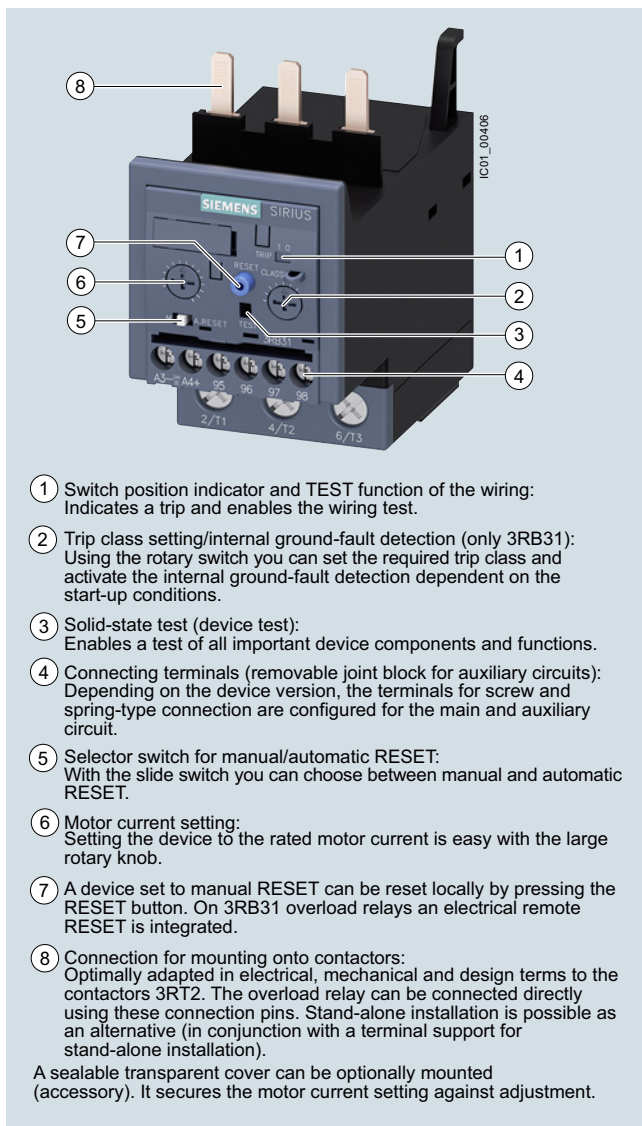


Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications



SIRIUS 3RB3133-4.B0 electronic overload relay

The 3RB30/3RB31 electronic overload relays up to 115 A with internal power supply have been designed for current-dependent protection of loads with normal and heavy starting, and to protect against excessive temperature rises due to overload, phase asymmetry or phase failure. An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current. This current rise is detected by the current transformers integrated into the devices and evaluated by corresponding solid-state circuits which then output a pulse to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, (see [Characteristic curves](#)).

In addition to inverse-time delayed protection of loads against excessive temperature rises due to overload, phase asymmetry and phase failure, the 3RB31 electronic overload relays also allow internal ground-fault detection (not possible in conjunction with contactor assemblies for wye-delta starting). This provides protection of loads against high-resistance short circuits due to damage to the insulation material, moisture, condensed water etc.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after the recovery time has elapsed.

The 3RB3 electronic overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

3RB20 and 3RB21 overload relays in sizes S6 to S10/S12, see [page 7/109 onwards](#).

Use in hazardous areas

The 3RB30/3RB31 electronic overload relays are suitable for the overload protection of motors with the following types of protection:

- Ex II (2) G [Ex e] [Ex d] [Ex px]
- Ex II (2) D [Ex t] [Ex p]

EC type test certificate for Group II, Category (2) G/D exists. It has the number PTB 09 ATEX 3001.

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications

Article No. scheme

Product versions		Article number					
Electronic overload relays		3RB3	☐	☐	☐	☐	☐
Device type	e. g. 0 = standard device, with internal supply, for three-phase loads	☐	☐	☐	☐	☐	☐
Size, rated operational current and power	e. g. 1 = 16 A (7.5 kW) for size S00	☐	☐	☐	☐	☐	☐
Version of the automatic RESET, electrical remote RESET	e. g. 6 = switchable between manual/auto RESET	☐	☐	☐	☐	☐	☐
Trip class (CLASS)	e. g. 1 = CLASS 10E	☐	☐	☐	☐	☐	☐
Setting range of the overload release	e.g. R = 0.1 ... 0.4 A	☐	☐	☐	☐	☐	☐
Connection methods	e.g. B = screw terminals for main and auxiliary circuits	☐	☐	☐	☐	☐	☐
Installation type	e. g. 0 = mounting on contactor	☐	☐	☐	☐	☐	☐
Example		3RB3	0	1	6	–	1 R B 0

Note:

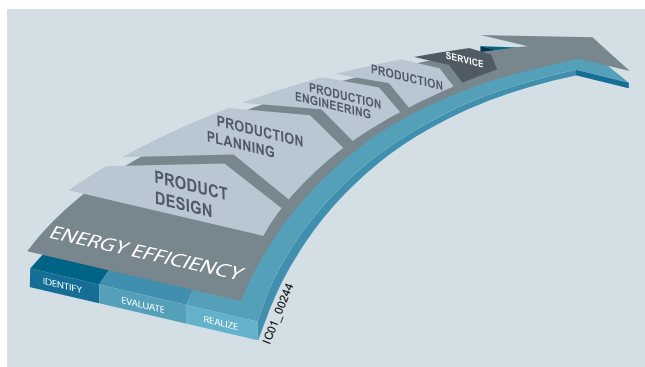
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB30/3RB31 electronic overload relays are listed in the overview table (see "General Data" page 7/71 onwards).

