

## Relay Module - RIF-1-RSC-LDP-24DC/2X21AU - 2903346

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Pre-assembled relay module with screw connection, consisting of: relay base, multi-layer contact relay, plug-in display/interference suppression module, and retaining bracket. Contact type: 2 changeover contacts. Input voltage: 24 V DC

RoHS

### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 10 pc                                                                                                   |
| GTIN         | <br>4 046356 732796 |
| GTIN         | 4046356732796                                                                                           |

### Technical data

#### Note

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---------------------------------------------------------------------------|

#### Dimensions

|        |       |
|--------|-------|
| Width  | 16 mm |
| Height | 89 mm |
| Depth  | 75 mm |

#### Ambient conditions

|                                         |                  |
|-----------------------------------------|------------------|
| Ambient temperature (operation)         | -40 °C ... 70 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |

#### Coil side

|                                           |             |
|-------------------------------------------|-------------|
| Nominal input voltage $U_N$               | 24 V DC     |
| Input voltage range in reference to $U_N$ | see diagram |
| Typical input current at $U_N$            | 18 mA       |
| Typical response time                     | 8 ms        |
| Typical release time                      | 10 ms       |
| Coil voltage                              | 24 V DC     |

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## Technical data

### Coil side

|                                         |               |
|-----------------------------------------|---------------|
| Protective circuit                      | Damping diode |
| Operating voltage display               | Yellow LED    |
| Power dissipation for nominal condition | 0.43 W        |

### Contact side

|                                       |                        |
|---------------------------------------|------------------------|
| Contact type                          | 2 PDT                  |
| Type of switch contact                | Single contact         |
| Contact material                      | AgNi, hard gold-plated |
| Maximum switching voltage             | 30 V AC                |
|                                       | 36 V DC                |
| Minimum switching voltage             | 100 mV (at 10 mA)      |
| Min. switching current                | 1 mA (at 24 V)         |
| Maximum inrush current                | 50 mA                  |
| Limiting continuous current           | 50 mA                  |
| Interrupting rating (ohmic load) max. | 1.2 W (at 24 V DC)     |

### Contact side (with destroyed gold layer)

|                                       |                                                                  |
|---------------------------------------|------------------------------------------------------------------|
| Contact material                      | AgNi                                                             |
| Note                                  | the following values are applicable if a gold layer is destroyed |
| Maximum switching voltage             | 250 V AC/DC                                                      |
| Minimum switching voltage             | 5 V (at 10 mA)                                                   |
| Limiting continuous current           | 25 A (20 ms, N/O contact)                                        |
| Min. switching current                | 10 mA (At 5 V)                                                   |
| Interrupting rating (ohmic load) max. | 192 W (at 24 V DC)                                               |
|                                       | 96 W (at 48 V DC)                                                |
|                                       | 60 W (at 60 V DC)                                                |
|                                       | 44 W (at 110 V DC)                                               |
|                                       | 57 W (at 220 V DC)                                               |
|                                       | 2000 VA (for 250 V AC)                                           |
| Switching capacity                    | 2 A (at 24 V, DC13)                                              |
|                                       | 0.2 A (at 110 V, DC13)                                           |
|                                       | 0.2 A (at 250 V, DC13)                                           |
|                                       | 2 A (at 24 V, AC15)                                              |
|                                       | 2 A (at 120 V, AC15)                                             |
|                                       | 2 A (at 250 V, AC15)                                             |

### Connection data input side

|                                                                      |                     |
|----------------------------------------------------------------------|---------------------|
| Connection name                                                      | Coil side           |
| Connection method                                                    | Screw connection    |
| Stripping length                                                     | 8 mm                |
| Conductor cross section solid                                        | 0.5 mm² ... 4 mm²   |
| Conductor cross-section solid (2 conductors with same cross section) | 0.5 mm² ... 2.5 mm² |

