

For Motor Protection

3RV20 Class 10 – up to 40A

MOTOR STARTER PROTECTORS 1

Description	Ordering Information
<p>The 3RV20x MSPs are UL approved as Self Protected Combination Motor Controllers which are also called Type E. In this application, all the required functions for a motor branch are provided in one device: disconnect, short circuit protection, motor control and overload protection. A type E terminal adaptor is required. The 3RV20x MSPs are also approved for use as follows:</p> <ul style="list-style-type: none"> – Manual Motor Controller: Motor starter, motor disconnect, control and overload—protection. – Group Installation: Motor starter only, motor disconnect, control and overload protection. – Tap conductor Protection in Group Installation acc. NEC: Motor starter only; motor disconnect, control and overload protection. <p>When the 3RV20x is used with one of the 3 above mentioned approvals, the 3RV20x can be installed downstream of one circuit breaker or fuse set.</p> <p>For more detailed application information and rules how to apply, size and rate the 3RV20x in control panels in general, in group installations or in accordance to international IEC standards visit our website: www.usa.siemens.com/controlpaneldesign</p>	<ul style="list-style-type: none"> ▶ ON/OFF rotary handle with lockout and visible trip indication. ▶ Adjustment dial for setting to motor FLA. ▶ Class 10 overload trip characteristics. ▶ Short circuit trip at 13 times the maximum setting of the FLA adjustment dial. ▶ Short circuit current rating: ▶ Ambient compensated up to 140° F (applies to side by side mounting). ▶ Phase loss sensitivity. ▶ Test trip function. ▶ Terminal versions: screw, spring, ring lug. ▶ Auxiliaries and Accessories see pages 1/7–1/17. ▶ General Information see pages 1/29–1/32. ▶ Technical Data see pages 1/18–1/28. ▶ Dimensions see page 1/33.

Note: Select MSP by motor Full Load Amperes. Horsepower ratings are for reference only.

Illustration	FLA Adjustment Range [A]	Single-Phase HP Ratings		Three-Phase HP Ratings ¹⁾				Instantaneous short circuit release [A]	UL short-circuit breaking capacity @ 480V [kA]	Size S00 ^{2) 4)}	
		115V	230V	200V	230V	460V	575V			Order Number	Order Number
	0.11-0.16	—	—	—	—	—	—	2.1	65	3RV2011-0AA●●	—
	0.14-0.2	—	—	—	—	—	—	2.6	65	3RV2011-0BA●●	—
	0.18-0.25	—	—	—	—	—	—	3.3	65	3RV2011-0CA●●	—
	0.22-0.32	—	—	—	—	—	—	4.2	65	3RV2011-0DA●●	—
	0.28-0.4	—	—	—	—	—	—	5.2	65	3RV2011-0EA●●	—
	0.35-0.5	—	—	—	—	—	—	6.5	65	3RV2011-0FA●●	—
	0.45-0.63	—	—	—	—	—	—	8.2	65	3RV2011-0GA●●	3RV2021-0GA●●
	0.55-0.8	—	—	—	—	—	—	10	65	3RV2011-0HA●●	3RV2021-0HA●●
	0.7-1	—	—	—	—	—	1/2	13	65	3RV2011-0JA●●	3RV2021-0JA●●
	0.9-1.25	—	—	—	—	—	1/2	16	65	3RV2011-0KA●●	3RV2021-0KA●●
	1.1-1.6	—	1/10	—	—	—	3/4	21	65	3RV2011-1AA●●	3RV2021-1AA●●
	1.4-2	—	1/8	—	—	—	3/4	26	65	3RV2011-1BA●●	3RV2021-1BA●●
	1.8-2.5	—	1/8	1/2	1/2	1	1 1/2	33	65	3RV2011-1CA●●	3RV2021-1CA●●
	2.2-3.2	1/10	1/4	1/2	3/4	1 1/2	2	42	65	3RV2011-1DA●●	3RV2021-1DA●●
	2.8-4	1/8	1/8	3/4	3/4	2	3	52	65	3RV2011-1EA●●	3RV2021-1EA●●
	3.5-5	1/8	1/2	1	1	3	3	65	65	3RV2011-1FA●●	3RV2021-1FA●●
	4.5-6.3	1/4	1/2	1	1 1/2	3	5	82	65	3RV2011-1GA●●	3RV2021-1GA●●
	5.5-8	1/3	1	2	2	5	5	104	65	3RV2011-1HA●●	3RV2021-1HA●●
	7-10	1/2	1 1/2	2	3	5	7 1/2	130	65	3RV2011-1JA●●	3RV2021-1JA●●
	9-12.5	1/2	2	3	3	7 1/2	10	163	65	3RV2011-1KA●●	3RV2021-1KA●●
	10-16	1	2	3	5	10	—	208	65	3RV2011-4AA●●	3RV2021-4AA●●
	13-20	1 1/2	3	5	5	10	—	260	65	—	3RV2021-4BA●●
	16-22	1 1/2	3	5	7 1/2	15	—	286	65	—	3RV2021-4CA●●
18-25	2	3	5	7 1/2	15	—	325	65	—	3RV2021-4DA●●	
23-28	2	5	7 1/2	10	20	—	364	50	—	3RV2021-4NA●●	
27-32	2	5	7 1/2	10	20	—	400	50	—	3RV2021-4EA●●	
30-36 ³⁾	3	5	10	10	25	—	432	12	—	3RV2021-4PA●● ⁵⁾	
34-40 ³⁾	3	7 1/2	10	10	30	—	480	12	—	3RV2021-4FA●● ⁵⁾	

Screw terminals, no auxiliary: ●● = 10
 Screw Terminals, with 1NO/1NC Aux: ●● = 15
 Spring terminals, no auxiliary: ●● = 20
 Spring Terminals, with 1NO/1NC Aux: ●● = 25
 Ring Lug Terminals, no Auxiliary: ●● = 40

1) Select motor starter protector by motor full load amps. Horsepower ratings for reference only.
 2) The motor starter protectors rated up to 32 A can be used as manual motor controllers or as Type E combination motor controllers. For use as a Type E combina-

tion motor controller, a Type E terminal is required. See accessories page 1/10.
 3) These products are NOT certified as Type E combination motor controllers. They can only be used as manual motor controllers.

