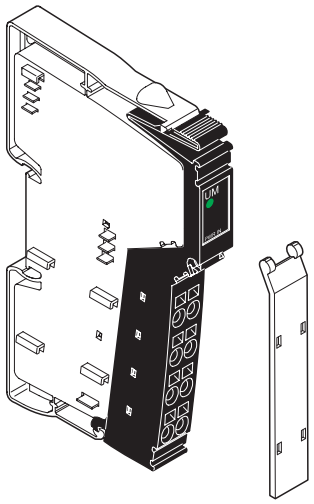
IB IL 24 PWR IN (-PAC)

Inline Power Terminal Without Fuse



AUTOMATIONWORX

Data Sheet
5567_en_05

Description

The terminal is designed for use within an Inline station. The terminal 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.

Features

- Supply of the 24 V main voltage U_M
- Supply/provision of the 24 V segment voltage U_S
- Main circuit protected by an external fuse
- Segment circuit can be protected by an external fuse
- Diagnostic indicator
- Approved as power terminal following a safety segment circuit

Please observe the notes on page 6 when using the terminals following a safety-related segment circuit.

This data sheet is only valid in association with the IL SYS INST UM E user manual or the Inline system manual for your bus system.

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 products listed on the following page.

Ordering Data

Terminals

Description	Type	Order No.	Pcs./Pkt.
Power terminal without fuse complete with accessories (connectors and labeling field)	IB IL 24 PWR IN-PAC	2861331	1
Power terminal without fuse, without accessories	IB IL 24 PWR IN	2726311	1

One of the listed connectors for the voltage supply is required for the IB IL 24 PWR IN terminal.

Accessories

Description	Type	Order No.	Pcs./Pkt.
Connector, for Inline power and segment terminal blocks (black, w/o color print);	IB IL SCN-PWR IN	2727462	10
Connector, colored, for Inline power and segment terminal blocks	IB IL SCN-PWR IN-CP	2727637	10

Documentation

Description	Type	Order No.	Pcs./Pkt.
User manual: "Configuring and Installing the INTERBUS Inline Product Range"	IB IL SYS PRO UM E	2743048	1
User manual: "Automation Terminals of the Inline Product Range"	IL SYS INST UM E	2698737	1
Data sheet: "IB IL 24 SAFE 1 (-PAC) Safety Terminal“	DB GB IB IL 24 SAFE 1 (-PAC)	9004913	–
Application note: "Inline Terminals for Use in Zone 2 Potentially Explosive Areas"	AH EN IL EX ZONE 2	7217	–

Technical Data

General Data	
Housing dimensions (width x height x depth)	12.2 mm x 120 mm x 71.5 mm
Weight	44 g (without connectors), 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 (storage/transport)	70 kPa to 106 kPa (up to 3,000 m above sea level)
Degree of protection	IP20 according to IEC 60529
Class of protection	Class 3 according to VDE 0106, IEC 60536
Connection data for Inline connector	
Connection method	Spring-cage terminals
Conductor cross section	0.2 mm^2 to 1.5 mm^2 (solid or stranded), AWG (24 - 16)

24 V I/O Supply (Main Circuit U_M)		
Connection	+24 V Ground (GND)	Terminal points 1.2 and 2.2 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

24 V I/O Supply (Main Circuit U_M) (Continued)

Permissible current	8 A, maximum
Voltage supply requirements	The power terminal must be supplied from a new power supply unit to create an electrically isolated area. Protect the 24 V area via an external fuse.

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

Safety Equipment

Overload/short-circuit in segment circuit	No
Surge voltage	Yes, suppressor diode for voltage limitation between terminal points 1.1 and 1.3, and terminal points 1.2 and 1.3
Polarity reversal	Yes, diode connected in parallel as protection against polarity reversal

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

Electrical Isolation/Isolation of the Voltage Areas

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. Please also pay attention to GND/PE connections on the power supply units (see also user manual).

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.download.phoenixcontact.com.

