

# Single relay - REL-MR-230AC/21-21 - 2961451

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Plug-in miniature power relay, with power contact, 2 PDTs, input voltage 230 V AC

## Your advantages

- RT III-proof (wash-proof)
- Switching current of up to 8 A



## Key Commercial Data

|                        |               |
|------------------------|---------------|
| Packing unit           | 10 pc         |
| Minimum order quantity | 10 pc         |
| GTIN                   |               |
| GTIN                   | 4017918937867 |

## 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 $U_N$    | 230 V AC          |
| Mains frequency                | 50/60 Hz          |
| Typical input current at $U_N$ | 3 mA (at 50 Hz)   |
|                                | 2.5 mA (At 60 Hz) |

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## Technical data

### Coil side

|   |  |
|---|--|
| Typical response time                   | 3 ms ... 12 ms (depending on phase relation) |
| Typical release time range              | 2 ms ... 9 ms (depending on phase relation)  |
| Coil resistance                         | 32500 Ω ±15 % (at 20 °C)                     |
| Power dissipation for nominal condition | 0.4 W  |

### Contact side

|                                       |                        |
|---------------------------------------|------------------------|
| Contact type                          | 2 PDT                  |
| Type of switch contact                | Single contact         |
| Contact material                      | AgNi                   |
| Maximum switching voltage             | 250 V AC/DC            |
| Minimum switching voltage             | 5 V (at 10 mA)         |
| Min. switching current                | 10 mA (At 5 V)         |
| Maximum inrush current                | 12 A (20 ms)           |
| Limiting continuous current           | 8 A                    |
| 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 250 V, DC13) |
|                                       | 3 A (at 24 V, AC15)    |
|                                       | 3 A (at 120 V, AC15)   |
|                                       | 3 A (at 250 V, AC15)   |
| Motor load according to UL 508        | 1/4 HP, 120 V AC       |
|                                       | 1/2 HP, 240 V AC       |

### 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                         |
| Service life, electrical                 | see diagram                                       |
| Mounting position                        | any   |
| Assembly instructions                    | Can be aligned without spacing (> 70 °C ≥ 2.5 mm) |

### Connection data

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

### Standards and Regulations

|                                  |           |
|----------------------------------|-----------|
| Connection in acc. with standard | CUL       |
| Standards/regulations            | IEC 60664 |

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## Technical data

### Standards and Regulations

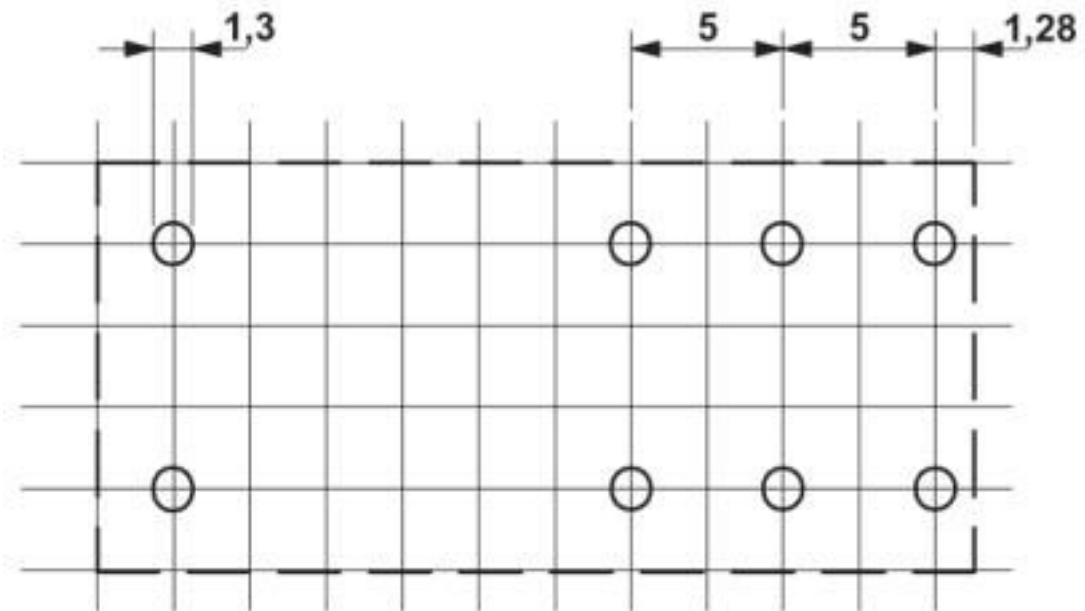
|                      |            |
|----------------------|------------|
|                      | EN 50178   |
|                      | EN 61810-1 |
| Pollution degree     | 3          |
| Overvoltage category | III        |

