Brochure

PSE Softstarter
The Efficient Range

Power and productivity
for a better world™

The PSE Softstarter – Easy and Reliable with LCD display and torque control

The PSE softstarter is the world's first compact softstarter with torque control and LCD display. It is developed in close cooperation with customers to ensure that the product fulfills their important needs.

The PSE softstarter is ideal for any application where space is limited, but where advanced functionality is still required. It is suitable for all common applications such as pumps, fans, compressors, conveyor belts, and more.

Easy

One of the most important features of any electrical device is that it is easy to set-up and easy to use. The PSE softstarter is equipped with a language neutral backlit display and an easy-to-use four button keypad. In addition, the built-in by-pass provided in this compact unit reduces the number of connections, making it easy to mount and ultimately decreasing both time and cost of the installation.

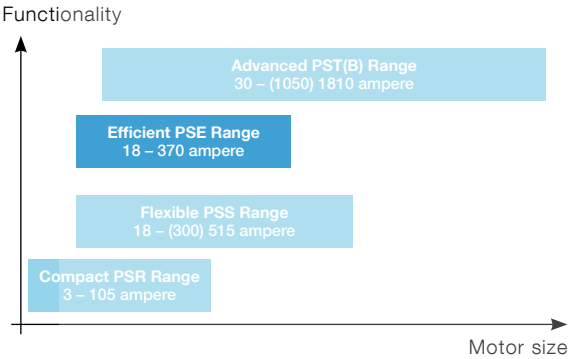
Reliable

The PSE softstarter is designed to ensure exceptional reliability, even in tough and harsh environments. Features such as torque control eliminates water hammering, and thereby, greatly reducing the mechanical stress on pump systems and provides a more reliable operation with less downtime.

Efficient

Knowing what the customers want has made it possible to design a softstarter that really fulfills their needs, without adding unwanted complexity. This gives excellent value for money and, together with the built-in by-pass for energy saving, makes the PSE softstarter a very efficient choice.

ABB Softstarters – the complete offer



The PSE softstarter is the latest addition to the ABB softstarter family, which now consists of four different ranges; PSR, PSS, PSE, and PST(B). This makes it possible to find a suitable soft-starter for almost any imaginable application and segment, while making sure that the needs of our customers are fulfilled.

Developed in cooperation with customers? Naturally.

As a part of the development process, we at ABB conducted deep interviews with key customers from all around the world. As a result, we all learned more about the customers' processes and how they want to use softstarters. New trends in the market were identified, and most importantly, the true needs of various customers were realized. We also learned that the current ABB softstarter portfolio could be even better when complimented with an additional product to optimize our offer.

Based on these findings, the efficient PSE softstarter was developed. The new PSE softstarter combines the most important functions from the advanced PST(B) with the cost efficient design of the compact PSR. This in combination with the built-in by-pass for energy saving, will for many customers be the most efficient choice.

"This was the first time anyone asked us in advance about our true needs"



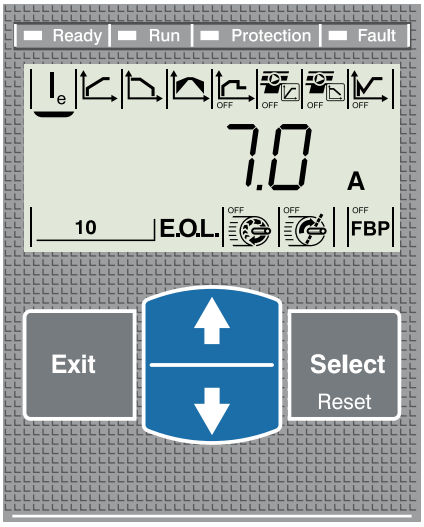






The only compact softstarter with LCD display

The PSE softstarter can be used for almost any application, for instance a fan.



The keypad and display of the PSE softstarter provides easy and intuitive set-up and operation.

The PSE softstarter is the first truly compact softstarter equipped with a LCD display and a keypad. This not only makes it easy to set-up, but also makes it possible to see important status information such as current and voltage during operation. To simplify the use of the PSE softstarter even more, the language independent LCD display is illuminated.

Set-up

Each function is clearly marked with its own icon which is made possible thanks to the LCD technology. With just a few clicks on the keypad, settings can be easily viewed and adjusted.

