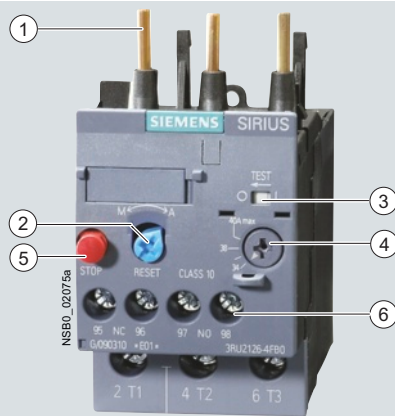


# Overload Relays

## SIRIUS 3RU2 Thermal Overload Relays

General data

### Overview



- ① Connection for mounting onto contactors:  
Optimally adapted in electrical, mechanical and design terms to the contactors. The overload relay can be connected directly to these contactor using these pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal bracket for stand-alone installation).
- ② 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 RESETE can be reset locally by pressing the RESET button. A remote RESETE is possible using the RESETE modules (accessories), which are independent of size.
- ③ Switch position indicator and TEST function of the wiring:  
Indicates a trip and enables the wiring test.
- ④ Motor current setting:  
Setting the device to the rated motor current is easy with the large rotary knob.
- 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 Supply terminals:  
Depending on the device version, the terminals for screw, spring-type or ring lug terminal connection are configured for the main and auxiliary circuit.

A sealable transparent cover can be optionally mounted (accessory). It secures the motor current setting against adjustment.

3RU21 26-4FB00 thermal overload relays

### Benefits

The most important features and benefits of the 3RU21 thermal overload relays are listed in the overview table (see "General data" on page 5/34).

The 3RU21 thermal overload relays up to 40 A have been designed for current-dependent protection of loads with normal starting (for "Function" see note on Technical Information on page 5/1) 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 switch-off time depends on the ratio between the tripping current and set current  $I_e$  and is stored in the form of a long-term stable tripping characteristic (for "Characteristic Curves" see the note on Technical Information on page 5/1).

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 note on Technical Information on page 5/1).

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"); see Chapter 9 "Appendix" --> "Standards and approvals" --> "Type overview of approved devices for explosion-protected areas (ATEX Explosion Protection)".

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

# Overload Relays

## SIRIUS 3RU2 Thermal Overload Relays

### General data

#### Application

##### Industries

The 3RU21 thermal overload relays are suitable for customers from all industries who want to guarantee optimum current-dependent protection of their electrical loads (e. g. motors) under normal starting conditions (CLASS 10).

##### Application

The 3RU21 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 3RU21 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

The 3RU21 thermal overload relays have temperature compensation in accordance with IEC 60947-4-1 for the temperature range of -40 to +60 °C. For temperatures from +60 to +80 °C the upper set value of the setting range must be reduced by the factor listed in the table below.

| Ambient temperature<br>°C | Derating factor for the upper set value |             |
|---------------------------|---|-------------|
|                           | Current ranges<br>0.11 ... 20 A         | 17 ... 40 A |
| +60                       | 1.0                                     | 1.0         |
| +65                       | 0.94                                    | 0.97        |
| +70                       | 0.87                                    | 0.94        |
| +75                       | 0.81                                    | 0.90        |
| +80                       | 0.73                                    | 0.86        |

#### Accessories

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 each 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
- Terminal covers for devices with ring lug terminal connection

#### More information

##### Order No. scheme

| Digit of the Order No.                    | 1st - 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th | 11th |   |   |   |
|---|-----------|-----|-----|-----|-----|-----|-----|------|------|---|---|---|
|   | □□□       | □   | □   | □   | □   | -   | □   | □    | □    |   |   |   |
| Thermal overload relays                   | 3 R U     |     |     |     |     |     |     |      |      |   |   |   |
| SIRIUS 2nd generation                     | 2         |     |     |     |     |     |     |      |      |   |   |   |
| Device series                             | □         |     |     |     |     |     |     |      |      |   |   |   |
| Size, rated operational current and power | □ □       |     |     |     |     |     |     |      |      |   |   |   |
| Setting range of the overload release     | □ □       |     |     |     |     |     |     |      |      |   |   |   |
| Connection method                         | □         |     |     |     |     |     |     |      |      |   |   |   |
| Installation type                         | □         |     |     |     |     |     |     |      |      |   |   |   |
| Example                                   | 3         | R   | U   | 2   | 1   | 1   | 6   | -    | 0    | A | B | 0 |

##### Note:

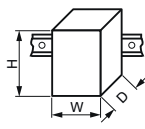
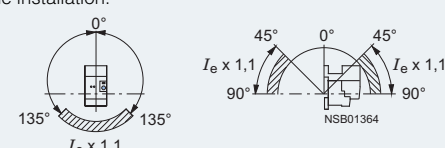
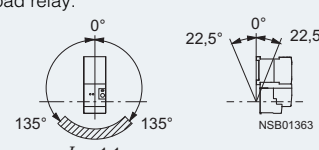
The Order No. scheme is presented here merely for information purposes and for better understanding of the logic behind the order numbers.

