

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

5



### Price groups

PG 41A, 41B, 41H, 41L

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### Introduction

#### Contactor relays

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# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Introduction

### Overview

#### More information

Homepage, see [www.siemens.com/sirius](http://www.siemens.com/sirius)

Industry Mall, see [www.siemens.com/product?3RH\\_3TH](http://www.siemens.com/product?3RH_3TH)

Conversion tool for article numbers, see [www.siemens.com/sirius/conversion-tool](http://www.siemens.com/sirius/conversion-tool)

#### The advantages at a glance



Size  
Type

**S00**  
3RH21

**S00**  
3RH22

3TH42

3TH43

| Article No. | Page |
|-------------|------|
|-------------|------|

#### SIRIUS 3RH2 contactor relays

|  |                                     |
|--|-------------------------------------|
| <b>4-pole</b>                                    | • Screw or spring-loaded terminals  |
| <b>8-pole</b>                                    |                                     |
| <b>4-pole, latched</b>                           |                                     |
| <b>Coupling contactor relays</b>                 | • Coils for control by the PLC      |
| <b>Contactor relays for railway applications</b> | • Coils with extended voltage range |

|              |            |
|--------------|------------|
| <b>3RH21</b> | 5/12, 5/13 |
| <b>3RH22</b> | 5/12, 5/13 |
| <b>3RH24</b> | 5/12, 5/13 |
| <b>3RH21</b> | 5/14, 5/15 |
| <b>3RH21</b> | 4/64       |

#### 3TH4 contactor relays

|  |                                     |
|--|-------------------------------------|
| <b>8-pole</b>                                    | • Screw terminals                   |
| <b>10-pole</b>                                   |                                     |
| <b>Contactor relays for railway applications</b> | • Coils with extended voltage range |

|              |      |
|--------------|------|
| <b>3TH42</b> | 5/20 |
| <b>3TH43</b> | 5/21 |
| <b>3TH42</b> | 4/66 |

#### Accessories for SIRIUS 3RH2 contactor relays

|  |            |
|--|------------|
| <b>Auxiliary switches</b>  | • On front |
|  | • Lateral  |
| <b>Function modules (direct-on-line starting, star-delta (wye-delta) starting)</b> | • On front |
| <b>Surge suppressors</b>   | • On front |
| <b>Additional load modules</b>   | • On front |

|                         |                  |
|-------------------------|------------------|
| <b>3RH29, 3RA281.</b>   | from 3/89, 3/102 |
| <b>3RH29</b>            | 3/99             |
| <b>3RA281., 3RA283.</b> | 3/107            |
| <b>3RT2916</b>          | 3/104, 3/105     |
| <b>3RT2916</b>          | 3/121            |

#### Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/7.

## More information

Homepage, see [www.siemens.com/relays](http://www.siemens.com/relays)Industry Mall, see [www.siemens.com/product?3RQ\\_3RS\\_LZ](http://www.siemens.com/product?3RQ_3RS_LZ)Conversion tool for article numbers, see [www.siemens.com/sirius/conversion-tool](http://www.siemens.com/sirius/conversion-tool)

## The advantages at a glance



3RQ2



3RQ3



LZS/LZX

Type

Article No. Page

## SIRIUS 3RQ2 coupling relays with industrial enclosure

**Coupling relays with relay output**

- 1, 2 or 3 changeover contacts with wide voltage range
- Also available with hard gold-plated contacts

3RQ2 5/26

## SIRIUS 3RQ3 coupling relays, narrow design

**Coupling relays with relay output (not plug-in)**

- Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available
- Output coupling links
- Input coupling links

3RQ301 5/34  
3RQ303 5/34

**Coupling relays with plug-in relays**

- Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available
- Output coupling links

3RQ311 5/34

**Coupling relays with semiconductor output (not plug-in)**

- Width 6.2 mm, output 1 semiconductor, triac or transistor
- Output coupling links
- Input coupling links

3RQ305, 3RQ306 5/34  
3RQ307 5/34

## LZS coupling relays with plug-in relays

**Coupling relays with plug-in relays with 2, 3 and 4 changeover contacts**

- Switching capacity 12 A/10 A/6 A
- Width 27 mm
- Base with or without logical separation

LZS:PT, LZX:PT 5/40 ... 5/42

**Coupling relays with plug-in relays with 3 changeover contacts and circular base**

- Switching capacity 10 A
- 11-pole circular base
- Width 38 mm

LZS:MT, LZX:MT 5/42

**Coupling relays with plug-in relays with 1 or 2 changeover contacts**

- Switching capacity 16 A/8 A
- Width 15.5 mm
- Base with or without logical separation

LZS:RT, LZX:RT 5/43

## Connection methods

The contactor relays and the relays are available with screw terminals (box terminals) or with spring-loaded terminals.

The 3RQ coupling relays are supplied with screw terminals and spring-loaded (push-in) terminals. The plug-in bases for LZS/LZX coupling relays are also available with plug-in (push-in) terminals.



Screw terminals



Spring-loaded terminals, spring-loaded terminals (push-in)



Flat connectors



Plug-in terminals (push-in)

The connection method is indicated in the corresponding tables by the respective symbol shown on an orange background.

## 3RQ coupling relays: Spring-loaded terminals (push-in) with TOP-wiring

Push-in terminals are a form of spring-loaded terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-loaded terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire finely-stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-loaded terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals, see video "SIRIUS spring-loaded terminals – strong, flexible, safe and fast!"

With the TOP wiring method, the wire inlet and terminals can be reached from the front. This helps to speed up the wiring process and eliminate wiring errors.

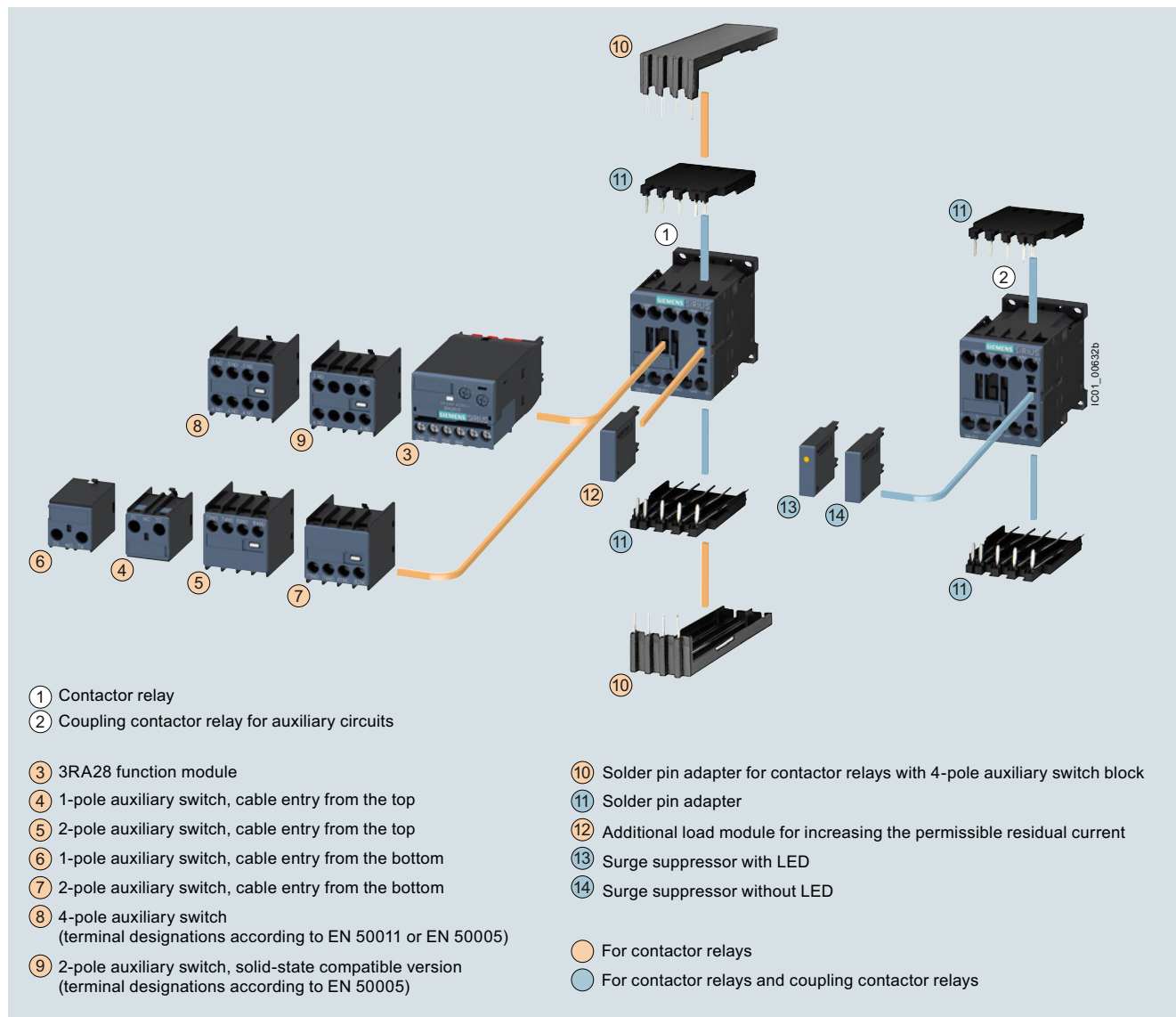
# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### SIRIUS 3RH2 contactor relays, 4- and 8-pole

#### Overview

#### Contactor relays, size S00, with accessories



# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### SIRIUS 3RH2 contactor relays, 4- and 8-pole

#### Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1

The 3RH2 contactor relays are available with screw or spring-loaded terminals. The basic unit contains four contacts with terminal designations according to EN 50011.

The 3RH2 contactor relays are suitable for use in any climate. They are finger-safe according to IEC 60529.

The 3RH21 coupling contactor relays for switching auxiliary circuits are tailored to the special requirements of working with electronic controls.

#### Contact reliability

High contact stability at low voltages and currents, suitable for solid-state circuits with currents  $\geq 1$  mA at a voltage of  $\geq 17$  V.

#### Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) can be plugged onto all 3RH2 contactor relays from the front for damping opening surges in the coil. The plug-in direction is determined by a coding device.

Coupling contactor relays have a low power consumption and an extended solenoid coil operating range.

Depending on the version, the solenoid coils of the coupling contactor relays are supplied either without overvoltage damping (versions 3RH21...-HB40 or 3RH21...-MB40-0KT0) or with a diode or suppressor diode connected as standard.

#### Accessories

The accessories for the 3RT2 contactors in size S00 can also be used for the 3RH2 contactor relays (see page 3/77 onwards).

#### Article No. scheme

| Product versions                      | Article number                              |
|---------------------------------------|---|
| <b>SIRIUS contactor relays</b>        | <b>3RH2</b> □ □ □ - □ □ □ □ 0 - □ □ □ □     |
| Device type                           | e.g. 1 = 4-pole contactor relay □           |
| Number of NO contacts                 | e.g. 2 = 2 NO □                             |
| Number of NC contacts                 | e.g. 2 = 2 NC □                             |
| Type of electrical connection         | Screw terminals 1                           |
|                                       | Spring-loaded terminals 2                   |
| Operating range/solenoid coil circuit | e.g. A = AC standard/without coil circuit □ |
| Rated control supply voltage          | e.g. P0 = 50/60 Hz 230 V AC □ □             |
| Special version                       | □ □ □ □                                     |
| Example                               | <b>3RH2 1 2 2 - 1 A P 0 0</b>               |

#### Note:

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

#### Auxiliary switches

The 3RH21 contactor relays (with the exception of coupling contactor relays) can be expanded by up to four contacts by the addition of mounted auxiliary switches.

The auxiliary switch can easily be snapped onto the front of the contactor relays. The auxiliary switch has a centrally positioned release lever for disassembly.

The conventional front auxiliary contacts fulfill the characteristics of positively driven operation and are therefore suitable for safety applications.

#### Contactor relays in safety-related applications

Contactor relays are a significant part of safety-related applications. They are generally the actuators that perform the switching operation leading to the safe disconnection of the corresponding application or system.

Contactor relays with positively driven operation according to IEC 60947-5-1 are generally required for use in safety-related applications. Most of our contactors meet this requirement; a corresponding note can be found in the technical product data sheet.

#### Contactor relays with increased tamper protection

Increased tamper protection is ensured either by using our contactor relay versions with permanently mounted auxiliary switches installed in the factory (e.g. 3RH22 contactor relays), or by using the 3RT2916-4MA10 sealable cover as an accessory (see page 3/119).

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

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### SIRIUS 3RH2 contactor relays, 4- and 8-pole

#### Technical specifications

##### More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16188/td>  
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16188/faq>

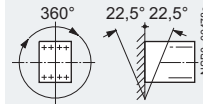
Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16188/man>

Type  
Size

**Contactor relays**  
**3RH2**  
**S00**

##### Permissible mounting position

The contactor relays are designed for operation on a vertical mounting surface.



Upright mounting position



Special version required

(in the case of coupling contactor relays and contactor relays with extended operating range 3RH2122-2K.40 on request)

##### Positively driven operation of contacts in contactor relays

###### 3RH2:

**Yes**, in the basic unit and the auxiliary switch as well as between the basic unit and the mounted auxiliary switch (**removable**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L

###### 3RH22:

**Yes**, in the basic unit and the auxiliary switch as well as between the basic unit and the mounted auxiliary switch (**permanently mounted**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L

###### Note:

3RH2911-.NF. solid-state compatible auxiliary switches have no positively driven contacts.

##### Explanations:

There is positively driven operation if it is ensured that the NC and NO contacts cannot be closed at the same time.

###### ZH1/457

Safety Rules for Controls on Power-Operated Metalworking Presses.

###### IEC 60947-5-1, Appendix L

Standard for low-voltage switchgear and controlgear; special requirements for positively driven contacts

##### Contact reliability

Contact reliability at 17 V, 1 mA acc. to IEC 60947-5-4

Frequency of contact faults  $< 10^{-8}$ , i.e.  $< 1$  fault per 100 million operating cycles

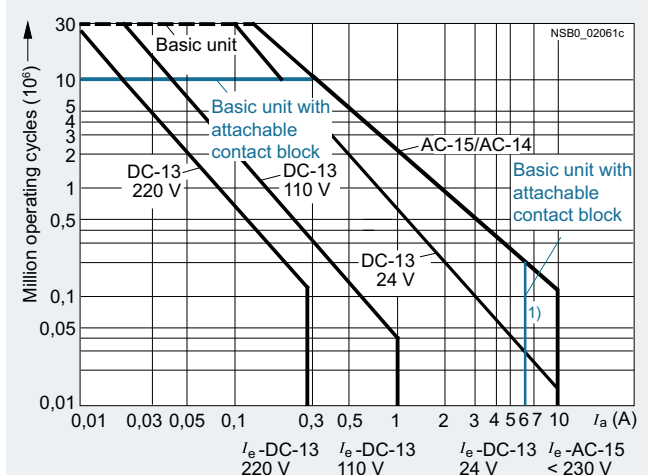
##### Contact endurance for AC-15/AC-14 and DC-13 utilization categories

The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

If magnetic circuits other than the contactor operating mechanisms or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary, e.g. in the form of RC elements and freewheel diodes.

The characteristic curves apply to

- 3RH21/3RH22 contactor relays<sup>1)</sup>
- 3RH24 latched contactor relays
- 3RH2911 auxiliary switches<sup>1)</sup>
- Auxiliary switches for snapping onto the front, max. 4-pole and for mounting onto the side in size S00



##### Diagram legend:

$I_a$  = Breaking current

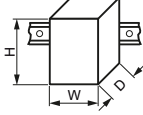
$I_e$  = Rated operational current

<sup>1)</sup> 3RH22, 3RH2911:  $I_e = 6$  A for AC-15/AC-14 and DC-13.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays



### SIRIUS 3RH2 contactor relays, 4- and 8-pole

| Type<br>Size  | Contactor relays  |  |                          |            |              |           |
|---|---|--|--------------------------|------------|--------------|-----------|
|   | 3RH21<br>S00  | 3RH22  | 3RH24                    |            |              |           |
| <b>General data</b>   |   |  |                          |            |              |           |
| <b>Dimensions (W x H x D)</b>   |   |  |                          |            |              |           |
| <ul style="list-style-type: none"> <li>Basic units               <ul style="list-style-type: none"> <li>Screw terminals</li> <li>Spring-loaded terminals</li> </ul> </li> <li>Basic unit with mounted auxiliary switch               <ul style="list-style-type: none"> <li>Screw terminals</li> <li>Spring-loaded terminals</li> </ul> </li> <li>Basic unit with mounted function module or solid-state time-delay auxiliary switch               <ul style="list-style-type: none"> <li>Screw terminals</li> <li>Spring-loaded terminals</li> </ul> </li> </ul> |  | mm   | 45 x 58 x 73             | --         | 90 x 58 x 73 |           |
|   |   | mm   | 45 x 70 x 73             | --         |              |           |
|   |   | mm   | 45 x 58 x 117            | --         |              |           |
|   |   | mm   | 45 x 70 x 121            | --         |              |           |
|   |   | mm   | 45 x 58 x 147            | --         |              |           |
|   |   | mm   | 45 x 70 x 147            | --         |              |           |
|   |   | <b>Mechanical endurance</b>  |                          |            |              |           |
|   |   | • Basic units  | Operat-<br>ing<br>cycles | 30 million |              | 5 million |
|   |   | • Basic unit with mounted auxiliary switch   | Operat-<br>ing<br>cycles | 10 million |              | 5 million |
|   |   | • Solid-state-compatible auxiliary switch  | Operat-<br>ing<br>cycles | 5 million  |              |           |
| <b>Rated insulation voltage <math>U_i</math></b> (pollution degree 3)   |   |  |                          |            |              |           |
|   | V   | 690  |                          |            |              |           |
| <b>Rated impulse withstand voltage <math>U_{imp}</math></b>   |   |  |                          |            |              |           |
|   | kV  | 6  |                          |            |              |           |
| <b>Protective separation</b> between coil and contacts in the basic unit, acc. to IEC 60947-1, Appendix N   |   |  |                          |            |              |           |
|   | V   | 400  |                          |            |              |           |
| <b>Permissible ambient temperature</b>  |   |  |                          |            |              |           |
| • During operation  | °C  | -25 ... +60  |                          |            |              |           |
| • During storage  | °C  | -55 ... +80  |                          |            |              |           |
| <b>Degree of protection IP on the front</b> according to IEC 60529  |   |  |                          |            |              |           |
|   |   | IP20 (screw terminals and spring-loaded terminals)                                   |                          |            |              |           |
| <b>Touch protection on the front</b> according to IEC 60529   |   |  |                          |            |              |           |
|   |   | Finger-safe for vertical touching from the front (screw and spring-loaded terminals) |                          |            |              |           |
| <b>Shock resistance</b>   |   |  |                          |            |              |           |
| • Rectangular pulse   |   |  |                          |            |              |           |
| - AC operation  | <i>g</i> /ms  | 7.3/5 and 4.7/10   |                          |            |              |           |
| - DC operation  | <i>g</i> /ms  | 10/5 and 5/10  |                          |            |              |           |
| • Sine pulse  |   |  |                          |            |              |           |
| - AC operation  | <i>g</i> /ms  | 11.4/5 and 7.3/10  |                          |            |              |           |
| - DC operation  | <i>g</i> /ms  | 15/5 and 8/10  |                          |            |              |           |
| <b>Short-circuit protection</b>   |   |  |                          |            |              |           |
| • Short-circuit test  |   |  |                          |            |              |           |
| - With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1   | A   | 10   |                          |            |              |           |
| - With miniature circuit breakers with C characteristic with short-circuit current $I_k = 400$ A acc. to IEC 60947-5-1  | A   | 6  |                          |            |              |           |

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### SIRIUS 3RH2 contactor relays, 4- and 8-pole

| Type<br>Size  | Contactor relays |  |       |
|---|------------------|--|-------|
|   | 3RH21<br>S00     | 3RH22  | 3RH24 |
| <b>Conductor cross-sections</b>   |                  |  |       |
| <b>Auxiliary conductors and coil terminals</b><br>(1 or 2 conductors can be connected)              |                  |  <b>Screw terminals</b>         |       |
| • Solid or stranded   | mm <sup>2</sup>  | 2 x (0.5 ... 1.5) <sup>1)</sup> ; 2 x (0.75 ... 2.5) <sup>1)</sup> , max. 2 x 4                                  |       |
| • Finely stranded with end sleeve   | 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>  |       |
| • Terminal screw  |                  | M3 (for Pozidriv size 2, Ø 5 ... 6 mm)   |       |
| - Tightening torque   | Nm               | 0.8 ... 1.2 (7 ... 10.3 lb.in)   |       |
| <b>Auxiliary conductors and coil terminals<sup>2)</sup></b><br>(1 or 2 conductors can be connected) |                  |  <b>Spring-loaded terminals</b> |       |
| • Operating devices   | mm               | 3.0 x 0.5; 3.5 x 0.5   |       |
| • Solid or stranded   | mm <sup>2</sup>  | 2 x (0.5 ... 4)  |       |
| • Finely stranded with end sleeve   | mm <sup>2</sup>  | 2 x (0.5 ... 2.5)  |       |
| • Finely stranded without end sleeve  | mm <sup>2</sup>  | 2 x (0.5 ... 2.5)  |       |
| • AWG cables, solid or stranded   | AWG              | 2 x (20 ... 12)  |       |
| <b>Auxiliary conductors for front and laterally mounted auxiliary switches<sup>2)</sup></b>         |                  |  |       |
| • Operating devices   | mm               | 3.0 x 0.5; 3.5 x 0.5   |       |
| • Solid or stranded   | mm <sup>2</sup>  | 2 x (0.5 ... 2.5)  |       |
| • Finely stranded with end sleeve   | mm <sup>2</sup>  | 2 x (0.5 ... 1.5)  |       |
| • Finely stranded without end sleeve  | mm <sup>2</sup>  | 2 x (0.5 ... 2.5)  |       |
| • AWG cables, solid or stranded   | AWG              | 2 x (20 ... 14)  |       |

<sup>1)</sup> If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

<sup>2)</sup> Max. external diameter of the conductor insulation: 3.6 mm.  
On spring-loaded terminals with conductor cross-sections ≤ 1 mm<sup>2</sup> an insulation stop is recommended, see page 3/122.



# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### SIRIUS 3RH2 contactor relays, 4- and 8-pole

| Type  | Contactor relays       |   |
|---|------------------------|---|
| Size  | 3RH2<br>S00            |   |
| <b>Control</b>  |                        |   |
| <b>Solenoid coil operating range</b>  |                        |   |
| • AC operation  | At 50 Hz<br>At 60 Hz   | 0.8 ... 1.1 x $U_s$<br>0.85 ... 1.1 x $U_s$ |
| • DC operation  | At +50 °C<br>At +60 °C | 0.8 ... 1.1 x $U_s$<br>0.85 ... 1.1 x $U_s$ |
| <b>Power consumption of the solenoid coil</b><br>(for cold coil and 1.0 x $U_s$ )   |                        |   |
| • AC operation, 50 Hz   |                        |   |
| - Closing   | VA/p.f.                | 37/0.8                                      |
| - Closed  | VA/p.f.                | 5.7/0.25                                    |
| • AC operation, 60 Hz   |                        |   |
| - Closing   | VA/p.f.                | 33/0.75                                     |
| - Closed  | VA/p.f.                | 4.4/0.25                                    |
| • DC operation  | W                      | 4.0   |
| Closing = Closed  |                        |   |
| <b>Permissible residual current of the electronics</b><br>(with 0 signal)   |                        |   |
| • For AC operation <sup>1)</sup>  |                        | < 4 mA x (230 V/ $U_s$ )                    |
| • For DC operation  |                        | < 10 mA x (24 V/ $U_s$ )                    |
| <b>Operating times for 1.0 x <math>U_s</math><sup>2)</sup></b><br>Total break time = OFF-delay + Arcing time<br>Values apply with coil in cold state and at operating temperature for operating range |                        |   |
| <u>AC operation</u>   |                        |   |
| • Closing   |                        |   |
| - ON-delay of NO contact  | ms                     | 9 ... 22                                    |
| 3RH24 minimum operating time  | ms                     | ≥ 35  |
| - OFF-delay of NC contact   | ms                     | 6.5 ... 19                                  |
| • Opening   |                        |   |
| - OFF-delay of NO contact   | ms                     | 4.5 ... 15                                  |
| 3RH24 minimum operating time  | ms                     | ≥ 30  |
| - ON-delay of NC contact  | ms                     | 5 ... 15                                    |
| <u>DC operation</u>   |                        |   |
| • Closing   |                        |   |
| - ON-delay of NO contact  | ms                     | 35 ... 50                                   |
| 3RH24 minimum operating time  | ms                     | ≥ 100                                       |
| - OFF-delay of NC contact   | ms                     | 30 ... 45                                   |
| • Opening   |                        |   |
| - OFF-delay of NO contact   | ms                     | 7 ... 12                                    |
| 3RH24 minimum operating time  | ms                     | ≥ 30  |
| - ON-delay of NC contact  | ms                     | 13 ... 18                                   |
| • Arcing time   | ms                     | 10 ... 15                                   |




<sup>1)</sup> The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/121.




<sup>2)</sup> The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

### Contactor relays

#### SIRIUS 3RH2 contactor relays, 4- and 8-pole

|   |              | Coupling contactor relays   |   |  |
|---|--------------|---|---|--|
| Type  |              | 3RH21...-HB40   | 3RH21...-JB40   | 3RH21...-KB40  |
| Size  |              | S00   |   |  |
| <b>Control</b>  |              |   |   |  |
| <b>Solenoid coil operating range</b>  |              | 0.7 ... 1.25 x $U_s$  |   |  |
| <b>Power consumption of the solenoid coil</b><br>(for cold coil and 1.0 x $U_s$ )<br>Closing = Closed at $U_s = 24$ V |              | W   | 2.8   |  |
| <b>Permissible residual current</b><br>of the electronics with 0 signal   |              | < 10 mA x (24 V/ $U_s$ )  |   |  |
| <b>Overvoltage configuration of the solenoid coil</b>   |              | No overvoltage damping<br> | Integrated diode<br> | Integrated suppressor diode<br> |
| <b>Operating times at 1.0 x <math>U_s</math></b>  |              |   |   |  |
| • Closing delay   | ON-delay NO  | ms  | 35 ... 60   |  |
|   | OFF-delay NC | ms  | 25 ... 40   |  |
| • Opening delay   | OFF-delay NO | ms  | 7 ... 20  | 38 ... 65  |
|   | ON-delay NO  | ms  | 10 ... 30   | 30 ... 90  |
| <b>Upright mounting position</b>  |              | On request  |   |  |

|   |              | Coupling contactor relays   |   |  |
|---|--------------|---|---|--|
| Type  |              | 3RH21...-MB40-0KT0  | 3RH21...-VB40   | 3RH21...-SB40  |
| Size  |              | S00   |   |  |
| <b>Control</b>  |              |   |   |  |
| <b>Solenoid coil operating range</b>  |              | 0.85 ... 1.85 x $U_s$   |   |  |
| <b>Power consumption of the solenoid coil</b><br>(for cold coil and 1.0 x $U_s$ )<br>Closing = Closed at $U_s = 24$ V |              | W   | 1.6   |  |
| <b>Permissible residual current</b><br>of the electronics with 0 signal   |              | < 8 mA x (24 V/ $U_s$ )   |   |  |
| <b>Overvoltage configuration of the solenoid coil</b>   |              | No overvoltage damping<br> | Integrated diode<br> | Integrated suppressor diode<br> |
| <b>Operating times at 1.0 x <math>U_s</math></b>  |              |   |   |  |
| • Closing delay   | ON-delay NO  | ms  | 25 ... 90   |  |
|   | OFF-delay NC | ms  | 15 ... 80   |  |
| • Opening delay   | ON-delay NO  | ms  | 5 ... 20  | 20 ... 80  |
|   | OFF-delay NC | ms  | 10 ... 30   | 30 ... 90  |
| <b>Upright mounting position</b>  |              | On request  |   |  |

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### SIRIUS 3RH2 contactor relays, 4- and 8-pole

|   |               | Contactor relays |        |
|---|---------------|------------------|--------|
| Type  |               | 3RH2             |        |
| Size  |               | S00              |        |
| <b>Rated data of the auxiliary contacts</b>   |               |                  |        |
| <b>Load rating with AC</b>  |               |                  |        |
| <b>Rated operational currents <math>I_e</math></b>  |               |                  |        |
| AC-12   | A             | 10               |        |
| AC-15/AC-14, at rated operational voltage $U_e$   | Up to 230 V A | 10 <sup>1)</sup> |        |
|   | 400 V A       | 3                |        |
|   | 500 V A       | 2                |        |
|   | 690 V A       | 1                |        |
| <b>Load rating with DC</b>  |               |                  |        |
| <b>Rated operational currents <math>I_e</math></b>  |               |                  |        |
| DC-12, at rated operational voltage $U_e$   |               |                  |        |
| • 1 conducting path   | 24 V A        | 10               |        |
|   | 60 V A        | 6                |        |
|   | 110 V A       | 3                |        |
|   | 220 V A       | 1                |        |
|   | 440 V A       | 0.3              |        |
|   | 600 V A       | 0.15             |        |
| • 2 conducting paths in series  | 24 V A        | 10               |        |
|   | 60 V A        | 10               |        |
|   | 110 V A       | 4                |        |
|   | 220 V A       | 2                |        |
|   | 440 V A       | 1.3              |        |
|   | 600 V A       | 0.65             |        |
| • 3 conducting paths in series  | 24 V A        | 10               |        |
|   | 60 V A        | 10               |        |
|   | 110 V A       | 10               |        |
|   | 220 V A       | 3.6              |        |
|   | 440 V A       | 2.5              |        |
|   | 600 V A       | 1.8              |        |
| DC-13, at rated operational voltage $U_e$   |               |                  |        |
| • 1 conducting path   | 24 V A        | 10 <sup>1)</sup> |        |
|   | 60 V A        | 2                |        |
|   | 110 V A       | 1                |        |
|   | 220 V A       | 0.3              |        |
|   | 440 V A       | 0.14             |        |
|   | 600 V A       | 0.1              |        |
| • 2 conducting paths in series  | 24 V A        | 10               |        |
|   | 60 V A        | 3.5              |        |
|   | 110 V A       | 1.3              |        |
|   | 220 V A       | 0.9              |        |
|   | 440 V A       | 0.2              |        |
|   | 600 V A       | 0.1              |        |
| • 3 conducting paths in series  | 24 V A        | 10               |        |
|   | 60 V A        | 4.7              |        |
|   | 110 V A       | 3                |        |
|   | 220 V A       | 1.2              |        |
|   | 440 V A       | 0.5              |        |
|   | 600 V A       | 0.26             |        |
| <b>Switching frequency</b>  |               |                  |        |
| <b>Switching frequency <math>z</math> in operating cycles/hour</b>  |               |                  |        |
| • Rated operation for utilization category  | AC-12/DC-12   | 1/h              | 1 000  |
| Dependence of the switching frequency $z'$ on the operational current $I'$ and operational voltage $U'$ :<br>$z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$ | AC-15/AC-14   | 1/h              | 1 000  |
|   | DC-13         | 1/h              | 1 000  |
| • No-load switching frequency   |               | 1/h              | 10 000 |
| <b>Ⓢ and Ⓜ rated data</b>   |               |                  |        |
| <b>Basic units and auxiliary switches</b>   |               |                  |        |
| • Rated control supply voltage  | V AC          | max. 600         |        |
| • Rated voltage   | V AC          | 600              |        |
| • Switching capacity  |               | A 600, Q 600     |        |
| • Uninterrupted current at 240 V AC   | A             | 10               |        |

1) 3RH22, 3RH29:  $I_e = 6$  A for AC-15/AC-14 and DC-13.

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

## SIRIUS 3RH2 contactor relays, 4- and 8-pole

## Selection and ordering data

AC operation 

PU (UNIT, SET, M) = 1  
 PS\* = 1 unit  
 PG = 41A



3RH2122-1A..0



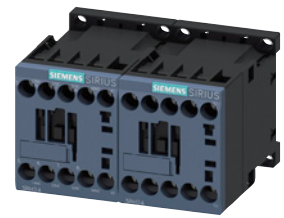
3RH2122-2A..0







3RH2244-1A..0



3RH2244-2A..0



3RH2422-1A..0

| Rated operational current<br>$I_{e/AC-15/AC-14}$<br>at 230 V | Contacts   |  | Rated control supply<br>voltage $U_s$ at 50/60 Hz <sup>1)</sup> | SD | Screw terminals  |                 | SD | Spring-loaded<br>terminals  |                 |
|--|------------|--|---|----|---|-----------------|----|--|-----------------|
|  | Ident. No. | Version  |   |    | Article No.   | Price<br>per PU |    | Article No.  | Price<br>per PU |
| A  |            |  NO<br> NC | V AC  | d  |   |                 | d  |  |                 |

For screw fixing and snap-on mounting  
onto TH 35 standard mounting rail

## Size S00

|  |     |   |     |     |               |               |               |               |
|--|-----|---|-----|-----|---------------|---------------|---------------|---------------|
| 10   | 40E | 4 | --  | 24  | ▶             | 3RH2140-1AB00 | 2             | 3RH2140-2AB00 |
|  |     |   |     | 110 |               | 3RH2140-1AF00 |               | 3RH2140-2AF00 |
|  |     |   |     | 230 |               | 3RH2140-1AP00 |               | 3RH2140-2AP00 |
| 31E  | 3   | 1 | 24  | ▶   | 3RH2131-1AB00 | 2             | 3RH2131-2AB00 |               |
|  |     |   | 110 |     | 3RH2131-1AF00 |               | 3RH2131-2AF00 |               |
|  |     |   | 230 |     | 3RH2131-1AP00 |               | 3RH2131-2AP00 |               |
| 22E  | 2   | 2 | 24  | ▶   | 3RH2122-1AB00 | 2             | 3RH2122-2AB00 |               |
|  |     |   | 110 |     | 3RH2122-1AF00 |               | 3RH2122-2AF00 |               |
|  |     |   | 230 |     | 3RH2122-1AP00 |               | 3RH2122-2AP00 |               |
| <b>With permanently mounted auxiliary switch</b> |     |   |     |     |               |               |               |               |
| 6  | 44E | 4 | 4   | 230 | ▶             | 3RH2244-1AP00 | 2             | 3RH2244-2AP00 |
|  |     |   |     | 230 |               | 3RH2262-1AP00 |               | 3RH2262-2AP00 |
| <b>Latched</b>                                   |     |   |     |     |               |               |               |               |
| No lateral auxiliary switches can be mounted     |     |   |     |     |               |               |               |               |
| 10   | 40E | 4 | --  | 24  | 5             | 3RH2440-1AB00 |               | --            |
|  |     |   |     | 110 |               | 3RH2440-1AF00 |               | --            |
|  |     |   |     | 230 |               | 3RH2440-1AP00 |               | --            |
| 31E  | 3   | 1 | 24  | 5   | 3RH2431-1AB00 |               | --            |               |
|  |     |   | 110 |     | 3RH2431-1AF00 |               | --            |               |
|  |     |   | 230 |     | 3RH2431-1AP00 |               | --            |               |
| 22E  | 2   | 2 | 24  | 5   | 3RH2422-1AB00 |               | --            |               |
|  |     |   | 110 |     | 3RH2422-1AF00 |               | --            |               |
|  |     |   | 230 |     | 3RH2422-1AP00 |               | --            |               |

<sup>1)</sup> Coil operating range  
 - At 50 Hz: 0.8 to 1.1 x  $U_s$   
 - At 60 Hz: 0.85 to 1.1 x  $U_s$

Other voltages according to page 3/75 on request.

Accessories, see page 3/77 onwards.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### SIRIUS 3RH2 contactor relays, 4- and 8-pole

#### DC operation

PU (UNIT, SET, M) = 1  
 PS\* = 1 unit  
 PG = 41A



3RH2122-1B..0



3RH2122-2B..0







3RH2244-1B..0



3RH2244-2B..0



3RH2422-1B.40

| Rated operational current<br>$I_e$ /AC-15/AC-14<br>at 230 V | Contacts   |   | Rated control supply<br>voltage $U_c$ | SD | Screw terminals  |                 | SD | Spring-loaded<br>terminals  |                 |
|---|------------|---|---------------------------------------|----|---|-----------------|----|--|-----------------|
|   | Ident. No. | Version   |                                       |    | Article No.   | Price<br>per PU |    | Article No.  | Price<br>per PU |
| A   |            |   | V DC                                  | d  |   |                 | d  |  |                 |

For screw fixing and snap-on mounting  
onto TH 35 standard mounting rail

#### Size S00

|   |     |   |    |                  |             |   |   |                                |  |
|---|-----|---|----|------------------|-------------|---|---|--------------------------------|--|
| 10  | 40E | 4 | -- | 24<br>220        | ▶           | 3RH2140-1BB40<br>3RH2140-1BM40                  | ▶ | 3RH2140-2BB40<br>3RH2140-2BM40 |  |
|   | 31E | 3 | 1  | 24<br>220        | ▶           | 3RH2131-1BB40<br>3RH2131-1BM40                  | ▶ | 3RH2131-2BB40<br>3RH2131-2BM40 |  |
|   | 22E | 2 | 2  | 24<br>220        | ▶           | 3RH2122-1BB40<br>3RH2122-1BM40                  | ▶ | 3RH2122-2BB40<br>3RH2122-2BM40 |  |
| <b>With integrated coil circuit (diode integrated at factory)</b> |     |   |    |                  |             |   |   |                                |  |
| 10  | 40E | 4 | -- | 24               | ▶           | 3RH2140-1FB40                                   | ▶ | 3RH2140-2FB40                  |  |
|   | 31E | 3 | 1  | 24               | ▶           | 3RH2131-1FB40                                   | ▶ | 3RH2131-2FB40                  |  |
|   | 22E | 2 | 2  | 24               | ▶           | 3RH2122-1FB40                                   | ▶ | 3RH2122-2FB40                  |  |
| <b>With permanently mounted auxiliary switch</b>                  |     |   |    |                  |             |   |   |                                |  |
| 6   | 44E | 4 | 4  | 24               | ▶           | 3RH2244-1BB40                                   | ▶ | 3RH2244-2BB40                  |  |
|   | 62E | 6 | 2  | 24               | ▶           | 3RH2262-1BB40                                   | ▶ | 3RH2262-2BB40                  |  |
| <b>Latched</b>  |     |   |    |                  |             |   |   |                                |  |
| No lateral auxiliary switches can be mounted                      |     |   |    |                  |             |   |   |                                |  |
| 10  | 40E | 4 | -- | 24<br>110<br>220 | 5<br>5<br>5 | 3RH2440-1BB40<br>3RH2440-1BF40<br>3RH2440-1BM40 |   | --<br>--<br>--                 |  |
|   | 31E | 3 | 1  | 24<br>110<br>220 | 5<br>5<br>5 | 3RH2431-1BB40<br>3RH2431-1BF40<br>3RH2431-1BM40 |   | --<br>--<br>--                 |  |
|   | 22E | 2 | 2  | 24<br>110<br>220 | 2<br>5<br>5 | 3RH2422-1BB40<br>3RH2422-1BF40<br>3RH2422-1BM40 |   | --<br>--<br>--                 |  |

Other voltages according to page 3/75 on request.

Accessories, see page 3/77 onwards.

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

### Contactor relays

#### SIRIUS 3RH2 contactor relays, 4- and 8-pole

##### DC operation for direct control by PLC

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switches





PU (UNIT, SET, M) = 1  
 PS\* = 1 unit  
 PG = 41A



3RH21...-1.B40



3RH21...-2.B40

| Rated operational current<br>$I_e$ /AC-15/AC-14<br>at 230 V | Auxiliary contacts                |   | Rated control<br>supply voltage $U_s$ | SD | Screw terminals  |                 | SD | Spring-loaded<br>terminals  |                 |
|---|-----------------------------------|---|---------------------------------------|----|---|-----------------|----|--|-----------------|
|   | Ident. No.<br>acc. to<br>EN 50011 | Version   |                                       |    | Article No.   | Price<br>per PU |    | Article No.  | Price<br>per PU |
|   |                                   |   | V DC                                  | d  |   |                 | d  |  |                 |
| <b>A</b>  |                                   |   |                                       |    |   |                 |    |  |                 |

For screw fixing and snap-on mounting  
 onto TH 35 standard mounting rail

##### Size S00

Cannot be expanded with auxiliary switches

Operating range **0.7 to 1.25 x  $U_s$** ,  
 power consumption of the solenoid coils **2.8 W** at 24 V

|           |            |   |    |    |   |
|-----------|------------|---|----|----|---|
| <b>10</b> | <b>40E</b> | 4 | -- | 24 | 5 |
|           | <b>31E</b> | 3 | 1  | 24 | 5 |
|           | <b>22E</b> | 2 | 2  | 24 | 5 |

Operating range **0.85 to 1.85 x  $U_s$** ,  
 power consumption of the solenoid coils **1.6 W** at 24 V

|           |            |   |    |    |   |
|-----------|------------|---|----|----|---|
| <b>10</b> | <b>40E</b> | 4 | -- | 24 | 5 |
|           | <b>31E</b> | 3 | 1  | 24 | 2 |
|           | <b>22E</b> | 2 | 2  | 24 | 5 |

|                      |   |
|----------------------|---|
| <b>3RH2140-1HB40</b> | 5 |
| <b>3RH2131-1HB40</b> | 5 |
| <b>3RH2122-1HB40</b> | 5 |

|                      |   |
|----------------------|---|
| <b>3RH2140-2HB40</b> | 5 |
| <b>3RH2131-2HB40</b> | 5 |
| <b>3RH2122-2HB40</b> | 5 |

|                           |   |
|---------------------------|---|
| <b>3RH2140-1MB40-0KT0</b> | 5 |
| <b>3RH2131-1MB40-0KT0</b> | 5 |
| <b>3RH2122-1MB40-0KT0</b> | 5 |

|                           |   |
|---------------------------|---|
| <b>3RH2140-2MB40-0KT0</b> | 5 |
| <b>3RH2131-2MB40-0KT0</b> | 5 |
| <b>3RH2122-2MB40-0KT0</b> | 5 |

Other voltages [according to page 3/75](#) on request.

