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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

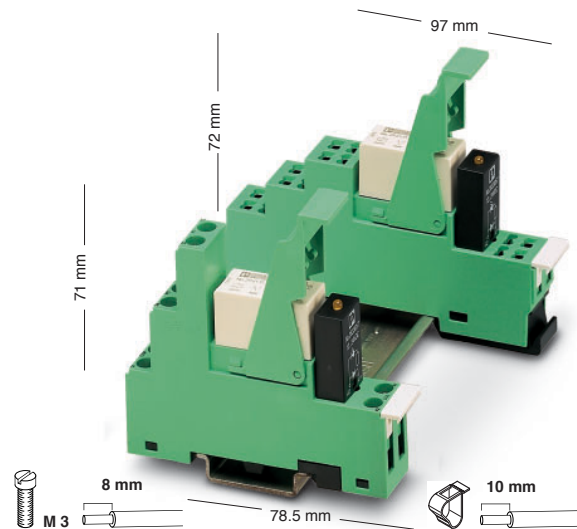
Input Voltages

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
Permissible range with reference to U_N		See diagram in the INTERFACE catalog			
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			
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 μ m 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 μ W	
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

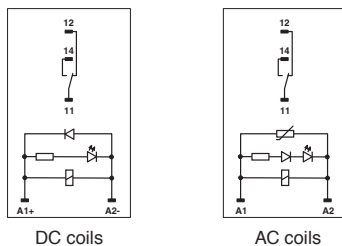
Color: green

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		
	24 V AC	PR1-RSC3-LDP-24DC/2x21	2834481	5
	120 V AC	PR1-RSC3-LV-24AC/2x21	2834494	5
	230 V AC	PR1-RSC3-LV-120AC/2x21 PR1-RSC3-LV-230AC/2x21	2834504 2834517	5 5
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		
	24 V AC	PR1-RSC3-LDP-24DC/2x21AU	2834520	5
	120 V AC	PR1-RSC3-LV-24AC/2x21AU	2834533	5
	230 V AC	PR1-RSC3-LV-120AC/2x21AU PR1-RSC3-LV-230AC/2x21AU	2834546 2834559	5 5

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-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

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
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

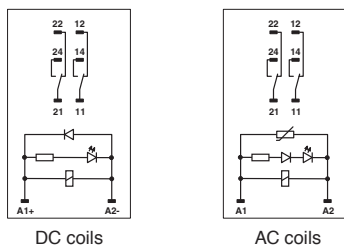
Polyamide PA fiber reinforced, PA-F
Color: green

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 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		
	24 V AC	PR1-RSP3-LDP-24DC/21	2834407	5
	120 V AC	PR1-RSP3-LV-24AC/21	2834410	5
	230 V AC	PR1-RSP3-LV-120AC/21 PR1-RSP3-LV-230AC/21	2834423 2834436	5 5
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		
	24 V AC	PR1-RSP3-LDP-24DC/21AU	2834449	5
	120 V AC	PR1-RSP3-LV-24AC/21AU	2834452	5
	230 V AC	PR1-RSP3-LV-120AC/21AU PR1-RSP3-LV-230AC/21AU	2834465 2834478	5 5

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.

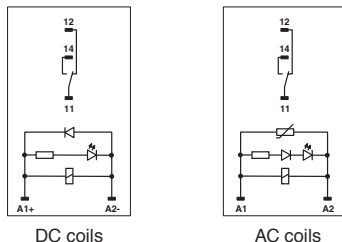
Insulating housing version

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:

