

Contactors & Relays for Safety Applications

3RT, 3TF safety contactors and 3RH2, 3TH2 safety control relays

Applications

“Safety” Contactors

Safety rated contactors are required to have mirrored contact construction according to IEC 60947-4-1 Annex F. A mirror contact is a Normally Closed (NC) auxiliary contact which can not be closed simultaneously with a Normally Open (NO) main contact.

In some industries, such as automotive, requirements have been established that a safety rated contactor must also have permanently mounted auxiliary contact blocks. See page 2/23 for Contactors with permanently mounted auxiliary contacts.

Siemens Contactors for “Safety” applications:

All Siemens standard 3RT, 3TF6, 40HN & 40PH Contactors are provided with positively driven (mirror) contacts which meet or exceed the criteria for “Safety Contactors” according to IEC 60947-4 Annex F which describes the requirements for mirror contact performance. When applying Safety Contactors in safety circuits, the NC auxiliary contacts must be wired in series or parallel and must be used as monitoring contacts with feedback to the safety evaluation device (i.e. safety relay or failsafe logic controller).

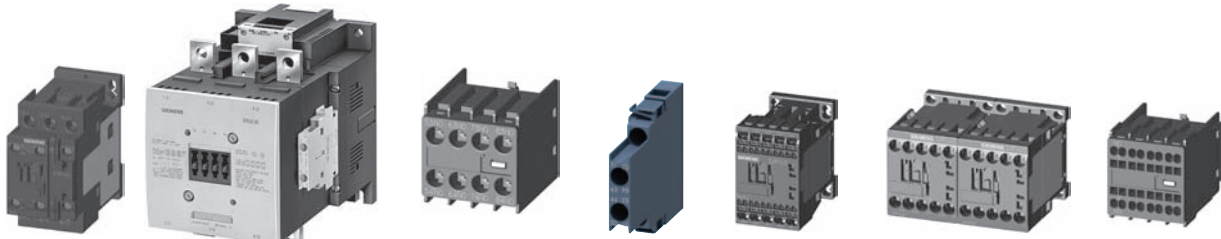
“Safety” Control Relays

Safety rated control relays are required to have positively driven contact elements according to IEC 60947-5-1 Annex L. Positively driven contact elements are a combination of NO auxiliary contacts and NC auxiliary contacts whose construction prevents them from being closed simultaneously.

In some industries, such as automotive, requirements have been established that a safety rated control relays must also have permanently mounted auxiliary contact blocks. See page 2/18 for Control Relays with permanently mounted auxiliary contacts.

Siemens Control Relays for “Safety” applications:

All SIRIUS 3RH control relays (with at least 1 NC contact) meet or exceed the criteria for “Safety Control Relays” according to IEC 60947-5-1 Annex L. This is true for the basic 3RH relay with or without an additional auxiliary contact block.



3RT20 2.-1A.00

3RT10 7.-6A..6

3RH29 21.-1F

3RH29 21.-1DA 11

3RH21

3RH24

3RH2911-2HA..

Frame size	Contactors	Auxiliary contact block
S00	3RT201	3RH2911
	3RT231	
	3RT251	
	3RT261	
S0	3RT202	3RH2921
	3RT232	
	3RT252	
	3RT262	
S2	3RT203	3RH2921
	3RT233	
	3RT253	
	3RT263	
S3	3RT204	3RH2921
	3RT234	
	3RT244	
	3RT264	
S6	3RT105	3RH1921
	3RT145	
S10	3RT106	3RH1921
	3RT126	
	3RT146	
S12	3RT107	3RH1921
	3RT127	
	3RT147	
	3TF6	3TY7561-1UA00






Frame size	Control Relays	Auxiliary contact block
S00	3RH21	3RH2911
	3RH24	
	3TH20	3TX44

For contactors, see pages 2/8-2/9.
For auxiliaries contact blocks, see pages 2/66-2/68.
For control relays, see pages 2/50-2/52.
For auxiliaries contact blocks, see page 2/66-2/68..

