

Completely Assembled Relay Modules PR1-R... Including 1 or 2 PDT Miniature Relays – With Screw or Spring-Cage Connection

PR1-R... is a 16 mm wide, completely assembled, coupling relay series for universal use with screw or spring-cage connection, which consists of a relay base, a plug-in miniature power relay, a plug-in display module or interference suppression module, and a relay retaining bracket with eject function. Whether with free-wheeling diode or varistor, an LED is provided for status display on the interference suppression module. The relay base has a 1/3 story design and thus has a logical structure. It has coil and contact connections that are located opposite one another and thus meets the requirements of modern control cabinet concepts with clear isolation of control signals and load.

Advantages:

- Low ordering and storage costs
- High degree of flexibility and low maintenance costs through the use of plug-in relays

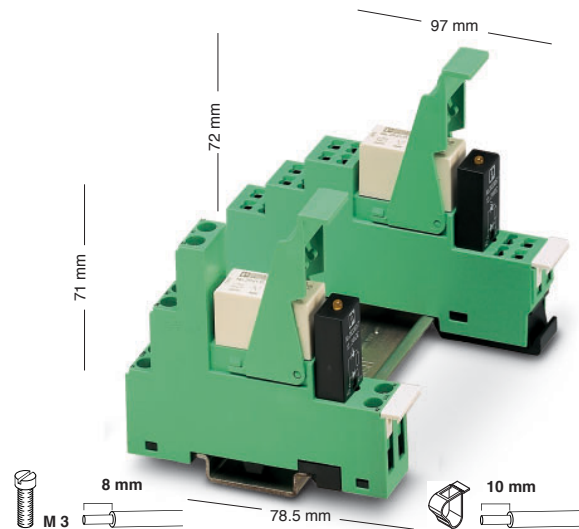
Input Voltages

PR1-R... is available on the coil side in popular industrial voltages.

Another advantage is the integrated input wiring, which consists of a status LED and a free-wheeling diode (DC types) or a varistor (AC types).

Rugged Miniature Relay

At the heart of the series is a rugged miniature power relay, which is one of the most modern and powerful models on the market. The types with hard gold-plated contacts are designed to provide increased contact reliability in low-current applications.



| | Solid | Stranded | | I | U |
|------------------------|------------|--------------------|---------|-----|-----|
| | | [mm ²] | AWG | [A] | [V] |
| Screw connection | 0.14 - 2.5 | 0.14 - 2.5 | 26 - 14 | * | * |
| Spring-cage connection | 0.2 - 1.5 | 0.2 - 1.5 | 25 - 16 | * | * |

* The electrical data is determined by the relay.

Completely Assembled Relay Modules With Screw Connection and Miniature Relay

PR1-RSC3...21.... (1 PDT Contact)

