



Catalog

Controlling pumps PSTX softstarter range



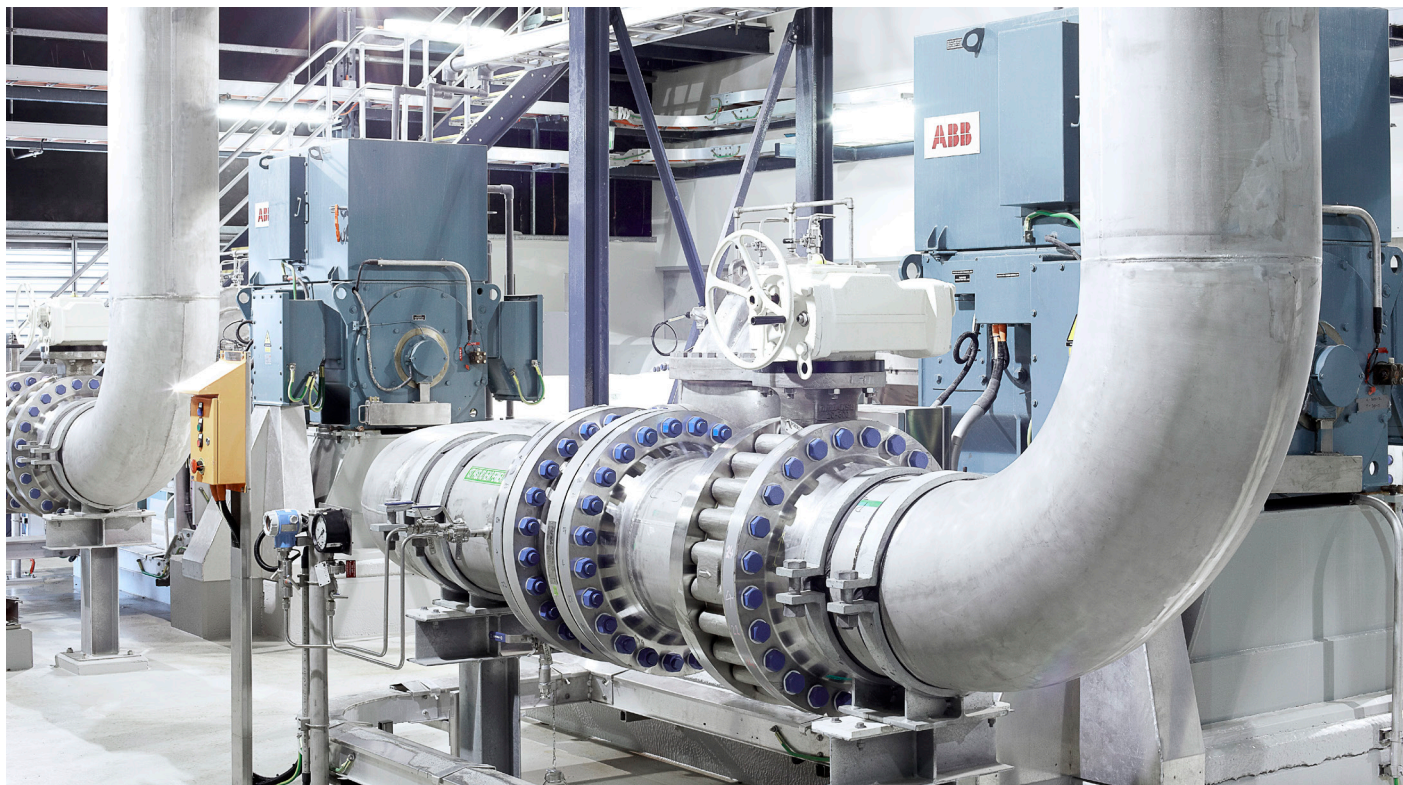
ABB’s products for controlling pumps

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ABB's pump controlling solution

How we face the challenges



Most of us take water for granted. Only when water supply fails do we realize just how dependent we are – whether in our homes or in industry.

The continuous processing of waste water depends on easily managed water treatment processes that just keep working. Pumps form a crucial part of our water treatment processes. They often operate in harsh environments and operating conditions, exposing motors to severe strain. Together with frequent starts and stops, this makes softstarters a vital tool to ensure maximum process availability.

