

Type PSR Softstarters

ABB Softstarters
Type PSR



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General information

Designed for motor currents from 3 to 45 A, PSR Softstarters complement the existing advanced PST Softstarters for 30 - 1050 A and the flexible PSS Softstarters for 30 - 1050 A. The PSR Softstarter is compact and easily accessible for installation in places where space is limited.

The PSR range comprises three physical sizes with widths from 45 to 54mm, covers rated currents from 3 to 45 A and is available for supply voltages of 24 VDC or 100-240 VAC. All sizes include a Run signal relay while sizes from 25 A also have an output signal for TOR (Top of Ramp, i.e., full voltage).

Cooling function

With standard performance, the PSR Softstarters handle ten starts per hour. When an auxiliary cooling fan is added, the starting capacity is increased to 20 starts per hour.

Installation

The PSR Softstarter is easy to set and operate thanks to the clearly marked settings. All terminals are distinctly marked and easily accessible for cable connection. Both screw and DIN rail mounting are possible.

Flexible communication

PSR can also be remote controlled by bus communication using ABB's FieldBusPlug. The FieldBusPlug accessories are available for several protocols such as Profibus DP and Device Net.

The PSR Softstarter is ideal for the replacement of DOL starters and for installation in places with limited space.

Open

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Type PSR16-600-70



Type PSR30-600-70



Type PSR45-600-70

PSR Open type

Connected In-Line Catalog number	Maximum motor current		Maximum horsepower			
	UL	IEC	208V	240V	480V	600V
PSR3-600-70 PSR3-600-81	3.4	3.9	0.5	0.75	2	2
PSR6-600-70 PSR6-600-81	6.1	6.8	1	1.5	3	5
PSR9-600-70 PSR9-600-81	9.0	9.0	2	2	5	7.5
PSR12-600-70 PSR12-600-81	11.0	12.0	3	3	7.5	10
PSR16-600-70 PSR16-600-81	15.2	16.0	3	5	10	10
PSR25-600-70 PSR25-600-81	24.2	25.0	7.5	7.5	15	20
PSR30-600-70 PSR30-600-81	28.0	30.0	7.5	10	20	25
PSR37-600-70 PSR37-600-81	34.0	37.0	10	10	25	30
PSR45-600-70 PSR45-600-81	46.2	45.0	15	15	30	40

PSR Open type

PSR3 - 600 - 70

Maximum motor current
when connected in-line

Line voltage
208V - 600 VAC

Control voltage
70 = 100 - 240 VAC
81 = 24 VDC

ABB Softstarters

General



To the left: A combination with PSR and a manual Motor Starter MS116
Above: PSR16, PSR30 and PSR 45 *)

ABB Automation Products serves customer worldwide and has long experience and comprehensive know-how of the development and production of softstarters.

After the PSS and the PST(B) ranges, it is now time to introduce the small compact PSR Softstarter - a real smart starter.

The Softstarter is the solution to both mechanical and electrical problems.

Constant-speed AC motors are the workhorses of industry; they are used to drive fans, pumps, conveyors and lots of other types of machinery. These motors are tough machines, but they have some drawbacks. During start and stop both mechanical and electrical stresses are high, causing undesirable load peaks each time the motors are started. An ABB Softstarter eliminates many of these problems. The voltage is smoothly applied to, and removed from, the motor. Both the torque and the current consequently behave in the same way. The result is that mechanical and electrical stresses are significantly lower than with conventional starting methods.

Fewer electrical problems

The starting current will be significantly lower than with direct on line (DOL) starting and compared with Y/D starters the switching transients will be eliminated.

Fewer mechanical problems

Sliding drive belts and gearbox wear caused by heavy torque peaks are familiar problems that require lots of maintenance. PSR Softstarter reduce the torque peaks as they apply the torque smoothly.

Fewer operational problems

Pressure surges in pipelines are often called water hammer. It is a common but undesirable effect when stopping almost all pumps. PSR Softstarters allow smooth stops and reduce the problems associated with water hammer.

ABB softstarters -Advanced, Flexible and Compact Range

ABB offers three different ranges of softstarter to cover every customer need for solutions for small to medium-sized motor applications.

PST(B) - Advanced range, covers motor currents from 30 to 1050 A and provides advanced functionality, including integrated protections, programmable signal relays, a flexible communication system and an LCD display. Sizes PSTB370 to 1050 A include a by-pass contactor.

PSS - Flexible range covers motor currents from 18 to 300 A and offers a flexible solution with easy installation and setup. It can also be connected in-line or inside delta.

Softstarters type PST(B) and PSS are described in Catalogue 1SFC132001C0201

PSR - Compact range, covers motor currents from 3 to 45 A. It is the latest addition to the softstarter family and has an attractive, compact design. Further, the system concept includes MMS and the softstarters are available for remote control connection using the FieldBusPlug as an accessory. All sizes include a Run signal relay, while from sizes 25 A the PSR Softstarters are also provided with an output signal for TOR (Top Of Ramp), i.e. full voltage). With standard performance the PSR Softstarters handle ten starts per hour. When an auxiliary cooling fan is added, the starting capacity is increased to 20 starts per hour.

