

## Single relay - REL-MR- 24AC/21-21AU - 2961464

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

### Your advantages

- ✓ RT III-proof (wash-proof)



COMPLIANT

### Key Commercial Data

|                        |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit           | 10 pc                                                                                                   |
| Minimum order quantity | 10 pc                                                                                                   |
| GTIN                   | <br>4 017918 937874 |
| GTIN                   | 4017918937874                                                                                           |

### Technical data

#### Dimensions

|        |         |
|--------|---------|
| Width  | 12.7 mm |
| Height | 29 mm   |
| Depth  | 15.7 mm |

#### Ambient conditions

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

#### Coil side

|                                |                                              |
|--------------------------------|----------------------------------------------|
| Nominal input voltage $U_N$    | 24 V AC                                      |
| Mains frequency                | 50/60 Hz                                     |
| Typical input current at $U_N$ | 32 mA (at 50 Hz)                             |
|                                | 24 mA (At 60 Hz)                             |
| Typical response time          | 3 ms ... 12 ms (depending on phase relation) |

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## Technical data

### Coil side

|                                         |                                             |
|-----------------------------------------|---------------------------------------------|
| Typical release time range              | 2 ms ... 9 ms (depending on phase relation) |
| Coil resistance                         | 350 $\Omega$ $\pm$ 10 % (at 20 °C)          |
| Power dissipation for nominal condition | 0.77 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           | 8 A                                                              |
| Maximum inrush current                | 50 A (20 ms)                                                     |
| Min. switching current                | 10 mA (At 5 V)                                                   |
| Interrupting rating (ohmic load) max. | 190 W (at 24 V DC)                                               |
|                                       | 85 W (at 48 V DC)                                                |
|                                       | 60 W (at 60 V DC)                                                |
|                                       | 44 W (at 110 V DC)                                               |
|                                       | 60 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)                                             |

### General

|                                          |                           |
|------------------------------------------|---------------------------|
| Test voltage relay winding/relay contact | 5 kV AC (50 Hz, 1 min.)   |
| Test voltage relay contact/relay contact | 2.5 kV AC (50 Hz, 1 min.) |
| Operating mode                           | 100% operating factor     |
| Mechanical service life                  | 1x 10 <sup>7</sup> cycles |

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### Technical data

#### General

|                          |                                                                        |
|--------------------------|------------------------------------------------------------------------|
| Service life, electrical | see diagram                                                            |
| Mounting position        | any                                                                    |
| Assembly instructions    | Can be aligned without spacing ( $> 70\text{ °C} \geq 2.5\text{ mm}$ ) |

#### Connection data

|                   |                   |
|-------------------|-------------------|
| Connection method | Solder connection |
|-------------------|-------------------|

#### Standards and Regulations

|                                  |                  |
|----------------------------------|------------------|
| Connection in acc. with standard | CUL              |
| Standards/regulations            | IEC 60664        |
|                                  | EN 50178         |
|                                  | EN 61810-1       |
| Insulation                       | Basic insulation |
| Pollution degree                 | 3                |
| Overvoltage category             | III              |

