

# Overload Relays

## Solid-State Overload Relays

3RB12 up to 820 A,  
CLASS 5 to CLASS 30 adjustable

### Selection and ordering data


#### 3RB12 solid-state overload relays for full motor protection with screw-type terminals for direct mounting<sup>1)</sup> and installation as a single unit, adjustable from CLASS 5 to CLASS 30

Features and technical characteristics

- CLASS 5/10/15/20/25/30, adjustable
- Input T1/T2 for thermistor sensors (PTCs) for full motor protection
- Input C1/C2 for earth fault detection with additional 3UL22 summation current transformer
- Manual/Automatic/Remote RESET Y1/Y2
- TEST functions
- 2 outputs: 1 NO and 1 NC each
- 3 LEDs for operating and status indication

For 3RT1 contactors and soft starters 3RW30, 3RW31	Setting range	Rated control supply voltage	for direct mounting <sup>1)</sup> and installation as a single unit	Weight approx.
Size	A		Order No. Price	kg

#### 3RB12 46 solid-state overload relay for full motor protection

	S00 – S3 Individual mounting	1.25 – 6.3 <sup>2)</sup>	110 V – 120 V 50/60 Hz 220 V – 240 V 50/60 Hz DC 24 V	<b>3RB12 46-1PG</b> □□ <b>3RB12 46-1PM</b> □□ <b>3RB12 46-1PB</b> □□	0.60
		6.3 – 25	110 V – 120 V 50/60 Hz 220 V – 240 V 50/60 Hz DC 24 V	<b>3RB12 46-1QG</b> □□ <b>3RB12 46-1QM</b> □□ <b>3RB12 46-1QB</b> □□	0.60
		25 – 100	110 V – 120 V 50/60 Hz 220 V – 240 V 50/60 Hz DC 24 V	<b>3RB12 46-1EG</b> □□ <b>3RB12 46-1EM</b> □□ <b>3RB12 46-1EB</b> □□	0.60

#### 3RB12 53 solid-state overload relay for full motor protection

S6	50 – 205	110 V – 120 V 50/60 Hz 220 V – 240 V 50/60 Hz DC 24 V	<b>3RB12 53-0FG</b> □□ <b>3RB12 53-0FM</b> □□ <b>3RB12 53-0FB</b> □□	1.00
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#### 3RB12 57 solid-state overload relay for full motor protection

S10 and S12	125 – 500	110 V – 120 V 50/60 Hz 220 V – 240 V 50/60 Hz DC 24 V	<b>3RB12 57-0KG</b> □□ <b>3RB12 57-0KM</b> □□ <b>3RB12 57-0KB</b> □□	1.90
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#### 3RB12 62 solid-state overload relay for full motor protection

	Size 14 (3TF68 and 3TF69)	200 – 820	110 V – 120 V 50/60 Hz 220 V – 240 V 50/60 Hz DC 24 V	<b>3RB12 62-0LG</b> □□ <b>3RB12 62-0LM</b> □□ <b>3RB12 62-0LB</b> □□	3.20
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### Order no. supplement

Design	Order No. supplement 3RB12 ... □□ PG 101	Additional price
<b>Standard version</b>		
1 NO + 1 NC: Overload/thermistor	0 0	
1 NO + 1 NC: Overload/thermistor/earth fault	1 0	
<b>Version with analog output</b>		
As for the standard version 3RB12 ... □□, but also with an analog output signal of 4 mA to 20 mA for the motor current related to the set motor current; for controlling measuring instruments, processing in master systems, communication via bus systems, indication of overload and motor current <sup>3)</sup> .		
1 NO + 1 NC: Overload/thermistor	4 0	
<b>Version with internal earth fault detection<sup>4)</sup></b>		
As for the standard version, but with additional earth fault detection, for 3-wire circuits only, not suitable for single-phase motors and star-delta changeovers.		
1 NO + 1 NC: Overload/thermistor	2 0	
1 NO + 1 NC: Overload/thermistor/earth fault	3 0	
<b>Bistable version</b>		
As for standard version, but with bistable output relay, no change in the switching status of the auxiliary contacts on failure of the control supply voltage.		
1 NO + 1 NC: Overload/thermistor	0 1	
1 NO + 1 NC: Overload/thermistor/earth fault	1 1	

1) Exception: 3RB12 46.

2) The current setting range of 0.25 A to 1.25 A is achieved by looping the main conducting path.

3) For further information, see "Description".

4) The internal earth fault detection detects fault currents > 30% of the setting current.








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1  
2  
3  
4

### Accessories

Design	for type	Order No.	Price	Weight approx kg	Pack		
	Size						
<b>Summation current transformers for external ground fault detection</b>							
	Diameter of the inlet opening: 40 mm	Rated fault current		0.35	1 unit		
		$I_n$					
		0.3A 0.5A 1 A	<b>3UL22 01-1A</b> <b>3UL22 01-2A</b> <b>3UL22 01-3A</b>				
	65 mm	0.3A 0.5A 1 A	<b>3UL22 02-1A</b> <b>3UL22 02-2A</b> <b>3UL22 02-3A</b>	0.60	1 unit		
		120 mm	0.3A 0.5A 1 A	<b>3UL22 03-1A</b> <b>3UL22 03-2A</b> <b>3UL22 03-3A</b>	2.50	1 unit	
			<b>Direct voltage element</b>				
			<b>SITOP POWER 24 V/0.375 A</b> for operation of a 3RB12 with a control supply voltage of DC 24 V on a DC voltage of 30 V to 264 V input voltage: 30 V to 264 V DC, 21 V to 186 V AC output voltage: 24VDC @ 0.375 A power supply for converting a wide input voltage range to 24 V DC for all low-voltage controls. Output current 0.375 A		<b>6EP1 731-2BA00</b> <sup>1)</sup>	0.20	1 unit
	<b>Sealable cap</b>						
		3RB19 00-0A for current and CLASS setting knobs	3RB12	<b>3RB19 00-0A</b> <sup>2)</sup>	0.01	1 unit	
<b>Push-in lugs</b>							
	3RB19 00-0B for screw fixing on a mounting plate, 2 units are required for each overload relay (1 bag = 10 units).	3RB12 46	<b>3RB19 00-0B</b> <sup>2)</sup>	0.01	1 bag		
<b>Terminal cover</b>							
	3TX7 506-0A Cover for installation as a single unit or on the load side for direct mounting (1 pack contains 2 units)	3RB12 53	<b>3TX7 506-0A</b>	0.01	10 units		
		3RB12 57	<b>3TX7 536-0A</b>	0.01	2 units		
	3TX7 506-0B Cover between contactor and overload relay for direct mounting	3RB12 62 with 3TF68	<b>3TX7 686-0A</b>	0.17	1 packg.		
		3RB12 62 with 3TF69	<b>3TX7 696-0A</b>	0.17	1 packg.		
	3TX7 506-0B Cover between contactor and overload relay for direct mounting	3RB12 53	<b>3TX7 506-0B</b>	0.01	5 units		
		3RB12 57	<b>3TX7 536-0B</b>	0.07	1 unit		
	3TX7 506-0B Cover between contactor and overload relay for direct mounting	3RB12 62 with 3TF68	<b>3TX7 686-0B</b>	0.07	1 unit		
		3RB12 62 with 3TF69	<b>3TX7 696-0B</b>	0.07	1 unit		
<b>Base plate</b>							
	3UF19 00-0JA00 For snapping onto 75 mm standard mounting rail	3RB12 53	<b>3UF19 00-0JA00</b>	0.20	1 unit		

1) Discount code: SITOP

2) Discount code: Overload relays