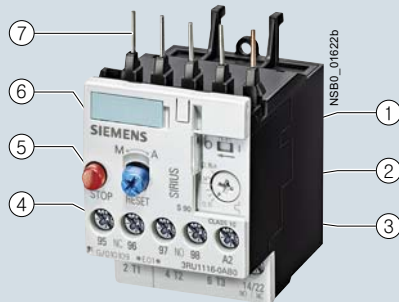


Overload relays

SIRIUS 3RU1 Thermal Overload Relays

3RU11 up to 100 A for standard applications

Overview



- ① Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.
- ② Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.
- ③ Transparent, sealable cover:
Secures the motor current setting and the TEST function against adjustment.
- ④ Supply terminals:
The generously sized terminals permit connection of two conductors with different cross-sections for the main and auxiliary circuits. The auxiliary circuit can be connected with screw terminals and alternatively with spring-type terminals.
- ⑤ STOP button:
If the STOP button is pressed, the NC contact is opened. This switches off the contactor downstream. The NC contact is closed again when the button is released.
- ⑥ Selector switch for manual/automatic RESET and RESET button:
With this switch you can choose between manual and automatic RESET. A device set to manual RESET can be reset locally by pressing the RESET button. A remote RESET is possible using the RESET modules (accessories), which are independent of size.
- ⑦ Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors. Connecting pins can be used for direct mounting of the overload relays. Stand-alone installation is possible as an alternative (in some cases in conjunction with a stand-alone installation module).

The 3RU11 thermal overload relays up to 100 A have been designed for inverse-time delayed protection of loads with normal starting (for "Function", see Reference Manual "Protection Equipment – 3RU1, 3RB2 Overload Relays") against excessive temperature rises due to overload or phase failure.

An overload or a phase failure result in an increase of the motor current beyond the set rated motor current. Via heating elements, this current rise heats up the bimetal strips inside the device which then bend and as a result trigger the auxiliary contacts by means of a tripping mechanism. 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 current setting I_e and is stored in the form of a long-term stable tripping characteristic (see www.siemens.com/sirius/support → "Characteristic Curves").

The "tripped" status is signaled by means of a switch position indicator. Resetting takes place either manually or automatically after a recovery time has elapsed (for "Function", see Reference Manual "Protection Equipment – 3RU1 and 3RB2 Overload Relays").

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.

"Increased safety" type of protection EEx e according to ATEX Directive 94/9/EC

The 3RU11 thermal overload relays are suitable for the overload protection of explosion-proof motors with "increased safety" type of protection EEx e.

The relays meet the requirements of IEC 60079-7 (Electrical apparatus for areas subject to explosion hazards – Increased safety "e").

EC type test certificate for Category (2) G/D exists. It has the number DMT 98 ATEX G 001.

SIRIUS 3RU1116-0AB0 thermal overload relays

Article No. scheme

Digit of the Article No.	1st - 3rd	4th	5th	6th	7th	8th	9th	10th	11th
Thermal overload relays	□□□	□	□	□	□	-	□	□	□
SIRIUS 1st generation	3 R U			1					
Device series			□						
Size, rated operational current and power				□	□				
Setting range of the overload release							□	□	
Connection method									□
Installation type									□
Example	3 R U	1	1	3	6	-	1	H	B 0

Note:

The Article No. scheme is presented here merely for information purposes and for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the catalog in the Selection and ordering data.

Benefits

The most important features and benefits of the 3RU11 thermal overload relays are listed in the overview table (see "General Data", page 7/36 onwards).

Application

Industries

The 3RU11 thermal overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal starting conditions (CLASS 10).

Application area

The 3RU11 thermal overload relays have been designed for the protection of three-phase and single-phase AC and DC motors.

If single-phase AC or DC loads are to be protected by the 3RU11 thermal overload relays, all three bimetal strips must be heated. For this purpose, all main current paths of the relay must be connected in series.

Ambient conditions

3RU11 thermal overload relays compensate temperature in the temperature range from -20 °C to $+60\text{ °C}$ according to IEC 60947-4-1. At temperatures from $+60\text{ °C}$ to $+70\text{ °C}$, the upper set value of the setting range has to be reduced by a specific factor in accordance with the table below.

Ambient temperature °C	Derating factor for the upper set value
+60	1.0
+65	0.94
+70	0.87

Overload relays

SIRIUS 3RU1 Thermal Overload Relays

3RU11 up to 100 A for standard applications





Selection and ordering data

3RU11 thermal overload relays with screw terminals on the auxiliary current side for mounting onto contactor¹⁾, CLASS 10

Features and technical specifications:

- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET

- Switch position indicator
- TEST function
- STOP button
- Integrated sealable cover

