

PWR 02

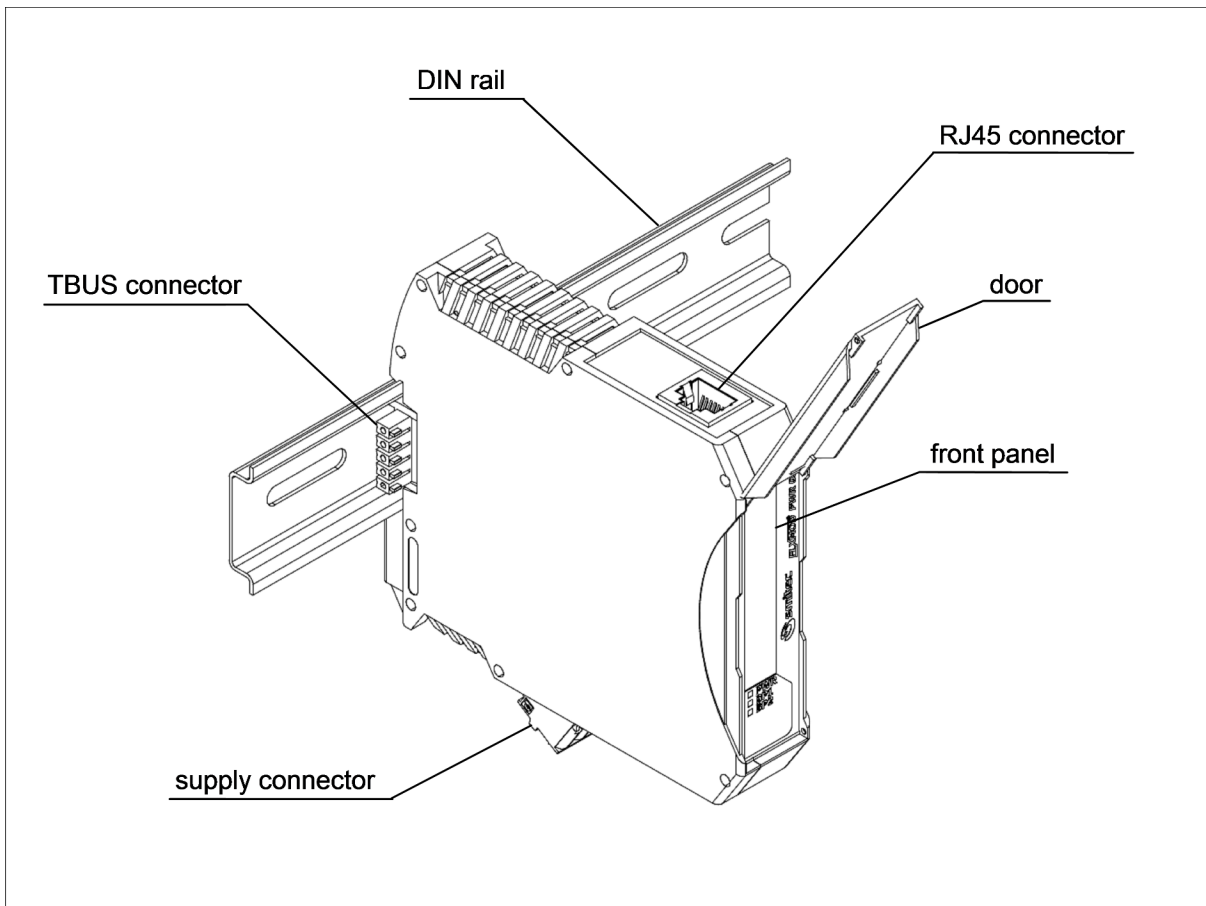
Power supply module

Datasheet

Description

Power supply module; the unit gets the 24V supply from the input connector and provides proper feeding for modules on bus. It also provides one RJ-45 for external extension of the FLXIO™ bus. Main characteristics:

- 5 V / 3 A main output
- 24 V / 2 A auxiliary output
- Overcurrent and short circuit protection on 5V output
- RJ-45 connector for FLXIO™ bus
- Status and diagnostic LEDs



Ordering informations

| Products | SMITEC part number |
|--|---------------------------|
| Power supply, complete with accessories (power connector and TBUS connector) | KZ010355 |

| Accessories | SMITEC part number |
|--|---------------------------|
| Power supply connector (Phoenix Contact p/n 1910377) | KF100009 |
| TBUS connector (Phoenix Contact p/n 2713722) | KF101034 |
| Power supply fuse (Littelfuse p/n 0452 005) | KD200038 |

| Documentation | SMITEC part number |
|--|---------------------------|
| Installing instructions | DK400042 |
| Datasheet for PWR 02 | DK400064 |
| FLXIO and FLXMOD system integration manual | DK400076 |