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## Technical data

### Connection data input side

|                                                                         |                                                                                |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Conductor cross section flexible                                        | 0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>                                      |
|                                                                         | 0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup> (Ferrule with plastic sleeve)        |
| Conductor cross section flexible (2 conductors with same cross section) | 0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>                                    |
|                                                                         | 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (TWIN ferrule with plastic sleeve) |
| Conductor cross section AWG                                             | 20 ... 10 (solid)                                                              |
|                                                                         | 20 ... 12 (flexible)                                                           |
| Torque                                                                  | 0.5 Nm ... 0.6 Nm                                                              |

### Connection data output side

|                                                                         |                                                                                |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Connection name                                                         | Contact side                                                                   |
| Connection method                                                       | Screw connection                                                               |
| Stripping length                                                        | 8 mm                                                                           |
| Conductor cross section solid                                           | 0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>                                      |
| Conductor cross-section solid (2 conductors with same cross section)    | 0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>                                    |
| Conductor cross section flexible                                        | 0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>                                      |
|                                                                         | 0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup> (Ferrule with plastic sleeve)        |
| Conductor cross section flexible (2 conductors with same cross section) | 0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>                                    |
|                                                                         | 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (TWIN ferrule with plastic sleeve) |
| Conductor cross section AWG                                             | 20 ... 10 (solid)                                                              |
|                                                                         | 20 ... 12 (flexible)                                                           |
| Torque                                                                  | 0.5 Nm ... 0.6 Nm                                                              |

### General

|                                          |                                                                                                             |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Type of note                             | Notes on operation                                                                                          |
| Note                                     | FBS 2-6... plug-in bridge for the input side (A2) and FBS-2-8... plug-in bridge for the output side (11/21) |
| Test voltage relay winding/relay contact | 4 kV <sub>rms</sub> (50 Hz, 1 min.)                                                                         |
| Test voltage PDT/PDT                     | 2.5 kV <sub>rms</sub> (50 Hz, 1 min.)                                                                       |
| Operating mode                           | 100% operating factor                                                                                       |
| Degree of protection                     | IP20 (Relay base)                                                                                           |
|                                          | RT III (Relay)                                                                                              |
| Mechanical service life                  | approx. 3x 10 <sup>7</sup> cycles                                                                           |
| Mounting position                        | any                                                                                                         |
| Assembly instructions                    | In rows with zero spacing                                                                                   |

### Standards and Regulations

|                                        |                                                                                                 |
|----------------------------------------|-------------------------------------------------------------------------------------------------|
| Standards/regulations                  | DIN EN 50178                                                                                    |
| Rated surge voltage                    | 6 kV                                                                                            |
| Insulation                             | Safe isolation, basic insulation, and 4 kV rated surge voltage between all changeover contacts. |
| Degree of pollution                    | 2                                                                                               |
| Overvoltage category                   | III                                                                                             |
| Flammability rating according to UL 94 | V2                                                                                              |

# Relay Module - RIF-1-RSC-LDP-24DC/2X21AU - 2903346

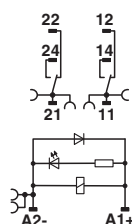
## Technical data

### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| China RoHS | Environmentally Friendly Use Period = 50                                                            |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