4) 3RV2 MSPs can only be used with Innovations contactors and accessories
 5) Spring and Ring Lug terminals are not available

For Motor Protection

3RV10 Class 10 & 20 – up to 100A

MOTOR STARTER PROTECTORS

Description	Ordering Information
<p>The 3RV203/204 MSPs are UL approved as Self Protected Combination Motor Controllers which are also called Type E. In this application, all the required functions for a motor branch are provided in one device: disconnect, short circuit protection, motor control and overload protection. A type E terminal adaptor is required for all S2 frame 3RV2031 above 45A and all S2 frame 3RV2032 as well as for all S3 frame motor starter protectors.</p> <p>The 3RV203/204 MSPs are also approved for use as follows:</p> <ul style="list-style-type: none"> – Manual Motor Controller: Motor starter, motor disconnect, control and overload protection. – Group Installation: Motor starter only, motor disconnect, control and overload protection. – Tap conductor Protection in Group Installation acc. NEC: Motor starter only; motor disconnect, control and overload protection. <p>When the 3RV203/204 is used with one of the 3 above mentioned approvals, they can be installed downstream of one circuit breaker or fuse set.</p> <p>For more detailed application information and rules how to apply, size and rate these MSPs in control panels in general, in group installations or in accordance to international IEC standards visit our website: www.usa.siemens.com/controlpaneldesign</p>	<ul style="list-style-type: none"> ▶ ON/OFF rotary handle with lockout and visible trip indication. ▶ Adjustment dial for setting to motor FLA. ▶ Class 10 overload trip characteristics. ▶ Short circuit trip at 13 times the maximum setting of the FLA adjustment dial. ▶ Short circuit current rating: ▶ Ambient compensated up to 140° F (applies to side by side mounting). ▶ Phase loss sensitivity. ▶ Test trip function. ▶ Auxiliaries and Accessories see pages 1/7–1/17. ▶ General Information see pages 1/29–1/32. ▶ Technical Data see pages 1/18–1/28. ▶ Dimensions see page 1/33.

Note: Select MSP by motor Full Load Amperes. Horsepower ratings are for reference only.

Illustration	FLA Adjustment Range [A]	Single Phase HP rating ¹⁾		3 Phase HP Rating ¹⁾				Inst. Short-Circuit Release [A]	UL AIC (480V) [kA] ⁶⁾	Trip Class 10	Trip Class 20
		115V	240V	200V	230V	460V	575V			Order Number ⁴⁾	Order Number ⁴⁾
	3RV203 Frame Size S2										
	9.5 - 14	1.5	3	5	5	10	15	208	65	3RV2031-4SA10	3RV2031-4SB10
	12 - 17	1.5	3	5	7.5	15	15	260	65	3RV2031-4TA10	3RV2031-4TB10
	14 - 20	1.5	3	7.5	7.5	15	20	260	65	3RV2031-4BA10	3RV2031-4BB10
	18 - 25	2	5	7.5	10	20	25	325	65	3RV2031-4DA10	3RV2031-4DB10
	22 - 32	3	5	10	10	25	30	416	65	3RV2031-4EA10	3RV2031-4EB10
	28 - 36	3	7.5	15	15	30	40	520	65	3RV2031-4PA10	3RV2031-4PB10
	32 - 40	3	7.5	15	15	30	40	585	65	3RV2031-4UA10	3RV2031-4UB10
	35 - 45	3	10	15	15	40	50	650	65	3RV2031-4VA10	3RV2031-4VB10
	42 - 52	5	10	15	20	40	50	741	65	3RV2031-4WA10	3RV2031-4WB10
49 - 59	5	15	20	25	50	60	845	30	3RV2031-4XA10	3RV2031-4XB10	
54 - 65	5	15	20	25	50	60	845	30	3RV2031-4JA10	3RV2031-4JB10	
62 - 73	7.5	15	25	30	60	75	949	30	3RV2031-4KA10	3RV2031-4KB10	
70 - 80 ⁷⁾	7.5	15	25	30	60	75	1040	30	3RV2032-4RA10	3RV2032-4RB10	
	3RV204 Frame Size S3										
	28 - 40	3	7.5	15	15	30	40	520A	65	3RV2041-4FA10	3RV2042-4FB10
	36 - 50	5	10	15	20	40	50	650A	65	3RV2041-4HA10	3RV2042-4HB10
	45 - 63	5	15	20	25	50	60	819A	65	3RV2041-4JA10	3RV2042-4JB10
	57 - 75	7.5	15	25	25	60	75	975A	65	3RV2041-4KA10	3RV2042-4KB10
	65 - 84	7.5	15	25	30	60	75	1170A	65	3RV2041-4RA10	3RV2042-4RB10
	75 - 93	7.5	20	30	40	75	100 ³⁾	1300A	65	3RV2041-4YA10	3RV2042-4YB10
80 - 100	10	25	40	40	75	100 ³⁾	1300A	65	3RV2041-4MA10	3RV2042-4MB10	

1) Select motor starter protector by motor full load amps. Horsepower ratings for reference only.