| Description | Input Voltage U _N ¹⁾ | Type | Order No. | Pcs. Pkt. |
|---|--|--|--|------------------|
| Pre-assembled coupling relay with screw connection , consisting of relay base, plug-in miniature power relay, and plug-in display/interference suppression module, for mounting on τ , includes 5 removable MP1 markers | 24 V DC | Includes power contact relay PR1-RSC3-LDP-24DC/21 PR1-RSC3-LV-24AC/21 PR1-RSC3-LV-120AC/21 PR1-RSC3-LV-230AC/21 | 2834326 2834339 2834342 2834355 | 5 5 5 5 |
| | 24 V AC | | | |
| | 120 V AC | | | |
| | 230 V AC | | | |
| Pre-assembled coupling relay with screw connection , as above, but with solid gold coating on the contacts | 24 V DC | Includes hard gold-plated contacts PR1-RSC3-LDP-24DC/21AU PR1-RSC3-LV-24AC/21AU PR1-RSC3-LV-120AC/21AU PR1-RSC3-LV-230AC/21AU | 2834368 2834371 2834384 2834397 | 5 5 5 5 |
| | 24 V AC | | | |
| | 120 V AC | | | |
| | 230 V AC | | | |
| Technical Data | | | | |
| Input Data | | | | |
| Nominal input voltage U _N | 24 V DC 24 V AC 120 V AC 230 V AC | See diagram in the INTERFACE catalog | | |
| Permissible range with reference to U _N | | | | |
| Typical input current at U _N (for AC: 50/60 Hz) | 19 mA 34/26 mA 9/7mA 6/5.5 mA | | | |
| Typical response time at U _N (for AC: depending on phase relation) | 8 ms 3 - 12 ms 3 - 12 ms 3 - 12 ms | | | |
| Typical release time at U _N (for AC: depending on phase relation) | 10 ms 1.5 - 14 ms 1.5 - 16 ms 2 - 22 ms | | | |
| Input wiring: | 24 V DC 24, 120, 230 V AC | Operating indicator and free-wheeling diode in the plug-in module Operating indicator and varistor in the plug-in module | | |
| Output Data | | | | |
| Contact type | | PR1-RSC3...21 | PR1-RSC3...21AU | |
| Contact material | | Single contact, 1 PDT | Single contact, 1 PDT | |
| Maximum switching voltage | | AgNi | AgNi + 5 μm Au ²⁾ | |
| Minimum switching voltage | | 250 V AC/DC | 30 V AC/36 V DC | |
| Limiting continuous current | | 12 V | 100 mV | |
| Maximum inrush current | | 12 A | 50 mA | |
| Minimum switching current | | 30 A (300 ms) | 50 mA | |
| Maximum shutdown power, ohmic load: | 250 V AC | 100 mA | 1 mA | |
| (For additional data, see INTERFACE catalog) | | 3000 VA | – | |
| Minimum switching power | | 1.2 W | 100 μW | |
| General Data | | | | |
| Test voltage | Winding/contact | 4 kV, 50 Hz, 1 minute | | |
| Ambient operating temperature range | | -25°C to +60°C | | |
| Nominal operating mode | | 100% operating factor | | |
| Mechanical service life | | 3 x 10 ⁷ cycles | | |
| Standards/specifications | | IEC 60 255/DIN VDE 0435 (in relevant parts), DIN EN 50 178/ VDE 0160 (in relevant parts), EN 60 730/DIN VDE 0631, IEC 60 664/IEC 60 664 A/DIN VDE 0110, pollution degree 3, Surge Voltage Category III | | |
| Mounting position/mounting | | Any/can be mounted without spacing | | |
| Connection type | | Screw connection | | |

¹⁾Additional input voltages available on request.

²⁾If the specified maximum values are exceeded, the gold coating will be damaged. In subsequent operation, the values of the AgNi contact will apply.

Insulating housing version

Polyamide PA fiber reinforced, PA-F

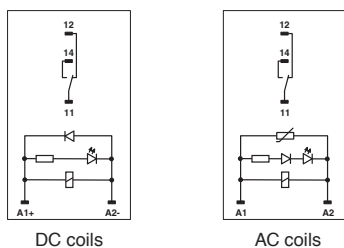
Color: green

For torque of terminal block screws, see INTERFACE catalog.

The dimensioning cross section (see INTERFACE catalog) refers to simple wires without ferrules.

Inductive loads must be attenuated with an effective protective circuit to protect inputs and outputs.

Connection diagram:



Completely Assembled Relay Modules With Screw Connection and Miniature Relay

PR1-RSC3...2x21... (2 PDT Contacts)

| Description | Input Voltage $U_N^{1)}$ | Type | Order No. | Pcs. Pkt. |
|---|-----------------------------|---|--|------------------|
| Pre-assembled coupling relay with screw connection , consisting of relay base, plug-in miniature power relay, and plug-in display/interference suppression module, for mounting on τ , includes 5 removable MP1 markers | 24 V DC | Includes power contact relay PR1-RSC3-LDP-24DC/2x21 PR1-RSC3-LV-24AC/2x21 PR1-RSC3-LV-120AC/2x21 PR1-RSC3-LV-230AC/2x21 | 2834481 2834494 2834504 2834517 | 5 5 5 5 |
| | 24 V AC | | | |
| | 120 V AC | | | |
| | 230 V AC | | | |
| Pre-assembled coupling relay with screw connection , as above, but with solid gold coating on the contacts | 24 V DC | Includes hard gold-plated contacts PR1-RSC3-LDP-24DC/2x21AU PR1-RSC3-LV-24AC/2x21AU PR1-RSC3-LV-120AC/2x21AU PR1-RSC3-LV-230AC/2x21AU | 2834520 2834533 2834546 2834559 | 5 5 5 5 |
| | 24 V AC | | | |
| | 120 V AC | | | |
| | 230 V AC | | | |

