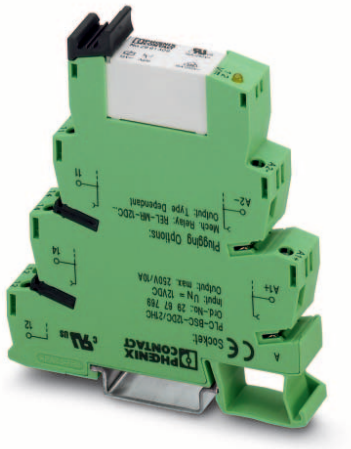
PLC-R...21HC

PLC INTERFACE With SPDT Relay, High-Current Version



INTERFACE

Data Sheet
100221_03_en

Description

A number of applications such as electrical heating systems require higher continuous load currents than miniature relays can carry and switch.

Long Electrical Service Life

The above-average service life of the contacts is particularly noticeable in the mid-load range when compared with less powerful relays. On average, the interval between servicing can be doubled or tripled, thus reducing costs.

Rugged SPDT Relay for Higher Loads

The abbreviation "HC" in the designation stands for "High Current" applications with up to 10 A continuous current. The block contains a 16 A power relay with PDT contact application, so that additional reserves are used if overdimensioning occurs, e.g., in the event of temporary overload. The relay is secured against vibration by a captive retaining bracket and can be replaced if it becomes worn without having to remove the wiring. The relay is sealed with RTII protection to protect the relay mechanics against external influences such as dust.

Vibration-Resistant Plug-In Bridge System Reduces the Amount of Wiring Required

Another feature of the PLC series is the FBST 500 plug-in bridge system, which 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 vibration-resistant connection. Up to 35 PLCs can be clearly connected "to the block" within seconds, without any errors.

Additional user-friendly wiring is provided by the contact connections arranged in pairs, if more than one conductor has to be connected per contact.

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 connection with protection against polarity reversal of eight PLCs to the control system via PLC-V8 adapter and system cable
- High-quality, vibration-resistant 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 all products listed on the following page.

Ordering Data

Description		Type	Order No.	Pcs./Pck.
PLC INTERFACE With Screw Connection				
PLC INTERFACE with SPDT relay, high-current version, comprising PLC-BSC-... basic terminal block and plug-in miniature relay (see INTERFACE catalog), for assembly on ⊓.	12 V DC	PLC-RSC- 12DC/21HC	2967617	10
	24 V DC	PLC-RSC- 24DC/21HC	2967620	10
	24 V AC/DC	PLC-RSC- 24UC/21HC	2967633	10
	48 V DC	PLC-RSC- 48DC/21HC	2967646	10
	60 V DC	PLC-RSC- 60DC/21HC	2967659	10
	120 V AC/110 V DC	PLC-RSC-120UC/21HC	2967662	10
	230 V AC/220 V DC[1]	PLC-RSC-230UC/21HC	2967675	10
PLC INTERFACE With Spring-Cage Connection				
PLC INTERFACE with SPDT relay, high-current version, comprising PLC-BSC-... basic terminal block and plug-in miniature relay (see INTERFACE catalog), for assembly on ⊓.	12 V DC	PLC-RSP- 12DC/21HC	2912264	10
	24 V DC	PLC-RSP- 24DC/21HC	2912277	10
	24 V AC/DC	PLC-RSP- 24UC/21HC	2912280	10
	48 V DC	PLC-RSP- 48DC/21HC	2912293	10
	60 V DC	PLC-RSP- 60DC/21HC	2912303	10
	120 V AC/110 V DC	PLC-RSP-120UC/21HC	2912316	10
	230 V AC/220 V DC[1]	PLC-RSP-230UC/21HC	2912329	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.

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/ 4.2 mA	4.5 mA/ 4.3 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.

Output Data

Contact type	Single contact, SPDT
Contact material	AgNi
Maximum switching voltage	250 V AC/DC[1]
Minimum switching voltage	12 V AC/DC
Limiting continuous current	10 A (6 A)[2]
Maximum inrush current	30 A (300 ms)
Minimum switching current	100 mA
Maximum shutdown power	Ohmic load t = 0 ms
24 V DC	240 W (144 W)[2]
48 V DC	58 W
60 V DC	48 W
110 V DC	50 W
220 V DC	80 W
250 V AC	2500 VA (1500 VA)[2]
Minimum switching power	1.2 W

[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.

