CONTROL SECTION 9

Softstarters

PSR, PSRC, PSE, PSTX and ELV-X

Section Updated 01/2026

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PSR
Introduction

Technical specifications
- Rated operational current: 3...105 A
- Operational voltage: 208...600 V AC
- Wide rated control supply voltage: 100...240 V AC, 50/60 Hz or 24 V AC/DC

Features
- Two-phase controlled
- Soft start and stop with voltage ramp
- Built-in bypass for energy saving and easy installation
- Easy set-up by three potentiometers
- Run and Top of Ramp relays available for monitoring
- Connection kits available for connection to ABB's manual motor starters (MMS)

Protections
- Motor protection with manual motor starter

Communication
- Fieldbus communication with fieldbus plug adapter and fieldbus plug

Motor protection with manual motor starter PSR together with the MMS to get a complete motor starter with soft start and stop together with overload and short circuit protection.

Screw or DIN-rail mounted PSR is fast and easy to install by using screw mounting or DIN-rail mounting (PSR3 ... PSR45).

Three potentiometers for settings
Set-up is made very easy with only three potentiometers, for start ramp time, stop ramp time and initial/end voltage level.

Connection kit (optional) simplifies installation of the PSR by making the connection to the MMS screwless.

Output signal relays for Run and Top of ramp (PSR25 ... PSR105).

LED indicators for On/Ready and Run/Top of ramp.

PSR

Coordination examples

PSR3 ... PSR16

PSR25 ... PSR30

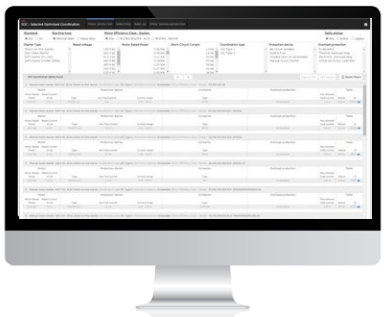
PSR37 ... PSR45

PSR60 ... PSR105

Normal start in-line connected

Softstarter	**PSR3**	**PSR6**	**PSR9**	**PSR12**	**PSR16**	**PSR25**	**PSR30**	**PSR37**	**PSR45**	**PSR60**	**PSR72**	**PSR85**	**PSR105[2]**
IEC kW (400V)	1.5	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55
IEC max A	3.9	6.8	9	12	16	25	30	37	45	60	72	85	105
UL HP (440-480 V)	2	3	5	7.5	10	15	20	25	30	40	50	60	75
UL max FLA	3.4	6.1	9	11	15.2	24.2	28	34	46.2	59.4	68	80	104
Using manual motor starters type 1 coordination will be achieved[1]	**Manual motor starter (50 kA) 400 V, 40 °C**												
	MS116	MS116	MS116	MS132	MS132	MS132	MS132	MS165	MS165	MS165	MS495	MS495	MS495
Using gG fuses type 1 coordination will be achieved[1]	**Fuse protection (50 kA) gG Fuse**												
	10 A	16 A	25 A	32 A	32 A	50 A	63 A	100 A	125 A	125 A	200 A	200 A	250 A
Suitable switch fuse for the above gG fuses[1]	**Switch fuse**												
							OS32G			OS125G			OS250
J-type fuses for UL coordination[1]	**Max. fuse, J-type**												
	35 A	35 A	35 A	35 A	35 A	60 A	60 A	90 A	90 A	110 A	125 A	150 A	200 A
Overload protection is used to protect the motor from over heating[1]	**Thermal overload relay**												
								TF42DU			TA75DU		TA110DU
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor**												
	AF9	AF9	AF9	AF12	AF16	AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx
[2] Can be used with MS495 up to 100 A



Coordination tables (SOC) >
For more examples of coordination visit the online tool for coordination with short circuit protection, overload protection and line contactor.

PSR

Normal starts, class 10, in-line
Ordering details

PSR3 ... PSR16

PSR25 ... PSR30

PSR37 ... PSR45

PSR60 ... PSR105

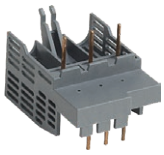
Rated operational voltage U_e, 208...600 V AC, Rated control supply voltage, U_s, 100...240 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
230 V	400 V	500 V	current	200/208 V	220/240 V	440/480 V	550/600 V	current				
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
0.75	1.5	2.2	3.9	0.5	0.75	2	2	3.4	PSR3-600-70	1SFA896103R7000	0.4	0.8
1.5	3	4	6.8	1	1.5	3	5	6.1	PSR6-600-70	1SFA896104R7000	0.4	0.8
2.2	4	4	9	2	2	5	7.5	9	PSR9-600-70	1SFA896105R7000	0.4	0.8
3	5.5	5.5	12	3	3	7.5	10	11	PSR12-600-70	1SFA896106R7000	0.4	0.8
4	7.5	7.5	16	3	5	10	10	15.2	PSR16-600-70	1SFA896107R7000	0.4	0.8
5.5	11	15	25	7.5	7.5	15	20	24.2	PSR25-600-70	1SFA896108R7000	0.6	1.3
7.5	15	18.5	30	7.5	10	20	25	28	PSR30-600-70	1SFA896109R7000	0.6	1.3
7.5	18.5	22	37	10	10	25	30	34	PSR37-600-70	1SFA896110R7000	1.0	2.2
11	22	30	45	15	15	30	40	46.2	PSR45-600-70	1SFA896111R7000	1.0	2.2
15	30	37	60	20	20	40	50	59.4	PSR60-600-70	1SFA896112R7000	2.1	4.6
22	37	45	72	20	25	50	60	68	PSR72-600-70	1SFA896113R7000	2.1	4.6
22	45	55	85	25	30	60	75	80	PSR85-600-70	1SFA896114R7000	2.1	4.6
30	55	55	105	30	40	75	100	104	PSR105-600-70	1SFA896115R7000	2.1	4.6

Rated operational voltage U_e, 208...600 V AC, Rated control supply voltage, U_s, 24 V AC/DC, 50/60 Hz

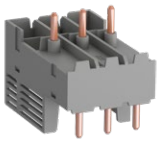
IEC Rated operational power				UL/CSA Rated operational power								
230 V	400 V	500 V	current	200/208 V	220/240 V	440/480 V	550/600 V	current				
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
0.75	1.5	2.2	3.9	0.5	0.75	2	2	3.4	PSR3-600-11	1SFA896103R1100	0.4	0.8
1.5	3	4	6.8	1	1.5	3	5	6.1	PSR6-600-11	1SFA896104R1100	0.4	0.8
2.2	4	4	9	2	2	5	7.5	9	PSR9-600-11	1SFA896105R1100	0.4	0.8
3	5.5	5.5	12	3	3	7.5	10	11	PSR12-600-11	1SFA896106R1100	0.4	0.8
4	7.5	7.5	16	3	5	10	10	15.2	PSR16-600-11	1SFA896107R1100	0.4	0.8
5.5	11	15	25	7.5	7.5	15	20	24.2	PSR25-600-11	1SFA896108R1100	0.6	1.3
7.5	15	18.5	30	7.5	10	20	25	28	PSR30-600-11	1SFA896109R1100	0.6	1.3
7.5	18.5	22	37	10	10	25	30	34	PSR37-600-11	1SFA896110R1100	1.0	2.2
11	22	30	45	15	15	30	40	46.2	PSR45-600-11	1SFA896111R1100	1.0	2.2
15	30	37	60	20	20	40	50	59.4	PSR60-600-11	1SFA896112R1100	2.1	4.6
22	37	45	72	20	25	50	60	68	PSR72-600-11	1SFA896113R1100	2.1	4.6
22	45	55	85	25	30	60	75	80	PSR85-600-11	1SFA896114R1100	2.1	4.6
30	55	55	105	30	40	75	100	104	PSR105-600-11	1SFA896115R1100	2.1	4.6

PSR
Accessories

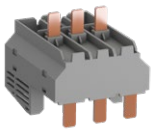


Connection kit
for PSR3...16

Connection kit
for PSR25...30



Connection kit
for PSR37...45



Connection kit
for PSR60...72

Connection kit

Article	Breaker type	Type	Order code	Pkg qty	Net kg	lb
PSR3...16	MS116/132	PSR16-MS116	1SFA896211R1001	1	0.03	0.08
PSR25...30	MS132	PSR30-MS132	1SFA896212R1001	1	0.03	0.08
PSR37...45	MS165	PSR45-MS165	1SFA896216R1001	1	0.05	0.11
PSR60...72	MS165	PSR60-MS165	1SFA896215R1001	1	0.05	0.11
PSR60...105	MS495	PSR105-MS495	1SAM501903R1001	1	0.03	0.08

Fan

Fan

Article	Type	Order code	Pkg qty	Net kg	lb
PSR3...16	PSR-FAN3-45A	1SFA896311R1001	1	0.01	0.02
PSR25...30	PSR-FAN60-105A	1SFA896313R1001	1	0.01	0.03

Terminal enlargements

Terminal enlargements

Article	Type	Order code	Pkg qty	Net kg	lb
PSR60... PSR105	PSLW-72	1SFA899002R1072	1	0.16	0.35

Note: Wire range mm² 1 x 10...50 mm², 2 x 10...25 mm²

Fieldbus plug adapter

Fieldbus plug adapter with cable

Article	Type	Order code	Pkg qty	Net kg	lb
Fieldbus plug adapter	PS-FBPA	1SFA896312R1002	1	0.05	0.11

PSR

Technical data

Softstarter types	PSR3	PSR6	PSR9	PSR12	PSR16	PSR25	PSR30	PSR37	PSR45	PSR60	PSR72	PSR85	PSR105
Max. Power loss at rated I_e	0.7 W	2.9 W	6.5 W	11.5 W	20.5 W	25 W	36 W	5.5 W	8.1 W	3.6 W	5.2 W	7.2 W	6.6 W

Technical data	
Rated insulation voltage U_i	600 V
Rated operational voltage U_e	208...600 V +10%/-15%, 50/60 Hz ±5%
Rated control supply voltage U_s	100...240 V AC, 50/60Hz ±5% or 24 V AC/DC, +10%/-15%
Starting capacity at I_e	4 x I_e for 6 sec.
Maximum altitude	4000 m (13123 ft)[3]
Number of starts per hour	
Standard	10[1]
With aux. fan	20[1]
Ambient temperature	
During operation	-25...+60 °C (-13...+140 °F)[2]
During storage	-40...+70 °C (-40...+158 °F)
Degree of protection	
Main circuit	PSR3 - PSR30: IP20 PSR37 - PSR105: IP10
Control circuit	PSR3 - PSR30: IP20
Power consumption	
At 100...240 V AC	PSR3 - PSR30: 12 VA PSR37 - PSR105 10 VA
At 24 V AC/DC	PSR3 - PSR30: 5 W PSR37 - PSR105: 10 VA
Signal relays for run signal: PSR3.. 105	
Resistive load	3 A
AC-15 (contactor)	0.5 A
Signal relays for top of ramp signal: PSR25... 105	
Resistive load	3 A
AC-15 (contactor)	0.5 A
LED	
For On/Ready	Green
For Run/Top of ramp	Green
Settings	
Ramp time during start	1...20 sec.
Ramp time during stop	0...20 sec.
Initial- and end voltage	40...70%

[1] Valid for 50% on time and 50% off time. If other data is required, contact your local ABB office.
[2] Above 40 °C (104 °F) up to max. 60 °C (140 °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), de-rate the rated current using the following formula.

$$[\ \%\ \text{of}\ I_e = 100 - \frac{x-1000}{150}\ ]$$ x = actual altitude of the softstarter in meter.

Number of starts per hour using PSR softstarters

Motor current	Starts/hour without auxiliary fan							
I_e	10	20	30	40	50	60	80	100
3 A	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3	PSR6
6 A	PSR6	PSR6	PSR6	PSR6	PSR6	PSR9	PSR9	PSR9
9 A	PSR9	PSR9	PSR9	PSR12	PSR12	PSR12	PSR16	PSR25
12 A	PSR12	PSR12	PSR12	PSR16	PSR25	PSR25	PSR30	PSR30
16 A	PSR16	PSR25	PSR25	PSR25	PSR30	PSR30	PSR37	PSR37
25 A	PSR25	PSR30	PSR37	PSR37	PSR37	PSR45	PSR45	PSR60
30 A	PSR30	PSR37	PSR37	PSR45	PSR45	PSR60	PSR60	PSR72
37 A	PSR37	PSR45	PSR45	PSR60	PSR60	PSR72	PSR85	PSR105
45 A	PSR45	PSR45	PSR60	PSR60	PSR72	PSR85	PSR105	-
60 A	PSR60	PSR60	PSR72	PSR85	PSR105	PSR105	-	-
72 A	PSR72	PSR85	PSR105	PSR105	-	-	-	-
85 A	PSR85	PSR105	PSR105	-	-	-	-	-
105 A	PSR105	-	-	-	-	-	-	-

Number of starts per hour using PSR softstarters

Motor current	Starts/hour with auxiliary fan							
I_e	10	20	30	40	50	60	80	100
3 A	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3	PSR3
6 A	PSR6	PSR6	PSR6	PSR6	PSR6	PSR6	PSR6	PSR9
9 A	PSR9	PSR9	PSR9	PSR9	PSR9	PSR12	PSR12	PSR12
12 A	PSR12	PSR12	PSR12	PSR12	PSR12	PSR16	PSR25	PSR25
16 A	PSR16	PSR16	PSR25	PSR25	PSR25	PSR25	PSR30	PSR30
25 A	PSR25	PSR2	PSR30	PSR37	PSR37	PSR37	PSR37	PSR45
30 A	PSR30	PSR30	PSR37	PSR37	PSR45	PSR45	PSR45	PSR45
37 A	PSR37	PSR37	PSR45	PSR45	PSR45	PSR45	PSR60	PSR60
45 A	PSR45	PSR45	PSR45	PSR60	PSR60	PSR60	PSR72	PSR72
60 A	PSR60	PSR60	PSR60	PSR72	PSR72	PSR85	PSR105	-
72 A	PSR72	PSR72	PSR72	PSR85	PSR105	PSR105	-	-
85 A	PSR85	PSR85	PSR105	PSR105	-	-	-	-
105 A	PSR105	PSR105	-	-	-	-	-	-

Data based on an ambient temperature of 40 °C (104 °F), starting current of 4 x I_e and ramp time 6 seconds. For more optimized selection or to use PSR for heavy-duty starts, please use the softstarter selection tool.

