Rexroth Inline Power Terminal

R911170608
Edition 02

R-IB IL 24 PWR IN-PAC

Power Terminal
24 V DC
Without Fuse

06/2011

1 Description

The terminal is designed for use within an Inline station.
It supplies 24 V power to the main circuit (U_M). In addition, this terminal can be used to supply 24 V power for a segment circuit (U_S).

This terminal does not have an INTERBUS protocol chip and therefore is not an INTERBUS device.

1.1 Features

- Supply of the 24 V main voltage U_M
- Supply/provision of the 24 V segment voltage U_S
- The main and segment circuit can be protected by an external fuse
- Diagnostic indicators
- Approved for providing the supply voltage in a safety-related segment circuit and for use directly after a safety-related segment circuit
(Please observe the notes on page 6)

This data sheet is only valid in association with the application descriptions for the Rexroth-Inline system (see "Documentation" on page 2).

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

2 Ordering Data

Products

Description	Type	MNR	Pcs. / Pkt.
Rexroth Inline power terminal without fuse, including accessories (connector and labeling field)	R-IB IL 24 PWR IN-PAC	R911170789	1

Documentation

Description	Type	MNR	Pcs. / Pkt.
"Automation Terminals of the Rexroth Inline Product Range" application description	DOK-CONTRL-ILSYSINS***-AW..-EN-P	R911317021	1
"Safety-Related Segment Circuit" application description	DOK-CONTRL-ILSAFE*SEG*-AP..-EN-P	R911335486	1

For additional ordering data (accessories), please refer to the product catalog at www.boschrexroth.com.

3 Technical Data

General data	
Housing dimensions (width x height x depth)	12.2 mm x 119.8 mm x 71.5 mm
Weight	59 g (with connector)
Ambient temperature (operation)	-25°C to +55°C
Ambient temperature (storage/transport)	-25°C to +85°C
Permissible humidity (operation/storage/transport)	10% to 95%, according to DIN EN 61131-2
Permissible air pressure (operation/storage/transport)	70 kPa to 106 kPa (up to 3000 m above sea level)
Degree of protection	IP20 according to IEC 60529
Class of protection	Class III according to EN 61131-2, IEC 61131-2
Connection data for Inline connectors	
Connection method	Spring-cage terminals
Conductor cross section	0.08 mm^2 to 1.5 mm^2 (solid or stranded), 28 - 16 AWG

Transmission speed	
Can be used in Inline stations with the following transmission speed	500 kbps or 2 Mbps

24 V I/O supply (main circuit U_M)	
Connection	
+ 24 V	Terminal points 1.2 and 2.2
Ground (GND)	Terminal points 1.3 and 2.3
Rated value	24 V DC
Tolerance	-15% / +20%
AC voltage component	5%
Permissible range	19.2 V to 30 V
Permissible current	8 A, maximum
Demands on the power supply	The power terminal must be supplied from a new power supply unit to create an electrically isolated area. Protect the 24 V power supply with an external fuse.

CAUTION

The power supply unit must be able to supply 4 times (400%) the nominal current of the external fuse.

Protective equipment	
Overload/short circuit in the segment circuit	No
Surge voltage	Yes; Suppressor diode for voltage limitation between terminal points 1.1 and 1.3 as well as terminal points 1.2 and 1.3
Polarity reversal	Yes, diode connected in parallel as protection against polarity reversal

Electrical isolation/isolation of the voltage areas

CAUTION

To provide electrical isolation between the logic level and the I/O area, it is necessary to supply these areas via the bus coupler or via the bus coupler and a power terminal from separate power supply units. Interconnection of the power supply units in the 24 V area is not permitted.
(See also application description)

Common potentials

The 24 V main voltage, 24 V segment voltage, and GND have the same potential. FE is a separate potential area.

Separate potentials in the system consisting of bus coupler/power terminal and I/O terminal

- Test distance	- Test voltage
5 V supply incoming remote bus/7.5 V supply (bus logic)	500 V AC, 50 Hz, 1 min.
5 V supply outgoing remote bus/7.5 V supply (bus logic)	500 V AC, 50 Hz, 1 min.
7.5 V supply (bus logic)/24 V supply (I/O)	500 V AC, 50 Hz, 1 min.
24 V supply (I/O)/functional earth ground	500 V AC, 50 Hz, 1 min.

Error messages to the higher-level control or computer system

None

Approvals

For the latest approvals, please visit www.boschrexroth.com.

4 Local Diagnostic Indicators and Terminal Assignment

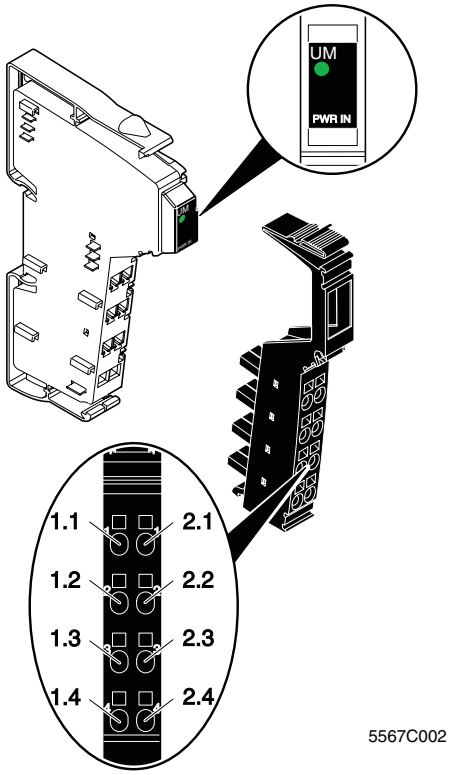

Fig. 1 Terminal with appropriate connector

4.1 Local Diagnostic Indicator

Des.	Color	Meaning
UM	Green	24 V voltage (in the main circuit U_M)

