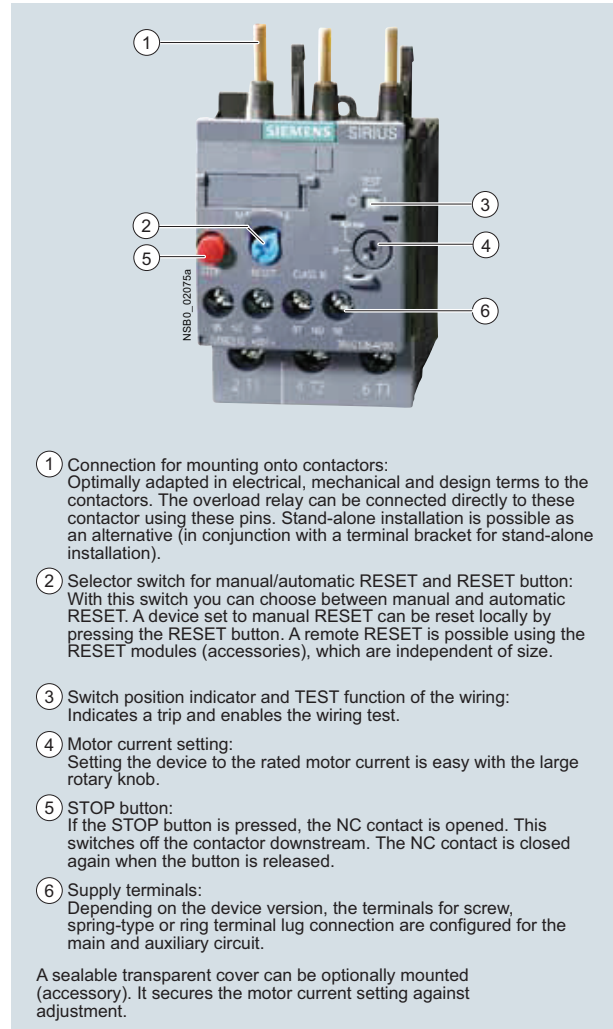


Overview



SIRIUS 3RU21 26-4FB00 thermal overload relay

Order No. scheme

Digit of the Order No.	1st - 3rd	4th	5th	6th	7th		8th	9th	10th	11th
Thermal overload relays	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innovations	3 R U	2								
Device series			<input type="checkbox"/>							
Size, rated operational current and power				<input type="checkbox"/>	<input type="checkbox"/>					
Setting range of the overload release							<input type="checkbox"/>	<input type="checkbox"/>		
Connection methods									<input type="checkbox"/>	
Installation type										<input type="checkbox"/>
Example	3 R U	2	1	1	6	-	0	A	B	0

Note:

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

For your orders, please use the order numbers quote in the catalog in the Selection and ordering data.

The 3RU21 thermal overload relays up to 40 A have been designed for inverse-time delayed protection of loads with normal starting against excessive temperature rises due to overload or phase failure.

An overload or phase failure results 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.

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.

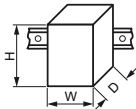
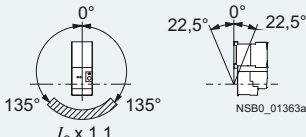
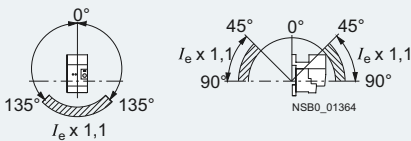
The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials.

They comply with all important worldwide standards and approvals.

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

The 3RU21 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 EN 60079-7 (Electrical apparatus for areas subject to explosion hazards – Increased safety "e");



EC prototype test certificate for Category (2)G/D has been submitted. More details on request.



Type				3RU21 16	3RU21 26
Size				S00	S0
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals		mm	45 x 89 x 79	45 x 97 x 95	
• Spring-type terminals		mm	45 x 102 x 80	45 x 114 x 97	
General data (continued)					
Electromagnetic compatibility (EMC) – Interference immunity					
• Conductor-related interference					
- Burst acc. to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	EMC interference immunity is not relevant for thermal overload relays			
- Surge acc. to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	EMC interference immunity is not relevant for thermal overload relays			
• Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	EMC interference immunity is not relevant for thermal overload relays			
• Field-related interference acc. to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	EMC interference immunity is not relevant for thermal overload relays			
Electromagnetic compatibility (EMC) – Emitted interference			EMC interference immunity is not relevant for thermal overload relays		
Resistance to extreme climates – air humidity	%	90			
Dimensions		See “Dimensional drawings”			
Installation altitude above sea level	m	Up to 2 000; above this, please enquire			
Mounting position		The diagrams show the permissible mounting positions for mounting onto contactors and stand-alone installation. For installation in the hatched area, a setting correction of 10 % must be implemented. Stand-alone installation: 			
		Contactor + overload relay: 			
Type of mounting		Mounting onto contactor/stand-alone installation with terminal bracket (For screw and snap-on mounting on TH 35 standard mounting rail.			