PSRC
Introduction

Technical specifications
- Rated operational current: 3...105 A
- Operational voltage: 208...600 V AC
- Wide rated control supply voltage: 100...240 V AC, 50/60 Hz

Features
- Two-phase controlled
- Soft start with voltage ramp
- Built-in bypass for energy saving and easy installation
- Easy set-up
- Run and Top of Ramp relays available for monitoring
- Ambient temperature -25 to +60 degrees
- Connection kits available for connection to ABB's manual motor starters (MMS)

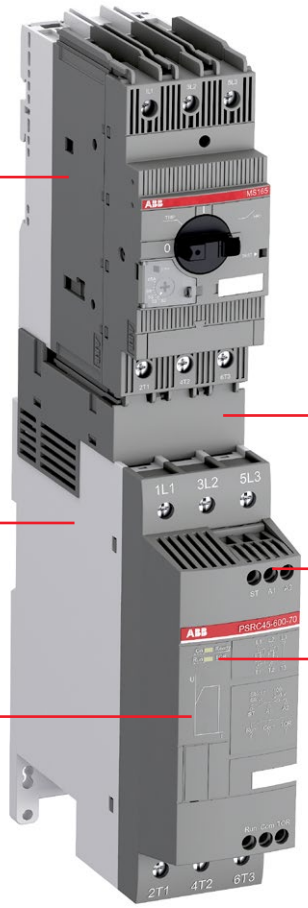
Protections
- Motor protection with manual motor starter

Communication
- Fieldbus communication with fieldbus plug adapter and fieldbus plug

Motor protection with manual motor starter the PSRC together with the MMS to get a complete motor starter with soft start and stop together with overload and short circuit protection.

Screw or DIN-rail mounted
PSRC is fast and easy to install by using screw mounting or DIN-rail mounting (PSRC3 ... PSRC45).

Fixed settings "Tamper-proof"
No risk of parameters getting changed after installation.



Connection kit (optional) simplifies installation of the PSRC by making the connection to the MMS screwless.

Output signal relays for Run and Top of ramp (PSRC25 ... PSRC105).

LED indicators for On/Ready and Run/Top of ramp.

PSRC

Coordination examples

PSRC3... PSRC16

PSRC25... PSRC30

PSRC37... PSRC45

PSRC60... PSRC105

Normal start in-line connected

Softstarter	PSRC3	PSRC6	PSRC9	PSRC12	PSRC16	PSRC25	PSRC30	PSRC37	PSRC45	PSRC60	PSRC72	PSRC85	PSRC105[2]
IEC kW (400V)	1.5	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55
IEC max A	3.9	6.8	9	12	16	25	30	37	45	60	72	85	105
UL HP (440-480 V)	2	3	5	7.5	10	15	20	25	30	40	50	60	75
UL max FLA	3.4	6.1	9	11	15.2	24.2	28	34	46.2	59.4	68	80	104
Using manual motor starters type 1 coordination will be achieved[1]	**Manual motor starter (50 kA) 400 V, 40 °C**												
	MS116	MS116	MS116	MS132	MS132	MS132	MS132	MS165	MS165	MS165	MS495	MS495	MS495
Using gG fuses type 1 coordination will be achieved[1]	**Fuse protection (50 kA) gG Fuse**												
	10 A	16 A	25 A	32 A	32 A	50 A	63 A	100 A	125 A	125 A	200 A	200 A	250 A
Suitable switch fuse for the above gG fuses[1]	**Switch fuse**												
							OS32G			OS125G			OS250
J-type fuses for UL coordination[1]	**Max. fuse, J-type**												
	35 A	35 A	35 A	35 A	35 A	60 A	60 A	90 A	90 A	110 A	125 A	150 A	200 A
Overload protection is used to protect the motor from over heating[1]	**Thermal overload relay**												
								TF42DU			TA75DU		TA110DU
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor**												
	AF9	AF9	AF9	AF12	AF16	AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx
[2] Can be used with MS495 up to 100 A

Coordination tables (SOC) >

For more examples of coordination visit the online tool for coordination with short circuit protection, overload protection and line contactor.

PSRC

Normal starts, class 10, in-line
Ordering details

PSRC3... PSRC16

PSRC25... PSRC30

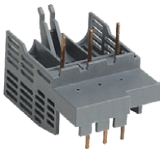
PSRC37... PSRC45

PSRC60... PSRC105

Rated operational voltage U_e, 208...600 V AC, Rated control supply voltage, U_s, 100...240 V AC

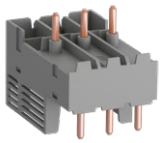
Motor power									
IEC data		UL/CSA data						Net weight	
kW at 400 V	I_e rated current	hp at 208 V	hp at 480 V	hp at 600 V	FLA	Type	Order code	kg	lb
1.5	3.9	0.5	2	2	3.4	PSRC3-600-70	1SFA896203R7000	0.4	0.8
3	6.8	1	3	5	6.1	PSRC6-600-70	1SFA896204R7000	0.4	0.8
4	9	2	5	7.5	9	PSRC9-600-70	1SFA896205R7000	0.4	0.8
5.5	12	3	7.5	10	11	PSRC12-600-70	1SFA896206R7000	0.4	0.8
7.5	16	3	10	10	15	PSRC16-600-70	1SFA896207R7000	0.4	0.8
11	25	7.5	15	20	14	PSRC25-600-70	1SFA896208R7000	0.6	1.3
15	30	7.5	20	25	28	PSRC30-600-70	1SFA896209R7000	0.6	1.3
18.5	37	10	25	30	34	PSRC37-600-70	1SFA896210R7000	1.0	2.2
22	45	15	30	40	46.2	PSRC45-600-70	1SFA896211R7000	1.0	2.2
30	60	20	40	50	59.4	PSRC60-600-70	1SFA896212R7000	2.1	4.6
37	72	20	50	60	68	PSRC72-600-70	1SFA896213R7000	2.1	4.6
45	85	25	60	75	80	PSRC85-600-70	1SFA896214R7000	2.1	4.6
55	105	30	75	100	104	PSRC105-600-70	1SFA896215R7000	2.1	4.6

PSRC
Accessories

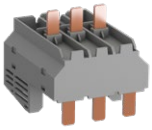


Connection kit
for PSRC3...16

Connection kit
for PSRC25...30



Connection kit
for PSRC37...45



Connection kit
for PSRC60...72

Connection kit

Article	Breaker type	Type	Order code	Pkg qty	Net kg	lb
PSRC3...16	MS116/132	PSR16-MS116	1SFA896211R1001	1	0.03	0.08
PSRC25...30	MS132	PSR30-MS132	1SFA896212R1001	1	0.03	0.08
PSRC37...45	MS165	PSR45-MS165	1SFA896216R1001	1	0.05	0.11
PSRC60...72	MS165	PSR60-MS165	1SFA896215R1001	1	0.05	0.11
PSRC60...105	MS495	PSR105-MS495	1SAM501903R1001	1	0.03	0.08

Fan

Fan

Article	Type	Order code	Pkg qty	Net kg	lb
PSRC3...16	PSR-FAN3-45A	1SFA896311R1001	1	0.01	0.02
PSRC25...30	PSR-FAN60-105A	1SFA896313R1001	1	0.01	0.03

Terminal enlargements

Terminal enlargements

Article	Type	Order code	Pkg qty	Net kg	lb
PSRC60... PSRC105	PSLW-72	1SFA899002R1072	1	0.16	0.35

Note: Wire range mm² 1 x 10...50 mm², 2 x 10...25 mm²

Fieldbus plug adapter

Fieldbus plug adapter with cable

Article	Type	Order code	Pkg qty	Net kg	lb
Fieldbus plug adapter	PS-FBPA	1SFA896312R1002	1	0.05	0.11

PSRC

Technical data

Normal start													
In-line connected	**PSRC3**	**PSRC6**	**PSRC9**	**PSRC12**	**PSRC16**	**PSRC25**	**PSRC30**	**PSRC37**	**PSRC45**	**PSRC60**	**PSRC72**	**PSRC85**	**PSRC105**
IEC data													
(400 V) kW	1.5	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55
I_e rated current	3.9	6.8	9	12	16	25	30	37	45	60	72	85	105
UL/CSA data													
(208 V) hp	0.5	1	2	3	3	7.5	7.5	10	15	20	20	25	30
(440-480 V) hp	2	3	5	7.5	10	15	20	25	30	40	50	60	75
(600 V) hp	2	5	7.5	10	10	20	25	30	40	50	60	75	100
FLA	3.4	6.1	9	11	15.2	24.2	28	34	46.2	59.4	68	80	104

Connectable cable area	**PSRC3...16**	**PSRC25... 30**	**PSRC37... 45**	**PSRC60...105**
Main circuit	1 x 0.75 - 2.5 mm²	1 x 2.5 - 10 mm²	1 x 6 - 35 mm²	1 x 10 - 95 mm²
	2 x 0.75 - 2.5 mm²	2 x 2.5 - 10 mm²	2 x 6 - 16 mm²	2 x 6 - 35 mm²
	1 x 14 AWG	1 x 12 - 8 AWG	1 x 8 - 4 AWG	1 x 6 - 2/0 AWG
Control circuit	**PSRC3...16**	**PSRC25... 105**		
	1 x 0.75 - 2.5 mm²	1 x 0.75 - 2.5 mm²		
	1 x 0.75 - 2.5 mm²	2 x 0.75 - 1.5 mm²		
	1 x 16 - 14 AWG / 2 x 16 AWG	1 x 16 - 14 AWG / 2 x 16 AWG		

Degree of protection	
Main circuit	PSRC3... 30: IP20 PSRC37... 105: IP10
Control circuit	PSRC3... 30: IP20
Signal relays	
For Run signal Resistive load	**PSRC3... 16** 240 V AC, 3 A / 24 V DC, 3 A **PSRC25... 105** 240 V AC, 3 A / 24 V DC, 3 A
AC-15 (Contactor)	**PSRC3... 16** 240 V AC, 0.5 A / 24 V DC 0.5 A **PSRC25... 105** 240 V AC, 0.5 A / 24 V DC, 0.5 A
For Top ramp signal	PSRC25... 105
Resistive load	240 V AC, 3 A / 24 V DC, 3 A
AC-15 (Contactor)	**PSRC25... 105** 240 V AC, 0.5 A / 24 V DC, 0.5 A
Rated insulation voltage U_i	600 V
Rated operational voltage U_e	208...600 V AC +10%/-15%, 50/60 Hz ±5%
Rated control supply voltage U_s	100...240 V AC, 50/60Hz ±5%
Ambient temperature	
During operation	-25 °C to +60 °C (-13 to +140 °F)[1]
During storage	-40 °C to +70 °C (-40 to +158 °F)
Maximum altitude	4000 m (13123 ft)[2]

[1] Above 40 °C (104 °F) up to max. 60 °C (140 °F) reduce the rated current with 0.8% per °C (0.44% per °F).
[2] When used at high altitudes above 1000 meters (3281 ft) up to 4000 meters (13123 ft) you need to derate the rated current using one of the following formulas.
[% of I_e = 100 - (x-1000)/150] x = actual altitude for the softstarter in meters.
[% of I_e = 100 - (x-3280)/497] x = actual altitude for the softstarter in feet.

Number of starts per hour using PSRC softstarters

Starts/hour without auxiliary fan

I_e	10	20	30	40	50	60	80	100
3 A	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC6
6 A	PSRC6	PSRC6	PSRC6	PSRC6	PSRC6	PSRC9	PSRC9	PSRC9
9 A	PSRC9	PSRC9	PSRC9	PSRC12	PSRC12	PSRC12	PSRC16	PSRC25
12 A	PSRC12	PSRC12	PSRC12	PSRC16	PSRC25	PSRC25	PSRC30	PSRC30
16 A	PSRC16	PSRC25	PSRC25	PSRC25	PSRC30	PSRC30	PSRC37	PSRC37
25 A	PSRC25	PSRC30	PSRC37	PSRC37	PSRC37	PSRC45	PSRC45	PSRC60
30 A	PSRC30	PSRC37	PSRC37	PSRC45	PSRC45	PSRC60	PSRC60	PSRC72
37 A	PSRC37	PSRC45	PSRC45	PSRC60	PSRC60	PSRC72	PSRC85	PSRC105
45 A	PSRC45	PSRC45	PSRC60	PSRC60	PSRC72	PSRC85	PSRC105	-
60 A	PSRC60	PSRC60	PSRC72	PSRC85	PSRC105	PSRC105	-	-
72 A	PSRC72	PSRC85	PSRC105	PSRC105	-	-	-	-
85 A	PSRC85	PSRC105	PSRC105	-	-	-	-	-
105 A	PSRC105	-	-	-	-	-	-	-

Number of starts per hour using PSRC softstarters

Starts/hour with auxiliary fan

I_e	10	20	30	40	50	60	80	100
3 A	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3	PSRC3
6 A	PSRC6	PSRC6	PSRC6	PSRC6	PSRC6	PSRC6	PSRC6	PSRC9
9 A	PSRC9	PSRC9	PSRC9	PSRC9	PSRC9	PSRC12	PSRC12	PSRC12
12 A	PSRC12	PSRC12	PSRC12	PSRC12	PSRC12	PSRC16	PSRC25	PSRC25
16 A	PSRC16	PSRC16	PSRC25	PSRC25	PSRC25	PSRC25	PSRC30	PSR30
25 A	PSRC25	PSRC2	PSRC30	PSRC37	PSRC37	PSRC37	PSRC37	PSRC45
30 A	PSRC30	PSRC30	PSRC37	PSRC37	PSRC45	PSRC45	PSRC45	PSRC45
37 A	PSRC37	PSRC37	PSRC45	PSRC45	PSRC45	PSRC45	PSRC60	PSRC60
45 A	PSRC45	PSRC45	PSRC45	PSRC60	PSRC60	PSRC60	PSRC72	PSRC72
60 A	PSRC60	PSRC60	PSRC60	PSRC72	PSRC72	PSRC85	PSRC105	-
72 A	PSRC72	PSRC72	PSRC72	PSRC85	PSRC105	PSRC105	-	-
85 A	PSRC85	PSRC85	PSRC105	PSRC105	-	-	-	-
105 A	PSRC105	PSRC105	-	-	-	-	-	-

Data based on an ambient temperature of 40 °C (104 °F), starting current of 4 x I_e and ramp time 6 seconds. For more optimized selection or to use PSR for heavy-duty starts, please use the softstarter selection tool.