### Environmental Product Compliance

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

## Drawings

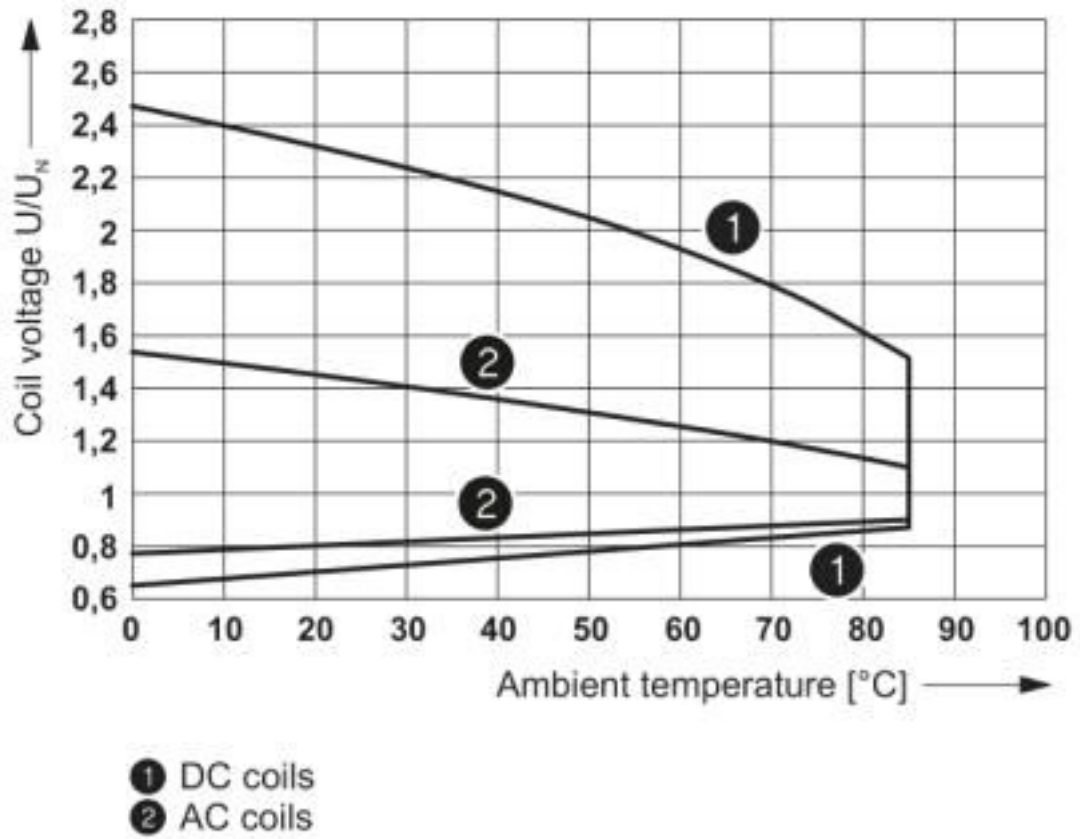
Drilling diagram



Basic pitch 2.5 mm

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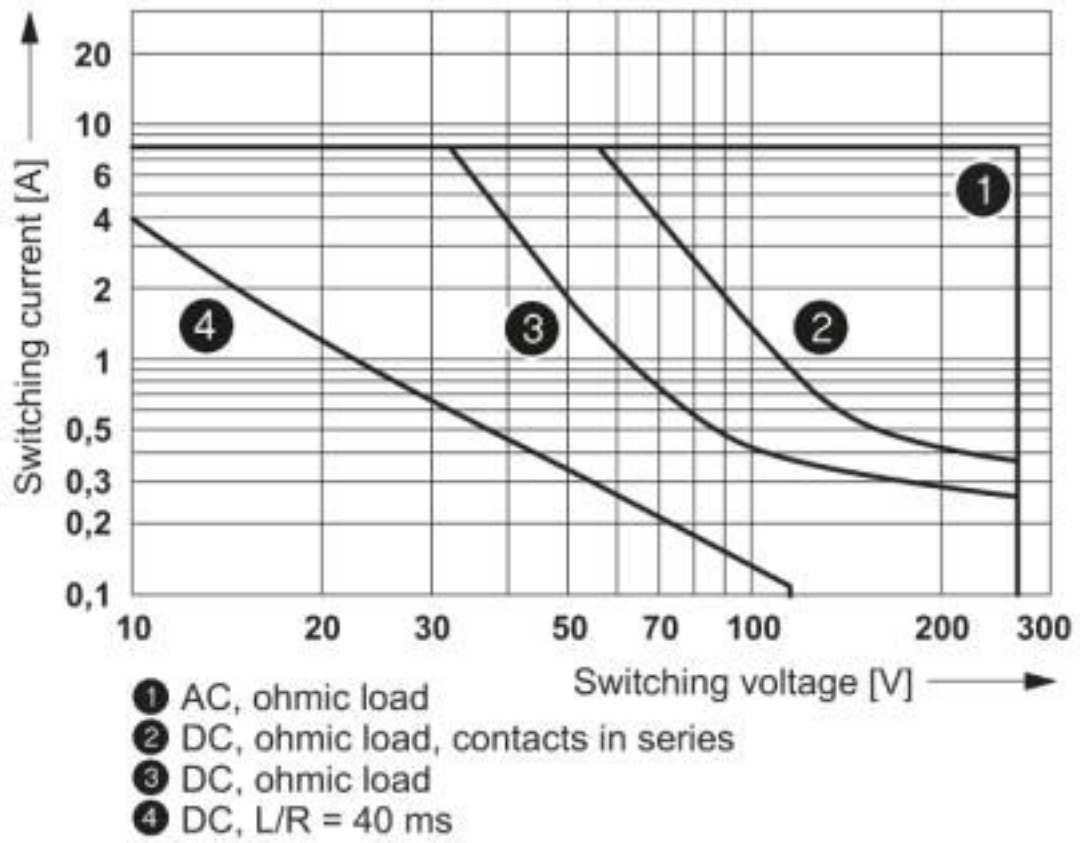
Diagram



