	15	20	25	9	PST30-600-70	\$ 1330
34	37	10	10	20	25	30	9	PST37-600-70	1360
42	44	10	15	25	30	40	11	PST44-600-70	1390
54	50	15	20	30	40	50	11	PST50-600-70	1730
68	72	20	25	40	50	60	22	PST72-600-70	1755
80	85	25	30	50	60	75	22	PST85-600-70	2380
104	105	30	40	60	75	100	27	PST105-600-70	2410
130	142	40	50	75	100	125	33	PST142-600-70	3375
156	175	50	60	100	125	150	44	PST175-600-70	3420
192	210	60	75	125	150	200	49	PST210-600-70	3870
248	250	75	100	150	200	250	49	PST250-600-70	4350
302	300	100	100	150	250	300	53	PST300-600-70	4480
361	370	125	150	200	300	350	84	PSTB370-600-70	5660
480	470	150	200	300	400	500	93	PSTB470-600-70	7000
590	570	200	250	350	500	600	97	PSTB570-600-70	8550
720	720	250	300	450	600	700	119	PSTB720-600-70	9630
840	840	300	350	500	700	800	124	PSTB840-600-70	10,900
1062	1050	400	450	600	900	1000	137	PSTB1050-600-70	18,000

Connected Inside Delta

Maximum motor current		Maximum horsepower					Weight (lbs.)	Catalog number	List price
UL	IEC	208V	240V	380V	480V	600V			
42	51	10	15	30	30	40	9	PST30-600-70	\$ 1330
54	64	15	20	40	40	50	9	PST37-600-70	1360
72	76	20	25	50	50	60	11	PST44-600-70	1390
80	86	25	30	50	60	75	11	PST50-600-70	1730
104	124	30	40	75	75	100	22	PST72-600-70	1755
130	148	40	50	75	100	125	22	PST85-600-70	2380
156	181	50	60	100	125	150	27	PST105-600-70	2410
192	245	60	75	150	150	200	33	PST142-600-70	3375
248	303	75	100	200	200	250	44	PST175-600-70	3420
302	363	100	100	200	250	300	49	PST210-600-70	3870
361	433	125	150	250	300	350	49	PST250-600-70	4350
480	519	150	200	300	400	500	53	PST300-600-70	4480
590	640	200	250	400	500	600	84	PSTB370-600-70	5660
720	814	250	300	500	600	700	93	PSTB470-600-70	7000
840	987	300	350	600	700	800	97	PSTB570-600-70	8550
1247	1247	400	500	800	1000	1200	119	PSTB720-600-70	9630
1454	1454	500	600	900	1200	1500	124	PSTB840-600-70	10,900
1839	1818	600	700	1000	1500	1800	137	PSTB1050-600-70	18,000

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Type PST, Enclosed NEMA 1, 12 In-Line, 5 – 1000 HP

Connected In-Line

Max. motor current		Maximum horsepower					NEMA1, 480V	NEMA1, 600V	List Price	NEMA12, 480V	NEMA12, 600V	List Price
UL	IEC	208V	240V	380V	480V	600V	Catalog Number	Catalog Number		Catalog Number	Catalog Number	
18	18	5	5	10	10	—	T010L1-48	—	\$ 1655	T010L2-48M	—	\$ 1905
		—	—	—	—	15	—	T015L1-60		—	T015L2-60M	
28	30	7.5	10	15	20	—	T020L1-48	—	1655	T020L2-48M	—	1930
		—	—	—	—	25	—	T025L1-60		—	T025L2-60M	
34	37	10	10	20	25	—	T025L1-48	—	1685	T025L2-48M	—	2085
		—	—	—	—	30	—	T030L1-60		—	T030L2-60M	
42	44	10	15	25	30	—	T030L1-48	—	1715	T030L2-48M	—	2165
		—	—	—	—	40	—	T040L1-60		—	T040L2-60M	
54	50	15	20	30	40	—	T040L1-48	—	2055	T040L2-48M	—	2555
		—	—	—	—	50	—	T050L1-60		—	T050L2-60M	
68	72	20	25	40	50	—	T050L1-48	—	2080	T050L2-48M	—	2630
		—	—	—	—	60	—	T060L1-60		—	T060L2-60M	
80	85	25	30	50	60	—	T060L1-48	—	2705	T060L2-48M	—	3355
		—	—	—	—	75	—	T075L1-60		—	T075L2-60M	
104	105	30	40	60	75	—	T075L1-48	—	2735	T075L2-48M	—	3460
		—	—	—	—	100	—	T100L1-60		—	T100L2-60M	
130	142	40	50	75	100	—	T100L1-48	—	3875	T100L2-48M	—	4775
		—	—	—	—	125	—	T125L1-60		—	T125L2-60M	
156	150	50	60	100	125	—	T125L1-48	—	3920	T125L2-48M	—	5120
		—	—	—	—	150	—	T150L1-60		—	T150L2-60M	
192	210	60	75	125	150	—	T150L1-48	—	4370	T150L2-48M	—	5770
		—	—	—	—	200	—	T200L1-60		—	T200L2-60M	
248	250	75	100	150	200	—	T200L1-48	—	4850	T200L2-48M	—	6550
		—	—	—	—	250	—	T250L1-60		—	T250L2-60M	
302	300	100	100	150	250	—	T250L1-48	—	5080	T250L2-48M	—	7830
		—	—	—	—	300	—	T300L1-60		—	T300L2-60M	
361	370	125	150	200	300	—	T300L1-48M ^①	—	6260	T300L2-48M ^①	—	6910
		—	—	—	—	350	—	T350L1-60M ^①		—	T350L2-60M ^①	
414	400	—	—	250	350	—	T350L1-48M ^①	—	7700	T350L2-48M ^①	—	8550
		—	—	—	—	400	—	T400L1-60M ^①		—	T400L2-60M ^①	
480	470	150	200	300	400	—	T400L1-48M ^①	—	7700	T400L2-48M ^①	—	8550
		—	—	—	—	500	—	T500L1-60M ^①		—	T500L2-60M ^①	
590	570	200	250	350	500	—	T500L1-48M ^①	—	9350	T500L2-48M ^①	—	10,350
		—	—	—	—	600	—	T600L1-60M ^①		—	T600L2-60M ^①	
720	720	250	300	450	600	—	T600L1-48M ^①	—	10,830	T600L2-48M ^①	—	11,830
		—	—	—	—	700	—	T700L1-60M ^①		—	T700L2-60M ^①	
840	840	300	350	500	700	—	T700L1-48M ^①	—	12,900	T700L2-48M ^①	—	14,000
		—	—	—	—	800	—	T800L1-60M ^①		—	T800L2-60M ^①	
960	—	350	400	—	800	—	T800L1-48M ^①	—	21,000	T800L2-48M ^①	—	22,300
		—	—	—	—	900	—	T900L1-60M ^①		—	T900L2-60M ^①	
1062	1050	400	450	600	900	—	T900L1-48M ^①	—	21,000	T900L2-48M ^①	—	22,300
		—	—	—	—	1000	—	T1000L1-60M ^①		—	T1000L2-60M ^①	

① Includes integrated shunt rated (AC1) bypass contactor as standard. For across the line rated (AC3) bypass contactors, see page 6.30.

Type PST, Enclosed NEMA 1, 12 Inside Delta, 7.5 – 1800 HP



Connected Inside Delta

Max. motor current		Maximum horsepower					NEMA1, 480V	NEMA1, 600V		NEMA12, 480V	NEMA12, 600V	
UL	IEC	208V	240V	380V	480V	600V	Catalog Number	Catalog Number	List Price	Catalog Number	Catalog Number	List Price
28	30	7.5	10	15	20	—	T020D1-48	—	\$ 1655	T020D2-48M	—	\$ 1905
		—	—	—	—	25	—	T025D1-60		—	T025D2-60M	
34	37	10	10	20	25	—	T025D1-48	—	1655	T025D2-48M	—	1905
		—	—	—	—	30	—	T030D1-60		—	T030D2-60M	
42	44	10	15	25	30	—	T030D1-48	—	1655	T030D2-48M	—	1930
		—	—	—	—	40	—	T040D1-60		—	T040D2-60M	
54	50	15	20	30	40	—	T040D1-48	—	1685	T040D2-48M	—	2085
		—	—	—	—	50	—	T050D1-60		—	T050D2-60M	
68	72	20	25	40	50	—	T050D1-48	—	1715	T050D2-48M	—	2165
		—	—	—	—	60	—	T060D1-60		—	T060D2-60M	
80	85	25	30	50	60	—	T060D1-48	—	2055	T060D2-48M	—	2555
		—	—	—	—	75	—	T075D1-60		—	T075D2-60M	
104	105	30	40	60	75	—	T075D1-48	—	2080	T075D2-48M	—	2630
		—	—	—	—	100	—	T100D1-60		—	T100D2-60M	
130	142	40	50	75	100	—	T100D1-48	—	2705	T100D2-48M	—	3355
		—	—	—	—	125	—	T125D1-60		—	T125D2-60M	
156	150	50	60	100	125	—	T125D1-48	—	2735	T125D2-48M	—	3460
		—	—	—	—	150	—	T150D1-60		—	T150D2-60M	
192	210	60	75	125	150	—	T150D1-48	—	3875	T150D2-48M	—	4775
		—	—	—	—	200	—	T200D1-60		—	T200D2-60M	
248	250	75	100	150	200	—	T200D1-48	—	3920	T200D2-48M	—	5120
		—	—	—	—	250	—	T250D1-60		—	T250D2-60M	
302	300	100	100	150	250	—	T250D1-48	—	4370	T250D2-48M	—	5770
		—	—	—	—	300	—	T300D1-60		—	T300D2-60M	
361	370	125	150	200	300	—	T300D1-48	—	4850	T300D2-48M	—	6550
		—	—	—	—	350	—	T350D1-60		—	T350D2-60M	
414	400	—	—	250	350	—	T350D1-48	—	5080	T350D2-48M	—	7830
		—	—	—	—	400	—	T400D1-60		—	T400D2-60M	
480	470	150	200	300	400	—	T400D1-48	—	5080	T400D2-48M	—	7830
		—	—	—	—	500	—	T500D1-60		—	T500D2-60M	
590	570	200	250	350	500	—	T500D1-48M ^①	—	6260	T500D2-48M ^①	—	6910
		—	—	—	—	600	—	T600D1-60M ^①		—	T600D2-60M ^①	
720	720	250	300	450	600	—	T600D1-48M ^①	—	7700	T600D2-48M ^①	—	8550
		—	—	—	—	700	—	T700D1-60M ^①		—	T700D2-60M ^①	
840	840	300	350	500	700	—	T700D1-48M ^①	—	9350	T700D2-48M ^①	—	10,350
		—	—	—	—	800	—	T800D1-60M ^①		—	T800D2-60M ^①	
960	—	350	400	—	800	—	T800D1-48M ^①	—	10,830	T800D2-48M ^①	—	12,130
		—	—	—	—	900	—	T900D1-60M ^①		—	T900D2-60M ^①	
1062	1050	400	450	600	900	—	T900D1-48M ^①	—	10,830	T900D2-48M ^①	—	12,130
		—	—	—	—	1000	—	T1000D1-60M ^①		—	T1000D2-60M ^①	
1247	1215	400	500	800	1000	—	T1000D1-48M ^①	—	10,830	T1000D2-48M ^①	—	12,130
		—	—	—	—	1200	—	T1200D1-60M ^①		—	T1200D2-60M ^①	
1454	1370	500	600	900	1200	—	T1200D1-48M ^①	—	12,900	T1200D2-48M ^①	—	14,650
		—	—	—	—	1500	—	T1500D1-60M ^①		—	T1500D2-60M ^①	
1839	1823	600	700	1200	1500	—	T1500D1-48M ^①	—	21,000	T1500D2-48M ^①	—	22,750
		—	—	—	—	1800	—	T1800D1-60M ^①		—	T1800D2-60M ^①	

