

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

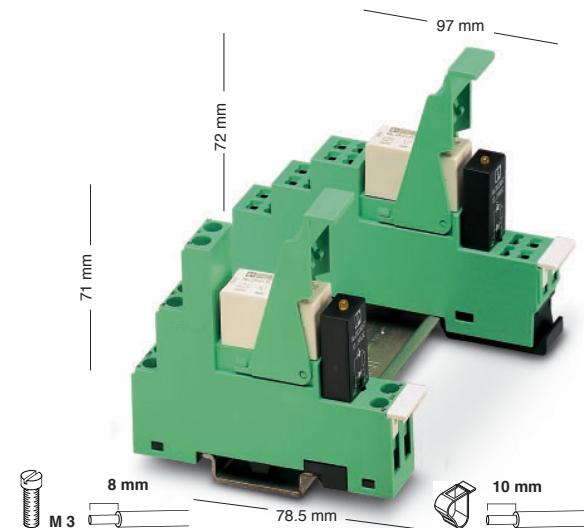
Input Voltages

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 [mm ²]	Stranded [mm ²]	AWG	I [A]	U [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 \sqcup , includes 5 removable MP1 markers	24 V DC 24 V AC 120 V AC 230 V AC	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
Pre-assembled coupling relay with screw connection , as above, but with solid gold coating on the contacts	24 V DC 24 V AC 120 V AC 230 V AC	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

Technical Data

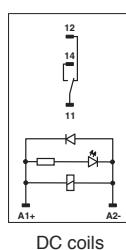
Input Data	24 V DC	24 V AC	120 V AC	230 V AC
Nominal input voltage U_N				
Permissible range with reference to U_N	See diagram in the INTERFACE catalog			
Typical input current at U_N (for AC: 50/60 Hz)	19 mA	34/26 mA	9/7 mA	6/5.5 mA
Typical response time at U_N (for AC: depending on phase relation)	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	PR1-RSC3...21	PR1-RSC3...21AU		
Contact type	Single contact, 1 PDT	Single contact, 1 PDT		
Contact material	AgNi	AgNi + 5 μm Au ²)		
Maximum switching voltage	250 V AC/DC	30 V AC/36 V DC		
Minimum switching voltage	12 V	100 mV		
Limiting continuous current	12 A	50 mA		
Maximum inrush current	30 A (300 ms)	50 mA		
Minimum switching current	100 mA	1 mA		
Maximum shutdown power, ohmic load:	250 V AC	3000 VA		
(For additional data, see INTERFACE catalog)				
Minimum switching power		—		
	1.2 W	100 μW		
General Data	4 kV, 50 Hz, 1 minute			
Test voltage	-25°C to +60°C			
Ambient operating temperature range	100% operating factor			
Nominal operating mode	3 $\times 10^7$ cycles			
Mechanical service life	IEC 60 255/DIN VDE 0435 (in relevant parts), DIN EN 50 178/ VDE 0160 (in relevant parts), EN 60 730/DIN VDE 0631,			
Standards/specifications	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.

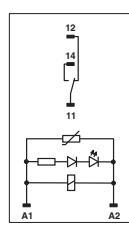
²)If the specified maximum values are exceeded, the gold coating will be damaged. In subsequent operation, the values of the AgNi contact will apply.

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:



DC coils



AC coils

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 \sqcap , includes 5 removable MP1 markers	24 V DC 24 V AC 120 V AC 230 V AC	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
Pre-assembled coupling relay with screw connection , as above, but with solid gold coating on the contacts	24 V DC 24 V AC 120 V AC 230 V AC	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

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	24 V DC	24 V AC	120 V AC	230 V AC
See diagram in the INTERFACE catalog				
AgNi	19 mA	34/26 mA	9/7 mA	6/5.5 mA
250 V AC/DC	8 ms	3 - 12 ms	3 - 12 ms	3 - 12 ms
5 V	10 ms	1.5 - 14 ms	1.5 - 16 ms	2 - 22 ms
8 A	15 A (300 ms)	50 mA	50 mA	
10 mA	2000 VA	1 mA	1 mA	—
50 mW		100 μ W		

Operating indicator and free-wheeling diode in the plug-in module
Operating indicator and varistor in the plug-in module

PR1-RSC3...2x21

Single contact, 2 PDT

PR1-RSC3...2x21AU

Single contact, 2 PDT

AgNi + 5 μ m Au²

30 V AC/36 V DC

100 mV

50 mA

50 mA

1 mA

—

General Data

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

4 kV, 50 Hz, 1 minute

2.5 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

Screw connection

Mounting position/mounting
Connection type

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

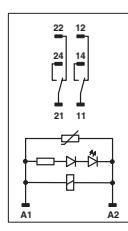
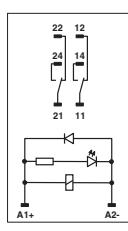
Color: green

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 \square , includes 5 removable MP1 markers	24 V DC 24 V AC 120 V AC 230 V AC	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
Pre-assembled coupling relay with spring-cage connection , as above, but with solid gold coating on the contacts	24 V DC 24 V AC 120 V AC 230 V AC	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
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: (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				

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.

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
 3×10^7 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

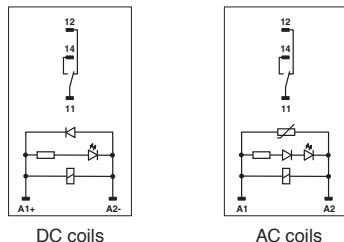
Insulating housing version

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 \sqcap , includes 5 removable MP1 markers	24 V DC 24 V AC 120 V AC 230 V AC	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
Pre-assembled coupling relay with spring-cage connection , as above, but with solid gold coating on the contacts	24 V DC 24 V AC 120 V AC 230 V AC	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

Technical Data

Input Data		Output Data	
Nominal input voltage U_N		24 V DC	24 V AC
Permissible range with reference to U_N		See diagram in the INTERFACE catalog	120 V AC
Typical input current at U_N (for AC: 50/60 Hz)	19 mA	34/26 mA	9/7mA
Typical response time at U_N (for AC: depending on phase relation)	8 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
Input wiring:	24 V DC 24, 120, 230 V AC	Operating indicator and free-wheeling diode in the plug-in module	2 - 22 ms
		Operating indicator and varistor in the plug-in module	
General Data		PR1-RSP3...2x21	PR1-RSP3...2x21AU
Test voltage		Single contact, 2 PDT	Single contact, 2 PDT
Ambient operating temperature range		AgNi	AgNi + 5 μ m Au ²⁾
Nominal operating mode		250 V AC/DC	30 V AC/36 V DC
Mechanical service life		5 V	100 mV
Standards/specifications		8 A	50 mA
		15 A (300 ms)	50 mA
Mounting position/mounting	250 V AC	10 mA	1 mA
Connection type		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

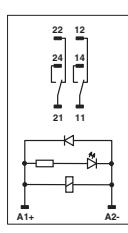
Polyamide PA fiber reinforced, PA-F

Color: green

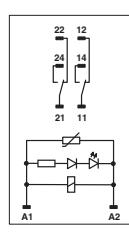
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Inductive loads must be attenuated with an effective protective circuit to protect inputs and outputs.

Connection diagram:



DC coils



AC coils