



Panorama

# Softstarters The complete range

Power and productivity  
for a better world™

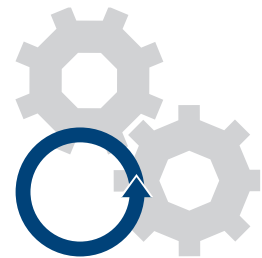


# Why does soft starting matter?

Controlling industrial electricity. The vast majority of the world's industrial applications are driven by motors. It is estimated that 28 percent of all electricity used in one year is dedicated to run industrial motors. Controlling industrial electricity is what ABB softstarters does in an excellent way.

## Secure motor Reliability

With ABB softstarters current peaks are eliminated and the starting current is significantly reduced. The load and voltage protections keep your motor protected from load and network irregularities. Additional features that improve the overall reliability of the motor are three types of current limit and earth fault protection, amongst others.



## Improve installation Efficiency

The built-in bypass will reduce both energy consumption and heat generation while running motors at full speed. It saves installation time and space inside the panels while reducing the cost of extra cooling equipment. ABB softstarters also come with HMI's that are easy to learn, improving the efficiency of the softstarters once they are in use.



## Increase application Productivity

ABB softstarters will reduce mechanical wear and tear and increase the productivity of your applications. With torque control damage to pump systems from problems such as water hammering can be completely avoided. The continuous operation of applications can also be increased by features like jog with slow speed, pump cleaning and limp mode, which allows your application to do more.



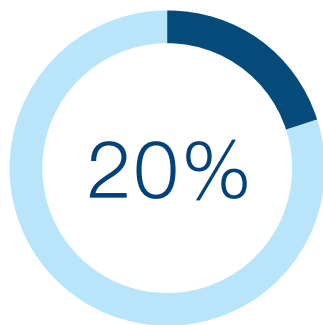


# Yantai Guhe Electric Improving water supply reliability

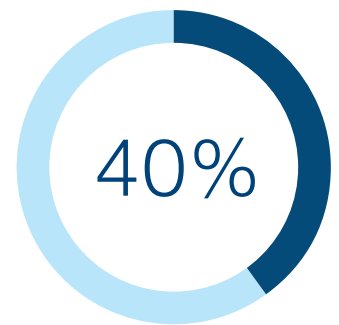
Manufacturing over 1,000 installation panels for pump systems annually requires the use of reliable motor starting solutions. In the past, Yantai Guhe Electric experienced problems with water hammering when stopping pumps with the panels it built. However, since using ABB softstarters with torque control, this problem has been eliminated. This led to a 20 percent reduction of downtime and a 40 percent reduction in cost.

## Why soft starting matters to Yantai Guhe Electric

Reduction of  
pump system  
downtime by



Maintenance cost  
for pump system  
reduced by



For more examples of how ABB softstarters help the industry, visit: [new.abb.com/low-voltage/launches/pstx](https://new.abb.com/low-voltage/launches/pstx).

# PSR – The compact range



Normal start In-line connected	PSR3	PSR6	PSR9	PSR12	PSR16	PSR25	PSR30	PSR37	PSR45	PSR60	PSR72	PSR85	PSR105	
(400 V) kW	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	
(440-480 V) hp	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	
<b>UL coordination</b>	<b>600 V, 40 °C</b>													
J-type fuses for UL coordination <sup>1)</sup>	<b>UL max. fuse, J-type (85 kA)</b>													
	J-35				J-60			J-90		J-110	J-125	J-150	J-200	
UL listed circuit breaker <sup>1)</sup>	Please see coordination tables at: <a href="http://applications.it.abb.com/SOC">applications.it.abb.com/SOC</a> or at <a href="http://new.abb.com/low-voltage/products/softstarters/pstx">new.abb.com/low-voltage/products/softstarters/pstx</a> .													
<b>IEC coordination</b>	<b>400 V, 40 °C</b>													
Using manual motor starter or MCCB, Type 1 coordination will be achieved. <sup>1)</sup>	<b>IEC manual motor starter (50 kA)</b>			MS116				MS132		MS450		MS495		—
Using gG fuses, Type 1 coordination will be achieved. To achieve Type 2 coordination, semiconductor fuses must be used. <sup>1)</sup>	<b>IEC fuse protection (50 kA) gG fuse</b>													
	10 A	16 A	25 A	32 A		50 A	63 A	100 A	125 A		200 A		250 A	
Suitable switch fuse for the recommended semiconductor fuses. <sup>1)</sup>	<b>Switch fuse</b>													
	OS32G						OS125G			OS25				
The line contactor is not required for the softstarter itself but often used to open if OL trips. <sup>1)</sup>	<b>Line contactor</b>													
	AF9		AF12	AF16	AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116		
Overload protection is always required to protect the motor. <sup>1)</sup>	<b>Thermal overload relay</b>													
	TF42						TF65		TF96		TF140DU			