Accessories, [see page 3/77 onwards](#).

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### SIRIUS 3RH2 contactor relays, 4- and 8-pole

#### DC operation for direct control by PLC

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switches





PU (UNIT, SET, M) = 1  
 PS\* = 1 unit  
 PG = 41A



3RH21...-1.B40



3RH21...-2.B40

| Rated operational current<br>$I_e$ /AC-15/AC-14<br>at 230 V | Auxiliary contacts                |   | Rated control<br>supply voltage $U_s$ | SD | Screw terminals  |                 | SD | Spring-loaded<br>terminals  |                 |
|---|-----------------------------------|---|---------------------------------------|----|---|-----------------|----|--|-----------------|
|   | Ident. No.<br>acc. to<br>EN 50011 | Version   |                                       |    | Article No.   | Price<br>per PU |    | Article No.  | Price<br>per PU |
|   |                                   |   | V DC                                  | d  |   |                 | d  |  |                 |

**A** For screw fixing and snap-on mounting  
onto TH 35 standard mounting rail

#### Size S00

#### With integrated coil circuit (diode integrated at factory)

Cannot be expanded with auxiliary switches

Operating range **0.7 to 1.25 x  $U_s$**

Power consumption of the solenoid coils **2.8 W** at 24 V

| 10 | 40E | 4 | -- | 24 | 2 | 3RH2140-1JB40 | ▶ | 3RH2140-2JB40 |
|----|-----|---|----|----|---|---------------|---|---------------|
|    | 31E | 3 | 1  | 24 | ▶ | 3RH2131-1JB40 | ▶ | 3RH2131-2JB40 |
|    | 22E | 2 | 2  | 24 | ▶ | 3RH2122-1JB40 | 2 | 3RH2122-2JB40 |

Operating range **0.85 to 1.85 x  $U_s$**

Power consumption of the solenoid coils **1.6 W** at 24 V

| 10 | 40E | 4 | -- | 24  | 5   | 3RH2140-1VB40                                    | 5                        | 3RH2140-2VB40 |
|----|-----|---|----|---|---|--|--------------------------|---------------|
|    | 31E | 3 | 1  | 24 <td>5 <td>3RH2131-1VB40 <td>5 <td>3RH2131-2VB40</td> </td></td></td> | 5 <td>3RH2131-1VB40 <td>5 <td>3RH2131-2VB40</td> </td></td> | 3RH2131-1VB40 <td>5 <td>3RH2131-2VB40</td> </td> | 5 <td>3RH2131-2VB40</td> | 3RH2131-2VB40 |
|    | 22E | 2 | 2  | 24 <td>5 <td>3RH2122-1VB40 <td>5 <td>3RH2122-2VB40</td> </td></td></td> | 5 <td>3RH2122-1VB40 <td>5 <td>3RH2122-2VB40</td> </td></td> | 3RH2122-1VB40 <td>5 <td>3RH2122-2VB40</td> </td> | 5 <td>3RH2122-2VB40</td> | 3RH2122-2VB40 |

#### With integrated coil circuit (suppressor diode integrated at factory)

Cannot be expanded with auxiliary switches

Operating range **0.7 to 1.25 x  $U_s$**

Power consumption of the solenoid coils **2.8 W** at 24 V

| 10 | 40E | 4 | -- | 24 | 5   | 3RH2140-1KB40                                    | ▶                        | 3RH2140-2KB40 |
|----|-----|---|----|----|---|--|--------------------------|---------------|
|    | 31E | 3 | 1  | 24 | ▶ <td>3RH2131-1KB40 <td>▶ <td>3RH2131-2KB40</td> </td></td> | 3RH2131-1KB40 <td>▶ <td>3RH2131-2KB40</td> </td> | ▶ <td>3RH2131-2KB40</td> | 3RH2131-2KB40 |
|    | 22E | 2 | 2  | 24 | ▶ <td>3RH2122-1KB40 <td>▶ <td>3RH2122-2KB40</td> </td></td> | 3RH2122-1KB40 <td>▶ <td>3RH2122-2KB40</td> </td> | ▶ <td>3RH2122-2KB40</td> | 3RH2122-2KB40 |

Operating range **0.85 to 1.85 x  $U_s$**

Power consumption of the solenoid coils **1.6 W** at 24 V

| 10 | 40E | 4 | -- | 24  | 5   | 3RH2140-1SB40                                    | 5                        | 3RH2140-2SB40 |
|----|-----|---|----|---|---|--|--------------------------|---------------|
|    | 31E | 3 | 1  | 24 <td>2 <td>3RH2131-1SB40 <td>5 <td>3RH2131-2SB40</td> </td></td></td> | 2 <td>3RH2131-1SB40 <td>5 <td>3RH2131-2SB40</td> </td></td> | 3RH2131-1SB40 <td>5 <td>3RH2131-2SB40</td> </td> | 5 <td>3RH2131-2SB40</td> | 3RH2131-2SB40 |
|    | 22E | 2 | 2  | 24 <td>2 <td>3RH2122-1SB40 <td>5 <td>3RH2122-2SB40</td> </td></td></td> | 2 <td>3RH2122-1SB40 <td>5 <td>3RH2122-2SB40</td> </td></td> | 3RH2122-1SB40 <td>5 <td>3RH2122-2SB40</td> </td> | 5 <td>3RH2122-2SB40</td> | 3RH2122-2SB40 |

Other voltages [according to page 3/75](#) on request.

Accessories, [see page 3/77 onwards](#).

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

### Contactor relays

#### 3TH4 contactor relays, 8- and 10-pole

##### Overview

###### Standards

IEC/EN 60947-1, IEC/EN 60947-5-1

The 3TH42 and 3TH43 contactor relays are suitable for use in any climate. They are finger-safe according to IEC 60529.

###### Note:

The 3TH42 and 3TH43 contactor relays feature positively driven operation in accordance with IEC 60947-5-1, Ed. 3.1.

###### Terminal designations according to EN 50011

In terms of their terminal designations, identification numbers and identification letters, the 3TH42 and 3TH43 contactor relays conform to the standard EN 50011 for "Particular Contactor Relays".

###### Contact reliability

High contact stability at low voltages and currents as a result of double-break contacts, suitable for solid-state circuits with currents  $\geq 1$  mA at a voltage of  $\geq 17$  V.

###### Surge suppression

The 3TH42 and 3TH43 contactor relays can be equipped with RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) for damping opening surges. The surge suppressors can be mounted directly on the coil (see page 5/23).

###### Note:

The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

###### Mounting

###### Note:

With 3TH4 contactor relays with AC operation, an overvoltage of  $1.1 \times U_s$ , an ambient temperature  $\geq 45$  °C and 100% ON-period of all contactors, a minimum clearance of 5 mm between the contactors shall be observed in the case of side-by-side mounting.

##### Technical specifications

Contactor relays

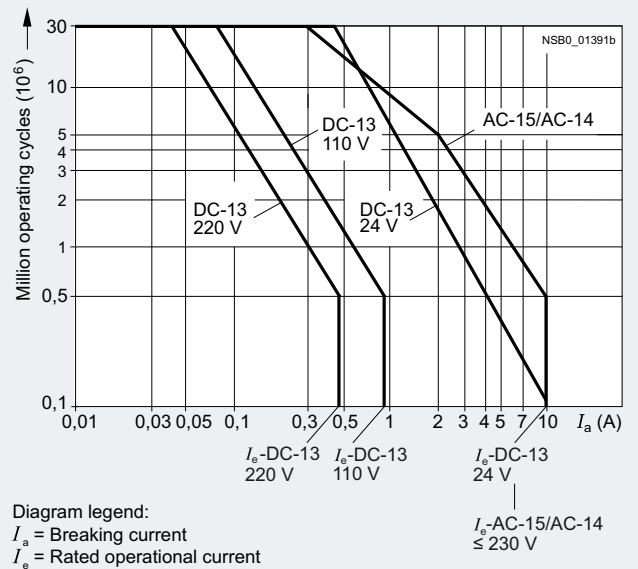
Type **3TH42, 3TH43**

###### Contact endurance for AC-15/AC-14 and DC-13 utilization categories

The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

If magnetic circuits other than the contactor operating mechanisms or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary.

RC elements or freewheel diodes are suitable as protective measures for the circuits.

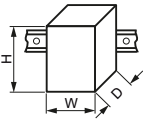
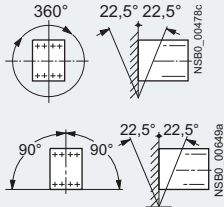






# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### 3TH4 contactor relays, 8- and 10-pole

| Contactor relays   | Type  | 3TH42   | 3TH43                         |
|--|---|---|-------------------------------|
| <b>General data</b>  |   |   |                               |
| <b>Dimensions (W x H x D)</b>  |   |   |                               |
| <ul style="list-style-type: none"> <li>AC operation</li> <li>DC operation</li> </ul>   |  | mm 45 x 78 x 97<br>mm 45 x 78 x 130   | 55 x 78 x 97<br>55 x 78 x 130 |
| <b>Permissible mounting position</b>   |   |   |                               |
| The contactor relays are designed for operation on a vertical mounting surface. <ul style="list-style-type: none"> <li>AC operation</li> <li>DC operation</li> </ul>   |   |   |                               |
| Upright mounting position<br>AC and DC operation   |   |  Special version required  |                               |
| <b>Mechanical endurance</b>  | Basic units   | Operating cycles  | 30 million                    |
| <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  | 8                             |
| <b>Protective separation</b> between the coil and the main contacts acc. to IEC 60947-1, Appendix N  |   | V   | Up to 500                     |
| <b>Permissible ambient temperature</b>   |   |   |                               |
| <ul style="list-style-type: none"> <li>During operation</li> <li>During storage</li> </ul>   | °C<br>°C  | -25 ... +55<br>-55 ... +80  |                               |
| <b>Degree of protection IP on the front</b><br>according to IEC 60529  |   |   |                               |
| IP00   |   |   |                               |
| <b>Shock resistance</b>  |   |   |                               |
| <ul style="list-style-type: none"> <li>Rectangular pulse               <ul style="list-style-type: none"> <li>AC operation</li> <li>DC operation</li> </ul> </li> <li>Sine pulse               <ul style="list-style-type: none"> <li>AC operation</li> <li>DC operation</li> </ul> </li> </ul>  | g/ms<br>g/ms<br>g/ms<br>g/ms  | 7.7/5 and 4.4/10<br>9.3/5 and 5.4/10<br>12/5 and 6.8/10<br>14.7/5 and 8.5/10  |                               |
| <b>Short-circuit protection</b>  |   |   |                               |
| Short-circuit test   |   |   |                               |
| <ul style="list-style-type: none"> <li>With fuse links of operational class gG<br/>With short-circuit current <math>I_k = 1</math> kA acc. to IEC 60947-5-1               <ul style="list-style-type: none"> <li>LV HRC, type 3NA</li> <li>DIAZED, type 5SB</li> <li>NEOZED, type 5SE, quick</li> </ul> </li> <li>With miniature circuit breakers<br/>With short-circuit current <math>I_k = 400</math> A acc. to IEC 60947-5-1               <ul style="list-style-type: none"> <li>C characteristic</li> <li>B characteristic</li> </ul> </li> </ul> | A<br>A<br>A<br>A<br>A   | 16<br>16<br>20<br>16<br>16  |                               |
| <b>and rated data</b>  |   |   |                               |
| <b>Basic units</b>   |   |   |                               |
| <b>Rated control supply voltage <math>U_s</math></b>   | Max. 600 V AC, 230 V DC (acc. to UL 240 V DC)                                     |   |                               |
| <b>Rated voltage</b>   | 600 V AC, 600 V DC  |   |                               |
| <b>Switching capacity</b>  | A 600, P 600  |   |                               |
| <b>Conductor cross-sections</b>  |   |   |                               |
| <b>Auxiliary conductors and coil terminals</b><br>(1 or 2 conductors can be connected)   |   |   |                               |
| <ul style="list-style-type: none"> <li>Solid or stranded</li> <li>Finely stranded with end sleeve</li> <li>Terminal screw</li> </ul>   | mm <sup>2</sup><br>mm <sup>2</sup>  |  <b>Screw terminals</b><br>2 x (0.5 ... 1) <sup>1)</sup> ; 2 x (1 ... 2.5) <sup>1)</sup> ; 1 x 4<br>2 x (0.75 ... 2.5)<br>M3.5 |                               |

<sup>1)</sup> If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### 3TH4 contactor relays, 8- and 10-pole

| Contactor relays   | Type    | 3TH42, 3TH43                                      |
|--|---------|---|
| <b>Control</b>   |         |   |
| <b>Solenoid coil operating range</b>   |         |   |
| • AC operation   |         | 0.8 ... 1.1 x $U_s$ <sup>1)</sup>                 |
| • DC operation (except 24 V)   |         | 0.8 ... 1.1 x $U_s$                               |
| - At 24 V DC   |         | 0.8 ... 1.2 x $U_s$                               |
| <b>Power consumption of the solenoid coil</b> (for cold coil and 1.0 x $U_s$ ) |         |   |
| • AC operation, 50 Hz, standard version  |         |   |
| - Closing  | VA/p.f. | 68/0.82   |
| - Closed   | VA/p.f. | 10/0.29   |
| • AC operation, 50/60 Hz, standard version                                     |         |   |
| - Closing, 50 Hz   | VA/p.f. | 77/0.81   |
| - Closed, 50 Hz  | VA/p.f. | 11/0.28   |
| - Closing, 60 Hz   | VA/p.f. | 71/0.75   |
| - Closed, 60 Hz  | VA/p.f. | 9/0.27  |
| • AC operation, 50 Hz, USA/Canada  |         |   |
| - Closing  | VA/p.f. | 68/0.82   |
| - Closed   | VA/p.f. | 10/0.29   |
| • AC operation, 60 Hz, USA/Canada  |         |   |
| - Closing  | VA/p.f. | 75/0.76   |
| - Closed   | VA/p.f. | 9.4/0.29 ... 0.3                                  |
| • AC operation, 50 Hz, Japan   |         |   |
| - Closing  | VA/p.f. | 80/0.8  |
| - Closed   | VA/p.f. | 10.7/0.29   |
| • AC operation, 60 Hz, Japan   |         |   |
| - Closing  | VA/p.f. | 75 ... 90/0.73                                    |
| - Closed   | VA/p.f. | 8.5 ... 10.7/0.29 ... 0.3                         |
| • DC operation up to 250 V   | W       | 6.2   |
| Closing = Closed   |         |   |
| <b>Permissible residual current of the electronics</b> (with 0 signal)         |         |   |
| • For AC operation   |         | $\leq 8 \text{ mA} \times (220 \text{ V}/U_s)$    |
| • For DC operation   |         | $\leq 1.25 \text{ mA} \times (220 \text{ V}/U_s)$ |
| <b>Operating times at 1.0 x <math>U_s</math><sup>2)</sup></b>                  |         |   |
| <u>AC operation</u>  |         |   |
| • Closing  |         |   |
| - ON-delay NO  | ms      | 10 ... 25   |
| - OFF-delay NC   | ms      | 7 ... 20  |
| • Opening  |         |   |
| - OFF-delay NO   | ms      | 5 ... 18  |
| - ON-delay NC  | ms      | 7 ... 20  |
| <u>DC operation</u>  |         |   |
| • Closing  |         |   |
| - ON-delay NO  | ms      | 30 ... 70   |
| - OFF-delay NC   | ms      | 28 ... 65   |
| • Opening  |         |   |
| - OFF-delay NO   | ms      | 10 ... 20   |
| - ON-delay NC  | ms      | 15 ... 25   |
| Arcing time  | ms      | 10  |

1) Coils for USA, Canada and Japan: 0.85 to 1.1 x  $U_s$  at 60 Hz.

2) The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 9x; diode assembly 2x to 6x; varistor +2 to 5 ms).

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### 3TH4 contactor relays, 8- and 10-pole

| Contactor relays  | Type         | 3TH42, 3TH43 |        |
|---|--------------|--------------|--------|
| <b>Rated data of the auxiliary contacts</b>   |              |              |        |
| <b>Load rating with AC</b>  |              |              |        |
| <b>Rated operational currents <math>I_e</math></b>  |              |              |        |
| • AC-12   | A            | 16           |        |
| • AC-15/AC-14, at rated operational voltage $U_e$   |              |              |        |
|   | 230 V A      | 10           |        |
|   | 400 V A      | 6            |        |
|   | 500 V A      | 4            |        |
|   | 690 V A      | 2            |        |
| <b>Rated power of three-phase motors</b>  |              |              |        |
| Acc. to utilization categories AC-2 and AC-3, 50 Hz   |              |              |        |
|   | 230/220 V kW | 2.4          |        |
|   | 400/380 V kW | 4            |        |
|   | 500 V kW     | 4            |        |
|   | 690/660 V kW | 4            |        |
| <b>Load rating with DC</b>  |              |              |        |
| <b>Rated operational currents <math>I_e</math></b>  |              |              |        |
| DC-12, at rated operational voltage $U_e$   |              |              |        |
| • 1 conducting path   |              |              |        |
|   | Up to 48 V A | 10           |        |
|   | 110 V A      | 2.1          |        |
|   | 220 V A      | 0.8          |        |
|   | 440 V A      | 0.6          |        |
| • 2 conducting paths in series  |              |              |        |
|   | Up to 48 V A | 10           |        |
|   | 110 V A      | 10           |        |
|   | 220 V A      | 1.6          |        |
|   | 440 V A      | 0.8          |        |
| • 3 conducting paths in series  |              |              |        |
|   | Up to 48 V A | 10           |        |
|   | 110 V A      | 10           |        |
|   | 220 V A      | 10           |        |
|   | 440 V A      | 1.3          |        |
| DC-13, at rated operational voltage $U_e$   |              |              |        |
| • 1 conducting path   |              |              |        |
|   | Up to 24 V A | 10           |        |
|   | 48 V A       | 5            |        |
|   | 110 V A      | 1            |        |
|   | 220 V A      | 0.45         |        |
|   | 440 V A      | 0.25         |        |
|   | 600 V A      | 0.2          |        |
| • 2 conducting paths in series  |              |              |        |
|   | Up to 24 V A | 10           |        |
|   | 48 V A       | 10           |        |
|   | 110 V A      | 2.5          |        |
|   | 220 V A      | 0.75         |        |
|   | 440 V A      | 0.5          |        |
|   | 600 V A      | 0.4          |        |
| • 3 conducting paths in series  |              |              |        |
|   | Up to 24 V A | 10           |        |
|   | 48 V A       | 10           |        |
|   | 110 V A      | 10           |        |
|   | 220 V A      | 2            |        |
|   | 440 V A      | 0.9          |        |
|   | 600 V A      | 0.8          |        |
| <b>Switching frequency</b>  |              |              |        |
| <b>Switching frequency <math>z</math> in operating cycles/hour</b>  |              |              |        |
| • Rated operation for utilization category  | AC-12/DC-12  | 1/h          | 1 000  |
| Dependence of the switching frequency $z'$ on the operational current $I'$ and operational voltage $U'$ : | AC-2         | 1/h          | 500    |
| $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$  | AC-3         | 1/h          | 1 000  |
|   | AC-15/AC-14  | 1/h          | 3 600  |
|   | DC-13        | 1/h          | 3 600  |
| • No-load switching frequency   |              | 1/h          | 10 000 |

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

## 3TH4 contactor relays, 8- and 10-pole

## Selection and ordering data


## 8-pole contactor relays

AC operation  or DC operation 

3TH4280-0AP0



3TH4244-0BB4

| Contacts | Rated operational current $I_e$ /AC-15/AC-14 at |           |       |           | Contacts | Ident. No. acc. to EN 50011 | Version | SD | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|----------|---|-----------|-------|-----------|----------|-----------------------------|---------|----|---|-------------------|-----|----|
|          | 230/220 V                                       | 400/380 V | 500 V | 690/660 V |          |                             |         |    |   |                   |     |    |
| Number   | A   | A         | A     | A         |          |                             |         |    | Article No.   | Price per PU      |     |    |
|          |   |           |       |           | NO       | NC                          | NO      | NC |   |                   |     |    |

## For screw fixing and snap-on mounting onto TH 35 standard mounting rail

AC operation, rated control supply voltage  $U_s = 50 \text{ Hz } 230/220 \text{ V AC}^{1)}$ 

|   |    |   |   |   |        |   |    |    |    |   |              |   |        |     |
|---|----|---|---|---|--------|---|----|----|----|---|--------------|---|--------|-----|
| 8 | 10 | 6 | 4 | 2 | 80E    | 8 | -- | -- | -- | X | 3TH4280-0AP0 | 1 | 1 unit | 41A |
|   |    |   |   |   | 71E    | 7 | 1  | -- | -- | X | 3TH4271-0AP0 | 1 | 1 unit | 41A |
|   |    |   |   |   | 62E    | 6 | 2  | -- | -- | X | 3TH4262-0AP0 | 1 | 1 unit | 41A |
|   |    |   |   |   | 53E    | 5 | 3  | -- | -- | X | 3TH4253-0AP0 | 1 | 1 unit | 41A |
|   |    |   |   |   | 44E    | 4 | 4  | -- | -- | X | 3TH4244-0AP0 | 1 | 1 unit | 41A |
|   |    |   |   |   | 44E, U | 3 | 3  | 1  | 1  | X | 3TH4293-0AP0 | 1 | 1 unit | 41A |

DC operation, rated control supply voltage  $U_s = 24 \text{ V DC}$ 

|   |    |   |   |   |        |   |    |    |    |   |              |   |        |     |
|---|----|---|---|---|--------|---|----|----|----|---|--------------|---|--------|-----|
| 8 | 10 | 6 | 4 | 2 | 80E    | 8 | -- | -- | -- | X | 3TH4280-0BB4 | 1 | 1 unit | 41A |
|   |    |   |   |   | 71E    | 7 | 1  | -- | -- | X | 3TH4271-0BB4 | 1 | 1 unit | 41A |
|   |    |   |   |   | 62E    | 6 | 2  | -- | -- | X | 3TH4262-0BB4 | 1 | 1 unit | 41A |
|   |    |   |   |   | 53E    | 5 | 3  | -- | -- | X | 3TH4253-0BB4 | 1 | 1 unit | 41A |
|   |    |   |   |   | 44E    | 4 | 4  | -- | -- | X | 3TH4244-0BB4 | 1 | 1 unit | 41A |
|   |    |   |   |   | 44E, U | 3 | 3  | 1  | 1  | X | 3TH4293-0BB4 | 1 | 1 unit | 41A |

<sup>1)</sup> Operating range at 220 V:  $0.85$  to  $1.1 \times U_s$ ;  
lower operating range limit according to IEC 60947.