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

3RU2 up to 40 A
for standard applications

Type		3RU21 16	3RU21 26
Size		S00	S0
Main circuit			
Rated insulation voltage U_i (pollution degree 3)	V	690	
Rated impulse withstand voltage U_{imp}	kV	6	
Rated operational voltage U_e	V	690	
Type of current			
• Direct current		Yes	
• Alternating current		Yes, frequency range up to 400 Hz	
Current setting	AA	0.11 ... 0.16 to 11 ... 16	1.8 ... 2.5 to 34 ... 40
Power loss per unit (max.)	W	3.9 ... 6.6	3.9 ... 6
Short-circuit protection			
• With fuse without contactor		See “Selection and ordering data”	
• With fuse and contactor		See “Technical specifications” —> “Short-circuit protection with fuses/ Motor Protection Circuit Breakers for motor feeders”	
Protective separation between main and auxiliary conducting path acc. to IEC 60947-1	V	≥ 440	
Conductor cross-sections of main circuit			
Connection type		 Screw terminals	
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2
Operating devices	mm	ø 5 ... 6	ø 5 ... 6
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected			
• Solid	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾ , 2 x (0.5 ... 4) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾
• Finely stranded with end sleeves (DIN 46228 T1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ ; max. 1 x 10
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 14) ¹⁾ , 2 x 12	2 x (16 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾
Connection type		 Spring-type terminals	
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5	
Conductor cross-sections (min./max.)			
• Solid	mm ²	1 x (0.5 ... 4)	1 x (1 ... 10)
• Finely stranded without end sleeve	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)
• Finely stranded with end sleeves (DIN 46228 T1)	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)
• AWG cables, solid or stranded	AWG	1 x (20 ... 12)	1 x (18 ... 8)

Type		3RU21 16	3RU21 26
Size		S00	S0
Auxiliary circuit			
Number of NO contacts	1		
Number of NC contacts	1		
Auxiliary contacts – assignment		1 NO for the signal “tripped”; 1 NC for disconnecting the contactor	
Rated insulation voltage U_i (pollution degree 3)	V	690	
Rated impulse withstand voltage U_{imp}	kV	6	
Contact rating of the auxiliary contacts			
• NC contact with alternating current AC-14/AC-15, rated operational current I_e at U_e :			
- 24 V	A	4	
- 120 V	A	4	
- 125 V	A	4	
- 230 V	A	3	
- 400 V	A	2	
- 600 V	A	0.75	
- 690 V	A	0.75	
• NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e :			
- 24 V	A	3	
- 120 V	A	3	
- 125 V	A	3	
- 230 V	A	2	
- 400 V	A	1	
- 600 V	A	0.75	
- 690 V	A	0.75	
• NC contact, NO contact with direct current DC-13, rated operational current I_e at U_e :			
- 24 V	A	1	
- 60 V	A	On request	
- 110 V	A	0.22	
- 125 V	A	0.22	
- 220 V	A	0.11	
• Conventional thermal current I_{th}	A	6	
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes	
Short-circuit protection			
• With fuse			
- Operational class gG	A	6	
- Quick	A	10	
• With miniature circuit breaker (C characteristic)	A	6 ¹⁾	
Protective separation between auxiliary conducting paths acc. to IEC 60947-1	V	≥ 440	
CSA, UL, UR rated data			
Auxiliary circuit – switching capacity		B600, R300	
Conductor cross-sections for auxiliary circuit			
Connection type		 Screw terminals	
Terminal screw		M3, Pozidriv size 2	
Operating devices	mm	Ø 5 ... 6	
Prescribed tightening torque	Nm	0.8 ... 1.2	
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected			
• Solid	mm²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	
• Finely stranded with end sleeves (DIN 46228 T1)	mm²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾	
Connection type		 Spring-type terminals	
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5	
Conductor cross-sections (min./max.)			
• Solid	mm²	2 x (0.5 ... 2.5)	
• Finely stranded without end sleeve	mm²	2 x (0.5 ... 1.5)	
• Finely stranded with end sleeves (DIN 46228 T1)	mm²	2 x (0.5 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	

1) Up to $I_k \leq 0.5$ kA; $U \leq 260$ V.

