



Catalog

Softstarters Type PSTX

Power and productivity
for a better world™





Softstarters type PSTX

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PSTX – The advanced range

Introduction



The PSTX combines many years of research and product development with extensive knowledge of application specific requirements and needs. It is our latest advancement in motor control and protection and adds new functionality and increased reliability.

- Three-phase controlled
- Operational voltage: 208 – 690 VAC
- Wide rated control supply voltage: 100 – 250 V, 50/60 Hz
- PSTX rated operational current: 30 to 1250 A (inside-delta: 2160 A)
- Both in-line and inside-delta connection
- Coated circuit boards protecting from dust, moist and corrosive atmosphere
- Detachable keypad rated Type 1, 4X,12 & IP66
- Graphical display with 15 languages for easy setup and operation
- Built-in bypass for energy saving and easy installation
- Built-in Modbus RTU for monitoring and control
- Support for all major communication protocols
- Analog output for measurement of current, voltage, power factor etc.

Secure motor Reliability

Complete motor protection

The PSTX offers complete motor protection in only one unit and is able to handle both load and network irregularities. PT-100, earth fault protection and over/under voltage protection along with many other functions keep your motor safer than ever.

Three types of current limit

PSTX offers three types of current limit: standard, dual and ramp. This gives you full control of your motor during start. It also allows you to use your motor in weaker networks.

Improve installation Efficiency

Built-in bypass saves time and energy

When reaching full speed, the PSTX will activate its bypass. This saves energy while reducing the softstarter's heat generation. On the PSTX, the bypass is built in and verified by ABB, saving you time during installation and space in your panel.

Easy-to-use and detachable keypad

A user-friendly and clear display saves you time and resources during both setup and operation. The detachable keypad is standard on all PSTX softstarters.

Increase application Productivity

Complete control of pumps

Time to use your processes to their full potential. The PSTX features many application enhancing features, including torque control: the most efficient way to start and stop pumps. The pump cleaning feature can reverse pump flow and clean out pipes, securing uptime of your pump system.

Jog with slow speed

The slow speed forward and backward jog feature will make you more flexible when operating e.g. conveyor belts and cranes. The PSTX provides positioning capabilities, letting you take control of your process.

PSTX – The advanced range

Introduction



Keyhole mounting for quick installation

The PSTX is simple and quick to install using keyhole mounting, saving you valuable time during the installation.

A compact motor starting solution

When your application reaches full speed, a bypass will reduce the softstarter's energy consumption. It also reduces heat generation which means you can save money by reducing the need of added cooling equipment. On the PSTX, the bypass is built in and verified by ABB.

Clear markings on the front

With the PSTX, you do not need a manual to handle control circuit connections. With the self-explanatory markings on the front you can verify that the connections are done right. And with basic data on the front, identification is simple without having to take the product down.

Customizable

The PSTX has 15 pre-installed languages along with options to customize your own specific home screens (up to seven different). You can use your customized home screens to show status information important to your process – and hide information that is not.



Easy to learn

A large graphical display along with built-in assistants make learning how to handle the PSTX fun and simple. The interface resembles other interfaces from ABB which will streamline and help with training of field personnel.

Detachable

The PSTX comes with a detachable keypad as standard. It can be placed on your panel door, meaning you do not have to interrupt your process in order to read status information or to change settings.

PSTX – The advanced range

Overview



Normal start In-Line connected (220-240 V) hp (440-480 V) hp (550-600 V) hp CSA, Max. A	PSTX30	PSTX37	PSTX45	PSTX60	PSTX72	PSTX85	PSTX105	PSTX142	PSTX170
	10	10	15	20	25	30	40	50	60
	20	25	30	40	50	60	75	100	125
	25	30	40	50	60	75	100	125	150
	28	34	42	60	68	80	104	130	169
Using manual motor starter or MCCB, type 1 coordination will be achieved. ¹⁾	550-600 V, 40 °C								
	MCCB (100 kA), type								
	T4V								T5V
For optimized short-circuit protection, the usage of high speed Class J or L fuses are highly recommended. ¹⁾	J type High Speed fuse (100kA), 150% rating								
	40 A	50 A	60 A	90 A	100 A	125 A	150 A	200 A	250 A
Suitable switch fuse for the recommended J type fuses. ¹⁾	Switch fuse, Type								
	OS60			OS100		OS200		OS400	
The line contactor is not required for the softstarter itself but often used to open if OL trips ¹⁾	Line contactor								
	AF30	AF38	AF52	AF65	AF80	AF96	AF116	AF140	AF190
Overload protection is always required to protect the motor ¹⁾	Electronic overload relay								
	Built-in								

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

PSTX – The advanced range

Overview



Normal start In-Line connected	PSTX210	PSTX250	PSTX300	PSTX370	PSTX470	PSTX570	PSTX720	PSTX840	PSTX1050	PSTX1250
(220-240 V) hp	75	100	100	150	200	200	300	350	450	500
(440-480 V) hp	150	200	250	300	400	500	600	700	900	1000
(550-600 V) hp	200	250	300	350	500	600	700	800	1000	1200
CSA, max FLA	192	248	302	361	480	590	720	840	1062	1250

550-600 V, 40 °C

Using manual motor starter or MCCB, type 1 coordination will be achieved. ¹⁾	MCCB (100kA) type				MCCB (30kA) type					
	T5V				T6H		Contact ABB for more information			

For optimized short-circuit protection, the usage of high speed Class J or L fuses are highly recommended. ¹⁾	J & L type high speed fuse (100kA), 150% rating				(30kA), 150% rating					
	300 A	350 A	450 A	500 A	700 A	800 A	Contact ABB for more information			

Suitable switch fuse for the recommended fuse type. ¹⁾	Switch fuse, type									
	OS400		OS600		OS800		Contact ABB for more information			

The line contactor is not required for the softstarter itself but often used to open if OL trips. ¹⁾	Line contactor									
	AF205	AF265	AF305	AF370	AF460	AF580	AF750	AF1350	AF1650	-

Overload protection is always required to protect the motor ¹⁾	Electronic overload relay									
	Built-in									

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

PSTX30 ... PSTX1250 – The advanced range

Normal starts, class 10, in-line, ordering details



PSTX30 ... PSTX105



PSTX142 ... PSTX170



PSTX210 ... PSTX370



PSTX470 ... PSTX570



PSTX720 ... PSTX840



PSTX1050 ... PSTX1250

Description

Selection table for normal start. Typical applications:

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



For a more precise selection, use the softstarter selection tool available by scanning the shown QR code.
new.abb.com/low-voltage/products/softstarters

