

PLC-RS...21-21

PLC INTERFACE With DPDT Relay

INTERFACE

Data Sheet
102530_en_01

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1 Description

The 14 mm **PLC-RS.../21-21** relay series can be used universally. It comprises a basic terminal block and plug-in miniature relay with 2 PDT contacts.

1.1 PDT Offers a High Degree of Flexibility

The PLC-RS.../21-21 universal PDT module is used whenever an application requires a high degree of flexibility. It can be used either as an input or output module or in N/O, N/C or PDT contact applications.

This offers the advantage of fewer ordering and warehousing items. PLC INTERFACE modules are supplied fully equipped with a relay as standard.

1.2 Input Voltages From 5 V to 230 V

Versions with input voltages from 5 V to 230 V are suitable for all industrial applications. An input circuit – which consists of a status indicator as well as free-wheeling diode and polarity reversal protection function – is integrated in the module.

1.3 Optimum Use of Plug-In Bridges

The PLC INTERFACE module achieves maximum efficiency with the user-friendly FBST plug-in bridge system. The PLC-RS.../21-21 makes effective use of the bridging options for the A1/A2 connection on the coil side and for the grouped power supply at connection 11 on the contact side. Especially effective here are the 500 mm long color-insulated continuous plug-in bridges that can easily be cut to the required length and quickly inserted in the bridge shafts. They eliminate the need for complicated and time-consuming loop bridges.

1.4 Additional PLC Advantages

- Operational safety with RT III (IP67)-protected mechanics
- Environmentally friendly, cadmium-free power contact material for loads up to 250 V AC/6 A
- Available with gold coating for low power levels (mA) as an option
- Integrated input circuit
- Relay can be replaced using an engagement lever
- Safe isolation according to DIN EN 50178
- Inflammability class V0 according to UL94



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 all products listed on the following page:

2 Ordering Data

PLC INTERFACE With Screw Connection

Description	Type	Order No.	Pcs./Pck.
PLC INTERFACE with DPDT relay, comprising PLC-BSC.../21 basic terminal block and plug-in miniature relay (see INTERFACE catalog), for mounting on 	12 V DC PLC-RSC- 12DC/21-21	2967235	10
	24 V DC PLC-RSC- 24DC/21-21	2967060	10
	24 V AC/DC PLC-RSC- 24UC/21-21	2967073	10
	48 V DC PLC-RSC- 48DC/21-21	2967248	10
	60 V DC PLC-RSC- 60DC/21-21	2967293	10
	120 V AC/110 V DC PLC-RSC-120UC/21-21	2967086	10
	230 V AC/220 V DC ¹ PLC-RSC-230UC/21-21	2967099	10

PLC INTERFACE With Spring-Cage Connection

Description	Type	Order No.	Pcs./Pck.
PLC INTERFACE with DPDT relay, comprising PLC-BSP.../21 basic terminal block and plug-in miniature relay (see INTERFACE catalog), for mounting on 	12 V DC PLC-RSP- 12DC/21-21	2912497	10
	24 V DC PLC-RSP- 24DC/21-21	2912507	10
	24 V AC/DC PLC-RSP- 24UC/21-21	2912510	10
	48 V DC PLC-RSP- 48DC/21-21	2912523	10
	60 V DC PLC-RSP- 60DC/21-21	2912536	10
	120 V AC/110 V DC PLC-RSP-120UC/21-21	2912549	10
	230 V AC/220 V DC ¹ PLC-RSP-230UC/21-21	2912552	10

¹ The PLC-ATP BK 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.

Accessories

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



The PLC-ATP BK 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.

For additional accessories such as power terminal blocks and plug-in bridges, please refer to the INTERFACE catalog or www.phoenixcontact.com.

3 Technical Data

Input Data	...12DC...	...24DC...	...24UC...	...48DC...	...60DC...	...120UC...	...230UC...
Nominal input voltage U_N ¹	12 V DC	24 V DC	24 V AC/DC	48 V DC	60 V DC	120 V AC/ 110 V DC	230 V AC/ 220 V DC
Permissible range (with reference to U_N)	See "Operating Voltage Ranges" on page 4						
Typical input current at U_N	33 mA	18 mA	17.5 mA	20 mA	10 mA	4.5 mA	
Typical response time at U_N	8 ms					7 ms	
Typical release time at U_N	10 ms						
Input circuit							
DC	Yellow LED, protection against polarity reversal, free-wheeling diode						
AC/DC	Yellow LED, bridge rectifier						

¹ The PLC-ATP BK 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.