PSE
Introduction

Technical specifications
- Rated operational current: 18...370 A
- Operational voltage: 208...600 V AC
- Wide rated control supply voltage: 100...250 V AC, 50/60 Hz

Features
- Voltage ramp and torque control for both start and stop
- Two-phase controlled
- Current limit
- Kick-start
- Built-in bypass for energy saving and easy installation
- Illuminated display that uses symbols to become language neutral
- External keypad rated IP66 (Type 1, 4X, 12) as an option
- Analog output for display of motor current

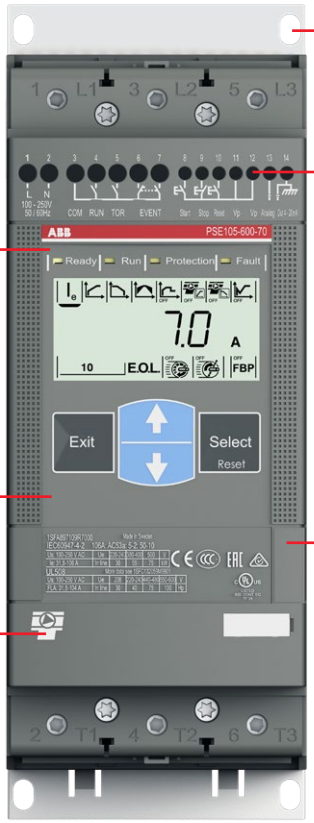
Protections
- Electronic overload protection
- Underload protection
- Locked rotor protection

Communication
- Built-in Modbus RTU
- Fieldbus communication with fieldbus plug adapter and fieldbus plug

Output signal relays for run, top of ramp and event Three output signal relays for indicating that the motor is running, that the softstarter is in top of ramp and if any event has happened. The relays can be used e.g. with pilot lights or to control a line contactor.

Coated circuit boards protecting from dust, moist and corrosive atmosphere.

Torque control function the absolutely best possible stop of pumps without water hammering and pressure surges.



Screw mounting PSE is fast, easy to install by using screw mounting.

Digital input for start, stop and reset PSE is controlled through digital inputs using the internal 24 V DC source. This allows easy control with e.g. push buttons or relays.

NEW Modbus- RTU fieldbus communication for monitoring and control. Support for all major communication protocols.

PSE

Coordination examples

PSE18 ... PSE105

PSE142 ... PSE170

PSE210 ... PSE370

Normal start In-line connected

Softstarter	PSE18	PSE25	PSE30	PSE37	PSE45	PSE60	PSE72	PSE85	PSE105
IEC kW (400V)	7.5	11	15	18.5	22	30	37	45	55
IEC max A	18	25	30	37	45	60	72	85	106
UL HP (440-480 V)	10	15	20	25	30	40	50	60	75
UL max FLA	18	25	28	34	42	60	68	80	104
Using MCCB only, type 1 coordination will be achieved[1]	**MCCB (400 V, 40 °C)**								
MCCB (35 kA)	XT2N160	XT2N160	XT2N160	XT2N160	XT2N160	XT2N160	XT2N160	XT2N160	XT3N250
MCCB (50 kA)	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT3S250
To achieve type 2 coordination, semi-conductor fuses must be used[1]	**Fuse protection (85 kA), Semiconductor fuses, Bussmann**								
	170M1563	170M1564	170M1566	170M1567	170M1568	170M1569	170M1571	170M1572	170M3819
Suitable switch fuse for recommended semi-conductor fuses[1]	**Switch fuse**								
	OS32GD	OS32GD	OS32GD	OS63GD	OS63GD	OS63GD	OS125GD	OS125GD	OS250D
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor**								
	AF26	AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116

Softstarter	PSE142	PSE170	PSE210	PSE250	PSE300	PSE370
(400 V) kW	75	90	110	132	160	200
IEC, max. A	143	171	210	250	300	370
(440-480 V) hp	100	125	150	200	250	300
UL, max. FLA	130	169	192	248	302	361
Using MCCB only, type 1 coordination will be achieved[1]	**MCCB (400 V, 40 °C)**					
MCCB (35 kA)	XT3N250	XT3N250	XT4N320	XT5N400	XT5N400	XT5N630
MCCB (50 kA)	XT3S250	XT3S250	XT4S320	XT5S400	XT5S400	XT5S630
To achieve type 2 coordination, semi-conductor fuses must be used[1]	**Fuse protection (85kA), Semiconductor fuses, Bussmann**					
	170M5809	170M5810	170M5812	170M5813	170M6812	170M6813
Suitable switch fuse for recommended semi-conductor fuses[1]	**Switch fuse**					
	OS400D	OS400D	OS400D	OS400D	OS630D	OS630D
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor**					
	AF146	AF190	AF265	AF265	AF305	AF370

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx

PSE

Ordering details

PSE18 ... PSE105

PSE142 ... PSE170

PSE210 ... PSE370

Normal starts, class 10, in-line Rated operational voltage U_e, 208-600 V, Rated control supply voltage U_s, 100-250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
230 V	400 V	500 V	current	200/208 V	220/240 V	440/480 V	550/600 V	current				
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
4	7.5	11	18	5	5	10	15	18	PSE18-600-70	1SFA897101R7000	2.5	5.5
5.5	11	15	25	7.5	7.5	15	20	25	PSE25-600-70	1SFA897102R7000	2.5	5.5
7.5	15	18.5	30	7.5	10	20	25	28	PSE30-600-70	1SFA897103R7000	2.5	5.5
9	18.5	22	37	10	10	25	30	34	PSE37-600-70	1SFA897104R7000	2.5	5.5
11	22	30	45	10	15	30	40	42	PSE45-600-70	1SFA897105R7000	2.5	5.5
15	30	37	60	20	20	40	50	60	PSE60-600-70	1SFA897106R7000	2.5	5.5
18.5	37	45	72	20	25	50	60	68	PSE72-600-70	1SFA897107R7000	2.5	5.5
22	45	55	85	25	30	60	75	80	PSE85-600-70	1SFA897108R7000	2.6	5.7
30	55	75	106	30	40	75	100	104	PSE105-600-70	1SFA897109R7000	2.9	6.3
40	75	90	143	40	50	100	125	130	PSE142-600-70	1SFA897110R7000	4.4	9.7
45	90	110	171	60	60	125	150	169	PSE170-600-70	1SFA897111R7000	4.4	9.7
59	110	132	210	60	75	150	200	192	PSE210-600-70-1	1SFA897112R7001	8.5	18.7
75	132	160	250	75	100	200	250	248	PSE250-600-70-1	1SFA897113R7001	10.6	23.3
90	160	200	300	100	100	250	300	302	PSE300-600-70-1	1SFA897114R7001	10.6	23.3
110	200	250	370	125	150	300	350	361	PSE370-600-70-1	1SFA897115R7001	10.6	23.3

Heavy-duty starts, class 30, in-line Rated operational voltage U_e, 208...600 V, Rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
230 V	400 V	500 V	current	200/208 V	220/240 V	440/480 V	550/600 V	current				
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
3	5.5	7.5	12	3	3	7.5	10	11	PSE18-600-70	1SFA897101R7000	2.5	5.5
4	7.5	11	18	5	5	10	15	18	PSE25-600-70	1SFA897102R7000	2.5	5.5
5.5	11	15	25	7.5	7.5	15	20	25	PSE30-600-70	1SFA897103R7000	2.5	5.5
7.5	15	18.5	30	7.5	10	20	25	28	PSE37-600-70	1SFA897104R7000	2.5	5.5
9	18.5	22	37	10	10	25	30	34	PSE45-600-70	1SFA897105R7000	2.5	5.5
11	22	30	45	10	15	30	40	42	PSE60-600-70	1SFA897106R7000	2.5	5.5
15	30	37	60	20	20	40	50	60	PSE72-600-70	1SFA897107R7000	2.5	5.5
18.5	37	45	72	20	25	50	60	68	PSE85-600-70	1SFA897108R7000	2.6	5.7
22	45	55	85	25	30	60	75	80	PSE105-600-70	1SFA897109R7000	2.9	6.3
30	55	75	106	30	40	75	100	104	PSE142-600-70	1SFA897110R7000	4.4	9.7
40	75	90	143	40	50	100	125	130	PSE170-600-70	1SFA897111R7000	4.4	9.7
45	90	110	171	60	60	125	150	169	PSE210-600-70-1	1SFA897112R7001	8.5	18.7
59	110	132	210	60	75	150	200	192	PSE250-600-70-1	1SFA897113R7001	10.6	23.3
75	132	160	250	75	100	200	250	248	PSE300-600-70-1	1SFA897114R7001	10.6	23.3
90	160	200	300	100	100	250	300	302	PSE370-600-70-1	1SFA897115R7001	10.6	23.3

PSE
Accessories

Cable connectors for CU cables

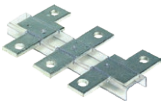
Cable connectors for Cu cables

Article	Wire range mm²	Tightening torque max Nm	Type	Order code	Pkg qty	Net kg	lb
PSE142 ... PSE170	6...120	14	KIT FC Cu XT4 3pcs	1SDA066917R1	3	0.18	0.40
PSE142 ... PSE170	2 x (50...120)	16	LZ185-2C/120	1SFN074709R1000	3	0.10	0.22
PSE210 ... PSE370	16...300	25	T5 400 3pcs	1SDA055016R1	3	0.39	0.45

Cable connectors for CU & AL cables

Cable connectors for Al and Cu cables

Article	Wire range mm²	Tightening torque max Nm	Type	Order code	Pkg qty	Net kg	lb
PSE142 ... PSE170	95...185	31	KIT FC CuAl T4 3pcs	1SDA054988R1	3	0.14	0.31
PSE210 ... PSE370	185...240	43	KIT FC CuAl T5 400 3pcs	1SDA055020R1	3	0.24	0.54



Terminal enlargements

Terminal enlargements

Article	Dimensions hole ø mm²	Bar mm²	Type	Order code	Pkg qty	Net kg	lb
PSE18 ... PSE105	6.5	15 x 3	LW110	1SFN074307R1000	1	0.07	0.14
PSE142 ... PSE170	10.5	17.5 x 5	LW185	1SFN074707R1000	1	0.29	0.64
PSE210 ... PSE370	10.5	20 x 5	LW300	1SFN075107R1000	1	0.49	1.08

Terminal kit

Terminal kit

Article	Type	Order code	Pkg qty	Net kg	lb
PSE142...PSE170	PSLE-185	1SFA899221R1002	1	0.34	0.75
PSE210...370	PSLE-300	1SFA899221R1003	1	0.30	0.66

Terminal extension

Terminal extension

Article	Type	Order code	Pkg qty	Net kg	lb
PSE142 ... PSE170 8.5 17.5 x 5	LX205	1SFN074810R1000	1	0.25	0.55
PSE210 ... PSE370 10.5 20 x 5	LX370	1SFN075410R1000	1	0.35	0.77

PSE
Accessories

Terminal shrouds

Terminal shrouds

Article	Type	Order code	Pkg qty	Net kg	lb
PSE18... PSE105, Screw terminals	LT140-30L	1SFN124203R1000	2	0.07	0.15
PSE142... PSE170, short for use with cable clamps	LT185-AC	1SFN124701R1000	2	0.05	0.11
PSE142... PSE170,long for use with compression lugs	LT185-AL	1SFN124703R1000	2	0.22	0.49
PSE210... PSE370, short for use with cable clamps	LT300-AC	1SFN125101R1000	2	0.09	0.19
PSE210... PSE370, long for use with compression lugs	LT300-AL	1SFN125103R1000	2	0.28	0.62

External keypad

External keypad including a 3m cable

Article	Type	Order code	Pkg qty	Net kg	lb
PSE18 ... PSE370	PSEEK	1SFA897100R1001	1	0.13	0.29

USB cable

USB cable for Service Engineer Tool

Article	Type	Order code	Pkg qty	Net kg	lb
PSE18 ... PSE370	PSECA	1SFA897201R1001	1	0.10	0.22

Fieldbus plug adaptor

Fieldbus plug connection, cable included

Article	Type	Order code	Pkg qty	Net kg	lb
Fieldbus plug adaptor	PS-FBPA	1SFA896312R1002	1	0.15	0.33

Terminal extensions retrofit kit

Terminal extensions retrofit kit

Article	Type	Order code	Pkg qty	Net kg	lb
Terminal extensions retrofit kit	LXR370	1SFA899222R1003	1	0.45	0.99

