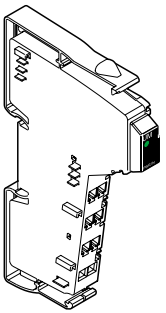
VARIO PWR IN/24

Power Terminal
24V DC without fuse



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User Manual 02/2003

The item versions only differ with regard to the scope of supply (see "Ordering Data" on page 8). Function and technical data are identical.

Function

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 is no active bus device.

Features

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

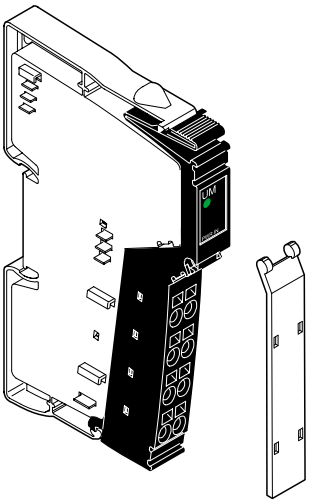

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Figure 1 VARIO PWR IN/24

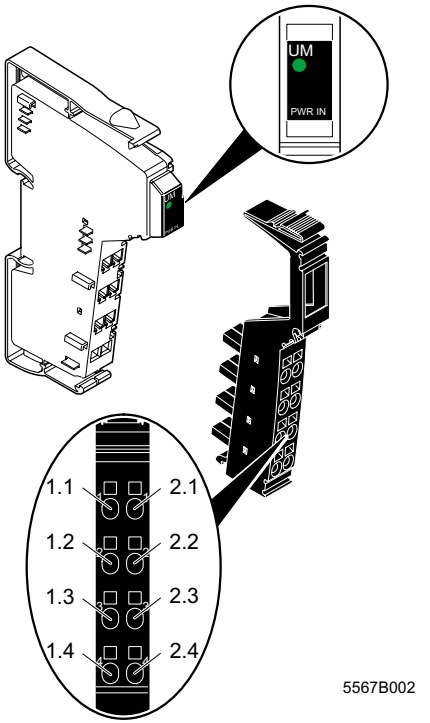


Figure 2 VARIO PWR IN/24 with appropriate connector

Function identification

Black

Local Diagnostic Indicators

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

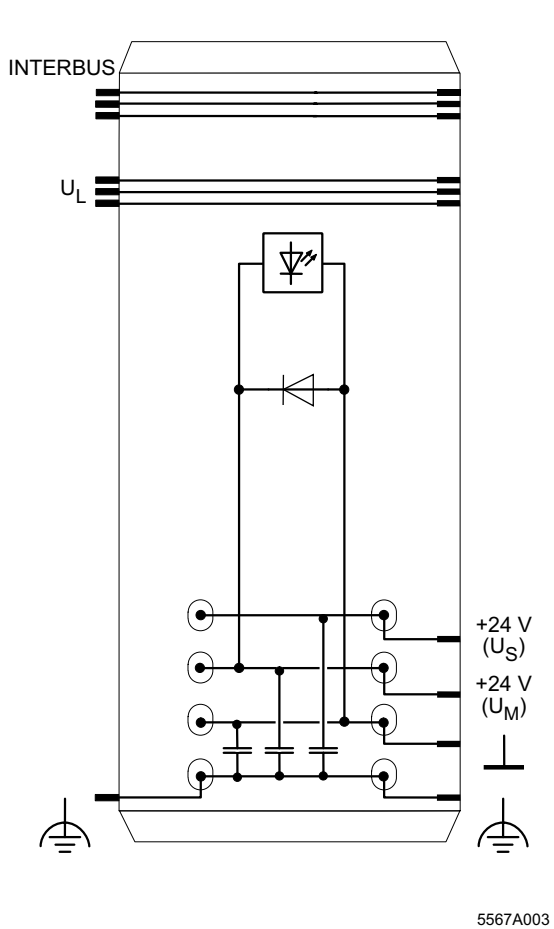
Terminal Assignment

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 (+24 V) Connection of a switch or a jumper in the segmentation level These terminal points are connected with each other and with the voltage jumper of the unprotected main supply U_M. The voltage jumpers of the unprotected main circuit U_M and the segment circuit U_S have together an 8 A current carrying capacity.
1.3, 2.3	Ground contact (GND) The reference potential is directly routed 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.
	The 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 voltage jumpers should not exceed 8 A.