Local Diagnostic Indicators and Terminal Assignment

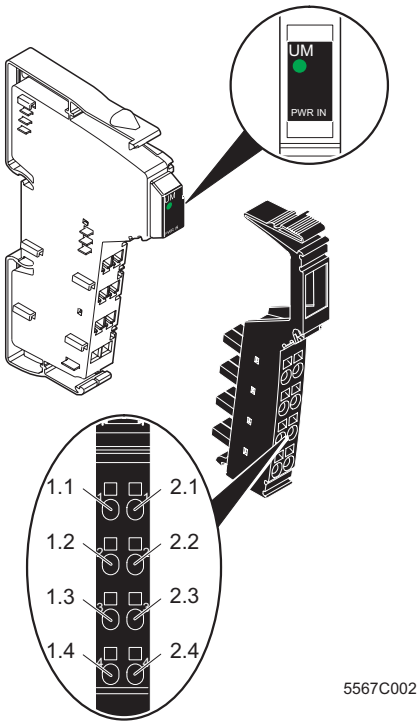


Figure 1 The terminal with the appropriate connector

Local Diagnostic Indicators

Des.	Color	Meaning
UM	Green	24 V Voltage (main circuit U_M)

Function Identification

Black

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 in the segmentation level.
1.2, 2.2	Supply points for the main circuit U_M (Main Circuit; +24 V) Connection of a switch or a jumper in the segmentation level. These terminal points are connected with each other and with 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 contact (GND) The reference potential is directly led 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 with 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.

Observe the current carrying capacity

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

Internal Circuit Diagram

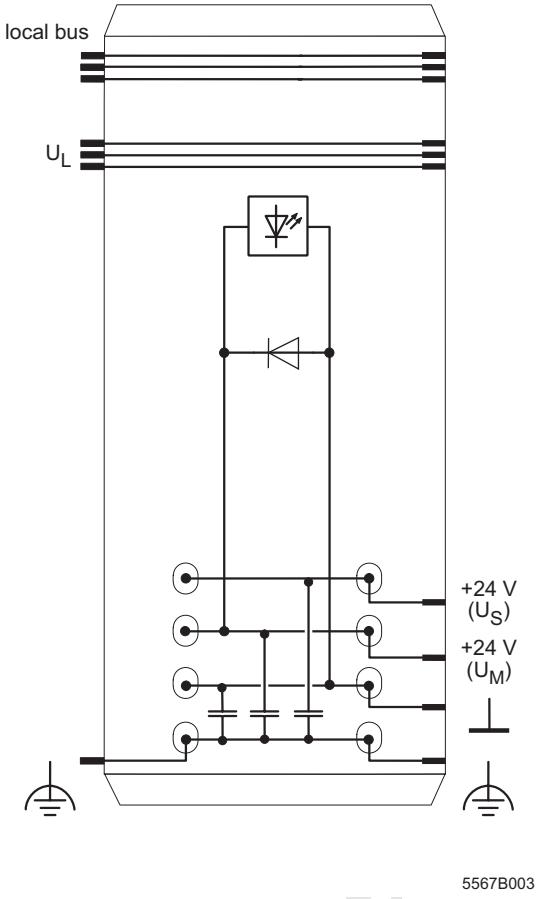


Figure 2 Internal wiring of the terminal points

Key:

LED

Diode

Capacitive connection to functional earth ground (FE)

Other symbols used are explained in the IL SYS INST UM E user manual or in the Inline system manual for your bus system.

Connection Example

Protect the 24 V supply with an external fuse!