Modbus adapter

Modbus adapter

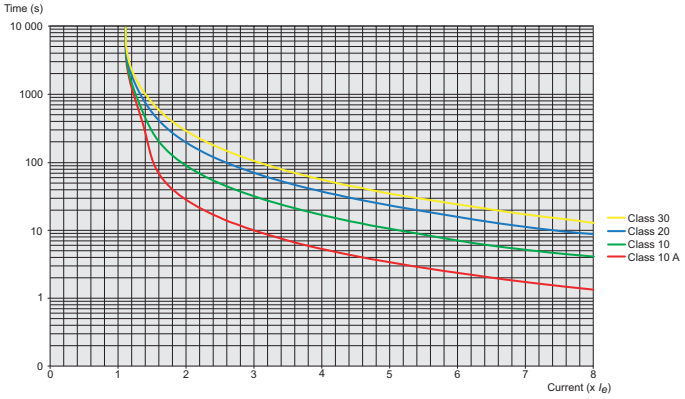
Article	Type	Order code	Pkg qty	Net kg	lb
Modbus adapter	PS-MBIA	1SFA899300R1020	1	0.01	0.02

PSE
Technical data

Technical data	PSE18 ... PSE370
Rated insulation voltage U_i	600 V
Rated operational voltage U_e	208...600 V +10%/-15%
Rated control supply voltage U_s	100...250 V +10%/-15%, 50/60 Hz ±10%
Rated control circuit voltage U_c	Internal 24 V DC
Starting capacity at I_e	4 x I_e for 10 sec.
Number of starts per hour	10[1]
Maximum Altitude	4000 m (13123 ft)[3]
Overload capability	
Overload class	10
Ambient temperature	
During operation	-25...+60 °C (-13...+140 °F)[2]
During storage	-40...+70 °C (-40...+158 °F)
Degree of protection	
Main circuit	IP00
Supply and control circuit	IP20
Main circuit	
Built-in bypass	Yes
Cooling system	fan cooled (thermostat controlled)
HMI for settings	
Display	4 7-segments and icons. Illuminated
Keypad	2 selection keys and 2 navigation keys
Main settings	
Setting current	Size dependent
Ramp time during start	1...30 sec
Ramp time during stop	0...30 sec
Initial/end voltage	30...70%
Current limit	1.5...7 x I_e
Torque control for start	Yes / No
Torque control for stop	Yes / No
Kick start	Off, 30...100%
Signal relays	
Number of signal relays	3
K2	Run signal
K3	TOR (bypass) signal
K1	Event signal
Rated operational voltage U_e	100-250 V AC/24 V DC[4]
Rated thermal current I_{th}	3 A
Rated operational current I_e at AC-15 (U_e = 250 V)	1.5 A
Vibration test	
According to IEC 60068-2-6:2007	

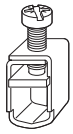
Technical data	PSE18 ... PSE370
Analog output	
Output signal reference	4...20 mA
Type of output signal	I Amp
Scaling	Fixed at 1.2 x I_e
Control circuit	
Number of inputs	3 (start, stop, reset of faults)
Signal indication LED	
On / Ready	Green flashing / steady
Run / TOR	Green flashing / steady
Protection	Yellow
Fault	Red
Protections	
Electronic overload	Yes (Class 10A, 10, 20, 30)
Locked rotor protection	Yes
Underload protection	Yes
Fieldbus connection	
ABB Fieldbus plug	Yes (option)
NEW Built-in modbus	Yes
External keypad	
Display	LCD type
Ambient temperature	
During operation	-25...+60 °C (-13...+140 °F)
During storage	-40...+70 °C (-40...+158 °F)
Degree of protection	IP66

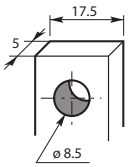
[1] Valid for 50% on time and 50% off time. If other data is required, contact your local ABB office.
[2] Above 40 °C (104 °F) up to max. 60 °C (140 °F) reduce the rated current with 0.6% per °C (0.33% per °F).
[3] When used at high altitudes, above 1000 meters (3281 ft) up to 4000 meters (13123 ft), de-rate the rated current using the following formula.
$[\% \text{ of } I_e = 100 - \frac{x - 1000}{150}]$ x = actual altitude of the softstarter in meters.
[4] A common voltage needs to be used for all 3 signal relays.

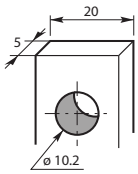


Tripping curves for the integrated electronic overload protection
PSE has an integrated electronic overload protection that can be set to four different tripping classes. Above you find a curve for each tripping class in cold state.

PSE
Technical data







Main terminals

Article	PSE18... 105	PSE142... 170	PSE210... 370
Cu cable - Flexible 1 x mm²	2.5...70 mm²	6...120 mm²	16...300 mm²
Clamp type	Included	1SDA066917R1	1SDA055016R1
Tightening torque	8 Nm	14 Nm	25 Nm
Cu cable - Flexible 2 x mm²	2.5...70 mm²	50...120 mm²	-
Clamp type	Included	1SFN074709R1000	-
Tightening torque	8 Nm	16 Nm	-
Cu cable - Stranded 1 x mm²	2.5...70 mm²	6...120 mm²	16...300 mm²
Clamp type	Included	1SDA066917R1	1SDA055016R1
Tightening torque	8 Nm	14 Nm	25 Nm
Cu cable - Stranded 2 x mm²	2.5...70 mm²	50...120 mm²	-
Clamp type	Included	1SFN074709R1000	-
Tightening torque	8 Nm	16 Nm	-
Al cable - Stranded 1 x mm²	-	95...185 mm²	185...240
Clamp type	-	1SDA054988R1	1SDA055020R1
Tightening torque	-	31 Nm	43 Nm
Lugs			
Width	22 mm (0.866 in)	24 mm (0.945 in)	30 mm (1.181 in)
Diameter>=	6.5 mm (0.256 in)	8.5 mm (0.335 in)	10.2 mm (0.402 in)
Tightening torque	9 Nm (80 in lb)	18 Nm (159 in lb)	28 Nm (248 in lb)
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	71 in lb	300 in lb	375 in lb
Connection capacity acc to UL/CSA 2 x AWG/kcmil	-	-	4...500 kcmil
Clamp type	-	-	ATK300/2
Tightening torque	-	-	375 in lb
Supply and control circuit			
Cu cable - Stranded 1 x mm²			0.75...2.5 mm² (19...14 AWG)
Cu cable - Stranded 2 x mm²			0.75...1.5 mm² (19...16 AWG)
Tightening torque			0.5 Nm (4.4 in lb)

Fuse ratings and power losses

Softstarter	Current range A	Max power loss at rated I_e W	Max fuse rating - main circuit[1] Bussmann fuses, DIN43 620 (Knife) A	Type	Size	Power requirements supply circuit Holding (VA) / Pull-in (VA)
PSE18	5.4...18.0	0.2	40	170M1563	000	16/19.9
PSE25	7.5...25.0	0.4	50	170M1564	000	16/19.9
PSE30	9.0...30.0	0.5	80	170M1566	000	16/19.9
PSE37	11.1...37.0	0.8	100	170M1567	000	16/19.9
PSE45	13.5...45.0	1.2	125	170M1568	000	16/19.9
PSE60	18.0...60.0	2.2	160	170M1569	000	16/19.9
PSE72	21.6...72.0	3.1	250	170M1571	000	16/19.9
PSE85	25.5...85.0	4.3	315	170M1572	000	16/19.9
PSE105	31.8...106.0	6.6	400	170M3819	1	16/19.9
PSE142	42.9...143.0	12.1	450	170M5809	2	16/31
PSE170	51.3...171.0	17.6	500	170M5810	2	16/31
PSE210	63.0...210.0	8.8	630	170M5812	2	21/244
PSE250	75.0...250.0	12.5	700	170M5813	2	21/244
PSE300	90.6...302.0	18.0	800	170M6812	3	21/244
PSE370	111.0...370.0	27.4	900	170M6813	3	21/244

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

PSTX

Introduction

Technical specifications

- Rated operational current: 30... 1250 A (inside-delta: 2160 A)
- Operational voltage: 208... 690 V AC
- Wide rated control supply voltage: 100... 250 V, 50/60 Hz

Features

- Both in-line and inside-delta connection
- Detachable keypad rated IP66 (4X outdoor)
- Graphical display with 17 languages for easy setup and operation
- Built-in bypass for energy saving and easy installation
- Analog output for measurement of current, voltage, power factor, etc.

Protections

- Complete motor protection

Communication

- Built-in Modbus RTU
- Support for all major communication protocols

Heavy duty design to handle heavy applications such as centrifugal fan, mill and mixers.

Jog with slow speed forward & reverse The slow speed forward and backward jog feature will make you more flexible when operating e.g. conveyor belts and cranes.

Torque control function the absolutely best possible stop of pumps without water hammering and pressure surges.

HMI 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 with IP66 and 4X outdoor for tough environments.

Coated PCB protecting from dust, moist and corrosive atmosphere.

PSTX

Coordination examples

PSTX30... PSTX105

PSTX142... PSTX170

Normal start in-line connected

Softstarter	PSTX30	PSTX37	PSTX45	PSTX60	PSTX72	PSTX85	PSTX105	PSTX142	PSTX170
IEC kW (400V)	15	18.5	22	30	37	45	55	75	90
IEC max A	30	37	45	60	72	85	106	143	171
UL HP (440-480 V)	20	25	30	40	50	60	75	100	125
UL max FLA	28	34	42	60	68	80	104	130	169
Using manual motor starter or MCCB, type 1 coordination will be achieved.[1]	**MCCB (50 kA) 400 V, 40 °C**								
	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT2S160	XT4S250
Using gG fuses, type 1 coordination will be achieved. To achieve type 2 coordination, semiconductor fuses must be used.[1]	**Fuse protection (80 kA), Semiconductor fuses, Bussmann**								
	170M1567	170M1568	170M1569	170M1569	170M1571	170M1572	170M3819	170M5810	170M5812
Suitable switch fuse for the recommended semiconductor fuses.[1]	**Switch fuse**								
	OS32G	OS63G	OS63G	OS63G	OS125G	OS125G	OS250	OS400	OS400
The line contactor is not required for the softstarter itself but often used to open if OL trips[1]	**Line contactor[2]**								
	AF30	AF38	AF52	AF65	AF80	AF96	AF116	AF146	AF190

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx
[2] When using a softstarter in a network with high harmonic disturbances, we recommend to use a line-contactor. Please check the information in the Installation manual for more details.

Coordination tables (SOC) >

For more examples of coordination visit the online tool for coordination with short circuit protection, overload protection and line contactor.

PSTX

Coordination examples

PSTX210... PSTX370

PSTX470... PSTX570

PSTX720... PSTX840

PSTX1050... PSTX1250

Normal start In-line connected

Softstarter	PSTX210	PSTX250	PSTX300	PSTX370	PSTX470	PSTX570	PSTX720	PSTX840	PSTX1050	PSTX1250
IEC kW (400V)	110	132	160	200	250	315	400	450	560	710
IEC max A	210	250	300	370	470	570	720	840	1050	1250
UL HP (440-480 V)	150	200	250	300	400	500	600	700	900	1000
UL max FLA	192	248	302	361	480	590	720	840	1062	1250
Using manual motor starter or MCCB, type 1 coordination will be achieved.[1]	**MCCB (50 kA) 400 V, 40 °C**									
	T4S320	T5S400	T5S400	T5S630	T7S800	T7S800	T7S1250	T7S1250	E2.2N 2000	
Using gG fuses, type 1 coordination will be achieved. To achieve type 2 coordination, semiconductor fuses must be used.[1]	**Fuse protection (80 kA), Semiconductor fuses, Bussmann**									
	170M5812	170M5813	170M6812	170M6813	170M6813	170M6814	170M8554	170M6018	170M6020	170M6021
Suitable switch fuse for the recommended semiconductor fuses.[1]	**Switch fuse**									
	OS400	OS400	OS630	OS630	OS630	OS630	OS800	-	-	-
The line contactor is not required for the softstarter itself but often used to open if OL trips.[1]	**Line contactor[2]**									
	AF265	AF265	AF305	AF370	AF580	AF580	AF750	AF1350	AF1650	-

[1] These are an example of coordination. For more examples see: https://applications.it.abb.com/SOC/Page/Selection.aspx
[2] When using a softstarter in a network with high harmonic disturbances, we recommend to use a line-contactor. Please check the information in the Installation manual for more details.