Operation

While operating the softstarter, the display provides crucial operational data such as voltage or current, which is not accessible on softstarters without a display. The HMI also includes four LEDs to easily overview operational status.

External keypad

Using the optional external keypad, which is identical to the fixed HMI, the softstarter can be set-up and monitored from the panel door. The external keypad can also be used to transfer parameters between different softstarters.

A reliable softstarter with torque control? Certainly.

Torque control is especially designed to prevent water hammering when stopping pumps.

One of the most important market needs is reliability. It has been our main focus during the whole development process of the PSE softstarter, and has been considered in every decision taken. Our aim has been to both create a reliable product and to achieve process reliability.

The problem with water hammering

One of the very biggest challenges in all pumping applications is water hammering. This is the phenomenon that appears when the pump is stopped too fast, and the water in the system crashes into the pump and valve with a tremendous force. This can be heard like a very loud banging sound and in larger systems there will be huge vibrations. During a single stop of the motor this is merely an inconvenience. However, water hammering at every stop, day in and day out, will quickly wear out the valve, the pump and the pipes leading to an increased need for service and repair, and even worse, to unplanned down time.

Eliminate water hammering with torque control

Water hammering can be limited or totally avoided by slowing down the speed of the pump gradually. But since many pump systems are very complex it is crucial to slow down the pump in just the right way, in order to avoid water hammering. This is the reason why ABB has had a close cooperation with pump manufacturers for several years; just to find the optimal way to stop a pump.

Torque control, which is developed to avoid water hammering, has only been available in the most advanced, largest, and most expensive softstarters. With the PSE softstarter however, this advanced functionality is now available in a much more compact unit.

Coated circuit boards

In many cases, customer installations must withstand very tough environment conditions. This may vary from dry, humid, cold, and warm conditions. In addition, corrosive gases and acids may exist in for instance wastewater plants. All these conditions can shorten the life length of the product and can cause unplanned process down time. To make the softstarter much more resistant towards these tough environments, all the circuit boards have a protective coating. This will ensure a reliable operation and reduce the downtime.

Reliable process

Reliability does however not only concern a single product. The whole process has to be reliable. Naturally, the new PSE softstarter is equipped with features that reduce the mechanical wear of the equipment, limiting voltage fluctuations on the network and protecting both motor and equipment from damage. All of this will contribute to a very reliable process.

PSE Softstarter – the Efficient range
Features and Benefits

Product description

- Wide rated operational voltage 208–600 V AC
- Wide rated control supply voltage 100–250 V, 50/60 Hz
- Rated operational current 18 to 370 A
- Wide ambient temperature range, -25 to +60 degrees Celsius
- Coated circuit boards for reliable operation in harsh environments
- Built-in by-pass on all sizes, saving energy and reducing installation time
- User friendly HMI with illuminated language neutral display and four button keypad
- Torque control for excellent control of pumps
- Current limit, adjustable between 1,5-7xIe
- Motor overload protection with classes 10A, 10, 20 and 30
- Motor underload protection and locked rotor protection
- Kick start to start jammed pumps or conveyor belts
- Analog output showing operational current, 4-20 mA
- Prepared for fieldbus communication using Profibus, Modbus, Devicenet or CANopen

Built-in by-pass
Using by-pass after reaching full voltage will greatly reduce the power loss, and thereby save energy. In the PSE soft-starter range, the by-pass is built-in on all sizes, which will give a very compact starting solution and reduce the need for wiring during installation.

Motor protection
The PSE softstarter is equipped with built-in electronic over-load protection, protecting the motor from overheating. Since no additional overload device is needed, our efficient design saves both space, installation time, and ultimately money.
The PSE softstarter can detect a stalled motor thanks to the locked rotor protection. This further protects your equipment.
Finally, the built-in underload protection can be used to detect broken belts and dry pumps which cause low loaded motors, thereby preventing damage and saving energy.

Kick start
Sometimes a high starting torque is required to overcome the initial friction of, for example, jammed conveyor belts or pumps. An activated kick start provides the necessary torque to allow the application to break loose and the start ramp will then still ensure a soft start.

Analog output
The analog output terminals can be connected to an analog current meter to show the current during operation and there-by eliminating the need for an additional current transformer. The analog output signal can also be used as an analog input to a PLC.