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① Includes integrated shunt rated (AC1) bypass contactor as standard. For across the line rated (AC3) bypass contactors, see page 6.30.



Type PST, Enclosed NEMA 1, Combination In-Line, 5 – 1000 HP

Connected In-Line

Max. motor current		Maximum horsepower					NEMA1, 480V Circuit breaker	NEMA1, 600V Circuit breaker	List Price	NEMA1, 480V Fused disconnect	NEMA 1, 600V Fused disconnect	List Price
UL	IEC	208V	240V	380V	480V	600V	Catalog Number	Catalog Number		Catalog Number	Catalog Number	
18	18	5	5	10	10	—	T010LB1-48E	—	\$ 2055	T010LF1-48A	—	\$ 2055
		—	—	—	—	15	—	T015LB1-60E		—	T015LF1-60A	
28	30	7.5	10	15	20	—	T020LB1-48J	—	2065	T020LF1-48B	—	2065
		—	—	—	—	25	—	T025LB1-60J		—	T025LF1-60B	
34	37	10	10	20	25	—	T025LB1-48K	—	2110	T025LF1-48B	—	2110
		—	—	—	—	30	—	T030LB1-60K		—	T030LF1-60B	
42	44	10	15	25	30	—	T030LB1-48L	—	2315	T030LF1-48C	—	2315
		—	—	—	—	40	—	T040LB1-60L		—	T040LF1-60C	
54	50	15	20	30	40	—	T040LB1-48N	—	2655	T040LF1-48C	—	2655
		—	—	—	—	50	—	T050LB1-60N		—	T050LF1-60C	
68	72	20	25	40	50	—	T050LB1-48R	—	2680	T050LF1-48C	—	2680
		—	—	—	—	60	—	T060LB1-60R		—	T060LF1-60C	
80	85	25	30	50	60	—	T060LB1-48S	—	3705	T060LF1-48D	—	3705
		—	—	—	—	75	—	T075LB1-60S		—	T075LF1-60D	
104	105	30	40	60	75	—	T075LB1-48T	—	3735	T075LF1-48D	—	3735
		—	—	—	—	100	—	T100LB1-60T		—	T100LF1-60D	
130	142	40	50	75	100	—	T100LB1-48V	—	5075	T100LF1-48D	—	5075
		—	—	—	—	125	—	T125LB1-60V		—	T125LF1-60D	
156	150	50	60	100	125	—	T125LB1-48X	—	5720	T125LF1-48E	—	5720
		—	—	—	—	150	—	T150LB1-60X		—	T150LF1-60E	
192	210	60	75	125	150	—	T150LB1-48Y	—	6170	T150LF1-48E	—	6170
		—	—	—	—	200	—	T200LB1-60Y		—	T200LF1-60E	
248	250	75	100	150	200	—	T200LB1-48Z	—	6650	T200LF1-48E	—	6650
		—	—	—	—	250	—	T250LB1-60Z		—	T250LF1-60E	
302	300	100	100	150	250	—	T250LB1-48B	—	7580	T250LF1-48F	—	7580
		—	—	—	—	300	—	T300LB1-60B		—	T300LF1-60F	
361	370	125	150	200	300	—	T300LB1-48CM ^①	—	8860	T300LF1-48FM ^①	—	8860
		—	—	—	—	350	—	T350LB1-60CM ^①		—	T350LF1-60FM ^①	
414	400	—	—	250	350	—	T350LB1-48DM ^①	—	11,300	T350LF1-48FM ^①	—	11,300
		—	—	—	—	400	—	T400LB1-60DM ^①		—	T400LF1-60FM ^①	
480	470	150	200	300	400	—	T400LB1-48EM ^①	—	11,800	T400LF1-48GM ^①	—	11,800
		—	—	—	—	500	—	T500LB1-60EM ^①		—	T500LF1-60GM ^①	
590	570	200	250	350	500	—	T500LB1-48GM ^①	—	14,550	T500LF1-48HM ^①	—	14,550
		—	—	—	—	600	—	T600LB1-60GM ^①		—	T600LF1-60HB ^①	
720	720	250	300	450	600	—	T600LB1-48JM ^①	—	16,030	T600LF1-48HM ^①	—	16,030
		—	—	—	—	700	—	T700LB1-60JM ^①		—	T700LF1-60HB ^①	
840	840	300	350	500	700	—	T700LB1-48JM ^①	—	19,400	T700LF1-48JM ^①	—	19,400
		—	—	—	—	800	—	T800LB1-60JM ^①		—	T800LF1-60JB ^①	
960	—	350	400	—	800	—	T800LB1-48KM ^①	—	27,500	T800LF1-48JM ^①	—	27,500
		—	—	—	—	900	—	T900LB1-60KM ^①		—	T900LF1-60JB ^①	
1062	1050	400	450	600	900	—	T900LB1-48KM ^①	—	28,200	T900LF1-48KM ^①	—	28,200
		—	—	—	—	1000	—	T1000LB1-60KM ^①		—	T1000LF1-60KB ^①	

① Includes integrated shunt rated (AC1) bypass contactor as standard. For across the line rated (AC3) bypass contactors, see page 6.30.

Type PST, Enclosed NEMA 1, Combination Inside Delta, 7.5 – 1900 HP

Softstarters
Type PST

Connected Inside Delta

Max. motor current		Maximum horsepower					NEMA1, 480V Circuit breaker	NEMA1, 600V Circuit breaker	List Price	NEMA1, 480V Fused disconnect	NEMA 1, 600V Fused disconnect	List Price
UL	IEC	208V	240V	380V	480V	600V	Catalog Number	Catalog Number		Catalog Number	Catalog Number	
28	30	7.5	10	15	20	—	T020DB1-48J	—	\$ 2065	T020DF1-48B	—	\$ 2065
		—	—	—	—	25	—	T025DB1-60J		—	T025DF1-60B	
34	37	10	10	20	25	—	T025DB1-48K	—	2080	T025DF1-48B	—	2080
		—	—	—	—	30	—	T030DB1-60K		—	T030DF1-60B	
42	44	10	15	25	30	—	T030DB1-48L	—	2255	T030DF1-48C	—	2255
		—	—	—	—	40	—	T040DB1-60L		—	T040DF1-60C	
54	50	15	20	30	40	—	T040DB1-48N	—	2285	T040DF1-48C	—	2285
		—	—	—	—	50	—	T050DB1-60N		—	T050DF1-60C	
68	72	20	25	40	50	—	T050DB1-48R	—	2315	T050DF1-48C	—	2315
		—	—	—	—	60	—	T060DB1-60R		—	T060DF1-60C	
80	85	25	30	50	60	—	T060DB1-48S	—	3055	T060DF1-48D	—	3055
		—	—	—	—	75	—	T075DB1-60S		—	T075DF1-60D	
104	105	30	40	60	75	—	T075DB1-48T	—	3080	T075DF1-48D	—	3080
		—	—	—	—	100	—	T100DB1-60T		—	T100DF1-60D	
130	142	40	50	75	100	—	T100DB1-48V	—	3905	T100DF1-48D	—	3905
		—	—	—	—	125	—	T125DB1-60V		—	T125DF1-60D	
156	150	50	60	100	125	—	T125DB1-48X	—	4535	T125DF1-48E	—	4535
		—	—	—	—	150	—	T150DB1-60X		—	T150DF1-60E	
192	210	60	75	125	150	—	T150DB1-48Y	—	5675	T150DF1-48E	—	5675
		—	—	—	—	200	—	T200DB1-60Y		—	T200DF1-60E	
248	250	75	100	150	200	—	T200DB1-48Z	—	5720	T200DF1-48E	—	5720
		—	—	—	—	250	—	T250DB1-60Z		—	T250DF1-60E	
302	300	100	100	150	250	—	T250DB1-48B	—	6870	T250DF1-48F	—	6870
		—	—	—	—	300	—	T300DB1-60B		—	T300DF1-60F	
361	370	125	150	200	300	—	T300DB1-48C	—	7450	T300DF1-48F	—	7450
		—	—	—	—	350	—	T350DB1-60C		—	T350DF1-60F	
414	400	—	—	250	350	—	T350DB1-48D	—	8680	T350DF1-48F	—	8680
		—	—	—	—	400	—	T400DB1-60D		—	T400DF1-60F	
480	470	150	200	300	400	—	T400DB1-48E	—	9180	T400DF1-48G	—	9180
		—	—	—	—	500	—	T500DB1-60E		—	T500DF1-60G	
590	570	200	250	350	500	—	T500DB1-48GM [Ⓞ]	—	11,460	T500DF1-48HM [Ⓞ]	—	11,460
		—	—	—	—	600	—	T600DB1-60GM [Ⓞ]		—	T600DF1-60HM [Ⓞ]	
720	720	250	300	450	600	—	T600DB1-48JM [Ⓞ]	—	12,900	T600DF1-48HM [Ⓞ]	—	12,900
		—	—	—	—	700	—	T700DB1-60JM [Ⓞ]		—	T700DF1-60HM [Ⓞ]	
840	840	300	350	500	700	—	T700DB1-48JM [Ⓞ]	—	15,850	T700DF1-48JM [Ⓞ]	—	15,850
		—	—	—	—	800	—	T800DB1-60JM [Ⓞ]		—	T800DF1-60JM [Ⓞ]	
960	—	350	400	—	800	—	T800DB1-48KM [Ⓞ]	—	17,330	T800DF1-48JM [Ⓞ]	—	17,330
		—	—	—	—	900	—	T900DB1-60KM [Ⓞ]		—	T900DF1-60JM [Ⓞ]	
1062	1050	400	450	600	900	—	T900DB1-48KM [Ⓞ]	—	18,030	T900DF1-48KM [Ⓞ]	—	18,030
		—	—	—	—	1000	—	T1000DB1-60KM [Ⓞ]		—	T1000DF1-60KM [Ⓞ]	
1247	1215	400	500	800	1000	—	T1000DB1-48LM [Ⓞ]	—	20,830	T1000DF1-48KM [Ⓞ]	—	20,830
		—	—	—	—	1200	—	T1200DB1-60LM [Ⓞ]		—	T1200DF1-60KM [Ⓞ]	
1454	1370	500	600	900	1200	—	T1200DB1-48MM [Ⓞ]	—	22,900	T1200DF1-48LM [Ⓞ]	—	22,900
		—	—	—	—	1500	—	T1500DB1-60MM [Ⓞ]		—	T1500DF1-60LM [Ⓞ]	
1839	1823	600	700	1200	1500	—	T1500DB1-48NM [Ⓞ]	—	33,500	T1500DF1-48NM [Ⓞ]	—	33,500
		—	—	—	—	1800	—	T1800DB1-60NM [Ⓞ]		—	T1800DF1-60NM [Ⓞ]	