Internal Circuit Diagram



Key:

LED

Diode

Capacitive connection to functional earth ground (FE)

Figure 3 Internal wiring of the terminal points

Connection Example

Protect the 24 V supply with an external fuse!

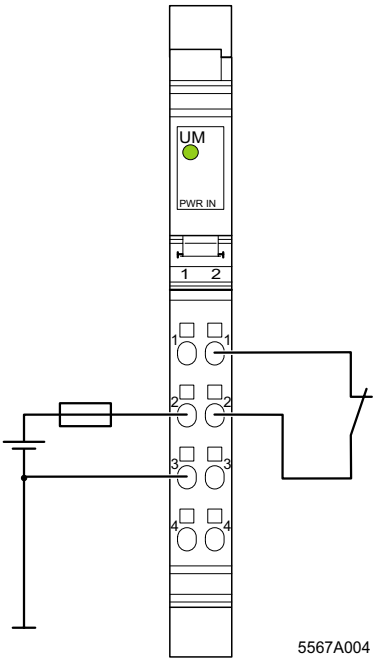


Figure 4 Typical connection of the supply voltage U_M and of an external switch to supply the segment voltage U_S

To ensure maximum current carrying capacity, use a power connector to connect the cables (see "Ordering Data" on page 8).
In these connectors, 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 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.

Technical Data

General Data	
Designation (order no.)	VARIO PWR IN/24 (KSVC-105-00001)
Housing dimensions (width x height x depth)	12.2 mm x 120 mm x 71.5 mm (0.480 x 4.724 x 2.815 in.)
Weight	44 g (without connectors)
Permissible temperature (operation)	-25°C to +55°C (-13°F to +131°F)
Permissible temperature (storage/transport)	-25°C to +85°C (-13°F to +185°F)
Permissible humidity (operation)	75% on average, 85% occasionally
 In the range from -25°C to +55°C (-13°F to +131°F) appropriate measures against increased humidity (> 85%) must be taken.	
Permissible humidity (storage/transport)	75% on average, 85% occasionally
 For a short period, slight condensation may appear on the outside of the housing if, for example, the terminal is brought into a closed room from a vehicle.	
Permissible air pressure (operation)	80 kPa to 106 kPa (up to 2000 m [6562 ft.] above sea level)
Permissible air pressure (storage/transport)	70 kPa to 106 kPa (up to 3000 m [9843 ft.] above sea level)
Degree of protection	IP 20 according to IEC 60529
Class of protection	Class 3 according to VDE 0106, IEC 60536

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
Permissible current		8 A, maximum
Demands on the voltage supply		The power terminal must be supplied from a new power supply unit to provide electrical isolation. Protect the 24 V power supply with an external fuse.  The power supply unit must be able to supply 4 times (400%) the nominal current of the external fuse.

Safety Devices	
Overload/short circuit in segment circuit	No
Surge voltage	Yes; suppressor diode for voltage limitation between terminal points 1.1 and 1.3 and between 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, these areas must be supplied from the bus terminal, or from the bus terminal and a power terminal with separate power supplies. Interconnection of the 24 V power supplies is not permitted. Please pay attention to GND/PE connections on the power supply units (see also user manual).
Common Potentials
The 24 V main voltage supply, 24 V segment voltage, and GND have the same potential. FE is a separate potential area.
Separate Potentials in the System Consisting of Bus Terminal/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	

Ordering Data

Description	Order Designation	Order No.
Power terminal without fuse including connectors and labeling field	VARIO PWR IN/24	KSVC-105-00001

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