Water controlled by man flows on a daily basis through pipes, dams and basins in massive quantities, unmatched by any other substance. To deliver successfully on these stringent demands, we need simple, efficient and reliable processes – controlled by softstarters.

Solving the problems of waste water

Water hammering is a well-known and undesired phenomenon that is frequently occurring in pipes. Besides causing disturbing noise, it puts excessive stress on pipes, valves and pumps.

Unlike conventional softstarters, ABB's torque control feature enables the softstarter to control the flow of the fluid with a feedback control loop. This will ensure true soft starting and stopping of pumps – and prolonging the lifetime of the equipment. Motors operating in cold climates risk freezing during standstill. **Motor heating** is a built-in PSTX feature that keeps the motor warm and dry without spinning. It works by transmitting just enough energy to the motor in

order to keep it warm. The feature eliminates the need for external heating systems in cold and damp climates. Clogging of pumps and pipes is a common cause of downtime and time-consuming service work in wastewater facilities. Thanks to a smart **pump cleaning feature**, the PSTX lets you clean pumps and pipes, directly from the softstarter. By simply alternating between forward and reversing of the pump flow, pipes are easily cleaned thus enabling higher up-time of your pump system.

ABB's softstarter improves waste water installations of Yantai Guhe Electric - China

Yantai Guhe Electric manufactures installation panels for pumps and provides some of the leading brands in the HVAC and fluid control segment with pump system control solutions. Pumping water through horizontal pipes demands a motor controller that can handle the way fluids behave. This is especially important when stopping the motor that runs the pump because a lot of stress is affecting the motor and water hammering occurs.

Thanks to ABB's softstarters having torque control, the issue of water hammering when stopping pumps was eliminated. The results that followed were very pleasing for Yantai Guhe Electric with downtime being reduced by 20 percent and cost of maintenance reduced by 40 percent - saving a total of 30000 US dollars per year.

Waste water - a tough environment for products

Benefits of ABB's leading product - The softstarter range



The installation of ABB products can help keep the wheels in motion 24 hours a day. We are focused on ensuring that our products can be easily maintained, whether that is through designing the product so it can be replaced while the system remains operational or providing built-in monitoring functions and efficient service solutions. In everything we do, we think of the customer and the application first. Our engineers constantly look for ways to simplify the installation process by developing innovative product designs which facilitate the product assembly and avoid mounting errors and reduce maintaince cost. Our engineers thrive on the challenge to develop products that need to operate in the most difficult electrical, mechanical and environmental conditions. Our solutions protect your application from overloads, network irregularities, mechanical wear, and environmental stresses ensuring your peace of mind. When you buy an ABB product, you buy extensive environmental testing guarantee.

Continuous operation



Secure motor reliability

- Detection of pump clogging and avoiding motor overheating with electronic overload protection.
- Fast stop if pump is jammed with locked rotor protection.
- Protection against dry pump using under current or power factor.
- Limp mode to keep the pump running even if one thyristor is shorted
- Motor heating function to operate even in cold and humid environments

Increase application productivity

- Pump cleaning with full voltage forward and jog backward to let the softstarter clean the pump.
- Torque control to eliminate water hammering.

Easy to install



Improve installation efficiency

- Detachable keypad to have full control of your application without opening the panel door.
- 15 different languages and graphical display for easy set-up and operation.
- Bypass reducing energy consumption while application running at full speed is already pre-installed and verified.