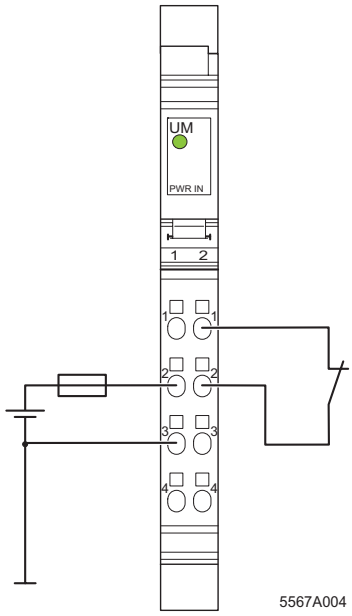


Figure 3 Typical connection of the supply voltage U_M and of an external switch to supply the segment voltage U_S

To ensure maximum current carrying capacity, use a power connector to connect the cables (see "Ordering Data" on page 2).
In these connectors, the adjacent terminal points 1.2 and 2.2, and 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 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.

Notes on Using the Terminals Following a Safety-Related Segment Circuit

Both terminals of the following hardware revision or later are approved to supply the supply voltage directly after a safety-related segment circuit.

Order No.	Order Designation	Hardware Version
2726311	IB IL 24 PWR IN	06
2861331	IB IL 24 PWR IN-PAC	00

The hardware version is imprinted on the side of the housing of every terminal (1 in Figure 4).

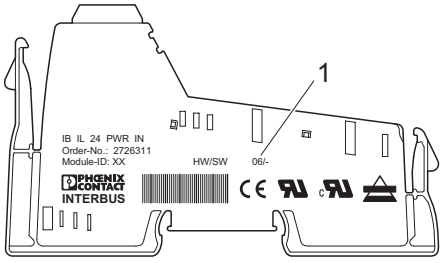


Figure 4 Imprinting on an Inline terminal

The instructions in the current documentation for the safety terminal must be observed to ensure that the operation of the safety-related segment circuit is not adversely affected.

Up-to-date documentation is available at www.download.phoenixcontact.com. It can be downloaded free of charge.

Notes on Using the Terminal in Potentially Explosive Areas

Approval in Acc. With EG-RL 94/9 (ATEX) II 3G EEx nAC IIC T4 U

This Inline terminal conforms to standard EN 50021 and can be installed in a Zone 2 potentially explosive area. These Inline terminals are Category 3 items of equipment.

UL Approval

These Inline terminals for the indicated hardware version or later are suitable for use in Class I, Division 2, Groups A, B, C, D.

Before using an Inline terminal in a Zone 2 potentially explosive area, check that the terminal has been approved for installation in this area.

For a list of terminals that are approved for the potentially explosive areas of Zone 2, please refer to the AH EN IL EX ZONE 2 application note.

Check the labeling on the Inline terminal and the packaging (see Figure 5).

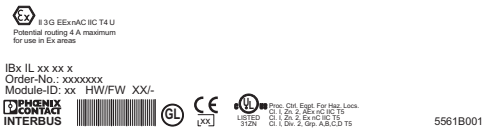


Figure 5 Example labeling of terminals for use in potentially explosive areas

Before startup, ensure that the following points and instructions are observed.

1. When working on the Inline terminal, always switch off the supply voltage.
2. The Inline terminal must only be installed, started up, and maintained by qualified specialist personnel.
3. Install the Inline terminals in a control cabinet or metal housing. The minimum requirement for both items is IP54 protection according to EN 60529.
4. The Inline terminal must not be subjected to any mechanical or thermal strain, which exceeds the limits specified in the product documentation.
5. The Inline terminal must not be repaired by the user. Repairs may only be carried out by the manufacturer. The Inline terminal is to be replaced by an approved terminal of the same type.
6. During operation, only Category 3G equipment must be connected to Inline terminals in Zone 2.
7. Observe all applicable standards (e.g., EN 60079) and national safety and accident prevention regulations for installing and operating equipment.

Restrictions

When using terminals in potentially explosive areas, observe the technical data and limit values specified in the corresponding documentation (user manual, data sheet, package slip).

Restrictions regarding the Inline system

The **maximum permissible current** flowing through potential jumpers U_M and U_S (total current) is limited to **4 A** when using the Inline terminals in potentially explosive areas.

The **supply of U_M** and **U_S** to the **IB IL 24 PWR IN (-PAC)** terminal must not exceed **4 A** and in each case it must be executed **via the adjacent terminal points**.