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

# Overload Relays

## SIRIUS 3RU2 Thermal Overload Relays

### General data

| Type   |   | 3RU21 16  | 3RU21 26      |
|--|---|---|---------------|
| Size   |   | S00   | S0            |
| Dimensions (W x H x D)<br>(overload relay with stand-alone installation support)         |  |   |               |
| • Screw terminals<br>• Spring-type terminals   | mm  | 45 x 89 x 79  | 45 x 97 x 95  |
|  | mm  | 45 x 102 x 80   | 45 x 114 x 97 |
| <b>General technical specifications</b>  |   |   |               |
| <b>Trips in the event of</b>   |   | Overload and phase failure  |               |
| <b>Trip class</b> acc. to IEC 60947-4-1  | CLASS   | 10  |               |
| <b>Phase failure sensitivity</b>   |   | Yes   |               |
| <b>Overload warning</b>  |   | No  |               |
| <b>Reset and recovery</b>  |   | Manual, automatic and remote RESET <sup>1)</sup>  |               |
| • Reset options after tripping   |   |   |               |
| • Recovery time  |   |   |               |
| - For automatic RESET  | min   | Depends on the strength of the tripping current and characteristic  |               |
| - For manual RESET   | min   | Depends on the strength of the tripping current and characteristic  |               |
| - For remote RESET   | min   | Depends on the strength of the tripping current and characteristic  |               |
| <b>Features</b>  |   |   |               |
| • Display of operating state on device   |   | Yes, by means of TEST function/switch position indicator slide  |               |
| • TEST function  |   | Yes   |               |
| • RESET button   |   | Yes   |               |
| • STOP button  |   | Yes   |               |
| <b>Safe operation of motors with "increased safety" type of protection</b>               |   |   |               |
| EC type test certificate number acc. to directive 94/9/EC (ATEX)                         |   | On request  |               |
| <b>Ambient temperature</b>   |   |   |               |
| • Storage/transport  | °C  | -55 ... +80   |               |
| • Operation  | °C  | -40 ... +70   |               |
| • Temperature compensation   | °C  | Up to 60  |               |
| • Permissible rated current at   |   |   |               |
| - Temperature inside control cabinet 60 °C   | %   | 100 (over +60 °C current reduction is not required)   |               |
| - Temperature inside control cabinet 70 °C   | %   | 87  |               |
| <b>Repeat terminals</b>  |   |   |               |
| • Coil repeat terminals  |   | Yes   | Not required  |
| • Auxiliary contact repeat terminal  |   | Yes   | Not required  |
| <b>Degree of protection</b> acc. to IEC 60529  |   | IP20  |               |
| <b>Touch protection</b> acc. to IEC 61140  |   | Screw and spring-type terminals: Finger-safe<br>Ring lug terminal connection: Finger-safe only with optional terminal covers  |               |
| <b>Shock resistance with sine</b> acc. to IEC 60068-2-27                                 | g/ms  | 15/11 <sup>2)</sup>   |               |
| <b>Electromagnetic compatibility (EMC) – Interference immunity</b>                       |   |   |               |
| • 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   |               |
| <b>Electromagnetic compatibility (EMC) – Emitted interference</b>                        |   | EMC interference immunity is not relevant for thermal overload relays   |               |
| <b>Resistance to extreme climates – Air humidity</b>                                     | %   | 90  |               |
| <b>Dimensions</b>  |   | For "Dimensional drawings" see the note on Technical Information on page 5/1.   |               |
| <b>Installation altitude above sea level</b>   | m   | Up to 2000; above this, please enquire  |               |
| <b>Mounting position</b>   |   | The diagrams show the permissible mounting positions for mounting onto contactors and stand-alone installation. For installation in the shaded area, a setting correction of 10 % must be implemented.<br>Stand-alone installation: |               |
|  |   |   |               |
|  |   | Contactor + overload relay:   |               |
|  |   |   |               |
| <b>Type of mounting</b>  |   | Mounting onto contactor/stand-alone installation with terminal bracket <sup>3)</sup>  |               |

<sup>1)</sup> Remote RESET in combination with the appropriate accessories.

<sup>2)</sup> Auxiliary contacts 95/96 and 97/98: 8 g/11 ms.




<sup>3)</sup> For screw and snap-on mounting on TH 35 standard mounting rail.

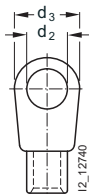
For the technical specifications of the terminal brackets see the note on Technical Information on page 5/1.

