# PSE - The efficient range
## Overview

**PSE18 ... PSE105**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Softstarter, type** | | | | | | | | |
| **Normal start In-line connected** | PSE18 | PSE25 | PSE30 | PSE37 | PSE45 | PSE60 | PSE72 | PSE85 | PSE105 |
| **(400 V) kW** | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 |
| **IEC, max. A** | 18 | 25 | 30 | 37 | 45 | 60 | 72 | 85 | 106 |
| **(440-480 V) hp** | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 |
| **UL, max FLA** | 18 | 25 | 28 | 34 | 42 | 60 | 68 | 80 | 104 |
| | **400 V, 40 °C** | | | | | | | | |
| Using MCCB only, type 1 coordination will be achieved | **MCCB (35 kA), type** | | | | | | | | |
| | T2N160 | | | | | | | | T3N250 |
| | **MCCB (50 kA), type** | | | | | | | | |
| | T2S160 | | | | | | | | T3S250 |
| To achieve type 2 coordination, semi-conductor fuses must be used | **Fuse protection (85 kA), Semiconductor fuses, Bussmann, type** | | | | | | | | |
| | 170M1563 | 170M1564 | 170M1566 | 170M1567 | 170M1568 | 170M1569 | 170M1571 | 170M1572 | 170M3819 |
| Suitable switch fuse for recommended semi-conductor fuses | **Switch fuse, type** | | | | | | | | |
| | OS32GD03P | | | OS63GD03P | | | OS125GD03P | | OS250D03P |
| The line contactor is not required for the softstarter itself but often used to open if OL trips | **Line contactor, type** | | | | | | | | |
| | AF26 | | AF30 | AF38 | AF52 | AF65 | AF80 | AF96 | AF116 |
| Overload protection is used to protect the motor from over heating | **Electronic overload relay, type** | | | | | | | | |
| | Built-in | | | | | | | | |
| The by-pass will reduce the power loss of the softstarter. | **By-pass, type** | | | | | | | | |
| | Built-in | | | | | | | | |

The table above is an overview of possible combinations of devices.
Complete coordination tables are available at www.abb.com/lowvoltage

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| | PSE142 ... PSE170 | | PSE210 ... PSE370 | | | |
|---|---|---|---|---|---|---|
| | **Softstarter, type** | | | | | |
| **Normal start In-line connected** | 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 |
| | **400 V, 40 °C** | | | | | |
| Using MCCB only, type 1 coordination will be achieved | **MCCB (35 kA), type** | | | | | |
| | T3N250 | | T4N320 | T5N400 | | T5N630 |
| | **MCCB (50 kA), type** | | | | | |
| | T3S250 | | T4S320 | T5S400 | | T5S630 |
| To achieve type 2 coordination, semi-conductor fuses must be used | **Fuse protection (85kA), Semiconductor fuses, Bussmann, type** | | | | | |
| | 170M5809 | 170M5810 | 170M5812 | 170M5813 | 170M6812 | 170M6813 |
| Suitable switch fuse for recommended semi-conductor fuses | **Switch fuse, type** | | | | | |
| | OS400D03P | | | | OS630D03P | |
| The line contactor is not required for the softstarter itself but often used to open if OL trips | **Line contactor, type** | | | | | |
| | AF140 | AF190 | AF205 | AF265 | AF305 | AF370 |
| Overload protection is used to protect the motor from over heating | **Electronic overload relay, type** | | | | | |
| | Built-in | | | | | |
| The by-pass will reduce the power loss of the softstarter. | **By-pass, type** | | | | | |
| | Built-in | | | | | |

**How to select the correct size**

By using the guide here, you can quickly select a suitable softstarter for the most common applications.

If a more precise selection is required, you can use the softstarer selection tool available at www.abb.com/lowvoltage

**Quick guide for selection**

| **Normal start class 10** | **Heavy-duty start class 30** |
|---|---|
| Ordering - see page 30 | Ordering - see page 31 |

**Typical applications**

| | | | |
|---|---|---|---|
| • Bow thruster | • Centrifugal pump | • Centrifugal fan | • Conveyor belt (long) |
| • Compressor | • Conveyor belt (short) | • Crusher | • Mill |
| • Elevator | • Escalator | • Mixer | • Stirrer |

**If more than 10 starts/h**

**! Select one size larger than the standard selection**

# PSE - The efficient range
## Features

### 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 ºC
- Coated circuit boards for reliable operation in harsh environment
- 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
- Optional external keypad, IP66
- Torque control for excellent control of pumps
- Current limit, adjustable between 1.5–7 x $I_e$
- Motor overload protection with classes 10A, 10, 20 and 30
- Motor underload protection to detect pumps running dry
- Locked rotor protection, detecting jammed pumps
- Kick start to start jammed pumps or conveyor belts
- Analog output showing operational current, 4–20 mA
- Optional fieldbus communication using Profibus, Modbus, Devicenet or CANopen
- Sophisticated algorithm eliminating the DC-component and thereby providing excellent starting performance

The PSE softstarter range is the world's first compact softstarter range with torque control. This makes the PSE range an ideal choice for pumping applications where water hammering normally is a big problem. The compactness and advanced functionality of the PSE means that it is also a very efficient solution for other applications such as compressors and fans.

### Torque control

The most important function when stopping pumps is torque control. Since the PSE softstarter is optimized for controlling pumps, this feature is a must.

### Built-in by-pass for energy saving

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

### Coated circuit boards

All circuit boards in the new PSE softstarter have a protective coating to ensure a reliable operation even in tough environments like wastewater plants, where corrosive gases and acids may exist.

### Motor protection

The PSE softstarter is equipped with built-in electronic overload protection, preventing the motor from overheating. Since no additional overload device is needed, our efficient design saves both space, installation time, and ultimately money.

### Analog output

The analog output terminals can be connected to an analog current meter to show the current during operation. This eliminates the need of an additional current transformer. The analog output signal can also be used as an analog input to a PLC.

### Display and keypad

The setup of the PSE softstarter is done using the four button keypad and the illuminated display, providing a quick and easy setup. While operating, the display will also provide important status information such as current and voltage.

### External keypad

As an option the PSE softstarter can be equipped with an external keypad for easy setup and monitoring of the unit without opening the enclosure door. The keypad can also be used to copy parameters between different softstarters.