

# Relay Module - RIF-1-RSC-LV-120AC/1X21AU - 2903352

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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: 1 changeover contact. Input voltage: 120 V AC



## Key Commercial Data

|                                      |               |
|--------------------------------------|---------------|
| Packing unit                         | 10 pc         |
| GTIN                                 |               |
| GTIN                                 | 4046356732086 |
| Weight per Piece (excluding packing) | 70.580 g      |
| Custom tariff number                 | 85364900      |
| Country of origin                    | China         |

## 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 ... 50 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |

### 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    |

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## Technical data

### Coil side

|                                |                |
|--------------------------------|----------------|
| 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                          | 1 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)     |
| Switching capacity                    | 2 A (at 24 V, AC15)    |

### 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             | 12 V (at 10 mA)  |
| Limiting continuous current           | 25 A (20 ms, N/O contact)  |
| Min. switching current                | 10 mA (at 12 V)  |
| Interrupting rating (ohmic load) max. | 240 W (at 24 V DC)   |
|                                       | 58 W (at 48 V DC)  |
|                                       | 48 W (at 60 V DC)  |
|                                       | 50 W (at 110 V DC)   |
|                                       | 80 W (at 220 V DC)   |
|                                       | 2500 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 |
|-----------------|-----------|

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## Technical data

### Connection data input 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 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.)   |
| Operating mode                           | 100% operating factor   |
| Degree of protection                     | IP20 (Relay base)   |
|  | RT II (Relay)   |
| Mechanical service life                  | approx. 10 <sup>7</sup> cycles  |
| Mounting position                        | any   |
| Assembly instructions                    | In rows with zero spacing   |

### Standards and Regulations

|                          |              |
|--------------------------|--------------|
| Standards/regulations    | DIN EN 50178 |
| Rated insulation voltage | 250 V AC     |
| Rated surge voltage      | 6 kV         |

# Relay Module - RIF-1-RSC-LV-120AC/1X21AU - 2903352

## Technical data

### Standards and Regulations

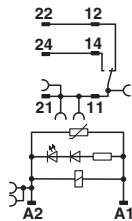
|  |                |
|--|----------------|
| Insulation                             | safe isolation |
| Degree of pollution                    | 2              |
| Overvoltage category                   | III            |
| Flammability rating according to UL 94 | V2             |

### Environmental Product Compliance

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

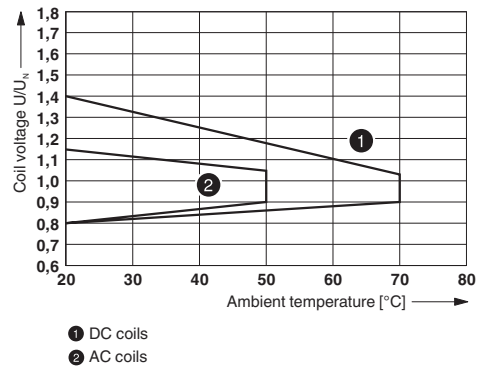
## Drawings

Circuit diagram



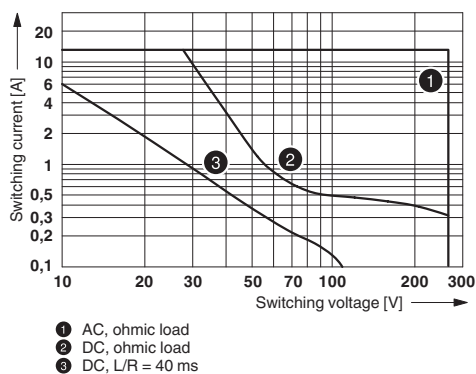
AC coils

Diagram



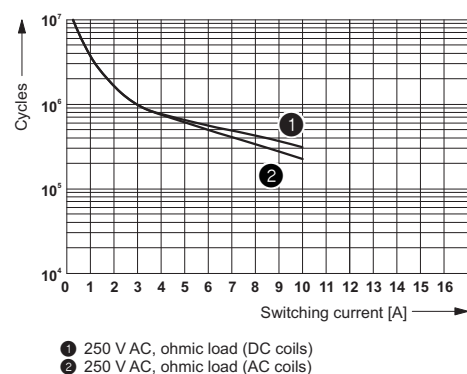
Operating voltage range

Diagram



Interrupting rating

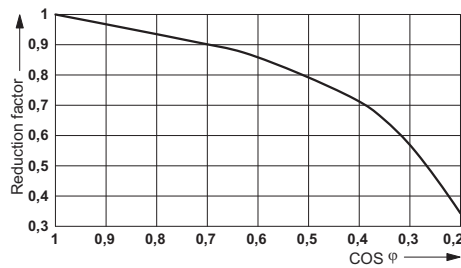
Diagram



Electrical service life

## Relay Module - RIF-1-RSC-LV-120AC/1X21AU - 2903352

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/21HC AU - 2961516



Plug-in miniature power relay, with multi-layer gold contact for high continuous currents, 1 PDT, 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  $\pm 20\%$

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-LV-120AC/1X21AU - 2903352

## Articles in set

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### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 5.0 | 27371601 |
| 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 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211917 |
| UNSPSC 7.0901 | 39121516 |
| UNSPSC 11     | 39121516 |
| UNSPSC 12.01  | 39121516 |
| UNSPSC 13.2   | 39122334 |

### 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 |
|--------|--|---|------------|

# Relay Module - RIF-1-RSC-LV-120AC/1X21AU - 2903352

## Approvals

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

## 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



Insulating sleeve - MPS-IH RD - 0201676

Insulating sleeve, color: red



Insulating sleeve - MPS-IH BU - 0201689

Insulating sleeve, color: blue



## Relay Module - RIF-1-RSC-LV-120AC/1X21AU - 2903352

### Accessories

Insulating sleeve - MPS-IH YE - 0201692

Insulating sleeve, color: yellow



Insulating sleeve - MPS-IH GN - 0201702

Insulating sleeve, color: green



Insulating sleeve - MPS-IH GY - 0201728

Insulating sleeve, color: gray



Insulating sleeve - MPS-IH BK - 0201731

Insulating sleeve, color: black



### 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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## Relay Module - RIF-1-RSC-LV-120AC/1X21AU - 2903352

### Accessories

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

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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

## Relay Module - RIF-1-RSC-LV-120AC/1X21AU - 2903352

### Accessories

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

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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

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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

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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

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### Test plug terminal block

## Relay Module - RIF-1-RSC-LV-120AC/1X21AU - 2903352

### Accessories

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/21HC AU - 2961516



Plug-in miniature power relay, with multi-layer gold contact for high continuous currents, 1 PDT, input voltage 120 V AC

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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 ±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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