

# PLC-RSP-230UC/21-21AU/RWF

## PLC Interface With 2 PDT Miniature Relays for Railway Applications

### INTERFACE

Data Sheet  
103045\_00\_en

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### Description

The **PLC-RSP-230UC/21-21AU/RWF** relay module is designed for input voltages with a nominal frequency of 16 2/3 Hz and is therefore ideal for railway applications. It consists of a 14 mm wide basic terminal block with spring-cage connection and a plug-in multi-layer contact relay with two PDT contacts for small switching loads.

#### Rugged Miniature Relay

The heart of the PDT relay series is a rugged miniature relay from the latest generation, equipped with features that are lacking in most standard plug-in relays:

- Operational safety with IP67-protected mechanics
- Environmentally friendly, cadmium-free power contact material for loads up to 250 V AC/2 x 6 A
- Hard gold-plated contacts for small loads
- 4 kV<sub>rms</sub> electrical isolation between coil and contact

#### Plug-In Bridges Save Wiring

The FBST plug-in bridge system offers a big advantage: whether an A1 or A2 connection on the coil side or grouped power supply at connections 11 and 21 on the contact side, with just one "click" the continuous bridge, which can be cut to length, or the 2-pos. bridge connector ensure quick cost-effective, and error-free wiring, while providing maximum clarity. This makes complicated, time-consuming loop bridges a thing of the past.

#### Additional PLC Advantages

The module naturally features the usual advantages of the PLC range:

- Integrated input circuit
- Relay can be quickly replaced using an engagement lever
- Safe isolation between input and output
- Marking labels from the standard modular terminal block range
- Inexpensive



Make sure you always use the latest documentation.  
It can be downloaded at [www.download.phoenixcontact.com](http://www.download.phoenixcontact.com).  
A conversion table is available on the Internet at  
[www.download.phoenixcontact.com/general/7000\\_en\\_00.pdf](http://www.download.phoenixcontact.com/general/7000_en_00.pdf).

## Ordering Data

### PLC Interface

Description	Type	Order No.	Pcs./Pck.
PLC interface with 2 PDT miniature relays for railway applications, with spring-cage connection	PLC-RSP-230UC/21-21AU/RWF	2968001	10

### Accessories

Description	Type	Order No.	Pcs./Pck.
Insulating plate	PLC-ATP...	See INTERFACE catalog	



The PLC-ATP... insulating plate should be used in the following cases: always fit at the start and end of a PLC terminal strip for voltages greater than 250 V (L1, L2, L3) between the same terminal points on adjacent modules (FBST 8-PLC... or FBST 500... can be used for potential bridging) and for safe isolation between adjacent modules.

## Technical Data

### Input Data

Nominal input voltage	230 V AC <sup>1</sup>
Permissible range (with reference to U <sub>N</sub> )	See Figure 2 on page 3
Typical input current at U <sub>N</sub>	4.8 mA for AC
Typical response time at U <sub>N</sub>	20 ms
Typical release time at U <sub>N</sub>	60 ms
Input circuit	LED, bridge rectifier

<sup>1</sup> The PLC-ATP insulating plate must be installed for voltages greater than 250 V (L1, L2, L3) between the same terminal points on adjacent modules (see "Accessories"). FBST 8-PLC... or FBST 500... is then used for potential bridging.

### Output Data

Contact type	Single contact, 2 PDT	
Contact material	AgNi + 5 μm Au <sup>1</sup>	
Maximum switching voltage	30 V AC/36 V DC	(250 V AC/DC) <sup>2</sup>
Minimum switching voltage	100 mV	(5 V)
Limiting continuous current	50 mA	(6 A)
Maximum inrush current	50 mA	(15 A, 300 ms)
Minimum switching current	1 mA	(10 mA)
Maximum shutdown power	Ohmic load τ = 0 ms	
	24 V DC	1.2 W (140 W)
	48 V DC	— (100 W)
	60 V DC	— (60 W)
	110 V DC	— (44 W)
	220 V DC	— (60 W)
	250 V AC	— (1500 VA)
Minimum switching power	100 μW	(50 mW)

<sup>1</sup> If the specified maximum values are exceeded, the gold coating will be damaged. In subsequent operation, the maximum values given in brackets will apply. This can then result in reduced service life, similar to dedicated power contacts.

<sup>2</sup> The PLC-ATP insulating plate must be installed for voltages greater than 250 V (L1, L2, L3) between the same terminal points on adjacent modules (see "Accessories"). FBST 8-PLC... or FBST 500... is then used for potential bridging.

General Data	
Impulse voltage withstand level	6 kV
Ambient temperature range	-20°C ... 60°C
Nominal operating mode	100% operating factor
Inflammability class according to UL 94 (housing)	V0
Mechanical service life	3 x 10 <sup>7</sup> cycles
Air and creepage distances between the circuits <sup>1</sup>	DIN EN 50178/VDE 0160
Pollution degree	2
Surge voltage category	III
Mounting position	Any
Assembly	Can be aligned without spacing
Dimensions (W x H x D)	14 mm x 94 mm x 80 mm
Conductor cross section	
Solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Stranded	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Housing material	Polybutylene terephthalate PBT non-reinforced, green
Tests/Approvals	UL (applied for)

<sup>1</sup> The PLC-ATP insulating plate must be installed for safe isolation between adjacent modules (see "Accessories"). FBST 8-PLC... or FBST 500... is then used for potential bridging.

**Block Diagram**

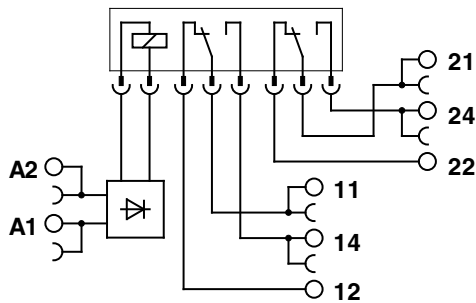
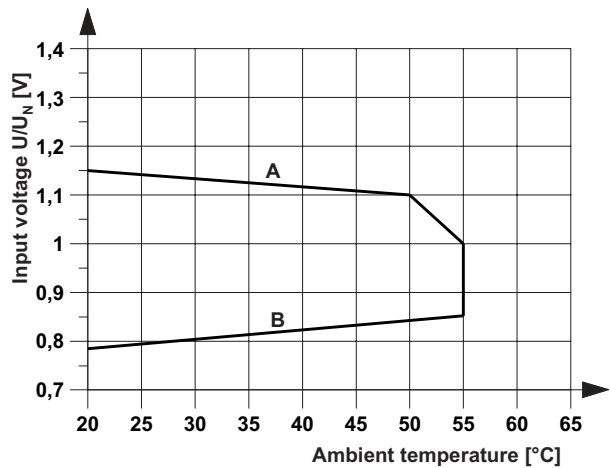


Figure 1 Block diagram

**Permissible Input Voltage Range**



Curve A:  
Maximum continuous operating voltage  
at limiting continuous current = 6 A

Curve B:  
Minimum relay operating voltage at initial  
trigger with U<sub>N</sub> and limiting continuous current = 6 A

Figure 2 Permissible input voltage range