

PLC-RSP...21-21/RW PLC-RSP...21-21AU/RW

PLC-INTERFACE With 2 PDT Relay for Railway
Applications in Accordance With EN 50155

INTERFACE

Data Sheet
103118_01_en

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Description

The 14 mm slim relay series **PLC-RSP...21-21/RW** has been especially developed for railway applications and is certified according to EN 50155. The modules available with input voltages of 24 V, 72 V and 110 V (further voltages on request) meet the trend towards energy, weight, and space saving in railway technology.

Wide-range Electronics Minimize Self-heating

In contrast to other manufacturer's relay modules PLC-RSP...21-21/RW has a special wide-range input voltage, similar to those in switched-mode power supply units, offering considerable advantages:

- Control voltage range from 70 % to 125 % of the nominal voltage throughout the entire temperature and load range
- Very low self-heating even with increased control voltage
- Wider ambient temperature range from -40 °C to +70 °C throughout the entire control voltage and load range

Furthermore, the modules are equipped with an RCZ filter and surge protection on the input side, to ensure high operational safety and resistance to interference.

Robust 2 PDT Relay for Small to Medium Loads

Regardless of whether switching of loads up to 2 x 6 A or pure signal coupling in mA range, a selection of suitable variants with power contact or hard gold-plated dry contact are available for every application. The relay is secured against vibration by a retaining bracket and can be exchanged if it becomes worn, without removing the wiring. The relay is sealed wash-tight (degree of protection RTIII) to ensure that the relay mechanics are protected against dust, humidity and aggressive gases,

Vibration-resistant Plug-in Bridge System Reduces the Wiring

Another feature of the PLC series is the FBST 500 plug-in bridge system that can be cut to any length: It can be plugged into the control and/or contact side "with a click" and snapped into place to ensure a vibration-free connection. Up to 35 PLCs can be clearly connected "to the block" within seconds, without any errors.

Additional PLC Advantages

- Marking labels from the standard modular terminal block range
- Many other electromechanical relays and electronic solid-state relays are available in the PLC series
- Quick, polarized connection of eight PLCs with control via PLC-V8 adapter and system cable
- High-quality, vibration proof Phoenix Contact connection method



Make sure you always use the latest documentation.
It can be downloaded at www.download.phoenixcontact.com.

A conversion table is available on the Internet at
www.download.phoenixcontact.com/general/7000_en_00.pdf.



This data sheet is valid for the following products.

Ordering Data

PLC-INTERFACE With Power Contact

Description	Type	Order No.	Pcs./Pck.
PLC-INTERFACE with 2 PDT relay for railway applications in accordance with EN 50155, input voltage 24 V DC	PLC-RSP- 24UC/21-21/RW	2987105	10
PLC-INTERFACE with 2 PDT relay for railway applications in accordance with EN 50155, input voltage 72 V DC	PLC-RSP- 72UC/21-21/RW	2987121	10
PLC-INTERFACE with 2 PDT relay for railway applications in accordance with EN 50155, input voltage 110 V DC	PLC-RSP-110UC/21-21/RW	2987147	10

PLC-INTERFACE Hard Gold-plated Dry Contact

Description	Type	Order No.	Pcs./Pck.
PLC-INTERFACE with 2 PDT relay for railway applications in accordance with EN 50155, input voltage 24 V DC	PLC-RSP- 24UC/21-21AU/RW	2987118	10
PLC-INTERFACE with 2 PDT relay for railway applications in accordance with EN 50155, input voltage 72 V DC	PLC-RSP- 72UC/21-21AU/RW	2987134	10
PLC-INTERFACE with 2 PDT relay for railway applications in accordance with EN 50155, input voltage 110 V DC	PLC-RSP-110UC/21-21AU/RW	2987150	10

Accessories

Description	Type	Order No.	Pcs./Pck.
Partition plate	PLC-ATP BK	2966841	25



Separating plate PLC-ATP BK is to 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.

Further accessories such as power terminal and plug-in bridges can be found in the INTERFACE catalog and at www.phoenixcontact.com.