Harsh environment protection

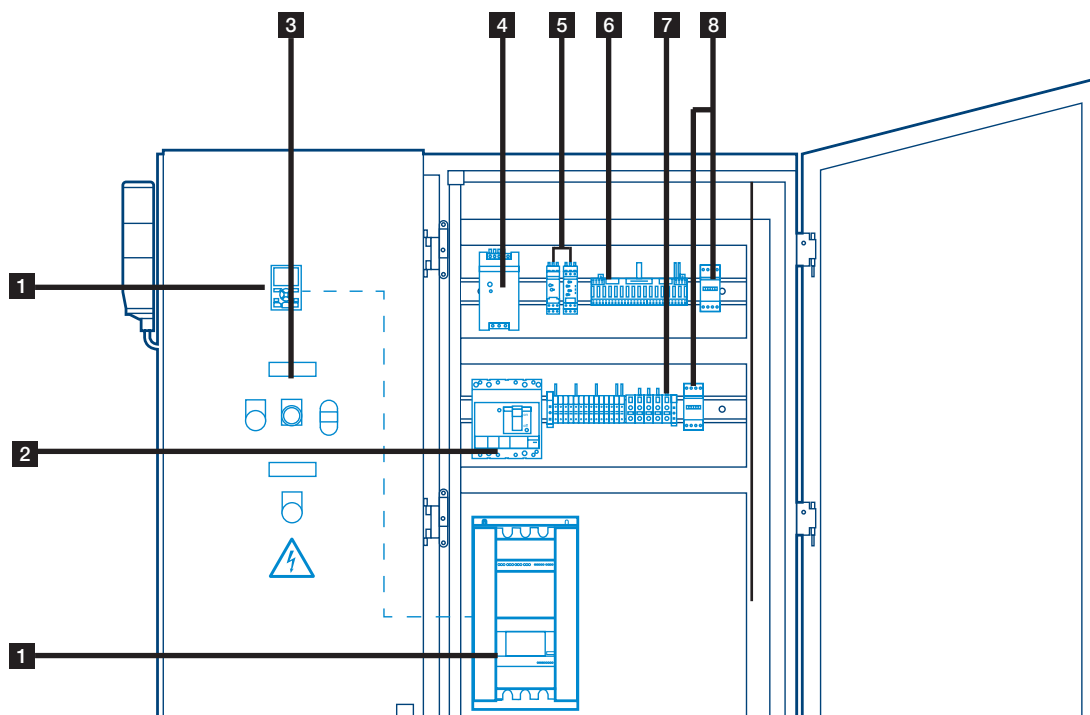


Running in the toughest areas of the world

- Coated circuit boards for protection from dust, moist and corrosive atmospheres
- Detachable keypad is rated IP66 (Type 1, 4x, 12) for protection against dust and water.
- Wide main voltage range: 208-600 V.

Setup of a typical waste water pump panel

Maximize the possibilities



1 Softstarter PSTX



- Soft start and stop with reduced current
- Pump enhancing features
- Detachable keypad for front door mounting on a panel

2 Short circuit breaker MCCB



- Short circuit protection of motor
- Possibility to isolate

3 Pilot devices



- Remote control of motor
- Indication of softstarter and motor status with light and sound
- Emergency stop of motor

4 Power supply CP-E



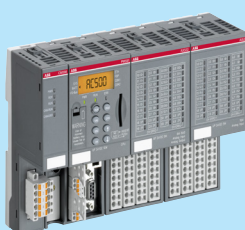
- Possible to use 24V AC/DC equipments in the panel, e.g. PLC and pump controller

5 Liquid level monitoring relays CM-ENS



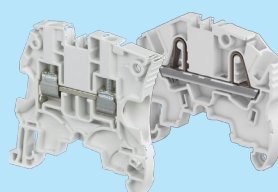
- Monitoring and signalling the water level

6 PLC 800M



- Automatic control
- Remote communication

7 Terminal blocks SNK range



- Easy installation of control wires

8 Line contactor AF



- Isolation at stop
- Isolation at faults
- Emergency stop
- Back-up D.O.L. starter

Challenging the standards for water applications

Benefits of ABB's solution



Continuous operation

Contactors AF

- Secure your uptime by letting the AF technology overbridge voltage drops and sags
- Built-in surge compression

Earth fault monitor CEM11

- Used in motor feeders to detect leakage currents respectively ground faults caused by insulation breakdowns.

Power supply CP-E

- Guaranteed power supply of the application with a high efficiency



Easy to install

Contactors AF

- The AF contactor is compact in size and has had its width reduced by up to 30%.
- The AF contactor has its coil terminals accessible from the front. The cables or bars do not have to be disconnected in order to perform voltage measurement or servicing work.