## Note:

The solenoid coils of the 3TH42 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..
- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH42 contactor relays.

Other voltages according to page 5/22 on request.

Accessories, see page 5/23.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### 3TH4 contactor relays, 8- and 10-pole

#### 10-pole contactor relays

AC operation  or DC operation 



3TH4355-0AP0



3TH4355-0BB4

| Contacts | Rated operational current<br>$I_e$ /AC-15/AC-14<br>at |       |       |       | Contacts                       | SD      | PU                | PS*             | PG |
|----------|---|-------|-------|-------|--------------------------------|---------|-------------------|-----------------|----|
|          | 230 V   | 400 V | 500 V | 690 V | Ident. No. acc. to<br>EN 50011 | Version | (UNIT,<br>SET, M) |                 |    |
| Number   | A   | A     | A     | A     |                                |         | Article No.       | Price<br>per PU |    |
|          |   |       |       |       | NO                             | NC      |                   |                 |    |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

AC operation, rated control supply voltage  $U_s = 50 \text{ Hz } 230/220 \text{ V AC}^{1)}$

|    |    |   |   |   |        |    |    |    |    |   |              |   |        |     |
|----|----|---|---|---|--------|----|----|----|----|---|--------------|---|--------|-----|
| 10 | 10 | 6 | 4 | 2 | 100E   | 10 | -- | -- | -- | X | 3TH4310-0AP0 | 1 | 1 unit | 41A |
|    |    |   |   |   | 91E    | 9  | 1  | -- | -- | X | 3TH4391-0AP0 | 1 | 1 unit | 41A |
|    |    |   |   |   | 82E    | 8  | 2  | -- | -- | X | 3TH4382-0AP0 | 1 | 1 unit | 41A |
|    |    |   |   |   | 73E    | 7  | 3  | -- | -- | X | 3TH4373-0AP0 | 1 | 1 unit | 41A |
|    |    |   |   |   | 73E, U | 6  | 2  | 1  | 1  | X | 3TH4346-0AP0 | 1 | 1 unit | 41A |
|    |    |   |   |   | 64E    | 6  | 4  | -- | -- | X | 3TH4364-0AP0 | 1 | 1 unit | 41A |
|    |    |   |   |   | 55E    | 5  | 5  | -- | -- | X | 3TH4355-0AP0 | 1 | 1 unit | 41A |
|    |    |   |   |   | 55E, U | 4  | 4  | 1  | 1  | X | 3TH4394-0AP0 | 1 | 1 unit | 41A |

DC operation, rated control supply voltage  $U_s = 24 \text{ V DC}$

|    |    |   |   |   |        |    |    |    |    |   |              |   |        |     |
|----|----|---|---|---|--------|----|----|----|----|---|--------------|---|--------|-----|
| 10 | 10 | 6 | 4 | 2 | 100E   | 10 | -- | -- | -- | X | 3TH4310-0BB4 | 1 | 1 unit | 41A |
|    |    |   |   |   | 91E    | 9  | 1  | -- | -- | X | 3TH4391-0BB4 | 1 | 1 unit | 41A |
|    |    |   |   |   | 82E    | 8  | 2  | -- | -- | X | 3TH4382-0BB4 | 1 | 1 unit | 41A |
|    |    |   |   |   | 73E    | 7  | 3  | -- | -- | X | 3TH4373-0BB4 | 1 | 1 unit | 41A |
|    |    |   |   |   | 73E, U | 6  | 2  | 1  | 1  | X | 3TH4346-0BB4 | 1 | 1 unit | 41A |
|    |    |   |   |   | 64E    | 6  | 4  | -- | -- | X | 3TH4364-0BB4 | 1 | 1 unit | 41A |
|    |    |   |   |   | 55E    | 5  | 5  | -- | -- | X | 3TH4355-0BB4 | 1 | 1 unit | 41A |
|    |    |   |   |   | 55E, U | 4  | 4  | 1  | 1  | X | 3TH4394-0BB4 | 1 | 1 unit | 41A |

<sup>1)</sup> Operating range at 220 V:  $0.85$  to  $1.1 \times U_s$ ;  
lower operating range limit according to IEC 60947.

#### Note:

The solenoid coils of the 3TH43 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..
- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH43 contactor relays.

Other voltages according to page 5/22 on request.

Accessories, see page 5/23.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### 3TH4 contactor relays, 8- and 10-pole

#### Options

**Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)**

Delivery time on request

| Rated control supply voltage $U_s$        |                  | Contactor type   | 3TH42/3TH43 | Rated control supply voltage $U_s$ |  | Contactor type | 3TH42/3TH43 |
|---|------------------|------------------|-------------|------------------------------------|--|----------------|-------------|
| <b>AC operation</b>                       |                  |                  |             | <b>DC operation</b>                |  |                |             |
| <b>Solenoid coils for 50 and 60 Hz AC</b> |                  |                  |             |                                    |  |                |             |
| <b>50 Hz</b>                              | <b>60 Hz</b>     |                  |             | 12 V DC                            |  | A4             |             |
| 24 V AC                                   | 29 V AC          | B0               |             | 24 V DC                            |  | B4             |             |
| 36 V AC                                   | 42 V AC          | G0               |             | 30 V DC                            |  | C4             |             |
| 42 V AC                                   | 50 V AC          | D0               |             | 36 V DC                            |  | V4             |             |
| 48 V AC                                   | 58 V AC          | H0               |             | 42 V DC                            |  | D4             |             |
| 60 V AC                                   | 72 V AC          | E0               |             | 48 V DC                            |  | W4             |             |
| 110 V AC                                  | 132 V AC         | F0               |             | 60 V DC                            |  | E4             |             |
| 125/127 V AC                              | 150/152 V AC     | L0               |             | 110 V DC                           |  | F4             |             |
| 230/220 V AC                              | 276 V AC         | P0 <sup>1)</sup> |             | 125 V DC                           |  | G4             |             |
| 240 V AC                                  | 288 V AC         | U0               |             | 220 V DC                           |  | M4             |             |
| 400/380 V AC                              | 480/460 V AC     | V0 <sup>1)</sup> |             | 230 V DC                           |  | P4             |             |
| 415 V AC                                  | 500 V AC         | R0               |             | 240 V DC                           |  | Q4             |             |
| 500 V AC                                  | 600 V AC         | S0               |             |                                    |  |                |             |
| <b>50/60 Hz</b>                           |                  |                  |             |                                    |  |                |             |
| 24 V AC                                   |                  | C2               |             |                                    |  |                |             |
| 42 V AC                                   |                  | D2               |             |                                    |  |                |             |
| 110 V AC                                  |                  | G2               |             |                                    |  |                |             |
| 115 V AC                                  |                  | J2               |             |                                    |  |                |             |
| 120 V AC                                  |                  | K2               |             |                                    |  |                |             |
| 220 V AC                                  |                  | N2               |             |                                    |  |                |             |
| 230 V AC                                  |                  | L2               |             |                                    |  |                |             |
| 240 V AC                                  |                  | P2               |             |                                    |  |                |             |
| 440 V AC                                  |                  | R2               |             |                                    |  |                |             |
| <b>For Japan</b>                          |                  |                  |             |                                    |  |                |             |
| <b>50 Hz</b>                              | <b>60 Hz</b>     |                  |             |                                    |  |                |             |
| 100 V AC                                  | 100 ... 110 V AC | G6 <sup>2)</sup> |             |                                    |  |                |             |
| 200 V AC                                  | 200 ... 220 V AC | N6 <sup>2)</sup> |             |                                    |  |                |             |
| <b>For USA and Canada</b>                 |                  |                  |             |                                    |  |                |             |
| <b>50 Hz</b>                              | <b>60 Hz</b>     |                  |             |                                    |  |                |             |
| 110 V AC                                  | 120 V AC         | K6 <sup>2)</sup> |             |                                    |  |                |             |
| 220 V AC                                  | 240 V AC         | P6 <sup>2)</sup> |             |                                    |  |                |             |

<sup>1)</sup> Operating range at 220 V or 380 V: 0.85 to 1.1 x  $U_s$ .

<sup>2)</sup> Operating range at 60 Hz: 0.85 to 1.1 x  $U_s$ .

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Contactor relays

### 3TH4 contactor relays, 8- and 10-pole > Accessories for 3TH4 contactor relays

#### Selection and ordering data

| Version | Rated control supply voltage $U_s$ |    | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---------|------------------------------------|----|----|-------------|--------------|-------------------|-----|----|
|         | AC                                 | DC |    |             |              |                   |     |    |

V V  
d

#### Surge suppressors<sup>1)</sup> for 3TH4 contactor relays



3TX7402-3.

|  |             |             |    |                   |  |   |        |     |
|--|-------------|-------------|----|-------------------|--|---|--------|-----|
| <b>Suppression diodes</b><br>With line spacer,<br>for mounting onto the coil terminal  | --          | 24 ... 250  | 2  | <b>3TX7402-3A</b> |  | 1 | 1 unit | 41B |
| <b>Diode assemblies</b><br>(diode and Zener diode)<br>With line spacer, DC operation,<br>for mounting onto the coil terminal | --          | 24 ... 250  | 2  | <b>3TX7402-3D</b> |  | 1 | 1 unit | 41B |
| <b>Varistors<sup>2)</sup></b><br>With line spacer,<br>for mounting onto the coil terminal                                    | 24 ... 48   | 24 ... 70   | 2  | <b>3TX7402-3G</b> |  | 1 | 1 unit | 41B |
|  | 48 ... 127  | 70 ... 150  | 2  | <b>3TX7402-3H</b> |  | 1 | 1 unit | 41B |
|  | 127 ... 240 | 150 ... 250 | 2  | <b>3TX7402-3J</b> |  | 1 | 1 unit | 41B |
|  | 240 ... 400 | --          | 20 | <b>3TX7402-3K</b> |  | 1 | 1 unit | 41B |
| <b>RC elements</b><br>With line spacer,<br>for mounting onto the coil terminal   | 400 ... 600 | --          | 20 | <b>3TX7402-3L</b> |  | 1 | 1 unit | 41B |
|  | 24 ... 48   | 24 ... 70   | 2  | <b>3TX7402-3R</b> |  | 1 | 1 unit | 41B |
|  | 48 ... 127  | 70 ... 150  | 2  | <b>3TX7402-3S</b> |  | 1 | 1 unit | 41B |
|  | 127 ... 240 | 150 ... 250 | 2  | <b>3TX7402-3T</b> |  | 1 | 1 unit | 41B |
|  | 240 ... 400 | --          | 5  | <b>3TX7402-3U</b> |  | 1 | 1 unit | 41B |
|  | 400 ... 600 | --          | X  | <b>3TX7402-3V</b> |  | 1 | 1 unit | 41B |
| <b>Covers</b> for switch position indicator  | --          | --          | X  | <b>3TX4210-0P</b> |  | 1 | 1 unit | 41B |

<sup>1)</sup> The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

<sup>2)</sup> Includes the peak value of the alternating voltage on the DC side.

| For contactors | Version | Rated control supply voltage $U_s$ 50/60 Hz AC | Time setting range (minimum times) | SD | <b>Screw terminals</b> | PU (UNIT, SET, M) | PS* | PG |
|----------------|---------|--|------------------------------------|----|------------------------|-------------------|-----|----|
|----------------|---------|--|------------------------------------|----|------------------------|-------------------|-----|----|

Type V s d Article No. Price per PU

#### ON-delay devices



3TX4180-0A

|                 |   |             |     |   |                   |   |        |     |
|-----------------|---|-------------|-----|---|-------------------|---|--------|-----|
| 3TH42,<br>3TH43 | <b>NTC thermistors</b><br>Time tolerance<br>+100%, -50% | 220 ... 230 | 0.1 | 5 | <b>3TX4180-0A</b> | 1 | 1 unit | 41B |
|-----------------|---|-------------|-----|---|-------------------|---|--------|-----|

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

### Coupling relays

#### SIRIUS 3RQ2 coupling relays with industrial enclosure

##### Overview



SIRIUS 3RQ2 coupling relay, screw terminals, 3 changeover contacts

##### More information

Homepage, see [www.siemens.com/relays](http://www.siemens.com/relays)

Industry Mall, see [www.siemens.com/product?3RQ2](http://www.siemens.com/product?3RQ2)

Conversion tool for article numbers, see [www.siemens.com/sirius/conversion-tool](http://www.siemens.com/sirius/conversion-tool)

3RQ2 coupling relays in their 22.5 mm industrial enclosure serve to couple control signals to and from a controller and replace the 3RS18 coupling relays. The 3RQ2 has an impressively high-quality industrial enclosure finished in modern titanium gray so that it fits in visually with the SIRIUS series of relays.

The series consists of devices with up to three changeover contacts with screw or spring-loaded terminals (push-in) and, with its wide voltage range from 24 to 240 V AC/DC, is a genuine highlight in the coupling relay market.

Thanks to terminal assignment that is identical to the previous version, existing products can easily be converted.

The reduced variety of components simplifies product selection and standardization.

Numerous accessories are available for the 3RQ2 coupling relays, for example replacement terminals, push-in lugs for wall mounting and coding pins.

##### Article No. scheme

| Product versions                 |                                   | Article number |   |                          |                          |                          |                          |                          |
|----------------------------------|-----------------------------------|----------------|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>Coupling relays, standard</b> |                                   | <b>3RQ2000</b> | - | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Connection methods               | Screw terminals                   |                | 1 |                          |                          |                          |                          |                          |
|                                  | Spring-loaded terminals (push-in) |                | 2 |                          |                          |                          |                          |                          |
| Outputs                          | 1 CO contact                      |                |   | A                        |                          |                          |                          |                          |
|                                  | 2 CO contacts                     |                |   | B                        |                          |                          |                          |                          |
|                                  | 3 CO contacts                     |                |   | C                        |                          |                          |                          |                          |
| Rated control supply voltage     | 24 ... 240 V AC/DC                |                |   |                          | W                        |                          |                          |                          |
| Material of switching contacts   | 0 = AgSnO <sub>2</sub>            |                |   |                          |                          |                          |                          | 0                        |
|                                  | 1 = AgNi + Au                     |                |   |                          |                          |                          |                          | 1                        |
| Example                          |                                   | <b>3RQ2000</b> | - | <b>1</b>                 | <b>C</b>                 | <b>W</b>                 | <b>0</b>                 | <b>1</b>                 |

##### Note:

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

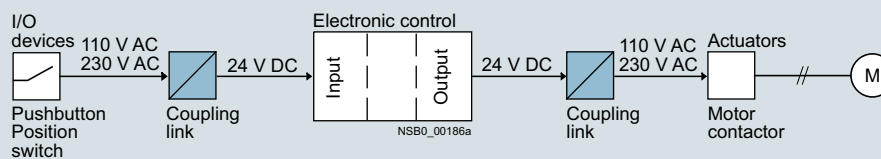
For your orders, please use the article numbers quoted in the selection and ordering data.

##### Benefits

- Permanent wiring thanks to removable terminals in screw or spring-loaded technology (push-in)
- Replacement of individual terminals minimizes wiring effort
- A product for all voltages from 24 to 240 V AC/DC
- Reduced costs thanks to fewer versions
- Especially high contact reliability even at low currents thanks to versions with hard gold-plated contacts
- International standards and certifications including CE, UL/CSA, EAC and confirmations for rail, and more

##### Application

- Electrical separation between the input and output circuit
- Signal amplification
- Adjustment of different signal levels
- Contact multiplication



Application example motor controller



# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### SIRIUS 3RQ2 coupling relays with industrial enclosure

#### Technical specifications

##### More information

Technical specifications, see  
<https://support.industry.siemens.com/cs/ww/en/ps/25158/td>

Operating Instructions, see  
<https://support.industry.siemens.com/cs/ww/en/ps/25158/man>

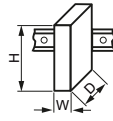
Type

**3RQ2000-AW00**  
**3RQ2000-BW00**  
**3RQ2000-CW00**

**3RQ2000-CW01**

##### General data

##### Dimensions (W x H x D)



mm

22.5 x 100 x 90

##### Insulation voltage for overvoltage category III acc. to IEC 60664 for pollution degree 3

V

300

##### Max. permissible voltage for protective separation between control circuit and auxiliary circuit acc. to IEC 60947-1

V

300

##### Ambient temperature

- During operation °C -40 ... +60
- During storage °C -40 ... +80

##### Degree of protection IP

IP20

##### Control circuit

##### Control supply voltage

V

24 ... 240 AC/DC; 50/60 Hz

##### Operating range factor of control supply voltage

0.7 ... 1.1

##### Load circuit

##### Thermal current of the non-solid-state contact blocks, maximum

A

5

##### Current carrying capacity of the output relay

- At AC-15 at 250 V A 3
- At DC-13 at 24 V A 1
- At DC-13 at 125 V A 0.2
- At DC-13 at 250 V A 0.1

##### Mechanical endurance (operating cycles) typical

10 000 000

##### Electrical endurance (operating cycles) for AC-15 at 230 V, typical

100 000

##### Material of switching contacts

AgSnO<sub>2</sub>

AgNi + Au


Type

**3RQ2000-1**

**3RQ2000-2**

##### Type of electrical connection

 Screw terminals

 Spring-loaded terminals (push-in)

##### Type of connectable conductor cross-sections

- Solid 1x (0.5 ... 4 mm<sup>2</sup>), 2x (0.5 ... 2.5 mm<sup>2</sup>) 1x (0.5 ... 4 mm<sup>2</sup>)
- Finely stranded with end sleeve 1x (0.5 ... 4 mm<sup>2</sup>), 2x (0.5 ... 1.5 mm<sup>2</sup>) 1x (0.5 ... 2.5 mm<sup>2</sup>)
- Solid for AWG cables 1x (20 ... 12), 2x (20 ... 14) 1x (20 ... 12)

##### Tightening torque

Nm

0.6 ... 0.8

--



# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### SIRIUS 3RQ2 coupling relays with industrial enclosure