# Overload Relays

## SIRIUS 3RU2 Thermal Overload Relays

### General data

| Type  |                 | 3RU21 16   | 3RU21 26  |
|---|-----------------|--|---|
| Size  |                 | S00  | S0  |
| Width   |                 | 45 mm  | 45 mm   |
| <b>Main circuit</b>   |                 |  |   |
| Rated insulation voltage $U_i$<br>(pollution degree 3)                                  | V               | 690  |   |
| Rated impulse withstand voltage $U_{imp}$   | kV              | 6  |   |
| Rated operational voltage $U_e$   | V               | 690  |   |
| Type of current   |                 | Yes  |   |
| • Direct current  |                 | Yes  |   |
| • Alternating current   |                 | Yes, frequency range up to 400 Hz  |   |
| Current setting   | A               | 0.11 ... 0.16  | 1.8 ... 2.5   |
|   | A               | to<br>11 ... 16  | to<br>34 ... 40   |
| Power loss per unit (max.)  | W               | 3.9 ... 6.6  | 3.9 ... 6   |
| Short-circuit protection  |                 | See "Selection and ordering data"  |   |
| • With fuse without contactor   |                 | See "Technical specifications" --> "Short-circuit protection with fuses/motor starter protectors for motor starters", see note on Technical Information on page 5/1. |   |
| • With fuse and contactor   |                 |  |   |
| Protective separation between main and auxiliary conducting path<br>acc. to IEC 60947-1 | V               | ≥ 440  |   |
| <b>Conductor cross-sections of main circuit</b>   |                 |  |   |
| Connection type screw terminals   |                 |  <b>Screw terminals</b>   |   |
| Terminal screw  |                 | M3, Pozidriv size 2  | M4, Pozidriv size 2   |
| Operating devices   | mm              | ∅ 5 ... 6  | ∅ 5 ... 6   |
| Prescribed tightening torque  | Nm              | 0.8 ... 1.2  | 2 ... 2.5   |
| Conductor cross-sections (min./max.),<br>1 or 2 conductors can be connected             |                 |  |   |
| • Solid   | mm <sup>2</sup> | 2 x (0.5 ... 1.5) <sup>1)</sup> ,<br>2 x (0.75 ... 2.5) <sup>1)</sup> ,<br>2 x (0.5 ... 4) <sup>1)</sup>   | 2 x (1 ... 2.5) <sup>1)</sup> ,<br>2 x (2.5 ... 10) <sup>1)</sup>                 |
| • Finely stranded with end sleeves<br>(DIN 46228 T1)                                    | mm <sup>2</sup> | 2 x (0.5 ... 1.5) <sup>1)</sup> ,<br>2 x (0.75 ... 2.5) <sup>1)</sup>  | 2 x (1 ... 2.5) <sup>1)</sup> ,<br>2 x (2.5 ... 6) <sup>1)</sup> ,<br>max. 1 x 10 |
| • AWG cables, solid or stranded   | AWG             | 2 x (20 ... 16) <sup>1)</sup> ,<br>2 x (18 ... 14) <sup>1)</sup> ,<br>2 x 12   | 2 x (16 ... 12) <sup>1)</sup> ,<br>2 x (14 ... 8) <sup>1)</sup>                   |
| Connection type spring-type terminals   |                 |  <b>Spring-type terminals</b>   |   |
| Operating devices   | mm              | 3.0 x 0.5 and 3.5 x 0.5  |   |
| Conductor cross-sections (min./max.)  |                 |  |   |
| • Solid   | mm <sup>2</sup> | 1 x (0.5 ... 4)  | 1 x (1 ... 10)  |
| • Finely stranded without end sleeve  | mm <sup>2</sup> | 1 x (0.5 ... 2.5)  | 1 x (1 ... 6)   |
| • Finely stranded with end sleeves<br>(DIN 46228 T1)                                    | mm <sup>2</sup> | 1 x (0.5 ... 2.5)  | 1 x (1 ... 6)   |
| • AWG cables, solid or stranded   | AWG             | 1 x (20 ... 12)  | 1 x (18 ... 8)  |
| Connection type ring lug terminals  |                 |  <b>Ring lug terminal connection</b>  |   |
| Terminal screw  |                 | M3, Pozidriv size 2  | M4, Pozidriv size 2   |
| Operating devices   | mm              | ∅ 5 ... 6  | ∅ 5 ... 6   |
| Prescribed tightening torque  | Nm              | 0.8 ... 1.2  | 2 ... 2.5   |
| Usable ring lug terminals   | mm              | $d_2 = \text{min. } 3.2,$<br>$d_3 = \text{max. } 7.5$  | $d_2 = \text{min. } 4.3,$<br>$d_3 = \text{max. } 12.2$                            |
| • DIN 46234 without insulation sleeve   |                 |  |   |
| • DIN 46225 without insulation sleeve   |                 |  |   |
| • DIN 46237 with insulation sleeve  |                 |  |   |
| • JIS C2805 Type R without insulation sleeve  |                 |  |   |
| • JIS C2805 Type RAV with insulation sleeve   |                 |  |   |
| • JIS C2805 Type RAP with insulation sleeve   |                 |  |   |



<sup>1)</sup> If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified. If identical cross-sections are used, this restriction does not apply.

