

## Single relay - REL-MR- 12DC/21HC - 2961309

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Plug-in miniature power relay, with power contact for high continuous currents, 1 PDT, input voltage 12 V DC

### Why buy this product

- ✓ Switching current of up to 16 A

RoHS

### Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 10 STK                                                                                                  |
| Minimum order quantity               | 10 STK                                                                                                  |
| GTIN                                 | <br>4 017918 187552 |
| GTIN                                 | 4017918187552                                                                                           |
| Weight per Piece (excluding packing) | 15.700 g                                                                                                |
| Weight per piece (including packing) | 16.500 g                                                                                                |
| Custom tariff number                 | 85364190                                                                                                |
| Country of origin                    | Austria                                                                                                 |
| Sales Key                            | 08                                                                                                      |

### 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 |

#### Coil side

|                             |         |
|-----------------------------|---------|
| Nominal input voltage $U_N$ | 12 V DC |
|-----------------------------|---------|

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## Technical data

### Coil side

|                                           |                                  |
|-------------------------------------------|----------------------------------|
| Input voltage range in reference to $U_N$ | see diagram                      |
| Typical input current at $U_N$            | 33 mA                            |
| Typical response time                     | 7 ms                             |
| Typical release time                      | 3 ms                             |
| Coil resistance                           | 360 $\Omega \pm 10\%$ (at 20 °C) |
| Power dissipation for nominal condition   | 0.4 W                            |

### Contact side

|                                                        |                        |
|--------------------------------------------------------|------------------------|
| Contact type                                           | 1 PDT                  |
| Type of switch contact                                 | Single contact         |
| Contact material                                       | AgNi                   |
| Maximum switching voltage                              | 250 V AC/DC            |
| Minimum switching voltage                              | 12 V (at 10 mA)        |
| Min. switching current                                 | 10 mA (at 12 V)        |
| Maximum inrush current                                 | 50 A (20 ms)           |
| Limiting continuous current                            | 16 A                   |
| Interrupting rating (ohmic load) max.                  | 384 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)     |
|                                                        | 4000 VA (for 250 V AC) |
| Switching capacity in acc. with DIN VDE 0660/IEC 60947 | 2 A (at 24 V, DC13)    |
|                                                        | 0.2 A (at 110 V, DC13) |
|                                                        | 0.2 A (at 250 V, DC13) |
|                                                        | 6 A (at 24 V, AC15)    |
|                                                        | 6 A (at 120 V, AC15)   |
|                                                        | 6 A (at 250 V, AC15)   |

### General

|                                          |                                                                        |
|------------------------------------------|------------------------------------------------------------------------|
| Test voltage relay winding/relay contact | 5 kV AC (50 Hz, 1 min.)                                                |
| Operating mode                           | 100% operating factor                                                  |
| Degree of protection                     | RT II (flux-proof)                                                     |
| Mechanical service life                  | $3 \times 10^7$ cycles                                                 |
| Mounting position                        | any                                                                    |
| Assembly instructions                    | Can be aligned without spacing ( $> 70\text{ °C} \geq 2.5\text{ mm}$ ) |

### Standards and Regulations

|                                  |            |
|----------------------------------|------------|
| Connection in acc. with standard | CUL        |
| Standards/regulations            | IEC 60664  |
|                                  | EN 50178   |
|                                  | EN 61810-1 |

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Technical data

Standards and Regulations

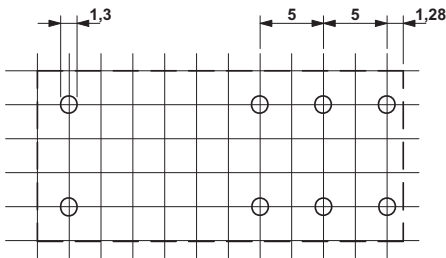
|                      |     |
|----------------------|-----|
| Degree of pollution  | 3   |
| Overvoltage category | III |