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

3RU2 up to 40 A
for standard applications

Selection and ordering data

3RU21 thermal overload relays for mounting onto contactor¹⁾, CLASS 10

Features and technical specifications:

- Screw and spring-type terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)



3RU21 16-4AB0



3RU21 16-4AC0



3RU21 26-4FB0



3RU21 26-4AC0

Size contactor ²⁾	Rating for induction motor, rated value ³⁾	Current setting of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ⁴⁾	Screw terminals	Spring-type terminals
				Order No.	Order No.
	kW	A	A		
Size S00					
500	0.04	0.11 ... 0.16	0.5	3RU21 16-0AB0	3RU21 16-0AC0
	0.06	0.14 ... 0.2	1	3RU21 16-0BB0	3RU21 16-0BC0
	0.06	0.18 ... 0.25	1	3RU21 16-0CB0	3RU21 16-0CC0
	0.09	0.22 ... 0.32	1.6	3RU21 16-0DB0	3RU21 16-0DC0
	0.09	0.28 ... 0.4	2	3RU21 16-0EB0	3RU21 16-0EC0
	0.12	0.35 ... 0.5	2	3RU21 16-0FB0	3RU21 16-0FC0
	0.18	0.45 ... 0.63	2	3RU21 16-0GB0	3RU21 16-0GC0
	0.18	0.55 ... 0.8	4	3RU21 16-0HB0	3RU21 16-0HC0
	0.25	0.7 ... 1	4	3RU21 16-0JB0	3RU21 16-0JC0
	0.37	0.9 ... 1.25	4	3RU21 16-0KB0	3RU21 16-0KC0
	0.55	1.1 ... 1.6	6	3RU21 16-1AB0	3RU21 16-1AC0
	0.75	1.4 ... 2	6	3RU21 16-1BB0	3RU21 16-1BC0
	0.75	1.8 ... 2.5	10	3RU21 16-1CB0	3RU21 16-1CC0
	1.1	2.2 ... 3.2	10	3RU21 16-1DB0	3RU21 16-1DC0
	1.5	2.8 ... 4	16	3RU21 16-1EB0	3RU21 16-1EC0
	1.5	3.5 ... 5	20	3RU21 16-1FB0	3RU21 16-1FC0
	2.2	4.5 ... 6.3	20	3RU21 16-1GB0	3RU21 16-1GC0
	3	5.5 ... 8	25	3RU21 16-1HB0	3RU21 16-1HC0
	4	7 ... 10	35	3RU21 16-1JB0	3RU21 16-1JC0
	5.5	9 ... 12.5	35	3RU21 16-1KB0	3RU21 16-1KC0
	7.5	11 ... 16	40	3RU21 16-4AB0	3RU21 16-4AC0
Size S0					
S0	0.75	1.8 ... 2.5	10	3RU21 26-1CB0	3RU21 26-1CC0
	1.1	2.2 ... 3.2	10	3RU21 26-1DB0	3RU21 26-1DC0
	1.5	2.8 ... 4	16	3RU21 26-1EB0	3RU21 26-1EC0
	1.5	3.5 ... 5	20	3RU21 26-1FB0	3RU21 26-1FC0
	2.2	4.5 ... 6.3	20	3RU21 26-1GB0	3RU21 26-1GC0
	3	5.5 ... 8	25	3RU21 26-1HB0	3RU21 26-1HC0
	4	7 ... 10	35	3RU21 26-1JB0	3RU21 26-1JC0
	5.5	9 ... 12.5	35	3RU21 26-1KB0	3RU21 26-1KC0
	7.5	11 ... 16	40	3RU21 26-4AB0	3RU21 26-4AC0
	7.5	14 ... 20	50	3RU21 26-4BB0	3RU21 26-4BC0
	11	17 ... 22	63	3RU21 26-4CB0	3RU21 26-4CC0
	11	20 ... 25	63	3RU21 26-4DB0	3RU21 26-4DC0
	15	23 ... 28	63	3RU21 26-4NB0	3RU21 26-4NC0
	15	27 ... 32	80	3RU21 26-4EB0	3RU21 26-4EC0
	18.5	30 ... 36	80	3RU21 26-4PB0	3RU21 26-4PC0
	18.5	34 ... 40	80	3RU21 26-4FB0	3RU21 26-4FC0

1) For matching terminal brackets see "Accessories".

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 for overload relay, type of coordination "2".

3RU21 thermal overload relays for stand-alone installation¹⁾, CLASS 10

Features and technical specifications:

- Screw or spring-type terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)



3RU21 16-4AB1



3RU21 16-4AC1



3RU21 26-4FB1



3RU21 26-4FC1

Size contactor ²⁾	Rating for induction motor, rated value ³⁾	Current setting of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ⁴⁾	Screw terminals	Spring-type terminals
				Order No.	Order No.
Size S00					
S00	0.04	0.11 ... 0.16	0.5	3RU21 16-0AB1	3RU21 16-0AC1
	0.06	0.14 ... 0.2	1	3RU21 16-0BB1	3RU21 16-0BC1
	0.06	0.18 ... 0.25	1	3RU21 16-0CB1	3RU21 16-0CC1
	0.09	0.22 ... 0.32	1.6	3RU21 16-0DB1	3RU21 16-0DC1
	0.09	0.28 ... 0.4	2	3RU21 16-0EB1	3RU21 16-0EC1
	0.12	0.35 ... 0.5	2	3RU21 16-0FB1	3RU21 16-0FC1
	0.18	0.45 ... 0.63	2	3RU21 16-0GB1	3RU21 16-0GC1
	0.18	0.55 ... 0.8	4	3RU21 16-0HB1	3RU21 16-0HC1
	0.25	0.7 ... 1	4	3RU21 16-0JB1	3RU21 16-0JC1
	0.37	0.9 ... 1.25	4	3RU21 16-0KB1	3RU21 16-0KC1
	0.55	1.1 ... 1.6	6	3RU21 16-1AB1	3RU21 16-1AC1
	0.75	1.4 ... 2	6	3RU21 16-1BB1	3RU21 16-1BC1
	0.75	1.8 ... 2.5	10	3RU21 16-1CB1	3RU21 16-1CC1
	1.1	2.2 ... 3.2	10	3RU21 16-1DB1	3RU21 16-1DC1
	1.5	2.8 ... 4	16	3RU21 16-1EB1	3RU21 16-1EC1
	1.5	3.5 ... 5	20	3RU21 16-1FB1	3RU21 16-1FC1
S0	2.2	4.5 ... 6.3	20	3RU21 16-1GB1	3RU21 16-1GC1
	3	5.5 ... 8	25	3RU21 16-1HB1	3RU21 16-1HC1
	4	7 ... 10	35	3RU21 16-1JB1	3RU21 16-1JC1
	5.5	9 ... 12.5	35	3RU21 16-1KB1	3RU21 16-1KC1
	7.5	11 ... 16	40	3RU21 16-4AB1	3RU21 16-4AC1
	7.5	14 ... 20	50	3RU21 26-4BB1	3RU21 26-4BC1
	11	17 ... 22	63	3RU21 26-4CB1	3RU21 26-4CC1
	11	20 ... 25	63	3RU21 26-4DB1	3RU21 26-4DC1
S0	15	23 ... 28	63	3RU21 26-4NB1	3RU21 26-4NC1
	15	27 ... 32	80	3RU21 26-4EB1	3RU21 26-4EC1
	18.5	30 ... 36	80	3RU21 26-4PB1	3RU21 26-4PC1
	18.5	34 ... 40	80	3RU21 26-4FB1	3RU21 26-4FC1

- 1) Screw and snap-on mounting onto TH 35 standard mounting rail.
- 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 for overload relay, type of coordination "2".

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

Accessories







Overview



Overload relays for standard applications

The following optional accessories are available for the 3RU21 thermal overload relays:

- Terminal bracket for stand-alone installation with screw or spring-type terminals for every size
- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Electrical remote RESET module in three voltage variants (for all sizes)
- Sealable cover (for all sizes)

Selection and ordering data

	Version	Size	Order No.
Terminal brackets for stand-alone installation			
 3RU29 16-3AA01  3RU29 26-3AA01	Terminal brackets for overload relays with screw terminals For separate mounting of the overload relays; screw and snap-on mounting onto TH 35 standard mounting rail	S00 S0	 Screw terminals 3RU29 16-3AA01 3RU29 26-3AA01
	Terminal brackets for overload relays with spring-type terminals For separate mounting of the overload relays; screw and snap-on mounting onto TH 35 standard mounting rail	S00 S0	 Spring-type terminals 3RU29 16-3AC01 3RU29 26-3AC01
Mechanical RESET			
 3RU29 00-1A with pushbutton and extension plunger	Resetting plungers, holders and formers	S00, S0	3RU29 00-1A
	Pushbuttons with extended stroke (12 mm), IP65, Ø 22 mm	S00, S0	3SB30 00-0EA11
	Extension plungers For compensation of the distance between the pushbutton and the unlatching button of the relay	S00, S0	3SX1 335
Cable releases with holder for RESET			
 3RU29 00-1.	For Ø 6.5 mm holes in the control panel; max. control panel thickness 8 mm		
	• Length 400 mm • Length 600 mm	S00, S0 S00, S0	3RU29 00-1B 3RU29 00-1C

Version		Size	Order No.
Modules for remote RESET, electrical			
	Operating range 0.85 ... 1.1 × U_N , power consumption AC 80 VA, DC 70 W, ON period 0.2 ... 4 s, switching frequency 60/h		
	• 24 ... 30 V AC/DC	S00, S0	3RU19 00-2AB71
	• 110 ... 127 V AC/DC	S00, S0	3RU19 00-2AF71
	• 220 ... 250 V AC/DC	S00, S0	3RU19 00-2AM71
3RU19 00-2A.71			
Sealable covers			
	For covering the setting knobs	S00, S0	3RV29 08-0P
3RV29 08-0P			