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[Ⓞ] Includes integrated shunt rated (AC1) bypass contactor as standard. For across the line rated (AC3) bypass contactors, see page 6.30.



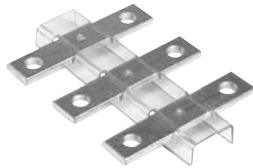
Type PST Options

Max FLA		Shunt rated (AC1) bypass or isolation contactor	Across the line rated (AC3) ^④ bypass contactor	Start/Stop pushbuttons	HOA Selector Switch	Run pilot Light	NEMA 12 adder	NEMA 3R adder	NEMA 4 adder	NEMA 4X adder
UL	IEC	List price	List price ^③	List price	List price	List price	List price	List price	List price	List price
18	18	\$ 150	\$ 775	\$ 72	\$ 72	\$ 135	\$ 100 ^①	\$ 100 ^①	\$ 150 ^①	\$ 450 ^①
28	30	175	850	72	72	135	100 ^①	100 ^①	150 ^①	450 ^①
34	37	250	900	72	72	135	150 ^①	150 ^①	200 ^①	600 ^①
42	44	300	950	72	72	135	150 ^①	150 ^①	200 ^①	600 ^①
54	50	350	1000	72	72	135	150 ^①	150 ^①	200 ^①	600 ^①
68	72	400	1100	72	72	135	150 ^①	150 ^①	200 ^①	600 ^①
80	85	500	1150	72	72	135	150 ^①	150 ^①	225 ^①	775 ^①
104	105	550	1200	72	72	135	175 ^①	175 ^①	225 ^①	775 ^①
130	142	600	1550	72	72	135	300 ^①	300 ^①	350 ^①	1050 ^①
156	150	950	1850	72	72	135	300 ^①	300 ^①	350 ^①	1050 ^①
192	210	950	2100	72	72	135	450 ^①	450 ^①	525 ^①	1575 ^①
248	250	1250	2700	72	72	135	450 ^①	450 ^①	525 ^①	1575 ^①
302	300	2100	3500	72	72	135	650 ^①	650 ^①	775 ^①	2325 ^①
361	370	— ^②	4800	72	72	135	650	650	775	2325
414	400	— ^②	4800	72	72	135	750	750	950	2850
480	470	— ^②	4800	72	72	135	850	850	1025	3075
590	570	— ^②	6800	72	72	135	1000	1000	1300	3900
720	720	— ^②	7100	72	72	135	1000	1000	1300	3900
840	840	— ^②	10,100	72	72	135	1100	1100	1425	4275
960	—	— ^②	10,100	72	72	135	1300	1300	1700	5100
1062	1050	— ^②	14,600	72	72	135	1300	1300	1700	5100
1247	1215	— ^②	14,600	72	72	135	1300	1300	1700	5100
1454	1370	— ^②	14,600	72	72	135	1750	1750	2200	7000
1839	1823	— ^②	14,600	72	72	135	1750	1750	2200	7000

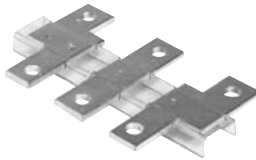
- ① Must add bypass contactor.
- ② PSTB includes an integrated shunt rated (AC1) bypass contactor.
- ③ Includes emergency bypass control.
- ④ Subtract AC1 List price when AC1 rating ("M" code) is included in catalog numbers shown on page 6.26.

Accessories

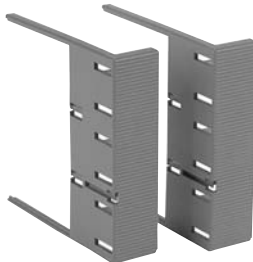
Softstarters
Type PST



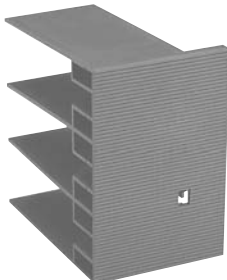
LX400



LW185



LT185-AC



LT460-AC

Terminal extension pieces (set of 3) ③

Softstarter Type	Dimensions		Weight lbs.	Catalog number	List price
	Hole (mm)	Bar (mm)			
PST85 – 142	8.5	17.5 x 5	0.55	LX185	\$ 90
PST175 – 300	10.5	20 x 5	0.77	LX300	140
PST370 – 470	10.5	25 x 5	1.1	LX460	195
PST570 – 1050	13	40 x 6	1.9	LX750	225

Delivered with straps to prevent them from rotating.

Terminal enlargement pieces (set of 3) ③

Softstarter Type	Dimensions		Weight lbs.	Catalog number	List price
	Hole (mm)	Bar (mm)			
PST30 – 72	6.5	15 x 3	0.22	LW110	\$ 15
PST85 – 142	10.5	17.5 x 5	0.55	LW185	120
PST175 – 300	10.5	20 x 5	0.99	LW300	130
PST370 – 470	10.5	25 x 5	1.6	LW460	295
PST570 – 1050	13	40 x 6	2.7	LW750	355

Delivered with straps to prevent them from rotating.

Terminal shrouds ③

Softstarter Type	Required quantity	Weight lbs.	Catalog number	List price
PST85 – 142	(1) - LT185-AC & (1) LT460-AC	0.11	LT185-AC LT460-AC	\$ 10 20
		0.22		
PST85 – 142	(1) - LT185-AL & (1) LT460-AL	0.48	LT185-AL LT460-AL	10 20
		1.8		
PST175 – 300	LT300-AC ⑤	0.15	LT300-AC	10
		0.62		
PSTB370 – 470	LT460-AC	0.22	LT460-AC	20
		1.8		
PSTB570 – 1050	LT750-AC	0.26	LT750-AC	20
		1.8		
	LT750-AL	1.8	LT750-AL	20

Control transformers

PST Amp ratings	Standard VA	Price adder for extra VA			
		100VA	250VA	500VA	750VA
9 – 68	50	\$ 175	—	—	—
69 – 130	75	225	\$ 300	—	—
131 – 480	250	360	400	\$ 500	\$ 625
481 – 1050	750	—	725	—	975

Terminal lug kits ①

Wire range	For softstarter ②	Catalog number	List price
#6 - 250 MCM (1 per phase)	PST85 – PST142	PSLK-185 ④	\$ 150
#4 - 400 MCM (1 per phase)	PST175 – PST300	PSLK-300 ④	195
#4 - 500 MCM (2 per phase)	PST175 – PST300	PSLK-300/2 ④	280
2/0 - 500 MCM (2 per phase)	PSTB370 – PSTB470	PSLK-580/2	350
2/0 - 500 MCM (3 per phase)	PSTB570 – PSTB1050	PSLK-750/3	525

① Includes line/load lugs and hardware.

② Softstarters listed are provided with terminating bus tabs as standard.

③ Use Discount Schedule ABA.

④ Must order two sets if using bypass contactor.

⑤ Requires two sets.



Accessories

Accessories

Item	Suffix code ①	List price adder
Softstarters		
Start-stop pushbutton	A	\$ 72
2 position selector switch	C	72
3 position selector switch	D	72
Pilot light run	E	135
Start-stop pushbutton & pilot light	F	207
2 position selector switch & pilot light	H	207
3 position selector switch & pilot light	J	207
Shunt rated (AC1) bypass contactor	M	see pg 6.30
Isolation contactor	W	see pg 6.30
Across the line rated (AC3) contactor with emergency bypass control	B	see pg 6.30
Service entrance, 3-wire	SE3	100
Service entrance, 4-wire	SE4	300
Lightning arrester	LA	320
Space heater, 100W with thermostat	SH	600
Emergency bypass control for PSTB ③	X	600
Auxiliary relays		
Type N control relay (4 pole)	CR	150
Electronic timer		
1.5 – 30s On Delay	TN30	125
5 – 100s On Delay	TN100	125
1.5 – 30s Off Delay	TF30	125
5 – 100s Off Delay	TF100	125
Phase failure phase reversal ②	PFPR	375
Undervoltage relay	UV	150
Overvoltage relay	OV	180
Ground fault protection	GFP	1000
Meters & metering		
Current transformer	CT	250
Ammeter (including C.T.)	AM	470
Ammeter & ammeter switch	AMS	1800
Voltmeter	VM	1200
Voltmeter & voltmeter switch	VMS	1800
Elapsed time meter	ETM	350
Operation counter	OC	375
Wattmeter	WM	2450

Additional auxiliary contact blocks for bypass or isolation contactors

Contact configuration	Suffix code	List price adder
1 N.O. & 1 N.C.	11	\$ 54
2 N.O. & 2 N.C.	22	98
3 N.O. & 3 N.C.	33	142

Remote mount keypad

Available 4th Quarter, 2003. Contact factory.