Terminal blocks SNK

- PI-Spring technology allows 50% faster connection time & reduced effort and conductor preparation time
- Avoid mounting and wiring errors thanks to SNK asymmetrical design and flat and visible marking area.
- The ABB screw clamp technology eliminates the need for retightening campaigns
- Save installation time with our snap on screwless ground terminal blocks, end stops, plugs and jumpers

Measuring and monitoring relays

- Whole S-range devices available in innovative new 22.5 mm design
- Push-in technology for tool-free connection of rigid and flexible wires with wire end ferrule
- Tool-free mounting on DIN rail as well as demounting

Circuit breaker Tmax & disconnect switch OT

- Easy mounting of device in panel for both horizontal and vertical installation
- Front side display to read values
- Switch can be mounted directly on front of the device



Harsh environment protection

Pilot devices

- IP67 / IP69K approved (withstand periodic submersion, high pressure, high temperature spraydown)
- Heavy duty design to suit in tough environments meeting major global industrial standards/approvals

Power supply CP-E

- Ambient temperature range during operation -40...+70 °C

Terminal blocks SNK

- SNK series is certified IEC Ex in accordance with IEC 60079-0 and IEC 60079-7: increased safety “Exe” world international standards for products used in explosive atmospheres.

Softstarter

Ordering details



PSTX30 ... PSTX105



PSTX142 ... PSTX170



PSTX210 ... PSTX370

PSTX softstarters

If more than 10 starts/h, select one size larger than the standard selection. For a more precise selection, use the softstarter selection tool available at www.abb.com/lowvoltage.

Rated operational voltage U_e , 208-600 V

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

IEC				UL/CSA				Type	Order code	Weight (1 pce)	
Rated operational power				Rated operational power							
400 V	500 V	690 V	current	200 / 208 V	220 / 240 V	440 / 480 V	550 / 600 V	current			
P_e kW	P_e kW	P_e kW	I_e A	P_e hp	P_e hp	P_e hp	P_e hp	FLA A			kg (lb)
15	18.5	-	30	7.5	10	20	25	28	PSTX30-600-70	1SFA898103R7000	6.10 (13.45)
18.5	22	-	37	10	10	25	30	34	PSTX37-600-70	1SFA898104R7000	6.10 (13.45)
22	25	-	45	10	15	30	40	42	PSTX45-600-70	1SFA898105R7000	6.10 (13.45)
30	37	-	60	20	20	40	50	60	PSTX60-600-70	1SFA898106R7000	6.10 (13.45)
37	45	-	72	20	25	50	60	68	PSTX72-600-70	1SFA898107R7000	6.10 (13.45)
45	55	-	85	25	30	60	75	80	PSTX85-600-70	1SFA898108R7000	6.10 (13.45)
55	75	-	106	30	40	75	100	104	PSTX105-600-70	1SFA898109R7000	6.10 (13.45)
75	90	-	143	40	50	100	125	130	PSTX142-600-70	1SFA898110R7000	9.60 (21.16)
90	110	-	171	50	60	125	150	169	PSTX170-600-70	1SFA898111R7000	9.60 (21.16)
110	132	-	210	60	75	150	200	192	PSTX210-600-70	1SFA898112R7000	12.70 (27.99)
132	160	-	250	75	100	200	250	248	PSTX250-600-70	1SFA898113R7000	12.70 (27.99)
160	200	-	300	100	100	250	300	302	PSTX300-600-70	1SFA898114R7000	12.70 (27.99)
200	257	-	370	125	150	300	350	361	PSTX370-600-70	1SFA898115R7000	12.70 (27.99)

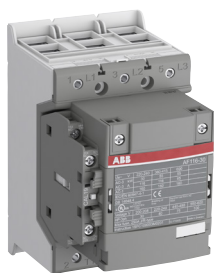
Coordination with line contactor and MCCB