Rated operational voltage U_e , 208-690 V

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

UL/CSA					IEC				Type	Weight (1 pce)	
Rated operational power					Rated operational power						
200 V P _e hp	220 V P _e hp	440 V P _e hp	550 V P _e hp	current FLA A	400 V P _e kW	500 V P _e kW	690 V P _e kW	current I _e A			
7.5	10	20	25	28	15	18.5	25	30	PSTX30-690-70	6.10	(13.45)
10	10	25	30	34	18.5	22	30	37	PSTX37-690-70	6.10	(13.45)
10	15	30	40	42	22	25	37	45	PSTX45-690-70	6.10	(13.45)
20	20	40	50	60	30	37	55	60	PSTX60-690-70	6.10	(13.45)
20	25	50	60	68	37	45	59	72	PSTX72-690-70	6.10	(13.45)
25	30	60	75	80	45	55	75	85	PSTX85-690-70	6.10	(13.45)
30	40	75	100	104	55	75	90	106	PSTX105-690-70	6.10	(13.45)
40	50	100	125	130	75	90	132	143	PSTX142-690-70	9.60	(21.16)
50	60	125	150	169	90	110	160	171	PSTX170-690-70	9.60	(21.16)
60	75	150	200	192	110	132	184	210	PSTX210-690-70	12.70	(27.99)
75	100	200	250	248	132	160	220	250	PSTX250-690-70	12.70	(27.99)
100	100	250	300	302	160	200	257	300	PSTX300-690-70	12.70	(27.99)
125	150	300	350	361	200	257	355	370	PSTX370-690-70	12.70	(27.99)
150	200	400	500	480	250	315	450	470	PSTX470-690-70	25.00	(55.12)
200	200	500	600	590	315	400	560	570	PSTX570-690-70	25.00	(55.12)
250	300	600	700	720	400	500	710	720	PSTX720-690-70	46.20	(101.85)
300	350	700	800	840	450	600	800	840	PSTX840-690-70	46.20	(101.85)
400	450	900	1000	1062	560	730	1000	1050	PSTX1050-690-70	64.20	(141.54)
400	500	1000	1200	1250	710	880	1200	1250	PSTX1250-690-70	64.70	(142.64)

PSTX30 ... PSTX1250 – The advanced range Heavy-duty, class 30, in-line, ordering details



PSTX30 ... PSTX105



PSTX142 ... PSTX170



PSTX210 ... PSTX370



PSTX470 ... PSTX570



PSTX720 ... PSTX840



PSTX1050 ... PSTX1250

Description

Selection table for heavy-duty start. Typical applications:

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



For a more precise selection, use the softstarter selection tool available by scanning the shown QR code.
new.abb.com/low-voltage/products/softstarters

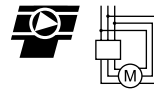
Rated operational voltage U_e , 208-690 V

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

UL/CSA					IEC					Type	Weight (1 pce)	
Rated operational power					Rated operational power							
200 / 208 V	220 / 240 V	440 / 480 V	550 / 600 V		400 V	500 V	690 V					
P_e	P_e	P_e	P_e	FLA	P_e	P_e	P_e	I_e			kg	(lb)
hp	hp	hp	hp	A	kW	kW	kW	A				
5	7.5	15	20	25	11	15	18.5	22	PSTX30-690-70		6.10	(13.45)
7.5	10	20	25	28	15	18.5	25	30	PSTX37-690-70		6.10	(13.45)
10	10	25	30	34	18.5	22	30	37	PSTX45-690-70		6.10	(13.45)
10	15	30	40	42	22	25	37	45	PSTX60-690-70		6.10	(13.45)
20	20	40	50	60	30	37	55	60	PSTX72-690-70		6.10	(13.45)
20	25	50	60	68	37	45	59	72	PSTX85-690-70		6.10	(13.45)
25	30	60	75	80	45	55	75	85	PSTX105-690-70		6.10	(13.45)
30	40	75	100	104	55	75	90	106	PSTX142-690-70		9.60	(21.16)
40	50	100	125	130	75	90	132	143	PSTX170-690-70		9.60	(21.16)
50	60	125	150	169	90	110	160	171	PSTX210-690-70		12.70	(27.99)
60	75	150	200	192	110	132	184	210	PSTX250-690-70		12.70	(27.99)
75	100	200	250	248	132	160	220	250	PSTX300-690-70		12.70	(27.99)
100	100	250	300	302	160	200	257	300	PSTX370-690-70		12.70	(27.99)
125	150	300	350	361	200	257	355	370	PSTX470-690-70		25.00	(55.12)
150	200	400	500	480	250	315	450	470	PSTX570-690-70		25.00	(55.12)
200	200	500	600	590	315	400	560	570	PSTX720-690-70		46.20	(101.85)
250	300	600	700	720	400	500	710	720	PSTX840-690-70		46.20	(101.85)
300	350	700	800	840	450	600	800	840	PSTX1050-690-70		64.20	(141.54)
400	450	900	1000	1062	560	730	1000	1050	PSTX1250-690-70		64.70	(142.64)

PSTX30 ... PSTX1050 – The advanced range

Normal starts, class 10, inside delta, ordering details



PSTX30 ... PSTX105



PSTX142 ... PSTX170



PSTX210 ... PSTX370



PSTX470 ... PSTX570



PSTX720 ... PSTX840



PSTX1050 ... PSTX1250

Description

Selection table for normal start. Typical applications:

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



For a more precise selection, use the softstarter selection tool available by scanning the shown QR code.
new.abb.com/low-voltage/products/softstarters

Rated operational voltage U_e , 208-690 V

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

UL/CSA					IEC					Type	Weight (1 pce)	
Rated operational power					Rated operational power							
200 / 208 V P _e hp	220 / 240 V P _e hp	440 / 480 V P _e hp	550 / 600 V P _e hp	current FLA A	400 V P _e kW	500 V P _e kW	690 V P _e kW	current I _e A	kg		(lb)	
10	15	30	40	48	25	30	45	52	PSTX30-690-70	6.10	(13.45)	
15	20	40	50	58	30	37	55	64	PSTX37-690-70	6.10	(13.45)	
20	25	50	60	72	37	45	59	76	PSTX45-690-70	6.10	(13.45)	
30	40	75	100	103	55	75	90	105	PSTX60-690-70	6.10	(13.45)	
30	40	75	100	117	59	80	110	124	PSTX72-690-70	6.10	(13.45)	
40	50	100	125	138	75	90	132	147	PSTX85-690-70	6.10	(13.45)	
60	60	150	150	180	90	110	160	181	PSTX105-690-70	6.10	(13.45)	
75	75	150	200	225	132	160	220	245	PSTX142-690-70	9.60	(21.16)	
75	100	200	250	292	160	200	257	300	PSTX170-690-70	9.60	(21.16)	
100	125	250	300	332	184	250	315	360	PSTX210-690-70	12.70	(27.99)	
150	150	350	450	429	220	295	400	430	PSTX250-690-70	12.70	(27.99)	
150	200	450	500	523	257	355	500	515	PSTX300-690-70	12.70	(27.99)	
200	250	500	600	625	355	450	600	640	PSTX370-690-70	12.70	(27.99)	
250	300	600	700	720	450	600	800	814	PSTX470-690-70	25.00	(55.12)	
300	350	700	800	840	540	700	960	987	PSTX570-690-70	25.00	(55.12)	
400	500	1000	1200	1240	710	880	1200	1247	PSTX720-690-70	46.20	(101.85)	
500	600	1200	1500	1450	800	1000	1400	1455	PSTX840-690-70	46.20	(101.85)	
600	700	1500	1800	1830	1000	1250	1700	1810	PSTX1050-690-70	64.20	(141.54)	
800	900	1800	2000	2160	1200	1500	2000	2160	PSTX1250-690-70	64.70	(142.64)	