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① Add the suffix code after the last digit of the catalog number.

② Included as standard in the PST.

③ Control includes selector switch start-stop pushbutton.

Accessories Communications DeviceNet



DeviceNet FieldBusPlug

Designation FieldBusPlug	Cable length	Weight lbs	Catalog number	List price
DeviceNet	0.25 m	.20	DNP21-FBP.025	\$ 286.47
DeviceNet	0.50 m	.22	DNP21-FBP.050	286.47
DeviceNet	1.00 m	.29	DNP21-FBP.100	286.47
DeviceNet	5.00 m	.79	DNP21-FBP.500	304.83

Ready-made DeviceNet fieldbus interface with various cable lengths

- Applicable on all FBP motor starters and other devices
- Degree of protection IP65, diagnostic LED

DeviceNet round cable for bus junctions

Designation	Cable length	Weight lbs	Catalog number	List price
DeviceNet round cable with female connector	0.50 m	.09	DNF11-FBP.050	\$ 48.21
DeviceNet round cable with male connector	0.50 m	.09	DNM11-FBP.050	49.96

Ready made bus cable with an M12 connector and an open cable end.

- Applicable on all bus junctions such as DeviceNet couplers or devices with an integrated DeviceNet interface.

DeviceNet round cable for bus extension

Designation	Cable length	Weight lbs	Catalog number	List price
DeviceNet extension cable	1 m	0.18	DNX11-FBP.100	\$ 70.93
	3 m	0.44	DNX11-FBP.300	114.96
	5 m	0.68	DNX11-FBP.500	148.74
	100 m	12.30	DNC11-FBP.999	1517.12

Ready made bus cable with M12 male and female connectors.

DeviceNet round cable and accessories for bus extension – Bus cable & coupling accessories

Designation	Weight lbs	Catalog number	List price
DeviceNet round cable male connector	.33	DNM11-FBP.0 ①	\$ 108.56
DeviceNet round cable female connector	.33	DNF11-FBP.0 ①	

DeviceNet termination resistor

Designation	Weight lbs	Catalog number	List price
DeviceNet termination resistor, 120 Ohm	.05	DNR11-FBP.120	\$ 37.22

To connect the PST Softstarter to a fieldbus system

You need specific software for PLC setup which is available free from the ABB Inc. web site; see the Resources section at the bottom of the Softstarter product page at www.abb-control.com/html/products/soft_strs.html. If you need help or advice, please contact your local ABB office.

① Includes five connectors.

Accessories

Communications

Profibus DP Fieldbus connectors & accessories

6



PDP21-FBP



PDF11-FBP.050



PDM11-FBP.050



PDX11-FBP



PDM11-FBP.0



PDF11-FBP.0

Profibus DP FieldBusPlug

Designation FieldBusPlug	Cable length	Weight lbs	Catalog number	List price
Profibus DP-FBP	0.25 m	.20	PDP21-FBP.025	\$ 390.39
Profibus DP-FBP	0.50 m	.22	FDP21-FBP.050	390.39
Profibus DP-FBP	1.00 m	.29	FDP21-FBP.100	390.39
Profibus DP-FBP	5.00 m	.79	FDP21-FBP.500	409.43

Ready-made Profibus DP fieldbus interface with various cable lengths.

- Applicable on all FBP motor starters and other devices.
- Degree of protection IP65, diagnostic LED.

Profibus DP round cable for bus junctions

Designation	Cable length	Weight lbs	Catalog number	List price
Profibus DP round cable with female connector	0.50 m	.09	PDF11-FBP.050	\$ 45.70
Profibus DP round cable with male connector	0.50 m	.09	PDM11-FBP.050	

Ready made bus cable with an M12 connector an an open cable end.

- Applicable on all bus junctions such as Profibus DB couplers or devices with an integrated Profibus DB interface.

Profibus DP round cable for bus extension

Designation	Cable length	Weight lbs	Catalog number	List price
Profibus DP extension cable	1 m	0.18	PDX11-FBP.100	\$ 64.75
	3 m	0.44	PDX11-FBP.300	99.03
	5 m	0.68	PDX11-FBP.500	133.30
	100 m	12.30	PDX11-FBP.999	1416.82

Ready made bus cable with M12 male and female connectors.

Profibus DP accessories for bus extension

Designation	Weight lbs	Catalog number	List price
Profibus DP male connector	.07	PDM11-FBP.0	\$ 38.09
Profibus DP female connector	.07	PDF11-FBP.0	

Profibus DP termination resistor

Designation	Weight lbs	Catalog number	List price
Profibus DP termination resistor, 120 Ohm	.02	PDR11-FBP.120	Consult factory

To connect the PST Softstarter to a fieldbus system

You need specific software for PLC setup which is available free from the ABB Inc. web site; see the Resources section at the bottom of the Softstarter product page at www.abb-control.com/html/products/soft_strs.html. If you need help or advice, please contact your local ABB office.

Technical data

PST30 – 300

PSTB370 – 1050

Softstarters
Type PST

	PST30 – 300	PSTB370 – 1050		PST30 – 300	PSTB370 – 1050	
Rated insulation voltage U_i	690 V	690 V	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)).	Yes	Yes	
Rated operational voltage U_e	208 – 690 V	208 – 690 V		Yes	Yes	
Starting capacity at max rated current I_r	500% for 30 sec	500% for 30 sec		Yes	Yes	
Number of starts per hour	30 ①	10 ①		Yes	Yes	
Overload capability Overload Class	10 – 30	10 – 30		Yes	Yes	
Service factor	115 %	115 % (PSTB370 – PSTB840) 100 % (PSTB1050)		Signal indication LED's Run power on – Green Fault - Red Protection - Yellow	Yes Yes Yes	Yes Yes Yes
Ambient temperature During operation During storage Altitudes Maximum altitude	$\pm 0 \dots +50$ °C ② -25... +70 °C 4000 m ③	$\pm 0 \dots +50$ °C ② -25... +70 °C 4000 m ③		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	Yes Yes Yes Yes Yes Yes Yes Yes	Yes Yes Yes Yes Yes Yes Yes Yes
Degree of protection Main circuit Supply and Control circuit	IP10 (PST30 ... 72) IP00 (PST85 ... 300) IP20	IP00 (all) IP20		Warnings (pre-warning) High current Low current (underload) Overload trip Overtemp. thyristors (SCR)	Yes Yes Yes Yes	Yes Yes Yes Yes
Main circuit Built in By-pass contactor Cooling system - Fan cooled (thermostat controlled)	No Yes	Yes Yes		Start of several motors Possible to set up and start three different motors	Yes	Yes
Supply circuit Control voltage – one range	100 ... 250 V, 50/60 Hz +10 %/-15 %	100 ... 250 V 50/60 Hz +10 %/-15 %		Field bus connection Connection for ABB FielBusPlug AS-I (option cable) DeviceNet (option cable) Profibus DP (option cable)	Yes Yes Yes Yes	Yes Yes Yes Yes
HMI for settings (Human Machine Interface) 20 segment display Keypad with two selection keys and two navigating keys Plain text in 10 languages (English, German, Italian, Chinese, Finnish, Swedish, French, Spanish, Dutch and Portuguese)	Yes Yes Yes	Yes 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 ($U_e = 250$ V)	3 Yes Yes Yes 250 V 5 A 1.5 A	3 Yes Yes Yes 250 V 5 A 1.5 A				

6

PSTB Integrated bypass ratings

	PSTB370	PSTB470	PSTB570	PSTB720	PSTB840	PSTB1050
Contactor type	AF260	AF300	AF400	AF580	AF750	AF750
AC3 Rating @ 480V HP	200	250	350	500	600	600
AC3 Rating A	248	302	414	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 °C up to max. 50 °C reduce the rated current by 0.8 % per °C.

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

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
1 st sequence, time for start ramp	Start Ramp1	1...30 s, 1...120 s (Range depends on Start Range)	10 s
1 st sequence, initial voltage for start ramp	Init Volt1	30...70 %	30 %
1 st sequence, current limit	Curr Lim1	2.0 ... 5.0 x I _e	4.0 x I _e
1 st sequence, setting current	1st Set I _e	9.0 ... 1380 A divided into 19 overlapping ranges	See table, page 6.38
2 nd sequence, time for start ramp	Start Ramp2	1...30 s, 1...120 s (Range depends on Start Range)	10 s
2 nd sequence, initial voltage for start ramp	Init Volt2	30...70 %	30 %
2 nd sequence, current limit	Curr Lim2	2.0 ... 5.0 x I _e	4.0 x I _e
2 nd sequence, setting current	2nd Set I _e	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

6

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.

