

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

3RV29 infeed system

① Three-phase busbars with infeed

A three-phase busbar with infeed unit is required for connecting the incoming supply. These modules comprise one infeed module and two sockets which each accept one motor starter protector. A choice of two versions with infeed on the left or right is available. The infeed is connected to spring-type terminals. They permit an infeed with conductor cross-sections of up to 25 mm² with end sleeve. An end cover is supplied with each module.

② Three-phase busbars for system expansion

The three-phase busbars for system expansion support expansion of the system. There is a choice of modules with two or three sockets. The system can be expanded as required up to a maximum current carrying capacity of 63 A. An expansion plug is supplied with each module.

③a Expansion plug

The expansion plug is used for electrical connection of adjacent three-phase busbars. The current carrying capacity of this plug equals 63 A. One expansion plug is supplied with each three-phase busbar for system expansion. Additional expansion plugs are therefore only required as spare parts.

③b Extra-wide expansion plug

The wide expansion plug makes the electrical connection between two three-phase busbars, thus performing the same function as the 3RV2917-5BA00 expansion plug; the electrical characteristics (e.g. a current carrying capacity of 63 A) are identical.

The 3RV2917-5E expansion plug is 10 mm wider than the 3RV2917-5BA00 expansion plug, hence in the plugged state there is a distance of 10 mm between the connected three-phase busbars. This distance can be used to lay the auxiliary current and control current wiring ("wiring duct"). The motor starter protector and contactor can be wired from underneath, which means that the complete cable duct above the system can be omitted.

④ End cover

The end cover is used to cover the three-phase busbar at the open end of the system. This cover is therefore only required once for each system. An end cover is supplied with each three-phase busbar system with infeed. Further end covers are therefore only required as spare parts.

⑤ Terminal block for device infeed

A new addition to the system is a connector for outfeeding to a device slot within a module. This offers the option not only of connecting three-phase loads to the system, but also of integrating single-phase loads into the infeed system.

⑥ Plug-in connector

The plug-in connector is used for the electrical connection between the three-phase busbar and the 3RV2 motor starter protector. These plug-in connectors are available for screw or spring-type terminals.

⑦ Contactor base

Load feeders can be assembled in the system using the S00 and S0 contactor base. The contactor bases are suitable for contactors sizes S00 and S0 with spring-type and screw terminals and are simply snapped onto the three-phase busbars. Direct-on-line starters and reversing starters are possible. One contactor base is required for direct-on-line starters and two are required for reversing starters.

To assemble load feeders for reversing starters, the contactor bases can be arranged alongside each other (90 mm overall width). In this case the mechanical interlocking of the contactors is possible. The S0 contactor bases are also suitable for soft starters size S00 and S0 with screw terminal.

The infeed system is designed for mounting onto a TH 35 standard mounting rail with 7.5 mm overall depth. This standard mounting rail gives the contactor base a stable mounting surface to sit on. If standard mounting rails with a depth of 15 mm are used, the spacer connected to the bottom of the contactor base must be knocked out and plugged into the standard mounting rail mating piece, which is also located on the underside. Then the contactor base also has a stable mounting surface. When standard mounting rails with a depth of 7.5 mm are used, the spacer has no function and can be removed.

The link modules are used for direct start load feeders, in which case the use of a contactor base is not absolutely necessary. Motor starter protector and contactor assemblies can then be directly snapped onto the sockets of the three-phase busbars. For feeders of sizes S00 and S0, the corresponding 3RA1921-1....., 3RA2911-2....., 3RA2921-1..... or 3RA2921-2..... link modules should generally be used.

⑧ Terminal block

The 3RV2917-5D terminal block enables the integration of not only SIRIUS motor starter protectors but also single-phase, two-phase and three-phase components. The three phases can be fed out of the system using the terminal block; which means that single-phase loads can also be integrated in the system. The terminal block is plugged into the slot of the expansion plug and thus enables outfeeding from the middle or end of the infeed system. The terminal block can be rotated through 180° and be locked to the support modules of the infeed system. In addition, the 45 mm wide TH 35 3RV1917-7B standard mounting rail option for screwing onto the support plate facilitates plugging the single-phase, two-phase and three-phase components onto the infeed system.