Fieldbus communication
With the use of an optional connection device, the PSE softstarter can be connected to a PLC system using the ABB FieldBusPlug, offering all common protocols. Using the fieldbus system the softstarter can be set-up, monitored, and controlled from the PLC.

More information
For further information, please explore the Softstarters Main Catalog (1SFC132005C0201), the Softstarters Complete Range Panorama (1SFC132009B0201), the Softstarters Solutions for Water and Wastewater Management (1SFC132010B0201) or visit www.abb.com/lowvoltage.

Ordering details

PSE18 ... PSE105

PSE142 ... PSE170

Normal starts, class 10, In-line

PSE18 ... PSE370

Rated operational voltage, U_e, 208 - 600 V AC

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

Motor power

230 V P_e kW	400 V P_e kW	500 V P_e kW	IEC Max rated operational current I_e A	Type	Order code	Weight kg 1 piece
4	7.5	11	18	**PSE18-600-70**	**1SFA897 101 R7000**	2.4
5.5	11	15	25	**PSE25-600-70**	**1SFA897 102 R7000**	2.4
7.5	15	18.5	30	**PSE30-600-70**	**1SFA897 103 R7000**	2.4
9	18.5	22	37	**PSE37-600-70**	**1SFA897 104 R7000**	2.4
11	22	30	45	**PSE45-600-70**	**1SFA897 105 R7000**	2.4
15	30	37	60	**PSE60-600-70**	**1SFA897 106 R7000**	2.4
18.5	37	45	72	**PSE72-600-70**	**1SFA897 107 R7000**	2.5
22	45	55	85	**PSE85-600-70**	**1SFA897 108 R7000**	2.5
30	55	75	106	**PSE105-600-70**	**1SFA897 109 R7000**	2.5
40	75	90	143	**PSE142-600-70**	**1SFA897 110 R7000**	4.2
45	90	110	171	**PSE170-600-70**	**1SFA897 111 R7000**	4.2
59	110	132	210	**PSE210-600-70**	**1SFA897 112 R7000**	12.4
75	132	160	250	**PSE250-600-70**	**1SFA897 113 R7000**	13.9
90	160	200	300	**PSE300-600-70**	**1SFA897 114 R7000**	13.9
110	200	250	370	**PSE370-600-70**	**1SFA897 115 R7000**	13.9

PSE210 ... PSE370

Heavy duty starts, class 30, In-line

PSE18 ... PSE370

Rated operational voltage, U_e, 208 - 600 V AC

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

Motor power

230 V P_e kW	400 V P_e kW	500 V P_e kW	IEC Max rated operational current I_e A	Type	Order code	Weight kg 1 piece
3	5.5	7.5	12	**PSE18-600-70**	**1SFA897 101 R7000**	2.4
4	7.5	11	18	**PSE25-600-70**	**1SFA897 102 R7000**	2.4
5.5	11	15	25	**PSE30-600-70**	**1SFA897 103 R7000**	2.4
7.5	15	18.5	30	**PSE37-600-70**	**1SFA897 104 R7000**	2.4
9	18.5	22	37	**PSE45-600-70**	**1SFA897 105 R7000**	2.4
11	22	30	45	**PSE60-600-70**	**1SFA897 106 R7000**	2.4
15	30	37	60	**PSE72-600-70**	**1SFA897 107 R7000**	2.5
18.5	37	45	72	**PSE85-600-70**	**1SFA897 108 R7000**	2.5
22	45	55	85	**PSE105-600-70**	**1SFA897 109 R7000**	2.5
30	55	75	106	**PSE142-600-70**	**1SFA897 110 R7000**	4.2
40	75	90	143	**PSE170-600-70**	**1SFA897 111 R7000**	4.2
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59	110	132	210	**PSE250-600-70**	**1SFA897 113 R7000**	13.9
75	132	160	250	**PSE300-600-70**	**1SFA897 114 R7000**	13.9
90	160	200	300	**PSE370-600-70**	**1SFA897 115 R7000**	13.9

Contact us

ABB AB
Cewe-Control
SE-721 61, Västerås, Sweden
Phone: +46 (0) 21 32 07 00
Fax: +46 (0) 21 12 60 01

www.abb.com/lowvoltage

Brochure 1SFC132011B0201, September 2010 Prod ABB AB, Cewe-Control

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