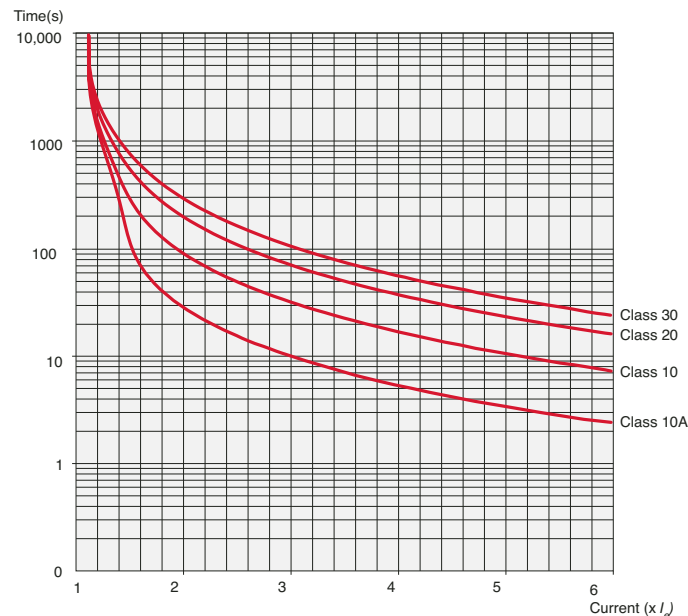


ABB FieldBusPlug

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

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 T1, T2, T3	Yes Yes	Yes Yes	Yes 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	–	–	–	–	–
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

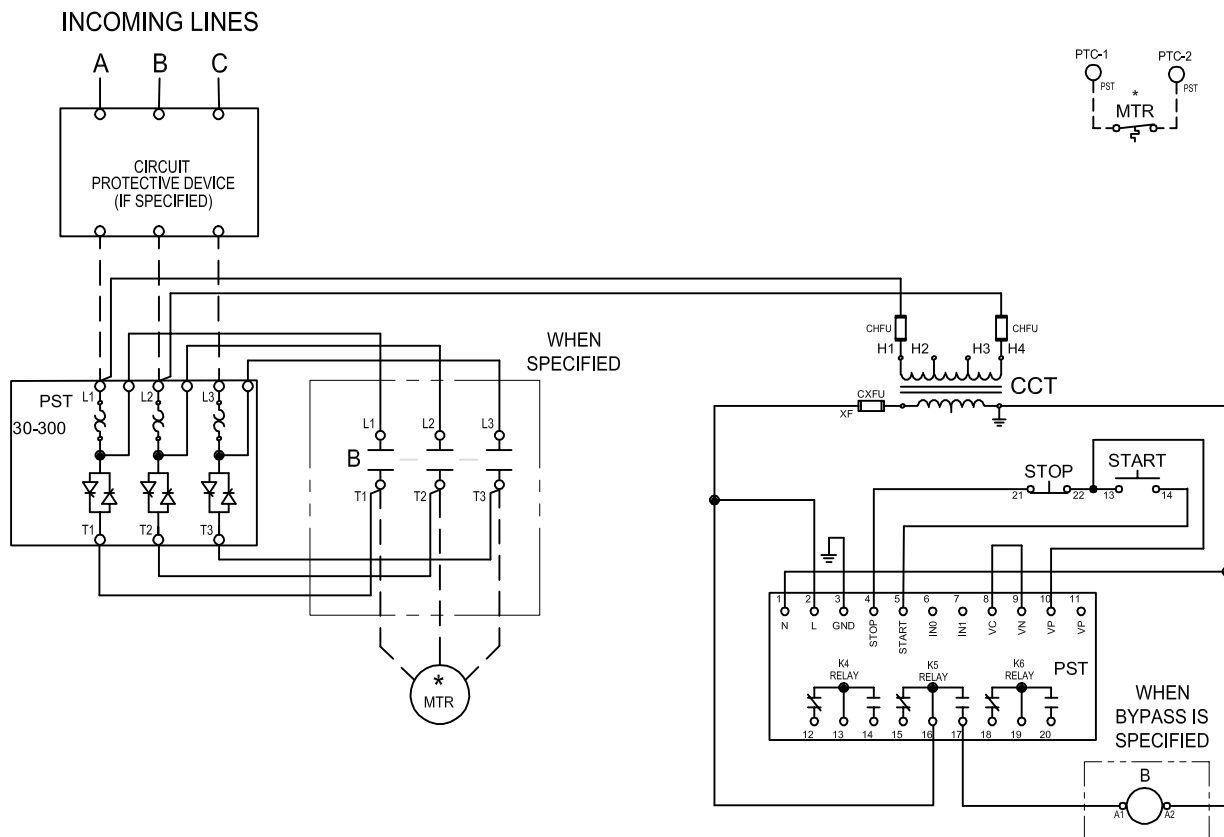
Fuse ratings and power losses

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		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
PST60	Integrated	18...69	190	200	170M1370	170H1007	250	6.6 URD 30 D08A 0250	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	170M6018	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

Circuit diagrams PST30 – PST300 In-Line



PST30 – PST300



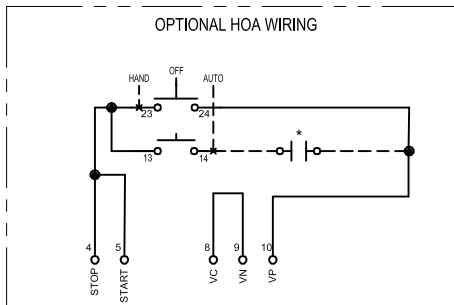
6

CONNECTION TORQUE: CONSULT SOFT STARTER MANUAL FOR WIRE TORQUE SPECIFICATIONS.

PST NOTES:

1. PROG. INPUT In0 FACTORY SET FOR RESET FAULT/OL.
2. PROG. RELAY K4 FACTORY SET FOR RUN.
3. PROG. RELAY K5 FACTORY SET FOR AT SPEED.
4. PROG. RELAY K6 FACTORY SET FOR EVENT.
5. FUNCTION MOT 1 Ie MUST BE SET TO MOTOR FLA.

LEGEND	
CCT	CONTROL CIRCUIT TRANSFORMER
CHF1	CCT PRIMARY FUSE
CXFU	CCT SECONDARY FUSE
B	BYPASS CONTACTOR
PTC	THERMAL COUPLE
o 13	CONN POINT ON DEVICE WITH NUMBER
*	REMOTE DEVICE
Ø	CONNECTION POINT AT TERMINAL BLOCK



NOTES

1. ALL CONTROL WIRING TO BE 14 GA. COLOR OF CONTROL WIRE SHALL BE PER VOLTAGE ON CONTACTOR COILS:

RED-ALL AC VOLTAGES
WHITE MAY BE USED ON THE GROUNDED SIDE OF THE AC CIRCUIT IF SPECIFIED.

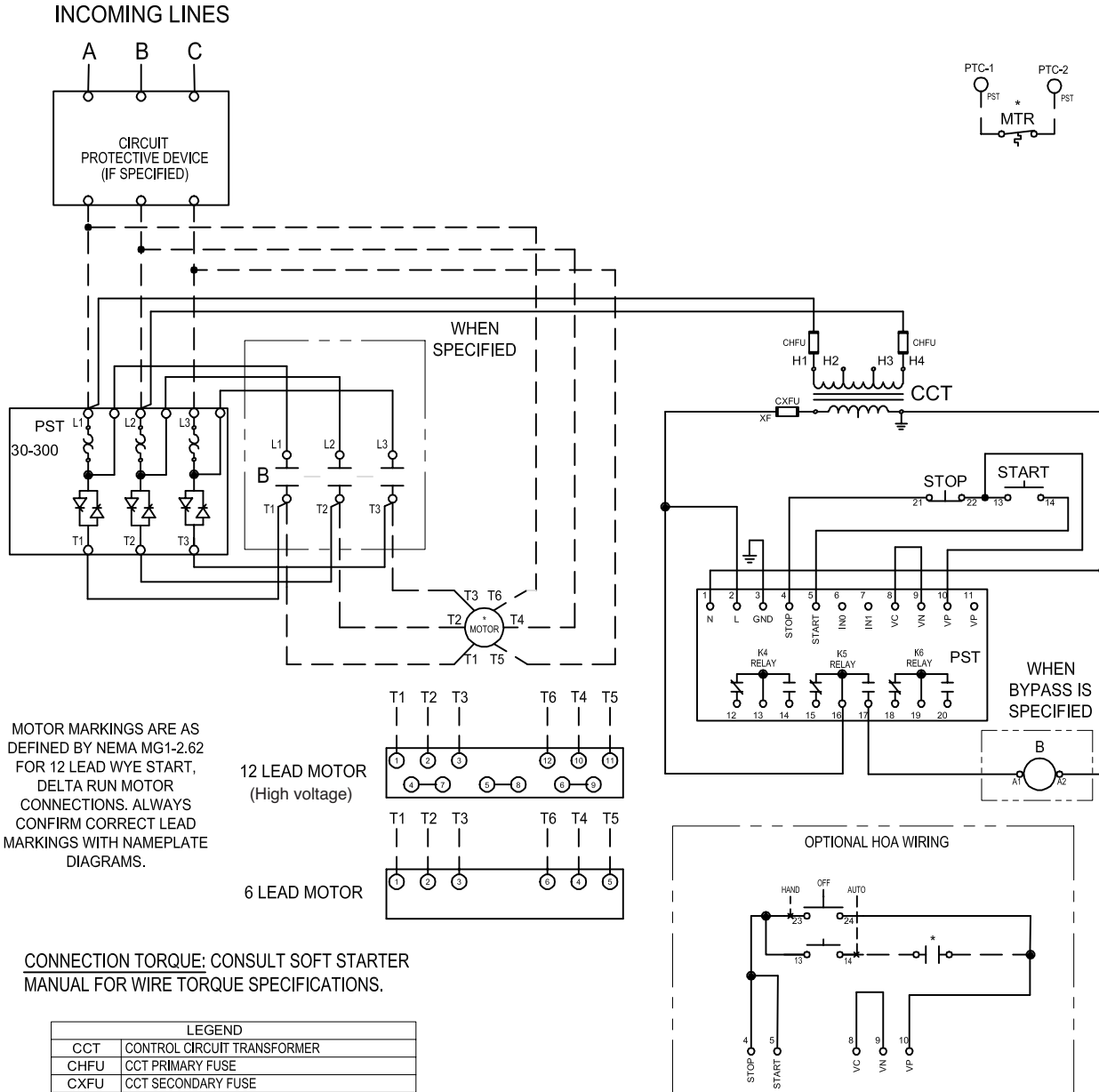
BLUE-ALL DC VOLTAGES

2. ALL DEVICES ARE SHOWN DE-ENERGIZED.
3. DO NOT USE SELECTOR SWITCHES WITH AUTO-RESET OVERLOAD RELAYS.

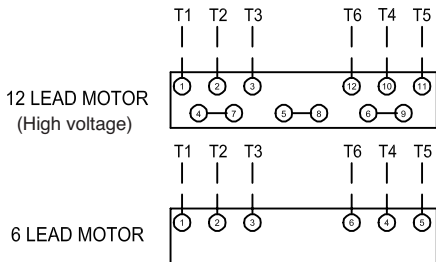
Circuit diagrams PST30 – PST300 Inside Delta

PST30 – PST300

6



MOTOR MARKINGS ARE AS DEFINED BY NEMA MG1-2.62 FOR 12 LEAD WYE START, DELTA RUN MOTOR CONNECTIONS. ALWAYS CONFIRM CORRECT LEAD MARKINGS WITH NAMEPLATE DIAGRAMS.