2) Size S2 and S3 are listed as type E combination motor controllers. For required Type E terminals see page 1/10. 3RV2031 MSPs with a current setting limit of 45A or less do not require a type E terminal and fulfill the spacing requirements of UL508.

3) Shaded ratings apply for group installation only. These ratings do not apply as UL listed manual combination starters.

4) Pre-assembled motor starter protector and transverse auxiliary switch with 1NO + 1NC is available. Replace the last digit of the order no. with a "5".

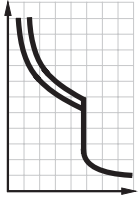
5) 3RV1 MSPs can only be used with 3RT1 contactors and accessories. 3RV2 MSPs can only be used with 3RT2 contactors and accessories.

6) For 100kA SCCR rated MSPs, change the part number from 3RV2031 to 3RV2032. (applies to S2 frame only through 65A).

7) Suitable for use with IE3/IE4 motors up to a starting current of 720A. For higher starting currents use size S3.

Refer to pages 1/18 to 1/20 when using an MSP in a Manual Motor Starter or a Manual Self-Protected Combination Motor Controller.

Selection and ordering data



Rated Current ¹⁾ [A]	Thermal overload release (non-adjustable) [A]	Short Circuit breaking capacity [kA]			For Motor Protection ²⁾			For Transformer Protection ³⁾		
		480 VAC	480Y/277VAC	600Y/347VAC	Instantaneous Over Current Release [A]	Order Number (Screw Terminals)	Weight [kg]	Instantaneous Over Current Release [A]	Order Number (Screw Terminals)	Weight [kg]
Innovations Frame Size S00⁴⁾										
0.16	0.16	—	65	10	2.1	3RV2711-0AD10	0.390	3.3	3RV2811-0AD10	0.390
0.2	0.2	—	65	10	2.6	3RV2711-0BD10	0.390	4.2	3RV2811-0BD10	0.390
0.25	0.25	—	65	10	3.3	3RV2711-0CD10	0.390	5.2	3RV2811-0CD10	0.390
0.32	0.32	—	65	10	4.2	3RV2711-0DD10	0.390	6.5	3RV2811-0DD10	0.390
0.4	0.4	—	65	10	5.2	3RV2711-0ED10	0.390	8.2	3RV2811-0ED10	0.390
0.5	0.5	—	65	10	6.5	3RV2711-0FD10	0.390	10	3RV2811-0FD10	0.390
0.63	0.63	—	65	10	8.2	3RV2711-0GD10	0.390	13	3RV2811-0GD10	0.400
0.8	0.8	—	65	10	10	3RV2711-0HD10	0.390	16	3RV2811-0HD10	0.450
1	1	—	65	10	13	3RV2711-0JD10	0.450	21	3RV2811-0JD10	0.450
1.25	1.25	—	65	10	16	3RV2711-0KD10	0.450	26	3RV2811-0KD10	0.460
1.6	1.6	—	65	10	21	3RV2711-1AD10	0.460	33	3RV2811-1AD10	0.460
2	2	—	65	10	26	3RV2711-1BD10	0.460	42	3RV2811-1BD10	0.460
2.5	2.5	—	65	10	33	3RV2711-1CD10	0.460	52	3RV2811-1CD10	0.460
3.2	3.2	—	65	10	42	3RV2711-1DD10	0.460	65	3RV2811-1DD10	0.460
4	4	—	65	10	52	3RV2711-1ED10	0.450	82	3RV2811-1ED10	0.460
5	5	—	65	10	65	3RV2711-1FD10	0.460	104	3RV2811-1FD10	0.460
6.3	6.3	—	65	10	82	3RV2711-1GD10	0.460	130	3RV2811-1GD10	0.460
8	8	—	65	10	104	3RV2711-1HD10	0.460	163	3RV2811-1HD10	0.460
10	10	—	65	10	130	3RV2711-1JD10	0.460	208	3RV2811-1JD10	0.460
12.5	12.5	—	65	10	163	3RV2711-1KD10	0.460	260	3RV2811-1KD10	0.460
15	15	—	65	—	208	3RV2711-4AD10	0.470	286	3RV2811-4AD10	0.470
Innovations Frame Size S0⁴⁾										
20	20	—	50	—	260	3RV2721-4BD10	0.514	325	3RV2821-4BD10	0.516
22	22	—	50	—	286	3RV2721-4CD10	0.516	364	3RV2821-4CD10	0.528
Innovations Frame Size S3⁵⁾										
10	10	65	—	20	150	3RV2742-5AD10	0.460	—	—	—
15	15	65	—	20	225	3RV2742-5BD10	0.460	—	—	—
20	20	65	—	20	260	3RV2742-5CD10	0.460	—	—	—
25	25	65	—	20	325	3RV2742-5DD10	0.460	—	—	—
30	30	65	—	20	390	3RV2742-5ED10	0.460	—	—	—
35	35	—	65	20	455	3RV2742-5FD10	0.460	—	—	—
40	40	—	65	20	520	3RV2742-5GD10	0.460	—	—	—
45	45	—	65	20	585	3RV2742-5HD10	0.460	—	—	—
50	50	—	65	20	650	3RV2742-5JD10	0.460	—	—	—
60	60	—	65	20	780	3RV2742-5LD10	0.460	—	—	—
70	70	—	65	10	910	3RV2742-5QD10	0.460	—	—	—



1) 100 % rated value acc. to UL 489 and IEC 60947-2 (100 % rated breaker).

2) Circuit breakers for system protection of motor and non-motor loads. Requires use of separate overload protection for motor applications.

3) Circuit breakers for system and transformer protection according to UL/CSA. Specially designed for transformers with high inrush current.