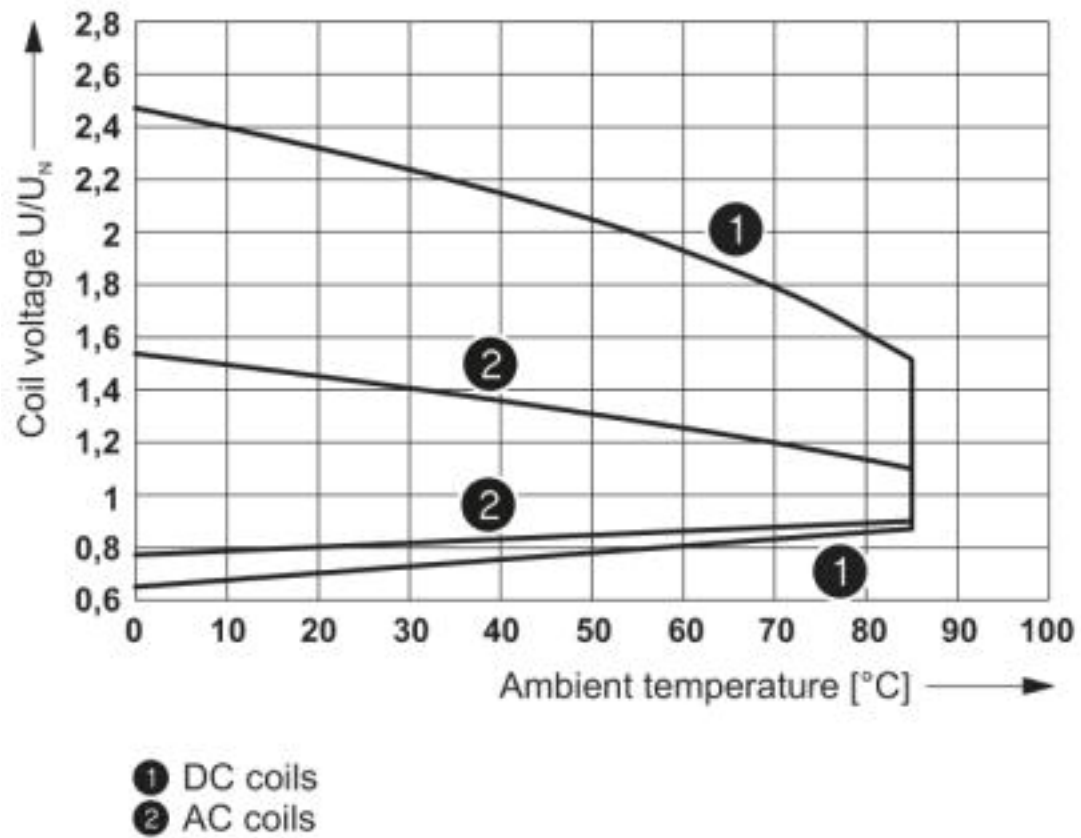
#### Environmental Product Compliance

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

### Drawings

## Single relay - REL-MR- 24AC/21-21AU - 2961464

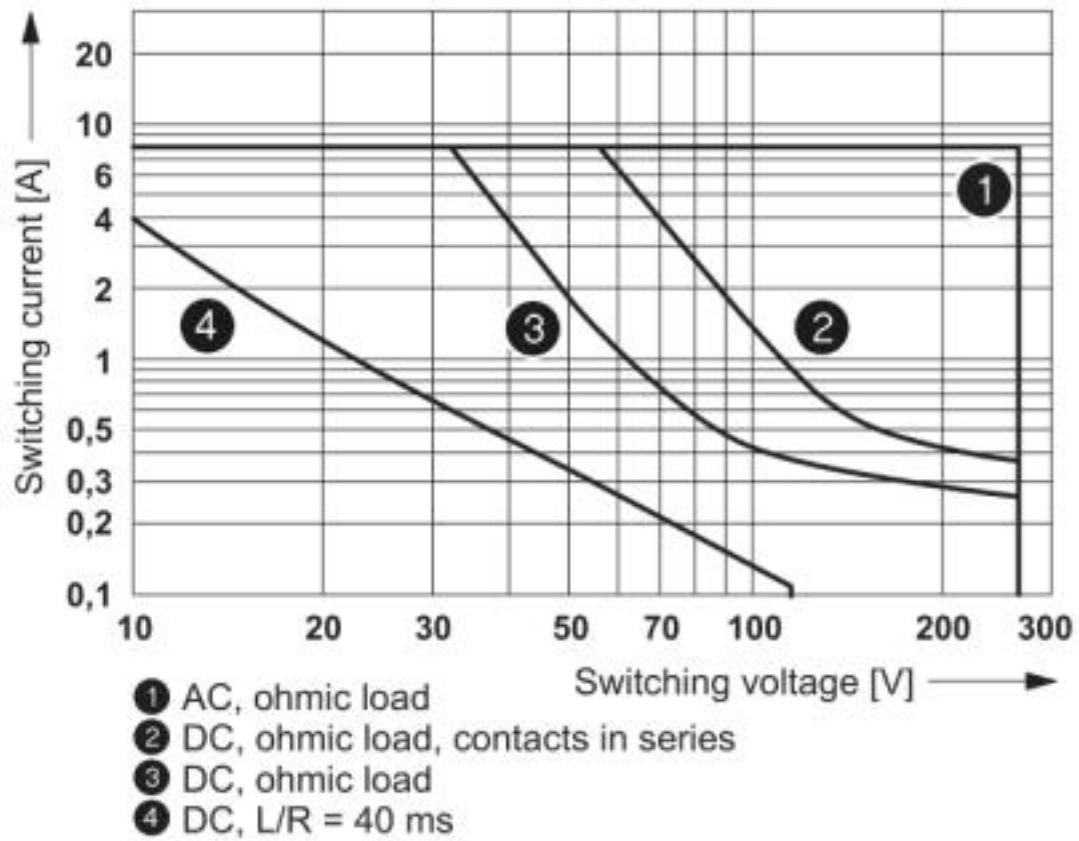
Diagram



Operating voltage range

## Single relay - REL-MR- 24AC/21-21AU - 2961464

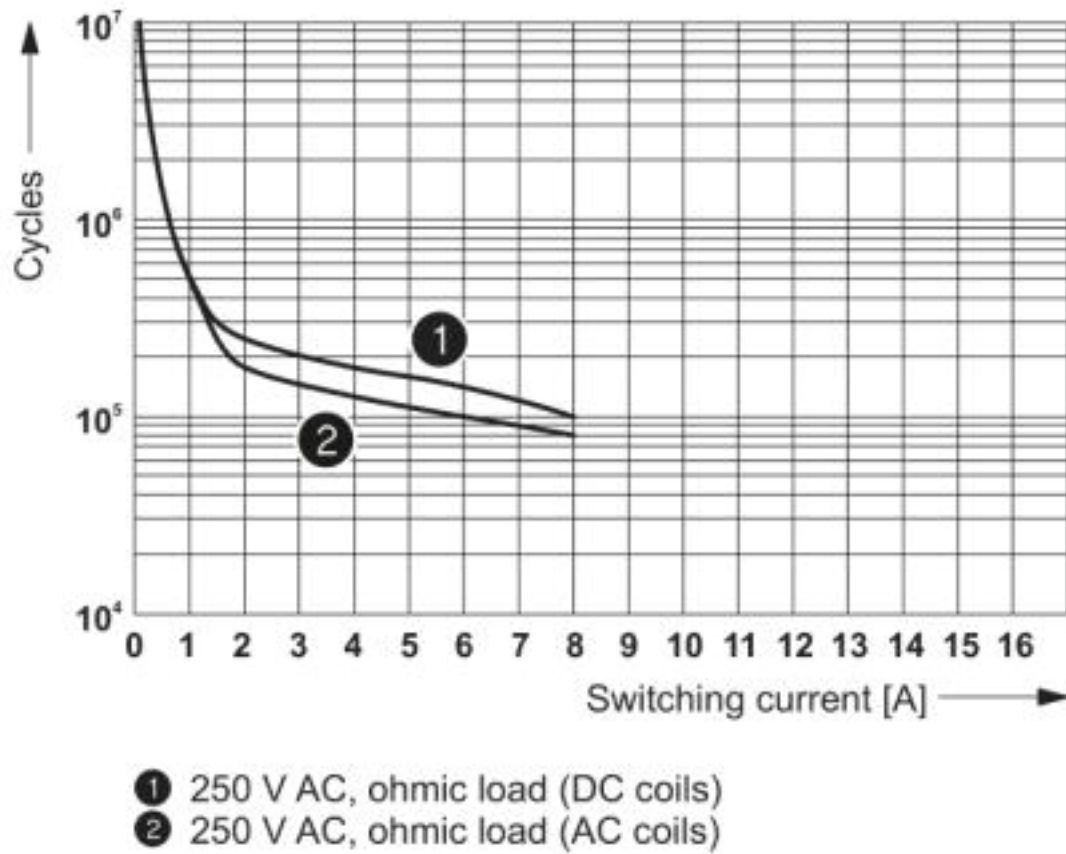
Diagram



Interrupting rating

## Single relay - REL-MR- 24AC/21-21AU - 2961464

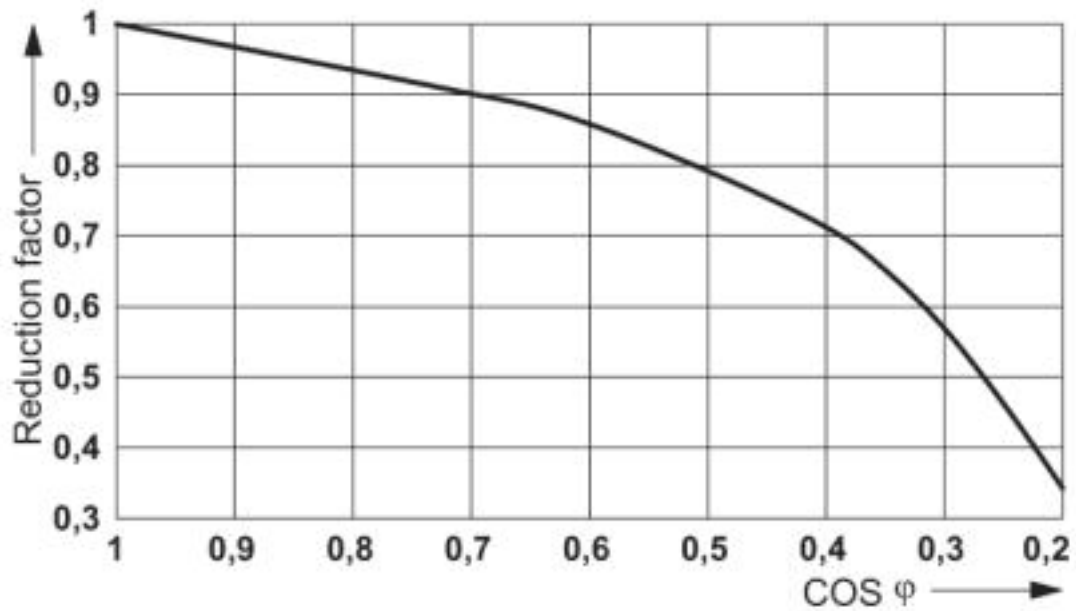
Diagram



Electrical service life

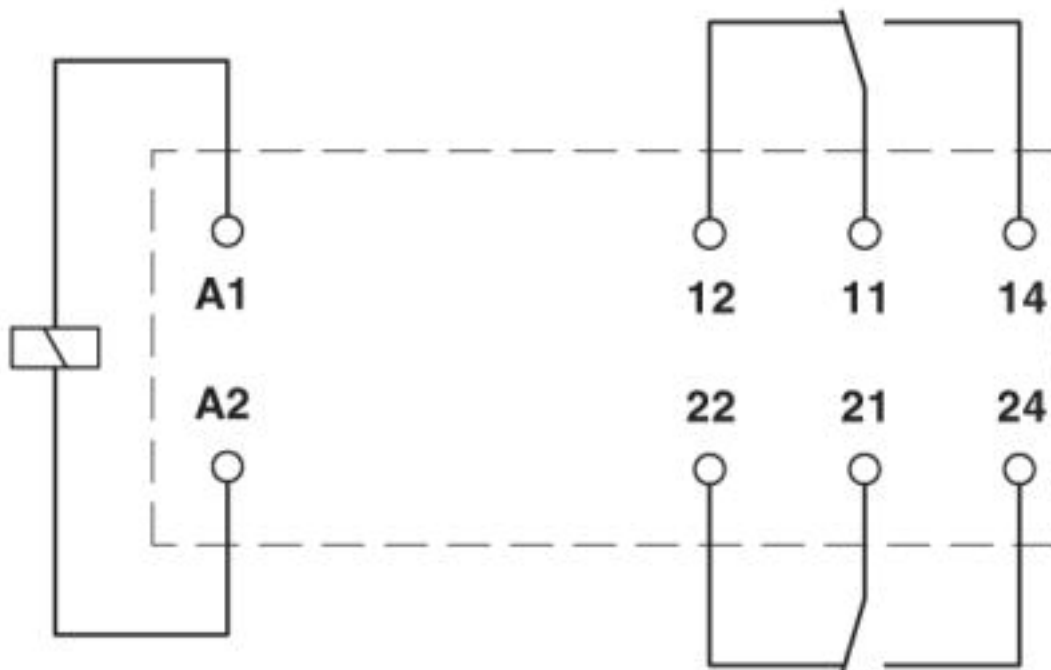
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Diagram



Service life reduction factor with various cos phi

Circuit diagram



## Single relay - REL-MR- 24AC/21-21AU - 2961464

### 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   | 30211916 |
| UNSPSC 7.0901 | 39121515 |
| UNSPSC 11     | 39121515 |
| UNSPSC 12.01  | 39121515 |
| UNSPSC 13.2   | 39122334 |
| UNSPSC 18.0   | 39122334 |
| UNSPSC 19.0   | 39122334 |
| UNSPSC 20.0   | 39122334 |
| UNSPSC 21.0   | 39122334 |

### Approvals

#### Approvals

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#### Approvals