CONNECTION TORQUE: CONSULT SOFT STARTER MANUAL FOR WIRE TORQUE SPECIFICATIONS.

LEGEND	
CCT	CONTROL CIRCUIT TRANSFORMER
CHF1	CCT PRIMARY FUSE
CXF1	CCT SECONDARY FUSE
B	BYPASS CONTACTOR
PTC	THERMAL COUPLE
o 13	CONN POINT ON DEVICE WITH NUMBER
*	REMOTE DEVICE
Ø	CONNECTION POINT AT TERMINAL BLOCK

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NOTES
 1. ALL CONTROL WIRING TO BE 14 GA. COLOR OF CONTROL WIRE SHALL BE PER VOLTAGE ON CONTACTOR COILS:

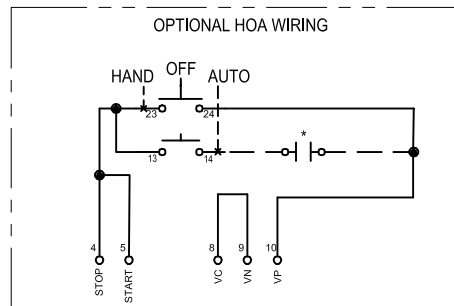
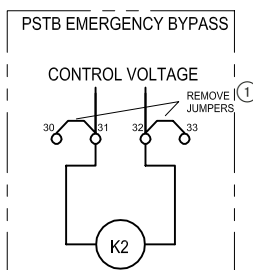
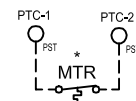
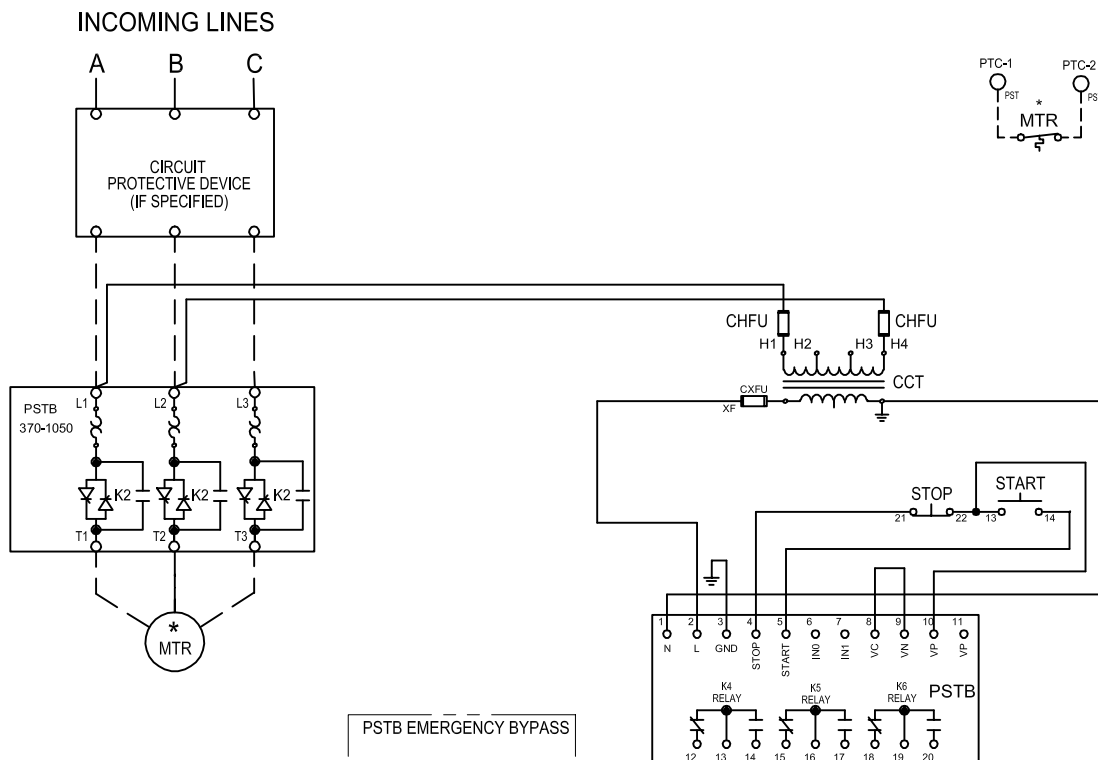
RED-ALL AC VOLTAGES
 WHITE MAY BE USED ON THE GROUNDED SIDE OF THE AC CIRCUIT IF SPECIFIED.
 BLUE-ALL DC VOLTAGES
 2. ALL DEVICES ARE SHOWN DE-ENERGIZED.
 3. DO NOT USE SELECTOR SWITCHES WITH AUTO-RESET OVERLOAD RELAYS.

Circuit diagrams

PSTB370 – PSTB1050

In-Line

Softstarters
Type PST



CONNECTION TORQUE: CONSULT SOFT STARTER MANUAL FOR WIRE TORQUE SPECIFICATIONS.

- PST NOTES:**
1. PROG. INPUT In0 FACTORY SET FOR RESET FAULT/OL.
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 3. PROG. RELAY K5 FACTORY SET FOR AT SPEED.
 4. PROG. RELAY K6 FACTORY SET FOR EVENT.
 5. FUNCTION MOT 1 Ie MUST BE SET TO MOTOR FLA.

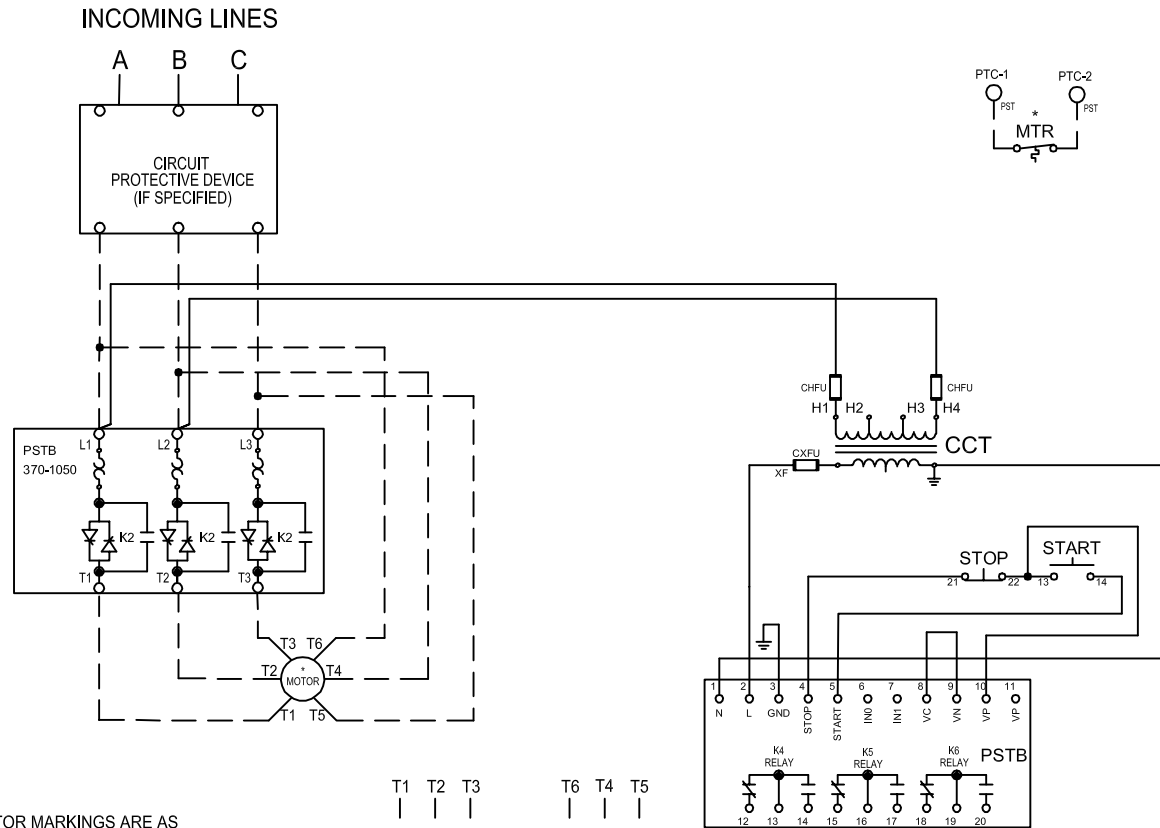
LEGEND	
CCT	CONTROL CIRCUIT TRANSFORMER
CHFU	CCT PRIMARY FUSE
CXFU	CCT SECONDARY FUSE
B	BYPASS CONTACTOR
PTC	THERMAL COUPLE
o 13	CONN POINT ON DEVICE WITH NUMBER
*	REMOTE DEVICE
Ø	CONNECTION POINT AT TERMINAL BLOCK

- NOTES**
1. ALL CONTROL WIRING TO BE 14 GA. COLOR OF CONTROL WIRE SHALL BE PER VOLTAGE ON CONTACTOR COILS:
RED-ALL AC VOLTAGES
WHITE MAY BE USED ON THE GROUNDED SIDE OF THE AC CIRCUIT IF SPECIFIED.
BLUE-ALL DC VOLTAGES
 2. ALL DEVICES ARE SHOWN DE-ENERGIZED.
 3. DO NOT USE SELECTOR SWITCHES WITH AUTO-RESET OVERLOAD RELAYS.

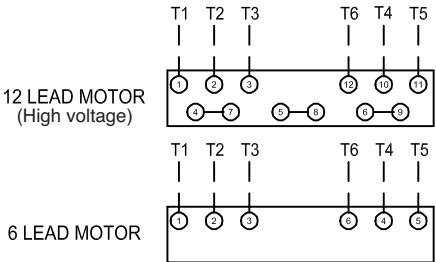
① See page 6.35 for across the line rated (AC3) contactor ratings.