PSTX30 ... PSTX1050 – The advanced range

Heavy-duty, class 30, inside delta, ordering details



PSTX30 ... PSTX105



PSTX142 ... PSTX170



PSTX210 ... PSTX370



PSTX470 ... PSTX570



PSTX720 ... PSTX840



PSTX1050 ... PSTX1250

Description

Selection table for heavy-duty start. Typical applications:

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



For a more precise selection, use the softstarter selection tool available by scanning the shown QR code.
new.abb.com/low-voltage/products/softstarters

Rated operational voltage U_e , 208-690 V

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

UL/CSA				IEC		Type				Weight (1 pce)	
Rated operational power				current	Rated operational power						
200 V P_e	220 V P_e	440 V P_e	550 V P_e	FLA	400 V P_e	500 V P_e	690 V P_e	I_e		kg	(lb)
hp	hp	hp	hp	A	kW	kW	kW	A			
7.5	10	25	30	34	18.5	25	37	42	PSTX30-690-70	6.10	(13.45)
10	15	30	40	48	25	30	45	52	PSTX37-690-70	6.10	(13.45)
15	20	40	50	58	30	37	55	64	PSTX45-690-70	6.10	(13.45)
20	25	50	60	72	37	45	59	76	PSTX60-690-70	6.10	(13.45)
30	40	75	100	103	55	75	90	105	PSTX72-690-70	6.10	(13.45)
30	40	75	100	117	59	80	110	124	PSTX85-690-70	6.10	(13.45)
40	50	100	125	138	75	90	132	147	PSTX105-690-70	6.10	(13.45)
60	60	150	150	180	90	110	160	181	PSTX142-690-70	9.60	(21.16)
75	75	150	200	225	132	160	220	245	PSTX170-690-70	9.60	(21.16)
75	100	200	250	292	160	200	257	300	PSTX210-690-70	12.70	(27.99)
100	125	250	300	332	184	250	315	360	PSTX250-690-70	12.70	(27.99)
150	150	350	450	429	220	295	400	430	PSTX300-690-70	12.70	(27.99)
150	200	450	500	523	257	355	500	515	PSTX370-690-70	12.70	(27.99)
200	250	500	600	625	355	450	600	640	PSTX470-690-70	25.00	(55.12)
250	300	600	700	720	450	600	800	814	PSTX570-690-70	25.00	(55.12)
300	350	700	800	840	540	700	960	987	PSTX720-690-70	46.20	(101.85)
400	500	1000	1200	1247	710	800	1200	1247	PSTX840-690-70	46.20	(101.85)
500	600	1200	1500	1454	800	1000	1400	1455	PSTX1050-690-70	64.20	(141.54)
600	700	1500	1800	1830	1000	1250	1700	1810	PSTX1250-690-70	64.70	(142.64)

PSTX – The advanced range

Accessories

For softstarter type	Wire range	Tightening torque max.	Type	Pkg qty	Weight (1 pce)
	AWG	Nm (lb-in)			kg (lb)

Cable connectors for Al and Cu cables

PSTX142 ... PSTX170	#6-300 MCM (1 per phase)	34 (300)	ATK185	3	
PSTX210 ... PSTX370	#4-400 MCM (1 per phase)	42 (375)	ATK300	3	
PSTX210 ... PSTX370	#4-500 MCM (2 per phase)	42 (375)	ATK300/2	3	
PSTX470 ... PSTX1050	#2/0-500 MCM (2 per phase)	42 (375)	ATK580/2	3	
PSTX720 ... PSTX1050	#2/0-500 MCM (3 per phase)	42 (375)	ATK750/3	3	
PSTX1250	Busbar connection only	-	-	-	

For softstarter type	Dimensions hole ø	bar	Type	Pkg qty	Weight (1 pce)
	mm ²	mm			kg (lb)

Terminal extensions

PSTX142 ... PSTX170	8.5	17.5 x 5	LX205	1	0.250 (5.551)
PSTX210 ... PSTX370	10.5	20 x 5	LX370	1	0.350 (0.772)
PSTX470 ... PSTX570	10.5	25 x 5	LX460	1	0.500 (1.102)
PSTX720 ... PSTX840	13	40 x 6	LX750	1	0.850 (1.874)

Terminal enlargements

PSTX30 ... PSTX105	6.5	15 x 3	LW110	1	0.100 (0.220)
PSTX142 ... PSTX170	10.5	17.5 x 5	LW205	1	0.250 (5.551)
PSTX210 ... PSTX370	10.5	20 x 5	LW370	1	0.450 (0.992)
PSTX470 ... PSTX570	10.5	25 x 5	LW460	1	0.730 (1.609)
PSTX720 ... PSTX840	13	40 x 6	LW750	1	1.230 (2.712)

For softstarter type	Req. qty	Type	Pkg qty	Weight (1 pce)
				kg (lb)

Terminal shrouds

PSTX142 ... PSTX170, short for use with cable clamps	2	LT205-30C	2	0.050 (0.110)
PSTX142 ... PSTX170, long for use with compression lugs	2	LT205-30L	2	0.220 (0.485)
PSTX210 ... PSTX370, short for use with cable clamps	2	LT370-30C	2	0.035 (0.077)
PSTX210 ... PSTX370, long for use with compression lugs	2	LT370-30L	2	0.280 (0.617)
PSTX210 ... PSTX370, long and deep for use with extending cable clamps, ATK300/2	2	LT370-30D	2	0.150 (0.331)
PSTX470 ... PSTX570, short for use with cable clamps	2	LT460-AC	2	0.100 (0.220)
PSTX470 ... PSTX570, long for use with compression lugs	2	LT460-AL	2	0.800 (1.764)
PSTX720 ... PSTX840, short for use with cable clamps	2	LT750-AC	2	0.120 (0.265)
PSTX720 ... PSTX840, long for use with compression lugs	2	LT750-AL	2	0.825 (1.819)

For softstarter type	Type	Pkg qty	Weight (1 pce)
			kg (lb)

Anybus connection accessory

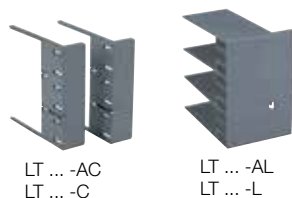
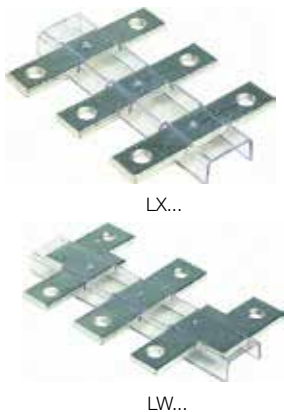
Anybus suitable for PSTX30 ... PSTX1250. See page 18

FieldBusPlug connection accessory

PSTX30 ... PSTX1250	PS-FBPA	1	0.060 (0.132)
ABB's FieldBusPlug suitable for all sizes, see latest softstarter catalog.			