- Current ratings 3.9 – 45 A (1.5 - 22 kW)
- Motor voltage 208 – 600 V
- Supply voltage 24 V DC or 100-240 V AC
- Easy to install and adjust
- DIN rail or screw mounting

With their compact design, the PSR Softstarters are ideal for installation in places where space is limited and where there is a demand for easy installation.

PSR Softstarter - a smart softstarter.

*) In the background an application example, a snow cannon from Lenko Snow, Sweden

PSR3 ... PSR45

Ordering details



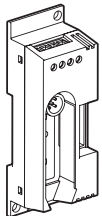
PSR3 ... PSR16



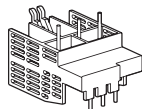
PSR25, PSR30



PSR37 ... PSR45



PSR-FBPA



PSR16-MS116



PSR-FAN



Motor power				IEC	Type	Order code	Weight kg 1 piece
230 V P_e kW	400 V P_e kW	500 V P_e kW	Max rated motor current, I_e A				
208 – 600 V AC							
Supply voltage 100-240 V AC							
0.75	1.5	2.2	3.9	PSR3-600-70	1SFA 896 103 R7000	0.45	
1.5	3	4	6.8	PSR6-600-70	1SFA 896 104 R7000	0.45	
2.2	4	4	9	PSR9-600-70	1SFA 896 105 R7000	0.45	
3	5.5	5.5	12	PSR12-600-70	1SFA 896 106 R7000	0.45	
4	7.5	7.5	16	PSR16-600-70	1SFA 896 107 R7000	0.45	
5.5	11	15	25	PSR25-600-70	1SFA 896 108 R7000	0.65	
7.5	15	18.5	30	PSR30-600-70	1SFA 896 109 R7000	0.65	
7.5	18.5	22	37	PSR37-600-70	1SFA 896 110 R7000	1.00	
11	22	30	45	PSR45-600-70	1SFA 896 111 R7000	1.00	
Supply voltage 24 V DC							
0.75	1.5	2.2	3.9	PSR3-600-81	1SFA 896 103 R8100	0.45	
1.5	3	4	6.8	PSR6-600-81	1SFA 896 104 R8100	0.45	
2.2	4	4	9	PSR9-600-81	1SFA 896 105 R8100	0.45	
3	5.5	5.5	12	PSR12-600-81	1SFA 896 106 R8100	0.45	
4	7.5	7.5	16	PSR16-600-81	1SFA 896 107 R8100	0.45	
5.5	11	15	25	PSR25-600-81	1SFA 896 108 R8100	0.65	
7.5	15	18.5	30	PSR30-600-81	1SFA 896 109 R8100	0.65	
7.5	18.5	22	37	PSR37-600-81	1SFA 896 110 R8100	1.00	
11	22	30	45	PSR45-600-81	1SFA 896 111 R8100	1.00	

Accessories

Description	Type	Order code	Weight kg 1 piece
Fieldbus Plug Connection Accessory			
The same accessory for all sizes	PSR-FBPA	1SFA 896 312 R1001	0.06
Connection kit PSR3-16 and MS116			
	PSR16-MS116	1SFA 896 211 R1001	0.03
Connection kit PSR37-45 and MS450			
	PSR45-MS450	1SFA 896 213 R1001	0.03
Fan			
All sizes can be equipped with auxiliary cooling fan for increased starting capacity.	PSR-FAN	1SFA 896 311 R1001	0.01
ABB Field Bus Plug			
The same accessory for all sizes, see Catalogue 1SFC132001C0201, May 2005 or later revisions.			

**Coordination table: PSR Softstarter with Manuel Motor Starter
400 V, 16 kA, IEC/EN 60947-4-2, AC-53-a, Type 1
Starter and MMS in line
Normal Start**

Motor		Softstarter	Manuel Motor Starter		Contactor type		Max. ambient temperature
Rated Output	Max. current	Type	Type	Current setting	Line	By-pass	
(kW)	(A)			(A)			(°C)
0.25	1	PSR3-600-70	MS116-1	0.63 - 1	A9	Integrated	40
0.37	1.6	PSR3-600-70	MS116-1.6	1 - 1.6	A9	Integrated	40
0.55	1.6	PSR3-600-70	MS116-1.6	1 - 1.6	A9	Integrated	40
0.75	2.5	PSR3-600-70	MS116-2.5	1.6 - 2.5	A9	Integrated	40
1.1	3.9	PSR3-600-70	MS116-4	2.5 - 5	A9	Integrated	40
1.5	3.9	PSR3-600-70	MS116-4	2.5 - 4	A9	Integrated	40
2.2	6.3	PSR6-600-70	MS116-6.3	4 - 6.3	A9	Integrated	40
3	6.8	PSR6-600-70	MS116-10	6.3 - 10	A9	Integrated	40
4	9	PSR9-600-70	MS116-10	6.3 - 10	A9	Integrated	40
5.5	12	PSR12-600-70	MS116-12	8 - 12	A12	Integrated	40
7.5	16	PSR16-600-70	MS116-16	10 - 16	A16	Integrated	40
11	25	PSR25-600-70	MS325-25	20 - 25	A26	Integrated	40
15	30	PSR30-600-70	MS450-32	22 - 32	A30	Integrated	40
18.5	37	PSR37-600-70	MS450-37	28 - 40	A40	Integrated	40
22	45	PSR45-600-70	MS450-45	36 - 45	A50	Integrated	40