

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

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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: 120 V AC

### Product Description

The pluggable electromechanical and solid-state relays in the RIFLINE complete product range and the base are recognized and approved in accordance with UL 508.

The relevant approvals can be called up at the individual components in question.



### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 10 pc                                                                                                   |
| GTIN         | <br>4 046356 732109 |
| GTIN         | 4046356732109                                                                                           |

### Technical data

#### Note

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

#### Dimensions

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

#### Ambient conditions

|                                         |                   |
|-----------------------------------------|-------------------|
| Ambient temperature (operation)         | -40 °C ... 50 °C  |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C  |
| Degree of protection                    | IP20 (Relay base) |
|                                         | RT III (Relay)    |

# Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

## Technical data

### Coil side

|                                           |                |
|-------------------------------------------|----------------|
| Nominal input voltage $U_N$               | 120 V AC       |
| Input voltage range in reference to $U_N$ | see diagram    |
| Mains frequency                           | 50/60 Hz       |
| Typical input current at $U_N$            | 8 mA           |
| Typical response time                     | 3 ms ... 12 ms |
| Typical release time range                | 3 ms ... 20 ms |
| Coil voltage                              | 120 V AC       |
| Protective circuit                        | Varistor       |
| Operating voltage display                 | Yellow LED     |

### 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           | 12 A (20 ms, N/O contacts)                                       |
| 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)                                             |

# Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

## Technical data

### General

|                                          |                                       |
|------------------------------------------|---------------------------------------|
| 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                 |
| Flammability rating according to UL 94   | V2 (Housing)                          |
| Mechanical service life                  | approx. 10 <sup>7</sup> cycles        |
| Service life, electrical                 | see diagram                           |
| Mounting position                        | any                                   |
| Assembly instructions                    | In rows with zero spacing             |

### Connection data

|                                                                         |                                                                                |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Connection name                                                         | Coil 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                                                              |

### Connection data 2

|                                                                         |                                                                                |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 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                                                              |

### 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. |

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

### Technical data

#### Standards and Regulations

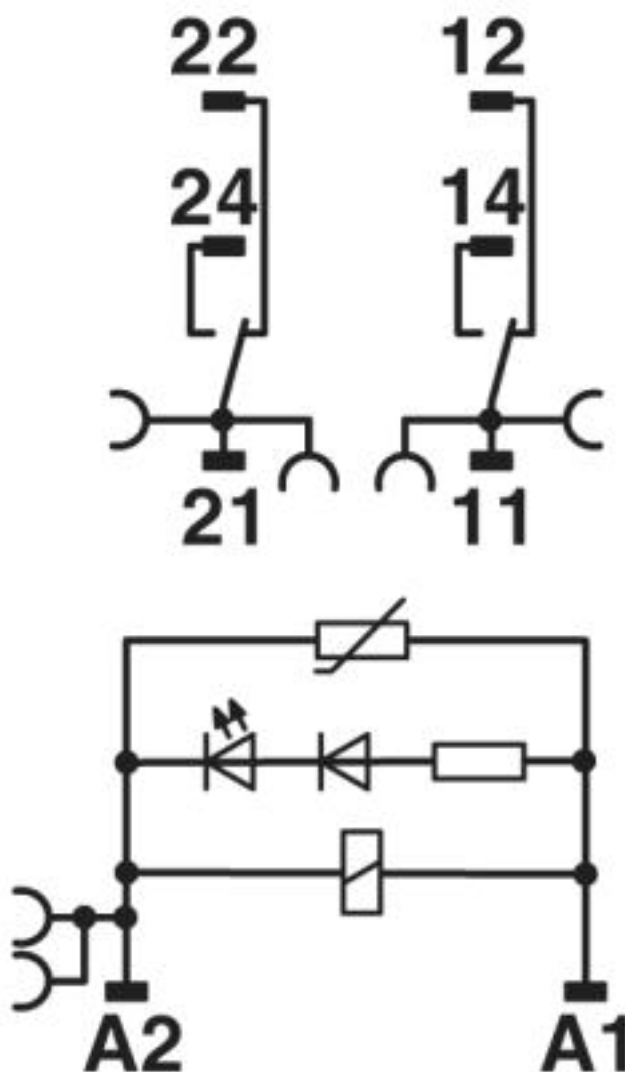
|                      |     |
|----------------------|-----|
| Pollution degree     | 2   |
| Overvoltage category | III |

