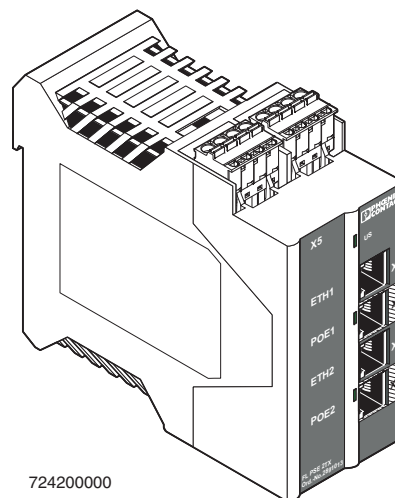


FL PSE 2TX

Power-over-Ethernet Module (PSE) for Midspan Power Supply in Accordance with IEEE 802.3af



AUTOMATIONWORX

Data Sheet

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724200000

Description

The Power-over-Ethernet module for industrial use enables common transmission of power and data in accordance with IEEE 802.3af via Ethernet. In this way, the termination devices such as WLAN/Bluetooth access points, IP phones, or IP cameras can be connected fast and cost-effectively.

The FL PSE 2TX is a compact stand-alone solution converting two standard Ethernet ports into two Power-over-Ethernet ports. The FL PSE 2TX is a plug & play device generating those 48 V DC from the 24 V module power supply required for Power-over-Ethernet according to IEEE 802.3af.

Features

- 2 PoE supply ports
- No configuration required
- Automatic detection of connected devices
- Can operate on 10 Mbps and 100 Mbps networks
- Convenient diagnostic and status indicators
- Redundant 24 V DC supply possible
- Connection for optimum functional earth ground



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

Products

| Description | Type | Order No. | Pcs./Pkt. |
|-------------------------------------|------------|-----------|-----------|
| Module for PoE midspan power supply | FL PSE 2TX | 2891013 | 1 |

Accessories

| Description | Type | Order No. | Pcs./Pkt. |
|--|-------------------|-----------|-----------|
| Universal end clamp | E/NS 35 N | 0800886 | 50 |
| Patch cable, CAT 5, pre-assembled, 0.3 m long | FL CAT5 PATCH 0,3 | 2832250 | 10 |
| Patch cable, CAT 5, pre-assembled, 0.5 m long | FL CAT5 PATCH 0,5 | 2832263 | 10 |
| Patch cable, CAT 5, pre-assembled, 1.0 m long | FL CAT5 PATCH 1,0 | 2832276 | 10 |
| Patch cable, CAT 5, pre-assembled, 1.5 m long | FL CAT5 PATCH 1,5 | 2832221 | 10 |
| Patch cable, CAT 5, pre-assembled, 2.0 m long | FL CAT5 PATCH 2,0 | 2832289 | 10 |
| Patch cable, CAT 5, pre-assembled, 3.0 m long | FL CAT5 PATCH 3,0 | 2832292 | 10 |
| Patch cable, CAT 5, pre-assembled, 5.0 m long | FL CAT5 PATCH 5,0 | 2832580 | 10 |
| Patch cable, CAT 5, pre-assembled, 7.5 m long | FL CAT5 PATCH 7,5 | 2832616 | 10 |
| Patch cable, CAT 5, pre-assembled, 10.0 m long | FL CAT5 PATCH 10 | 2832629 | 10 |

Technical Data

General Data

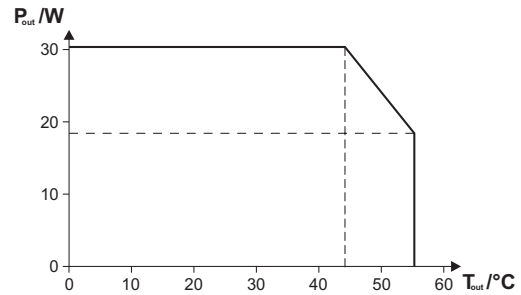
| | |
|---|---|
| Function | Power-over-Ethernet module (PSE) for midspan power supply |
| Housing dimensions (width x height x depth) | 45 mm x 99 mm x 112 mm |
| Permissible operating temperature | 0°C to +55°C (see derating curve) |
| Permitted storage temperature | -20°C to +70°C |
| Degree of protection | IP20, DIN 40050, IEC 60529 |
| Class of protection | Class 3 VDE 0106; IEC 60536 |
| Maximum humidity (operation) | 30% to 95%, no condensation |
| Maximum humidity (storage/transport) | 30% to 95%, no condensation |
| Air pressure (operation) | 86 kPa to 108 kPa, 1500 m above sea level |
| Air pressure (operation) | 66 kPa to 108 kPa, 3500 m above sea level |
| Preferred mounting position | Perpendicular to a standard DIN rail |
| Connection to protective earth ground | By snapping it on a grounded DIN rail / via COMBICON (optional) |
| Weight | 320 g, typical |