Technical Data

Input Data

| | |
|--|-------------------|
| Nominal input voltage U_N | 24 V DC |
| Permissible range with reference to U_N | 24, 120, 230 V AC |
| Typical input current at U_N (for AC: 50/60 Hz) | |
| Typical response time at U_N (for AC: depending on phase relation) | |
| Typical release time at U_N (for AC: depending on phase relation) | |
| Input wiring: | 24 V DC |
| | 24, 120, 230 V AC |

Output Data

| | |
|--|-----------------------|
| Contact type | Single contact, 2 PDT |
| Contact material | AgNi |
| Maximum switching voltage | 250 V AC/DC |
| Minimum switching voltage | 5 V |
| Limiting continuous current | 8 A |
| Maximum inrush current | 15 A (300 ms) |
| Minimum switching current | 10 mA |
| Maximum shutdown power, ohmic load: | 2000 VA |
| (For additional data, see INTERFACE catalog) | |
| Minimum switching power | 50 mW |

General Data

| | |
|-------------------------------------|--|
| Test voltage | Winding/contact Contact/contact |
| Ambient operating temperature range | -25°C to +60°C |
| Nominal operating mode | 100% operating factor |
| Mechanical service life | 3×10^7 cycles |
| Standards/specifications | IEC 60 255/DIN VDE 0435 (in relevant parts), DIN EN 50 178/ VDE 0160 (in relevant parts), EN 60 730/DIN VDE 0631, IEC 60 664/IEC 60 664 A/DIN VDE 0110, pollution degree 3, Surge Voltage Category III |
| Mounting position/mounting | Any/can be mounted without spacing |
| Connection type | Screw connection |

| | | | |
|---|-------------|-------------|-----------|
| 24 V DC | 24 V AC | 120 V AC | 230 V AC |
| 19 mA | 34/26 mA | 9/7mA | 6/5.5 mA |
| 8 ms | 3 - 12 ms | 3 - 12 ms | 3 - 12 ms |
| 10 ms | 1.5 - 14 ms | 1.5 - 16 ms | 2 - 22 ms |
| Operating indicator and free-wheeling diode in the plug-in module | | | |
| Operating indicator and varistor in the plug-in module | | | |

PR1-RSC3...2x21 PR1-RSC3...2x21AU

| | |
|-----------------------|-----------------------------------|
| Single contact, 2 PDT | Single contact, 2 PDT |
| AgNi | AgNi + 5 μ m Au ²⁾ |
| 250 V AC/DC | 30 V AC/36 V DC |
| 5 V | 100 mV |
| 8 A | 50 mA |
| 15 A (300 ms) | 50 mA |
| 10 mA | 1 mA |
| 2000 VA | - |
| 50 mW | 100 μ W |

¹⁾Additional input voltages available on request.

²⁾If the specified maximum values are exceeded, the gold coating will be damaged. In subsequent operation, the values of the AgNi contact will apply.

Insulating housing version

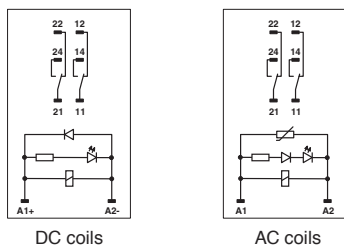
Polyamide PA fiber reinforced, PA-F
Color: green

For torque of terminal block screws, see INTERFACE catalog.

The dimensioning cross section (see INTERFACE catalog) refers to simple wires without ferrules.

Inductive loads must be attenuated with an effective protective circuit to protect inputs and outputs.

Connection diagram:



Completely Assembled Relay Modules With Spring-Cage Connection and Miniature Relay

PR1-RSP3...21.... (1 PDT Contact)

| Description | Input Voltage U_N ¹⁾ | Type | Order No. | Pcs. Pkt. |
|--|--------------------------------------|---|--|------------------|
| Pre-assembled coupling relay with spring-cage connection , consisting of relay base, plug-in miniature power relay, and plug-in display or protection module, for mounting on τ , includes 5 removable MP1 markers | 24 V DC | Includes power contact relay PR1-RSP3-LDP-24DC/21 PR1-RSP3-LV-24AC/21 PR1-RSP3-LV-120AC/21 PR1-RSP3-LV-230AC/21 | 2834407 2834410 2834423 2834436 | 5 5 5 5 |
| | 24 V AC | | | |
| | 120 V AC | | | |
| | 230 V AC | | | |
| Pre-assembled coupling relay with spring-cage connection , as above, but with solid gold coating on the contacts | 24 V DC | Includes hard gold-plated contacts PR1-RSP3-LDP-24DC/21AU PR1-RSP3-LV-24AC/21AU PR1-RSP3-LV-120AC/21AU PR1-RSP3-LV-230AC/21AU | 2834449 2834452 2834465 2834478 | 5 5 5 5 |
| | 24 V AC | | | |
| | 120 V AC | | | |
| | 230 V AC | | | |