# Overload Relays

## SIRIUS 3RU2 Thermal Overload Relays

### General data




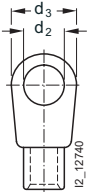
| Type   |    | 3RU21 16   | 3RU21 26 |
|--|----|--|----------|
| Size   |    | S00  | S0       |
| Width  |    | 45 mm  | 45 mm    |
| <b>Auxiliary circuit</b>   |    |  |          |
| <b>Number of NO contacts</b>   |    | 1  |          |
| <b>Number of NC contacts</b>   |    | 1  |          |
| <b>Auxiliary contacts – Assignment</b>   |    | 1 NO for the signal "tripped",<br>1 NC for disconnecting the contactor |          |
| <b>Rated insulation voltage <math>U_i</math></b><br>(pollution degree 3)                           | V  | 690  |          |
| <b>Rated impulse withstand voltage <math>U_{imp}</math></b>  | kV | 6  |          |
| <b>Contact rating of the auxiliary contacts</b>  |    |  |          |
| • NC contact with alternating current AC-14/AC-15,<br>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,<br>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,<br>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<br>(suitability for PLC control; 17 V, 5 mA)                                 |    | Yes  |          |
| <b>Short-circuit protection</b>  |    |  |          |
| • With fuse  |    |  |          |
| - Operational class gG   | A  | 6  |          |
| - Quick  | A  | 10   |          |
| • With miniature circuit breaker (C characteristic)  | A  | 6 <sup>1)</sup>  |          |
| <b>Protective separation between main and auxiliary<br/>conducting path</b><br>acc. to IEC 60947-1 | V  | ≥ 440  |          |
| <b>CSA, UL, UR rated data</b>  |    |  |          |
| <b>Auxiliary circuit – Switching capacity</b>  |    | B600, R300   |          |

<sup>1)</sup> Up to  $I_k \leq 0.5$  kA;  $\leq 260$  V.

# Overload Relays

## SIRIUS 3RU2 Thermal Overload Relays

### General data

|  |  |   |   |
|--|--|---|---|
| <b>Type</b>  |  | <b>3RU21 16</b>   | <b>3RU21 26</b>   |
| Size   |  | S00   | S0  |
| Width  |  | 45 mm   | 45 mm   |
| <b>Conductor cross-sections for auxiliary circuit</b>                              |  |   |   |
| <b>Connection type screw terminals</b>   |  |  <b>Screw terminals</b>              |   |
| <b>Terminal screw</b>  |  | M3, Pozidriv size 2   |   |
| <b>Operating devices</b>   | mm   | ∅ 5 ... 6   |   |
| <b>Prescribed tightening torque</b>  | Nm   | 0.8 ... 1.2   |   |
| <b>Conductor cross-sections (min./max.),</b><br>1 or 2 conductors can be connected |  |   |   |
| • Solid  | mm <sup>2</sup>  | 2 x (0.5 ... 1.5) <sup>1)</sup> , 2 x (0.75 ... 2.5) <sup>1)</sup>  |   |
| • Finely stranded with end sleeves (DIN 46228 T1)                                  | mm <sup>2</sup>  | 2 x (0.5 ... 1.5) <sup>1)</sup> , 2 x (0.75 ... 2.5) <sup>1)</sup>  |   |
| • AWG cables, solid or stranded  | AWG  | 2 x (20 ... 16) <sup>1)</sup> , 2 x (18 ... 14) <sup>1)</sup>   |   |
| <b>Connection type spring-type terminals</b>                                       |  |  <b>Spring-type terminals</b>        |   |
| <b>Operating devices</b>   | mm   | 3.0 x 0.5 and 3.5 x 0.5   |   |
| <b>Conductor cross-sections (min./max.)</b>  |  |   |   |
| • Solid  | mm <sup>2</sup>  | 2 x (0.5 ... 2.5)   |   |
| • Finely stranded without end sleeve   | mm <sup>2</sup>  | 2 x (0.5 ... 1.5)   |   |
| • Finely stranded with end sleeves (DIN 46228 T1)                                  | mm <sup>2</sup>  | 2 x (0.5 ... 1.5)   |   |
| • AWG cables, solid or stranded  | AWG  | 2 x (20 ... 14)   |   |
| <b>Connection type ring terminal end</b>   |  |  <b>Ring lug terminal connection</b> |   |
| <b>Terminal screw</b>  |  | M3, Pozidriv size 2   |   |
| <b>Operating devices</b>   | mm   | ∅ 5 ... 6   |   |
| <b>Prescribed tightening torque</b>  | Nm   | 0.8 ... 1.2   |   |
| <b>Usable ring lug terminals</b>   |  | mm  | d <sub>2</sub> = min. 3.2,<br>d <sub>3</sub> = max. 7.5 |
| • DIN 46234 without insulation sleeve  |  |   |   |
| • DIN 46225 without insulation sleeve  |  |   |   |
| • DIN 46237 with insulation sleeve   |  |   |   |
| • JIS C2805 Type R without insulation sleeve                                       |  |   |   |
| • JIS C2805 Type RAV with insulation sleeve  |  |   |   |
| • JIS C2805 Type RAP with insulation sleeve  |  |   |   |

<sup>1)</sup> If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified. If identical cross-sections are used, this restriction does not apply.