I/O module, 24 V DC digital input

PSTX30 ... PSTX1250	1SAJ611000R0101	1	0.220 (0.485)
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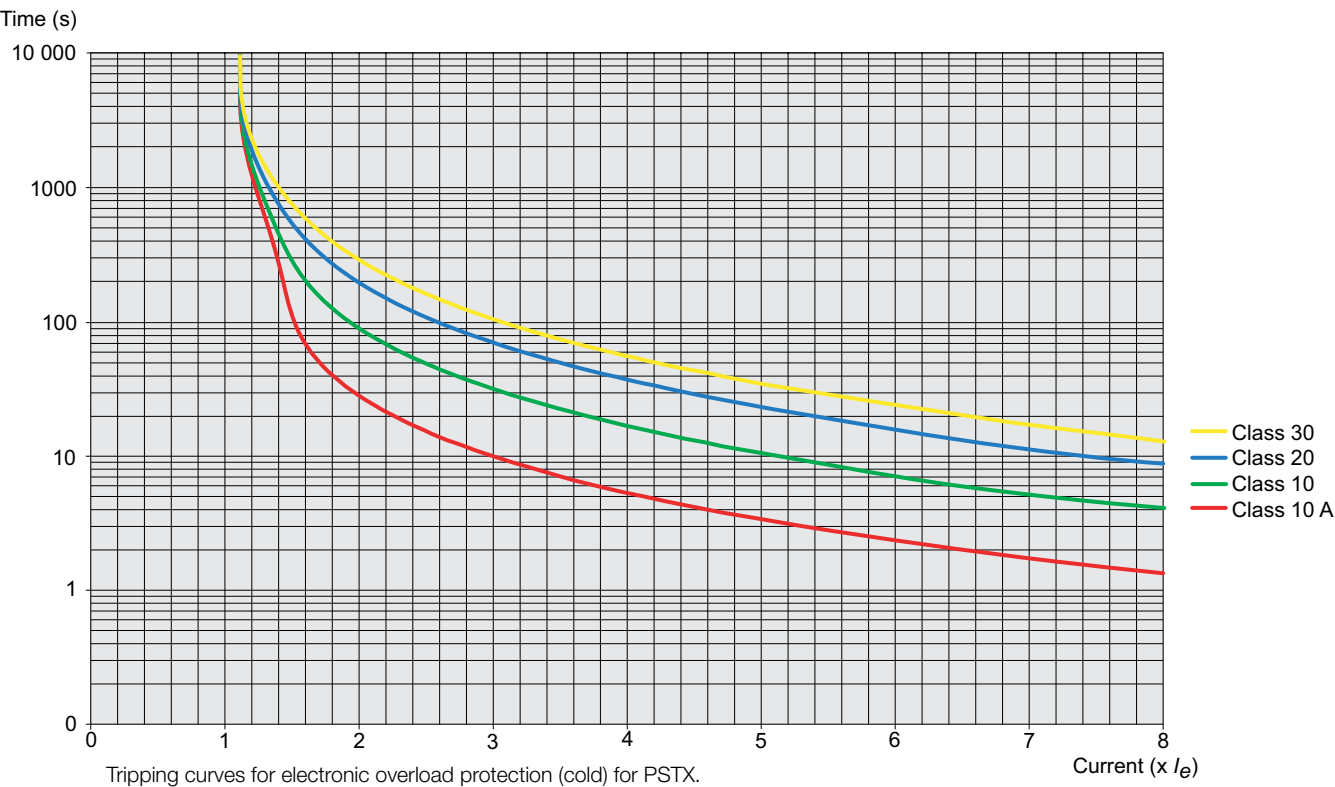


PSTX – The advanced range

Technical data

Tripping curves for the integrated electronic overload protection

All units have an integrated electronic overload protection that can be set to four different tripping classes. Below you find a curve for each tripping class in cold state. These tripping curves are valid for PSTX.



PSTX – The advanced range

Technical data

Softstarter types		PSTX30 ... PSTX1250
Rated insulation voltage U_i		690V
Rated operational voltage U_e		208...600 V, 208...690V + 10% / -15%, 50/60Hz $\pm 5\%$
Rated control supply voltage U_s		100...250 V +10% / -15%, 50/60Hz $\pm 5\%$
Rated control circuit voltage U_c		Internal or external 24 V DC
Starting capacity at I_e		4 x I_e for 10 sec.
Number of starts per hour		10 for PSTX30 ... PSTX370 ¹⁾ 6 for PSTX470 ... PSTX1250 ¹⁾
Overload capability	Overload class	10
	during operation	-25...+60 °C, (-13...+140 F) ²⁾
Ambient temperature	during storage	-40...+70 °C, (-40...+158 F)
Maximum altitude		4000 m (13123 ft) ³⁾
Degree of protection	main circuit	-
	Supply and control circuit	IP20
Main circuit	Built-in bypass contactor	Yes
	Cooling system - Fan cooled	Yes (thermostat controlled)
HMI for settings (Human Machine Interface)	Display	LCD type, graphical
	Languages	English, French, German, Italian, Dutch, Chinese, Finnish, Swedish, Spanish, Russian, Portuguese, Turkish, Polish and Czech
Signal relays	Keypad	2 selection keys, 4 navigation keys, start key, stop key, info key and remote/local key
	Number of programmable signal relays	3 (each relay can be programmed to be Run, Bypass or Event signal)
	K4	Default as Run signal
	K5	Default as Top of Ramp (Bypass) signal
	K6	Default as Event signal
	Rated operational voltage, U_e	250 V AC/24 V DC
Analog output	Rated thermal current I_{th}	5 A
	Rated operational current I_e at AC-15 ($U_e=250$ V)	1.5 A
	Output signal reference	0...10 V, 0...20 mA, 4...20 mA
	Type of output signal	I Amp, V Volt, P kW, P hp, Q kVar, TmpMot, TmpSCR, cosPhi
Control circuit	Number of inputs	2 (start, stop)
	Number of additional programmable inputs	3 (Each input can be programmed to be either; Non, Reset, Enable, Jog, Direct on line-On, Start motor 2, Start motor 3 or FieldBus-disable)
Signalling indication LED	Power on	Green
	Run	Green
	Fault	Red
	Protection	Yellow
External keypad	Detachable keypad	Yes
	Display	LCD type, graphical
	Ambient temperature	
	During operation	-25...+60 °C, (-13...+140 F)
Start and stop functions	During storage	-40...+70 °C, (-40...+158 F)
	Degree of protection	Type 1, 4X, 12 & IP66
	Soft start with voltage ramp	Yes
	Soft stop with voltage ramp	Yes
	Soft start with torque control	Yes
	Soft stop with torque control	Yes
	Kick start	Yes
	Full voltage start	Yes
	Sequence start	Yes, 3 different sets of settings
	Current limit	Yes
	Dual current limit	Yes
	Current ramp	Yes
	Torque limit	Yes
	Motor heating	Yes
	Jog with slow speed, forward and reverse	Yes
	Anti-backspin	Yes
	Limp mode with two-phase motor control if one set of thyristors is shorted	Yes
	Field bus connection	Yes
	Built-in Modbus RTU	Yes
	Connection for Anybus	Yes
	Connection for ABB FieldBusPlug	Yes, with adapter