4) Transverse and lateral auxiliary switches can be ordered separately (see "Mountable accessories").

5) Transverse auxiliary switches must not be mounted. Lateral auxiliary switches can be ordered separately (see "Mountable accessories").

Refer to page 1/21 when using as upstream protection of a Manual Motor Controller or a Manual Motor Controller Suitable for Tap Conductor Protection in Group Installations.

Accessories

Auxiliaries and Accessories

Selection and ordering data

			Width	Innovations	
Type	Version	Fits 3RV2 Frame Size		Screw Connection Order No.	
Auxiliary switches³⁾					
3RV2901-1E 	Transverse auxiliary switches	1 CO 1 NO + 1 NC 2 NO		S00, S0, S2, S3	3RV2901-1D 1), 2) 3RV2901-1E 1) 3RV2901-1F
3RV2901-1G 	Solid-state compatible, transverse auxiliary switches for use in dusty atmosphere and in electronic circuits with low operating currents	1 CO		S00, S0, S2, S3	3RV2901-1G
3RV2901-1A 	Covering caps for transverse auxiliary switch slots (pack of 10)			S00, S0, S2, S3	3RV2901-0H
	Lateral auxiliary switches (side mount) Width = 9 mm	1 NO + 1 NC 2 NO 2 NC 2 NO + 2 NC	9 9 9 18	S00, S0, S2, S3	1), 2) 3RV2901-1A 1) 3RV2901-1B 1) 3RV2901-1C 3RV2901-1J
Signaling switch⁴⁾					
3RV2921-1M 	Signaling switch (side mount) Individual tripped and short-circuit signaling Width = 18 mm	1 NO + 1 NC each	18	S00, S0, S2, S3	1), 2) 3RV2921-1M
Auxiliary releases⁵⁾					
3RV2902-1AB4 	Undervoltage releases (side mount) Width = 18 mm	DC 24 V AC 50 Hz 24 V 110 V — 230 V 400 V 415 V 500 V AC 60 Hz — 120 V 208 V 240 V 440 V 480 V 600 V		S00, S0, S2, S3 S00, S0, S2, S3	3RV2902-1AB4 3RV2902-1AB0 3RV2902-1AF0 1), 2) 3RV2902-1AM1 1), 2) 3RV2902-1AP0 3RV2902-1AV0 3RV2902-1AV1 3RV2902-1AS0
	Undervoltage releases with leading auxiliary contacts 2 NO (side mount) Width = 18 mm	24V 230 V 400 V 415 V 24V 240 V 440 V 480 V		S00, S0, S2, S3	3RV2922-1CB0 1) 3RV2922-1CP0 1) 3RV2922-1CV0 1), 2) 3RV2922-1CV1
	Shunt releases (side mount) Width = 18 mm	AC 50/60 Hz 100% ON⁶⁾ 20-24 V 90-110 V 210-240 V 350-415 V 500 V AC 50/60 Hz 5 sec ON⁷⁾ 20-70 V 70-190 V 190-330 V 330-500 V 500 V		S00, S0, S2, S3	1), 2) 3RV2902-1DB0 1), 2) 3RV2902-1DF0 1) 3RV2902-1DP0 3RV2902-1DV0 3RV2902-1DS0

1) This product is also available with spring terminals. The order no. must be changed in the 8th position to a "2": e.g. 3RV1901-2E or 3RV2901-2E

2) This product is also available with ring lug terminals. The order no. must be changed in the 8th position to a "4": e.g. 3RV2901-4E

3) Each motor starter protector can be fitted with one transverse and one lateral auxiliary switch. The lateral auxiliary switch 2 NO + 2 NC is used without transverse auxiliary switch.

4) One signaling switch can be mounted at the left of the motor starter protector. This accessory cannot be used on the 3RV27 and 3RV28 circuit breakers.

5) One auxiliary release can be mounted at the right of each MSP: motor starter protector.

6) The response voltage at the lower limit of the voltage range at 0.85 (Tu=60°C) is valid for 100% (infinite)

7) The response voltage at the lower limit of the voltage range at 0.9 (Tu=60°C) applies for a duty cycle of 5 seconds at AC 50/60 Hz and DC.

Accessories

Mounting accessories

1 MOTOR STARTER PROTECTORS

Selection and ordering data

Modular spacing mm	Number of motor starter protectors that can be connected			Rated current I_n at 690 V A	For motor starter protectors Size	Order No.	Order quantity	Weight approx. kg
	Without lateral accessories	Incl. lateral auxiliary switch	With auxiliary trip unit					

Three-phase busbar systems for Classic and Innovations

For feeding several motor starter protectors with screw terminals, mounted side-by-side on standard mounting rails, insulated, with touch protection.									
3RV19 15-1AB	45	2	--	--	63	S00, S0 ¹⁾²⁾ S00, S0 ¹⁾²⁾ S00, S0 ¹⁾²⁾ S00, S0 ¹⁾²⁾	3RV19 15-1AB 3RV19 15-1BB 3RV19 15-1CB 3RV19 15-1DB	1 unit 1 unit 1 unit 1 unit	0.044 0.071 0.099 0.124
3RV19 15-1BB	55	--	2	--	63	S00, S0 ¹⁾²⁾ S00, S0 ¹⁾²⁾ S00, S0 ¹⁾²⁾ S00, S0 ¹⁾²⁾	3RV19 15-2AB 3RV19 15-2BB 3RV19 15-2CB 3RV19 15-2DB	1 unit 1 unit 1 unit 1 unit	0.048 0.079 0.111 0.140
3RV19 15-1CB	63	--	--	2	63	S00, S0 ¹⁾²⁾ S00, S0 ¹⁾²⁾	3RV19 15-3AB 3RV19 15-3CB	1 unit 1 unit	0.052 0.120
3RV19 15-1DB	55	2	--	--	108	S2 ³⁾ S2 ³⁾ S2 ³⁾	3RV19 35-1A 3RV19 35-1B 3RV19 35-1C	1 unit 1 unit 1 unit	0.150 0.214 0.295
	75	--	2	2	108	S2 S2 S2	3RV19 35-3A 3RV19 35-3B 3RV19 35-3C	1 unit 1 unit 1 unit	0.161 0.262 0.369

1) Not suitable for 3RV21 motor starter protectors with overload relay function. The 3RV1915-5DB connecting piece is available for connecting motor starter protectors from size S0 to size S00.

