

SIEMENS



SIRIUS Innovations for Special Requirements

Solutions for frequent switching or soft starting

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The innovative SIRIUS modular system offers the suitable switching technology for every application: The new 3RF34 solid-state switching devices are employed wherever motors with very high switching frequencies require wear-free and silent switching. The 3RW soft starters guarantee a current- and torque-limiting start-up process for the protection of motor, mechanics and mains. As a highlight, the current monitoring relay guarantees easy application monitoring even beyond the motor.

Answers for industry.

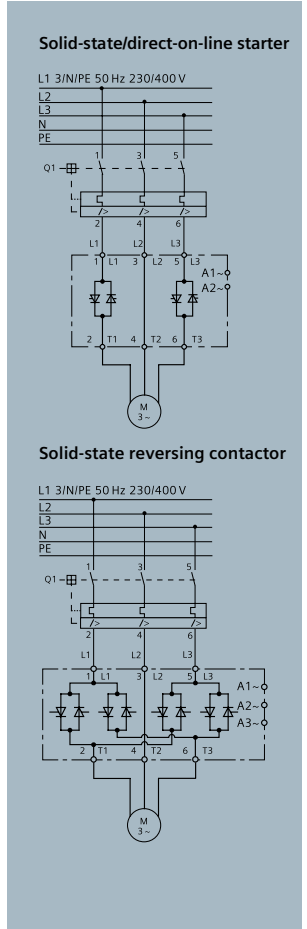
Starter combination: Motor starter protectors and solid-state switching devices with optional current monitoring relay

Solid-state contactors for the switching of motors are designed for the frequent on- and off-switching of three-phase drives in one direction of rotation up to 7.5 kW, as well as for reversing operation up to 3.0 kW.

Advantages:

- Wear-free, silent switching
- Insulated enclosure with integrated heat sink
- Degree of protection IP20 – finger-safe without additional cover
- Screw-type or spring-loaded connection
- Compact, space-saving design
- Reversing contactors with integrated electrical interlocking
- **NEW:** Current monitoring relay, directly in the main circuit, for the protection of motor, machine and application

Three-phase motor			Setting range Class 10	Motor starter protectors	Solid-state contactors Operating voltage 48–480 V AC	Solid-state reversing contactors Operating voltage 48–480 V AC	Current monitoring relay
Power [kW]	Current [A]	[A]	[A]		Rated operating current [A]	Rated operating current [A]	Measuring range [A]
Size, width				S00, 45 mm	S0, 45 mm	S0, 45 mm	S0, 45 mm
0.09	0.32	0.22 – 0.32		3RV2011-0DA <input type="checkbox"/> 0			
0.12	0.5	0.35 – 0.5		3RV2011-0FA <input type="checkbox"/> 0			
0.18	0.63	0.45 – 0.63		3RV2011-0GA <input type="checkbox"/> 0			
0.25	1	0.7 – 1		3RV2011-0JA <input type="checkbox"/> 0			
0.37	1.25	0.9 – 1.25		3RV2011-0KA <input type="checkbox"/> 0	5.2	3RF3405- <input type="checkbox"/> BB <input type="checkbox"/> 4	3.8
0.55	1.6	1.1 – 1.6		3RV2011-1AA <input type="checkbox"/> 0			
0.75	2	1.4 – 2		3RV2011-1BA <input type="checkbox"/> 0			
1.1	3.2	2.2 – 3.2		3RV2011-1DA <input type="checkbox"/> 0			
1.5	4	2.8 – 4		3RV2011-1EA <input type="checkbox"/> 0			
2.2	6.3	4.5 – 6.3		3RV2011-1GA <input type="checkbox"/> 0			
Size, width					S0, 90 mm	S0, 90 mm	
3	8	5.5 – 8		3RV2011-1HA <input type="checkbox"/> 0	9.2	3RF3410- <input type="checkbox"/> BB <input type="checkbox"/> 4	7.4
4	10	7 – 10		3RV2011-1JA <input type="checkbox"/> 0			
5.5	12.5	9 – 12.5		3RV2011-1KA <input type="checkbox"/> 0	12.5	3RF3412- <input type="checkbox"/> BB <input type="checkbox"/> 4	
7.5	16	11 – 16		3RV2011-4AA <input type="checkbox"/> 0			
Size, width				S0, 45 mm			
7.5	16	11 – 16		3RV2021-4AA <input type="checkbox"/> 0	16	3RF3416- <input type="checkbox"/> BB <input type="checkbox"/> 4	4 – 16
							3RR2142- <input type="checkbox"/> A <input type="checkbox"/> 30
							3RR2242- <input type="checkbox"/> F <input type="checkbox"/> 30