#### Selection and ordering data

PU (UNIT, SET, M) = 1  
 PS\* = 1 UNIT  
 PG = 41H

| Control supply voltage<br>At AC<br>At 50 Hz | Control supply voltage<br>At DC | Number of<br>CO contacts<br>for auxiliary<br>contacts | Material of<br>switching<br>contacts | SD | Screw terminals  |                 | Spring-loaded terminals<br>(push-in)  |                 |
|---|---------------------------------|---|--------------------------------------|----|---|-----------------|--|-----------------|
|   |                                 |   |                                      |    | Article No.   | Price<br>per PU | Article No.  | Price<br>per PU |
| V   | V                               | W   |                                      | d  |   |                 |  |                 |
| 24 ... 240                                  | 24 ... 240                      | 1   | AgSnO <sub>2</sub>                   | 2  | <b>3RQ2000-1AW00</b>  | 2               | <b>3RQ2000-2AW00</b>   |                 |
|   |                                 | 2   | AgSnO <sub>2</sub>                   | 2  | <b>3RQ2000-1BW00</b>  | 2               | <b>3RQ2000-2BW00</b>   |                 |
|   |                                 | 3   | AgSnO <sub>2</sub>                   | 2  | <b>3RQ2000-1CW00</b>  | 2               | <b>3RQ2000-2CW00</b>   |                 |
|   |                                 | 3   | AgNi + Au                            | 2  | <b>3RQ2000-1CW01</b>  | 2               | <b>3RQ2000-2CW01</b>   |                 |

#### Coupling relays with industrial enclosure, 22.5 mm



3RQ2000-1CW00

3RQ2000-2CW00

#### Accessories




##### More information

Operating Instructions, [see](https://support.industry.siemens.com/cs/ww/en/ps/25158/man)  
<https://support.industry.siemens.com/cs/ww/en/ps/25158/man>




Conversion tool for article numbers, [see](http://www.siemens.com/sirius/conversion-tool)  
[www.siemens.com/sirius/conversion-tool](http://www.siemens.com/sirius/conversion-tool)

| Version | SD | Article No. | Price<br>per PU | PU<br>(UNIT,<br>SET, M) | PS* | PG |
|---------|----|-------------|-----------------|-------------------------|-----|----|
|         | d  |             |                 |                         |     |    |


#### Terminals for SIRIUS devices in the industrial standard mounting rail enclosure

|  | Removable terminals   | SD | Screw terminals  |                 | Spring-loaded terminals<br>(push-in)  |     |
|---|---|----|---|-----------------|--|-----|
|   |   |    | Article No.   | Price<br>per PU | PU<br>(UNIT,<br>SET, M)  | PS* |
| 3ZY1122-1BA00   | • 2-pole, up to 1 x 4 mm <sup>2</sup> or 2 x 2.5 mm <sup>2</sup>                        | 2  | <b>3ZY1122-1BA00</b>  | 1               | 6 units  | 41L |
|   | • 2-pole, up to 1 x 4 mm <sup>2</sup> or 2 x 1.5 mm <sup>2</sup> (in shared end sleeve) | 2  | <b>3ZY1122-2BA00</b>  | 1               | 6 units  | 41L |

#### Accessories for enclosures

|   |  |   |                      |   |          |     |
|---|--|---|----------------------|---|----------|-----|
|  | <b>Hinged cover</b><br>Replacement cover, without terminal labeling,<br>titanium gray, 22.5 mm wide  | 2 | <b>3ZY1450-1AB00</b> | 1 | 5 units  | 41L |
|  | <b>Push-in lugs</b><br>For wall mounting   | 2 | <b>3ZY1311-0AA00</b> | 1 | 10 units | 41L |
|  | <b>Coding pins</b><br>For removable terminals of SIRIUS devices<br>in the industrial standard mounting rail enclosure;<br>they enable the mechanical coding of terminals | 2 | <b>3ZY1440-1AA00</b> | 1 | 12 units | 41L |

#### Tools for opening spring-loaded terminals

|   |   |   |                   |   |        |     |
|---|---|---|-------------------|---|--------|-----|
|  | <b>Screwdrivers</b><br>For all SIRIUS devices with spring-loaded terminals<br><br>3.0 mm x 0.5 mm,<br>length approx. 200 mm,<br>titanium gray/black,<br>partially insulated | 2 | <b>3RA2908-1A</b> | 1 | 1 unit | 41B |
|---|---|---|-------------------|---|--------|-----|

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### SIRIUS 3RQ2 coupling relays with industrial enclosure

#### More information

#### Code conversion table

| SIRIUS 3RS18 coupling relays |                         |                              |                                 | Comparison type SIRIUS 3RQ2 coupling relays |                                   |                    |                                 |
|------------------------------|-------------------------|------------------------------|---------------------------------|---|-----------------------------------|--------------------|---------------------------------|
| Screw terminals              | Spring-loaded terminals | Version                      | Contacts                        | Screw terminals                             | Spring-loaded terminals (push-in) | Version            | Contacts                        |
| 3RS1800-1AQ00                | 3RS1800-2AQ00           | 24 V AC/DC; 110 ... 120 V AC | 1 CO contact                    | 3RQ2000-1AW00                               | 3RQ2000-2AW00                     | 24 ... 240 V AC/DC | 1 CO contact                    |
| 3RS1800-1AP00                | 3RS1800-2AP00           | 24 V AC/DC; 220 ... 240 V AC | 2 CO contacts                   | 3RQ2000-1BW00                               | 3RQ2000-2BW00                     | 24 ... 240 V AC/DC | 2 CO contacts                   |
| 3RS1800-1BW00                | 3RS1800-2BW00           | 24 ... 240 V AC/DC           |                                 |   |                                   |                    |                                 |
| 3RS1800-1BQ00                | 3RS1800-2BQ00           | 24 V AC/DC; 110 ... 120 V AC | 3 CO contacts                   | 3RQ2000-1CW00                               | 3RQ2000-2CW00                     | 24 ... 240 V AC/DC | 3 CO contacts                   |
| 3RS1800-1BP00                | 3RS1800-2BP00           | 24 V AC/DC; 220 ... 240 V AC |                                 |   |                                   |                    |                                 |
| 3RS1800-1HW00                | 3RS1800-2HW00           | 24 ... 240 V AC/DC           | 3 CO contacts, hard gold-plated | 3RQ2000-1CW01                               | 3RQ2000-2CW01                     | 24 ... 240 V AC/DC | 3 CO contacts, hard gold-plated |
| 3RS1800-1HQ00                | 3RS1800-2HQ00           | 24 V AC/DC; 110 ... 120 V AC |                                 |   |                                   |                    |                                 |
| 3RS1800-1HP00                | 3RS1800-2HP00           | 24 V AC/DC; 220 ... 240 V AC |                                 |   |                                   |                    |                                 |
| 3RS1800-1HW01                | 3RS1800-2HW01           | 24 ... 240 V AC/DC           |                                 |   |                                   |                    |                                 |
| 3RS1800-1HQ01                | 3RS1800-2HQ01           | 24 V AC/DC; 110 ... 120 V AC |                                 |   |                                   |                    |                                 |
| 3RS1800-1HP01                | 3RS1800-2HP01           | 24 V AC/DC; 220 ... 240 V AC |                                 |   |                                   |                    |                                 |

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

### Coupling relays

#### SIRIUS 3RQ3 coupling relays, narrow design

##### Overview



SIRIUS 3RQ3 coupling relays

SIRIUS 3RQ3 coupling relays in narrow design are used for coupling control signals from and to a controller, and they are available in different versions:

- Coupling relays with relay output (not plug-in)
- Coupling relays with plug-in relays
- Coupling relays with semiconductor output (not plug-in)

##### ***Coupling relays with relay output (not plug-in)***

###### **AC and DC operation**

IEC/EN 60947-5-1

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

##### ***Coupling relays with plug-in relays***

###### **AC and DC operation**

IEC 60947-1

The coupling relays are plug-in, so the relay can be replaced quickly at the end of its service life without detaching the wiring.

##### ***Coupling relays with semiconductor output (not plug-in)***

###### **AC and DC operation**

IEC 60947-1, EN 60664-1 and EN 50005;  
coupling relays with semiconductor output: EN 60747-5;  
programmable controllers: IEC 61131-2

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

The coupling relays with semiconductor output have extremely high contact reliability, so they are especially suitable for electronic systems.

For test purposes, versions are available with manual-off-automatic switches.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### SIRIUS 3RQ3 coupling relays, narrow design

#### Article No. scheme

| Product versions   |   | Article number                         |                              |                              |                     |                |
|--|---|--|------------------------------|------------------------------|---------------------|----------------|
| <b>Coupling relays with relay output (not plug-in)</b>                     |   | <b>3RQ30</b> □ 8 – □ A □ 0 □           |                              |                              |                     |                |
| Design and type of output  | Output coupler, without manual/automatic switch       | 1                                      |                              |                              |                     |                |
|  | Input coupler   | 3                                      |                              |                              |                     |                |
| Type of electrical connection  | Screw terminals                                       | 1                                      |                              |                              |                     |                |
|  | Spring-loaded terminals (push-in)                     | 2                                      |                              |                              |                     |                |
| Control supply voltage   | 24 V AC/DC  |  | B                            |                              |                     |                |
|  | 115 V AC/DC   |  | E                            |                              |                     |                |
|  | 230 V AC/DC   |  | F                            |                              |                     |                |
| Material of switching contacts   | e.g.  |  |                              |                              |                     |                |
|  | 0 = AgSnO <sub>2</sub>                                |  | □                            |                              |                     |                |
|  | 1 = AgSnO <sub>2</sub> hard gold-plated               |  | □                            |                              |                     |                |
| Example  |   | <b>3RQ30 1 8 – 1 A B 0 1</b>           |                              |                              |                     |                |
| Product versions   |   | Article number                         |                              |                              |                     |                |
| <b>Coupling relays with relay output (not plug-in)</b>                     |   | <b>3RQ30 1 8 – 2 A</b> □ 0 8 – 0 A A 0 |                              |                              |                     |                |
| Railway version with extended operating range 0.7 ... 1.2 x U <sub>s</sub> |   |  |                              |                              |                     |                |
| Control supply voltage   | 24 V DC   |  | M                            |                              |                     |                |
|  | 110 V DC  |  | N                            |                              |                     |                |
| Example  |   | <b>3RQ30 1 8 – 2 A M 0 8 – 0 A A 0</b> |                              |                              |                     |                |
| Product versions   |   | Article number                         |                              |                              |                     |                |
| <b>Coupling relays with plug-in relays</b>                                 |   | <b>3RQ31 1 8 –</b> □ A □ 0 □           |                              |                              |                     |                |
| Type of electrical connection  | Screw terminals                                       | 1                                      |                              |                              |                     |                |
|  | Spring-loaded terminals (push-in)                     | 2                                      |                              |                              |                     |                |
| Control supply voltage   | 24 V AC/DC  |  | B                            |                              |                     |                |
|  | 115 V AC/DC   |  | E                            |                              |                     |                |
|  | 230 V AC/DC   |  | F                            |                              |                     |                |
|  | 24 V DC   |  | M                            |                              |                     |                |
| Material of switching contacts   | AgSnO <sub>2</sub>                                    |  | 0                            |                              |                     |                |
|  | AgSnO <sub>2</sub> hard gold-plated                   |  | 1                            |                              |                     |                |
| Example  |   | <b>3RQ31 1 8 – 1 A B 0 1</b>           |                              |                              |                     |                |
| Product versions   |   | Article number                         |                              |                              |                     |                |
| <b>Coupling relays with semiconductor output (not plug-in)</b>             |   | <b>3RQ30</b> □ □ – □ S □ □ 0           |                              |                              |                     |                |
|  | Current carrying capacity of the semiconductor output |  | Control supply voltage       |                              |                     |                |
|  | Switching voltage of the semiconductor output         |  |                              |                              |                     |                |
| Output coupler   | • Without manual/automatic switch                     | 1 mA ... 0.5 A                         | <b>3RQ30 5 0 –</b> □ S M 5 0 | 11 ... 30 V DC               | 10 ... 60 V DC      |                |
|  |   | 5 mA ... 2 A                           | <b>3RQ30 5 2 –</b> □ S M 3 0 | 11 ... 30 V DC               | 10 ... 30 V DC      |                |
|  |   | 1 mA ... 2 A                           | <b>3RQ30 5 2 –</b> □ S M 4 0 | 11 ... 30 V DC               | 10 ... 60 V DC      |                |
|  |   | 5 mA ... 2 A                           | <b>3RQ30 5 2 –</b> □ S M 5 0 | 11 ... 30 V DC               | 20 ... 264 V AC     |                |
|  |   | 1 mA ... 3 A                           | <b>3RQ30 5 3 –</b> □ S G 3 0 | 110 ... 230 V AC/DC          | 10 ... 30 V DC      |                |
|  | • With manual/automatic switch                        | 5 mA ... 5 A                           | <b>3RQ30 5 5 –</b> □ S M 3 0 | 11 ... 30 V DC               | 10 ... 30 V DC      |                |
|  |   | 5 mA ... 5 A                           | <b>3RQ30 6 5 –</b> □ S M 3 0 | 11 ... 30 V DC               | 10 ... 30 V DC      |                |
|  |   | Input coupler                          | 10 mA ... 0.5 A              | <b>3RQ30 7 0 –</b> □ S B 3 0 | 11 ... 30 V AC/DC   | 10 ... 30 V DC |
|  |   |  |                              | <b>3RQ30 7 0 –</b> □ S G 3 0 | 110 ... 230 V AC/DC | 10 ... 30 V DC |
|  |   | Type of electrical connection          | Screw terminals              | 1                            |                     |                |
| Spring-loaded terminals (push-in)  | 2   |  |                              |                              |                     |                |
| Example  |   | <b>3RQ30 7 0 – 1 S B 3 0</b>           |                              |                              |                     |                |

#### 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.

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

### Coupling relays

#### SIRIUS 3RQ3 coupling relays, narrow design

##### Benefits

###### General

- All versions with screw terminals or spring-loaded terminals (push-in technology)
- TOP wiring with spring-loaded terminals (push-in) for quick and reliable wiring
- Low space requirements in the control cabinet thanks to a consistent width of 6.2 mm
- Reduced stockkeeping due to fewer variants
- Clearly visible functional state of the coupling relay by green LED
- Integrated reverse polarity protection and EMC arc-suppression diode
- Standardized accessories across the entire 3RQ3 series
- Universal bridging option using connecting combs for all terminals
- Galvanic isolation plate for isolating different voltages for neighboring units
- Clip-on labels available as set for individual labeling

###### Coupling relays with relay output (not plug-in)

- Relays fixed in enclosure for increased contact reliability
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

###### Coupling relays with plug-in relays

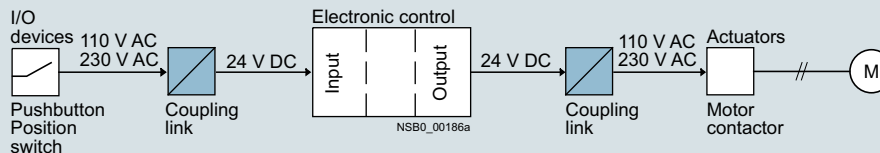
- Fast replacement of the relays with existing wiring
- Shorter installation times thanks to certified complete units
- Individual relays available as spare parts
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

###### Coupling relays with semiconductor output (not plug-in)

- Long service life since there is no mechanical wear
- High switching frequency thanks to short make-break times
- Vibration-resistant
- No contact bounce
- Extremely high contact reliability
- Noise-free switching
- Low control power required
- Switching of DC and capacitive loads

##### Application

- Electrical separation between the input and output circuit
- Adjustment of different signal levels
- Signal amplification



Application example motor controller

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### SIRIUS 3RQ3 coupling relays, narrow design

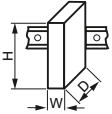
#### Technical specifications

##### More information

Technical specifications, see  
<https://support.industry.siemens.com/cs/ww/en/ps/16198/td>

Operating Instructions, see  
<https://support.industry.siemens.com/cs/ww/en/ps/16198/man>  
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16198/faq>

#### Coupling relays with relay output (not plug-in)

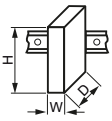
| Type  |   | 3RQ30.8-<br>.AB00 | 3RQ30.8-<br>.AB01 | 3RQ30.8-<br>.AE00 | 3RQ30.8-<br>.AE01 | 3RQ30.8-<br>.AF00 | 3RQ30.8-<br>.AF01 | 3RQ3018-<br>2AM08-0AA0 | 3RQ3018-<br>2AN08-0AA0              |  |
|---|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------------|-------------------------------------|--|
| <b>General technical specifications</b>   |   |                   |                   |                   |                   |                   |                   |                        |                                     |  |
| <b>Width x height x depth</b>   |  | mm                | 6.2 x 93 x 72.5   |                   |                   |                   |                   |                        |                                     |  |
| <b>Insulation voltage for overvoltage category III acc. to IEC 60664 for pollution degree 3</b>         | V   | 300               |                   |                   |                   |                   |                   |                        |                                     |  |
| <b>Max. permissible voltage for protective separation between control circuit and auxiliary circuit</b> | V   | 300               |                   |                   |                   |                   |                   |                        |                                     |  |
| <b>Ambient temperature</b>  |   |                   |                   |                   |                   |                   |                   |                        |                                     |  |
| • During operation  | °C  | -25 ... +60       |                   |                   |                   | -40 ... +70       |                   |                        |                                     |  |
| • During storage  | °C  | -40 ... +85       |                   |                   |                   |                   |                   |                        |                                     |  |
| <b>Degree of protection IP</b>  |   | IP20              |                   |                   |                   |                   |                   |                        |                                     |  |
| <b>Version of the fuse link required for short-circuit protection of the auxiliary switch</b>           |   | Fuse gG: 4 A      |                   |                   |                   |                   |                   |                        |                                     |  |
| <b>Operational current of the auxiliary contacts</b>  |   |                   |                   |                   |                   |                   |                   |                        |                                     |  |
| • At AC-15  |   |                   |                   |                   |                   |                   |                   |                        |                                     |  |
| - At 24 V   | A   | 3                 |                   |                   |                   |                   |                   |                        |                                     |  |
| - At 250 V  | A   | 3                 |                   |                   |                   |                   |                   |                        |                                     |  |
| • At DC-13  |   |                   |                   |                   |                   |                   |                   |                        |                                     |  |
| - At 24 V   | A   | 1                 |                   |                   |                   |                   |                   |                        |                                     |  |
| - At 125 V  | A   | 0.2               |                   |                   |                   |                   |                   |                        |                                     |  |
| - At 250 V  | A   | 0.1               |                   |                   |                   |                   |                   |                        |                                     |  |
| <b>Contact reliability of the auxiliary contacts</b><br>(one contact failure per 100 million)           |   | 17 V,<br>5 mA     | 5 V,<br>1 mA      | 17 V,<br>5 mA     | 5 V,<br>1 mA      | 17 V,<br>5 mA     | 5 V,<br>1 mA      | 17 V,<br>5 mA          |                                     |  |
| <b>Mechanical endurance (operating cycles) typical</b>  |   | 10 000 000        |                   |                   |                   |                   |                   |                        |                                     |  |
| <b>Electrical endurance (operating cycles) for AC-15 at 250 V typical</b>                               |   | 100 000           |                   |                   |                   |                   |                   |                        |                                     |  |
| <b>Operating range factor of the control supply voltage, rated value</b>                                |   |                   |                   |                   |                   |                   |                   |                        |                                     |  |
| • At AC   |   |                   |                   |                   |                   |                   |                   |                        |                                     |  |
| - At 50 Hz  |   | 0.8 ... 1.25      |                   | 0.8 ... 1.1       |                   | --                |                   |                        |                                     |  |
| - At 60 Hz  |   | 0.8 ... 1.25      |                   | 0.8 ... 1.1       |                   | --                |                   |                        |                                     |  |
| • At DC   |   | 0.8 ... 1.25      |                   | 0.8 ... 1.1       |                   | 0.7 ... 1.25      |                   |                        |                                     |  |
| <b>Active power input</b>   | W   | 0.3               |                   | 0.5               |                   | 1                 |                   | 0.3                    | 0.6                                 |  |
| <b>Thermal current</b>  | A   | 6                 |                   |                   |                   |                   |                   |                        |                                     |  |
| • Note  |   | --                |                   |                   |                   |                   |                   |                        | Derating, see characteristic curves |  |