EAC / UL Recognized / UL Recognized / cUL Recognized / cUL Recognized / VDE Zeichengenehmigung / VDE Zeichengenehmigung

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#### Ex Approvals

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#### Approval details

## Single relay - REL-MR- 24AC/21-21AU - 2961464

### Approvals

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

|               |                                                                                   |                                                                                                                                                                     |
|---------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UL Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> FILE E 228652 |
|---------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|               |                                                                                   |                                                                                                                                                                     |
|---------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UL Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> FILE E 172140 |
|---------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|----------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cUL Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> FILE E 228652 |
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|----------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cUL Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> FILE E 172140 |
|----------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VDE Zeichengenehmigung |  | <a href="http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx">http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx</a> 40007758 |
|------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VDE Zeichengenehmigung |  | <a href="http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx">http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx</a> 40048281 |
|------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Accessories

#### Additional products

Relay base - PR1-BSC2/2X21 - 2833518



Relay base PR1..., for miniature power relay or miniature switching relay with 1 or 2 PDT or solid-state relay of same construction, 2/2 level design, screw connections, connection facility for input/interference suppression modules

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### Accessories

Relay base - PR1-BSC3/2X21 - 2833521



Relay base PR1..., for miniature power relay or miniature switching relay with 1 or 2 PDT or solid-state relay of same construction, 1/3 level design, screw connections, connection facility for input/interference suppression modules

Relay base - PR1-BSP3/2X21 - 2833534



Relay base PR1..., for miniature power relay or miniature switching relay with 1 or 2 PDT or solid-state relay of same construction, 1/3 level design, spring-cage connections, connection facility for input/interference suppression modules

Relay base - RIF-1-BPT/2X21 - 2900931



RIF-1... relay base, for miniature power relay with 1 or 2 PDTs or solid-state relays of the same design, push-in connection, plug-in option for input/suppressor modules, for mounting on NS 35/7,5

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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