¹⁾ Valid for normal start (class 10) for 50% on time and 50% off time. If other data if required, contact your sales office.

²⁾ Above 40 °C (104 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.

$[\% \text{ of } I_e = 100 - \frac{x-1000}{150}] \times x = \text{actual altitude for the softstarter, } [\% \text{ of } I_e = 100 - \frac{x-3280}{497}] \times x = \text{actual altitude for the softstarter in feet.}$

PSTX – The advanced range

Technical data

Softstarter types		PSTX30 ... PSTX1250
Protections	Electronic overload protection, EOL	Yes (Class 10A, 10, 20, 30)
	Dual overload (separate overload for start and run)	Yes
	PTC connection	Yes
	PT-100 connection	Yes
	Locked rotor protection	Yes
	Current underload protection	Yes
	Current imbalance protection	Yes
	Power factor underload protection	Yes
	Under voltage protection	Yes
	Over voltage protection	Yes
	Voltage imbalance protection	Yes
	Earth fault protection / ground fault protection	Yes
	High current protection (8 x I _e)	Yes
	Phase reversal protection	Yes
	Fieldbus fault	Yes
	Max number of starts/hour	Yes
	Too long start time protection	Yes
Warnings (pre-warning) and embedded diagnostics	Current underload warning	Yes
	Current imbalance warning	Yes
	Voltage imbalance warning	Yes
	Thyristor overload warning (SCR)	Yes
	Electronic overload Time-to-trip	Yes
	Electronic overload Time-to-cool	Yes
	Over voltage warning	Yes
	Under voltage warning	Yes
	Power factor underload warning	Yes
	Locked rotor warning	Yes
	Faulty fans	Yes
	THD(U) - Total Harmonic Distortion	Yes
	Counted number of start sequences	Yes
	Motor runtime measurement	Yes
	Thyristor runtime measurement	Yes
	Auto phase sequence detection	Yes
	Electricity metering	Yes
	Voltage sags detection	Yes
	EOL warning	Yes
External faults detection	Phase loss	Yes
	Hight current	Yes
	Low control supply voltage	Yes
	Open circuit motor side	Yes
	Faulty connection	Yes
	Bad network quality	Yes
	Thyristor overload	Yes
Internal faults detection	Short circuit	Yes
	Open circuit thyristor or gate	Yes
	Bypass open	Yes
	Shunt fault	Yes
	Switch off resistance	2825 ohm ± 20%
PTC input	Switch on resistance	1200 ohm ± 20%
Other functions	Real time clock	Yes
	Event log	Yes
	Emergency mode	Yes
	Auto restart	Yes
	Secure settings	Yes
	Keypad password	Yes

For all functions and features see installation and commissioning manual.

PSTX – The advanced range

Technical data

Fuse ratings and power losses

For softstarter	Recommended ABB's overload protection			Fuse rating - main circuit ^{1) 2)} Bussmann fuses, DFJ & KRP-C			Power requirements supply circuit Holding (VA) / Pull-in(VA)
	Type	Current range	Max power loss at rated I _e	550-600 V, 40°C 150% A	Type	Class	
		A	W				
PSTX							
PSTX30	Integrated	9 - 30	0.8	40	DFJ-40	J	49/51
PSTX37	Integrated	11.1 - 37	1.2	50	DFJ-50	J	49/51
PSTX45	Integrated	13.5 - 45	1.8	60	DFJ-60	J	49/51
PSTX60	Integrated	18 - 60	3.2	90	DFJ-90	J	49/51
PSTX72	Integrated	21.6 - 72	4.7	100	DFJ-100	J	49/51
PSTX85	Integrated	22.5 - 85	6.5	125	DFJ-125	J	49/51
PSTX105	Integrated	31.8 - 106	10	150	DFJ-150	J	49/51
PSTX142	Integrated	42.9 - 143	18	200	DFJ-200	J	49/53
PSTX170	Integrated	51.3 - 171	26	250	DFJ-250	J	49/53
PSTX210	Integrated	63 - 210	48	300	DFJ-300	J	56/276
PSTX250	Integrated	75 - 250	68	350	DFJ-350	J	56/276
PSTX300	Integrated	90 - 300	97	450	DFJ-450	J	56/276
PSTX370	Integrated	111 - 370	148	500	DFJ-500	J	56/276
PSTX470	Integrated	141 - 470	99	700	KRP-C-700SP	L	67/434
PSTX570	Integrated	171 - 570	146	800	KRP-C-800SP	L	67/434
PSTX720	Integrated	216 - 720	78	Contact ABB for more information			61/929
PSTX840	Integrated	252 - 840	106	Contact ABB for more information			61/929
PSTX1050	Integrated	315 - 1050	165	Contact ABB for more information			68/929
PSTX1250	Integrated	375 - 1250	234	Contact ABB for more information			68/929

¹⁾ For the supply circuit 6 A delayed, for MCB use C characteristics.

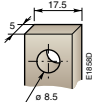
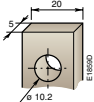
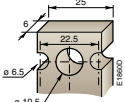
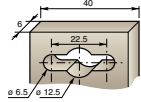
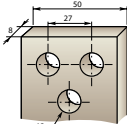
²⁾ For inside delta connection the fuses shall be placed inside the delta. Contact ABB for more information.