# 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 contactor<sup>1)</sup>, CLASS 10

Features and technical specifications:

- Screw, spring-type or ring lug terminal connection<sup>2)</sup>
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicators
- TEST function
- STOP button
- Sealable covers (optional accessory)
- Terminal covers for devices with ring lug terminal connection (optional accessory)



3RU21 16-4AB0





3RU21 16-4AC0



3RU21 26-4FB0



3RU21 26-4AC0

| Size contactor <sup>3)</sup> | Current setting value of the current-dependent overload release | Screw terminals  | Weight approx.       | Spring-type terminals  | Weight approx. |
|------------------------------|---|---|----------------------|---|----------------|
|                              | A   | Order No.   | kg                   | Order No.   | kg             |
| <b>Size S00</b>              |   |   |                      |   |                |
| S00                          | 0.11 ... 0.16   | <b>3RU21 16-0AB0</b>  | 0.130                | <b>3RU21 16-0AC0</b>  | 0.150          |
|                              | 0.14 ... 0.2  | <b>3RU21 16-0BB0</b>  | 0.130                | <b>3RU21 16-0BC0</b>  | 0.150          |
|                              | 0.18 ... 0.25   | <b>3RU21 16-0CB0</b>  | 0.130                | <b>3RU21 16-0CC0</b>  | 0.150          |
|                              | 0.22 ... 0.32   | <b>3RU21 16-0DB0</b>  | 0.130                | <b>3RU21 16-0DC0</b>  | 0.150          |
|                              | 0.28 ... 0.4  | <b>3RU21 16-0EB0</b>  | 0.130                | <b>3RU21 16-0EC0</b>  | 0.150          |
|                              | 0.35 ... 0.5  | <b>3RU21 16-0FB0</b>  | 0.130                | <b>3RU21 16-0FC0</b>  | 0.150          |
|                              | 0.45 ... 0.63   | <b>3RU21 16-0GB0</b>  | 0.130                | <b>3RU21 16-0GC0</b>  | 0.150          |
|                              | 0.55 ... 0.8  | <b>3RU21 16-0HB0</b>  | 0.130                | <b>3RU21 16-0HC0</b>  | 0.150          |
|                              | 0.7 ... 1   | <b>3RU21 16-0JB0</b>  | 0.130                | <b>3RU21 16-0JC0</b>  | 0.150          |
|                              | 0.9 ... 1.25  | <b>3RU21 16-0KB0</b>  | 0.130                | <b>3RU21 16-0KC0</b>  | 0.150          |
|                              | 1.1 ... 1.6   | <b>3RU21 16-1AB0</b>  | 0.130                | <b>3RU21 16-1AC0</b>  | 0.150          |
|                              | 1.4 ... 2   | <b>3RU21 16-1BB0</b>  | 0.130                | <b>3RU21 16-1BC0</b>  | 0.150          |
|                              | 1.8 ... 2.5   | <b>3RU21 16-1CB0</b>  | 0.130                | <b>3RU21 16-1CC0</b>  | 0.150          |
|                              | 2.2 ... 3.2   | <b>3RU21 16-1DB0</b>  | 0.130                | <b>3RU21 16-1DC0</b>  | 0.150          |
|                              | 2.8 ... 4   | <b>3RU21 16-1EB0</b>  | 0.130                | <b>3RU21 16-1EC0</b>  | 0.150          |
|                              | 3.5 ... 5   | <b>3RU21 16-1FB0</b>  | 0.130                | <b>3RU21 16-1FC0</b>  | 0.150          |
|                              | 4.5 ... 6.3   | <b>3RU21 16-1GB0</b>  | 0.130                | <b>3RU21 16-1GC0</b>  | 0.150          |
|                              | 5.5 ... 8   | <b>3RU21 16-1HB0</b>  | 0.130                | <b>3RU21 16-1HC0</b>  | 0.150          |
|                              | 7 ... 10  | <b>3RU21 16-1JB0</b>  | 0.130                | <b>3RU21 16-1JC0</b>  | 0.150          |
|                              | 9 ... 12.5  | <b>3RU21 16-1KB0</b>  | 0.130                | <b>3RU21 16-1KC0</b>  | 0.150          |
| 11 ... 16                    | <b>3RU21 16-4AB0</b>  | 0.130   | <b>3RU21 16-4AC0</b> | 0.150   |                |
| <b>Size S0</b>               |   |   |                      |   |                |
| S0                           | 1.8 ... 2.5   | <b>3RU21 26-1CB0</b>  | 0.160                | <b>3RU21 26-1CC0</b>  | 0.220          |
|                              | 2.2 ... 3.2   | <b>3RU21 26-1DB0</b>  | 0.160                | <b>3RU21 26-1DC0</b>  | 0.220          |
|                              | 2.8 ... 4   | <b>3RU21 26-1EB0</b>  | 0.160                | <b>3RU21 26-1EC0</b>  | 0.220          |
|                              | 3.5 ... 5   | <b>3RU21 26-1FB0</b>  | 0.160                | <b>3RU21 26-1FC0</b>  | 0.220          |
|                              | 4.5 ... 6.3   | <b>3RU21 26-1GB0</b>  | 0.160                | <b>3RU21 26-1GC0</b>  | 0.220          |
|                              | 5.5 ... 8   | <b>3RU21 26-1HB0</b>  | 0.160                | <b>3RU21 26-1HC0</b>  | 0.220          |
|                              | 7 ... 10  | <b>3RU21 26-1JB0</b>  | 0.160                | <b>3RU21 26-1JC0</b>  | 0.220          |
|                              | 9 ... 12.5  | <b>3RU21 26-1KB0</b>  | 0.160                | <b>3RU21 26-1KC0</b>  | 0.220          |
|                              | 11 ... 16   | <b>3RU21 26-4AB0</b>  | 0.160                | <b>3RU21 26-4AC0</b>  | 0.220          |
|                              | 14 ... 20   | <b>3RU21 26-4BB0</b>  | 0.160                | <b>3RU21 26-4BC0</b>  | 0.220          |
|                              | 17 ... 22   | <b>3RU21 26-4CB0</b>  | 0.160                | <b>3RU21 26-4CC0</b>  | 0.220          |
|                              | 20 ... 25   | <b>3RU21 26-4DB0</b>  | 0.160                | <b>3RU21 26-4DC0</b>  | 0.220          |
|                              | 23 ... 28   | <b>3RU21 26-4NB0</b>  | 0.160                | <b>3RU21 26-4NC0</b>  | 0.220          |
|                              | 27 ... 32   | <b>3RU21 26-4EB0</b>  | 0.160                | <b>3RU21 26-4EC0</b>  | 0.220          |
|                              | 30 ... 36   | <b>3RU21 26-4PB0</b>  | 0.160                | <b>3RU21 26-4PC0</b>  | 0.220          |
|                              | 34 ... 40   | <b>3RU21 26-4FB0</b>  | 0.160                | <b>3RU21 26-4FC0</b>  | 0.220          |