Contactor Assemblies for Switching Motors

3RA13, 3RA23 reversing contactor assemblies

Accessories

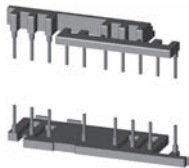
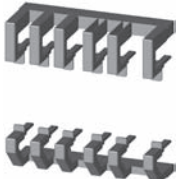

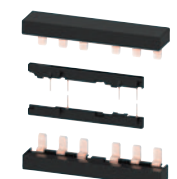
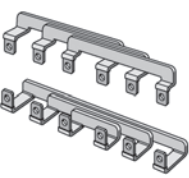
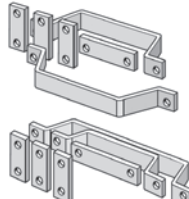
	For contactors Type	Size	Design	Order No.	Weight approx. kg
Mechanical interlocks					
	3RA19 24-2B	3RT2.3	S2	laterally mountable for 3RT2 S2 contactors only. There are no NC auxiliary contacts. Use the integrated NC auxiliary on the contactor.	3RA2934-2B 0.04
	3RT204, 3RT234, 3RT245		S3 ¹⁾	laterally mountable each with one auxiliary contact (1 NC) per contactor (can only couple contactors of max. 1 level different size. The mounting depth of the smaller contactor has to be adapted.) Interlock width: 10 mm	3RA19 24-2B 0.05
	3RT20 4;		S3;	front mountable on S3 contactors (for contactors of the same size respectively) Note: Size S3: Use 3RA19 32-2C mechanical connectors.	3RA19 24-1A 0.04
	3RA19 54-2C	3RT204 to 3RT105	S3 to S6	adapter to mechanically interlock a 3RT204 with a 3RT105 includes the adapter and QTY 2 - 3RA1942-2G mechanical connectors requires the 3RA1954 - 2A to be ordered separately Note: Fits 3RT104 AC coil versions only. Does not fit 3RT104 DC coil versions.	3RA19 54-2C
	3RA19 54-2A	3RT1. 5 to 3RT1. 7	S6, S10, S12	laterally mountable without auxiliary contacts; size S6, S10 and S12 contactors can be interlocked with each other as required; no adaptation of mounting depth is necessary. Contactor clearance 10 mm.	3RA19 54-2A 0.02
Repeat coil terminal					1 set
	3RA19 23-3B	3RT20 4	S3	for coil terminals A1 and A2 for reversing starters of size S3 contactors. 2 x A1 and 1 x A2 are required per assembly. (1 set contains 2 x A1 and 1 x A2)	3RA19 23-3B 0.02
Baseplates					1 unit
	3RT10 5		S6	for customer mounting of contactor assemblies for reversing	3RA19 52-2A 1.3
	3RT1. 6		S10		3RA19 62-2A 2.4
	3RT1. 7		S12		3RA19 72-2A 2.6

1) Can also be used for size S3 4-pole contactors.

Contactor Assemblies for Switching Motors

3RA13, 3RA23 reversing contactor assemblies

Accessories

	For contactors Type	Size	Details	Screw Terminals Order No.	Spring Terminals Order No.	Pkg. qty.
Assembly kits for making 3-pole contactor assemblies						
	3RT201	S00	The assembly kit contains: Mechanical interlock, 2 connecting clips for 2 contactors, Wiring modules on the top and bottom • For main, auxiliary and control circuits	3RA2913-2AA1	3RA2913-2AA2	1 kit
	3RT202	S0	The assembly kit contains: Mechanical interlock, 2 connecting clips for 2 contactors, Wiring modules on the top and bottom • For main, auxiliary and control circuits ¹⁾ • Only for main circuit ²⁾	3RA2923-2AA1 —	— 3RA2923-2AA2	1 kit 1 kit
	3RT203	S2	The installation kit contains: 2 connecting clips for 2 contactors, Wiring modules on the top and bottom • Only for main circuit ³⁾	3RA2933-2AA1 —	— 3RA2933-2AA2	1 kit 1 kit
	3RT204	S3	The installation kit contains: 2 connecting clips for 2 contactors, Wiring modules on the top and bottom and the mechanical interlock	3RA2943-2AA1	—	
	3RT105	S6	The installation kit contains: Wiring modules on the top and bottom (for connection with box terminal)	3RA19 53-2A	—	1 kit
	3RT105 3RT1. 6 3RT1. 7	S6 S10 S12	The installation kit contains: Wiring modules on the top and bottom (for connection without box terminals)	3RA1953-2M 3RA1963-2A 3RA1973-2A		1 kit

1) Use of the 3RA2923-2AA1 assembly kit in conjunction with the 3RT202-.....-3MA0 contactors is limited because the auxiliary switches in the basic unit are not allowed to be used on account of the permanently mounted auxiliary switch block.

2) Version in size S0 with spring-type terminals: Only the wiring modules for the main circuit are included. No connectors are included for the auxiliary and control circuit.

3) Version in size S2 with spring-type terminals in the auxiliary and control circuits: Only the wiring modules for the main circuit are included. A cable set is included for the auxiliary circuit.