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

3RB30/3RB31 electronic overload relays contribute to energy efficiency throughout the plant as follows:

- Reduced inherent power loss
- Less heating of the control cabinet
- Smaller control cabinet air conditioners can be used

Application

Industries

The 3RB30/3RB31 electronic overload relays are suitable for customers from all industries who want to guarantee optimum in-verse-time delayed protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB30/3RB31 electronic overload relays have been designed for the protection of three-phase motors in sinusoidal 50/60 Hz voltage networks. The relays are not suitable for the protection of single-phase AC or DC loads.

The 3RU21 thermal overload relay or the 3RB22/3RB23/3RB24 electronic overload relay can be used for single-phase AC loads. For DC loads we recommend the 3RU21 thermal overload relay.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, ageing and temperature fluctuations.

For the temperature range from –25 °C to +60 °C, the 3RB30/3RB31 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RB30/3RB31 electronic overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see [Preface on page 7](#).

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications **IE3/IE4 ready**

3RB30 electronic overload relays, CLASS 20E

Features and technical specifications:

- Connection methods
 - Sizes S00 and S0:
Main and auxiliary circuit: Either screw or spring-type terminals
 - Sizes S2 and S3:
Main circuit: Screw terminals with box terminal or as straight-through transformer,
Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and asymmetry protection

- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1

PS* = 1 unit

PG = 41G



3RB3016-2.B0



3RB3026-2.B0



3RB3036-2.B0



3RB3036-2.W1



3RB3046-2.B0



3RB3046-2.W1

Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	SD	Screw terminals		SD	Spring-type terminals	
	kW	A	A	d	Article No.	Price per PU	d	Article No.	Price per PU
Size S00									
S00	Devices for mounting onto contactor ³⁾								
	0.04 ... 0.09	0.1 ... 0.4	4	▶	3RB3016-2RB0		2	3RB3016-2RE0	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	3RB3016-2NB0		2	3RB3016-2NE0	
	0.55 ... 1.5	1 ... 4	20	▶	3RB3016-2PB0		2	3RB3016-2PE0	
	1.1 ... 5.5	3 ... 12	25	▶	3RB3016-2SB0		2	3RB3016-2SE0	
	2.2 ... 7.5	4 ... 16	25	▶	3RB3016-2TB0		2	3RB3016-2TE0	
Size S0									
S0	Devices for mounting onto contactor ³⁾								
	0.04 ... 0.09	0.1 ... 0.4	4	▶	3RB3026-2RB0		2	3RB3026-2RE0	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	3RB3026-2NB0		2	3RB3026-2NE0	
	0.55 ... 1.5	1 ... 4	20	▶	3RB3026-2PB0		2	3RB3026-2PE0	
	1.1 ... 5.5	3 ... 12	25	▶	3RB3026-2SB0		2	3RB3026-2SE0	
	3 ... 11	6 ... 25	50	▶	3RB3026-2QB0		2	3RB3026-2QE0	
	5.5 ... 18.5	10 ... 40	50	▶	3RB3026-2VB0		2	3RB3026-2VE0	
Size S2									
S2	Devices with screw terminals (main current side) and for mounting onto contactor ³⁾								
	7.5 ... 22	12.5 ... 50	250	▶	3RB3036-2UB0		▶	3RB3036-2UD0	
	11 ... 37	20 ... 80	250	▶	3RB3036-2WB0		▶	3RB3036-2WD0	
	Devices with straight-through transformer for stand-alone installation								
	7.5 ... 22	12.5 ... 50	250	▶	3RB3036-2UW1		▶	3RB3036-2UX1	
	11 ... 37	20 ... 80	250	▶	3RB3036-2WW1		▶	3RB3036-2WX1	
Size S3 NEW									
S3	Devices with screw terminals (main current side) and for mounting onto contactor ³⁾								
	7.5 ... 22	12.5 ... 50	200	X	3RB3046-2UB0		X	3RB3046-2UD0	
	18.5 ... 55	32 ... 115	315	X	3RB3046-2XB0		X	3RB3046-2XD0	
	Devices with straight-through transformer for stand-alone installation								
	7.5 ... 22	12.5 ... 50	200	X	3RB3046-2UW1		X	3RB3046-2UX1	
	18.5 ... 55	32 ... 115	315	X	3RB3046-2XW1		X	3RB3046-2XX1	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2".
For fuse values in connection with contactors, see Configuration Manual.

³⁾ With the appropriate terminal supports (see "Accessories", page 7/100), these overload relays can also be installed as stand-alone units.