<sup>1)</sup> For matching terminal brackets see "Accessories" on page 5/45.

<sup>2)</sup> The 3RU21 overload relays are also available with ring lug terminal connection. The Order No. must be changed in the 10th position to "J": e. g. 3RU21 16-0AJ0.

<sup>3)</sup> Observe maximum rated operational current of the devices.

# Overload Relays

## SIRIUS 3RU2 Thermal Overload Relays

3RU2 up to 40 A  
for standard applications

3RU21 thermal overload relays for stand-alone installation<sup>1)</sup>, 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 indicators
- TEST function
- STOP button
- Sealable covers (optional accessory)



3RU21 16-4AB1





3RU21 16-4AC1



3RU21 26-4FB1



3RU21 26-4FC1

| Size contactor <sup>2)</sup> | Current setting value of the current-dependent overload release | Screw terminals  | Weight approx. | Spring-type terminals  | Weight approx. |
|------------------------------|---|---|----------------|---|----------------|
|                              | A   | Order No.   | kg             | Order No.   | kg             |
| <b>Size S00</b>              |   |   |                |   |                |
| S00                          | 0.11 ... 0.16   | 3RU21 16-0AB1   | 0.170          | 3RU21 16-0AC1   | 0.190          |
|                              | 0.14 ... 0.2  | 3RU21 16-0BB1   | 0.170          | 3RU21 16-0BC1   | 0.190          |
|                              | 0.18 ... 0.25   | 3RU21 16-0CB1   | 0.170          | 3RU21 16-0CC1   | 0.190          |
|                              | 0.22 ... 0.32   | 3RU21 16-0DB1   | 0.170          | 3RU21 16-0DC1   | 0.190          |
|                              | 0.28 ... 0.4  | 3RU21 16-0EB1   | 0.170          | 3RU21 16-0EC1   | 0.190          |
|                              | 0.35 ... 0.5  | 3RU21 16-0FB1   | 0.170          | 3RU21 16-0FC1   | 0.190          |
|                              | 0.45 ... 0.63   | 3RU21 16-0GB1   | 0.170          | 3RU21 16-0GC1   | 0.190          |
|                              | 0.55 ... 0.8  | 3RU21 16-0HB1   | 0.170          | 3RU21 16-0HC1   | 0.190          |
|                              | 0.7 ... 1   | 3RU21 16-0JB1   | 0.170          | 3RU21 16-0JC1   | 0.190          |
|                              | 0.9 ... 1.25  | 3RU21 16-0KB1   | 0.170          | 3RU21 16-0KC1   | 0.190          |
|                              | 1.1 ... 1.6   | 3RU21 16-1AB1   | 0.170          | 3RU21 16-1AC1   | 0.190          |
|                              | 1.4 ... 2   | 3RU21 16-1BB1   | 0.170          | 3RU21 16-1BC1   | 0.190          |
|                              | 1.8 ... 2.5   | 3RU21 16-1CB1   | 0.170          | 3RU21 16-1CC1   | 0.190          |
|                              | 2.2 ... 3.2   | 3RU21 16-1DB1   | 0.170          | 3RU21 16-1DC1   | 0.190          |
|                              | 2.8 ... 4   | 3RU21 16-1EB1   | 0.170          | 3RU21 16-1EC1   | 0.190          |
|                              | 3.5 ... 5   | 3RU21 16-1FB1   | 0.170          | 3RU21 16-1FC1   | 0.190          |
|                              | 4.5 ... 6.3   | 3RU21 16-1GB1   | 0.170          | 3RU21 16-1GC1   | 0.190          |
|                              | 5.5 ... 8   | 3RU21 16-1HB1   | 0.170          | 3RU21 16-1HC1   | 0.190          |
|                              | 7 ... 10  | 3RU21 16-1JB1   | 0.170          | 3RU21 16-1JC1   | 0.190          |
|                              | 9 ... 12.5  | 3RU21 16-1KB1   | 0.170          | 3RU21 16-1KC1   | 0.190          |