PSTX

Normal starts, class 10, in-line

Ordering details

PSTX30... PSTX105

PSTX142... PSTX170

PSTX210... PSTX370

PSTX470... PSTX570

PSTX720... PSTX840

PSTX1050... PSTX1250

Rated operational voltage U_e, 208...600 V , rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
15	18.5	-	30	7.5	10	20	25	28	PSTX30-600-70	1SFA898103R7000	4.6	10.1
18.5	22	-	37	10	10	25	30	34	PSTX37-600-70	1SFA898104R7000	4.6	10.1
22	25	-	45	10	15	30	40	42	PSTX45-600-70	1SFA898105R7000	4.6	10.1
30	37	-	60	20	20	40	50	60	PSTX60-600-70	1SFA898106R7000	4.6	10.1
37	45	-	72	20	25	50	60	68	PSTX72-600-70	1SFA898107R7000	4.6	10.1
45	55	-	85	25	30	60	75	80	PSTX85-600-70	1SFA898108R7000	4.6	10.1
55	75	-	106	30	40	75	100	104	PSTX105-600-70	1SFA898109R7000	4.6	10.1
75	90	-	143	40	50	100	125	130	PSTX142-600-70	1SFA898110R7000	4.6	10.1
90	110	-	171	50	60	125	150	169	PSTX170-600-70	1SFA898111R7000	4.7	10.3
110	132	-	210	60	75	150	200	192	PSTX210-600-70	1SFA898112R7000	4.7	10.3
132	160	-	250	75	100	200	250	248	PSTX250-600-70	1SFA898113R7000	4.7	10.3
160	200	-	300	100	100	250	300	302	PSTX300-600-70	1SFA898114R7000	4.7	10.3
200	257	-	370	125	150	300	350	361	PSTX370-600-70	1SFA898115R7000	4.7	10.3
250	315	-	470	150	200	400	500	480	PSTX470-600-70	1SFA898116R7000	4.7	10.3
315	400	-	570	200	200	500	600	590	PSTX570-600-70	1SFA898117R7000	7.0	15.4
400	500	-	720	250	300	600	700	720	PSTX720-600-70	1SFA898118R7000	7.0	15.4
450	600	-	840	300	350	700	800	840	PSTX840-600-70	1SFA898119R7000	8.9	19.6
560	730	-	1050	400	450	900	1000	1062	PSTX1050-600-70	1SFA898120R7000	8.9	19.6
710	880	-	1250	400	500	1000	1200	1250	PSTX1250-600-70	1SFA898121R7000	13.3	29.3

Rated operational voltage U_e, 208...690 V , rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
15	18.5	25	30	7.5	10	20	25	28	PSTX30-690-70	1SFA898203R7000	4.6	10.1
18.5	22	30	37	10	10	25	30	34	PSTX37-690-70	1SFA898204R7000	4.6	10.1
22	25	37	45	10	15	30	40	42	PSTX45-690-70	1SFA898205R7000	4.6	10.1
30	37	55	60	20	20	40	50	60	PSTX60-690-70	1SFA898206R7000	4.6	10.1
37	45	59	72	20	25	50	60	68	PSTX72-690-70	1SFA898207R7000	4.6	10.1
45	55	75	85	25	30	60	75	80	PSTX85-690-70	1SFA898208R7000	4.6	10.1
55	75	90	106	30	40	75	100	104	PSTX105-690-70	1SFA898209R7000	4.6	10.1
75	90	132	143	40	50	100	125	130	PSTX142-690-70	1SFA898210R7000	4.6	10.1
90	110	160	171	50	60	125	150	169	PSTX170-690-70	1SFA898211R7000	4.7	10.3
110	132	184	210	60	75	150	200	192	PSTX210-690-70	1SFA898212R7000	4.7	10.3
132	160	220	250	75	100	200	250	248	PSTX250-690-70	1SFA898213R7000	4.7	10.3
160	200	257	300	100	100	250	300	302	PSTX300-690-70	1SFA898214R7000	4.7	10.3
200	257	355	370	125	150	300	350	361	PSTX370-690-70	1SFA898215R7000	4.7	10.3
250	315	450	470	150	200	400	500	480	PSTX470-690-70	1SFA898216R7000	4.7	10.3
315	400	560	570	200	200	500	600	590	PSTX570-690-70	1SFA898217R7000	7.0	15.4
400	500	710	720	250	300	600	700	720	PSTX720-690-70	1SFA898218R7000	7.0	15.4
450	600	800	840	300	350	700	800	840	PSTX840-690-70	1SFA898219R7000	8.9	19.6
560	730	1000	1050	400	450	900	1000	1062	PSTX1050-690-70	1SFA898220R7000	8.9	19.6
710	880	1200	1250	400	500	1000	1200	1250	PSTX1250-690-70	1SFA898221R7000	13.3	29.3

PSTX

Heavy-duty starts, class 30, in-line

Ordering details

PSTX30... PSTX105

PSTX142... PSTX170

PSTX210... PSTX370

PSTX470... PSTX570

PSTX720... PSTX840

PSTX1050... PSTX1250

Rated operational voltage U_e, 208...600 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
11	15	-	22	5	7.5	15	20	25	PSTX30-600-70	1SFA898103R7000	4.6	10.1
15	18.5	-	30	7.5	10	20	25	28	PSTX37-600-70	1SFA898104R7000	4.6	10.1
18.5	22	-	37	10	10	25	30	34	PSTX45-600-70	1SFA898105R7000	4.6	10.1
22	25	-	45	10	15	30	40	42	PSTX60-600-70	1SFA898106R7000	4.6	10.1
30	37	-	60	20	20	40	50	60	PSTX72-600-70	1SFA898107R7000	4.6	10.1
37	45	-	72	20	25	50	60	68	PSTX85-600-70	1SFA898108R7000	4.6	10.1
45	55	-	85	25	30	60	75	80	PSTX105-600-70	1SFA898109R7000	4.6	10.1
55	75	-	106	30	40	75	100	104	PSTX142-600-70	1SFA898110R7000	4.6	10.1
75	90	-	143	40	50	100	125	130	PSTX170-600-70	1SFA898111R7000	4.7	10.3
90	110	-	171	50	60	125	150	169	PSTX210-600-70	1SFA898112R7000	4.7	10.3
110	132	-	210	60	75	150	200	192	PSTX250-600-70	1SFA898113R7000	4.7	10.3
132	160	-	250	75	100	200	250	248	PSTX300-600-70	1SFA898114R7000	4.7	10.3
160	200	-	300	100	100	250	300	302	PSTX370-600-70	1SFA898115R7000	4.7	10.3
200	257	-	370	125	150	300	350	361	PSTX470-600-70	1SFA898116R7000	4.7	10.3
250	315	-	470	150	200	400	500	480	PSTX570-600-70	1SFA898117R7000	7.0	15.4
315	400	-	570	200	200	500	600	590	PSTX720-600-70	1SFA898118R7000	7.0	15.4
400	500	-	720	250	300	600	700	720	PSTX840-600-70	1SFA898119R7000	8.9	19.6
450	600	-	840	300	350	700	800	840	PSTX1050-600-70	1SFA898120R7000	8.9	19.6
560	730	-	1050	400	450	900	1000	1062	PSTX1250-600-70	1SFA898121R7000	13.3	29.3

Rated operational voltage U_e, 208...690 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
11	15	18.5	22	5	7.5	15	20	25	PSTX30-690-70	1SFA898203R7000	4.6	10.1
15	18.5	25	30	7.5	10	20	25	28	PSTX37-690-70	1SFA898204R7000	4.6	10.1
18.5	22	30	37	10	10	25	30	34	PSTX45-690-70	1SFA898205R7000	4.6	10.1
22	25	37	44	10	15	30	40	42	PSTX60-690-70	1SFA898206R7000	4.6	10.1
30	37	55	60	20	20	40	50	60	PSTX72-690-70	1SFA898207R7000	4.6	10.1
37	45	59	72	20	25	50	60	68	PSTX85-690-70	1SFA898208R7000	4.6	10.1
45	55	75	85	25	30	60	75	80	PSTX105-690-70	1SFA898209R7000	4.6	10.1
55	75	90	106	30	40	75	100	104	PSTX142-690-70	1SFA898210R7000	4.6	10.1
75	90	132	143	40	50	100	125	130	PSTX170-690-70	1SFA898211R7000	4.7	10.3
90	110	160	171	50	60	125	150	169	PSTX210-690-70	1SFA898212R7000	4.7	10.3
110	132	184	210	60	75	150	200	192	PSTX250-690-70	1SFA898213R7000	4.7	10.3
132	160	220	250	75	100	200	250	248	PSTX300-690-70	1SFA898214R7000	4.7	10.3
160	200	257	300	100	100	250	300	302	PSTX370-690-70	1SFA898215R7000	4.7	10.3
200	257	355	370	125	150	300	350	361	PSTX470-690-70	1SFA898216R7000	4.7	10.3
250	315	450	470	150	200	400	500	480	PSTX570-690-70	1SFA898217R7000	7.0	15.4
315	400	560	570	200	200	500	600	590	PSTX720-690-70	1SFA898218R7000	7.0	15.4
400	500	710	720	250	300	600	700	720	PSTX840-690-70	1SFA898219R7000	8.9	19.6
450	600	800	840	300	350	700	800	840	PSTX1050-690-70	1SFA898220R7000	8.9	19.6
560	730	1000	1050	400	450	900	1000	1062	PSTX1250-690-70	1SFA898221R7000	13.3	29.3

PSTX

Normal starts, class 10, inside delta

Ordering details

PSTX30... PSTX105

PSTX142... PSTX170

PSTX210... PSTX370

PSTX470... PSTX570

PSTX720... PSTX840

PSTX1050... PSTX1250

Rated operational voltage U_e, 208...600 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
25	30	-	52	10	15	30	40	48	PSTX30-600-70	1SFA898103R7000	4.6	10.1
30	37	-	64	15	20	40	50	58	PSTX37-600-70	1SFA898104R7000	4.6	10.1
37	45	-	76	20	25	50	60	72	PSTX45-600-70	1SFA898105R7000	4.6	10.1
55	75	-	105	30	40	75	100	103	PSTX60-600-70	1SFA898106R7000	4.6	10.1
59	80	-	124	30	40	75	100	117	PSTX72-600-70	1SFA898107R7000	4.6	10.1
75	90	-	147	40	50	100	125	138	PSTX85-600-70	1SFA898108R7000	4.6	10.1
90	110	-	181	60	60	150	150	180	PSTX105-600-70	1SFA898109R7000	4.6	10.1
132	160	-	245	75	75	150	200	225	PSTX142-600-70	1SFA898110R7000	4.6	10.1
160	200	-	300	75	100	200	250	292	PSTX170-600-70	1SFA898111R7000	4.7	10.3
184	250	-	360	100	125	250	300	332	PSTX210-600-70	1SFA898112R7000	4.7	10.3
220	295	-	430	150	150	350	450	429	PSTX250-600-70	1SFA898113R7000	4.7	10.3
257	355	-	515	150	200	450	500	523	PSTX300-600-70	1SFA898114R7000	4.7	10.3
355	450	-	640	200	250	500	600	625	PSTX370-600-70	1SFA898115R7000	4.7	10.3
450	600	-	814	250	300	600	700	830	PSTX470-600-70	1SFA898116R7000	4.7	10.3
540	700	-	987	300	350	700	800	1020	PSTX570-600-70	1SFA898117R7000	7.0	15.4
710	880	-	1247	400	500	1000	1200	1240	PSTX720-600-70	1SFA898118R7000	7.0	15.4
800	1000	-	1455	500	600	1200	1500	1450	PSTX840-600-70	1SFA898119R7000	8.9	19.6
1000	1250	-	1810	600	700	1500	1800	1830	PSTX1050-600-70	1SFA898120R7000	8.9	19.6
1200	1500	-	2160	800	900	1800	2000	2160	PSTX1250-600-70	1SFA898121R1000	13.3	29.3

Rated operational voltage U_e, 208...690 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
25	30	45	52	10	15	30	40	48	PSTX30-690-70	1SFA898203R7000	4.6	10.1
30	37	55	64	15	20	40	50	58	PSTX37-690-70	1SFA898204R7000	4.6	10.1
37	45	59	76	20	25	50	60	72	PSTX45-690-70	1SFA898205R7000	4.6	10.1
55	75	90	105	30	40	75	100	103	PSTX60-690-70	1SFA898206R7000	4.6	10.1
59	80	110	124	30	40	75	100	117	PSTX72-690-70	1SFA898207R7000	4.6	10.1
75	90	132	147	40	50	100	125	138	PSTX85-690-70	1SFA898208R7000	4.6	10.1
90	110	160	181	60	60	150	150	180	PSTX105-690-70	1SFA898209R7000	4.6	10.1
132	160	220	245	75	75	150	200	225	PSTX142-690-70	1SFA898210R7000	4.6	10.1
160	200	257	300	75	100	200	250	292	PSTX170-690-70	1SFA898211R7000	4.7	10.3
184	250	315	360	100	125	250	300	332	PSTX210-690-70	1SFA898212R7000	4.7	10.3
220	295	400	430	150	150	350	450	429	PSTX250-690-70	1SFA898213R7000	4.7	10.3
257	355	500	515	150	200	450	500	523	PSTX300-690-70	1SFA898214R7000	4.7	10.3
355	450	600	640	200	250	500	600	625	PSTX370-690-70	1SFA898215R7000	4.7	10.3
450	600	800	814	250	300	600	700	830	PSTX470-690-70	1SFA898216R7000	4.7	10.3
540	700	960	987	300	350	700	800	1020	PSTX570-690-70	1SFA898217R7000	7.0	15.4
710	880	1200	1247	400	500	1000	1200	1240	PSTX720-690-70	1SFA898218R7000	7.0	15.4
800	1000	1400	1455	500	600	1200	1500	1450	PSTX840-690-70	1SFA898219R7000	8.9	19.6
1000	1250	1700	1810	600	700	1500	1800	1830	PSTX1050-690-70	1SFA898220R7000	8.9	19.6
1200	1500	2000	2160	800	900	1800	2000	2160	PSTX1250-690-70	1SFA898221R7000	13.3	29.3

PSTX

Heavy-duty starts, class 30, inside delta

Ordering details

PSTX30... PSTX105

PSTX142... PSTX170

PSTX210... PSTX370

PSTX470... PSTX570

PSTX720... PSTX840

PSTX1050... PSTX1250

Rated operational voltage U_e, 208...600 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
18.5	25	-	42	7.5	10	25	30	34	PSTX30-600-70	1SFA898103R7000	4.6	10.1
25	30	-	52	10	15	30	40	48	PSTX37-600-70	1SFA898104R7000	4.6	10.1
30	37	-	64	15	20	40	50	58	PSTX45-600-70	1SFA898105R7000	4.6	10.1
37	45	-	76	20	25	50	60	72	PSTX60-600-70	1SFA898106R7000	4.6	10.1
55	75	-	105	30	40	75	100	103	PSTX72-600-70	1SFA898107R7000	4.6	10.1
59	80	-	124	30	40	75	100	117	PSTX85-600-70	1SFA898108R7000	4.6	10.1
75	90	-	147	40	50	100	125	138	PSTX105-600-70	1SFA898109R7000	4.6	10.1
90	110	-	181	60	60	150	150	180	PSTX142-600-70	1SFA898110R7000	4.6	10.1
132	160	-	245	75	75	150	200	225	PSTX170-600-70	1SFA898111R7000	4.7	10.3
160	200	-	300	75	100	200	250	292	PSTX210-600-70	1SFA898112R7000	4.7	10.3
184	250	-	360	100	125	250	300	332	PSTX250-600-70	1SFA898113R7000	4.7	10.3
220	295	-	430	150	150	350	450	429	PSTX300-600-70	1SFA898114R7000	4.7	10.3
257	355	-	515	150	200	450	500	523	PSTX370-600-70	1SFA898115R7000	4.7	10.3
355	450	-	640	200	250	500	600	625	PSTX470-600-70	1SFA898116R7000	4.7	10.3
450	600	-	814	250	300	600	700	830	PSTX570-600-70	1SFA898117R7000	7.0	15.4
540	700	-	987	300	350	700	800	1020	PSTX720-600-70	1SFA898118R7000	7.0	15.4
710	880	-	1247	400	500	1000	1200	1240	PSTX840-600-70	1SFA898119R7000	8.9	19.6
800	1000	-	1455	500	600	1200	1500	1450	PSTX1050-600-70	1SFA898120R7000	8.9	19.6
1000	1250	-	1810	600	700	1500	1800	1830	PSTX1250-600-70	1SFA898121R7000	13.3	29.3