PSTX Integrated bypass ratings

Softstarter	PSTX470	PSTX570	PSTX720	PSTX840	PSTX1050	PSTX1250
Integrated contactor	AF370			AF750		AF1250
AC-3 rating at 600 V (A)	370			750		-

PSTX – The advanced range

Technical data

Main terminals		PSTX30 ... PSTX105	PSTX142 ... PSTX170	PSTX210 ... PSTX370	PSTX470 ... PSTX570	PSTX720 ... PSTX1050	PSTX1250
							
	Lugs						
	Width ≤	-	24 mm (.945 in)	32 mm (1.260 in)	47 mm (1.850 in)	50 mm (1.969 in)	50 mm (1.969 in)
	Diameter =	-	8 mm (.315 in)	10 mm (.394 in)	10 mm (.394 in)	12 mm (.472 in)	12 mm (.472 in)
	Tightening torque	-	18 Nm / 160 lb.in	28 Nm / 248 lb.in	35 Nm / 310 lb.in	45 Nm / 398 lb.in	45 Nm / 398 lb.in
Connection capacity acc to UL / CSA 1 x AWG / kcmil		6 - 2/0	6 - 300 kcmil	4 - 400 kcmil	-	-	-
	Clamp type	Included	ATK185	ATK300	-	-	-
	Tightening torque	8 Nm / 71 lb. in.	34 Nm / 300 lb.in.	42 Nm / 375 lb. in.	-	-	-
Connection capacity acc to UL / CSA 2 x AWG / kcmil		-	-	4 - 500 kcmil	2/0 - 500 kcmil	2/0 - 500 kcmil	-
	Clamp type	-	-	ATK300/2 ¹⁾	ATK580/2	ATK580/2	-
	Tightening torque	-	-	42 Nm / 375 lb. in.	375 lb. in.	375 lb. in.	-
Connection capacity acc to UL / CSA 3 x AWG / kcmil		-	-	-	-	2/0 - 500 kcmil	-
	Clamp type	-	-	-	-	ATK750/3	-
	Tightening torque	-	-	-	-	42 Nm / 375 lb.in	-
Connection capacity acc to UL / CSA 4 x AWG / kcmil		-	-	-	-	-	-
	Clamp type	-	-	-	-	-	-
	Tightening torque	-	-	-	-	-	-

¹⁾ Terminal shrouds LT370-30D can be used.

²⁾ Use a wall between ATK1350/4

PSTX - The advanced range

Anybus



Profibus
Modbus-RTU



DeviceNet



EtherNet/IP (1-port)
Modbus/TCP (1-port)



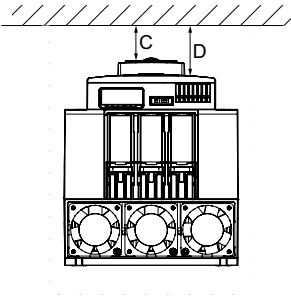
EtherNet/IP (2-port)
Modbus/TCP (2-port)
Profinet (2-port)

For communication protocol	Type		Pkg qty	Weight (1 pce) kg	(lb)
Profibus	AB-PROFIBUS-1		1	0.042	(0.093)
DeviceNet	AB-DEVICENET-1		1	0.042	(0.093)
Modbus-RTU	AB-MODBUS-RTU-1		1	0.042	(0.093)
EtherNet/IP (1-port)	AB-ETHERNET-IP-1		1	0.042	(0.093)
EtherNet/IP (2-port)	AB-ETHERNET-IP-2		1	0.042	(0.093)
Modbus/TCP (1-port)	AB-MODBUS-TCP-1		1	0.042	(0.093)
Modbus/TCP (2-port)	AB-MODBUS-TCP-2		1	0.042	(0.093)
Profinet (2-port)	AB-PROFINET-2		1	0.042	(0.093)

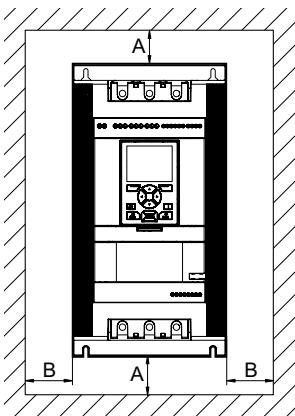
PSTX - The advanced range

Wall mounting instructions

Minimum distance to front



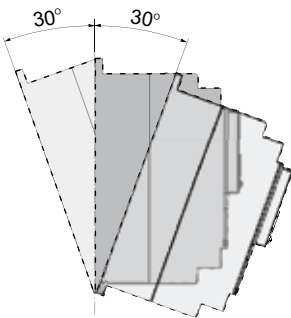
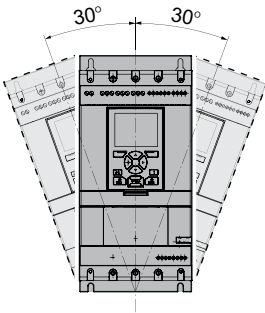
Minimum distance to wall



Dimensions mm (in)

Softstarter, type	A	B	C	D
PSTX				
PSTX30 ... PSTX105	100 (3.94)	10 (0.39)	20 (0.79)	35 (1.38)
PSTX142 ... PSTX170	100 (3.94)	10 (0.39)	20 (0.79)	35 (1.38)
PSTX210 ... PSTX370	100 (3.94)	10 (0.39)	20 (0.79)	35 (1.38)
PSTX470 ... PSTX570	150 (5.91)	15 (0.59)	20 (0.79)	35 (1.38)
PSTX720 ... PSTX840	150 (5.91)	15 (0.59)	20 (0.79)	35 (1.38)
PSTX1050 ... PSTX1250	150 (5.91)	15 (0.59)	20 (0.79)	35 (1.38)