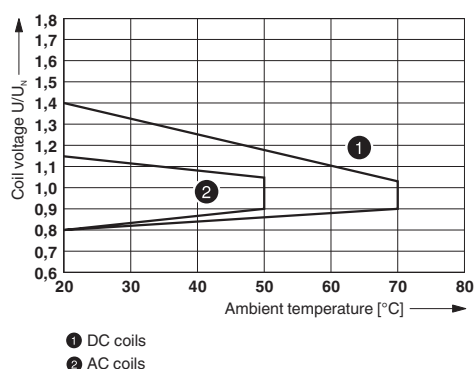
## Drawings

Circuit diagram



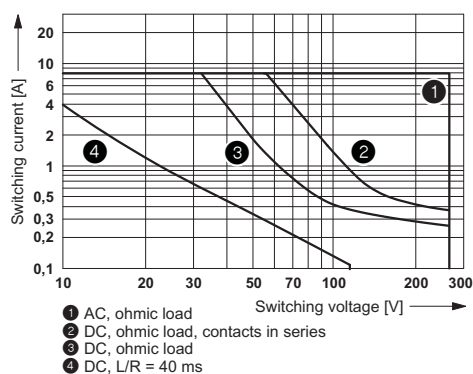
DC coils

Diagram



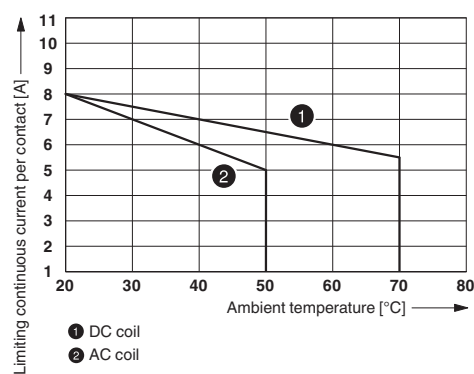
Operating voltage range

Diagram



Interrupting rating

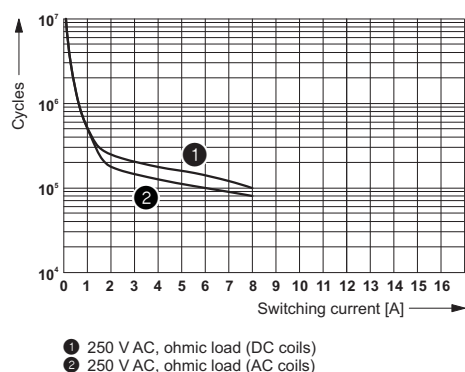
Diagram



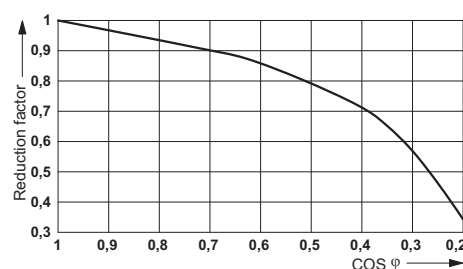
Contact derating

## Relay Module - RIF-1-RSC-LDP-24DC/2X21AU - 2903346

Diagram



Diagram



Electrical service life

Service life reduction factor

### Articles in set

Relay base - RIF-1-BSC/2X21 - 2900930



RIF-1... relay base, for miniature power relay with 1 or 2 changeover contacts or identical solid-state relays, screw connection, plug-in option for input/interference suppression modules, for mounting on NS 35/7,5

Single relay - REL-MR- 24DC/21-21AU - 2961215



Plug-in miniature power relay, with multi-layer gold contact, 2 PDTs, input voltage 24 V DC

Plug-in module - RIF-LDP-12-24 DC - 2900939



Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with freewheeling diode and yellow LED, polarity: A1+, A2-, input voltage: 12 ... 24 V DC  $\pm 20\%$

Retaining bracket - RIF-RH-1 - 2900953



Relay retaining bracket, with ejector function and holder for marking material, suitable for RIF-1 relay base, for 16 mm tall miniature power relay and solid-state relay

## Relay Module - RIF-1-RSC-LDP-24DC/2X21AU - 2903346

### Articles in set

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### Approvals

#### Approvals

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#### Approvals

DNV GL / EAC

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#### Ex Approvals

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### Approval details

|        |                                                                           |            |
|--------|---------------------------------------------------------------------------|------------|
| DNV GL | <a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a> | TAA000018V |
|--------|---------------------------------------------------------------------------|------------|

|     |                                                                                     |                          |
|-----|-------------------------------------------------------------------------------------|--------------------------|
| EAC |  | RU C-<br>DE.A*30.B.01082 |
|-----|-------------------------------------------------------------------------------------|--------------------------|

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