2) Not suitable for 3RV UL 489 circuit breakers.

3) Auxiliary trip units and lateral auxiliary switches cannot be used in combination.

Version	Modular spacing mm	For motor starter protectors Size	Order No.	Order quantity	Weight approx. kg
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Connecting pieces for three-phase busbars

3RV19 15-5DB	45	S00, S0	3RV19 15-5DB	1 unit	0.042
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Conductor cross-section, AWG cables, solid or stranded		Tightening torque Nm	For motor starter protector size	Order No.
For 3RV1 MSP	For 3RV2 MSP			
AWG	AWG			3RV2 Innovations²⁾

Three-phase feeder terminals

3RV29 25-5AB	Connection from top				
	--	10...4	3...4	S00	3RV2925-5AB
	--	10...4	3...4	S0	3RV2925-5AB
3RV2915-5B	Connection from below³⁾				
	--	10...4	Input: 4, Output: 2 ... 2.5	S00, S0	3RV2915-5B
3RV2935-5A	Connection from top				
	14...0	--	4-6	S2	3RV2935-5A

Three-phase feeder terminals for constructing "Type E Starters" Innovations

3RV2935-5E	Connection from top				
	--	10...4	3-4	S00	3RV2925-5EB
	--	10...4	3-4	S0	3RV2925-5EB
	8...0	10...2/0	4.5-6	S2	3RV2935-5E

1) Do not mix 3RV1 Classic Accessories with 3RV2 Innovations MSPs

2) Do not mix 3RV2 Innovations Accessories with 3RV1 Classic MSPs

3) This terminal is connected in place of a switch, please take the space requirement into account.

Accessories

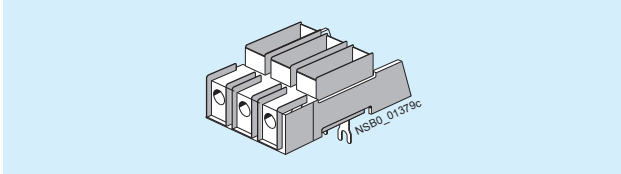
Mounting accessories

Overview

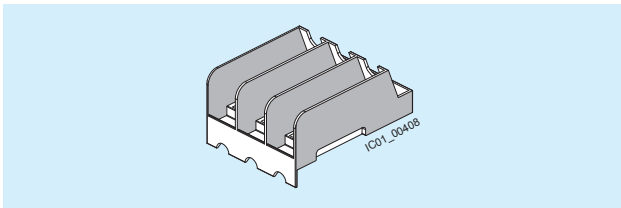
Accessories for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1

The 3RV20 motor starter protectors with screw terminals are approved according to UL 508/UL 60947-4-1 as "Self-Protected Combination Motor Controllers (Type E)".

This requires increased clearance and creepage distances (1 inch and 2 inches respectively) at the input side of the device, which are achieved by mounting a terminal block or a phase barrier.



SIRIUS 3RV2928-1H terminal block



SIRIUS 3RV2938-1K phase barrier

Motor starter protectors/ circuit breakers	Size	Essential accessories for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1
3RV201., 3RV202.	S00/S0	3RV2928-1H terminal block or 3RV2928-1K phase barrier
3RV2031-4B1., 3RV2031-4D.1., 3RV2031-4E1., 3RV2031-4P.1., 3RV2031-4S.1., 3RV2031-4T.1., 3RV2031-4U.1., 3RV2031-4V.1.	S2	--
3RV2031-4J.1., 3RV2031-4K.1., 3RV2031-4R.1., 3RV2031-4W.1., 3RV2031-4X.1., 3RV2032	S2	3RV2938-1K phase barrier
3RV204	S3	3RT2946-4GA07 terminal block

-- No accessories needed

Special threephase infeed terminals are required for constructing "Type E Starters" with an insulated threephase busbar system (see page 1/8).

The 3RV29 infeed system also enables the assembly of "Type E Starters", see page 1/14 onwards.

Note:

According to CSA, these terminal blocks and the phase barriers can be omitted when the device is used as a "Self-Protected Combination Motor Controller (Type E)".

Link modules

Feeders can be easily assembled from single devices with the help of the link modules. The following table shows the different combination options for devices with screw or spring-type terminals.