Size contactor ²⁾	Rating for three- phase motors, rated value ³⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ⁴⁾	DT	Screw terminals (on auxiliary current side)	PU (UNIT, SET, M)	PS*	PG	
									Article No.
Size S00									
 3RU1116...B0	S00	0.04	0.11 ... 0.16	0.5	▶	3RU1116-0AB0	1	1 unit	41F
		0.06	0.14 ... 0.2	1	▶	3RU1116-0BB0	1	1 unit	41F
		0.06	0.18 ... 0.25	1	▶	3RU1116-0CB0	1	1 unit	41F
		0.09	0.22 ... 0.32	1.6	▶	3RU1116-0DB0	1	1 unit	41F
		0.09	0.28 ... 0.4	2	▶	3RU1116-0EB0	1	1 unit	41F
		0.12	0.35 ... 0.5	2	▶	3RU1116-0FB0	1	1 unit	41F
		0.18	0.45 ... 0.63	2	▶	3RU1116-0GB0	1	1 unit	41F
		0.18	0.55 ... 0.8	4	▶	3RU1116-0HB0	1	1 unit	41F
		0.25	0.7 ... 1	4	▶	3RU1116-0JB0	1	1 unit	41F
		0.37	0.9 ... 1.25	4	▶	3RU1116-0KB0	1	1 unit	41F
		0.55	1.1 ... 1.6	6	▶	3RU1116-1AB0	1	1 unit	41F
		0.75	1.4 ... 2	6	▶	3RU1116-1BB0	1	1 unit	41F
		0.75	1.8 ... 2.5	10	▶	3RU1116-1CB0	1	1 unit	41F
		1.1	2.2 ... 3.2	10	▶	3RU1116-1DB0	1	1 unit	41F
		1.5	2.8 ... 4	16	▶	3RU1116-1EB0	1	1 unit	41F
		1.5	3.5 ... 5	20	▶	3RU1116-1FB0	1	1 unit	41F
	2.2	4.5 ... 6.3	20	▶	3RU1116-1GB0	1	1 unit	41F	
	3	5.5 ... 8	25	▶	3RU1116-1HB0	1	1 unit	41F	
	4	7 ... 10	35	▶	3RU1116-1JB0	1	1 unit	41F	
	5.5	9 ... 12	35	▶	3RU1116-1KB0	1	1 unit	41F	
Size S0									
 3RU1126...B0	S0	0.75	1.8 ... 2.5	10	▶	3RU1126-1CB0	1	1 unit	41F
		1.1	2.2 ... 3.2	10	▶	3RU1126-1DB0	1	1 unit	41F
		1.5	2.8 ... 4	16	▶	3RU1126-1EB0	1	1 unit	41F
		1.5	3.5 ... 5	20	▶	3RU1126-1FB0	1	1 unit	41F
		2.2	4.5 ... 6.3	20	▶	3RU1126-1GB0	1	1 unit	41F
		3	5.5 ... 8	25	▶	3RU1126-1HB0	1	1 unit	41F
		4	7 ... 10	35	▶	3RU1126-1JB0	1	1 unit	41F
		5.5	9 ... 12.5	35	▶	3RU1126-1KB0	1	1 unit	41F
		7.5	11 ... 16	40	▶	3RU1126-4AB0	1	1 unit	41F
		7.5	14 ... 20	50	▶	3RU1126-4BB0	1	1 unit	41F
		11	17 ... 22	63	▶	3RU1126-4CB0	1	1 unit	41F
	11	20 ... 25	63	▶	3RU1126-4DB0	1	1 unit	41F	
Size S2									
 3RU1136...B0	S2	3	5.5 ... 8	25	▶	3RU1136-1HB0	1	1 unit	41F
		4	7 ... 10	35	▶	3RU1136-1JB0	1	1 unit	41F
		5.5	9 ... 12.5	35	▶	3RU1136-1KB0	1	1 unit	41F
		7.5	11 ... 16	40	▶	3RU1136-4AB0	1	1 unit	41F
		7.5	14 ... 20	50	▶	3RU1136-4BB0	1	1 unit	41F
		11	18 ... 25	63	▶	3RU1136-4DB0	1	1 unit	41F
		15	22 ... 32	80	▶	3RU1136-4EB0	1	1 unit	41F
		18.5	28 ... 40	80	▶	3RU1136-4FB0	1	1 unit	41F
		22	36 ... 45	100	▶	3RU1136-4GB0	1	1 unit	41F
		22	40 ... 50	100	▶	3RU1136-4HB0	1	1 unit	41F
Size S3									
 3RU1146...B0	S3	11	18 ... 25	63	▶	3RU1146-4DB0	1	1 unit	41F
		15	22 ... 32	80	▶	3RU1146-4EB0	1	1 unit	41F
		18.5	28 ... 40	80	▶	3RU1146-4FB0	1	1 unit	41F
		22	36 ... 50	125	▶	3RU1146-4HB0	1	1 unit	41F
		30	45 ... 63	125	▶	3RU1146-4JB0	1	1 unit	41F
		37	57 ... 75	160	▶	3RU1146-4KB0	1	1 unit	41F
		45	70 ... 90	160	▶	3RU1146-4LB0	1	1 unit	41F
		45	80 ... 100 ⁵⁾	200	▶	3RU1146-4MB0	1	1 unit	41F

¹⁾ With the appropriate terminal supports (see "Accessories", page 7/45), the 3RU11 overload relays for mounting on contactors can also be installed as stand-alone units.

²⁾ Observe maximum rated operational current of the devices.

³⁾ 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.

⁴⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Reference Manual "Protection Equipment – 3RU1, 3RB2 Overload Relays" → "Technical Specifications" → "Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders".

⁵⁾ For overload relays > 100 A, see 3RB2 electronic overload relays, page 7/49 onwards.