

## 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

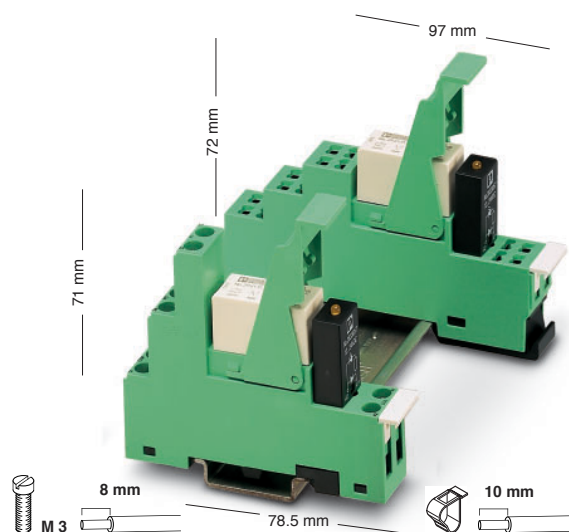
### Input Voltages

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 <sup>2</sup> ]	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 <sub>N</sub> <sup>1)</sup>
<b>Pre-assembled coupling relay with screw connection</b> , consisting of relay base, plug-in miniature power relay, and plug-in display/interference suppression module, for mounting on  , includes 5 removable MP1 markers	24 V DC 24 V AC 120 V AC 230 V AC
<b>Pre-assembled coupling relay with screw connection</b> , as above, but with solid gold coating on the contacts	24 V DC 24 V AC 120 V AC 230 V AC

Technical Data

Input Data

Nominal input voltage U <sub>N</sub>	
Permissible range with reference to U <sub>N</sub>	
Typical input current at U <sub>N</sub> (for AC: 50/60 Hz)	
Typical response time at U <sub>N</sub> (for AC: depending on phase relation)	
Typical release time at U <sub>N</sub> (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: (For additional data, see INTERFACE catalog)	250 V AC
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

Type	Order No.	Pcs. Pkt.
Includes power contact relay <b>PR1-RSC3-LDP-24DC/21</b> <b>PR1-RSC3-LV-24AC/21</b> <b>PR1-RSC3-LV-120AC/21</b> <b>PR1-RSC3-LV-230AC/21</b>	<b>2834326</b> <b>2834339</b> <b>2834342</b> <b>2834355</b>	5 5 5 5
Includes hard gold-plated contacts <b>PR1-RSC3-LDP-24DC/21AU</b> <b>PR1-RSC3-LV-24AC/21AU</b> <b>PR1-RSC3-LV-120AC/21AU</b> <b>PR1-RSC3-LV-230AC/21AU</b>	<b>2834368</b> <b>2834371</b> <b>2834384</b> <b>2834397</b>	5 5 5 5

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			

<b>PR1-RSC3...21</b> Single contact, 1 PDT AgNi 250 V AC/DC 12 V 12 A 30 A (300 ms) 100 mA 3000 VA  1.2 W	<b>PR1-RSC3...21AU</b> Single contact, 1 PDT AgNi + 5 µm Au <sup>2)</sup> 30 V AC/36 V DC 100 mV 50 mA 50 mA 1 mA –  100 µW
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4 kV, 50 Hz, 1 minute  
-25°C to +60°C  
100% operating factor  
3 x 10<sup>7</sup> 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  
Screw connection

Insulating housing version

Polyamide PA fiber reinforced, PA-F  
Color: green

For torque of terminal block screws, see  
INTERFACE catalog.

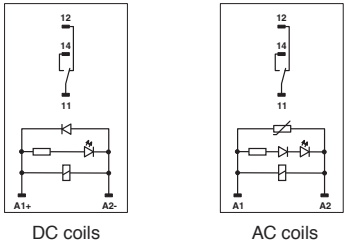
The dimensioning cross section (see INTERFACE catalog) refers to simple wires without ferrules.

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


<sup>1)</sup>Additional input voltages available on request.

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

Connection diagram:



Completely Assembled Relay Modules With Screw Connection and Miniature Relay  
PR1-RSC3...2x21... (2 PDT Contacts)

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

Technical Data

Input Data

Nominal input voltage U <sub>N</sub>	
Permissible range with reference to U <sub>N</sub>	
Typical input current at U <sub>N</sub> (for AC: 50/60 Hz)	
Typical response time at U <sub>N</sub> (for AC: depending on phase relation)	
Typical release time at U <sub>N</sub> (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: (For additional data, see INTERFACE catalog)	250 V AC
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-RSC3...2x21	PR1-RSC3...2x21AU
Single contact, 2 PDT	Single contact, 2 PDT
AgNi	AgNi + 5 μm Au <sup>2)</sup>
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 μW

4 kV, 50 Hz, 1 minute
2.5 kV, 50 Hz, 1 minute
-25°C to +60°C
100% operating factor
3 x 10 <sup>7</sup> 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
Screw connection

<sup>1)</sup>Additional input voltages available on request.

<sup>2)</sup>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

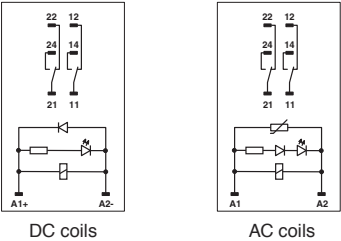
Polyamide PA fiber reinforced, PA-F  
Color: green

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

Technical Data

Input Data

Nominal input voltage U <sub>N</sub>	
Permissible range with reference to U <sub>N</sub>	
Typical input current at U <sub>N</sub> (for AC: 50/60 Hz)	
Typical response time at U <sub>N</sub> (for AC: depending on phase relation)	
Typical release time at U <sub>N</sub> (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			
<b>PR1-RSP3...21</b>		<b>PR1-RSP3...21AU</b>	
Single contact, 1 PDT		Single contact, 1 PDT	
AgNi		AgNi + 5 µm Au <sup>2)</sup>	
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 µW	

4 kV, 50 Hz, 1 minute  
-25°C to +60°C  
100% operating factor  
3 x 10<sup>7</sup> 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

<sup>1)</sup>Additional input voltages available on request.

<sup>2)</sup>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

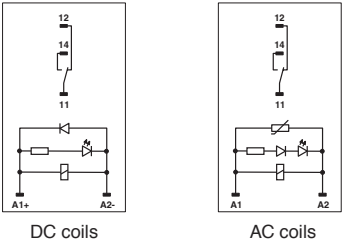
Polyamide PA fiber reinforced, PA-F

Color: green


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

Technical Data

Input Data

Nominal input voltage U <sub>N</sub>	
Permissible range with reference to U <sub>N</sub>	
Typical input current at U <sub>N</sub> (for AC: 50/60 Hz)	
Typical response time at U <sub>N</sub> (for AC: depending on phase relation)	
Typical release time at U <sub>N</sub> (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: (For additional data, see INTERFACE catalog)	250 V AC
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			
<b>PR1-RSP3...2x21</b>		<b>PR1-RSP3...2x21AU</b>	
Single contact, 2 PDT		Single contact, 2 PDT	
AgNi		AgNi + 5 μm Au <sup>2)</sup>	
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 μW	

4 kV, 50 Hz, 1 minute
2.5 kV, 50 Hz, 1 minute
-25°C to +60°C
100% operating factor
3 x 10 <sup>7</sup> 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

<sup>1)</sup>Additional input voltages available on request.

<sup>2)</sup>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:

