



## SIRIUS 3RB10 Solid State Overload Relays

### Specifications

- IEC 947-4-1, IEC 947-5-1 and DIN VDE 0660. UL Listed File #E22655.
- The devices are shock-hazard-protected according to DIN VDE 0106, Part 100.

### General

The 3RB10 overload relays form part of the new SIRIUS 3R control generation. The solid-state version of the SIRIUS 3R overload relay is noted for its wide overload ranges (setting ratio 4:1), for its phase loss protection (see characteristic curves) and also for the minimal energy requirement. In terms of dimensions and termination, the solid-state (3RB10) and the thermally delayed types (3RU11) are 100% compatible. Conformal coating of the printed-circuit board and of the electronic components assures reliable operation even in aggressive and tropical atmospheres. Four sizes and two variants are available up to 100A. The overload relays are optimally matched, both electrically and mechanically, to the 3RT10 contactors. They can, however, also be mounted separately with an adapter for installation as a single unit. Devices up to and including size S0 can be fitted on standard mounting rails without using tools.

### Application

3RB10 solid-state overload relays provide overload protection for three-phase induction motors with rated currents of up to 100A.

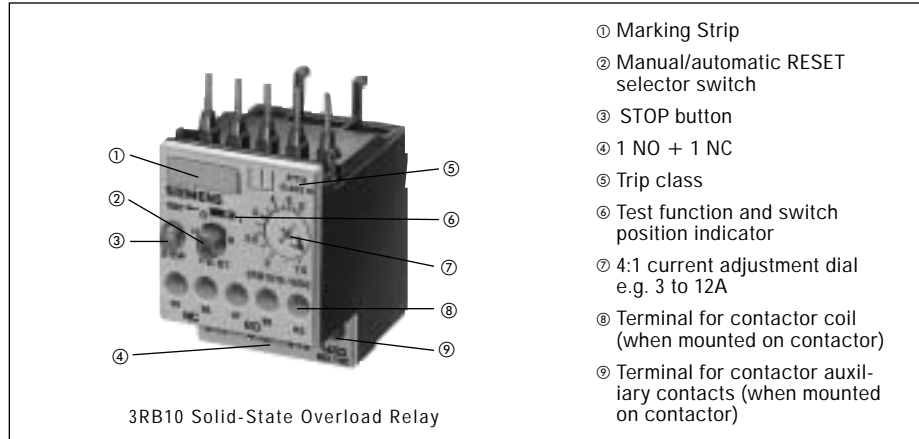
For short-circuit protection with fuses or circuit-breakers, the fusing values of the contactors must be taken into account.

### Operation

The solid-state overload relays have been developed for use in sinusoidal 50/60Hz voltage networks. These units are self-powered and require no additional power supply for operation. Current transformers (for measurement) are already integrated. A microprocessor checks the current values of each phase and initiates release in the event of overload or phase failure.

The tripping current corresponds to 110% of the set current.

The overload relay must be set to the rated motor current.



3RB10 Solid-State Overload Relay

- ① Marking Strip
- ② Manual/automatic RESET selector switch
- ③ STOP button
- ④ 1 NO + 1 NC
- ⑤ Trip class
- ⑥ Test function and switch position indicator
- ⑦ 4:1 current adjustment dial e.g. 3 to 12A
- ⑧ Terminal for contactor coil (when mounted on contactor)
- ⑨ Terminal for contactor auxiliary contacts (when mounted on contactor)

### Trip classes

The devices are available in CLASS 10 (motor starting times up to 10 s) and in CLASS 20 (motor starting times up to 20 s) trip curves.

### Phase-loss protection

The 3RB10 solid-state overload relays are equipped with phase-loss protection. If a phase loss occurs, the device trips within 3 seconds.

### STOP function

Activating this function only affects the NC contact, momentarily changing the state of the contact.

### Manual/automatic reset

Manual or automatic reset can be selected with the blue button. The appropriate setting is selected by pressing and turning the button.

### TEST function and switch position indicator

The switch position indicator also incorporates a test function which, when activated, simulates a tripped overload relay.

Both auxiliary contacts are actuated and the switch position is indicated.

### Terminal for contactor coil and auxiliary contact

When the 3RB1016 overload relay (size S00) is mounted directly on the contactor, the auxiliary contact and coil terminal A2 of the contactor are fed through to the bottom of the overload which simplifies wiring.

This is not necessary with size S0 as the contactors are equipped with 4 coil terminals.

### Auxiliary contacts

The overload relays are equipped with a NC contact for disconnecting the contactor and a NO contact for signalling tripping.

The breaking capacity of the switching contacts is very high so that the contactor coils can be switched directly.

### Mounting

The overload relays are mounted directly on the 3RT10 contactors. If they are fitted individually on a connector base, they can be fastened by means of screws or placed on a mounting rail. The connector bases of the 3RU11 thermally delayed relays can be used.

### Accessories

The accessories used with the 3RU11 thermal overload relays can be used for the 3RB10 solid-state overload relays.

- Reset plunger to extend the through-the-door reset button on deep panels
- Flexible Cable Reset Mechanism for overloads which are not easily accessible




# IEC Overload Relays

Selection

## SIRIUS 3RB10 Solid State Overload Relays

Description	Ordering Information
<p>Class 10 or 20, solid state overload relays for direct mounting to <b>3RT10</b> contactors or for separate mounting when used in conjunction with <b>3RU19</b> separate mount kits.</p> <p>These overloads include: 1 NO &amp; 1 NC Auxiliary Contacts, Manual/Automatic RESET, Trip Indicator, STOP Button, Test Function, Sealable Cover.</p>	<ul style="list-style-type: none"> <li>▶ Accessories see pages 264–265.</li> <li>▶ Dimensions see page 377.</li> <li>▶ Wiring Diagrams see page 356.</li> <li>▶ Application Data see page 259.</li> <li>▶ Technical Data see page 357.</li> </ul>

	For Contactor Type	Setting Range Amps	Manual / Automatic Reset				Manual Reset Only			
			Class 10 Catalog No	Price \$	Class 20 Catalog No	Price \$	Class 10 Catalog No	Price \$	Class 20 Catalog No	Price \$
 <p>3RB101</p>	<b>3RB101—for direct mounting to 3RT101 contactors</b>									
	3RT1015, 3RT1016, 3RT1017	0.1–0.4 0.4–1.6 1.5–6 3–12	3RB1016-1RB0 3RB1016-1NB0 3RB1016-1PB0 3RB1016-1SB0	72. 72. 72. 72.	3RB1016-2RB0 3RB1016-2NB0 3RB1016-2PB0 3RB1016-2SB0	72. 72. 72. 72.	3RB1015-1RB0 3RB1015-1NB0 3RB1015-1PB0 3RB1015-1SB0	67. 67. 67. 67.	3RB1015-2RB0 3RB1015-2NB0 3RB1015-2PB0 3RB1015-2SB0	67. 67. 67. 67.
	<b>3RB102—for direct mounting to 3RT102 contactors</b>									
	3RT1023, 3RT1024, 3RT1025, 3RT1026	0.1–0.4 0.4–1.6 1.5–6 3–12 6–25	3RB1026-1RB0 3RB1026-1NB0 3RB1026-1PB0 3RB1026-1SB0 3RB1026-1QB0	74. 74. 74. 74. 74.	3RB1026-2RB0 3RB1026-2NB0 3RB1026-2PB0 3RB1026-2SB0 3RB1026-2QB0	74. 74. 74. 74. 74.	3RB1025-1RB0 3RB1025-1NB0 3RB1025-1PB0 3RB1025-1SB0 3RB1025-1QB0	69. 69. 69. 69. 69.	3RB1025-2RB0 3RB1025-2NB0 3RB1025-2PB0 3RB1025-2SB0 3RB1025-2QB0	69. 69. 69. 69. 69.
	<b>3RB103—for direct mounting to 3RT103 contactors</b>									
3RT1033, 3RT1034, 3RT1035, 3RT1037	6–25 13–50	3RB1036-1QB0 3RB1036-1UB0	88. 110.	3RB1036-2QB0 3RB1036-2UB0	88. 110.	3RB1035-1QB0 3RB1035-1UB0	83. 105.	3RB1035-2QB0 3RB1035-2UB0	83. 105.	
<b>3RB104—for direct mounting to 3RT104 contactors</b>										
3RT1044, 3RT1045, 3RT1046	13–50 25–100	3RB1046-1UB0 3RB1046-1EB0	140. 224.	3RB1046-2UB0 3RB1046-2EB0	140. 224.	3RB1045-1UB0 3RB1045-1EB0	130. 215.	3RB1045-2UB0 3RB1045-2EB0	130. 215.	

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IEC Control