Rated operational voltage U_e, 208...690 V, rated control supply voltage U_s, 100...250 V AC, 50/60 Hz

IEC Rated operational power				UL/CSA Rated operational power								
400V	500V	690V	current	200/208V	220/240V	440/480V	550/600V	current			pkg/1 pce	
P_e	P_e	P_e	I_e	P_e	P_e	P_e	P_e	FLA			Net weight	
kW	kW	kW	A	hp	hp	hp	hp	A	Type	Order code	kg	lb
18.5	25	37	42	7.5	10	25	30	34	PSTX30-690-70	1SFA898203R7000	4.6	10.1
25	30	45	52	10	15	30	40	48	PSTX37-690-70	1SFA898204R7000	4.6	10.1
30	37	55	64	15	20	40	50	58	PSTX45-690-70	1SFA898205R7000	4.6	10.1
37	45	59	76	20	25	50	60	72	PSTX60-690-70	1SFA898206R7000	4.6	10.1
55	75	90	105	30	40	75	100	103	PSTX72-690-70	1SFA898207R7000	4.6	10.1
59	80	110	124	30	40	75	100	117	PSTX85-690-70	1SFA898208R7000	4.6	10.1
75	90	132	147	40	50	100	125	138	PSTX105-690-70	1SFA898209R7000	4.6	10.1
90	110	160	181	60	60	150	150	180	PSTX142-690-70	1SFA898210R7000	4.6	10.1
132	160	220	245	75	75	150	200	225	PSTX170-690-70	1SFA898211R7000	4.7	10.3
160	200	257	300	75	100	200	250	292	PSTX210-690-70	1SFA898212R7000	4.7	10.3
184	250	315	360	100	125	250	300	332	PSTX250-690-70	1SFA898213R7000	4.7	10.3
220	295	400	430	150	150	350	450	429	PSTX300-690-70	1SFA898214R7000	4.7	10.3
257	355	500	515	150	200	450	500	523	PSTX370-690-70	1SFA898215R7000	4.7	10.3
355	450	600	640	200	250	500	600	625	PSTX470-690-70	1SFA898216R7000	4.7	10.3
450	600	800	814	250	300	600	700	830	PSTX570-690-70	1SFA898217R7000	7.0	15.4
540	700	960	987	300	350	700	800	1020	PSTX720-690-70	1SFA898218R7000	7.0	15.4
710	880	1200	1247	400	500	1000	1200	1240	PSTX840-690-70	1SFA898219R7000	8.9	19.6
800	1000	1400	1455	500	600	1200	1500	1450	PSTX1050-690-70	1SFA898220R7000	8.9	19.6
1000	1250	1700	1810	600	700	1500	1800	1830	PSTX1250-690-70	1SFA898221R7000	13.3	29.3

PSTX
Accessories

Cable connectors for CU cables

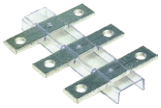
Cable connectors for Cu cables

Article	Wire range mm²	Tightening torque max Nm	Type	Order code	Pkg qty	Net kg	lb
PSTX142 ... PSTX170	6-120	8	KIT FC Cu XT4 3pcs	1SDA066917R1	3	0.18	0.40
PSTX142 ... PSTX170	2 x (50-95)	16	LZ185-2C/120	1SFN074709R1000	3	0.30	0.66
PSTX210 ... PSTX370	16-240	25	T5 400 3pcs	1SDA055016R1	3	0.36	0.79
PSTX210 ... PSTX370	2 x (95-185)	22	OZXB4/1	1SCA022194R0890	1	0.19	0.42
PSTX470 ... PSTX570	2 x (120-240)	35	T6 630-S6 6pcs	1SDA013922R1	6	0.57	1.26
PSTX570 ... PSTX1050	3 x (70-185)	45	T6 800-S6 6pcs	1SDA013956R1	6	2.12	4.68

Cable connectors for AL cables

Cable connectors for Al cables

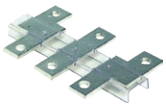
Article	Wire range mm²	Tightening torque max Nm	Type	Order code	Pkg qty	Net kg	lb
PSTX142 ... PSTX170	95-185	31	KIT FC CuAl T4 3pcs	1SDA054988R1	3	0.14	0.31
PSTX210 ... PSTX370	185-240	43	KIT FC CuAl T5 400 3pcs	1SDA055020R1	3	0.24	0.54
PSTX470 ... PSTX1050	2 x (120-240)	31	KIT FC CuAl T6 630-S6 3pcs	1SDA023380R1	3	0.11	0.24



Terminal extensions

Terminal extensions

Article	Dimensions hole ø mm²	Bar mm	Type	Order code	Pkg qty	Net kg	lb
PSTX142 ... PSTX170	8.5	17.5 x 5	LX205	1SFN074810R1000	1	0.25	5.55
PSTX210 ... PSTX370	10.5	20 x 5	LX370	1SFN075410R1000	1	0.35	0.77
PSTX470 ... PSTX570	10.5	25 x 5	LX460	1SFN075710R1000	1	0.50	1.10
PSTX720 ... PSTX840	13	40 x 6	LX750	1SFN076110R1003	1	0.85	1.87



Terminal enlargements

Terminal enlargements

Article	Dimensions hole ø mm²	Bar mm	Type	Order code	Pkg qty	Net kg	lb
PSTX30 ... PSTX105	6.5	15 x 3	LW110	1SFN074307R1000	1	0.07	0.15
PSTX142 ... PSTX170	10.5	17.5 x 5	LW205	1SFN074807R1000	1	0.25	5.55
PSTX210 ... PSTX370	10.5	20 x 5	LW370	1SFN075407R1000	1	0.45	0.99
PSTX470 ... PSTX570	10.5	25 x 5	LW460	1SFN075707R1000	1	0.73	1.61
PSTX720 ... PSTX840	13	40 x 6	LW750	1SFN076107R1000	1	1.23	2.71

Terminal shrouds

Terminal shrouds

Article	Description	Type	Order code	Pkg qty	Net kg	lb
PSTX142 ... PSTX170	short for use with cable clamps	LT205-30C	1SFN124801R1000	2	0.05	0.11
PSTX142 ... PSTX170	long for use with compression lugs	LT205-30L	1SFN124803R1000	2	0.22	0.49
PSTX210 ... PSTX370	short for use with cable clamps	LT370-30C	1SFN125401R1000	2	0.04	0.08
PSTX210 ... PSTX370	long for use with compression lugs	LT370-30L	1SFN125403R1000	2	0.28	0.62
PSTX210 ... PSTX370	long and deep for use with extending cable clamps, ATK300/2 and OZXB4	LT370-30D	1SFN125406R1000	2	0.15	0.33
PSTX470 ... PSTX570	short for use with cable clamps	LT460-AC	1SFN125701R1000	2	0.10	0.22
PSTX470 ... PSTX570	long for use with compression lugs	LT460-AL	1SFN125703R1000	2	0.80	1.76
PSTX720 ... PSTX1250	short for use with cable clamps	LT750-AC	1SFN126101R1000	2	0.12	0.27
PSTX720 ... PSTX1250	long for use with compression lugs	LT750-AL	1SFN126103R1000	2	0.83	1.82

PSTX
Accessories

USB cable

PSTX USB cable

Article	Type	Order code	Pkg qty	Net kg	lb
PSTX USB Cable	PSCA-1	1SFA899314R1001	1	0.05	0.12

Fieldbus plug adaptor

Fieldbus plug connection, cable included

Article	Type	Order code	Pkg qty	Net kg	lb
Fieldbus plug adaptor	PS-FBPA	1SFA896312R1002	1	0.05	0.11

I/O module

I/O module, 24 V DC digital input

Article	Type	Order code	Pkg qty	Net kg	lb
Extension module for I/O	DX111-FBP.0	1SAJ611000R0101	1	0.22	0.49
Extension module for I/O 24 VDC	DX122-FBP.0	1SAJ622000R0101	1	0.22	0.49

- Profibus DP-V1
- Modbus RTU

DeviceNet

BACnet MS/TP

- BACnet IP
- EthetCAT
- EtherNet/IP
- Modbus TCP
- Profinet IO

Anybus connection accessory for communication protocol suitable for PSTX30 ...PSTX1250

Article	Type	Order code	Pkg qty	Net kg	lb
Profibus	AB-PROFIBUS-1	1SFA899300R1001	1	0.03	0.07
DeviceNet	AB-DEVICENET-1	1SFA899300R1002	1	0.03	0.07
Modbus-RTU	AB-MODBUS-RTU-1	1SFA899300R1003	1	0.03	0.07
NEW BACnet IP	AB- BACNET-IP-2	1SFA899300R1004	1	0.03	0.07
EtherNet/IP (2-port)	AB-ETHERNET-IP-2	1SFA899300R1006	1	0.03	0.07
Modbus/TCP (2-port)	AB-MODBUS-TCP-2	1SFA899300R1008	1	0.03	0.07
Profinet (2-port)	AB-PROFINET-IO-2	1SFA899300R1010	1	0.03	0.07
NEW BACnet MS/TP	AB-BACNET-MSTP-1	1SFA899300R1011	1	0.03	0.07
NEW EtherCAT	AB-ETHERCAT-IP-2	1SFA899300R1012	1	0.03	0.07

PSTX

Technical data

Technical data	**PSTX30... 1250**
Rated insulation voltage U_i	690V
Rated operational voltage U_e	208...600 V, 208...690V +10% / -15%, 50/60Hz ±10%
Rated control supply voltage U_s	100...250 V +10%/-15%, 50/60Hz ±10%
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
Maximum altitude	4000 m (13123 ft)[3]
Ambient temperature	
During operation	-25...+60 °C, (-13...+140 °F)[2]
During storage	-40...+70 °C, (-40...+158 °F)
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	Arabic, Chinese, Czech, Dutch, English, Finnish, French, German, Greek, Indonesian, Italian, Polish, Portuguese, Russian, Spanish, Swedish and Turkish
Keypad	2 selection keys, 4 navigation keys, start key, stop key, info key and remote/local key
Signal relays	
Number of programmable signal relays	3 (each relay can be programmed to None, Run, Top of ramp, Event group 0-6, Sequence 1-3 Run, Sequence 1-3 Top of ramp or Run reverse)
K4	Default as Run signal
K5	Default as Top of Ramp (Bypass) signal
K6	Default as Event group 0 (Faults)
Rated operational voltage, U_e	250 V AC/24 V DC
Rated thermal current I_{th}	5 A
Rated operational current I_e at AC-15 (U_e=250 V)	1.5 A
Analog output	
Output signal reference	0...10 V, 0...10 mA, 0...20 mA, 4...20 mA
Type of output signal	Motor current (A), Main voltage (V), Active power (kW), Active power (HP), Reactive power (kVAr), Apparant power (kVArh), Active energy (kWh), Reactive energy (kVArh), cos phi, Motor temperature (%), Thyristor temperature (%), Motor voltage (%), Main frequency (Hz), PT100 temperature (centigrade), PTC resistance (Ohm)

Control circuit	
Number of inputs	2 (start, stop)
Number of additional programmable inputs	3 (each input can be programmed to: None, Reset, Enable, Slow speed forward (Jog), Slow speed reverse (Jog), Motor heating, Stand still brake, Start reverse, User defined protection, Emergency mode (active high), Emergency mode (active low), Fieldbus disable control, Start 1, Start 2, Start 3, Switch to remote control or Cancel brake)
Signalling indication LED	
Ready	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)
During storage	-40...+70 °C, (-40...+158 °F)
Degree of protection	IP66 (Type 1, 4X, 12)
Start and stop functions	
Soft start with voltage ramp	Linear voltage ramp, suitable for most applications
Soft stop with voltage ramp	Used to prolong the stop sequence
Soft start with torque control	Linear torque ramp, the best way to start pumps
Soft stop with torque control	Commonly used to reduce water hammering in pumps
Kick start	More power in the start for heavy duty applications.
Full voltage start	0.5 second start ramp for applications with need of high starting torque
Sequence start	Start multiple motors with one softstarter
Current limit	Limits the current below a specified value
Dual current limit	Consist of a low level, a high level and a time between them
Current limit ramp	A linear increase of the current from the low to the high level
Torque limit	Limit the torque to between 20-200%
Pre-start function	Use Motor heating, Stand still brake or Jog automatically prior to start ramp
Jog with slow speed, forward and reverse	Run the motor in three different speeds, both forward and reverse
Start reverse (external contactors)	Internal logic that allows control of external contactors for reverse start
Dynamic brake	Provides a braking force to decrease stop time

[1] Valid for normal start (class 10) for 50% on time and 50% off time. If other data is required, contact your local ABB office.
[2] Above 40 °C (104 °F) up to max. 60 °C (140 °F) reduce the rated current with 0.8% per °C (0.44% per °F).
[3] When used at high alitudes, above 1000 meters (3281 ft) up to 4000 meters (13123 ft), de-rate the rated current using the following formula.
[% of I_e = 100- $\frac{x-1000}{150}$] x = actual altitude of the softstarter in meter, [% of I_e = 100 - $\frac{x-3280}{497}$] x = actual altitude of the softstarter in feet. For de-rating of voltage, contact your local ABB office.