Combination devices	3RV2 motor starter protectors/ circuit breakers	3RT2 contactors; 3RW30, 3RW40 soft starters; 3RF34 solid-state contactors	Link modules	
			Screw terminals	Spring-type terminals
	Size	Size		

Link modules for connecting switching devices to 3RV2 motor starter protectors/circuit breakers¹⁾

3RT2 contactors with AC or DC coil	S00	S00	3RA1921-1DA00	3RA2911-2AA00
	S0	S00		--
	S2	S2	3RA2931-1AA00	--
3RT2 contactors with AC coil	S0	S0	3RA2921-1AA00	3RA2921-2AA00
	S00	S0		--
3RT2 contactors with DC coil	S0	S0	3RA2921-1BA00	3RA2921-2AA00
	S00	S0		--
3RW30 soft starters	S00	S00	3RA2921-1BA00	3RA2911-2GA00
	S0	S00		--
3RW30/3RW40 soft starters	S0	S0	3RA2921-1BA00	3RA2921-2GA00
	S00	S0		--
	S2 ²⁾	S2 ²⁾	3RA2931-1AA00	--
3RF34 solid-state contactors	S00/S0	S00	3RA2921-1BA00	--

Hybrid link modules for connecting contactors with spring-type terminals to 3RV2 motor starter protectors/circuit breakers with screw terminals³⁾

3RT2 contactors with AC or DC coil	S00	S00	3RA2911-2FA00	--
	S0	S0	3RA2921-2FA00	--

-- Version not possible

¹⁾ The link modules cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

²⁾ To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-1AC00 standard mounting rail adapter must be used.

³⁾ The motor starter protector to contactor hybrid link modules cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27 and 3RV28 motor starter protectors/circuit breakers. They are only suitable for constructing direct-on-line starters.

Note:

- Link modules can be used in
 - Sizes S00 and S0: up to max. 32 A
 - Size S2: up to max. 65 A
- Hybrid link modules can be used in
 - Sizes S00 and S0: up to max. 32 A

Selection and ordering data

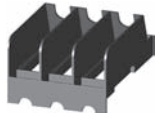
Version	For motor starter protector size	Innovations 3RV2/3RT2 Order No.	Order Quantity
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Terminal blocks and phase barriers for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508 / UL 60947-4-1

Note:
 UL 508 / UL 60947-4-1 demands 1-inch clearance and 2-inch creepage distance at line side for "Combination Motor Controller Type E".
 The following terminal blocks or phase barriers must be used on 3RV motor starter protectors.
 The terminal blocks or phase barriers cannot be used in combination with the 3RV19 .5 three-phase busbars.
 For construction with three-phase busbars, see "Accessories for busbar"



3RV29 28-1H



3RV29 28-1K



3RT1946-4GA07

Terminal blocks type E	For extended clearance and creepage distances (1 and 2 inch)	Size	3RV motor starter protector	Innovations 3RV2/3RT2 Order No.	Order Quantity
		S00, S0		3RV29 28-1H	1 unit
		S0		—	1 unit
		S2		3RV29 35-5E	1 unit
		S3		3RT2946-4GA07	1 unit

Phase barriers	For extended clearance and creepage distances (1 and 2 inch)	Size	3RV motor starter protector	Innovations 3RV2/3RT2 Order No.	Order Quantity
		S00, S0		3RV29 28-1K	1 unit
		S2		3RV29 38-1K	1 unit

Actuating voltage of contactor	Size 3RT contactor	3RV motor starter protector	Innovations 3RV2/3RT2 Order No.	Order Quantity
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Link modules for motor starter protector to contactor ¹⁾

For mechanical and electrical connection between motor starter protector and contactor with screw terminals.

Single-unit packaging

AC/DC	Size	3RV motor starter protector	Innovations 3RV2/3RT2 Order No.	Order Quantity
AC/DC	S00	S00/S0	3RA19 21-1DA00	1 unit
AC	S0	S00/S0	3RA29 21-1AA00	1 unit
AC	S2	S2	3RA29 31-1AA00	1 unit
AC	S3	S3	3RA19 41-1AA00	1 unit
DC	S0	S00/S0	3RA29 21-1BA00	1 unit
DC	S2	S2	3RA29 31-1AA00	1 unit
DC	S3	S3	3RA19 41-1AA00	1 unit

Multi-unit packaging

AC/DC	S00	S00/S0	3RA19 21-1D	10 units
AC	S0	S00/S0	3RA29 21-1A	10 units
DC	S0	S00/S0	3RA29 21-1B	10 units
AC/DC	S2	S2	3RA29 31-1A	5 units
AC/DC	S3	S3	3RA19 41-1A	5 units

For mechanical and electrical connection between motor starter protector and contactor with spring-type terminals.

Spring-type Terminals

Single-unit packaging

AC/DC	S00	S00	3RA29 11-2AA00	1 unit
AC ²⁾	S0	S0	3RA29 21-2AA00	1 unit
DC	S0	S0	3RA29 21-2AA00	1 unit

Multi-unit packaging

AC/DC	S00	S00	3RA29 11-2A	10 units
AC ²⁾	S0	S0	3RA29 21-2A	10 units
DC	S0	S0	3RA29 21-2A	10 units

Spacers

For compensating height on AC contactors				
Single-unit packaging	S0	S0	3RA29 11-1CA00	1 unit
Multi-unit packaging	S0	S0	3RA29 11-1C	5 units

1) The link modules for motor starter protector to contactor cannot be used for the 3RV2. 21-4PA1., 3RV2. 21-4FA1., 3RV27 and 3RV28 motor starter protectors

2) A spacer for height compensation on AC contactors size S0 is optionally available

Note
 Size S0 link modules can be used up to max. 32 A.
 Size S2 link modules can be used up to 65A max.