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Technical specifications

More information

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60279172>

General data

Type					3RV29.7
Size					S00, S0
Standards					
• IEC 60947-2					✓
• IEC 60947-4-1					✓
• UL 508/UL 60947-4-1					✓
Rated current I_n	A				63
Permissible rated current at inside temperature of control cabinet					
Motor starter protectors	Size	Rated current	Inside temperature of control cabinet		
• 3RV2.11	S00	... 14 A	60 °C	%	100
		> 14 ... 16 A	40 °C	%	100
			60 °C	%	87
• 3RV2.21	S0	... 16 A	60 °C	%	100
		> 16 ... 25 A	40 °C	%	100
			60 °C	%	87
		> 25 ... 32 A	40 °C	%	87
Permissible ambient temperature					
• Storage/transport	°C				-50 ... +80
• Operation	°C				-20 ... +60
Rated operational voltage U_e					
• Acc. to IEC	10% overvoltage	V AC		500	
	5% overvoltage	V AC		525	
• Acc. to UL/CSA	V AC		600		
Rated frequency	Hz				50/60
Rated impulse withstand voltage U_{imp}	kV				6
Short-circuit strength	corresponds to the mounted motor starter protector or load feeder				
Degree of protection acc. to IEC 60529	IP20 (In the terminal compartment of the infeed without connected IP00 conductor)				
Touch protection acc. to IEC 60529	Finger-safe				

Conductor cross-sections

Type		Three-phase busbar with infeed 3RV2917-1A, 3RV2917-1E	Terminal block 3RV2917-5D	Terminal block for device infeed 3RV2917-5FA00
Conductor cross-sections (min./max.)				
• Solid or stranded	mm ²	4 ... 25	1.5 ... 6	1 ... 10
• Finely stranded with end sleeve	mm ²	4 ... 25	1.5 ... 4	1 ... 6
• Finely stranded without end sleeve	mm ²	6 ... 25	1.5 ... 6	--
• AWG cables	AWG	10 ... 3	15 ... 10	18 ... 8

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Type	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal blocks							
	Terminal blocks For integration of single-phase, two-phase and three-phase components	Single-unit packaging	2	3RV2917-5D	1	1 unit	41E
3RV2917-5D							
TH 35 standard mounting rails, width 45 mm							
	TH 35 standard mounting rails Acc. to IEC 60715, width 45 mm For mounting onto three-phase busbars	Single-unit packaging	2	3RV1917-7B	1	1 unit	41E
3RV1917-7B							
Extra-wide expansion plugs							
	Extra-wide expansion plugs As accessory	Single-unit packaging	2	3RV2917-5E	1	1 unit	41E
3RV2917-5E							
Expansion plugs							
	Expansion plugs¹⁾ As spare part	Single-unit packaging	2	3RV2917-5BA00	1	1 unit	41E
3RV2917-5BA00							
End covers							
	End covers²⁾ As spare part	Multi-unit packaging	2	3RV2917-6A	100	10 units	41E
3RV2917-6A							
Terminal blocks for device infeed							
	Terminal blocks for device infeed	Single-unit packaging	2	3RV2917-5FA00	1	1 unit	41E
3RV2917-5FA00							

¹⁾ The expansion plug is included in the scope of supply of the 3RV2917-4, three-phase busbars for system expansion.

²⁾ The end cover is included in the scope of supply of the 3RV2917-1, three-phase busbars with infeed system.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed system for 3RA6

Terminal blocks

Using the terminal block the three phases can be fed out of the system; this means that single-phase, two-phase and three-phase components can also be integrated in the system.

After the end cover is pulled out, the terminal block can be plugged onto an expansion module.

Expansion plug for SIRIUS 3RV29 infeed systems

After the end cover is pulled out, the expansion plug for the SIRIUS 3RV29 infeed system can be plugged onto an expansion module. It connects the infeed system for 3RA6 compact starters with the SIRIUS 3RV29 infeed system.