#### Environmental Product Compliance

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

### Drawings

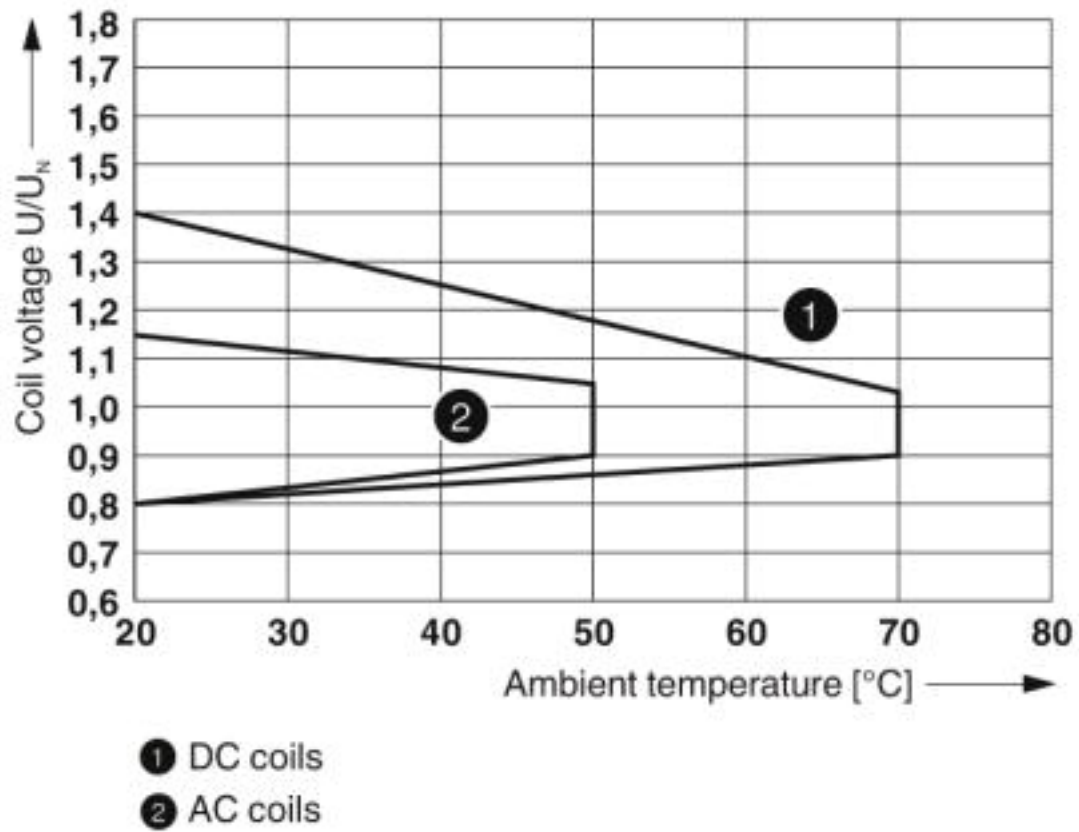
Circuit diagram



AC coils

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

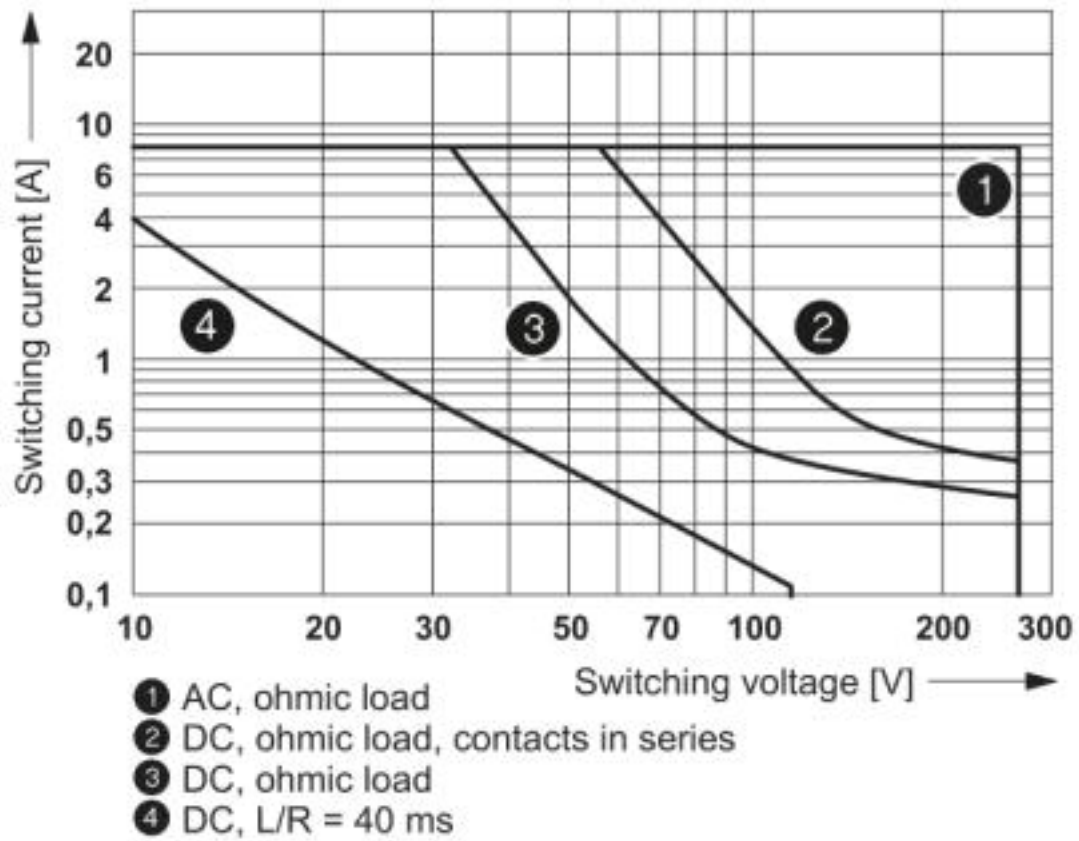
Diagram



Operating voltage range

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

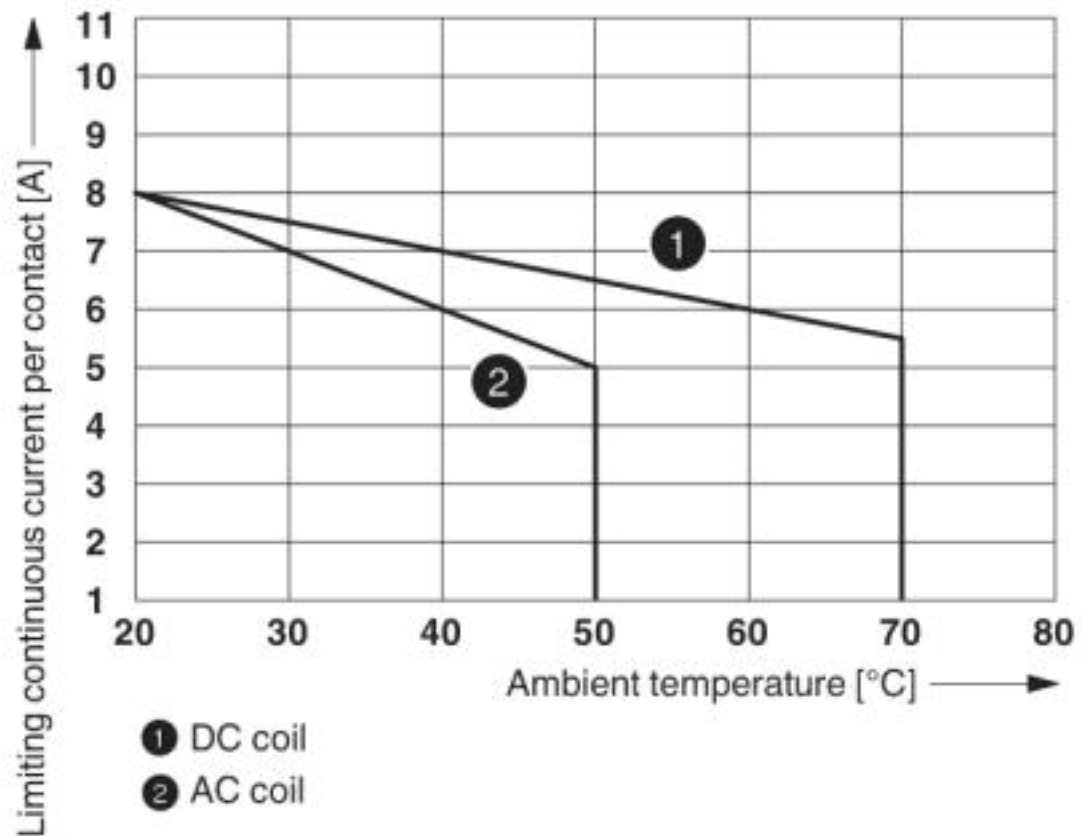
Diagram



Interrupting rating

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