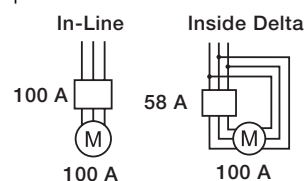
<sup>1)</sup> This is an example of a coordination. For more examples, see: [applications.it.abb.com/SOC](http://applications.it.abb.com/SOC).

## Select softstarter according to load

Normal start class 10	Heavy duty start class 30
<ul style="list-style-type: none"> <li>– Bow thruster</li> <li>– Centrifugal pump</li> <li>– Compressor</li> <li>– Conveyor belt (short)</li> <li>– Elevator</li> </ul>	<ul style="list-style-type: none"> <li>– Centrifugal fan</li> <li>– Crusher</li> <li>– Conveyor belt (long)</li> <li>– Mill</li> <li>– Mixer</li> <li>– Stirrer</li> </ul>
Select size according to the motor kW ratings.	Select a softstarter <b>one size larger</b> compared to the motor kW ratings.

### In-line or inside delta for PSTX

The PSTX softstarter can be connected inside the motor delta, reducing the current by 42 percent. For example, it will then be possible to run a 100 A motor using a 58 A softstarter.



# PSE – The efficient range



PSE18	PSE25	PSE30	PSE37	PSE45	PSE60	PSE72	PSE85	PSE105	PSE142	PSE170	PSE210	PSE250	PSE300	PSE370
7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200
18	25	30	37	45	60	72	85	106	143	171	210	250	300	370
10	15	20	25	30	40	50	60	75	100	125	150	200	250	300
18	25	28	34	42	60	68	80	104	130	169	192	248	302	361

## 600 V, 40 °C

### UL max. fuse, J-type (85 kA)

J-40	J-50	J-60	J-80	J-100	J-125	J-150	J-175	J-225	J-300	J-350	J-450	J-500	J-600
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### UL circuit breaker 480VAC (65 kA)

T4H250	T5L400	T5H600
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## 400 V, 40 °C

### IEC MCCB (50 kA)

XT2S160	XT4S250	T4S320	T5S400	T5S630
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### IEC fuse protection (85 kA), Semiconductor fuses, Bussmann

170M1563	170M1564	170M1566	170M1567	170M1568	170M1569	170M1571	170M1572	170M3819	170M5809	170M5810	170M5812	170M5813	170M6812	170M6813
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### Switch fuse

OS32GD	OS63GD	OS125GD	OS250D	OS400D	OS630D
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### Line contactor

AF26	AF30	AF38	AF52	AF65	AF80	AF96	AF116	AF140	AF190	AF205	AF265	AF305	AF400
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### Electronic overload relay

Built-in
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## PSR



Screw or DIN-rail mounted



LED indicators



Three potentiometers for settings



Output signal relays

## PSE



Screw mounting



Digital input for start, stop and reset



Output signal relays for run, top of ramp and event



Clear markings on the front for easy installation

# PSTX – The advanced range



PSTX30	PSTX37	PSTX45	PSTX60	PSTX72	PSTX85	PSTX105	PSTX142	PSTX170	PSTX210	PSTX250	PSTX300	PSTX370
15	18.5	22	30	37	45	55	75	90	110	132	160	200
30	37	45	60	72	85	106	143	171	210	250	300	370
20	25	30	40	50	60	75	100	125	150	200	250	300
28	34	42	60	68	80	104	130	169	192	248	302	361