| 11 ... 16                    | 3RU21 16-4AB1   | 0.170   | 3RU21 16-4AC1  | 0.280   |                |
| <b>Size S0</b>               |   |   |                |   |                |
| S0                           | 14 ... 20   | 3RU21 26-4BB1   | 0.200          | 3RU21 26-4BC1   | 0.280          |
|                              | 17 ... 22   | 3RU21 26-4CB1   | 0.200          | 3RU21 26-4CC1   | 0.280          |
|                              | 20 ... 25   | 3RU21 26-4DB1   | 0.200          | 3RU21 26-4DC1   | 0.280          |
|                              | 23 ... 28   | 3RU21 26-4NB1   | 0.200          | 3RU21 26-4NC1   | 0.280          |
|                              | 27 ... 32   | 3RU21 26-4EB1   | 0.200          | 3RU21 26-4EC1   | 0.280          |
|                              | 30 ... 36   | 3RU21 26-4PB1   | 0.200          | 3RU21 26-4PC1   | 0.280          |
|                              | 34 ... 40   | 3RU21 26-4FB1   | 0.200          | 3RU21 26-4FC1   | 0.280          |

<sup>1)</sup> Screw and snap-on mounting onto TH 35 standard mounting rail

<sup>2)</sup> Observe maximum rated operational current of the devices.



# 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 each 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
- Terminal covers for devices with ring lug terminal connection

#### Selection and ordering data








| Version  | Size  | Order No.   | Weight approx. kg |
|--|---|---|-------------------|
| <b>Terminal brackets for stand-alone installation<sup>1)</sup></b>   |   |   |                   |
| <br>3RU29 16-3AA01                                      | <b>Terminal brackets for overload relays with screw terminals</b><br>For separate mounting of the overload relays; screw and snap-on mounting onto TH 35 standard mounting rail       | <b>Screw terminals</b> <br><b>3RU29 16-3AA01</b><br><b>3RU29 26-3AA01</b>        | 0.040<br>0.050    |
|  | S00<br>S0   |   |                   |
| <br>3RU29 26-3AA01                                      |   |   |                   |
|  |   |   |                   |
| <br>3RU29 16-3AC01                                     | <b>Terminal brackets for overload relays with spring-type terminals</b><br>For separate mounting of the overload relays; screw and snap-on mounting onto TH 35 standard mounting rail | <b>Spring-type terminals</b> <br><b>3RU29 16-3AC01</b><br><b>3RU29 26-3AC01</b> | 0.040<br>0.060    |
|  | S00<br>S0   |   |                   |
| <br>3RU29 26-3AC01                                    |   |   |                   |
|  |   |   |                   |
| <b>Mechanical RESET</b>  |   |   |                   |
| <br>3RU29 00-1A with pushbutton and extension plunger | <b>Resetting plungers, holders and formers</b> S00, S0  | <b>3RU29 00-1A</b>  | 0.038             |
|  | <b>Pushbuttons with extended stroke</b> (12 mm), IP65, $\varnothing$ 22 mm S00, S0  | <b>3SB30 00-0EA11</b>   | 0.020             |
|  | <b>Extension plungers</b> S00, S0<br>For compensation of the distance between the pushbutton and the unlatching button of the relay   | <b>3SX1 335</b>   | 0.004             |
| <b>Cable releases with holder for RESET</b>  |   |   |                   |
| <br>3RU29 00-1.                                       | For $\varnothing$ 6.5 mm hole in the control panel; max. control panel thickness 8 mm   | <b>3RU29 00-1B</b><br><b>3RU29 00-1C</b>  | 0.063<br>0.073    |
|  | <ul style="list-style-type: none"> <li>• Length 400 mm S00, S0</li> <li>• Length 600 mm S00, S0</li> </ul>  |   |                   |