Operating voltage range

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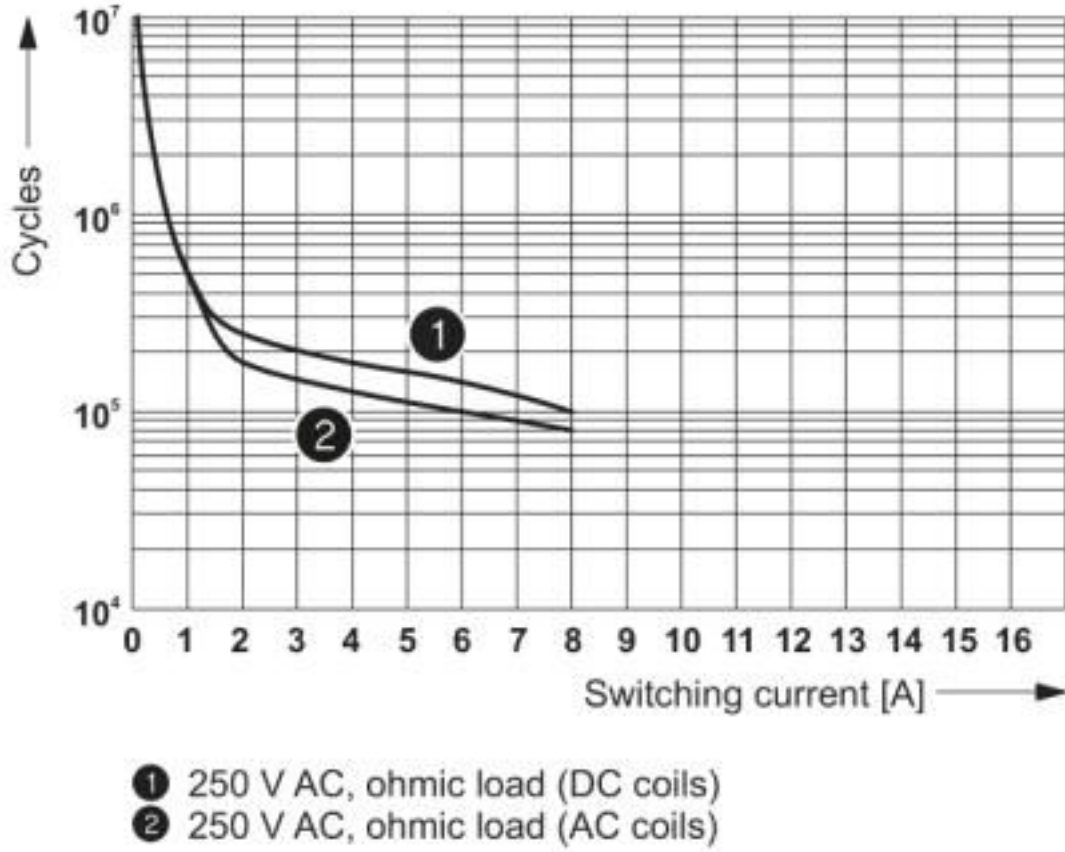
Diagram