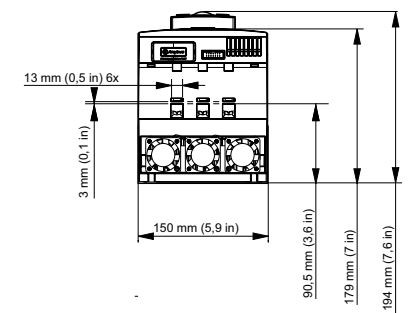
Maximum mounting angle



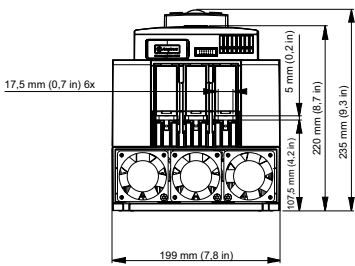
PSTX - The advanced range

Dimensions

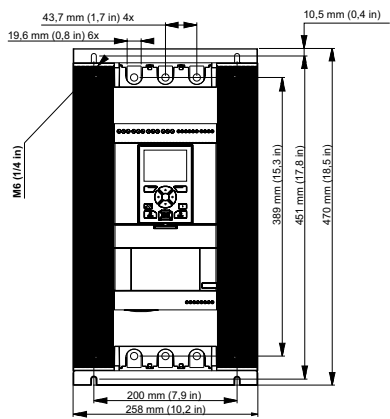
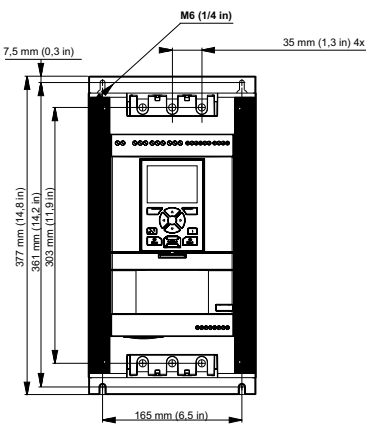
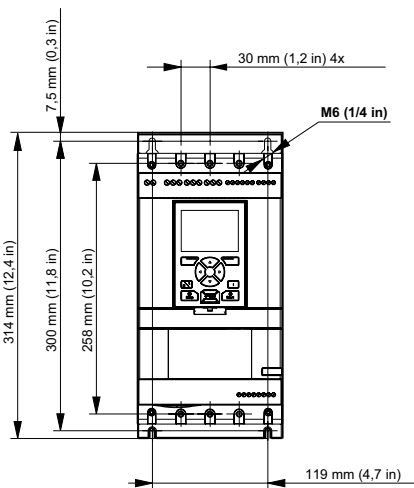
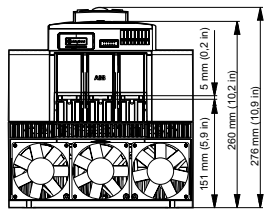
PSTX30 ... PSTX105



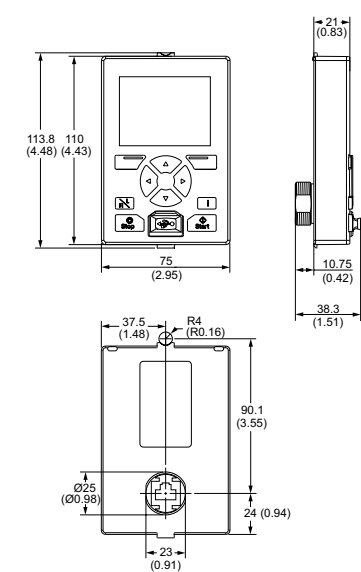
PSTX142 ... PSTX170



PSTX210 ... PSTX370



PSTX detachable keypad

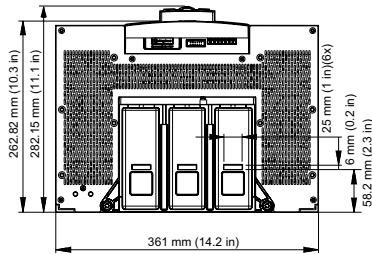


Dimensions in mm (in)

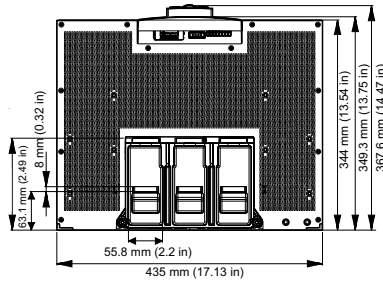
PSTX - The advanced range

Dimensions

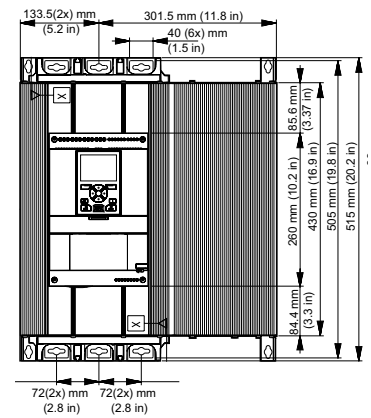
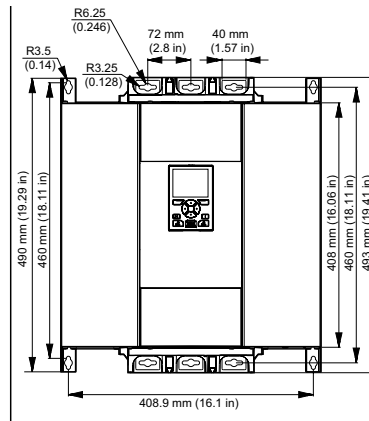
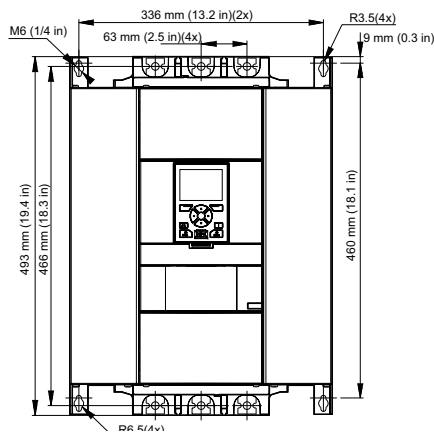
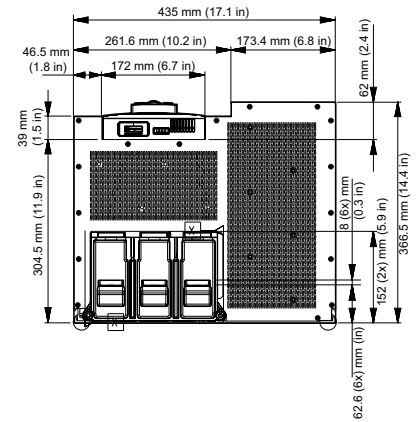
PSTX470 ... PSTX570



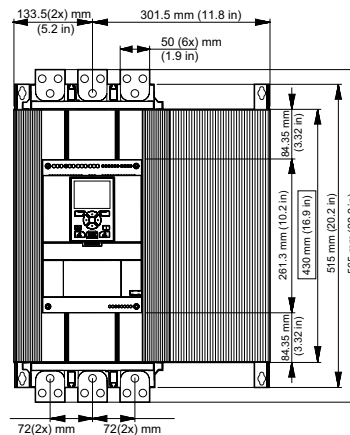
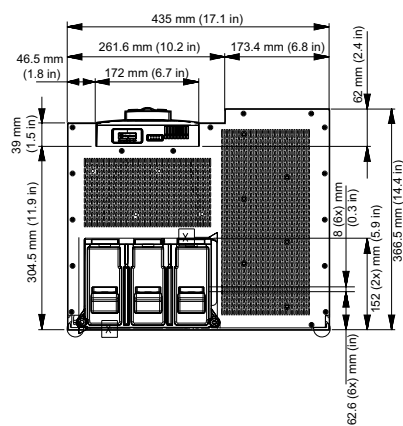
PSTX720 ... PSTX840



PSTX1050



PSTX1250



Dimensions in mm (in)