Accessories

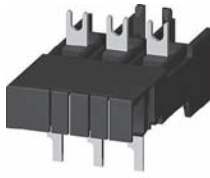
Mounting accessories

Selection and ordering data

Size	Order No.	PU (UNIT, SET, M)	PS*	Weight approx. kg
3RW30, 3RW40 soft starters; 3RF34 solid-state contactors	3RV2 motor starter protectors			

Link modules for motor starter protector to soft starter^{1) 3)} and motor starter protector to solid-state contactor

Connection between motor starter protector and soft starter / solid-state contactor with screw terminals



3RA29 21-1BA00

Single-unit packaging

Order No.	Size
S00	S00/S0
S0	S00/S0
S2 ³⁾	S2
S3 ⁴⁾	S3

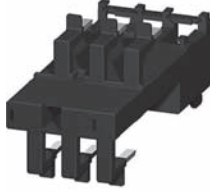
Multi-unit packaging

Order No.	Size
S00	S00/S0
S0	S00/S0
S2 ³⁾	S2
S3 ⁴⁾	S2

Screw terminals



Order No.	PU	PS*	Weight approx. kg
3RA29 21-1BA00	1	1 unit	0.068
3RA29 21-1BA00	1	1 unit	0.068
3RA29 31-1AA00	1	1 unit	0.104
3RA19 41-1A	1	1 unit	0.104
3RA29 21-1B	1	10 units	0.068
3RA29 21-1B	1	10 units	0.068
3RA29 31-1A	1	5 units	0.104
3RA19 41-1A	1	5 units	0.104



3RA29 21-2GA00

Connection between motor starter protector and soft starter with spring-type terminals

Single-unit packaging

Order No.	Size
S00	S00
S0	S0

Multi-unit packaging

Order No.	Size
S00	S00
S0	S0

Spring-type terminals



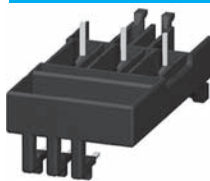
Order No.	PU	PS*	Weight approx. kg
3RA29 11-2GA00	1	1 unit	0.038
3RA29 21-2GA00	1	1 unit	0.072
3RA29 11-2G	1	10 units	0.380
3RA29 21-2G	1	10 units	0.720

¹⁾ The link modules for motor starter protector to soft starter and for motor starter protector to solid-state contactor cannot be used for the 3RV2. 21-4PA1., 3RV2. 21-4FA1., 3RV27 and 3RV28 motor starter protectors.

Note:
S0 link modules can be used up to max. 32 A.
S2 link modules can be used up to max. 65 A.

Actuating voltage of contactor	Size	Order No.	PU (UNIT, SET, M)	PS*	Weight approx. kg
	3RT2 contactors	3RV2 motor starter protectors			

Hybrid link modules for motor starter protector to contactor¹⁾



3RA29 11-2FA00

For mechanical and electrical connection between motor starter protector with screw terminals and contactor with spring-type terminals

Single-unit packaging

Order No.	Size	Size
AC/DC	S00	S00
AC ²⁾ /DC	S0	S0

Multi-unit packaging

Order No.	Size	Size
AC/DC	S00	S00
AC ²⁾ /DC	S0	S0

Spacers²⁾

for compensating the height on AC contactors

Order No.	Size	Size
Single-unit packaging	S0	S0
Multi-unit packaging	S0	S0

3RA29 21-2FA00

Order No.	PU	PS*	Weight approx. kg
3RA29 11-2FA00	1	1 unit	0.029
3RA29 21-2FA00	1	1 unit	0.056
3RA29 11-2F	1	10 units	0.290
3RA29 21-2F	1	10 units	0.560
3RA29 11-1CA00	1	1 unit	0.001
3RA29 11-1C	1	5 units	0.001

¹⁾ The hybrid link modules for motor starter protector to contactor cannot be used for the 3RV2. 21-4PA1., 3RV2. 21-4FA1., 3RV27 and 3RV28 motor starter protectors or reversing starters.

Note:
Hybrid link modules can be used up to max. 32 A.

²⁾ A spacer for height compensation on AC contactors size S0 is optionally available. See 3RA2911-1CA00

³⁾ To assemble the starter between a motor starter protector and a soft starter in size S2, the 3RA2932-1AC00 standard mounting rail adapter must be used.

⁴⁾ It is only permissible to assemble the feeder between the motor starter protector and the soft starter in Size S3 on a mounting plate.

Accessories

Mounting accessories

1
MOTOR STARTER
PROTECTORS

Selection and ordering data

Type	Design	For SIRIUS MSP size	Order No.	Order Quantity	Weight approx. (kg)
Isolator module ¹⁾					
3RV2938-1A without padlock	Visible isolating distance for isolating individual motor starter protectors from the network, lockable in isolating position.	S00, S0	3RV29 28-1A	1 unit	0.132
3RV29 28-1A without padlock		S2 ¹⁾	3RV29 38-1A	1 unit	0.368
Auxiliary terminal, 3 pole					
3RT19 46-4F	For connection of auxiliary and control cables to the main conductor connections	S3	3RT29 46-4F	1 unit	0.10
Covers					
3RV1 (size S3) with 3RT19 46-4EA1	Terminal cover for box terminals	Additional touch guard to be fitted at the box terminals (2 units can be mounted per MSP)	S2	3RT29 36-4EA2	1 unit 0.014
			S3	3RT29 46-4EA2	1 unit 0.019
3RV29 28-4AA00	Terminal cover for cable lug and bar connection	For maintaining the required voltage clearance and as protection against the equipment being touched if distant box terminals are used (2 units can be mounted per MSP)	S3	3RT19 46-4EA1	1 unit 0.03
3RV29 08-4AA10	Terminal cover for devices with ring lug terminal connection	• Main current level	S00, S0 ²⁾	3RV29 28-4AA00	1 unit 0.01
3RV29 08-0P	Scale cover	For covering the current setting scale. Packing unit: Bag with 10 scale covers.	S00, S0, S2 ³⁾	3RV29 08-0P	10 units
Fixing Material					
3RB1900-0B	Push-in lugs For screwing the motor starter protector onto mounting plates.	Two units are required for each motor starter protector.	S00	3RB19 00-0B	10 units 0.10
Tools for opening spring-type terminals by hand					
3RA29 08-1A	Screwdriver For all SIRIUS devices with spring terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black partially insulated	S00, S0, S2	3RA29 08-1A	1 unit 0.045

1) The isolator module for size S2 can be used only with 3RV2 motor starter protectors/circuit breakers up to max. 65 A. Similarly, it cannot be used with the transverse auxiliary switch or three-phase busbars.