[2] The values in brackets are for connections 12. If connections 12 are bridged, the values in brackets apply.

General Data

Impulse voltage withstand level	6 kV
Ambient temperature range	
Operation	-25°C ... +60°C (230 V type -25°C ... +55°C)
Storage/transport	-25°C ... +70°C (230 V type -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[1]	IEC 60664, IEC 60664 A, DIN VDE 0110, DIN EN 50178/VDE 0106-160, IEC 60255/DIN VDE 0435
Pollution degree	3
Surge voltage category	III
Mounting position	Any
Mounting	Can be aligned without spacing
Conductor cross-section	
Screw connection, solid and stranded	0.14 mm^2 ... 2.5 mm^2 (26 - 14 AWG)
Spring-cage connection, solid and stranded	0.2 mm^2 ... 2.5 mm^2 (26 - 14 AWG)
Stripping length	8 mm
Dimensions (W x H x D)	14 mm x 94 mm x 80 mm
Housing material	Polybutylene terephthalate PBT non-reinforced, green

[1] The PLC-ATP BK 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.

Tests/Approvals

CE	CE
UL	
GL	

Block Diagram

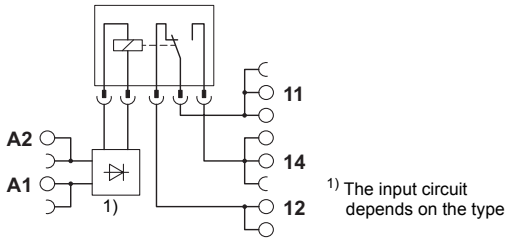


Figure 1 Block diagram

Operating Voltage Ranges

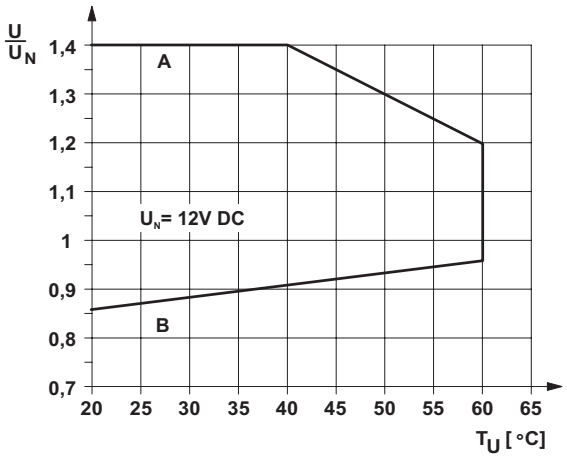


Figure 2 Operating voltage range for 12 V DC

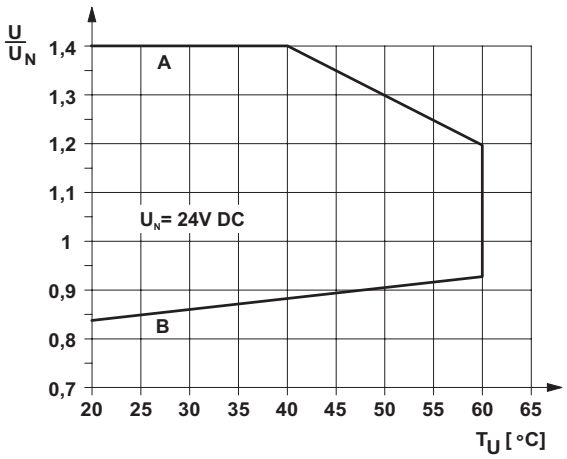


Figure 3 Operating voltage range for 24 V DC

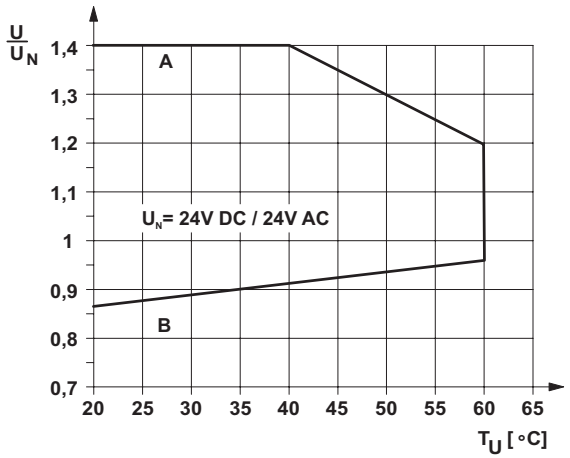


Figure 4 Operating voltage range for 24 V AC/DC

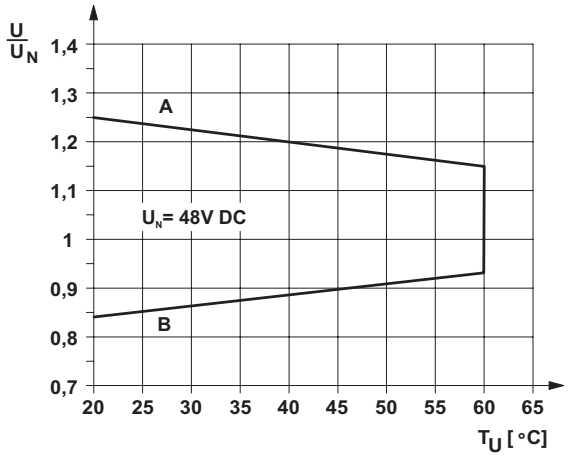


Figure 5 Operating voltage range for 48 V DC

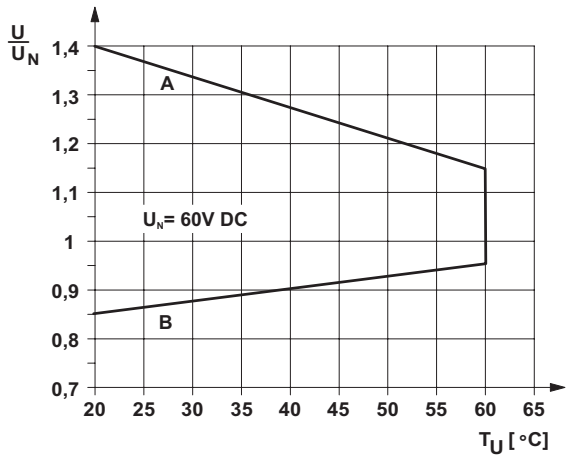


Figure 6 Operating voltage range for 60 V DC

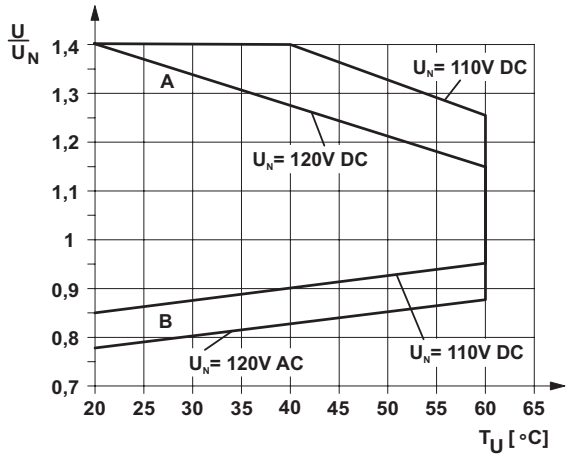


Figure 7 Operating voltage range for 120 V AC/DC

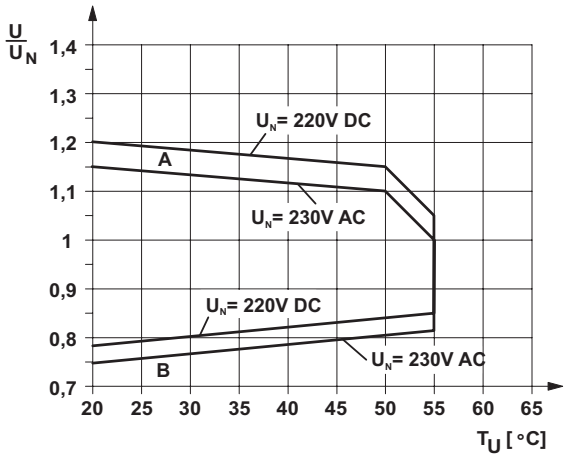


Figure 8 Operating voltage range for 230 V AC/DC

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

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