Softstarter type	Current range (A)	Line contactor	MCCB (50kA, 400V 40C) ¹⁾
		Type	Type
PSTX30-600-70	9.00 - 30.00	AF40	XT2S 160 MA 32
PSTX37-600-70	11.10 - 37.00	AF40	XT2S 160 MA 52
PSTX45-600-70	13.50 - 45.00	AF52	XT2S 160 MA 52
PSTX60-600-70	18.00 - 60.00	AF65	XT2S 160 MA 52
PSTX60-600-70	18.00 - 60.00	AF65	XT2S 160 MA 80
PSTX72-600-70	21.60 - 72.00	AF80	XT2S 160 MA 80
PSTX85-600-70	25.50 - 85.00	AF96	XT2S 160 MA 100
PSTX105-600-70	31.80 - 106.00	AF116	XT4S 250 Ekip I In=250
PSTX142-600-70	42.90 - 143.00	AF146	XT4S 250 Ekip I In=250
PSTX170-600-70	51.30 - 171.00	AF190	XT4S 250 Ekip I In 250
PSTX210-600-70	63.00 - 210.00	AF265	T4S 320 PR221-I In 320
PSTX250-600-70	75.00 - 250.00	AF265	T5S 400 PR221-I In 400
PSTX300-600-70	90.00 - 300.00	AF305	T5S 400 PR221-I In 400
PSTX370-600-70	111.00 - 370.00	AF370	T5S 630 PR221-I In 630
PSTX370-600-70	111.00 - 370.00	AF370	T6S 630 PR221-I In 630

¹⁾ This is one example of possible short-circuit coordination. For coordination with e.g. other short circuit currents or for coordination with fuses, see the [PSTX coordination tables on SOC II](#).

Line contactor, circuit breaker

Ordering details



AF contactor

AF Contactors

IEC		UL/CSA		Rated control circuit voltage		Type ¹⁾	Order code	Weight (1 pce)	
Rated operational power	current	3-phase motor rating	General use rating	Uc min. ... Uc max.					
400 V	$\theta \leq 40$	480 V	600 V AC						
AC-3	AC-1								
kW	A	hp	A	V 50/60 Hz	V DC			kg	(lb)
18.5	70	30	60	100...250	100...250	AF40-30-00-13	1SBL347001R4100	0.950	2.094
22	100	40	80			AF52-30-00-13	1SBL367001R1300	0.950	2.094
30	105	50	90			AF65-30-00-13	1SBL387001R1300	0.950	2.094
37	125	60	105			AF80-30-00-13	1SBL397001R1300	1.170	2.579
45	130	60	115			AF96-30-00-13	1SBL407001R1300	1.170	2.579
55	160	75	160			AF116-30-11-13	1SFL427001R1311	1.750	3.858
75	225	100	200			AF146-30-11-13	1SFL467001R1311	1.750	3.858
90	275	125	250			AF190-30-11-13	1SFL487002R1311	3.000	6.614
140	400	200	350			AF265-30-11-13	1SFL547002R1311	4.640	10.229
160	500	250	400			AF305-30-11-13	1SFL587002R1311	4.640	10.229
200	600	300	520			AF370-30-11-13	1SFL607002R1311	4.640	10.229

For other supply voltages, please see 1SBC100180C0201 Short form catalog for Motor protection and control.

Selection of short circuit breaker¹⁾



Tmax T

Type	Order code	Weight (1 pce)	
		kg	(lb)
XT2S 160 MA 32	1SDA067766R1	1.1	2.425
XT2S 160 MA 52	1SDA067767R1	1.1	2.425
XT2S 160 MA 80	1SDA067768R1	1.1	2.425
XT2S 160 MA 100	1SDA067769R1	1.1	2.425
XT4S 250 Ekip I In=250	1SDA068500R1	3.5	7.716
T4S 320 PR221-I In=320	1SDA054125R1	3.5	7.716
T5S400 PR221-I In=400	1SDA054333R1	5.1	11.244
T5S 630 PR221-I In=630	1SDA054404R1	5.1	11.244
T6S 630 PR221-I In=630	1SDA060236R1	9.5	20.944

¹⁾ This is one example of possible short-circuit coordination. For coordination with e.g. other short circuit currents or for coordination with fuses, see the [PSTX coordination tables on SOC II](#).