Circuit diagrams PSTB370 – PSTB1050 Inside Delta

6

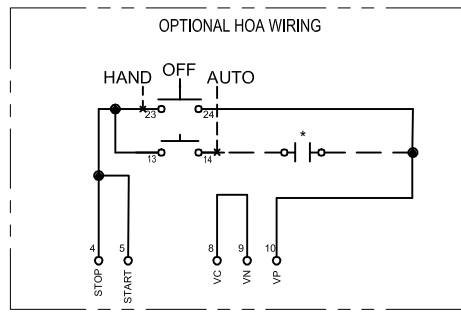
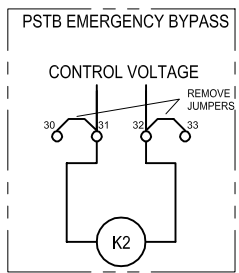


MOTOR MARKINGS ARE AS DEFINED BY NEMA MG1-2.62 FOR 12 LEAD WYE START, DELTA RUN MOTOR CONNECTIONS. ALWAYS CONFIRM CORRECT LEAD MARKINGS WITH NAMEPLATE DIAGRAMS.



CONNECTION TORQUE: CONSULT SOFT STARTER MANUAL FOR WIRE TORQUE SPECIFICATIONS.

LEGEND	
CCT	CONTROL CIRCUIT TRANSFORMER
CHFU	CCT PRIMARY FUSE
CXFU	CCT SECONDARY FUSE
B	BYPASS CONTACTOR
PTC	THERMAL COUPLE
o 13	CONN POINT ON DEVICE WITH NUMBER
*	REMOTE DEVICE
Ø	CONNECTION POINT AT TERMINAL BLOCK



- PST NOTES:**
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 5. FUNCTION MOT 1 le MUST BE SET TO MOTOR FLA.

- NOTES**
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RED-ALL AC VOLTAGES
WHITE MAY BE USED ON THE GROUNDED SIDE OF THE AC CIRCUIT IF SPECIFIED.
BLUE-ALL DC VOLTAGES
 2. ALL DEVICES ARE SHOWN DE-ENERGIZED.
 3. DO NOT USE SELECTOR SWITCHES WITH AUTO-RESET OVERLOAD RELAYS.

① See page 6.35 for across the line rated (AC3) contactor ratings.

Approximate dimensions

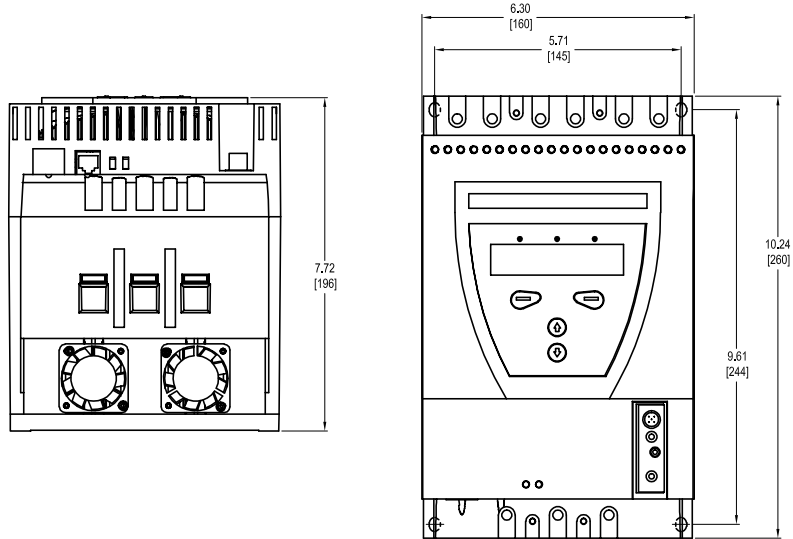
Open

PST30 – PST142

Softstarters
Type PST

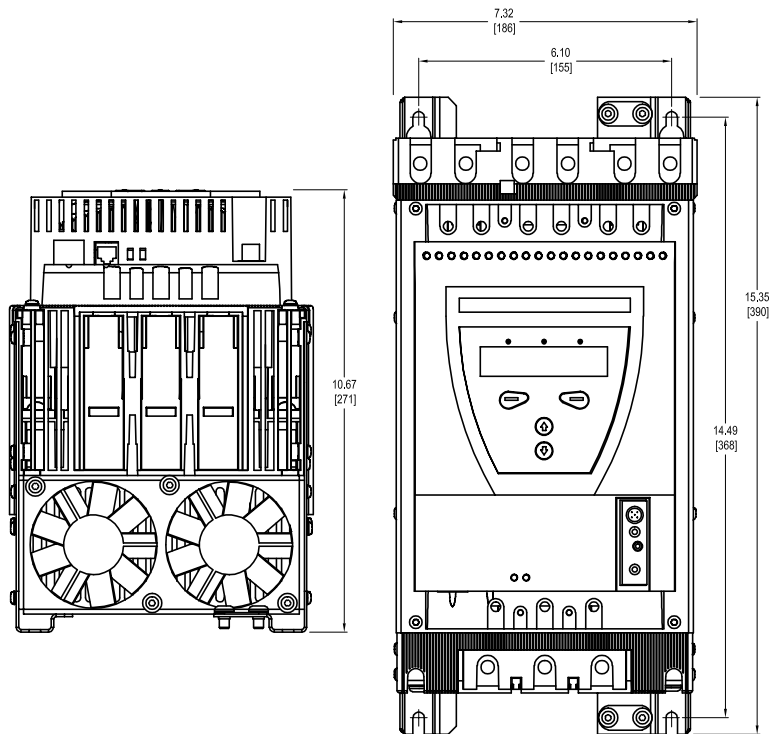
00.00 Inches
00.00 [Millimeters]

PST30 – PST72



6

PST85 – PST142



Approximate dimensions

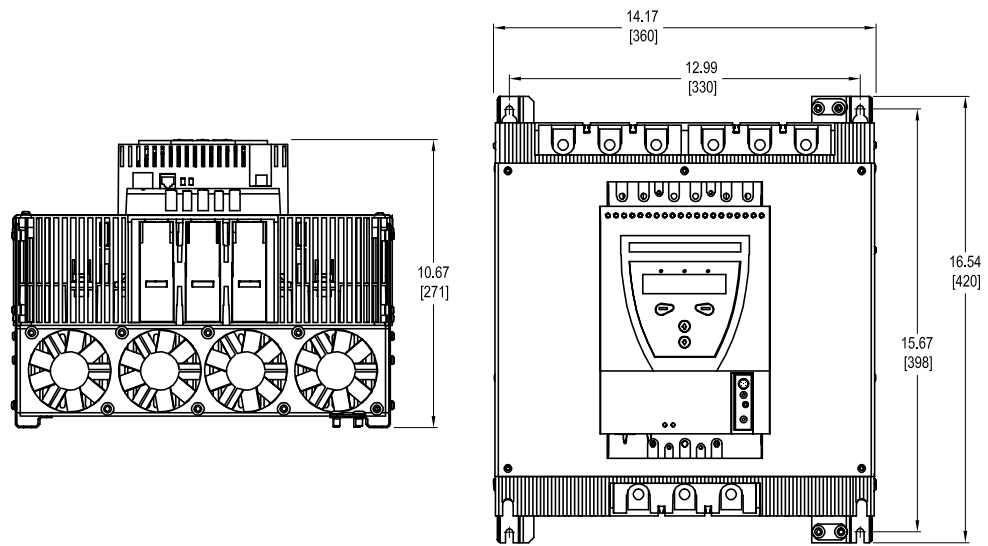
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PST175 – PSTB470

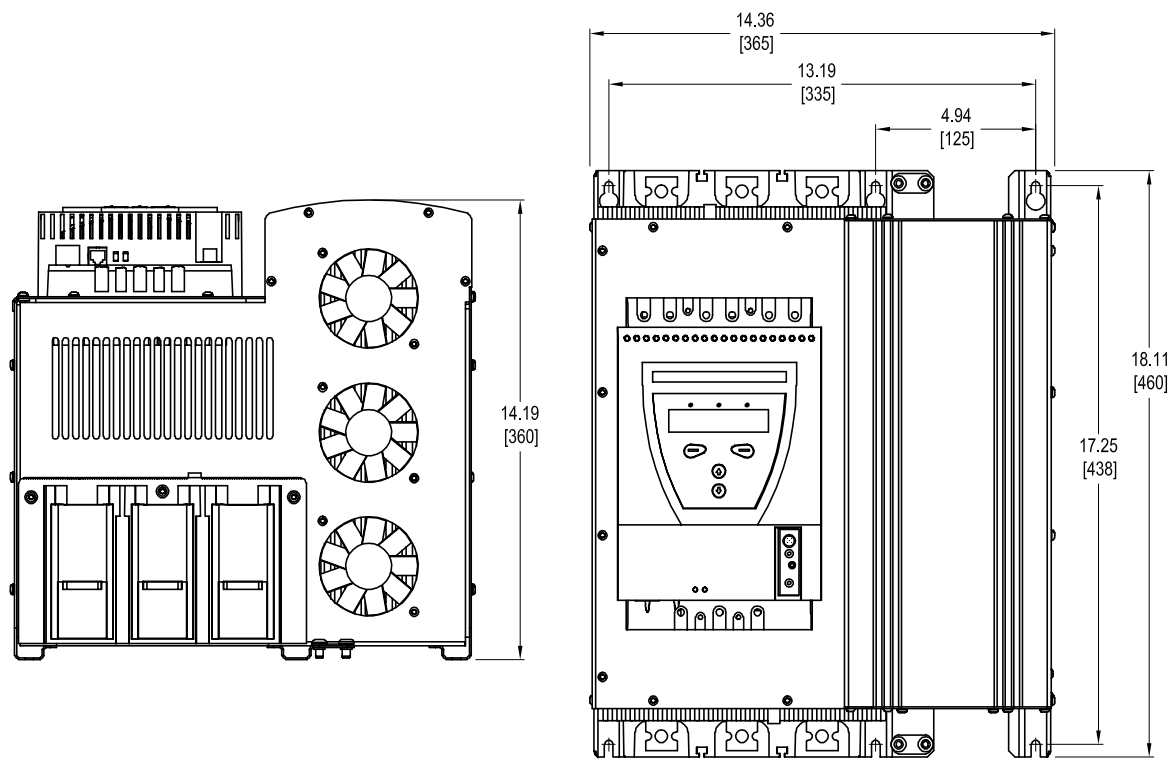
00.00 Inches
00.00 [Millimeters]