Technical Data

Input Data

| | |
|--|------------------------------|
| Nominal input voltage U_N | |
| Permissible range with reference to U_N | |
| Typical input current at U_N (for AC: 50/60 Hz) | |
| Typical response time at U_N (for AC: depending on phase relation) | |
| Typical release time at U_N (for AC: depending on phase relation) | |
| Input wiring: | 24 V DC 24, 120, 230 V AC |

Output Data

| | |
|--|----------|
| Contact type | |
| Contact material | |
| Maximum switching voltage | |
| Minimum switching voltage | |
| Limiting continuous current | |
| Maximum inrush current | |
| Minimum switching current | |
| Maximum shutdown power, ohmic load: | 250 V AC |
| (For additional data, see INTERFACE catalog) | |
| Minimum switching power | |

General Data

| | |
|-------------------------------------|-----------------|
| Test voltage | Winding/contact |
| Ambient operating temperature range | |
| Nominal operating mode | |
| Mechanical service life | |
| Standards/specifications | |

Mounting position/mounting
Connection type

| | | | |
|---|-------------|-------------|-----------|
| 24 V DC | 24 V AC | 120 V AC | 230 V AC |
| See diagram in the INTERFACE catalog | | | |
| 19 mA | 34/26 mA | 9/7mA | 6/5.5 mA |
| 8 ms | 3 - 12 ms | 3 - 12 ms | 3 - 12 ms |
| 10 ms | 1.5 - 14 ms | 1.5 - 16 ms | 2 - 22 ms |
| Operating indicator and free-wheeling diode in the plug-in module | | | |
| Operating indicator and varistor in the plug-in module | | | |

| PR1-RSP3...21 | PR1-RSP3...21AU |
|-----------------------|-----------------------------------|
| Single contact, 1 PDT | Single contact, 1 PDT |
| AgNi | AgNi + 5 μ m Au ²⁾ |
| 250 V AC/DC | 30 V AC/36 V DC |
| 12 V | 100 mV |
| 10 A | 50 mA |
| 30 A (300 ms) | 50 mA |
| 100 mA | 1 mA |
| 2500 VA | – |
| 1.2 W | 100 μ W |

4 kV, 50 Hz, 1 minute
-25°C to +60°C
100% operating factor
3 x 10⁷ cycles
IEC 60 255/DIN VDE 0435 (in relevant parts), DIN EN 50 178/ VDE 0160 (in relevant parts), EN 60 730/DIN VDE 0631,
IEC 60 664/IEC 60 664 A/DIN VDE 0110, pollution degree 3,
Surge Voltage Category III
Any/can be mounted without spacing
Spring-cage connection

¹⁾Additional input voltages available on request.

²⁾If the specified maximum values are exceeded, the gold coating will be damaged. In subsequent operation, the values of the AgNi contact will apply.

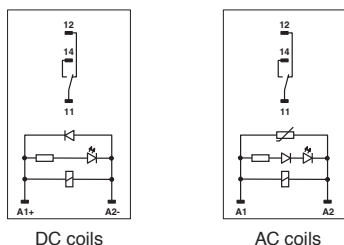
Insulating housing version

Polyamide PA fiber reinforced, PA-F
Color: green

The dimensioning cross section (see INTERFACE catalog) refers to simple wires without ferrules.

Inductive loads must be attenuated with an effective protective circuit to protect inputs and outputs.