Pilot devices, liquid level monitoring relays

Ordering details



CP1-104-10

1SFC151820001



CE4T-10R-01

1SFC151640001



MCB-01

1SFC152370001



MCB-10

1SFC152380001



MCBH-00

1SFC1510270001



Legend plate holder and inserts

1SFC151490001



CM-ENS

1SVR430851F1100

Start/stop push button

Description	Type	Order code	Pkg qty	Weight (1 pce)
Double pushbutton for start and stop. White and black, marked with I and O	MPD17-11B	1SFA611146R1106	1x10	0.025
Contact block holder	MCBH-00	1SFA611605R1100	1x10	0.006
Contact blocks and holder, contact block 1NO	MCB-10	1SFA611610R1001	1x10	0.013
Contact blocks and holder, contact block 1NC	MCB-01	1SFA611610R1010	1x10	0.013
Double Pushbutton Legend plate holder	MA1-8139	1SFA611920R8139	1x10	0.003
Legend plate holder "Start"	MA6-1044	1SFA611930R1044	1x10	0.001
Legend plate holder "Stop"	MA6-1045	1SFA611930R1045	1x10	0.001

Run and Event pilot lights

Colors	Rated current	Wavelength nm	Luminance mcd	Type	Order code	Pkg qty	Weight (1 pce)
	mA						kg
Green	15	520	126	CL-523G	1SFA619402R5232	1x10	0.023
Yellow	15	590	60	CL-523Y	1SFA619402R5233	1x10	0.023

Reset push button

Colors	Description	Type	Order code	Pkg qty	Weight (1 pce)
					kg
Blue	Flush pushbutton, Momentary, 1 NO	CP1-104-10	1SFA619100R1014	1x10	0.018

Pump cleaning toggle

Description	Type	Order code	Pkg qty	Weight (1 pce)
				kg
Toggle switch, 3-positions, Momentary, spring return from A, Black plastic to B and from C to B	MTS2-10B	1SFA611301R1006	1x10	0.021
Contact block holder	MCBH-00	1SFA611605R1100	1x10	0.006
Contact blocks and holder, contact block 1NO	MCB-10	1SFA611610R1001	1x10	0.013

These are suggested products of the pilot device range. To find more products see catalog 1SFC151005C0201.

Liquid level monitoring relays

Rated control supply voltage	Type	Order code	Weight (1 pce)
			kg
24 V AC	CM-ENE MIN	1SVR550855R9500	0.15 (0.33)
110-130 V AC		1SVR550850R9500	0.15 (0.33)
220-240 V AC		1SVR550851R9500	0.15 (0.33)
24 V AC	CM-ENE MAX	1SVR550855R9400	0.15 (0.33)
110-130 V AC		1SVR550850R9400	0.15 (0.33)
220-240 V AC		1SVR550851R9400	0.15 (0.33)
24 V AC	CM-ENS	1SVR430851R9100	0.15 (0.33)
110-130 V AC		1SVR430851R0100	0.15 (0.33)
220-240 V AC		1SVR430851R1100	0.15 (0.33)
220-240 V AC ¹⁾		1SVR430851R1300	0.15 (0.33)

These are suggested products of the liquid level monitoring range range. To find more products see catalog 2CDC110004C0210.

Power supply, communication module

Ordering details



Ordering details - CP-E < 100 W

Input voltage range	Rated output voltage / current	Type	Order code	Weight (1 pce) kg
90-264 V AC / 120-375 V DC	24 V DC / 0.75 A	CP-E 24/0.75	1SVR427030R0000	0.15 (0.33)
85-264 V AC / 90-375 V DC	24 V DC / 1.25 A	CP-E 24/1.25	1SVR427031R0000	0.29 (0.64)
85-264 V AC / 90-375 V DC	24 V DC / 2.5 A	CP-E 24/2.5	1SVR427032R0000	0.36 (0.79)

Ordering details - CP-E ≥ 120 W

Input voltage range	Rated output voltage / current	Type	Order code	Weight (1 pce) kg
90-132 V AC, 180-264 V AC / 210-375 V DC	24 V DC / 5 A	CP-E 24/5.0	1SVR427034R0000	1.00 (2.20)
90-132 V AC, 180-264 V AC / 210-375 V DC	24 V DC / 10 A	CP-E 24/10.0	1SVR427035R0000	1.36 (3.01)
90-264 V AC / 120-375 V DC	24 V DC / 20 A	CP-E 24/20.0	1SVR427036R0000	1.90 (4.18)

Ordering details - Anybus

For communication protocol	Type	Order code	Weight (1 pce) kg
Profibus	AB-PROFIBUS-1	1SFA899300R1001	0.042
DeviceNet	AB-DEVICENET-1	1SFA899300R1002	0.042
Modbus-RTU	AB-MODBUS-RTU-1	1SFA899300R1003	0.042
EtherNet/IP (1-port)	AB-ETHERNET-IP-1	1SFA899300R1005	0.042
EtherNet/IP (2-port)	AB-ETHERNET-IP-2	1SFA899300R1006	0.042
Modbus/TCP (1-port)	AB-MODBUS-TCP-1	1SFA899300R1007	0.042
Modbus/TCP (2-port)	AB-MODBUS-TCP-2	1SFA899300R1008	0.042



PSTX – The advanced range

Technical data

Softstarter types		PSTX30 ... PSTX370
Rated insulation voltage U_i		690V
Rated operational voltage U_e		208...600 V, 208...690V + 10% / -15%, 50/60Hz ±5%
Rated control supply voltage U_s		100...250 V +10% / -15%, 50/60Hz ±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 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)
		4000 m (13123 ft) ³⁾
Maximum altitude		
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, German, Italian, Dutch, Chinese, Finnish, Swedish, French, Spanish, Russian, Portuguese, Turkish, Polish and Czech
	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 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
	Rated thermal current I_{th}	5 A
	Rated operational current I_e at AC-15 ($U_e=250$ V)	1.5 A
Analog output	Output signal reference	0...10 V, 0...20 mA, 4...20 mA
	Type of output signal	1 Amp, U Volt, P kW, P hp, Q kVar, TmpMot, TmpSCR, cosPhi
Control circuit	Number of inputs	2 (start, stop)
	Number of additional programmable inputs	2 (Each input can be programmed to be either; Non, Reset, Enable, Jog, 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)
	During storage	-40...+70 °C, (-40...+158 F)
Start and stop functions	Degree of protection	IP66 (Type 1, 4X, 12)
	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	Yes
	Limp mode with two-phase motor control if one set of thyristors is shorted	Yes
		Yes
	Built-in Modbus RTU	Yes
	Connection for Anybus	Yes
	Connection for ABB FieldBusPlug	Yes, with adapter

¹⁾ Valid for 50% on time and 50% off time. If other data is 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 ... PSTX370
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 (Level and delay adjustable)
	Current underload protection	Yes (Level and delay adjustable)
	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
Warnings (pre-warning) and embedded diagnostics	Current underload warning	Yes (level and delay adjustable)
	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
External faults detection	Auto phase sequence detection	Yes
	Electricity metering	Yes
	Voltage sags detection	Yes
	Phase loss	Yes
	High current	Yes
Internal faults detection	Low control supply voltage	Yes
	Open circuit motor side	Yes
	Faulty connection	Yes
	Bad network quality	Yes
	Thyristor overload	Yes
PTC input	Short circuit	Yes
	Open circuit thyristor or gate	Yes
Other functions	Bypass open	Yes
	Shunt fault	Yes
	Switch off resistance	2825 ohm ± 20%
	Switch on resistance	1200 ohm ± 20%
Other functions	Real time clock	Yes
	Event log	Yes
	Keypad password	Yes

Marketing material

Additional product information and documentation

PSTX softstarter marketing material



Catalog

The whole assortment for Softstarters and further technical information.
Available in different languages:

English: **1SFC132009C0201**
Spanish: **1SFC132009C0701**
Russian: **1SFC132009C1101**
Portuguese: **1SFC132009C1601**



Pump manual

How to install and set-up the PSTX softstarter for a pump application.

English: **1SFC132104M0201**

Brochure

Find out how to control the elements with ABB's softstarter range.

English: **1SFC132014B0201**



Water pump assortment marketing material



Electronic Products and Relays catalog & Selection tables

The whole assortment of EPR in one single catalog and a single panorama to choose the right products for your application.

English catalog: **2CDC110004C0210**
English selection table: **2CDC110083C0201**



Pilot device catalogs

Select the right pilot device for your application.

English catalog: **1SFC151005C0201**
English overview: **1SFC150002B0201**



AF contactor & motor control and protection

Short form catalog and product range catalog available.

English short form catalog: **1SBC100180C0201**
English catalog: **1SBC100192C0201**

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