PSTX
Technical data

Fieldbus connection	
Built-in Modbus RTU	Yes, with RS485 interface on terminals 23 and 24
Connection for Anybus	Yes, including most common protocols, see catalog for details
Connection for ABB Fieldbus plug	Yes, compatible with a special adapter, see catalog for details
Protections	
Electronic overload protection, EOL	User defined, class 10A, 10, 20, 30
Dual overload (separate overload for start and run)	Possible to set separate overloads for start and full speed
PTC connection	User defined temerature control with external PTC sensor
PT-100 connection	User defined temerature control with external PT-100 sensor
Locked rotor protection	Prevents start if motor is stuck, e.g. stuck pumps and conveyors
Current underload protection	Stops the process if the load is too light, e.g. a pump running dry
Current imbalance protection	User defined, checks current imbalance between the phases
Power factor underload protection	User defined, trip if power factor is out of range
Under voltage protection	User defined, prevents the motor from stalling in weak networks
Over voltage protection	User defined, prevents the motor from damage at high voltage levels
Voltage imbalance protection	User defined, checks voltage imbalance between the phases
Earth fault protection / ground fault protection	User defined, 0.1-1.0 sec, stops the process if earth fault is detected
Phase reversal protection	Prevents start if phases are connected in the wrong order
Bypass open protection	Trips if the bypass is open when it should be closed
User defined protection	Programmable input, can be used with externa protection device
Too long current limit protection	User defined, trips when the current has been at the current limit for too long time
HMI failure protection	Indicates communication failure between softstarter and HMI
Fieldbus failure protection	Indicates communication failure between softstarter and PLC
Extension IO failure protection	Indicates communication failure between softstarter and IO module
Max number of starts/hour	Prevents start if the thyristors gets too warm (thus used over specification)
Too long start time protection	User defined, trips when the starting time exceeds a set value
External faults detection	
Phase loss	Yes
Hight current	Yes
Low control supply voltage	Yes
Faulty usage	Yes, e.g. using limp mode inside-delta
Faulty connection	Yes
Bad network quality	Yes
Vibration test	
According to IEC 60068-2-6:2007	

Warnings	
Current underload warning	User defined on/off
Current imbalance warning	User defined on/off
Voltage imbalance warning	User defined on/off
Thyristor overload warning (SCR)	User defined on/off
Electronic overload Time-to-trip	User defined on/off
Short circuit warning (for Limp mode)	User defined on/off, for Limp mode
Over voltage warning	User defined on/off
Under voltage warning	User defined on/off
Power factor underload warning	User defined on/off
Locked rotor warning	User defined on/off
Faulty fan warning	User defined on/off
THD(U) - Total Harmonic Distortion warning	User defined on/off
Motor runtime limit warning	User defined on/off
Phase loss warning (for stand by)	User defined on/off, for stand by
EOL warning	User defined on/off
Internal faults detection	
Thyristor overload	Yes
Short circuit	Yes
Open circuit thyristor or gate	Yes
Heat sink over temperature	Yes
Shunt fault	Yes
PTC input	
Switch off resistance	2825 ohm ± 20%
Switch on resistance	1200 ohm ± 20%
Other functions	
Real time clock	Can maintain time when the softstarter isn't powered up, 48 h back-up
Event log	Log of events such as trips, parameters changed and operation
Emergency mode	To keep the softstarter running regardless of trip or failure. Activated via DI
Automatic restart	In case of trip and stopped motor, the softstarter can restart itself
Keypad password	Lock the keypad to inhibit unathorized motor control
Pump cleaning	Can reverse pump flow and clean out pipes
Electronic overload Time-to-cool	Time until the motor is ready to be restarted efter an EOL trip
Thyristor runtime measurement	Measures most electrical variables, e.g. voltage, current and power
Auto phase sequence detection	Detection of the phase sequence
Electricity metering	Measures most electrical variables, e.g. voltage, current and power
Motor heating	DC injection in all windings to heat up the motor. Useful in cold or humid environment
Stand still brake	Prevents the motor from moving, useful to keep fans from reversing
Voltage sags detection	User defined
Limp mode with two-phase motor control if one set of thyristors is shorted	Can keep process running until planned maintenance

For all functions and features see installation and commissioning manual, available on solutions.abb/softstarters

PSTX
Technical data

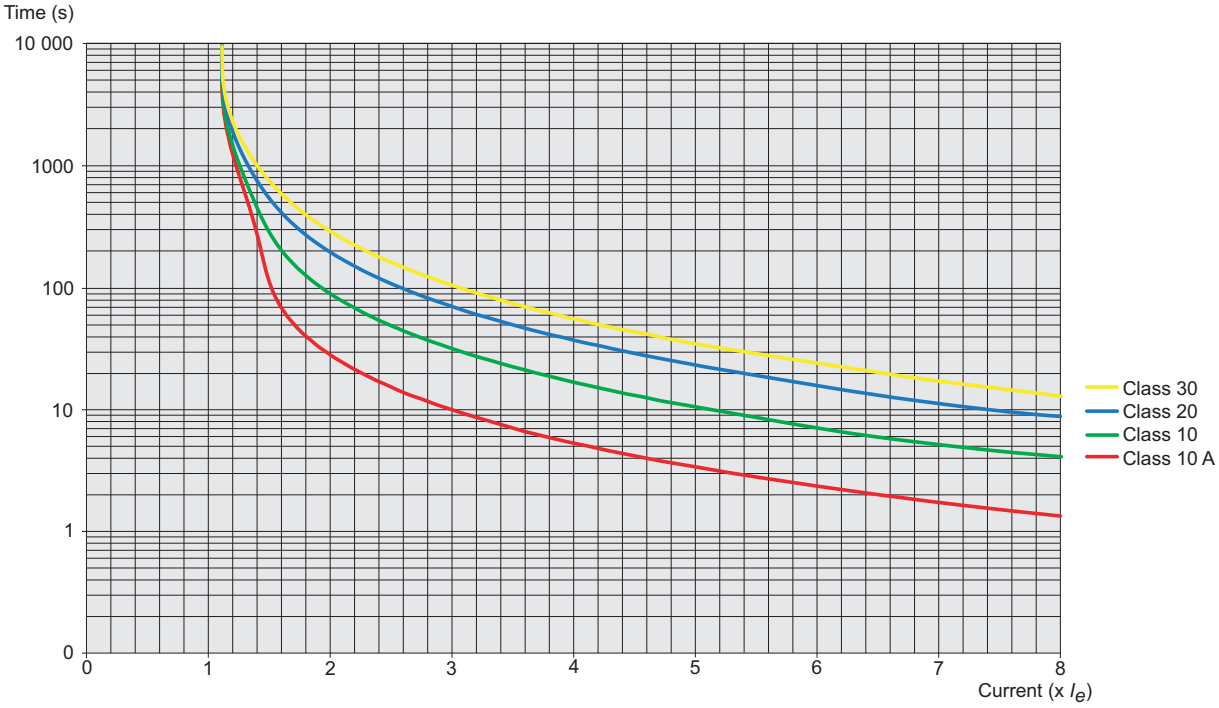
Fuse ratings and power losses

Softstarter	Current range A	Max power loss at rated I_e W	Max fuse rating - main circuit[1,2] Bussmann fuses, DIN43 620 (Knife) A	Type	Size	Power requirements supply circuit Holding (VA) /Pull-in (VA)
PSTX30	9.0...30.0	0.8	100	170M1567	000	49/51
PSTX37	11.1...37.0	1.2	125	170M1568	000	49/51
PSTX45	13.5...45.0	1.8	160	170M1569	000	49/51
PSTX60	18.0...60.0	3.2	160	170M1569	000	49/51
PSTX72	21.6...72.0	4.7	250	170M1571	000	49/51
PSTX85	22.5...85.0	6.5	315	170M1572	000	49/51
PSTX105	31.8...106.0	10	400	170M3819	1	49/51
PSTX142	42.9...143.0	18	500	170M5810	2	49/53
PSTX170	51.3...171.0	26	630	170M5812	2	49/53
PSTX210	63.0...210.0	48	630	170M5812	2	56/276
PSTX250	75.0...250.0	68	700	170M5813	2	56/276
PSTX300	90.0...300.0	97	800	170M6812	3	56/276
PSTX370	111.0...370.0	148	900	170M6813	3	56/276
PSTX470	141.0...470.0	99	900	170M6813	3	67/434
PSTX570	171.0...570.0	146	1000	170M6814	3	67/434
PSTX720	216.0...720.0	78	1250	170M8554	3	61/929
PSTX840	252.0...840.0	106	1500	170M6018	3	61/929
PSTX1050[3]	315.0...1050.0	165	1800	170M6020	3	68/929
PSTX1250[3,4]	375.0...1250.0	234	2000	170M6021	3	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.
[3] 170M6019 with fuse rating 1600 A should be used for 690 V version.
[4] For 690 V version, Bussmann fuses are only available for motors with rated current up to 1150 A.

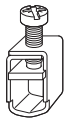
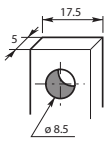
Tripping curves for electronic overload protection (cold) for PSE and PSTX

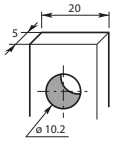
Tripping curves for the integrated electronic overload protection. All units have an integrated electronic overload protection that can be set to four different tripping classes. Below you find a curve for each tripping class in cold state. These tripping curves are valid for PSTX.

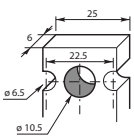


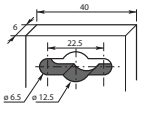
PSTX

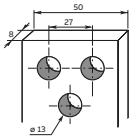
Technical data









Main terminals

Article	PSTX30 ... PSTX105	PSTX142 ... PSTX170	PSTX210 ... PSTX370	PSTX470 ... PSTX570	PSTX720 ... PSTX1050	PSTX1250
Cu cable - flexible 1 x mm²	10...70 mm²	6...120 mm²	16...240 mm²	-	-	-
Clamp type	Included	1SDA066917R1	1SDA055016R1	-	-	-
Tightening torque	8 Nm	14 Nm	25 Nm	-	-	-
Cu cable - flexible 2 x mm²	6...35 mm²	50...95 mm²	70...185 mm²	-	-	-
Clamp type	Included	LZ185-2C/120 1SFN074709R1000	OZXB4[1] 1SCA022194R0890	-	-	-
Tightening torque	8 Nm	16 Nm	22 Nm	-	-	-
Cu cable - Stranded 1 x mm²	10...95 mm²	6...150 mm²	16...300 mm²	-	-	-
Clamp type	Included	1SDA066917R1	1SDA055016R1	-	-	-
Tightening torque	8 Nm	14 Nm	25 Nm	-	-	-
Cu cable - Stranded 2 x mm²	6...35 mm²	50...120 mm²	70...185 mm²	120...240 mm²	-	-
Clamp type	Included	LZ185 - 2C/120 1SFN074709R1000	OZXB4[1] 1SCA022194R0890	1SDA013922R1	-	-
Tightening torque	8 Nm	16 Nm	22 Nm	35 Nm	-	-
Cu cable - Stranded 3 x mm²	-	-	-	-	70...185 mm²	-
Clamp type	-	-	-	-	1SDA013956R1	-
Tightening torque	-	-	-	-	45 Nm	-
Al cable - Stranded 1 x mm²	-	95...185 mm²	185...240 mm²	-	-	-
Clamp type	-	1SDA0549881R1	1SDA055020R1	-	-	-
Tightening torque	-	31 Nm	43 Nm	-	-	-
Al cable - Stranded 2 x mm²	-	-	-	120...240 mm²	-	-
Clamp type	-	-	-	1SDA023380R1	-	-
Tightening torque	-	-	-	31 Nm	-	-
Lugs Width ≤	-	24 mm (0.945 in)	32 mm (1.260 in)	47 mm (1.850 in)	50 mm (1.969 in)	50 mm (1.969 in)
Diameter >=	-	8 mm (0.355 in)	10.2 mm (0.402 in)	10.5 mm (0.413 in)	12.5 mm (0.492 in)	13 mm (0.519 in)
Tightening torque	-	18 Nm (160 in lb)	28 Nm (248 in lb)	35 Nm (310 in lb)	45 Nm (398 in lb)	45 Nm (398 in lb)
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	71 in lb	300 in lb	375 in lb	-	-	-
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[2]	ATK580/2	ATK580/2	-
Tightening torque	-	-	375 in lb	375 in lb	375 in lb	-
Connection capacity acc to UL / CSA 3 x AWG / kcmil	-	-	-	2/0...500 kcmil	2/0...500 kcmil	-
Clamp type	-	-	-	ATK750/3	ATK750/3	-
Tightening torque	-	-	-	375 in lb	375 in lb	-
Supply and control circuit						
Cu cable - Stranded 1 x mm²						0.75…2.5 mm² (19...14 AWG)
Cu cable - Stranded 2 x mm²						0.75…1.5 mm² (19...16 AWG)
Tightening torque						0.5 Nm (4.4 in lb)

[1] Terminal shrouds 1SFN125406R1000 must be used.
[2] Terminal shrouds 1SFN125406R1000 can be used.

PSTX integrated bypass ratings

All ABB's softstarters are equipped with a built-in bypass contactor. This bypass contactor is rated AC-1 since it only make and break the motor in full speed at the rated current of the softstarter. However, in the PSTX470-PSTX1050 products, the bypass contactors has also a lower rated AC-3 rating which is shown in the table below.

