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

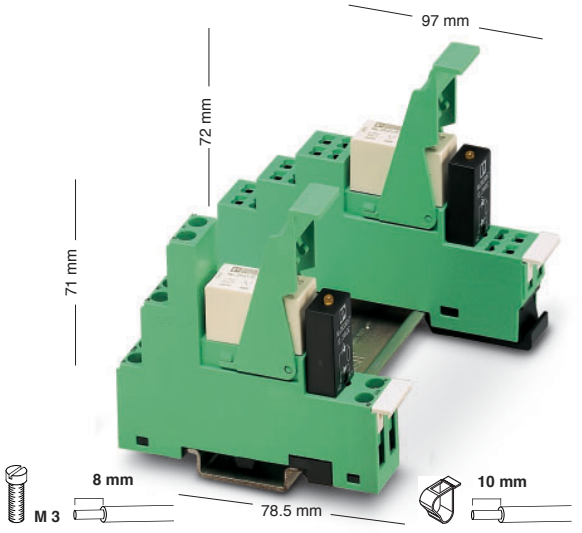
Input Voltages

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 [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.

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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 ⊓, 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				
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	Operating indicator and free-wheeling diode in the plug-in module			
24, 120, 230 V AC	Operating indicator and varistor in the plug-in module			

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 (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

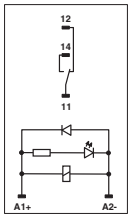
Polyamide PA fiber reinforced, PA-F
Color: green

For torque of terminal block screws, see INTERFACE catalog.

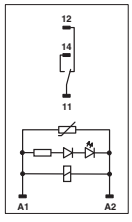
The dimensioning cross section (see INTERFACE catalog) refers to simple wires without ferrules.

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

Connection diagram:



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 ⊥, 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	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	Operating indicator and free-wheeling diode in the plug-in module			
24, 120, 230 V AC	Operating indicator and varistor in the plug-in module			

Output Data	**PR1-RSC3...2x21**	**PR1-RSC3...2x21AU**
Contact type	Single contact, 2 PDT	Single contact, 2 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	5 V	100 mV
Limiting continuous current	8 A	50 mA
Maximum inrush current	15 A (300 ms)	50 mA
Minimum switching current	10 mA	1 mA
Maximum shutdown power, ohmic load: 250 V AC	2000 VA	–
(For additional data, see INTERFACE catalog)		
Minimum switching power	50 mW	100 µW

General Data		
Test voltage	Winding/contact	4 kV, 50 Hz, 1 minute
	Contact/contact	2.5 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

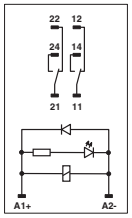
Polyamide PA fiber reinforced, PA-F
Color: green

For torque of terminal block screws, see INTERFACE catalog.

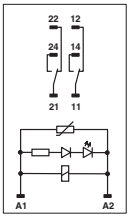
The dimensioning cross section (see INTERFACE catalog) refers to simple wires without ferrules.

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

Connection diagram:



DC coils



AC coils

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 ⊥, 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	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	Operating indicator and free-wheeling diode in the plug-in module			
24, 120, 230 V AC	Operating indicator and varistor in the plug-in module			

Output Data	**PR1-RSP3...21**	**PR1-RSP3...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	10 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	2500 VA	–
(For additional data, see INTERFACE catalog)		
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		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.

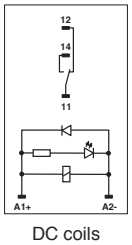
Insulating housing version

Polyamide PA fiber reinforced, PA-F
Color: green

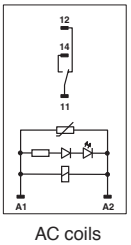
The dimensioning cross section (see INTERFACE catalog) refers to simple wires without ferrules.

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

Connection diagram:



DC coils



AC coils

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		Includes power contact relay		
spring-cage connection, consisting of	24 V DC	**PR1-RSP3-LDP-24DC/2x21**	**2834562**	5
relay base, plug-in miniature power relay,	24 V AC	**PR1-RSP3-LV-24AC/2x21**	**2834575**	5
and plug-in display or protection module, for	120 V AC	**PR1-RSP3-LV-120AC/2x21**	**2834588**	5
mounting on ⊔, includes 5 removable MP1 markers	230 V AC	**PR1-RSP3-LV-230AC/2x21**	**2834591**	5
Pre-assembled coupling relay with		Includes hard gold-plated contacts		
spring-cage connection, as above, but	24 V DC	**PR1-RSP3-LDP-24DC/2x21AU**	**2834601**	5
with solid gold coating on the contacts	24 V AC	**PR1-RSP3-LV-24AC/2x21AU**	**2834614**	5
	120 V AC	**PR1-RSP3-LV-120AC/2x21AU**	**2834627**	5
	230 V AC	**PR1-RSP3-LV-230AC/2x21AU**	**2834630**	5

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	Operating indicator and free-wheeling diode in the plug-in module			
24, 120, 230 V AC	Operating indicator and varistor in the plug-in module			

Output Data	**PR1-RSP3...2x21**	**PR1-RSP3...2x21AU**
Contact type	Single contact, 2 PDT	Single contact, 2 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	5 V	100 mV
Limiting continuous current	8 A	50 mA
Maximum inrush current	15 A (300 ms)	50 mA
Minimum switching current	10 mA	1 mA
Maximum shutdown power, ohmic load: 250 V AC	2000 VA	–
(For additional data, see INTERFACE catalog)		
Minimum switching power	50 mW	100 μW

General Data		
Test voltage	Winding/contact	4 kV, 50 Hz, 1 minute
	Contact/contact	2.5 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		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.

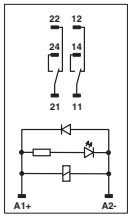
Insulating housing version

Polyamide PA fiber reinforced, PA-F
Color: green

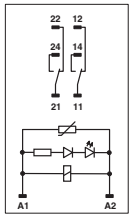
The dimensioning cross section (see INTERFACE catalog) refers to simple wires without ferrules.

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

Connection diagram:



DC coils



AC coils