2) Compatible with 3RV20 motor starter protectors.

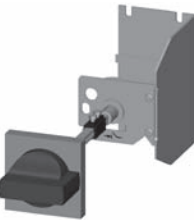
3) Compatible with 3RV20, 3RV21, and 3RV24 motor starter protectors.

Accessories


Rotary operating mechanisms



Selection and ordering data

Type	Details	For SIRIUS MSP size	Order No.	Approx. Wt. (kg)	
Door-coupling rotary operating mechanisms for Classic and Innovations					
 <p>3RV29 26-0B</p> <p>The door-coupling rotary operating mechanisms consist of a knob, a coupling driver and a 130/330 mm long extension shaft (6 mm x 6 mm). The door-coupling rotary operating mechanisms are designed to degree of protection IP64. The door locking device prevents accidental opening of the control cabinet door in the ON position of the motor starter protector. The OFF position can be locked with up to 3 padlocks.</p>	Door-coupling rotary operating mechanisms (black)	Extension shaft 130 mm	S00, S0 S2, S3	3RV29 26-0B 3RV29 26-0B	0.111 0.1
		Extension shaft 330 mm	S00, S0 S2, S3	3RV29 26-0K 3RV29 26-0K	0.324 0.3
	EMERGENCY STOP door-coupling rotary operating mechanisms (red/yellow)	Extension shaft 130 mm	S00, S0 S2, S3	3RV29 26-0C 3RV29 26-0C	0.110 0.1
		Extension shaft 330 mm	S00, S0 S2, S3	3RV29 26-0L 3RV29 26-0L	0.316 0.3

Type	Details	For SIRIUS MSP size	Order No.	Approx. Wt. (kg)	
Door-coupling rotary operating mechanisms for arduous conditions					
 <p>3RV29 26-2C</p> <p>The door-coupling rotary operating mechanisms consist of a knob, a coupling driver, an extension shaft of 300 mm length (8 mm x 8 mm), a spacer and two metal brackets, into which the MSP is inserted. The door-coupling rotary operating mechanisms are designed for degree of protection IP65. The door locking device reliably prevents accidental opening of the control cabinet door in the ON position of the MSP. The OFF position can be locked with up to 3 padlocks. Laterally mountable auxiliary releases and two-pole auxiliary switches can be used. The door-coupling rotary operating mechanisms thus meet the requirements for isolating functions according to IEC 60 947-2.</p>	Door-coupling rotary operating mechanisms (gray)		S00, S0 S2 S3	3RV29 26-2B 3RV29 36-2B 3RV29 46-2B	1.2 1.6 1.7
	EMERGENCY STOP door-coupling rotary operating mechanisms (red/yellow)		S00, S0 S2 S3	3RV29 26-2C 3RV29 36-2C 3RV29 46-2C	1.2 1.5 1.7

Enclosures and front plates

Type	Details	For SIRIUS MSP size	Order No.	Approx. Wt. (kg)	
Front Plates					
 <p>3RV19 23-4B + 3RV19 23-4G</p>	Molded-plastic front plate with rotary operating mechanism, lockable. For actuation of 3RV motor starter protectors in any enclosure	For actuation of 3RV MSPs in any enclosure, degree of protection IP55 (front plate)	S00, S0 S2, S3	3RV19 23-4B	0.08
	Molded-plastic front plate with EMERGENCY STOP door-coupling rotary operating mechanisms (red/yellow)	EMERGENCY-STOP operation of 3RV MSPs in any enclosure, degree of protection IP55	S00, S0 S2, S3	3RV19 23-4E	0.08
	Holders for front plates	Holder is mounted on front plate, MSP size S00 or S0 with or without accessories is snapped in	S00, S0	3RV19 23-4G	0.19

Type	Details	For SIRIUS MSP size	Order No.	Approx. Wt. (kg)	
Enclosures for wall mounting ²⁾					
 <p>3RV19 23-1CA00</p>	Molded-plastic enclosure for wall mounting with rotary operating mechanism, lockable, with metric cable gland	Degree of protection IP55, with N and PE terminals, lockable in 0 position overall width: 54 mm (for switch + lateral auxiliary switch)	S00, S0	3RV19 23-1CA00	0.26
		72 mm (for switch + lateral auxiliary switch + auxiliary release)	S00, S0	3RV19 23-1DA00	0.30
	 <p>3RV19 23-1DA01</p>	Cast aluminum surface-mount enclosure with rotary operating mechanism, lockable, with metric cable gland	Degree of protection IP65, with PE terminals, ¹⁾ lockable in 0 position overall width: 72 mm (for MSP + lateral auxiliary switch + auxiliary release)	S00, S0	3RV19 23-1DA01
Cast aluminum surface-mount enclosure with EMERGENCY-OFF rotary operating mechanism, red/yellow, lockable, with metric cable gland		Degree of protection IP65, with PE terminals, ¹⁾ lockable in 0 position overall width: 72 mm (for MSP + lateral auxiliary switch + auxiliary release)	S00, S0	3RV19 23-1GA01	1.01

1) If required, an additional N terminal can be mounted (e.g. 8WA10 11-1BG11).

2) For S2 versions, see 3RV1933-1DA00 (black) or 3RV1933-1GA00 (red/yellow)