PLC-RS...21-21

Output Data

Contact type	Single contact, DPDT
Contact material	AgNi
Maximum switching voltage	250 V AC/DC ¹
Minimum switching voltage	5 V AC/DC
Limiting continuous current	6 A
Maximum inrush current	15 A (300 ms)
Minimum switching current	10 mA
Maximum shutdown power	Ohmic load $\tau = 0$ ms
	24 V DC 140 W
	48 V DC 85 W
	60 V DC 60 W
	110 V DC 44 W
	220 V DC 60 W
	250 V AC 1500 VA

¹ The PLC-ATP BK 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	4 kV (50 Hz, 1 min.)
Ambient temperature range	
Operation	-25°C ... 60°C (230 V type -25°C ... 55°C)
Storage/transport	-40°C ... 85°C
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 the circuits	DIN EN 50178/VDE 0160 (safe isolation, reinforced insulation I/O)
Standards/specifications	IEC 60664, IEC 60664 A, DIN VDE 0110, DIN EN 50155/VDE 0115-200 (in relevant parts), IEC 60255/DIN VDE 0435 (in relevant parts)
Pollution degree	3
Surge voltage category	III
Mounting position	Any
Mounting	Can be aligned without spacing
Conductor cross-section	
Solid, with screw connection	0.14 mm ² ... 2.5 mm ² (26 - 14 AWG)
Stranded, with screw connection	0.14 mm ² ... 1.5 mm ² (26 - 14 AWG)
Solid, with spring-cage connection	0.2 mm ² ... 2.5 mm ² (24 - 14 AWG)
Stranded, with spring-cage connection	0.2 mm ² ... 1.5 mm ² (24 - 14 AWG)
Stripping length	
Screw connection	10 mm
Spring-cage connection	8 mm
Dimensions (W x H x D)	14 mm x 94 mm x 80 mm
Housing material	Polybutylene terephthalate PBT, non-reinforced, green