PSTX - The advanced range

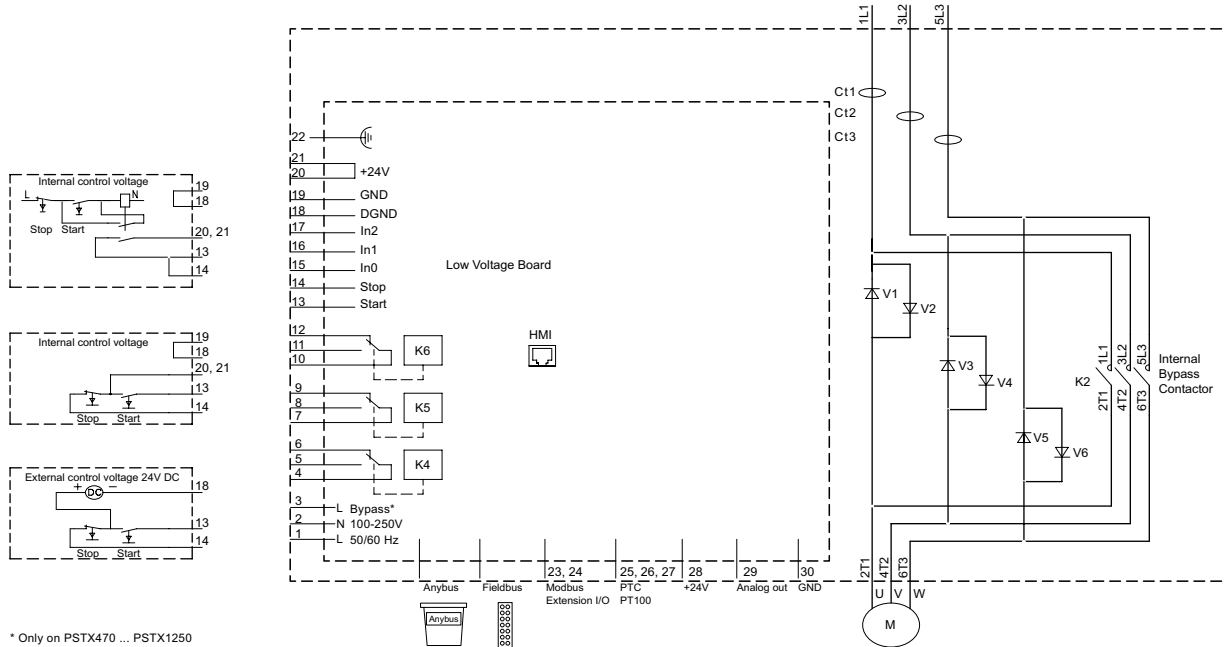
Circuit diagrams



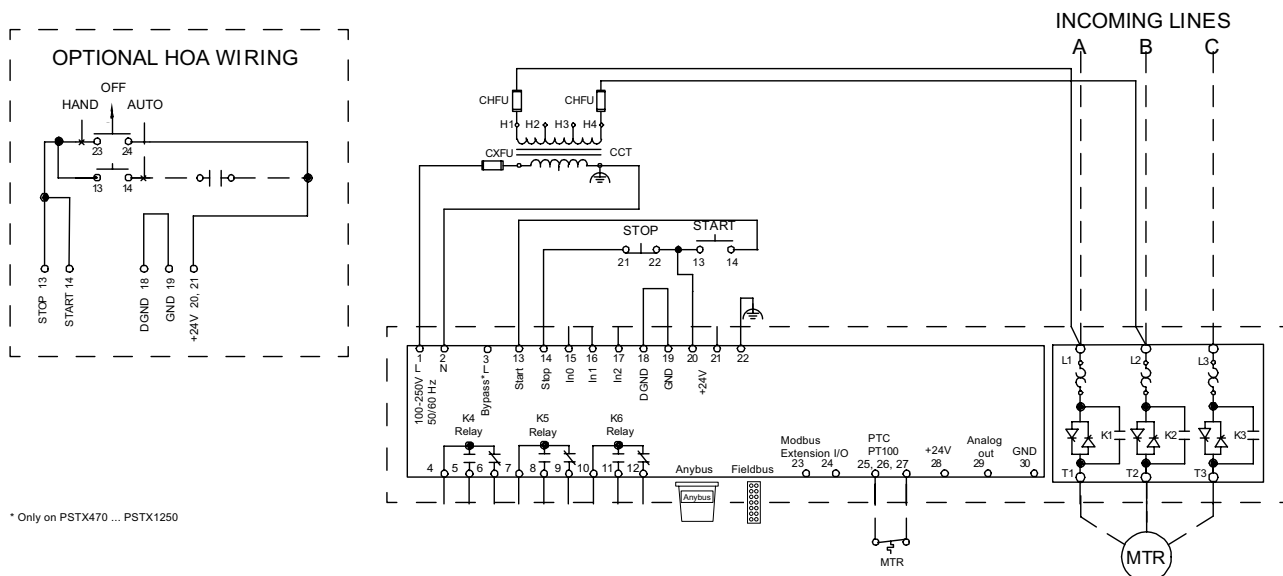
CAUTION

Terminal 22  is a function earth, it is not a protective earth. It shall be connected to the mounting plate.

PSTX30 ... PSTX1250 (IEC circuit diagram)



PSTX30 ... PSTX1250 (UL circuit diagram)



For more circuit diagrams see new.abb.com/low-voltage/products/softstarters

PSTX - The advanced range

Certifications and approvals

The table below shows the certifications and approvals for PSTX softstarters.
For other certifications and/or approvals, please contact ABB.

Certifications and approvals

Abbreviation approved in	Certifications						Approval: ship classification societies				
											
	CE EU	cULus Canada USA	CCC China	EAC Russia	ANCE Mexico	C-tick Australia	ABS	GL	Lloyd's Register	DNV	CCS
PSTX30 ... PSTX370	•	•	•	•	•	•	•	•	•	•	•
PSTX470 ... PSTX570	•	•	•	•	•	•	Pending	Pending	Pending	Pending	Pending
PSTX720 ... PSTX1250	•	•	Pending	•	•	•	Pending	Pending	Pending	Pending	Pending

- Standard design approved, the products bear the certification mark when it is required.

Directives and standards

No. 2006/95/EC	Low voltage equipment
No. 2004/108/EC	Electromagnetic compability
EN 60947-1	Low-Voltage Switchgear and Controlgear - Part 1: General rules
EN 60947-4-2	AC semiconductor motor controllers and starters
UL 508	Industrial Control Equipment
CSA C22.2 No 14	Industrial Control Equipment

Online softstarter selection

www.abbcontrol.fr/softstarter

Contact us

ABB Inc.

Low Voltage Products

2117 32nd Avenue
Lachine QC H8T 3J1
Canada

Tel.: 514-420-3100

1-800-567-0283

Technical support: ep.support@ca.abb.com

www.abb.com/lowvoltage

www.abb.com/connecttocontrol

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