Screw-type connection: 1 Screw-type connection: 1 Screw-type connection: 1 Screw-type connection: 1

Spring-loaded connection up to 32 A: 2 Spring-loaded connection: 2 Spring-loaded connection: - Spring-loaded connection: 2

Control supply voltage 24 V DC: 0 Control supply voltage 24 V DC: 0 24 V AC/DC: A

230 V, 50/60 Hz: 2 230 V, 50/60 Hz: 2 24 – 240 V AC/DC: W

Starter combinations: Circuit breakers and soft starters

Soft starters for a current- and torque-limiting start-up process can be easily combined with the basic components of the SIRIUS modular system. They protect the machine's mechanical power-transmission elements and efficiently protect the mains against high inrush peaks by means of reduced current input.

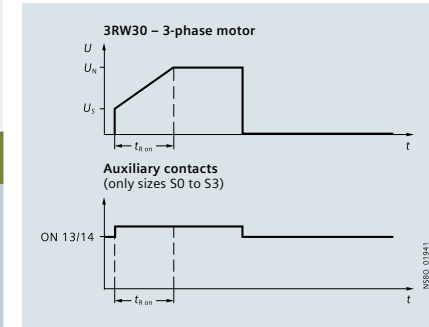
Advantages:

- Optimum adjustment per application thanks to individual potentiometers
- Minimum power loss, thanks to integrated bypass contacts after completed start-up
- Considerable space savings compared to star-delta combinations

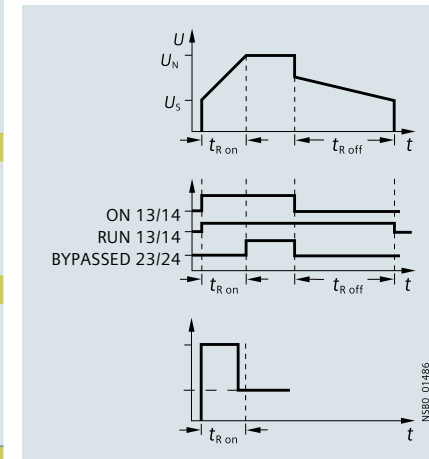
			Motor starter protectors	3RW30 Soft starters Operating voltage 3x200–480V AC	3RW40 Soft starters Operating voltage 3x200–480V AC
Three-phase motor	Setting range Class 10			Starts/h Rated Normal start-up current	Starts/h Rated Normal start-up current
	Power [kW]	Current [A]	[A]	[A]	[A]
Size, width			S00, 45 mm	S00, 45 mm	
0.25	1	0.7 – 1	3RV2011-0JA <input type="checkbox"/> 0		
0.37	1.25	0.9 – 1.25	3RV2011-0KA <input type="checkbox"/> 0		
0.55	1.6	1.1 – 1.6	3RV2011-1AA <input type="checkbox"/> 0	150 3.6 3RW3013- <input type="checkbox"/> BB <input type="checkbox"/> 4	
0.75	2	1.4 – 2	3RV2011-1BA <input type="checkbox"/> 0		
1.1	3.2	2.2 – 3.2	3RV2011-1DA <input type="checkbox"/> 0		
1.5	4	2.8 – 4	3RV2011-1EA <input type="checkbox"/> 0		
1.5	5	3.5 – 5	3RV2011-1FA <input type="checkbox"/> 0	64 6.5 3RW3014- <input type="checkbox"/> BB <input type="checkbox"/> 4	36 12.5 3RW4024- <input type="checkbox"/> BB <input type="checkbox"/> 4
2.2	6.3	4.5 – 6.3	3RV2011-1GA <input type="checkbox"/> 0		
3	8	5.5 – 8	3RV2011-1HA <input type="checkbox"/> 0		
4	10	7 – 10	3RV2011-1JA <input type="checkbox"/> 0	35 9 3RW3016- <input type="checkbox"/> BB <input type="checkbox"/> 4	
5.5	12.5	9 – 12.5	3RV2011-1KA <input type="checkbox"/> 0	62 12.5 3RW3017- <input type="checkbox"/> BB <input type="checkbox"/> 4	
7.5	16	11 – 16	3RV2011-4AA <input type="checkbox"/> 0	45 17.6 3RW3018- <input type="checkbox"/> BB <input type="checkbox"/> 4	15 25 3RW4026- <input type="checkbox"/> BB <input type="checkbox"/> 4
Size, width			S0, 45 mm	S0, 45 mm	
7.5	16	11 – 16	3RV2021-4AA <input type="checkbox"/> 0		
7.5	20	14 – 20	3RV2021-4BA <input type="checkbox"/> 0	15 25 3RW3026- <input type="checkbox"/> BB <input type="checkbox"/> 4	
11	22	17 – 22	3RV2021-4CA <input type="checkbox"/> 0		
11	25	20 – 25	3RV2021-4DA <input type="checkbox"/> 0		
15	28	23 – 28	3RV2021-4NA <input type="checkbox"/> 0	16 32 3RW3027- <input type="checkbox"/> BB <input type="checkbox"/> 4	16 32 3RW4027- <input type="checkbox"/> BB <input type="checkbox"/> 4
15	32	27 – 32	3RV2021-4EA <input type="checkbox"/> 0		
18.5	36	30 – 36	3RV2021-4PA <input type="checkbox"/> 1 0	12 38 3RW3028- <input type="checkbox"/> BB <input type="checkbox"/> 4	12 38 3RW4028- <input type="checkbox"/> BB <input type="checkbox"/> 4
18.5	40	34 – 40	3RV2021-4FA <input type="checkbox"/> 1 0		