Maximum rated operational current

The following maximum rated operational currents apply for the components of the infeed system for 3RA6:

Component	Maximum rated operational current A
Infeed with screw terminal 50/70 mm ²	100
Infeed with screw terminal 25/35 mm ²	63
Infeed with spring-type terminal 25/35 mm ²	63
Expansion plug	63

With side-by-side mounting of several expansion modules, the maximum rated operational current from the second expansion module to the end of the row is 63 A.

Proposal for upstream short-circuit protection devices

The following short-circuit data apply for the components of the infeed system for 3RA6 compact starters:








Conductor cross-section mm ²	Maximum let-through current $I_{d, \max}$ and current integral I^2t	Proposal for upstream short-circuit protection device	Maximum prospective $I_{\text{short-circuit}}$ kA
Short-circuit protection for 3RA681..8A, infeed with screw terminal (25/35 mm² and 50/70 mm²)			
2.5 ... 35, 2.5 ... 70	$I_{d, \max} < 21 \text{ kA}$, $I^2t = 530 \text{ kA}^2\text{s}$	3RV2041-4MA10 (LV HRC gG 3NA3; 315 A)	50
Short-circuit protection for spring-loaded infeed 25/35 mm², 3RA6830-5AC			
4	$I_{d, \max} < 9.5 \text{ kA}$, $I^2t = 85 \text{ kA}^2\text{s}$	3RV2021-4DA10	40
6	$I_{d, \max} < 12.5 \text{ kA}$, $I^2t = 140 \text{ kA}^2\text{s}$	3RV2031-4EA10	30
10	$I_{d, \max} < 15 \text{ kA}$, $I^2t = 180 \text{ kA}^2\text{s}$	3RV2031-4WA10	25
16/25	$I_{d, \max} < 19 \text{ kA}$, $I^2t = 440 \text{ kA}^2\text{s}$	3RV2031-4JA10	65
		3RV2041-4JA10	65
35	$I_{d, \max} < 21 \text{ kA}$, $I^2t = 530 \text{ kA}^2\text{s}$	3RV2041-4MA10 (LV HRC gG 3NA3; 315 A)	50
Short-circuit protection for terminal block, 3RV2917-5D			
1.5	$I_{d, \max} < 7.5 \text{ kA}$	5SY...	
2.5	$I_{d, \max} < 9.5 \text{ kA}$	1)	
4	$I_{d, \max} < 9.5 \text{ kA}$		
6	$I_{d, \max} < 12.5 \text{ kA}$		

1) To prevent the possibility of short circuits, the cables on the terminal block must be installed so that they are short-circuit proof.

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SIRIUS 3RA6 Compact Starters

Infeed system for 3RA6

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for infeed systems for 3RA6 (continued)						
 3RA6890-0BA	2	45 mm adapters For SIRIUS 3RV1.2 and 3RV2.2 circuit breakers/motor starter protectors size S0 up to 25 A <ul style="list-style-type: none"> Screw terminals (conductor cross-section AWG 10) 	Screw terminals  3RA6890-0BA	1	1 unit	42F
		Terminal covers for infeeds with screw terminal IP20 terminal covers for infeeds with screw terminal 25/35 mm² (3RA6812-8AB/AC) (2 units per pack)				
 3RA6880-2AB	2	IP20 terminal covers for infeeds with screw terminal 50/70 mm² (3RA6813-8AB/AC) (2 units per pack)	3RA6880-3AB	1	1 unit	42F
		 3RA6880-3AB				
 3RV2917-5D	2	Terminal blocks For integration of single-phase, two-phase and three-phase external components <ul style="list-style-type: none"> Spring-type terminals 	Spring-type terminals  3RV2917-5D	1	1 unit	41E
		Tools for opening spring-type terminals Screwdrivers For all SIRIUS devices with spring-type terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated				
 3RA2908-1A	2	System Manual System Manual "SIRIUS 3RA6 Compact Starter, SIRIUS Infeed System for 3RA6", see https://support.industry.siemens.com/cs/ww/en/view/27865747				