Softstarter	PSTX470... PSTX570	PSTX720... PSTX1050	PSTX1250
Integrated contactor	**AF370**	**AF750**	**AF1250**
AC-3 rating at 400 V	370 A	750 A	-
IEC AC-3 Rated operational power at 400 V	200 kW	400 kW	-
UL/CSA 3-phase motor rating at 480 V	300 hp	600 hp	-

Fieldbus communication

For softstarters

Fieldbus communication interface offering

PSR, PSE and PSTX softstarters can be connected to a fieldbus network for monitoring and control. All major industrial fieldbus protocols are covered with different accessories making the installation very flexible

Built-in Modbus-RTU for PSTX and PSE

- Built-in Modbus RTU communication interface
- Easy to install using the Modbus RTU adaptor which is included with the softstarter
- Through this communication interface it is possible to get full control and status information of the softstarter as well as reading- and writing parameters

Anybus connection for PSTX

- Anybus connection accessory for communication protocol suitable for PSTX30... PSTX1250

PROFIBUS

DeviceNet

Modbus RTU

BACnet IP

EtherNet IP

Modbus TCP

PROFINET

BACnet MS/TP

EtherCAT

Anybus connection accesssory for communication protocol suitable for PSTX30 ...PSTX1250

Article	Type	Order code	Pkg qty	kg	lb
Profibus	AB-PROFIBUS-1	1SFA899300R1001	1	0.03	0.07
DeviceNet	AB-DEVICENET-1	1SFA899300R1002	1	0.03	0.07
Modbus-RTU[1]	AB-MODBUS-RTU-1	1SFA899300R1003	1	0.03	0.07
NEW BACnet IP	AB- BACNET-IP-2	1SFA899300R1004	1	0.03	0.07
EtherNet/IP (2-port)	AB-ETHERNET-IP-2	1SFA899300R1006	1	0.03	0.07
Modbus/TCP (2-port)	AB-MODBUS-TCP-2	1SFA899300R1008	1	0.03	0.07
Profinet (2-port)	AB-PROFINET-IO-2	1SFA899300R1010	1	0.03	0.07
NEW BACnet MS/TP	AB-BACNET-MSTP-1	1SFA899300R1011	1	0.03	0.07
NEW EtherCAT	AB-ETHERCAT-IP-2	1SFA899300R1012	1	0.03	0.07

[1] Only needed when Com 3-port is used with Extension I/O

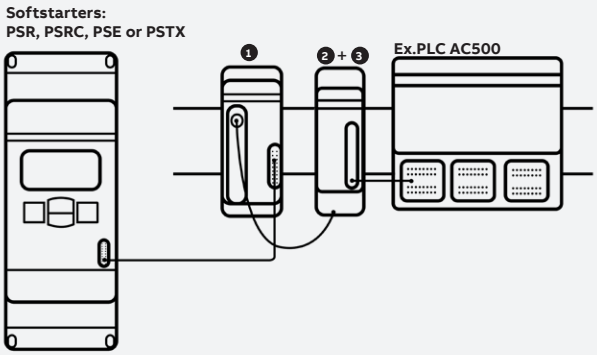
Fieldbus communication

For softstarters

Fieldbus communication interface offering
Available communication protocols for softstarters

Communication	PSR	PSRC	PSE	PSTX
Modbus RTU	○	○	●	●
Profibus	○	○	○	○
DeviceNet	○	○	○	○
Modbus TCP	–	–	○	–
Anybus	–	–	–	○

● = Built-in
○ = Optional
– = not available



Fieldbus plug adapter

1 Fieldbus plug adapter with cable

Article	Type	Order code	Pkg qty	kg	lb
Fieldbus plug adapter	PS-FBPA	1SFA896312R1002	1	0.05	0.11

Fieldbus plug kit

2 Fieldbus plug kit for mounting fieldbus plug adapter together with fieldbus plugs
Includes: Holder, cable, cable holder and 2 terminal blocks

Article	Type	Order code	Pkg qty	kg	lb
Accessory kit	PS-FBPK	1SFA899320R1002	1	0.15	0.33

- Profibus
- DeviceNET

Modbus-TCP

3 Fieldbus communication interface

Article	Type	Order code	Pkg qty	kg	lb
Profibus					
Profibus DP communication interface	PDP32.0	1SAJ242000R0001	1	0.05	0.11
Cable from PDP32.0 to drawer outside, length 1.5 m	CDP24.150	1SAJ929240R0015	1	0.06	0.13
DeviceNet					
DeviceNet communication interface; terminal block for fieldbus connection included	DNP31.0	1SAJ231000R0001	1	0.04	0.09
Cable from DNP31.0 to drawer outside, length 1.5 m	CDP24.150	1SAJ929240R0015	1	0.06	0.13
Modbus-TCP (No fieldbus plug kit needed)					
Ethernet Modbus TCP interface	MTQ22-FBP	1SAJ260000R0100	1	0.17	0.38
Cable ETH-X1/X4-M12 female, length 1.5m	CDP17-FBP.150	1SAJ929170R0015	1	0.08	0.17
Modbus-RTU[1]					
Modbus RTU communication interface; terminal block for fieldbus connection included	MRP31.0	1SAJ251000R0001	1	0.04	0.09
Cable from MRP31.0 to drawer outside, length 1.5 m	CDP24.150	1SAJ929240R0015	1	0.06	0.13

[1] Only for PSR
Note: See separate catalog for fieldbus communication interfaces:
https://search.abb.com/library/Download.aspx?DocumentID=2CDC190022C0206&LanguageCode=en&DocumentPartId=&Action=Launch
For more information visit the Universal Motor Controller website:
https://new.abb.com/low-voltage/products/motor-controllers/universal-motor-controllers

Hydraulic elevator softstarter ELV-X

Introduction

ELV-X series hydraulic elevator soft-starters up to 250 hp are the latest additions to the ABB softstarting portfolio.

These robust and energy efficient softstarting solutions are designed for safe and reliable operation of hydraulic elevators.

ELV-X series are cULus listed and conform to ASME A17.1/CSA B44 and ASME 17.5.

Comprehensive range
The solution has been designed from existing PSTX range of softstarters of different sizes and ratings, it consists of a pre-connected unit with a softstarter and a contactor mounted on a panel, Ready for mounting in the elevator control cabinet.

Installation efficiency
Reduced installation time and control panel size by having all features you need built into the solution, The solution is easy to install thanks to the compact design and many built-in features, The bypass built into soft-starters saves energy and space while reducing heat generation.

Application productivity
Increased equipment lifetime by protecting it from electrical and mechanical stresses with torque control, intuitive HMI and diagnostics help the application to run at its full potential.

Range and features

	Current Limit	Electronic motor overload protection	Underload protection	Locked rotor protection	Current/Voltage imbalance protection	Phase reversal protection	Customer defined protection	Motor heating	PTC/PT100 input for motor protection	Overvoltage/undervoltage protection	Earth-fault protection	Built-in bypass	Inside-delta connection possible	Graphical display and keypad	Detachable keypad	Motor runtime and start count	Programmable warning functions	Diagnostics	Overload time-to-trip and time-to-cool	Analog output	Fieldbus communication	Event log	Electricity metering	Torque control	Coated PCBA	Limp mode	Jog with slow speed forward/reverse	Dynamic and stand still brake	Sequence start	Full voltage start	Kick start
ELV-X	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Secure motor reliability											**Improve installation efficiency**												**Increase application productivity**							

• = standard

Hydraulic elevator softstarter ELV-X

Ordering details

ELV-X series selection (PSTX softstarter control inside)

In-line connection - 3 wire				Inside delta connection - 6 wire				Ie setting range (A)	Max FLA (A)	Frame Size	Type code	Order code
Max HP rating @ rated voltage				Max HP rating @ rated voltage								
200/208	220/240	440/480	550/600	200/208	220/240	440/480	550/600					
7.5	10	20	25	10	15	30	40	9…30	28	A	ELV30-X-600-70	1SFA971208R7000
10	10	25	30	15	20	40	50	11.1…37	34	A	ELV37-X-600-70	1SFA971209R7000
10	15	30	40	20	25	50	60	13.5…45	42	A	ELV45-X-600-70	1SFA971210R7000
20	20	40	50	30	40	75	100	18…60	60	A	ELV60-X-600-70	1SFA971211R7000
20	25	50	60	30	40	75	100	21.6…72	68	A	ELV72-X-600-70	1SFA971212R7000
25	30	60	75	40	50	100	125	25.5…85	80	A	ELV85-X-600-70	1SFA971213R7000
30	40	75	100	60	60	150	150	31.5…106	104	A	EL105-X-600-70	1SFA971214R7000
40	50	100	125	75	75	150	200	42.9...143	130	B	ELV142-X-600-70	1SFA971215R7000
50	60	125	150	75	100	200	250	51.3…171	169	B	ELV170-X-600-70	1SFA971216R7000

Main voltage 208-600 V AC 50/60 Hz, Control supply voltage 100-250 VAC 50/60 Hz, please see main catalog for Softstarters for more information 1SFC132012C0201.

Hydraulic elevator softstarter ELV-X

Technical data

Power circuit	
Rated insulation voltage Ui	600 V
Rated operational voltage Ue	208…600 V, +10 % / -15 %
Operating frequency	50/60 Hz, + 10 %
Rated Impulse withstand voltage Uimp	6 kV
Type of load control	3-phase squirrel cage induction motor loads

Control circuit	
Rated control supply voltage Us	100…250 V, +10 % / -15 %
Rated Control circuit voltage Uc	Internal or external 24 V DC
Operating frequency	50/60 Hz, + 10 %
Rated Impulse withstand voltage Uimp	4 kV
Number of inputs	6 (Start, Stop, 3 programmable, Temperature sensor)
Number of outputs	3 Signal Relays (Run, TOR, Event)
Relay contact ratings	250 VA AC / 24 V DC, Ith 3 A, Ie 1.5 A at AC-15 (Ue=250 V AC)
Analog output reference	0…10 V / 0…10 mA / 0…20 mA / 4…20 mA

Communication	
Modbus RTU	Built in
Other protocols	Yes (option)

Construction	
Thyristor bypass	Built in
Cooling system	Fan cooled (Thermostat controlled)
Display	Illuminated graphical LCD
Keypad	10 keys (selection, navigation, command)
Degree of protection - power circuit	IP 00
Degree of protection - control circuit	IP 20

Environment	
Operating temperature	-25….+60 °C (-13…+140 °F)[2]
Storage temperature	-40….+70 °C (-40…+158 °F)
Relative humidity	5…95 % (non-condensing)
Maximum altitude	4000 m (13123 ft)[3]
Pollution degree	3

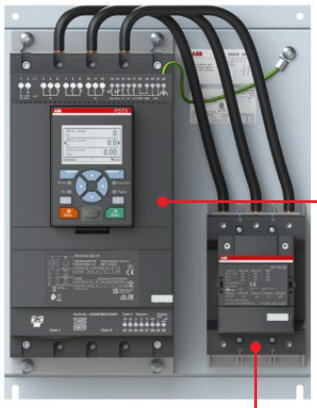
Certification	
Standards	UL 508, CSA C22.2 No 14. cULus Listed, ASME A17.1 / CSA B44 & ASME 17.5
Markings	c UL us

[1] See PSTX Softstarter data in the document 1SFC132012C0201 rev I, 2022.03
[2] Above 40 °C (104 °F) up to max. 60 °C (140 °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), de-rate the rated current using the formula **% of Ie = 100 - (x - 1000)/150** where x = actual altitude of the softstarter in **meters**, or using the formula **% of Ie = 100 - (y - 3280)/480** where y = actual altitude of the softstarter in **feet**.

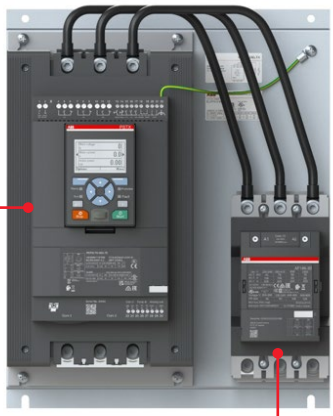
Hydraulic elevator softstarter ELV-X

Technical data

ELV-X series assembly Frame A



ELV-X series assembly Frame B

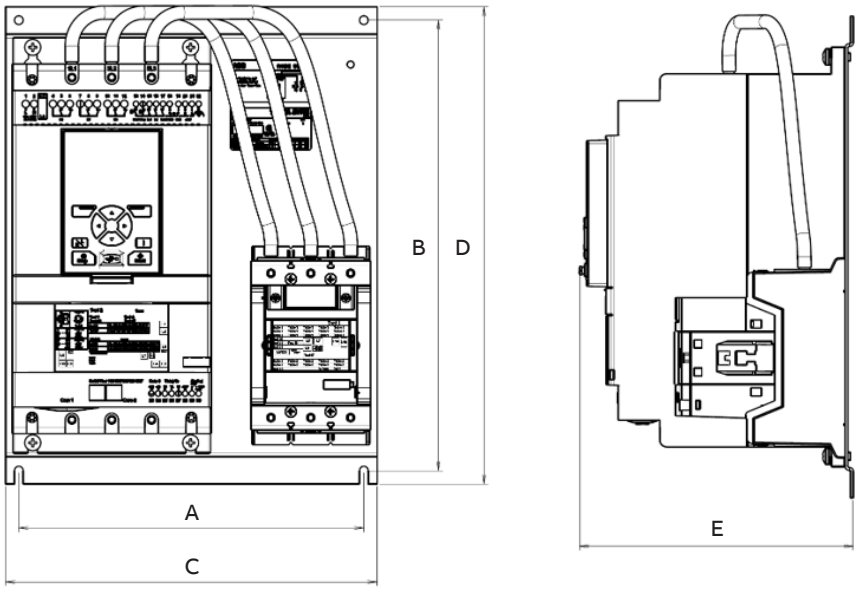


PSTX Softstarter

AF Contactor
(Fault Contactor)

Dimension drawings

ELV-X frame A/B



		Frame A	Frame B
Drill Holes	**A**	260 (10.24)	305 (12.01)
	B	340 (13.39)	405 (15.94)
Panel Dimension	**C**	280 (11.02)	345 (13.58)
	D	360 (14.17)	425 (16.73)
Depth	**E**	203.5 (8.01)	244.3 (9.62)

All dimensions in mm (inch)

Notes