## 600 V, 40 °C

UL max. fuse, J-type (100 kA)												
J-60	J-70	J-90	J-125	J-150	J-175	J-225	J-250	J-400	J-500	J-600		

UL circuit breaker 480VAC (65 kA)												
T4H100				T4H150			T4H250		T5H300	T5H400	T5H600	

## 400 V, 40 °C

IEC MCCB (50 kA)												
XT2S160							XT4S250	T4S320	T5S400		T5S630	

IEC fuse protection (80 kA), Semiconductor fuses, Bussmann												
170M1567	170M1568	170M1569		170M1571	170M1572	170M3819	170M5810	170M5812		170M5813	170M6812	170M6813

Switch fuse												
OS32GD	OS63GD		OS125GD			OS250D	OS400D					OS630D

Line contactor												
AF30	AF38	AF52	AF65	AF80	AF96	AF116	AF140	AF190	AF205	AF265	AF305	AF370

Electronic overload relay												
Built-in												

## PSTX

Three programmable digital inputs and start and stop

Three programmable output signal relays

Clear markings on the front for easy installation and handling

Extension I/O for extra inputs and outputs

Keyhole mounting for quick installation

A compact motor starting solution with many features

Built-in Modbus and Anybus for other protocols

Choose between 15 different measurements for analog out



PSTX470	PSTX570	PSTX720	PSTX840	PSTX1050	PSTX1250
250	315	400	450	560	710
470	570	720	840	1050	1250
400	500	600	700	900	1000
480	590	720	840	1062	1250
L-1200		L-1600		L-2500	
T7H1200		T8V3000		—	
T7S800		T7S1250		E2.2N 2000	
M6813	170M6814	170M8554	170M6018	170M6020	170M6021
OS630D		OS800D		—	
AF460	AF580	AF750	AF1350	AF1650	—
<b>Electronic overload relay</b>					
Built-in					

## Softstarter feature selection guide

	PSR	PSE	PSTX	• Standard	○ Optional	– Not available
Secure motor reliability	–	•	•	Current limit		
	–	–	•	Current limit ramp and dual current limit		
	–	•	•	Electronic motor overload protection		
	–	–	•	Dual overload protection		
	–	•	•	Underload protection		
	–	–	•	Power factor underload protection		
	–	•	•	Locked rotor protection		
	–	–	•	Current/voltage imbalance protection		
	–	–	•	Phase reversal protection		
	–	–	•	Customer defined protection		
Improve installation efficiency	–	–	•	Motor heating		
	–	–	•	PTC/PT100 input for motor protection		
	–	–	•	Oversvoltage/undersvoltage 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		
Increase application productivity	–	–	•	Diagnostics		
	–	–	•	Overload time-to-trip		
	–	–	•	Overload time-to-cool		
	–	•	•	Analog output		
	○	○	•	Fieldbus communication		
	–	○	•	Event log		
	–	–	17	Multiple languages		
	–	–	•	Electricity metering		
	–	•	•	Torque control		
	–	–	•	Torque limit		
Increase application productivity	–	•	•	Coated PCBA		
	–	–	•	Limp mode		
	–	–	•	Jog with slow speed forward/reverse		
	–	–	•	Dynamic brake		
	–	–	•	Stand still brake		
	–	–	•	Sequence start		
	–	–	•	Full voltage start		
	–	•	•	Kick start		
	–	–	•	Automatic pump cleaning		

Customizable display for important status information

Backlit display makes status information easy to read

Application assistant for fast and easy set-up

IP66 (1, 4x outdoor, 12) protection against water and dust

Easy to use because of large graphical display

Detachable HMI for easy panel door mounting

Information button for built-in help function

USB connection

# Contact us

## ABB

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