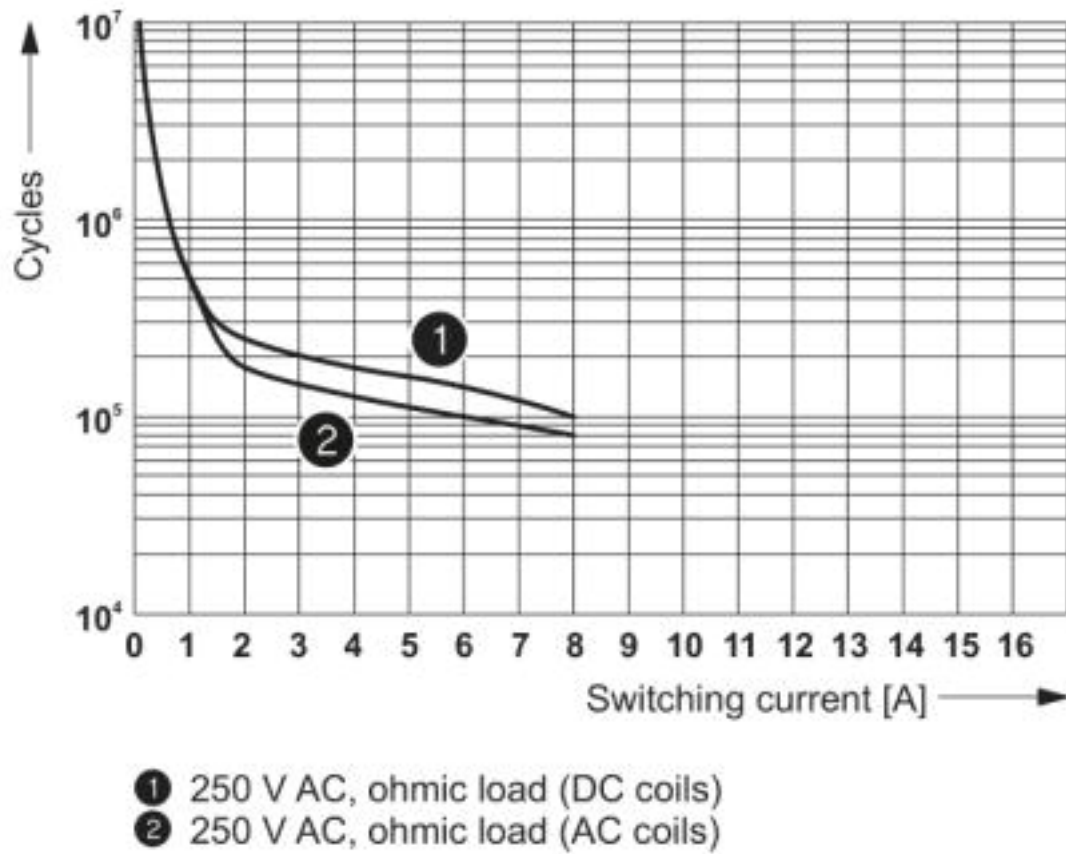
Diagram



Contact derating

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

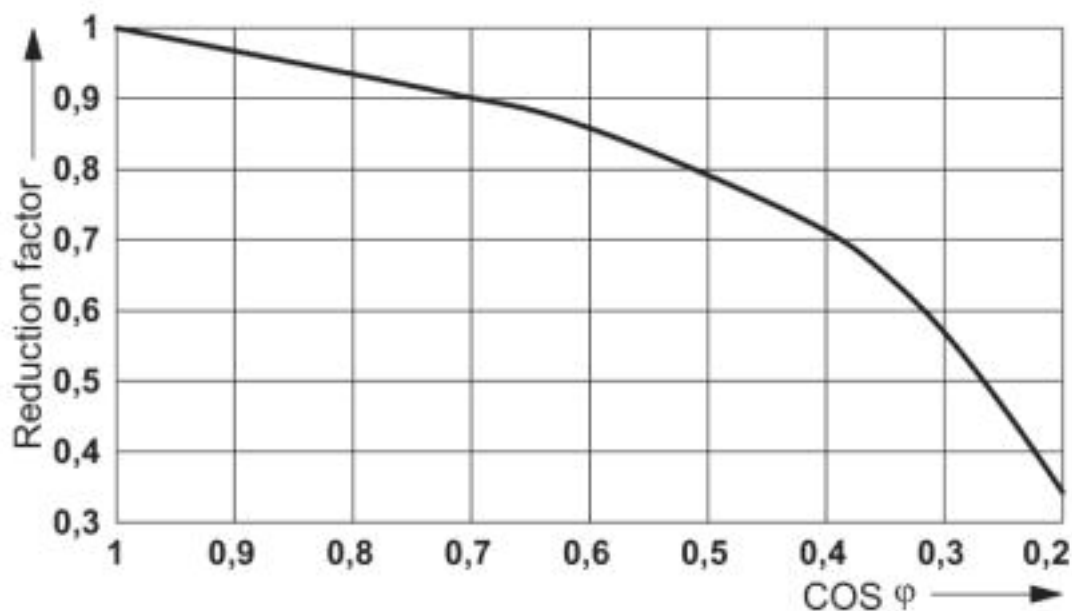
Diagram



Electrical service life

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

Diagram



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-120AC/21-21AU - 2961477



Plug-in miniature power relay, with multi-layer gold contact, 2 PDTs, input voltage 120 V AC

Plug-in module - RIF-LV-120-230 AC/110 DC - 2900944



Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with varistor and yellow LED, input voltage: 120 ... 230 V AC/110 V DC  $\pm 20\%$

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

### Articles in set

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

### Classifications

#### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27371601 |
| eCl@ss 4.0    | 27371100 |
| eCl@ss 4.1    | 27371100 |
| eCl@ss 5.0    | 27371600 |
| eCl@ss 5.1    | 27371600 |
| eCl@ss 6.0    | 27371600 |
| eCl@ss 7.0    | 27371601 |
| eCl@ss 8.0    | 27371601 |
| eCl@ss 9.0    | 27371601 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001437 |
| ETIM 3.0 | EC001437 |
| ETIM 4.0 | EC001437 |
| ETIM 5.0 | EC001437 |
| ETIM 6.0 | EC001437 |
| ETIM 7.0 | EC001437 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211917 |
| UNSPSC 7.0901 | 39121516 |
| UNSPSC 11     | 39121516 |
| UNSPSC 12.01  | 39121516 |
| UNSPSC 13.2   | 39122334 |
| UNSPSC 18.0   | 39122334 |
| UNSPSC 19.0   | 39122334 |
| UNSPSC 20.0   | 39122334 |
| UNSPSC 21.0   | 39122334 |