Technical data

| General data | |
|---|---|
| Housing dimensions (width x height x depth) | 22.5 mm x 99.0 mm x 114.5 mm |
| Weight | 95 g (without connectors), 107 g (with connectors) |
| Connection method for connectors | Spring cage terminals |
| Conductor cross-section (power connector) | 0.2 to 2.5 mm ² (24 – 12 AWG) |
| Functional earth connection | To the DIN rail with spring contact |
| Mode state visual indicators | Input power (PWR), bus power 1 (BP1) and bus power 2 (BP2) LED lamps on front panel |

| Environment data | |
|--|--|
| Permissible operating temperature | +5° to +55°C |
| Permissible storage and transport temperature | -25° to +85°C |
| Permissible humidity | 10% to 95%, not condensing |
| Permissible air pressure (operation) | 80 to 106 kPa (up to 2000 m above sea level) |
| Permissible air pressure (storage and transport) | 70 to 106 kPa (up to 3000 m above sea level) |
| Degree of protection (CE) | IP20 according to IEC 60529 |
| Degree of protection (UL) | Open Type |
| Overvoltage category | II |
| Pollution degree | 2 |
| Means of protection (UL) | Class III SELV power supply |

| Power supply | |
|--|---|
| Main power supply V_M | 24 V DC \approx (-15% ÷ + 20% according to IEC 61131-2) |
| Maximum allowed ripple | 5% of supply voltage (according to IEC 61131-2) |
| Current consumption from main supply | 3 A max. |
| Supply overvoltage protection on V_M | Bidirectional Zener clamp ($V_z > 30$ V) |
| Supply reverse polarity protection | None |
| Input power visual indicators | Green LED lamp, lighted if supply is present (PWR) |
| Local bus power #1 | 5 V DC / 3 A, regulated |
| Local bus power #1 protections | Overcurrent, catastrophic overvoltage |
| Local bus power #1 visual indicators | Green LED lamp, lighted if supply is present (BP1) |
| Local bus power #2 | 24 V DC / 2 A, unregulated |
| Local bus power #2 protections | None |
| Local bus power #2 visual indicators | Green LED lamp, lighted if supply is present (BP2) |
| Total power dissipation | Approx. 0,85W + total local bus 5V power load * 0,1 (see power load of each module connected to local bus and sum respective values) |

| Bus extension | |
|--------------------------|--------------------------------|
| Bus external connections | By RJ-45 connector |
| Recommended cable type | Straight CAT 5E Ethernet cable |
| Max cable length | 3 m |
| Bus termination resistor | none |

Connections

The module has two connectors: a power connector and a RJ-45 connector. They allow easy “plug and play” of the module, and also a fast replacement of a faulty unit.



Warning: Use a cable with cross-section suited to the current involved. A wire smaller than necessary could cause risk of fire and unwanted voltage drops.



Warning: To ensure conformance with EMC directive 2014/30/UE, the length of the cables must not exceed 30 m!

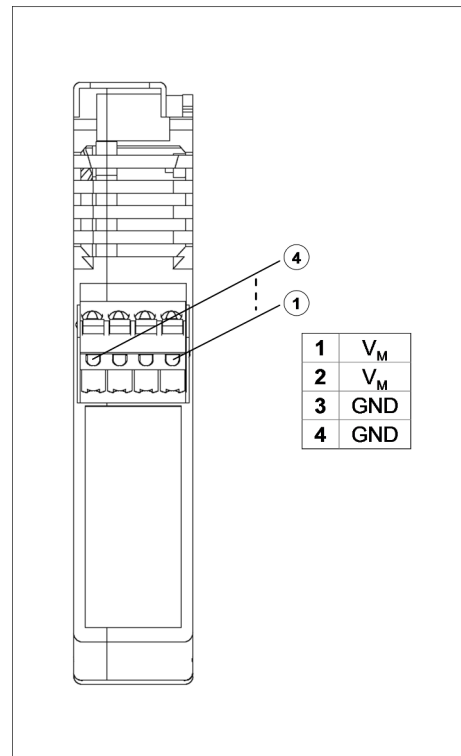


Warning: If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired

Power connector

The power connector is located on the bottom wall of the module. For the pinout, refer to the illustration at right.

Refer to the FLXIO and FLXMOD System Integration Manual for power connections topology.



For connector ratings and the applicable wiring refer to the following table

| Connector type: Phoenix Contact FKC 2,5/ 4-ST (1910377) | | | |
|--|----------------|---|-------------------------|
| Order code: KF100009 | | | |
| Technical data | | Conductor cross section | |
| Nominal voltage (CE) | 250V | Solid (CE) | 0,2÷2,5mm ² |
| Nominal voltage (UL) | 300V | Solid (UL) | 26÷12AWG - 75°C |
| Nominal current (CE) | 12A | Flexible (CE) | 0,2÷2,5mm ² |
| Nominal current (UL) | 10A | Flexible (UL) | 26÷12AWG - 75°C |
| | | Flexible, with ferrule without plastic sleeve | 0,25÷2,5mm ² |
| Stripping length | 10mm | Flexible, with ferrule with plastic sleeve | 0,25÷2,5mm ² |
| Screwdriver to open contacts | 0,6 x 3,5mm | 2 flexible conductors with same cross section, stranded, TWIN ferrules with plastic sleeve | 0,5÷1,5mm ² |



Warning: Pay attention to NOT supply the module with reverse polarity. This is to not blow internal fuse and/or damage the connected devices and/or burn the module itself.

RJ 45 connector

The RJ 45 connector is located on the upper side of the module; it permits the external extension of the FLXIO™ bus using a standard Ethernet cable.

Refer to the FLXIO and FLXMOD System Integration Manual for details on correct bus extension topology.

Diagnostic and status indicators

The module is provided with a series of LED lamps on the front panel (see illustration).

The green input power (**PWR**) LED is lighted if the 24 V supply (V_M) is present and the internal fuse is not blown.

The green bus power 1 (**BP1**) LED is lighted if the 5 V output is present. If the indicator is off or blinking, there is an excessive current absorption or a faulty power supply unit.

The green bus power 2 (**BP2**) LED is lighted if the 24 V output is present. If the indicator is off or blinking, there is an excessive current absorption or a faulty power supply unit.