Screw-type connection: <input type="checkbox"/> 1	Screw-type connection: <input type="checkbox"/> 1	Screw-type connection: <input type="checkbox"/> 1
Spring-loaded connection up to 32 A: <input type="checkbox"/> 2	Spring-loaded connection: <input type="checkbox"/> 2	Spring-loaded connection: <input type="checkbox"/> 2
Control supply voltage 24 V AC/DC: <input type="checkbox"/> 0	Control supply voltage 24 V AC/DC: <input type="checkbox"/> 0	Control supply voltage 24 V AC/DC: <input type="checkbox"/> 0
110 – 230 V AC/DC: <input type="checkbox"/> 1	110 – 230 V AC/DC: <input type="checkbox"/> 1	110 – 230 V AC/DC: <input type="checkbox"/> 1

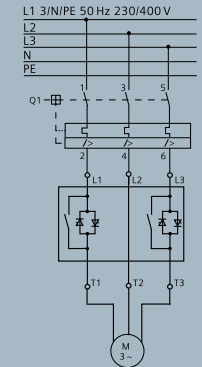
3RW3 State diagrams



3RW4 State diagrams

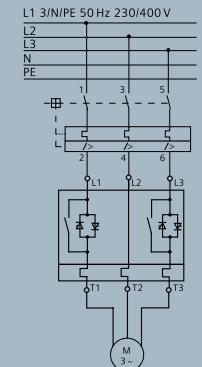


3RW3 Soft starter



3RW4 Soft starter

The 3RW4 is equipped with additional potentiometers for soft stop, current limiting and motor overload protection. Furthermore, it features intrinsic device protection, manual, automatic or remote reset as standard and optional thermistor motor protection.



Selection guide for soft starters



Application	SIRIUS 3RW30 Standard applications	SIRIUS 3RW40 Standard applications
Normal starting (CLASS 10)		
Pump	●	●
Pump with special stop (anti-water hammer)		
Heat pump	●	●
Hydraulic pump	○	●
Press	○	●
Conveyor belt	○	●
Roller conveyor	○	●
Screw conveyor	○	●
Escalator		●
Piston compressor		●
Screw compressor		●
Small fan		●
Centrifugal blower		●
Bow thruster		●

Current monitoring relay functions

Analog and digital setting:

- Overcurrent monitoring (wear, overload)
- Undercurrent monitoring (load shedding, no-load operation, belt slippage)
- Cable breakage / phase failure monitoring



Measuring principle:

- Apparent current measuring



Additional settings:

- Fault current monitoring
- Phase sequence monitoring
- Immediate disconnection in case of 2- to 5-fold I_{nom} exceedance (blocking)

Measuring principle:

- Apparent or active current measuring

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