4.2 Function Identification

Black

4.3 Terminal Point Assignment

Terminal point	Assignment
1.1, 2.1	Supply points for the segment circuit U_S (+24 V) Connection of a switch or a jumper on the segmentation level.
1.2, 2.2	Supply points for the main circuit U_M (main circuit; +24 V). Connection of a switch or jumper on the segmentation level. These terminal points are connected to each other and to one side of the potential jumper of the unprotected main supply U_M . The potential jumpers of the unprotected main circuit U_M and the segment circuit U_S have a combined current carrying capacity of 8 A.
1.3, 2.3	Ground connection (GND) The reference potential is routed directly to the potential jumper and is, at the same time, ground reference for the main and segment voltage.
1.4, 2.4	FE connection The contacts are directly connected to the potential jumper and the FE spring on the bottom of the housing. The terminal is grounded when it is snapped onto a grounded DIN rail.
	Terminal points 1.1, 1.2, and 1.3 are connected with a capacitor to FE.

CAUTION

Observe the current carrying capacity

The maximum total current flowing through the potential jumpers must not exceed 8 A.

5 Internal Basic Circuit Diagram

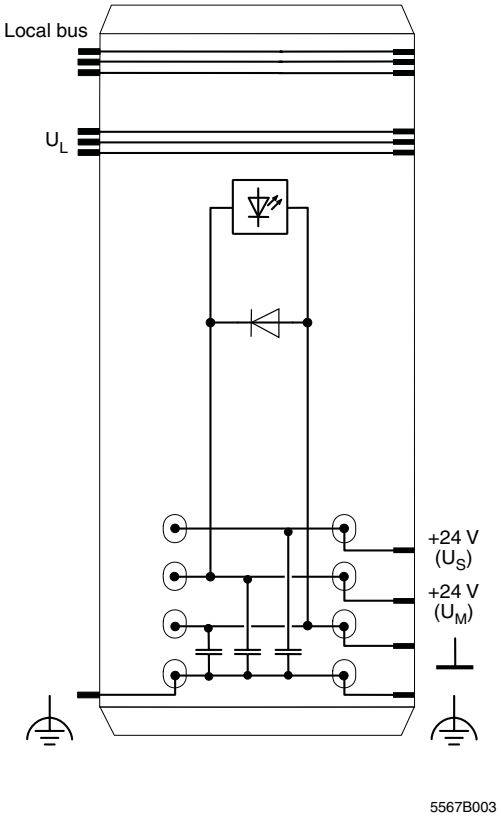

Fig. 2 Internal wiring of the terminal points

Key:

	LED
	Diode
	Capacitive connection to functional earth ground (FE)

Other symbols used are explained in the application descriptions for the Rexroth Inline system (see "Documentation" on page 2).

6 Connection Example

CAUTION

Protect the 24 V supply with an external fuse.

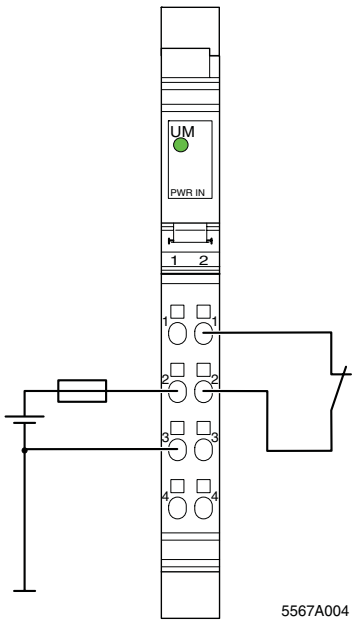

Fig. 3 Typical connection of the supply voltage U_M and of an external switch to supply the segment voltage U_S

CAUTION

To ensure maximum current carrying capacity, use the supplied power connector to connect the cables.

In this connector, the adjacent terminal points 1.2 and 2.2, as well as 1.3 and 2.3 are jumpered internally.

Most I/O terminals receive their supply voltage from the segment circuit.

The switch can be used to create a switched segment circuit.

If this is not needed for your specific application, you can provide the segment voltage in one of the following ways:

1 Jumper connections 1.1 and 1.2 or 2.1 and 2.2.

2 Supply the segment voltage separately.

3 Use an additional segment terminal.

7 Notes on Using the Terminal Within a Safety-Related Segment Circuit

The terminal of the following revision index and later is approved for use within a safety-related segment circuit and directly after a safety-related segment circuit.

MNR	Type	Revision index
R911170789	R-IB IL 24 PWR IN-PAC	GA1

The revision index is marked on the side of the housing of every terminal (1 in Fig. 4).

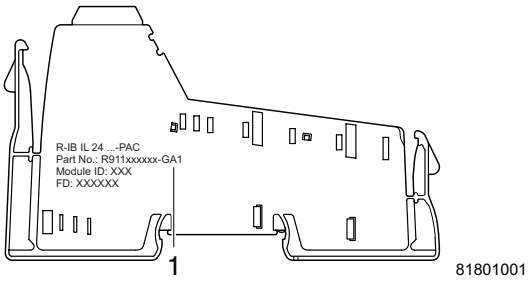

Fig. 4 Labeling on an Inline terminal

The instructions in the current documentation for the safety terminal used and from the DOK-CONTRL-IL-SAFE*SEG*-AP..-EN-P application description must be observed to ensure that operation of the safety-related segment circuit is not adversely affected.
The current documentation is available for download at
www.boschrexroth.com.

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