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

### Coupling relays

#### SIRIUS 3RQ3 coupling relays, narrow design

##### Coupling relays with plug-in relays

| Type  |    | 3RQ3118-<br>.AB00   | 3RQ3118-<br>.AB01 | 3RQ3118-<br>.AE00 | 3RQ3118-<br>.AE01 | 3RQ3118-<br>.AF00 | 3RQ3118-<br>.AF01 | 3RQ3118-<br>.AM00 | 3RQ3118-<br>.AM01 |
|---|----|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>General technical specifications</b>   |    |   |                   |                   |                   |                   |                   |                   |                   |
| <b>Width x height x depth</b>   | mm | 6.2 x 93 x 76   |                   |                   |                   |                   |                   |                   |                   |
|   |    |  |                   |                   |                   |                   |                   |                   |                   |
| <b>Insulation voltage for overvoltage category III acc. to IEC 60664 for pollution degree 3</b>         | V  | 300   |                   |                   |                   |                   |                   |                   |                   |
| <b>Max. permissible voltage for protective separation between control circuit and auxiliary circuit</b> | V  | 300   |                   |                   |                   |                   |                   |                   |                   |
| <b>Ambient temperature</b>  |    |   |                   |                   |                   |                   |                   |                   |                   |
| • During operation  | °C | -25 ... +60   |                   |                   |                   |                   |                   |                   |                   |
| • During storage  | °C | -40 ... +85   |                   |                   |                   |                   |                   |                   |                   |
| <b>Degree of protection IP</b>  |    | IP20  |                   |                   |                   |                   |                   |                   |                   |
| <b>Version of the fuse link required for short-circuit protection of the auxiliary switch</b>           |    | Fuse gG: 4 A  |                   |                   |                   |                   |                   |                   |                   |
| <b>Operational current of the auxiliary contacts</b>  |    |   |                   |                   |                   |                   |                   |                   |                   |
| • At AC-15  |    |   |                   |                   |                   |                   |                   |                   |                   |
| - At 24 V   | A  | 3   |                   |                   |                   |                   |                   |                   |                   |
| - At 250 V  | A  | 3   |                   |                   |                   |                   |                   |                   |                   |
| • At DC-13  |    |   |                   |                   |                   |                   |                   |                   |                   |
| - At 24 V   | A  | 1   |                   |                   |                   |                   |                   |                   |                   |
| - At 125 V  | A  | 0.2   |                   |                   |                   |                   |                   |                   |                   |
| - At 250 V  | A  | 0.1   |                   |                   |                   |                   |                   |                   |                   |
| <b>Contact reliability of the auxiliary contacts</b><br>(one contact failure per 100 million)           |    | 17 V,<br>5 mA   | 5 V,<br>1 mA      | 17 V,<br>5 mA     | 5 V,<br>1 mA      | 17 V,<br>5 mA     | 5 V,<br>1 mA      | 17 V,<br>5 mA     | 5 V,<br>1 mA      |
| <b>Mechanical endurance (operating cycles) typical</b>  |    | 10 000 000  |                   |                   |                   |                   |                   |                   |                   |
| <b>Electrical endurance (operating cycles) for AC-15 at 250 V typical</b>                               |    | 100 000   |                   |                   |                   |                   |                   |                   |                   |
| <b>Operating range factor of the control supply voltage, rated value</b>                                |    |   |                   |                   |                   |                   |                   |                   |                   |
| • At AC   |    |   |                   |                   |                   |                   |                   |                   |                   |
| - At 50 Hz  |    | 0.8 ... 1.25  |                   | 0.8 ... 1.1       |                   |                   |                   | --                |                   |
| - At 60 Hz  |    | 0.8 ... 1.25  |                   | 0.8 ... 1.1       |                   |                   |                   | --                |                   |
| • At DC   |    | 0.8 ... 1.25  |                   | 0.8 ... 1.1       |                   |                   |                   | 0.8 ... 1.25      |                   |
| <b>Active power input</b>   | W  | 0.3   |                   | 0.5               |                   | 1                 |                   | 0.3               |                   |
| <b>Thermal current</b>  | A  | 6   |                   |                   |                   |                   |                   |                   |                   |

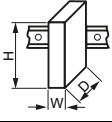




# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### SIRIUS 3RQ3 coupling relays, narrow design

#### Coupling relays with semiconductor output (not plug-in)

| Type  |    | 3RQ3050-<br>.SM50  | 3RQ3052-<br>.SM30 | 3RQ3052-<br>.SM40 | 3RQ3052-<br>.SM50 | 3RQ3053-<br>.SG30                 | 3RQ3055-<br>.SM30   | 3RQ3065-<br>.SM30 | 3RQ3070-<br>.SB30 | 3RQ3070-<br>.SG30 |  |  |
|---|----|--|-------------------|-------------------|-------------------|-----------------------------------|---|-------------------|-------------------|-------------------|--|--|
| <b>General technical specifications</b>   |    |  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| <b>Width x height x depth</b>   | mm | 6.2 x 93 x 72.5  |                   |                   |                   |                                   |   | 6.2 x 93 x 75     | 6.2 x 93 x 72.5   |                   |  |  |
|                |    |  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| <b>Insulation voltage for overvoltage category III acc. to IEC 60664 for pollution degree 3</b> | V  | 50   |                   |                   |                   | 300                               | 50  |                   |                   |                   |  |  |
| <b>Ambient temperature</b>  |    |  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| • During operation  | °C | -25 ... +60  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| • During storage  | °C | -40 ... +85  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| <b>Degree of protection IP</b>  |    | IP20   |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| <b>Switching voltage of the semiconductor output</b>  |    |  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| • At AC   | V  | --   |                   |                   |                   | 20 ... 264                        | --  |                   |                   |                   |  |  |
| • At DC   | V  | 10 ... 60  | 10 ... 30         | 10 ... 60         | --                | 10 ... 30                         |   |                   |                   |                   |  |  |
| <b>Current carrying capacity of the semiconductor output</b>                                    |    |  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| • At AC   |    | --   |                   |                   |                   | 5 mA ... 2 A                      | --  |                   |                   |                   |  |  |
| • At DC   |    | 1 mA ... 0.5 A   | 5 mA ... 2 A      | 1 mA ... 2 A      | --                | 1 mA ... 3 A                      | 5 mA ... 5 A  | 10 mA ... 0.5 A   |                   |                   |  |  |
| <b>Operating range factor of the control supply voltage, rated value</b>                        |    |  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| • At AC   |    |  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| - At 50 Hz  |    | --   |                   |                   |                   | 0.7 ... 1.1                       | --  |                   | 1 ... 1           | 0.7 ... 1.1       |  |  |
| - At 60 Hz  |    | --   |                   |                   |                   | 0.7 ... 1.1                       | --  |                   | 1 ... 1           | 0.7 ... 1.1       |  |  |
| • At DC   |    | 1 ... 1  |                   |                   |                   | 0.7 ... 1.1                       | 1 ... 1   |                   | 0.7 ... 1.1       |                   |  |  |
| <b>Active power input</b>   | W  | 0.3  |                   |                   | 0.25              | 0.3                               |   | 0.5               |                   |                   |  |  |
| <b>Thermal current</b>  | A  | 0.5  | 2                 |                   | 3                 |                                   | 5   |                   | 0.5               |                   |  |  |
| Type  |    | <b>3RQ3...-1....</b>   |                   |                   |                   |                                   | <b>3RQ3...-2....</b>  |                   |                   |                   |  |  |
| <b>Type of electrical connection for auxiliary and control circuits</b>                         |    |  <b>Screw terminals</b> |                   |                   |                   |                                   |  <b>Spring-loaded terminals (push-in)</b> |                   |                   |                   |  |  |
| <b>Type of connectable conductor cross-sections</b>   |    |  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| • Solid   |    | 1x (0.25 ... 2.5) mm <sup>2</sup>  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| • Finely stranded   |    |  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| - Without end sleeves   |    | --   |                   |                   |                   | 1x (0.25 ... 2.5) mm <sup>2</sup> |   |                   |                   |                   |  |  |
| - With end sleeves  |    | 1x (0.25 ... 1.5) mm <sup>2</sup>  |                   |                   |                   |                                   |   |                   |                   |                   |  |  |
| • Solid for AWG cables  |    | 1x (20 ... 14)   |                   |                   |                   |                                   |   |                   |                   |                   |  |  |

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### SIRIUS 3RQ3 coupling relays, narrow design

#### Selection and ordering data

| Type of voltage | Control supply voltage |          |       | Number of CO contacts for auxiliary contacts | Material of switching contacts | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|-----------------|------------------------|----------|-------|--|--------------------------------|----|-------------|--------------|-------------------|-----|----|
|                 | At AC                  |          | At DC |  |                                |    |             |              |                   |     |    |
|                 | At 50 Hz               | At 60 Hz |       |  |                                |    |             |              |                   |     |    |
|                 | V                      | V        | V     |  |                                | d  |             |              |                   |     |    |

#### Coupling relays with relay output (not plug-in)

##### Output coupling links

|       |     |     |     |   |                         |   |                           |   |         |     |
|-------|-----|-----|-----|---|-------------------------|---|---------------------------|---|---------|-----|
| AC/DC | 24  | 24  | 24  | 1 | AgSnO2                  | ▶ | <b>3RQ3018-□AB00</b>      | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2 hard gold-plated | ▶ | <b>3RQ3018-□AB01</b>      | 1 | 5 units | 41H |
|       | 115 | 115 | 115 | 1 | AgSnO2                  | 2 | <b>3RQ3018-□AE00</b>      | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2                  | ▶ | <b>3RQ3018-□AF00</b>      | 1 | 5 units | 41H |
| DC    | --  | --  | 24  | 1 | AgSnO2                  | ▶ | <b>3RQ3018-2AM08-0AA0</b> | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2                  | 2 | <b>3RQ3018-2AN08-0AA0</b> | 1 | 5 units | 41H |

##### Input coupling links

|       |     |     |     |   |                         |   |                      |   |         |     |
|-------|-----|-----|-----|---|-------------------------|---|----------------------|---|---------|-----|
| AC/DC | 24  | 24  | 24  | 1 | AgSnO2                  | ▶ | <b>3RQ3038-□AB00</b> | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2 hard gold-plated | 2 | <b>3RQ3038-□AB01</b> | 1 | 5 units | 41H |
|       | 115 | 115 | 115 | 1 | AgSnO2                  | 2 | <b>3RQ3038-□AE00</b> | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2 hard gold-plated | 2 | <b>3RQ3038-□AE01</b> | 1 | 5 units | 41H |
| DC    | --  | --  | 24  | 1 | AgSnO2                  | ▶ | <b>3RQ3038-□AF00</b> | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2 hard gold-plated | 2 | <b>3RQ3038-□AF01</b> | 1 | 5 units | 41H |

#### Coupling relays with plug-in relays

##### Output coupling links

|       |     |     |     |   |                         |   |                      |   |         |     |
|-------|-----|-----|-----|---|-------------------------|---|----------------------|---|---------|-----|
| AC/DC | 24  | 24  | 24  | 1 | AgSnO2                  | ▶ | <b>3RQ3118-□AB00</b> | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2 hard gold-plated | 2 | <b>3RQ3118-□AB01</b> | 1 | 5 units | 41H |
|       | 115 | 115 | 115 | 1 | AgSnO2                  | 2 | <b>3RQ3118-□AE00</b> | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2 hard gold-plated | 2 | <b>3RQ3118-□AE01</b> | 1 | 5 units | 41H |
| DC    | --  | --  | 24  | 1 | AgSnO2                  | ▶ | <b>3RQ3118-□AF00</b> | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2 hard gold-plated | 2 | <b>3RQ3118-□AF01</b> | 1 | 5 units | 41H |
| DC    | --  | --  | 24  | 1 | AgSnO2                  | ▶ | <b>3RQ3118-□AM00</b> | 1 | 5 units | 41H |
|       |     |     |     |   | AgSnO2 hard gold-plated | ▶ | <b>3RQ3118-□AM01</b> | 1 | 5 units | 41H |

#### Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1  
2

| Type of voltage | Control supply voltage |          |       | Current carrying capacity of the semiconductor output |       | Operating mode selectable via switch position | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|-----------------|------------------------|----------|-------|---|-------|---|----|-------------|--------------|-------------------|-----|----|
|                 | At AC                  |          | At DC | At AC   | At DC |   |    |             |              |                   |     |    |
|                 | At 50 Hz               | At 60 Hz |       |   |       |   |    |             |              |                   |     |    |
|                 |                        |          |       |   |       |   | d  |             |              |                   |     |    |

#### Coupling relays with semiconductor output (not plug-in)

##### Output coupling links

|       |               |               |               |    |                      |              |                      |                      |                      |         |         |     |
|-------|---------------|---------------|---------------|----|----------------------|--------------|----------------------|----------------------|----------------------|---------|---------|-----|
| DC    | --            | --            | 11 ... 30 V   | -- | 1 mA ... 0.5 A       | --           | 2                    | <b>3RQ3050-□SM50</b> | 1                    | 5 units | 41H     |     |
|       |               |               |               |    | 5 mA ... 2 A         | --           | ▶                    | <b>3RQ3052-□SM30</b> | 1                    | 5 units | 41H     |     |
|       |               |               |               |    | 1 mA ... 2 A         | --           | ▶                    | <b>3RQ3052-□SM40</b> | 1                    | 5 units | 41H     |     |
|       |               |               |               |    | 5 mA ... 2 A         | --           | 2                    | <b>3RQ3052-□SM50</b> | 1                    | 5 units | 41H     |     |
|       |               |               |               |    | --                   | 5 mA ... 5 A | --                   | ▶                    | <b>3RQ3055-□SM30</b> | 1       | 5 units | 41H |
|       |               |               |               |    | Manual/Off/Automatic | 2            | <b>3RQ3065-□SM30</b> | 1                    | 5 units              | 41H     |         |     |
| AC/DC | 110 ... 230 V | 110 ... 230 V | 110 ... 230 V | -- | 1 mA ... 3 A         | --           | 2                    | <b>3RQ3053-□SG30</b> | 1                    | 5 units | 41H     |     |

##### Input coupling links

|       |             |             |             |    |                 |    |   |                      |   |         |     |
|-------|-------------|-------------|-------------|----|-----------------|----|---|----------------------|---|---------|-----|
| AC/DC | 11 ... 30 V | 11 ... 30 V | 11 ... 30 V | -- | 10 mA ... 0.5 A | -- | 2 | <b>3RQ3070-□SB30</b> | 1 | 5 units | 41H |
|       |             |             |             |    | 10 mA ... 0.5 A | -- | 2 | <b>3RQ3070-□SG30</b> | 1 | 5 units | 41H |

#### Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)






1  
2

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### SIRIUS 3RQ3 coupling relays, narrow design

#### Accessories

| Version  | SD | Article No.   | Price per PU | PU (UNIT, SET, M)   | PS* | PG         |     |
|--|----|---|--------------|---|-----|------------|-----|
|  | d  |   |              |   |     |            |     |
| <b>Galvanic isolation plates</b>   |    |   |              |   |     |            |     |
|   |    | For electrical separation of different potentials when devices of different types are installed side by side      | 2            | <b>3RQ3900-0A</b>   | 1   | 10 units   | 41H |
| 3RQ3900-0A   |    |   |              |   |     |            |     |
| <b>Connecting combs</b>  |    |   |              |   |     |            |     |
|   |    | For linking the same potentials, current carrying capacity for infeed max. 6 A                                    |              |   |     |            |     |
| 3RQ3901-0B   |    | <ul style="list-style-type: none"> <li>• 2-pole</li> <li>• 4-pole</li> <li>• 8-pole</li> <li>• 16-pole</li> </ul> | ▶            | <b>3RQ3901-0A</b>   | 1   | 10 units   | 41H |
|  |    |   | ▶            | <b>3RQ3901-0B</b>   | 1   | 10 units   | 41H |
|  |    |   | ▶            | <b>3RQ3901-0C</b>   | 1   | 10 units   | 41H |
|  |    |   | ▶            | <b>3RQ3901-0D</b>   | 1   | 10 units   | 41H |
| <b>Clip-on labels<sup>1)</sup></b>   |    |   |              |   |     |            |     |
|   |    | For terminal and equipment labeling, white  |              |   |     |            |     |
| 3RQ3902-0A   |    | <ul style="list-style-type: none"> <li>• 5 x 5 mm</li> <li>• 6 x 12 mm</li> </ul>                                 | 2            | <b>3RQ3902-0A</b>   | 100 | 2000 units | 41H |
|  |    |   | 2            | <b>3RQ3902-0B</b>   | 100 | 1200 units | 41H |
| <b>Tools for opening spring-loaded terminals</b>                                   |    |   |              |   |     |            |     |
|  |    | <b>Screwdrivers</b><br>For all SIRIUS devices with spring-loaded terminals  |              |   |     |            |     |
| 3RA2908-1A   |    | 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated                                  | 2            | <b>Spring-loaded terminals (push-in)</b>  | 1   | 1 unit     | 41B |
|  |    |   |              | <b>3RA2908-1A</b>   |     |            |     |

<sup>1)</sup> PC labeling system for individual inscription of unit labeling plates available from Conta-Clip Verbindungstechnik GmbH (see page 16/16).

| Coupling relays with plug-in relay  | Control supply voltage | Material of switching contacts | Number of CO contacts for auxiliary contacts | SD | Article No.          | Price per PU | PU (UNIT, SET, M) | PS*      | PG  |
|---|------------------------|--------------------------------|--|----|----------------------|--------------|-------------------|----------|-----|
| Type  | V                      |                                |  | d  |                      |              |                   |          |     |
| <b>Replacement modules for 3RQ3118 coupling relays with plug-in relay</b> |                        |                                |  |    |                      |              |                   |          |     |
| 3RQ3118-.AM00   | 24 DC                  | AgSnO2                         | 1  | 2  | <b>3TX7014-7BM00</b> |              | 1                 | 15 units | 41H |
| 3RQ3118-.AM01   |                        | AgSnO2<br>hard gold-plated     |  | 2  | <b>3TX7014-7BM02</b> |              | 1                 | 15 units | 41H |
| 3RQ3118-.AB00   | 24 AC/DC               | AgSnO2                         | 1  | 2  | <b>3TX7014-7BM00</b> |              | 1                 | 15 units | 41H |
| 3RQ3118-.AB01   |                        | AgSnO2<br>hard gold-plated     |  | 2  | <b>3TX7014-7BM02</b> |              | 1                 | 15 units | 41H |
| 3RQ3118-.AE00   | 115 AC/DC              | AgSnO2                         | 1  | 2  | <b>3TX7014-7BP00</b> |              | 1                 | 20 units | 41H |
| 3RQ3118-.AF00   | 230 AC/DC              | AgSnO2                         |  |    |                      |              |                   |          |     |
| 3RQ3118-.AE01   | 115 AC/DC              | AgSnO2<br>hard gold-plated     | 1  | 2  | <b>3TX7014-7BP02</b> |              | 1                 | 20 units | 41H |
| 3RQ3118-.AF01   | 230 AC/DC              | AgSnO2<br>hard gold-plated     |  |    |                      |              |                   |          |     |

## Switching devices – Contactors and contactor assemblies – Contactor relays and relays

### Coupling relays

#### LZS coupling relays with plug-in relays

##### Overview

Coupling relays with plug-in relays can be ordered as complete units or as individual modules for customer assembly.

##### Function

The coupling relays with semiconductor output have low power consumption and are therefore particularly well-suited to solid-state systems. In the versions equipped with LEDs, these indicate the switching state. The LZS:PT/MT coupling relays have a test button. This can be used to force the relays into the switching state and to lock it without electrical control. This is indicated by a raised petrol-colored lever.

##### Control with solid-state output

In the case of solid-state outputs (e.g. proximity switch) with overload and short-circuit protection, you must make allowance during configuration for the temporarily flowing capacitor charging currents! This is possible, for example, by using a suitable LZS coupling relay with plug-in relay.

##### Surge suppression

The 24 V DC relays LZX:RT and LZX:PT with LEDs can be supplied with, all others without integral surge suppression (freewheel diode connected in parallel with A1/A2). The positive control supply voltage must be connected to coil terminal A1.

##### Mounting

The relays are plugged into the base and this is snapped onto a TH 35 standard mounting rail according to IEC 60715.

A fixing bracket can be ordered for the MT series that additionally fixes the relay into a plug-in base (under conditions of increased mechanical stress). For the RT and PT series, a combined fixing and ejection bracket is available which can be used to disassemble the relay where access is difficult, for example, when relays are mounted side-by-side.

They can be mounted as required.

##### Logical separation

The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for coil. Logical separation is not necessarily protective separation.

##### Protective separation

For protective separation, transfer of the voltage of one circuit to another circuit is prevented to a suitable degree of safety (requirements and tests are described in IEC 60947-1 in Appendix N).

##### Notes on the previous LZX series

The complete units and accessory parts of the LZX series are no longer listed in this catalog. The complete units of the LZS series are fully compatible with the corresponding units of the LZX series. Prices for the LZS series are lower than for the previous LZX series.

The LZX plug-in relays are available unchanged and are used accordingly in both the LZS and the LZX series.

##### Note:

Due to differences in geometry, the LED modules, plug-in bases, fixing brackets and labels can be combined and/or used only in the respective series, LZS or LZX.

The LZS series offers not only service-proven screw connections but also versions with plug-in terminals (push-in).