Technical Data

Input Data	PLC-...24UC...	PLC-...72UC...	PLC-...110UC...
Nominal input voltage U_N	24 V DC	72 V DC	110 V DC
Permissible range (with reference to U_N)	0.7 ... 1.25 x U_N		
Typical input current at U_N	12 mA	5,9 mA	4 mA
Typical response time at U_N	8 ms		
Typical release time at U_N	11 ms		
Input configuration	LED, wide-range electronics, free-wheeling diode, surge protection, bridge rectifier, RCZ filter		
Output Data	PLC-...21/RW	PLC-...21-21AU/RW	
Contact type	Single contact, 2 PDT		
Contact material	AgNi	AgNi, hard gold-plated ¹	
Maximum switching voltage	250 V AC/DC ²	30 V AC / 36 V DC ²	
Minimum switching voltage	12 V AC/DC	100 mV at 10 mA	
Limiting continuous current	6 A	50 mA	

PLC-RSP...21-21/RW

Output Data (Continued)	PLC-...21/RW	PLC-...21-21AU/RW
Maximum inrush current	15 A (300 ms)	50 mA
Minimum switching current	10 mA	1 mA at 5 V
Maximum power rating	Ohmic load $\tau = 0$ ms	Ohmic load $\tau = 0$ ms
24 V DC	140 W	1.2 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	–

¹ If the specified maximum values are exceeded, the gold coating will be damaged. In subsequent operation, the values of the PLC-...21-21/RW with power contact will apply. This can then result in reduced service life, similar to dedicated power contacts.

² The PLC-ATP BK partition 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	
Rated surge voltage	6 kV
Ambient temperature range	-40 °C... 70 °C (temperature class TX)
Nominal operating mode	100% operating factor
Inflammability class according to UL 94 (housing)	V0
Mechanical service life	3 x 10 ⁷ cycles
Air and creepage distances between circuits	DIN EN 50178 (safe isolation: control/contact side)
Pollution degree	2
Surge voltage category	III
Mounting position	Any
Installation location/category	On vehicle body/category 1, class B
Mounting	Can be aligned without spacing
Connection method	Spring-cage connection
Conductor Cross Section	
Solid	0.2 mm ² ... 2.5 mm ²
Stranded	0.2 mm ² ... 2.5 mm ²
Dimensions (W x H x D)	14 mm x 94 mm x 80 mm
Housing material	Polybutylene terephthalate PBT non-reinforced, green

Tests/Approvals	
EN 50155, EN 61373, EN 50121	Yes
CE	CE
UL, GL	Applied for

Block Diagram

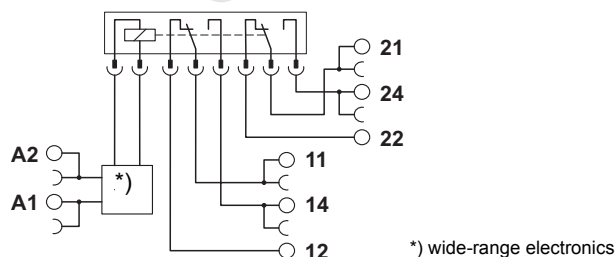
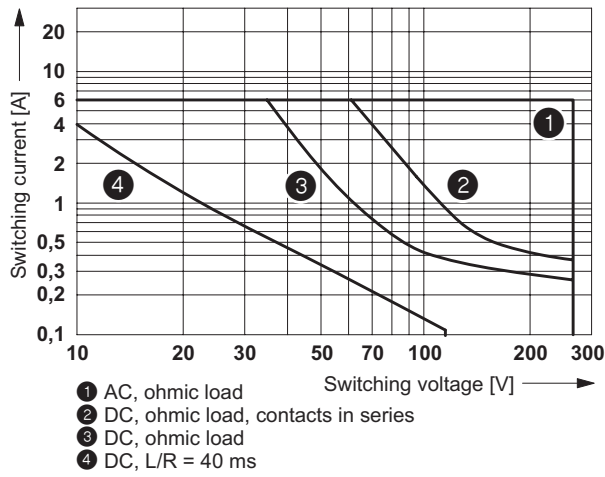
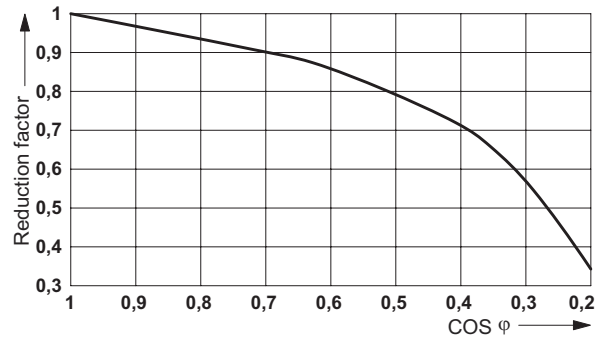


Figure 1 Block diagram

Power Rating



Service Life Reduction Factor



Electrical Service Life