<sup>1)</sup> The accessories are identical to those of the 3RB30/3RB31 solid-state overload relays.


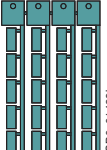
# Overload Relays

## SIRIUS 3RU2 Thermal Overload Relays

### Accessories

| Version   | Size   | Order No. | PU<br>(UNIT,<br>SET, M)             | PS*        | Weight<br>approx. |
|---|--|-----------|-------------------------------------|------------|-------------------|
| <b>Modules for remote RESET, electrical</b>   |  |           |                                     |            |                   |
| <br>3RU19 00-2A.71   | Operating range 0.85 ... 1.1 x $U_N$ ,<br>power consumption AC 80 VA, DC 70 W,<br>ON period 0.2 ... 4 s,<br>switching frequency 60/h   |           |                                     |            |                   |
|   | • 24 ... 30 V AC/DC  | S00, S0   | <b>3RU19 00-2AB71</b>               |            | 0.066             |
|   | • 110 ... 127 V AC/DC  | S00, S0   | <b>3RU19 00-2AF71</b>               |            | 0.067             |
|   | • 220 ... 250 V AC/DC  | S00, S0   | <b>3RU19 00-2AM71</b>               |            | 0.066             |
| <b>Sealable covers</b>  |  |           |                                     |            |                   |
| <br>3RV29 08-0P      | For covering the setting knobs   | S00, S0   | <b>3RV29 08-0P</b>                  | 1 10 units | 0.100             |
| <b>Terminal covers</b>  |  |           |                                     |            |                   |
| <b>Covers for devices with ring lug terminal connection</b><br>(ensure finger-safety)                 |  |           | <b>Ring lug terminal connection</b> |            |                   |
| <br>3RU29 16-3BJ21   | <ul style="list-style-type: none"> <li>• Main current level               <ul style="list-style-type: none"> <li>- Cover between contactor and overload relay for direct mounting of the overload relay</li> </ul> </li> </ul> | S00       | <b>3RU29 16-3BJ21</b>               | 1 10 units | 0.001             |
|   |  | S0        | <b>3RU29 26-3BJ21</b>               | 1 10 units | 0.001             |
| <br>3RU29 26-3BJ21   | <ul style="list-style-type: none"> <li>- Cover for overload relay on load side</li> </ul>  | S00       | <b>3RU29 16-3BJ20</b>               | 1 10 units | 0.001             |
|   |  | S0        | <b>3RV29 28-4AA00</b>               | 1 1 unit   | 0.010             |
| <br>3RU29 16-3BJ20   | <ul style="list-style-type: none"> <li>• Auxiliary current level</li> </ul>  | S00, S0   | <b>3RT29 16-4EA13</b>               | 1 10 units | 0.001             |
|   |  |           |                                     |            |                   |
| <br>3RV29 28-4AA00 |  |           |                                     |            |                   |
| <br>3RT29 16-4EA13 |  |           |                                     |            |                   |

### General accessories

| Version   | Use   | Order No.   | PU<br>(UNIT,<br>SET, M)      | PS*           | Weight<br>approx. |
|---|---|---|------------------------------|---------------|-------------------|
| kg  |   |   |                              |               |                   |
| <b>Tools for opening spring-type terminals</b>  |   |   |                              |               |                   |
| <br>3RA29 08-1A    | <b>Screwdrivers</b><br>for all SIRIUS devices with spring-type terminals<br>Length approx. 200 mm,<br>3.0 mm x 0.5 mm,<br>titanium gray/black,<br>partially insulated | Main and auxiliary circuit connection: 3RU2, 3RB3 | <b>Spring-type terminals</b> |               |                   |
|   |   |   | <b>3RA29 08-1A</b>           | 1             | 1 unit            |
| <b>Blank labels</b>   |   |   |                              |               |                   |
| <br>3RT19 00-1SB20 | <b>Unit labeling plates<sup>1)</sup></b><br>for SIRIUS devices<br>20 mm x 7 mm,<br>pastel turquoise   | 3RU2, 3RB3  | <b>3RT19 00-1SB20</b>        | 100 340 units | 0.200             |

<sup>1)</sup> PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systems, Inc. [www.murrplastik.com](http://www.murrplastik.com).