### Approvals

#### Approvals

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

### Approvals

#### Approvals

DNV GL / EAC / EAC

#### Ex Approvals

### Approval details

|        |                                                                                     |                                                                                   |                         |
|--------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------|
| DNV GL |    | <a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a> | TAA000018V              |
| EAC    |    |                                                                                   | TR_TS_D_00573_c         |
| EAC    |  |                                                                                   | RU*C-<br>DE.*08.B.00010 |

### Accessories

#### Accessories

##### End block

End clamp - CLIPFIX 35 - 3022218



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, width: 9.5 mm, color: gray

##### Insulating sleeve

Insulating sleeve - MPS-IH WH - 0201663

Insulating sleeve, color: white



## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

### Accessories

Insulating sleeve - MPS-IH RD - 0201676

Insulating sleeve, color: red



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Insulating sleeve - MPS-IH BU - 0201689

Insulating sleeve, color: blue



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Insulating sleeve - MPS-IH YE - 0201692

Insulating sleeve, color: yellow



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Insulating sleeve - MPS-IH GN - 0201702

Insulating sleeve, color: green



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Insulating sleeve - MPS-IH GY - 0201728

Insulating sleeve, color: gray



## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

### Accessories

Insulating sleeve - MPS-IH BK - 0201731

Insulating sleeve, color: black



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### Jumper

Plug-in bridge - FBS 2-6 - 3030336



Plug-in bridge, pitch: 6.2 mm, width: 10.7 mm, number of positions: 2, color: red

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Plug-in bridge - FBS 2-6 BU - 3036932



Plug-in bridge, pitch: 6.2 mm, width: 10.7 mm, number of positions: 2, color: blue

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Plug-in bridge - FBS 2-6 GY - 3032237



Plug-in bridge, pitch: 6.2 mm, width: 10.7 mm, number of positions: 2, color: gray

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Plug-in bridge - FBS 2-8 - 3030284



Plug-in bridge, pitch: 8.2 mm, width: 14.7 mm, number of positions: 2, color: red

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

### Accessories

Plug-in bridge - FBS 2-8 BU - 3032567



Plug-in bridge, pitch: 8.2 mm, width: 14.7 mm, number of positions: 2, color: blue

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Plug-in bridge - FBS 2-8 GY 7042 - 3032541



Bridge for potential distribution

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### Marker carriers

Marker carriers - STP 5-2 - 0800967



Double marker carrier, snaps onto the double-level spring-cage terminal block STTB 2,5, STTB 4, PTTB 2,5, PTTB 4 can be marked with UC-TM 5, ZB 5 or UC-TMF 5, ZBF 5

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### Terminal marking

Zack marker strip - ZB 5 :UNBEDRUCKT - 1050004



Zack marker strip, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into tall marker groove, for terminal block width: 5.2 mm, lettering field size: 5.1 x 10.5 mm, Number of individual labels: 10

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Zack marker strip - ZB 15:UNBEDRUCKT - 0811972



Zack marker strip, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into tall marker groove, for terminal block width: 15.2 mm, lettering field size: 10.5 x 15.1 mm, Number of individual labels: 5

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

### Accessories

#### Marker for terminal blocks - UC-TM 16 - 0819217



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into tall marker groove, for terminal block width: 16 mm, lettering field size: 15.45 x 10.5 mm, Number of individual labels: 32

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#### Marker for terminal blocks - UC-TMF 16 - 0819262



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 16 mm, lettering field size: 15.45 x 5.1 mm, Number of individual labels: 32

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#### Test plug terminal block

#### Test plugs - MPS-MT - 0201744



Test plugs, with solder connection up to 1 mm<sup>2</sup> conductor cross section, color: gray

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### Spare parts

#### 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

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#### Single relay - REL-MR-120AC/21-21AU - 2961477



Plug-in miniature power relay, with multi-layer gold contact, 2 PDTs, input voltage 120 V AC

## Relay Module - RIF-1-RSC-LV-120AC/2X21AU - 2903344

### Accessories

Plug-in module - RIF-LV-120-230 AC/110 DC - 2900944



Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with varistor and yellow LED, input voltage: 120 ... 230 V AC/110 V DC  $\pm 20\%$

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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

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PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>