Tests/Approvals

CE	CE
UL/CUL, GL	Applied for

4 Block Diagram

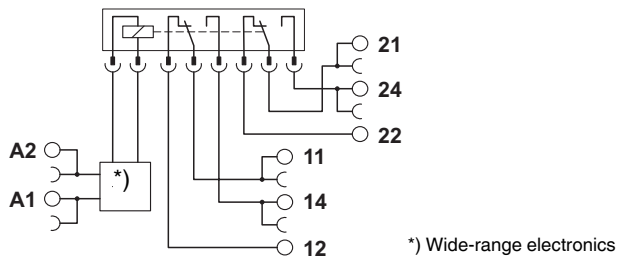


Figure 1 Block diagram

5 Operating Voltage Ranges

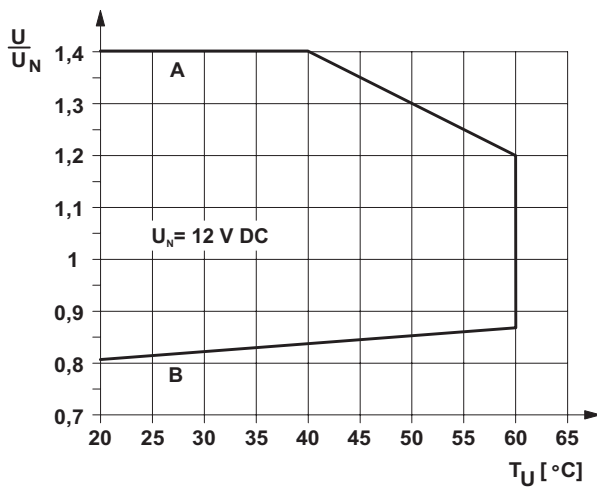


Figure 2 Operating voltage range for 12 V DC

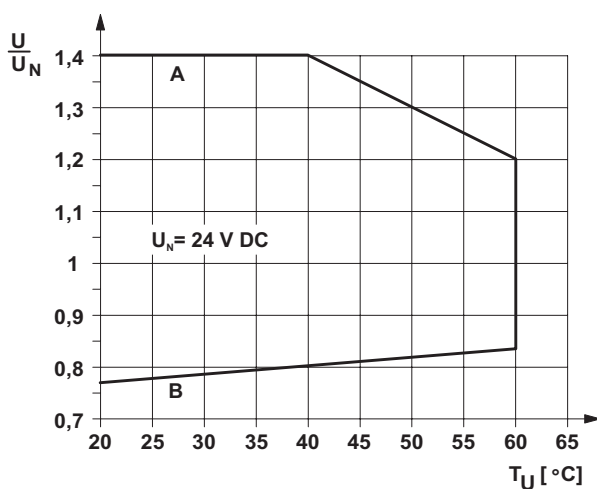


Figure 3 Operating voltage range for 24 V DC

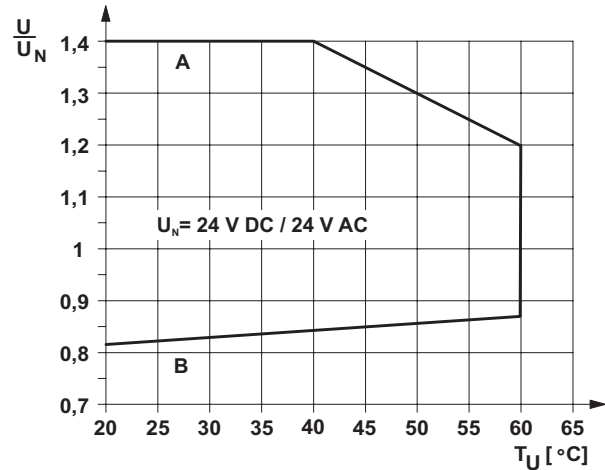


Figure 4 Operating voltage range for 24 V AC/DC

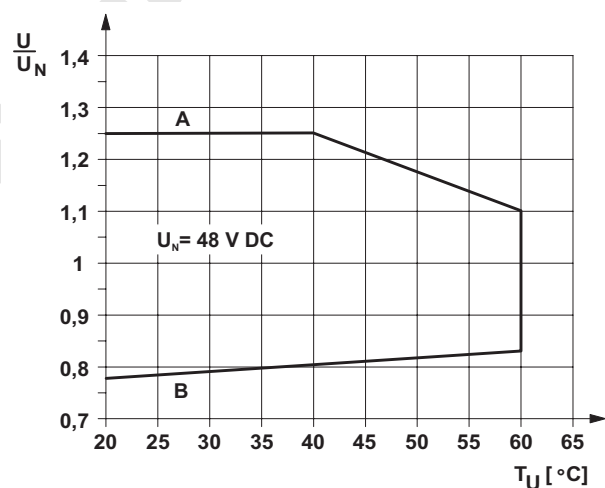


Figure 5 Operating voltage range for 48 V DC

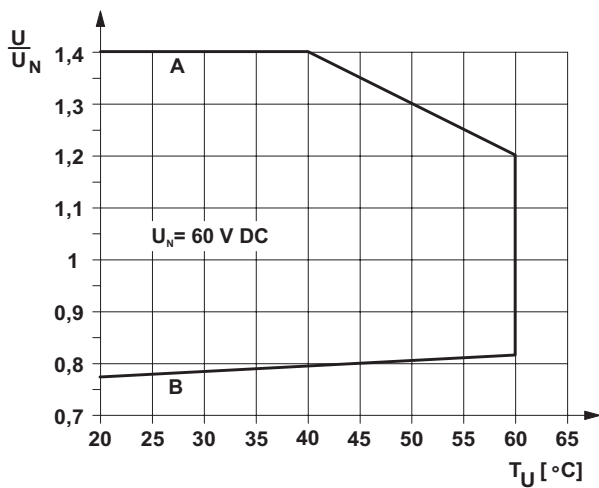


Figure 6 Operating voltage range for 60 V DC

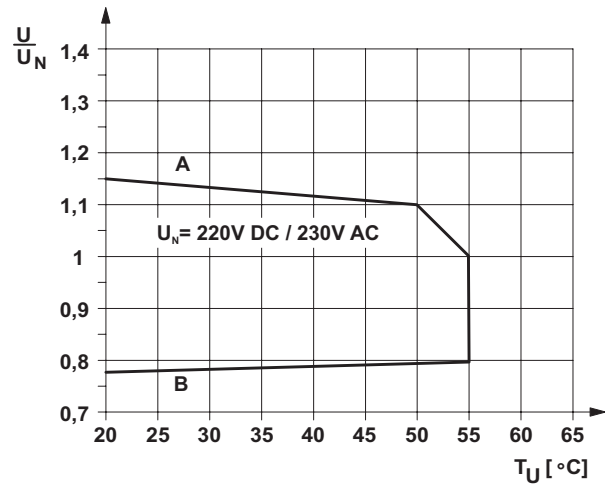


Figure 8 Operating voltage range for 230 V AC/DC

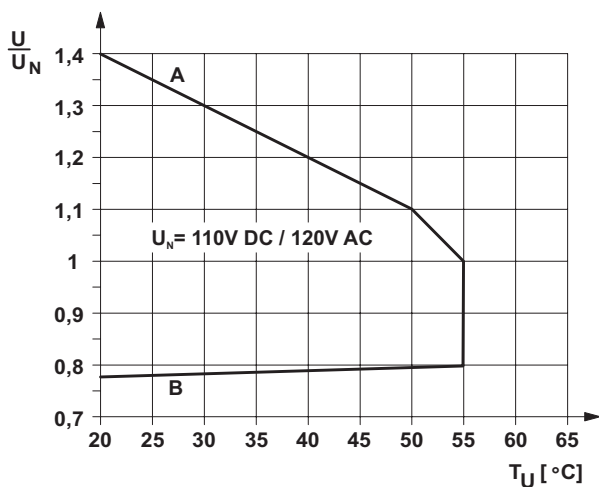


Figure 7 Operating voltage range for 120 V AC/DC

General Conditions

Direct alignment in the block, all devices 100% operating factor, horizontal or vertical mounting.

Curve A

Maximum permissible continuous voltage $U_{\max}$ with limiting continuous current on the contact side

Curve B

Minimum permissible operate voltage U_{op} following pre-excitation