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

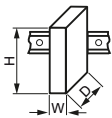


### LZS coupling relays with plug-in relays

#### Technical specifications

##### More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16204/td>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16204/man>

| Relay type   |   | <b>LZX:RT print relay, 8-pole,<br/>(12.7 mm) 1 CO / 2 CO</b>   |                |        |        | <b>LZX:PT industrial relay, 8-, 11- and 14-pole,<br/>(22.5 mm) 2 CO / 3 CO / 4 CO</b> |              |        |        |
|--|---|--|----------------|--------|--------|---|--------------|--------|--------|
| <b>General data</b>  |   |  |                |        |        |   |              |        |        |
| <b>Dimensions (W x H x D)</b>  |   |  |                |        |        |   |              |        |        |
| <ul style="list-style-type: none"> <li>LZS:RT.A4 / LZS:PT.A5</li> <li>LZS:RT.B4 / LZS:PT.B5</li> <li>LZS:RT.D4 / LZS:PT.D5</li> </ul>        |  | mm   | 15.5 x 78 x 71 |        |        |   | 28 x 74 x 72 |        |        |
|  |   | mm   | 15.5 x 77 x 71 |        |        |   | 28 x 77 x 79 |        |        |
|  |   | mm   | 15.5 x 98 x 71 |        |        |   | 28 x 98 x 79 |        |        |
| <b>Rated control supply voltage <math>U_s</math><sup>1)</sup></b>  | V   | 24 DC  | 24 AC          | 115 AC | 230 AC | 24 DC   | 24 AC        | 115 AC | 230 AC |
| <b>Rated insulation voltage <math>U_i</math></b><br>(Pollution degree 3)   | V   | 250  |                |        |        |   |              |        |        |
| <b>Overvoltage category</b><br>Acc. to IEC 60664-1   |   | III  |                |        |        |   |              |        |        |
| <b>Protective separation</b><br>Between coil and contacts<br>Acc. to IEC 60947-1, Appendix N   |   | Up to 250 V (with plug-in base LZS:RT78726)<br>No (for complete units with standard base)                              |                |        |        | No  |              |        |        |
| <b>Degree of protection</b>  |   | IP67   |                |        |        | IP50  |              |        |        |
| <b>Permissible ambient temperature</b>   | • During operation  | °C   | -40 ... +70    |        |        |   |              |        |        |
|  | • During storage  | °C   | -40 ... +80    |        |        |   |              |        |        |
| <b>Conductor cross-sections</b>  |   |  |                |        |        |   |              |        |        |
| Connection type  |   |  <b>Screw terminals</b>             |                |        |        |   |              |        |        |
| <ul style="list-style-type: none"> <li>Solid</li> <li>Finely stranded with end sleeve</li> <li>Corresponding opening tool</li> </ul>         | mm <sup>2</sup>   | 2 x 2.5  |                |        |        |   |              |        |        |
|  | mm <sup>2</sup>   | 2 x 1.5  |                |        |        |   |              |        |        |
|  | Screwdriver, size 3.0 ... 3.5 mm x 0.5 mm (3RA2908-1A)                            |  |                |        |        |   |              |        |        |
| Connection type  |   |  <b>Plug-in terminals (push-in)</b> |                |        |        |   |              |        |        |
| <ul style="list-style-type: none"> <li>Solid</li> <li>Finely stranded without end sleeve</li> <li>Finely stranded with end sleeve</li> </ul> | mm <sup>2</sup>   | 1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5  |                |        |        |   |              |        |        |
|  | mm <sup>2</sup>   | 1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5  |                |        |        |   |              |        |        |
|  | mm <sup>2</sup>   | 1 x (0.75 ... 1.0), 2 x 0.75, 1 x 1.5  |                |        |        |   |              |        |        |

<sup>1)</sup> AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### LZS coupling relays with plug-in relays

| Relay type   |                  | LZX:RT print relay, 8-pole, (12.7 mm) 1 CO / 2 CO     |                      |                     |                     | LZX:PT industrial relay, 8-, 11- and 14-pole, (22.5 mm) 2 CO / 3 CO / 4 CO |                      |        |        |
|--|------------------|---|----------------------|---------------------|---------------------|--|----------------------|--------|--------|
| Rated control supply voltage $U_s$ <sup>1)</sup>   | V                | 24 DC   | 24 AC                | 115 AC              | 230 AC              | 24 DC  | 24 AC                | 115 AC | 230 AC |
| <b>Control side</b>  |                  |   |                      |                     |                     |  |                      |        |        |
| <b>Operating range factor</b>  |                  | 0.9 ... 1.4   |                      |                     |                     | 0.9 ... 1.1  |                      |        |        |
| <b>Power consumption at <math>U_s</math></b>   |                  |   |                      |                     |                     |  |                      |        |        |
| • AC   | VA               | --  | 0.75                 |                     |                     | --   | 1                    |        |        |
| • DC   | W                | 0.4   | --                   |                     |                     | 0.75   | --                   |        |        |
| <b>Release voltage</b>   | V                | 2.4   | 3.6                  | 17.3                | 34.5                | 2.4  | 7.2                  | 34.5   | 69     |
| <b>Protection circuit</b>  |                  | Freewheel diode for complete unit                     |                      |                     |                     | Freewheel diode in LED module  |                      |        |        |
| <b>Load side</b>   |                  |   |                      |                     |                     |  |                      |        |        |
| <b>Switching voltage</b>   |                  |   |                      |                     |                     |  |                      |        |        |
| AC/DC  | V                | 24 ... 250  |                      |                     |                     |  |                      |        |        |
| <b>Rated currents<sup>2)</sup></b>   |                  |   |                      |                     |                     |  |                      |        |        |
| • Conventional thermal current $I_{th}$  |                  |   |                      |                     |                     |  |                      |        |        |
| - 1 CO contact   | A                | 16  |                      |                     |                     | --   |                      |        |        |
| - 2 CO contacts  | A                | 8   |                      |                     |                     | 12   |                      |        |        |
| - 3 CO contacts  | A                | --  |                      |                     |                     | 10   |                      |        |        |
| - 4 CO contacts  | A                | --  |                      |                     |                     | 6  |                      |        |        |
| • Rated operational current $I_o$ /AC-15 acc. to utilization categories (IEC 60947-5-1)                                  |                  |   |                      |                     |                     |  |                      |        |        |
| - 1 CO contact   | A                | 6   |                      |                     | 3                   | 4  |                      | 2      |        |
| - 2 CO contacts  | A                | 3   |                      |                     |                     | 4  |                      | 2      |        |
| - 3 CO contacts  | A                | --  |                      |                     |                     | 4  |                      | 2      |        |
| - 4 CO contacts  | A                | --  |                      |                     |                     | 4  |                      | 2      |        |
| • Rated operational current $I_o$ DC-13 with suppressor diode acc. to utilization categories (IEC 60947-5-1)             | A                | 2 at 24 V,<br>0.27 at 230 V                           |                      |                     |                     | PT2, PT3, PT5:<br>4 at 24 V,<br>0.5 at 230 V                               |                      |        |        |
| <b>Short-circuit protection</b>  |                  |   |                      |                     |                     |  |                      |        |        |
| Short-circuit test with fuse links of operational class gG with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1 |                  |   |                      |                     |                     |  |                      |        |        |
| • DIAZED, type 5SB   | A                | 10  |                      |                     |                     | 6  |                      |        |        |
| <b>Min. contact load</b> (reliability: 1 ppm)  |                  |   |                      |                     |                     |  |                      |        |        |
|  |                  | Standard 17 V, 10 mA;<br>hard gold-plated 17 V/0.1 mA |                      |                     |                     | Standard 17 V, 10 mA;<br>hard gold-plated 20 V/1 mA                        |                      |        |        |
| <b>Mechanical endurance</b>  |                  |   |                      |                     |                     |  |                      |        |        |
| • 1 CO contact   | Operating cycles | 30 x 10 <sup>6</sup>                                  | 10 x 10 <sup>6</sup> | 1 x 10 <sup>5</sup> | 7 x 10 <sup>4</sup> | 30 x 10 <sup>6</sup>   | 20 x 10 <sup>6</sup> |        |        |
| • 2 CO contacts  | Operating cycles | 30 x 10 <sup>6</sup>                                  | 5 x 10 <sup>6</sup>  | 1 x 10 <sup>5</sup> | 8 x 10 <sup>4</sup> | 30 x 10 <sup>6</sup>   | 20 x 10 <sup>6</sup> |        |        |
| • 3 CO contacts  | Operating cycles | --  |                      |                     |                     | 30 x 10 <sup>6</sup>   | 20 x 10 <sup>6</sup> |        |        |
| • 4 CO contacts  | Operating cycles | --  |                      |                     |                     | 30 x 10 <sup>6</sup>   | 20 x 10 <sup>6</sup> |        |        |
| <b>Electrical endurance</b> (resistive load at 250 V AC)   |                  |   |                      |                     |                     |  |                      |        |        |
| • 1 CO contact   | Operating cycles | 1 x 10 <sup>5</sup>                                   | 7 x 10 <sup>4</sup>  |                     |                     | --   |                      |        |        |
| • 2 CO contacts  | Operating cycles | 1 x 10 <sup>5</sup>                                   | 8 x 10 <sup>4</sup>  |                     |                     | 180 x 10 <sup>3</sup>  |                      |        |        |
| • 3 CO contacts  | Operating cycles | --  |                      |                     |                     | 180 x 10 <sup>3</sup>  |                      |        |        |
| • 4 CO contacts  | Operating cycles | --  |                      |                     |                     | 250 x 10 <sup>3</sup>  |                      |        |        |

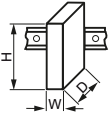

<sup>1)</sup> AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

<sup>2)</sup> Capacitive loads can result in micro-welding on the contacts.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### LZS coupling relays with plug-in relays

| Relay type  |   | LZS industrial relays: MT, 11-pole<br>(35.5 mm) 3 CO contacts  |              |            |             |
|---|---|--|--------------|------------|-------------|
| <b>General data</b>   |   |  |              |            |             |
| <b>Dimensions (W x H x D)</b>   |  | mm   | 36 x 69 x 36 |            |             |
| <b>Rated control supply voltage <math>U_s</math><sup>1)</sup></b>   | V   | 24 DC  | 24 AC        | 115 AC     | 230 AC      |
| <b>Rated insulation voltage <math>U_i</math></b><br>(Pollution degree 3)  | V   | 250  |              |            |             |
| <b>Overvoltage category</b><br>Acc. to IEC 60664-1  |   | III  |              |            |             |
| <b>Protective separation</b><br>Between coil and contacts<br>Acc. to IEC 60947-1, Appendix N                                |   | No   |              |            |             |
| <b>Degree of protection of relays/bases</b>   |   | IP50   |              |            |             |
| • Relays  |   | IP20   |              |            |             |
| • Bases   |   |  |              |            |             |
| <b>Permissible ambient temperature</b>  |   |  |              |            |             |
| • During operation  | °C  | -40 ... +60  | -45 ... +50  |            |             |
| • During storage  | °C  | -45 ... +80  |              |            |             |
| <b>Conductor cross-sections</b>   |   |  |              |            |             |
| Connection type   |   |  <b>Screw terminals</b> |              |            |             |
| • Solid   | mm <sup>2</sup>   | 2 x 2.5  |              |            |             |
| • Finely stranded with or without end sleeve  | mm <sup>2</sup>   | 2 x 1.5  |              |            |             |
| • Corresponding opening tool  |   | Screwdriver, size 1 or Pozidriv 1  |              |            |             |
| <b>Control side</b>   |   |  |              |            |             |
| <b>Operating range</b>  | V   | 18 ... 38  | 19.2 ... 38  | 92 ... 137 | 184 ... 264 |
| <b>Power consumption</b>  |   |  |              |            |             |
| • AC  | VA  | --   | 2.3          |            |             |
| • DC  | W   | 1.2  | --           |            |             |
| <b>Release voltage</b>  | V   | 2.4  | 9.6          | 46         | 92          |
| <b>Protection circuit</b>   |   | --   |              |            |             |
| <b>Load side</b>  |   |  |              |            |             |
| <b>Switching voltage</b>  |   |  |              |            |             |
| • AC/DC   | V   | 24 ... 250   |              |            |             |
| <b>Rated currents<sup>2)</sup></b>  |   |  |              |            |             |
| • Conventional thermal current $I_{th}$   | A   | 10   |              |            |             |
| • Rated operational current $I_e$ /DC-13<br>acc. to utilization categories (IEC 60947-5-1)                                  | A   | 2 at 24 V,<br>0.27 at 230 V  |              |            |             |
| • Rated operational current $I_e$ /AC-15<br>acc. to utilization categories (IEC 60947-5-1)                                  | A   | 5 at 24 V and 230 V  |              |            |             |
| <b>Short-circuit protection</b>   |   |  |              |            |             |
| Short-circuit test with fuse links of operational class gG<br>with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1 |   |  |              |            |             |
| • DIAZED, type 5SB  | A   | 10   |              |            |             |
| <b>Min. contact load</b><br>(reliability: 1 ppm)  |   | 12 V DC/10 mA  |              |            |             |
| <b>Mechanical endurance</b>   | Operat-<br>ing<br>cycles  | 20 x 10 <sup>6</sup>   |              |            |             |
| <b>Electrical endurance</b><br>(resistive load at 250 V AC)   | Operat-<br>ing<br>cycles  | 3 x 10 <sup>5</sup>  |              |            |             |

<sup>1)</sup> AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.





<sup>2)</sup> Capacitive loads can result in micro-welding on the contacts.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### LZS coupling relays with plug-in relays

#### Selection and ordering data

| Version  | Rated control supply voltage $U_s$ (at AC: 50/60 Hz)   | Contacts, number of CO contacts | Width mm | SD d | Article No.  | Price per PU | PU (UNIT, SET, M) | PS*     | PG      |     |
|--|--|---------------------------------|----------|------|--|--------------|-------------------|---------|---------|-----|
| <b>Complete units, 11- and 14-pole, PT series</b>  |  |                                 |          |      |  |              |                   |         |         |     |
| <br>LZS:PT3A5L24  | <b>Complete units with plug-in base</b>  |                                 |          |      | <b>Screw terminals</b>                |              |                   |         |         |     |
|  | For snap-on mounting onto TH 35 standard mounting rail   |                                 |          |      |  |              |                   |         |         |     |
|  | Comprising:  |                                 |          |      |  |              |                   |         |         |     |
|  | <ul style="list-style-type: none"> <li>• Coupling relays with plug-in relays</li> <li>• Standard plug-in base with screw terminals</li> <li>• LED module (24 V DC version: LED module with freewheel diode)</li> <li>• Fixing/ejection brackets</li> <li>• Labels</li> </ul>                           |                                 |          |      |  |              |                   |         |         |     |
|  | 3 CO contacts  | 24 DC                           | 3        | 28   | 2  | LZS:PT3A5L24 |                   | 1       | 5 units | 41H |
|  |  | 24 AC                           |          |      | 2  | LZS:PT3A5R24 |                   | 1       | 5 units | 41H |
|  |  | 115 AC                          |          |      | 2  | LZS:PT3A5S15 |                   | 1       | 5 units | 41H |
|  |  | 230 AC                          |          |      | 2  | LZS:PT3A5T30 |                   | 1       | 5 units | 41H |
|  | 4 CO contacts  | 24 DC                           | 4        | 28   | 2  | LZS:PT5A5L24 |                   | 1       | 5 units | 41H |
|  |  | 24 AC                           |          |      | 2  | LZS:PT5A5R24 |                   | 1       | 5 units | 41H |
|  | 115 AC   |                                 |          | 2    | LZS:PT5A5S15   |              | 1                 | 5 units | 41H     |     |
|  | 230 AC   |                                 |          | 2    | LZS:PT5A5T30   |              | 1                 | 5 units | 41H     |     |
| <b>Complete units with plug-in base With logical separation</b>  |  |                                 |          |      |  |              |                   |         |         |     |
| For snap-on mounting onto TH 35 standard mounting rail   |  |                                 |          |      |  |              |                   |         |         |     |
| Comprising:  |  |                                 |          |      |  |              |                   |         |         |     |
| <ul style="list-style-type: none"> <li>• Coupling relays with plug-in relays</li> <li>• Plug-in base with logical separation and screw terminals</li> <li>• LED module (24 V DC version: LED module with freewheel diode)</li> <li>• Fixing/ejection brackets</li> <li>• Labels</li> </ul> |  |                                 |          |      |  |              |                   |         |         |     |
| 4 CO contacts  | 24 DC  | 4                               | 28       | 2    | LZS:PT5B5L24   |              | 1                 | 5 units | 41H     |     |
|  | 24 AC  |                                 |          | 2    | LZS:PT5B5R24   |              | 1                 | 5 units | 41H     |     |
|  | 115 AC   |                                 |          | 2    | LZS:PT5B5S15   |              | 1                 | 5 units | 41H     |     |
|  | 230 AC   |                                 |          | 2    | LZS:PT5B5T30   |              | 1                 | 5 units | 41H     |     |
| <b>Complete units, 8- and 14-pole, PT series</b>   |  |                                 |          |      |  |              |                   |         |         |     |
| <br>LZS:PT5D5L24  | <b>Complete units with plug-in base With logical separation</b>  |                                 |          |      | <b>Plug-in terminals (push-in)</b>  |              |                   |         |         |     |
|  | For snap-on mounting onto TH 35 standard mounting rail   |                                 |          |      |  |              |                   |         |         |     |
|  | Comprising:  |                                 |          |      |  |              |                   |         |         |     |
|  | <ul style="list-style-type: none"> <li>• Coupling relays with plug-in relays</li> <li>• Plug-in base with logical separation and plug-in terminals (push-in)</li> <li>• LED module (24 V DC version: LED module with freewheel diode)</li> <li>• Fixing/ejection brackets</li> <li>• Labels</li> </ul> |                                 |          |      |  |              |                   |         |         |     |
|  | 2 CO contacts  | 24 DC                           | 2        | 28   | 2  | LZS:PT2D5L24 |                   | 1       | 5 units | 41H |
|  |  | 230 AC                          |          |      | 2  | LZS:PT2D5T30 |                   | 1       | 5 units | 41H |
|  | 4 CO contacts  | 24 DC                           | 4        | 28   | 2  | LZS:PT5D5L24 |                   | 1       | 5 units | 41H |
|  |  | 24 AC                           |          |      | 2  | LZS:PT5D5R24 |                   | 1       | 5 units | 41H |
|  |  | 115 AC                          |          |      | 2  | LZS:PT5D5S15 |                   | 1       | 5 units | 41H |
|  |  | 230 AC                          |          |      | 2  | LZS:PT5D5T30 |                   | 1       | 5 units | 41H |

#### Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).



# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### LZS coupling relays with plug-in relays

| Version | Rated control supply voltage $U_s$ at 50/60 Hz AC | Contacts, number of CO contacts | Width | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---------|---|---------------------------------|-------|----|-------------|--------------|-------------------|-----|----|
|         | V   |                                 | mm    | d  |             |              |                   |     |    |

#### Individual modules for customer assembly, PT series

##### Industrial relays, 8-, 11-, and 14-pole

###### Mini industrial relays

- With test bracket and mechanical switch position indicator, without LED<sup>1)</sup>



LZX:PT370024

|                          |   |      |   |              |   |        |     |  |  |
|--------------------------|---|------|---|--------------|---|--------|-----|--|--|
| 24 DC                    | 2 | 22.5 | ▶ | LZX:PT270024 | 1 | 1 unit | 41H |  |  |
|                          | 3 |      | ▶ | LZX:PT370024 | 1 | 1 unit | 41H |  |  |
|                          | 4 |      | ▶ | LZX:PT570024 | 1 | 1 unit | 41H |  |  |
| 24 AC                    | 2 | 22.5 | ▶ | LZX:PT270524 | 1 | 1 unit | 41H |  |  |
|                          | 3 |      | ▶ | LZX:PT370524 | 1 | 1 unit | 41H |  |  |
|                          | 4 |      | ▶ | LZX:PT570524 | 1 | 1 unit | 41H |  |  |
| 115 AC                   | 2 | 22.5 | 2 | LZX:PT270615 | 1 | 1 unit | 41H |  |  |
|                          | 3 |      | 2 | LZX:PT370615 | 1 | 1 unit | 41H |  |  |
|                          | 4 |      | 2 | LZX:PT570615 | 1 | 1 unit | 41H |  |  |
| 230 AC                   | 2 | 22.5 | ▶ | LZX:PT270730 | 1 | 1 unit | 41H |  |  |
|                          | 3 |      | ▶ | LZX:PT370730 | 1 | 1 unit | 41H |  |  |
|                          | 4 |      | ▶ | LZX:PT570730 | 1 | 1 unit | 41H |  |  |
| • With hard gold-plating |   |      |   |              |   |        |     |  |  |
| 24 DC                    | 4 | 22.5 | ▶ | LZX:PT580024 | 1 | 1 unit | 41H |  |  |
| 230 AC                   |   |      | ▶ | LZX:PT580730 | 1 | 1 unit | 41H |  |  |
| • Without test bracket   |   |      |   |              |   |        |     |  |  |
| 24 DC                    | 4 | 22.5 | ▶ | LZX:PT520024 | 1 | 1 unit | 41H |  |  |
| 230 AC                   |   |      | 2 | LZX:PT520730 | 1 | 1 unit | 41H |  |  |

###### Plug-in bases for PT relays

###### Standard plug-in bases

For mounting onto TH 35 standard mounting rail



LZS:PT78740

|    |   |    |   | Screw terminals  |   |        |     |
|----|---|----|---|--|---|--------|-----|
| -- | 2 | 28 | ▶ | LZS:PT78720  | 1 | 1 unit | 41H |
|    | 3 |    | ▶ | LZS:PT78730  | 1 | 1 unit | 41H |
|    | 4 |    | ▶ | LZS:PT78740  | 1 | 1 unit | 41H |

###### Plug-in bases with logical separation

For mounting onto TH 35 standard mounting rail



LZS:PT78722

|    |   |    |   |             |   |        |     |
|----|---|----|---|-------------|---|--------|-----|
| -- | 2 | 28 | ▶ | LZS:PT78722 | 1 | 1 unit | 41H |
|    | 4 |    | ▶ | LZS:PT78742 | 1 | 1 unit | 41H |

###### Plug-in bases with logical separation

For mounting onto TH 35 standard mounting rail



LZS:PT7874P

|    |   |    |   | Plug-in terminals (push-in)  |   |        |     |
|----|---|----|---|---|---|--------|-----|
| -- | 2 | 28 | ▶ | LZS:PT7872P   | 1 | 1 unit | 41H |
|    | 4 |    | ▶ | LZS:PT7874P   | 1 | 1 unit | 41H |

<sup>1)</sup> The test bracket is designed to be non-latching. If the test bracket is pressed further until 90° has been reached, two small lugs break off and the test bracket can be latched in position.

#### Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### LZS coupling relays with plug-in relays

| Version  | Rated control supply voltage $U_s$ at 50/60 Hz AC | Contacts, number of CO contacts | Width | SD | Article No.         | Price per PU | PU (UNIT, SET, M) | PS*      | PG  |
|--|---|---------------------------------|-------|----|---------------------|--------------|-------------------|----------|-----|
|  | V   |                                 | mm    | d  |                     |              |                   |          |     |
| <b>Individual modules for customer assembly, PT series</b>                           |   |                                 |       |    |                     |              |                   |          |     |
| <b>More individual modules</b>   |   |                                 |       |    |                     |              |                   |          |     |
| <b>LED modules</b>   |   |                                 |       |    |                     |              |                   |          |     |
| • Red  |   |                                 |       |    |                     |              |                   |          |     |
|  | 24 DC   | --                              | 12.5  | ▶  | <b>LZS:PTML0024</b> |              | 1                 | 1 unit   | 41H |
|  | 24 AC/DC  |                                 |       | ▶  | <b>LZS:PTML0524</b> |              | 1                 | 1 unit   | 41H |
|  | 110 ... 230 AC                                    |                                 |       | ▶  | <b>LZS:PTML0730</b> |              | 1                 | 1 unit   | 41H |
| • Green  |   |                                 |       |    |                     |              |                   |          |     |
|  | 24 DC   | --                              | 12.5  | ▶  | <b>LZS:PTMG0024</b> |              | 1                 | 1 unit   | 41H |
|  | 24 AC/DC  |                                 |       | ▶  | <b>LZS:PTMG0524</b> |              | 1                 | 1 unit   | 41H |
|  | 110 ... 230 AC                                    |                                 |       | ▶  | <b>LZS:PTMG0730</b> |              | 1                 | 1 unit   | 41H |
| <b>Fixing/ejection brackets for PT base with logical separation</b>                  |   |                                 |       |    |                     |              |                   |          |     |
|  | --  | --                              | 26    | ▶  | <b>LZS:PT17021</b>  |              | 100               | 10 units | 41H |
| <b>Fixing/ejection brackets for standard plug-in base without logical separation</b> |   |                                 |       |    |                     |              |                   |          |     |
|  | --  | --                              | 26    | ▶  | <b>LZS:PT17024</b>  |              | 100               | 10 units | 41H |
| <b>Labels</b>  |   |                                 |       |    |                     |              |                   |          |     |
|  | --  | --                              | 26    | ▶  | <b>LZS:PT17040</b>  |              | 100               | 10 units | 41H |
| <b>RC elements</b>   |   |                                 |       |    |                     |              |                   |          |     |
|  | 6 ... 60 AC                                       | --                              | 26    | ▶  | <b>LZS:PTMU0524</b> |              | 1                 | 1 unit   | 41H |
|  | 110 ... 230 AC                                    |                                 |       | ▶  | <b>LZS:PTMU0730</b> |              | 1                 | 1 unit   | 41H |
| <b>Freewheel diodes with connection to A1</b>  |   |                                 |       |    |                     |              |                   |          |     |
|  | 6 ... 230 DC                                      | --                              | 26    | ▶  | <b>LZS:PTMT00A0</b> |              | 1                 | 1 unit   | 41H |
| <b>Connecting combs for PT screw base</b>  |   |                                 |       |    |                     |              |                   |          |     |
|  | --  | --                              | --    | 5  | <b>LZS:PT170R6</b>  |              | 1                 | 10 units | 41H |
| <b>Connecting brackets for PT push-in base</b>                                       |   |                                 |       |    |                     |              |                   |          |     |
|  | --  | --                              | --    | 5  | <b>LZS:PT170P1</b>  |              | 1                 | 10 units | 41H |

### Individual modules for customer assembly, MT series

#### Industrial relays, 11-pole

##### Industrial relays with test bracket

|  |        |   |      |    |                     |  |   |        |     |
|--|--------|---|------|----|---------------------|--|---|--------|-----|
|  | 24 DC  | 3 | 35.5 | 2  | <b>LZX:MT321024</b> |  | 1 | 1 unit | 41H |
|  | 24 AC  | 3 | 35.5 | 2  | <b>LZX:MT323024</b> |  | 1 | 1 unit | 41H |
|  | 24 AC  | 3 | 35.5 | 15 | <b>LZX:MT326024</b> |  | 1 | 1 unit | 41H |
|  | 24 AC  | 3 | 35.5 | 15 | <b>LZX:MT328024</b> |  | 1 | 1 unit | 41H |
|  | 115 AC | 3 | 35.5 | 15 | <b>LZX:MT326115</b> |  | 1 | 1 unit | 41H |
|  | 115 AC | 3 | 35.5 | 15 | <b>LZX:MT328115</b> |  | 1 | 1 unit | 41H |
|  | 230 AC | 3 | 35.5 | 2  | <b>LZX:MT326230</b> |  | 1 | 1 unit | 41H |
|  | 230 AC | 3 | 35.5 | 2  | <b>LZX:MT328230</b> |  | 1 | 1 unit | 41H |

##### Plug-in bases

For mounting onto TH 35 standard mounting rail

|  |    |    |    |   |                    |   |   |        |     |
|--|----|----|----|---|--------------------|---|---|--------|-----|
|  | -- | -- | 38 | ▶ | <b>LZS:MT78750</b> |  | 1 | 1 unit | 41H |
|--|----|----|----|---|--------------------|---|---|--------|-----|

##### Fixing brackets

|  |    |    |    |   |                    |  |   |        |     |
|--|----|----|----|---|--------------------|--|---|--------|-----|
|  | -- | -- | 38 | ▶ | <b>LZS:MT28800</b> |  | 1 | 1 unit | 41H |
|--|----|----|----|---|--------------------|--|---|--------|-----|

#### Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.






Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages, see page 15/1 or Catalog KT 10.1.

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### LZS coupling relays with plug-in relays

| Version   | Rated control supply voltage $U_s$ at 50/60 Hz AC  | Contacts, number of CO contacts | Width | SD   | Article No.         | Price per PU   | PU (UNIT, SET, M) | PS*     | PG      |     |
|---|--|---------------------------------|-------|------|---------------------|--|-------------------|---------|---------|-----|
|   | V  |                                 | mm    | d    |                     |  |                   |         |         |     |
| <b>Complete units, 8-pole, 5 mm pinning, RT series</b>  |  |                                 |       |      |                     |  |                   |         |         |     |
| <br>LZS:RT4A4T30   | <b>Complete units with standard plug-in base</b>   |                                 |       |      |                     | <b>Screw terminals</b>                |                   |         |         |     |
|   | For snap-on mounting onto TH 35 standard mounting rail   |                                 |       |      |                     |  |                   |         |         |     |
|   | Comprising:  |                                 |       |      |                     |  |                   |         |         |     |
|   | <ul style="list-style-type: none"> <li>• Coupling relays with plug-in relays</li> <li>• Standard plug-in base with screw terminals</li> <li>• LED module (24 V DC version: LED module with freewheel diode)</li> <li>• Fixing/ejection brackets</li> <li>• Labels</li> </ul>                           |                                 |       |      |                     |  |                   |         |         |     |
|   | 1 CO contact   | 24 DC                           | 1     | 15.5 | 2                   | <b>LZS:RT3A4L24</b>  |                   | 1       | 5 units | 41H |
|   |  | 24 AC                           |       |      | 2                   | <b>LZS:RT3A4R24</b>  |                   | 1       | 5 units | 41H |
|   |  | 115 AC                          |       |      | 2                   | <b>LZS:RT3A4S15</b>  |                   | 1       | 5 units | 41H |
|   |  | 230 AC                          |       |      | 2                   | <b>LZS:RT3A4T30</b>  |                   | 1       | 5 units | 41H |
|   | 2 CO contacts  | 24 DC                           | 2     | 15.5 | 2                   | <b>LZS:RT4A4L24</b>  |                   | 1       | 5 units | 41H |
|   |  | 24 AC                           |       |      | 2                   | <b>LZS:RT4A4R24</b>  |                   | 1       | 5 units | 41H |
|   | 115 AC   |                                 |       | 2    | <b>LZS:RT4A4S15</b> |  | 1                 | 5 units | 41H     |     |
|   | 230 AC   |                                 |       | 2    | <b>LZS:RT4A4T30</b> |  | 1                 | 5 units | 41H     |     |
| <br>LZS:RT4B4T30   | <b>Complete units with plug-in base</b>  |                                 |       |      |                     |  |                   |         |         |     |
|   | <b>With logical separation</b>   |                                 |       |      |                     |  |                   |         |         |     |
|   | For snap-on mounting onto TH 35 standard mounting rail   |                                 |       |      |                     |  |                   |         |         |     |
|   | Comprising:  |                                 |       |      |                     |  |                   |         |         |     |
|   | <ul style="list-style-type: none"> <li>• Coupling relays with plug-in relays</li> <li>• Plug-in base with logical separation and screw terminals</li> <li>• LED module (24 V DC version: LED module with freewheel diode)</li> <li>• Fixing/ejection brackets</li> <li>• Labels</li> </ul>             |                                 |       |      |                     |  |                   |         |         |     |
|   | 1 CO contact   | 24 DC                           | 1     | 15.5 | 2                   | <b>LZS:RT3B4L24</b>  |                   | 1       | 5 units | 41H |
|   |  | 24 AC                           |       |      | 2                   | <b>LZS:RT3B4R24</b>  |                   | 1       | 5 units | 41H |
|   |  | 115 AC                          |       |      | 2                   | <b>LZS:RT3B4S15</b>  |                   | 1       | 5 units | 41H |
|   |  | 230 AC                          |       |      | 2                   | <b>LZS:RT3B4T30</b>  |                   | 1       | 5 units | 41H |
|   | 2 CO contacts  | 24 DC                           | 2     | 15.5 | 2                   | <b>LZS:RT4B4L24</b>  |                   | 1       | 5 units | 41H |
|   | 24 AC  |                                 |       | 2    | <b>LZS:RT4B4R24</b> |  | 1                 | 5 units | 41H     |     |
|   | 115 AC   |                                 |       | 2    | <b>LZS:RT4B4S15</b> |  | 1                 | 5 units | 41H     |     |
|   | 230 AC   |                                 |       | 2    | <b>LZS:RT4B4T30</b> |  | 1                 | 5 units | 41H     |     |
| <br>LZS:RT3D4L24 | <b>Complete units with plug-in base</b>  |                                 |       |      |                     | <b>Plug-in terminals (push-in)</b>  |                   |         |         |     |
|   | <b>With logical separation</b>   |                                 |       |      |                     |  |                   |         |         |     |
|   | For snap-on mounting onto TH 35 standard mounting rail   |                                 |       |      |                     |  |                   |         |         |     |
|   | Comprising:  |                                 |       |      |                     |  |                   |         |         |     |
|   | <ul style="list-style-type: none"> <li>• Coupling relays with plug-in relays</li> <li>• Plug-in base with logical separation and plug-in terminals (push-in)</li> <li>• LED module (24 V DC version: LED module with freewheel diode)</li> <li>• Fixing/ejection brackets</li> <li>• Labels</li> </ul> |                                 |       |      |                     |  |                   |         |         |     |
|   | 1 CO contact   | 24 DC                           | 1     | 15.5 | 2                   | <b>LZS:RT3D4L24</b>  |                   | 1       | 5 units | 41H |
|   |  | 24 AC                           |       |      | 2                   | <b>LZS:RT3D4R24</b>  |                   | 1       | 5 units | 41H |
|   |  | 115 AC                          |       |      | 2                   | <b>LZS:RT3D4S15</b>  |                   | 1       | 5 units | 41H |
|   |  | 230 AC                          |       |      | 2                   | <b>LZS:RT3D4T30</b>  |                   | 1       | 5 units | 41H |
|   | 2 CO contacts  | 24 DC                           | 2     | 15.5 | 2                   | <b>LZS:RT4D4L24</b>  |                   | 1       | 5 units | 41H |
|   | 24 AC  |                                 |       | 2    | <b>LZS:RT4D4R24</b> |  | 1                 | 5 units | 41H     |     |
|   | 115 AC   |                                 |       | 2    | <b>LZS:RT4D4S15</b> |  | 1                 | 5 units | 41H     |     |
|   | 230 AC   |                                 |       | 2    | <b>LZS:RT4D4T30</b> |  | 1                 | 5 units | 41H     |     |

#### Note:



Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

# Switching devices – Contactors and contactor assemblies – Contactor relays and relays

## Coupling relays

### LZS coupling relays with plug-in relays

| Version  | Rated control supply voltage $U_s$ at 50/60 Hz AC             | Contacts, number of CO contacts | Width | SD                 | Article No.  | Price per PU | PU (UNIT, SET, M) | PS*                                  | PG                       |
|--|---|---------------------------------|-------|--------------------|--|--------------|-------------------|--------------------------------------|--------------------------|
|  | V   |                                 | mm    | d                  |  |              |                   |                                      |                          |
| <b>Individual modules for customer assembly, RT series</b>                                     |   |                                 |       |                    |  |              |                   |                                      |                          |
| <b>Print relays, 8-pole, 5 mm pinning</b>  |   |                                 |       |                    |  |              |                   |                                      |                          |
| <b>Print relays</b><br>With hard gold-plating  |   |                                 |       |                    |  |              |                   |                                      |                          |
| Version with 1 CO contact  |   |                                 |       |                    |  |              |                   |                                      |                          |
| LZX:RT314024   | 24 DC<br>230 AC   | 1                               | 12.7  | ▶<br>15            | LZX:RT315024<br>LZX:RT315730   |              | 1<br>1            | 1 unit<br>1 unit                     | 41H<br>41H               |
| <b>Print relays</b><br>Version with 1 CO contact   |   |                                 |       |                    |  |              |                   |                                      |                          |
|  | 24 DC<br>24 AC<br>115 AC<br>230 AC                            | 1                               | 12.7  | ▶<br>15<br>15<br>▶ | LZX:RT314024<br>LZX:RT314524<br>LZX:RT314615<br>LZX:RT314730   |              | 1<br>1<br>1<br>1  | 1 unit<br>1 unit<br>1 unit<br>1 unit | 41H<br>41H<br>41H<br>41H |
| Version with 2 CO contacts   |   |                                 |       |                    |  |              |                   |                                      |                          |
| LZS:RT78725  | 12 DC<br>24 DC  | 2                               | 12.7  | ▶<br>▶             | LZX:RT424012<br>LZX:RT424024   |              | 1<br>1            | 1 unit<br>1 unit                     | 41H<br>41H               |
|  | 24 AC<br>115 AC<br>230 AC                                     |                                 |       | ▶<br>▶<br>▶        | LZX:RT424524<br>LZX:RT424615<br>LZX:RT424730   |              | 1<br>1<br>1       | 1 unit<br>1 unit<br>1 unit           | 41H<br>41H<br>41H        |
| <b>Standard plug-in bases</b><br>For mounting onto TH 35 standard mounting rail                |   |                                 |       |                    | <b>Screw terminals</b>                |              |                   |                                      |                          |
|  | --  | --                              | 15.5  | ▶                  | LZS:RT78725  |              | 1                 | 1 unit                               | 41H                      |
| <b>Plug-in bases with logical separation</b><br>For mounting onto TH 35 standard mounting rail |   |                                 |       |                    |  |              |                   |                                      |                          |
| LZS:RT78726  | --  | --                              | 15.5  | ▶                  | LZS:RT78726  |              | 1                 | 1 unit                               | 41H                      |
| <b>Plug-in bases with logical separation</b><br>For mounting onto TH 35 standard mounting rail |   |                                 |       |                    | <b>Plug-in terminals (push-in)</b>  |              |                   |                                      |                          |
|  | --  | --                              | 15.5  | ▶                  | LZS:RT7872P  |              | 1                 | 1 unit                               | 41H                      |
| <b>LED modules</b>   |   |                                 |       |                    |  |              |                   |                                      |                          |
| • Red  |   |                                 |       |                    |  |              |                   |                                      |                          |
|  | With freewheel diode 24 DC                                    | --                              | 15.5  | ▶                  | LZS:PTML0024   |              | 1                 | 1 unit                               | 41H                      |
|  | Without freewheel diode 24 AC/DC                              | --                              |       | ▶                  | LZS:PTML0524   |              | 1                 | 1 unit                               | 41H                      |
|  | 110 ... 230 AC  | --                              |       | ▶                  | LZS:PTML0730   |              | 1                 | 1 unit                               | 41H                      |
| • Green  |   |                                 |       |                    |  |              |                   |                                      |                          |
|  | With freewheel diode 24 DC                                    | --                              | 15.5  | ▶                  | LZS:PTMG0024   |              | 1                 | 1 unit                               | 41H                      |
|  | Without freewheel diode 24 AC/DC                              | --                              |       | ▶                  | LZS:PTMG0524   |              | 1                 | 1 unit                               | 41H                      |
|  | 110 ... 230 AC  | --                              |       | ▶                  | LZS:PTMG0730   |              | 1                 | 1 unit                               | 41H                      |
| <b>Fixing/ejection brackets</b><br>for RT base   |   |                                 |       |                    |  |              |                   |                                      |                          |
|  | --  | --                              | 15.5  | ▶                  | LZS:RT17016  |              | 100               | 10 units                             | 41H                      |
| <b>Labels</b>  |   |                                 |       |                    |  |              |                   |                                      |                          |
|  | --  | --                              | 15.5  | ▶                  | LZS:RT17040  |              | 100               | 10 units                             | 41H                      |
| <b>RC elements</b>   |   |                                 |       |                    |  |              |                   |                                      |                          |
|  | 6 ... 60 AC   | --                              | 15.5  | ▶                  | LZS:PTMU0524   |              | 1                 | 1 unit                               | 41H                      |
|  | 110 ... 230 AC  | --                              |       | ▶                  | LZS:PTMU0730   |              | 1                 | 1 unit                               | 41H                      |
| <b>Freewheel diodes with connection to A1</b>  |   |                                 |       |                    |  |              |                   |                                      |                          |
|  | 6 ... 230 DC  | --                              | 15.5  | ▶                  | LZS:PTMT00A0   |              | 1                 | 1 unit                               | 41H                      |
| <b>Connecting combs for RT screw base</b>  |   |                                 |       |                    |  |              |                   |                                      |                          |
|  | 8-pole,<br>10 A current carrying<br>capacity, natural-colored | --                              | --    | ▶                  | LZS:RT170R8  |              | 1                 | 10 units                             | 41H                      |
| <b>Connecting brackets for push-in base</b>  |   |                                 |       |                    |  |              |                   |                                      |                          |
|  | 2-pole,<br>10 A current carrying<br>capacity, natural-colored | --                              | --    | ▶<br>5             | LZS:RT170P1  |              | 100               | 10 units                             | 41H                      |

**Note:**

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages, see page 15/1 or Catalog KT 10.1.