Interrupting rating

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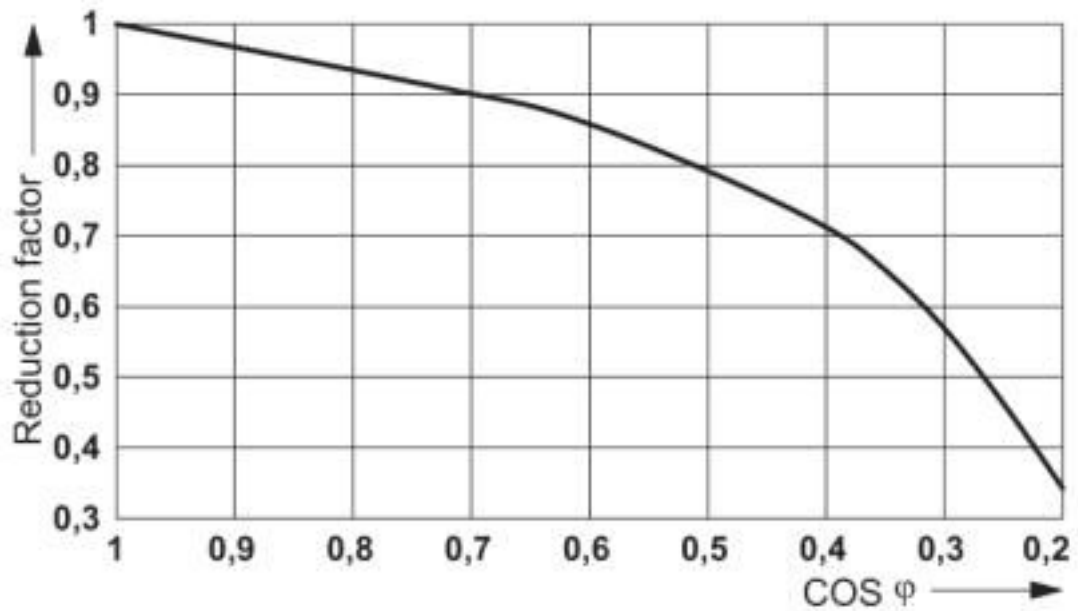
Diagram



Electrical service life

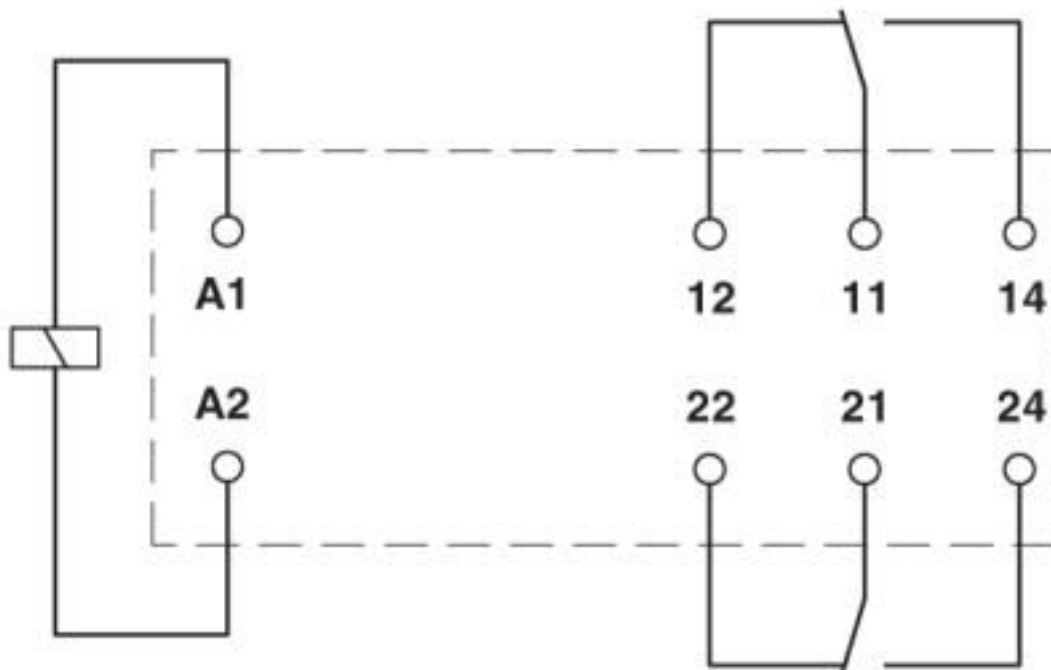
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Diagram



Service life reduction factor with various cos phi

Circuit diagram



# Single relay - REL-MR-230AC/21-21 - 2961451

## 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

#### Approvals

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

#### Ex Approvals

### Approval details



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## Approvals

|     |  |  |                 |
|-----|--|--|-----------------|
| EAC |  |  | TR_TS_D_00573_c |
|-----|--|--|-----------------|

|     |  |  |                     |
|-----|--|--|---------------------|
| EAC |  |  | RU*C-DE.*08.B.00010 |
|-----|--|--|---------------------|

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

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

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