PST175 – PST300

6



PSTB370 – PSTB470



Approximate dimensions

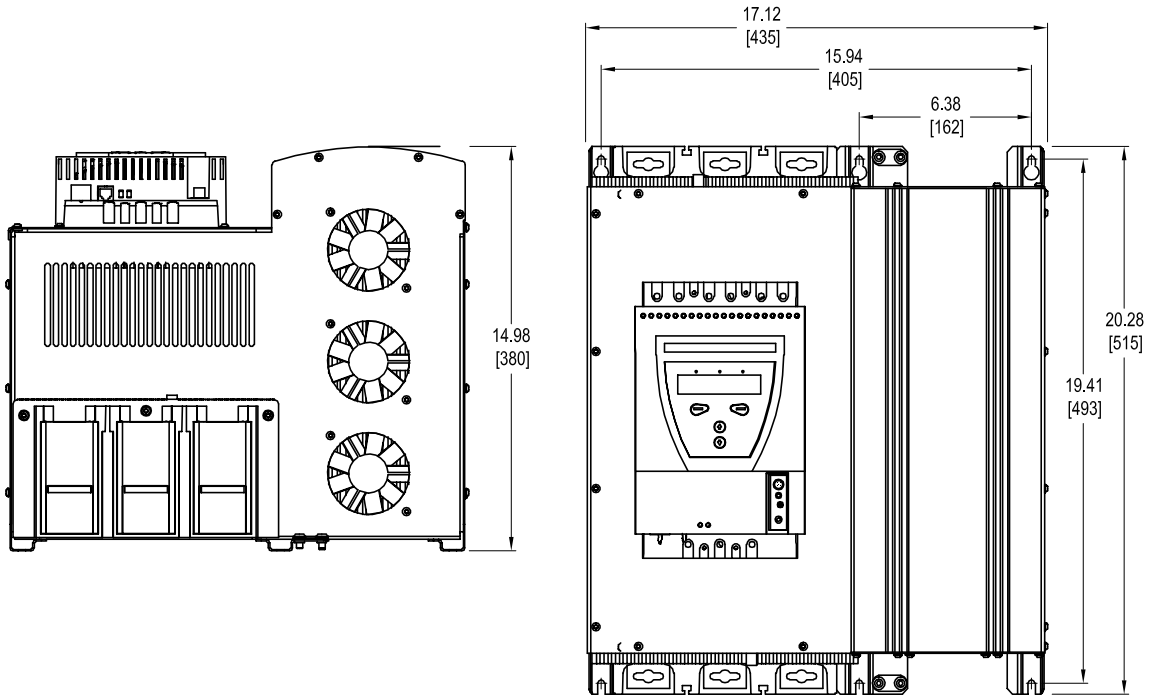
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PSTB570 – PSTB1050

Softstarters
Type PST

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00.00 [Millimeters]

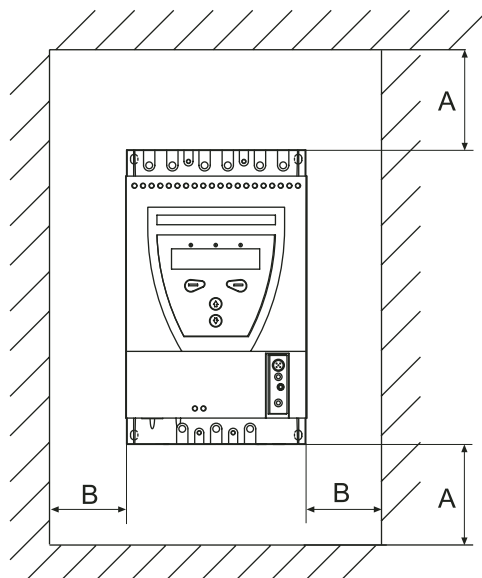
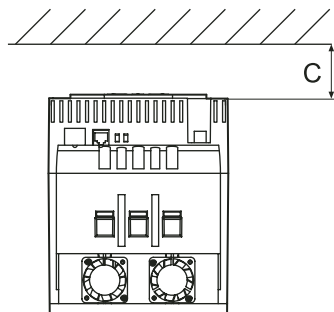
PSTB570 – PSTB1050



6

Approximate dimensions
Open
Wall mounting

6



Softstarter type	A In. / mm	B In. / mm	C In. / mm
PST30 – 72	3.94 / 100	0.39 / 10	0.79 / 20
PST85 – 300	3.94 / 100	0.39 / 10	0.79 / 20
PST175 – 300	3.94 / 100	0.39 / 10	0.79 / 20
PSTB370 – 470	5.91 / 150	0.59 / 15	0.79 / 20
PSTB570 – 1050	5.91 / 150	0.59 / 15	0.79 / 20

Approximate dimensions Enclosed Horsepower to PST Softstarter type cross-reference



Maximum horsepower in-line

208V	240V	380V	480V	600V	PST Type
5	5	10	10	—	PST30
—	—	—	—	15	
7.5	10	15	20	—	PST30
—	—	—	—	25	
10	10	20	25	—	PST37
—	—	—	—	30	
10	15	25	30	—	PST44
—	—	—	—	40	
15	20	30	40	—	PST50
—	—	—	—	50	
20	25	40	50	—	PST72
—	—	—	—	60	
25	30	50	60	—	PST85
—	—	—	—	75	
30	40	60	75	—	PST105
—	—	—	—	100	
40	50	75	100	—	PST142
—	—	—	—	125	
50	60	100	125	—	PST175
—	—	—	—	150	
60	75	125	150	—	PST210
—	—	—	—	200	
75	100	150	200	—	PST250
—	—	—	—	250	
100	100	150	250	—	PST300
—	—	—	—	300	
125	150	200	300	—	PSTB370
—	—	—	—	350	
—	—	250	350	—	PSTB470
—	—	—	—	400	
150	200	300	400	—	PSTB470
—	—	—	—	500	
200	250	350	500	—	PSTB570
—	—	—	—	600	
250	300	450	600	—	PSTB720
—	—	—	—	700	
300	350	500	700	—	PSTB840
—	—	—	—	800	
350	400	—	800	—	PSTB1050
—	—	—	—	900	
400	450	600	900	—	PSTB1050
—	—	—	—	1000	

Maximum horsepower inside delta

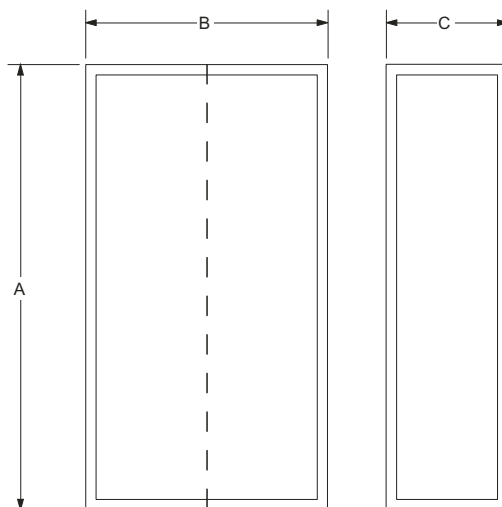
208V	240V	380V	480V	600V	PST Type
7.5	10	15	20	—	PST30
—	—	—	—	25	
10	10	20	25	—	PST30
—	—	—	—	30	
10	15	25	30	—	PST30
—	—	—	—	40	
15	20	30	40	—	PST37
—	—	—	—	50	
20	25	40	50	—	PST44
—	—	—	—	60	
25	30	50	60	—	PST50
—	—	—	—	75	
30	40	60	75	—	PST72
—	—	—	—	100	
40	50	75	100	—	PST85
—	—	—	—	125	
50	60	100	125	—	PST105
—	—	—	—	150	
60	75	125	150	—	PST142
—	—	—	—	200	
75	100	150	200	—	PST175
—	—	—	—	250	
100	100	150	250	—	PST210
—	—	—	—	300	
125	150	200	300	—	PST250
—	—	—	—	350	
—	—	250	350	—	PST300
—	—	—	—	400	
150	200	300	400	—	PST300
—	—	—	—	500	
200	250	350	500	—	PSTB370
—	—	—	—	600	
250	300	450	600	—	PSTB470
—	—	—	—	700	
300	350	500	700	—	PSTB570
—	—	—	—	800	
350	400	—	800	—	PSTB720
—	—	—	—	900	
400	450	600	900	—	PSTB720
—	—	—	—	1000	
400	500	800	1000	—	PSTB720
—	—	—	—	1200	
500	600	900	1200	—	PSTB840
—	—	—	—	1500	
600	700	1200	1500	—	PSTB1050
—	—	—	—	1800	

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Approximate dimensions

Enclosed

208V – 600V



6

Enclosed, 208V – 600V

Combination	In-Line			Inside Delta		
	A	B	C	A	B	C
PST30 – PST72						
Softstarter only	20	20	12	20	20	12
Softstarter with bypass	20	20	12	20	20	12
Softstarter with fused disconnect	24	20	12	24	20	12
Softstarter with circuit breaker	24	20	12	24	20	12
PST85 – PST142						
Softstarter only	24	24	12	36	24	12
Softstarter with bypass	24	24	12	36	24	12
Softstarter with fused disconnect	30	30	12	42	36	12
Softstarter with circuit breaker	24	24	12	42	36	12
PST175 – PST300						
Softstarter only	30	24	12	42	30	12
Softstarter with bypass	30	24	12	42	30	12
Softstarter with fused disconnect	36	36	12	48	36	12
Softstarter with circuit breaker	36	36	12	48	36	12

Combination	In-Line			Inside Delta		
	A	B	C	A	B	C
PSTB370 – PSTB470						
Softstarter only	48	36	16	48	36	16
Softstarter with bypass (internal)	48	36	16	48	36	16
Softstarter with fused disconnect	87	36	24	87	36	24
Softstarter with circuit breaker	48	36	16	48	36	16
PSTB570 – PSTB720						
Softstarter only	48	36	16	87	36	24
Softstarter with bypass (internal)	48	36	16	87	36	24
Softstarter with fused disconnect	87	36	24	87	48	24
Softstarter with circuit breaker	87	36	24	87	48	24
PSTB840 – PSTB1050						
Softstarter only	87	36	24	87	36	24
Softstarter with bypass (internal)	87	36	24	87	36	24
Softstarter with fused disconnect	87	48	24	87	48	24
Softstarter with circuit breaker	87	48	24	87	48	24