Supply Voltage

| | |
|---------------------------------------|---|
| Connection | Via COMBICON; maximum conductor cross section = 2.5 mm ² |
| Nominal value | 24 V DC |
| Permissible ripple | 3.6 V _{pp} within the permissible voltage range |
| Permissible voltage range | 18.5 V DC to 30.5 V DC |
| Current consumption at U _S | approx. 100 mA at no-load operation; approx. 1800 mA at 24 V at the input and at maximum admissible load and at an ambient temperature of 25°C |
| Test voltage | 1500 V AC for 1 minute |

Supply Voltage (Continued)

| | |
|--------------------------------------|---|
| Protection against polarity reversal | Present |
| Power consumption | approx. 2.4 W at no-load operation; approx. 43.5 W at 24 V at the input and at maximum admissible load and at an ambient temperature of 25°C |
| Derating | |



Interfaces

| | |
|--------------------------------------|---|
| Number of standard Ethernet ports | 2 |
| Number of PoE ports | 2 |
| Connection format | 8-pos. RJ45 socket at the device |
| Connection medium | Twisted pair cable with a conductor cross section of 0.14 mm ² to 0.22 mm ² |
| Impedance | 100 Ohm |
| Transmission speed | 10/100 Mbps |
| PoE supply in acc. with IEEE 802.3af | 48 V DC / Class 0 |

Mechanical Tests

| | |
|---|--|
| Shock test according to IEC 60068-2-27 | 30g |
| Vibration resistance according to IEC 60068-2-6 | Operation/storage/transport: 5g, Criterion A |
| Free fall according to IEC 60068-2-32 | 1 m |

Conformance With EMC Directives

| | |
|--|-------------|
| Developed according to IEC 61000-6-2 | |
| IEC 61000-4-2 (ESD) | Criterion B |
| IEC 61000-4-3 (radiated-noise immunity) | Criterion A |
| IEC 61000-4-4 (burst) | Criterion A |
| IEC 61000-4-5 (surge) | Criterion B |
| IEC 61000-4-6 (conducted noise immunity) | Criterion A |
| IEC 61000-4-8 (noise immunity against magnetic fields) | Criterion A |
| EN 55022 (noise emission) | Class A |

General Information



Warning

Disregarding this warning may result in damage to equipment and/or serious personal injury. Only qualified personnel may start up and operate this device. According to the safety instructions in this text, qualified personnel are persons who are authorized to start up, to ground, and to mark devices, systems, and equipment according to the standards of safety technology. In addition, these persons must be familiar with all warning instructions and maintenance measures in this text.



Warning

The FL PSE 2TX module is designed exclusively for SELV operation in accordance with IEC 60950 / EN 60950/VDE 0805.

Installation and Mounting/Removal

Install the PoE module on a clean DIN rail in accordance with EN 60715. Only use corrosion-free DIN rails to prevent contact resistance. In order to prevent the module from slipping on the rail, end brackets can be mounted on both sides of the module.

Mounting

- 1 Place the module onto the DIN rail from above. The upper holding keyway must be hooked onto the top edge of the DIN rail.
- 2 Push the module from the front towards the mounting surface.
- 3 Once the module has been snapped on properly, check that it is fixed securely on the DIN rail.

Removal

- 1 Pull the locking latch down using a screwdriver, needle-nose pliers or similar.
- 2 Pull the bottom edge of the module away from the mounting surface.
- 3 Pull the module diagonally upwards away from the DIN rail.

Terminal Assignment and Grounding

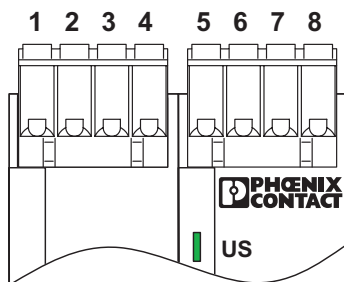
Connect the DIN rail to protective earth ground using a grounding terminal block. The modules are grounded when they are snapped onto the DIN rail. Connect protective earth ground with low impedance.

Connection of the Supply Voltage



Warning

The FL PSE 2TX module is designed exclusively for SELV operation in accordance with IEC 60950 / EN 60950/VDE 0805.



| Terminal | Meaning |
|----------|------------------------------------|
| 1 | Supply voltage +US1 (+24 V DC) |
| 2 | GND US1 |
| 3 | Supply voltage +US2 (+24 V DC) |
| 4 | GND US2 |
| 5 - 8 | Functional earth ground (optional) |

Figure 1 Terminal assignment

Diagnostic and Status Indicators

| Des. | Color | Meaning |
|------|-------|-----------------------------------|
| US | Green | Supply voltage |
| | Green | For each PoE port - PoE detection |

Port Assignment

There are two port pairs: ports ETH1 and POE1 as well as ports ETH2 and POE2.

Pin Assignment of the ETH1/2 Interface

| Pin | Assignment | Description |
|-----|------------|-------------|
| 1 | RX/TX | Data |
| 2 | RX/TX | Data |
| 3 | TX/RX | Data |
| 4 | Not used | |
| 5 | Not used | |
| 6 | TX/RX | Data |
| 7 | Not used | |
| 8 | Not used | |

Pin Assignment of the PoE1/2 Interface

| Pin | Assignment | Description |
|-----|------------|-------------|
| 1 | RX/TX | Data |
| 2 | RX/TX | Data |
| 3 | TX/RX | Data |
| 4 | PoE | 48 V DC |
| 5 | PoE | 48 V DC |
| 6 | TX/RX | Data |
| 7 | PoE | 0 V DC |
| 8 | PoE | 0 V DC |

Method of Operation of Power-over-Ethernet

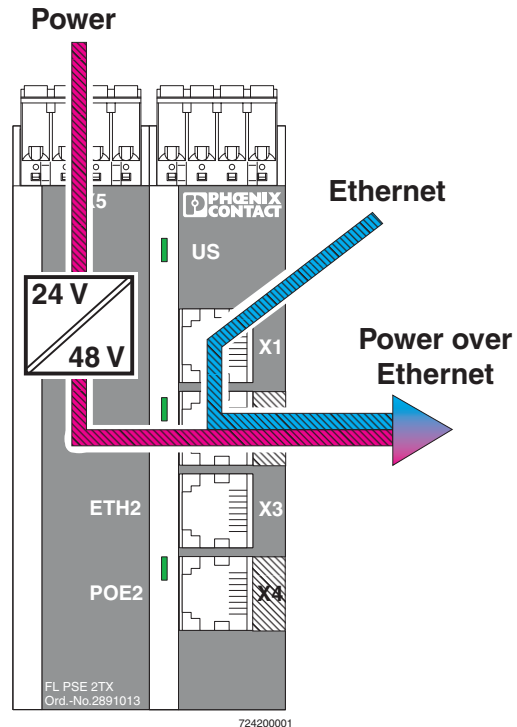


Figure 2 PoE method for ETH1 <-> PoE1

Midspan Insertion

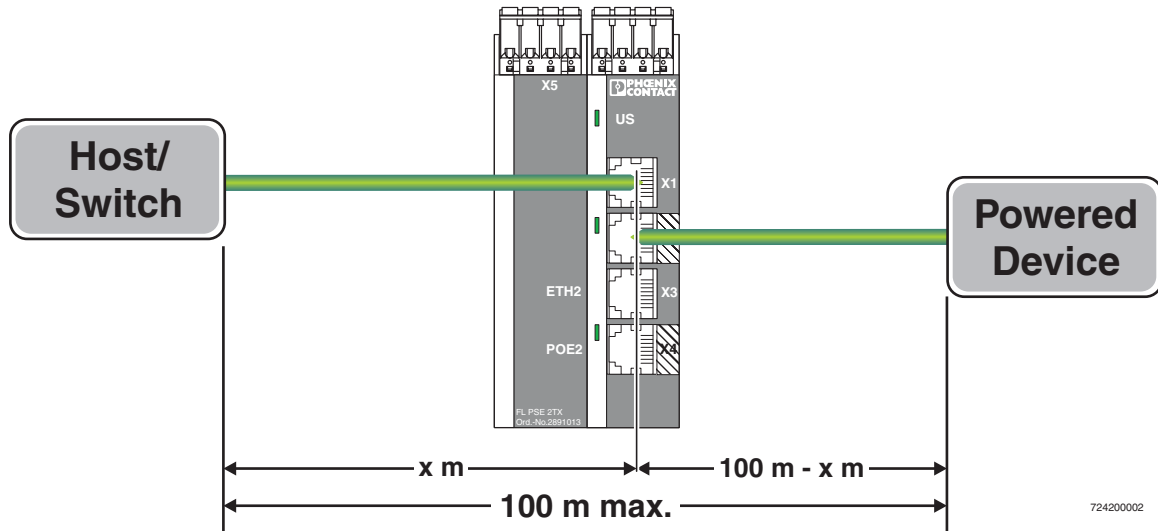
Devices transmitting the data of the active components and simultaneously supplying the Ethernet cables with power operate according to the "midspan insertion" method. Midspan insertion modules can simply be used to retrofit existing network infrastructures or they can be applied when only a small part of the required ports needs to be PoE-compliant.

Power-over-Ethernet Performance Classes

| Class | Usage | Power Supply | Power Outlet |
|-------|----------|--------------|----------------------|
| 0 | Default | 15.4 W | 0.44 W up to 12.95 W |
| 1 | Optional | 4.0 W | 0.44 W up to 3.84 W |
| 2 | Optional | 7.0 W | 3.84 W up to 6.49 W |
| 3 | Optional | 15.4 W | 6.49 W up to 12.95 W |
| 4 | Reserved | 15.4 W | Reserved |

Length of the Ethernet Cable

The length of the entire Ethernet cable per channel must not exceed 100 m.



724200002

Figure 3 Length of the Ethernet Cable

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