Environmental Product Compliance

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

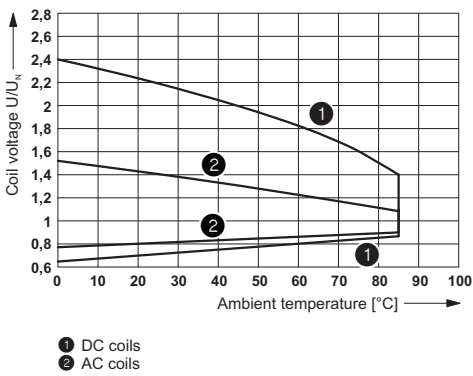
Drawings

Drilling diagram



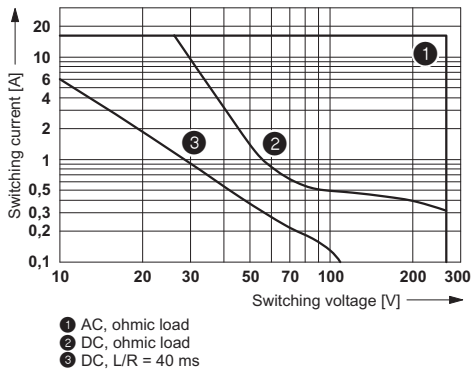
a = pitch division 2.5 mm

Diagram



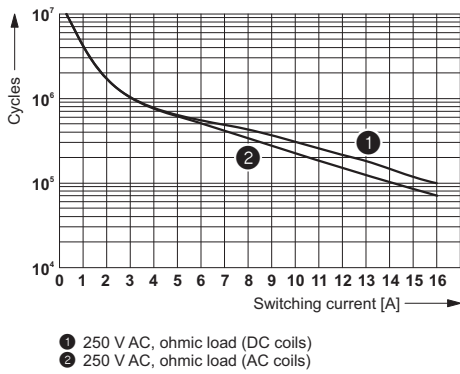
Operating voltage range

Diagram



Interrupting rating

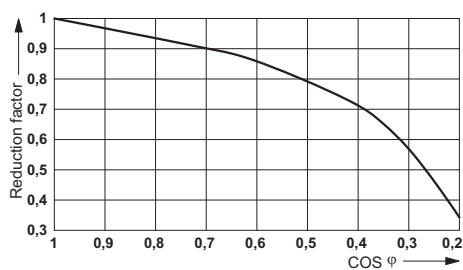
Diagram



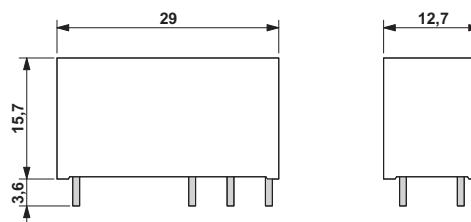
Electrical service life

## Single relay - REL-MR- 12DC/21HC - 2961309

Diagram

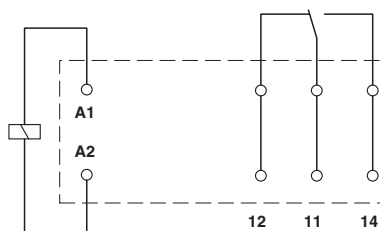


Dimensional drawing



Service life reduction factor with various cos phi

Circuit diagram



### Classifications

eCl@ss

|            |          |
|------------|----------|
| eCl@ss 5.0 | 27371601 |
| eCl@ss 5.1 | 27371601 |
| eCl@ss 6.0 | 27371601 |
| 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   | 30211916 |
| UNSPSC 7.0901 | 39121515 |
| UNSPSC 11     | 39121515 |
| UNSPSC 12.01  | 39121515 |

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## Classifications

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 13.2 | 39122334 |
|-------------|----------|

## Approvals

### Approvals

#### Approvals

UL Recognized / cUL Recognized / GL / EAC / UL Recognized / cUL Recognized / PRS / VDE approval of drawings / UL Recognized / cUL Recognized / cULus Recognized

#### Ex Approvals

### Approval details

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

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

|    |                                                                                     |                                                                           |             |
|----|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------|
| GL |  | <a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a> | 46016-03 HH |
|----|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------|

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

|     |                                                                                     |                                                     |                   |
|-----|-------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------|
| PRS |  | <a href="http://www.prs.pl/">http://www.prs.pl/</a> | TE/2109/880590/16 |
|-----|-------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------|

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### Approvals

VDE approval of drawings



<http://www.vde.com/en/Institute/OnlineService/VDE-approved-products/Pages/Online-Search.aspx>

40007758

UL Recognized



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 172140

cUL Recognized



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 172140

cULus Recognized



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

### Accessories

#### Additional products

Relay base - PLC-BPT- 12DC/21HC - 2900253



14 mm PLC basic terminal block for high continuous currents with push-in connection, without relay or solid-state relay, for mounting on DIN rail NS 35/7,5, 1 PDT, input voltage 12 V DC

Relay base - PLC-BSP- 12DC/21HC - 2912332



14 mm PLC basic terminal block for high continuous currents with spring-cage connection, without relay or solid-state relay, for mounting on DIN rail NS 35/7,5, 1 PDT, input voltage 12 V DC

Relay base - PLC-BSC- 12DC/21HC - 2967769



14 mm PLC basic terminal block for high continuous currents with screw connection, without relay or solid-state relay, for mounting on DIN rail NS 35/7,5, 1 PDT, input voltage 12 V DC

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### Accessories

#### 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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#### 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

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#### 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

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#### 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

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#### 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