Connection diagram:



Completely Assembled Relay Modules With Spring-Cage Connection and Miniature Relay

PR1-RSP3...2x21... (2 PDT Contacts)

| Description | Input Voltage $U_N^{1)}$ | Type | Order No. | Pcs. Pkt. |
|--|-----------------------------|---|--|------------------|
| Pre-assembled coupling relay with spring-cage connection , consisting of relay base, plug-in miniature power relay, and plug-in display or protection module, for mounting on τ , includes 5 removable MP1 markers | 24 V DC | Includes power contact relay PR1-RSP3-LDP-24DC/2x21 PR1-RSP3-LV-24AC/2x21 PR1-RSP3-LV-120AC/2x21 PR1-RSP3-LV-230AC/2x21 | 2834562 2834575 2834588 2834591 | 5 5 5 5 |
| | 24 V AC | | | |
| | 120 V AC | | | |
| | 230 V AC | | | |
| Pre-assembled coupling relay with spring-cage connection , as above, but with solid gold coating on the contacts | 24 V DC | Includes hard gold-plated contacts PR1-RSP3-LDP-24DC/2x21AU PR1-RSP3-LV-24AC/2x21AU PR1-RSP3-LV-120AC/2x21AU PR1-RSP3-LV-230AC/2x21AU | 2834601 2834614 2834627 2834630 | 5 5 5 5 |
| | 24 V AC | | | |
| | 120 V AC | | | |
| | 230 V AC | | | |

Technical Data

Input Data

| | |
|--|-------------------|
| Nominal input voltage U_N | 24 V DC |
| Permissible range with reference to U_N | 24 V AC |
| Typical input current at U_N (for AC: 50/60 Hz) | 120 V AC |
| Typical response time at U_N (for AC: depending on phase relation) | 230 V AC |
| Typical release time at U_N (for AC: depending on phase relation) | |
| Input wiring: | 24 V DC |
| | 24, 120, 230 V AC |

Output Data

| | |
|--|----------|
| Contact type | |
| Contact material | |
| Maximum switching voltage | |
| Minimum switching voltage | |
| Limiting continuous current | |
| Maximum inrush current | |
| Minimum switching current | |
| Maximum shutdown power, ohmic load: | 250 V AC |
| (For additional data, see INTERFACE catalog) | |
| Minimum switching power | |

General Data

| | |
|-------------------------------------|-----------------|
| Test voltage | Winding/contact |
| | Contact/contact |
| Ambient operating temperature range | |
| Nominal operating mode | |
| Mechanical service life | |
| Standards/specifications | |
| Mounting position/mounting | |
| Connection type | |

| | | | |
|---|-------------|-------------|-----------|
| 24 V DC | 24 V AC | 120 V AC | 230 V AC |
| See diagram in the INTERFACE catalog | | | |
| 19 mA | 34/26 mA | 9/7mA | 6/5.5 mA |
| 8 ms | 3 - 12 ms | 3 - 12 ms | 3 - 12 ms |
| 10 ms | 1.5 - 14 ms | 1.5 - 16 ms | 2 - 22 ms |
| Operating indicator and free-wheeling diode in the plug-in module | | | |
| Operating indicator and varistor in the plug-in module | | | |

PR1-RSP3...2x21 PR1-RSP3...2x21AU

| | |
|-----------------------|-----------------------------------|
| Single contact, 2 PDT | Single contact, 2 PDT |
| AgNi | AgNi + 5 μ m Au ²⁾ |
| 250 V AC/DC | 30 V AC/36 V DC |
| 5 V | 100 mV |
| 8 A | 50 mA |
| 15 A (300 ms) | 50 mA |
| 10 mA | 1 mA |
| 2000 VA | - |
| 50 mW | 100 μ W |

| |
|---|
| 4 kV, 50 Hz, 1 minute |
| 2.5 kV, 50 Hz, 1 minute |
| -25°C to +60°C |
| 100% operating factor |
| 3 x 10 ⁷ cycles |
| IEC 60 255/DIN VDE 0435 (in relevant parts), DIN EN 50 178/ VDE 0160 (in relevant parts), EN 60 730/DIN VDE 0631, |
| IEC 60 664/IEC 60 664 A/DIN VDE 0110, pollution degree 3, |
| Surge Voltage Category III |
| Any/can be mounted without spacing |
| Spring-cage connection |

¹⁾Additional input voltages available on request.

²⁾If the specified maximum values are exceeded, the gold coating will be damaged. In subsequent operation, the values of the AgNi contact will apply.

Insulating housing version

Polyamide PA fiber reinforced, PA-F
Color: green

The dimensioning cross section (see INTERFACE catalog) refers to simple wires without ferrules.

Inductive loads must be attenuated with an effective protective circuit to protect inputs and outputs.

Connection diagram:

