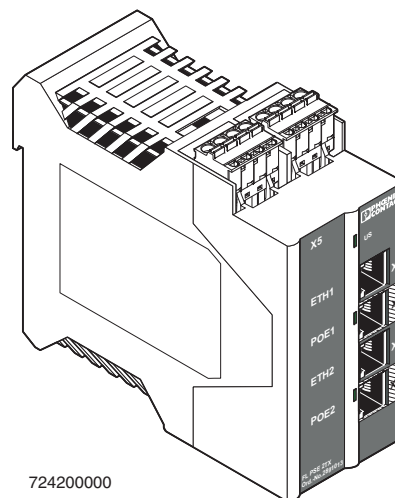


FL PSE 2TX

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

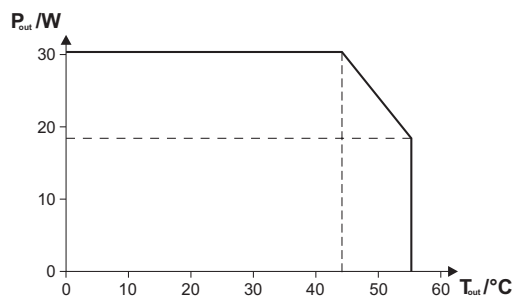
Function	Power-over-Ethernet module (PSE) for midspan power supply
Housing dimensions (width x height x depth)	45 mm x 99 mm x 112 mm
Permissible operating temperature	0°C to +55°C (see derating curve)
Permitted storage temperature	-20°C to +70°C
Degree of protection	IP20, DIN 40050, IEC 60529
Class 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

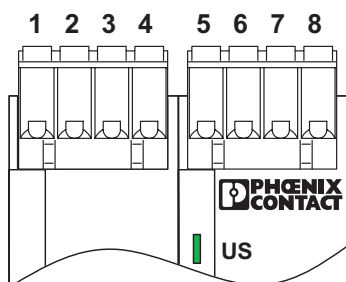
Connect the DIN rail to protective earth ground using a grounding terminal block. The modules are grounded when they are snapped onto the DIN rail. Connect protective earth ground with low impedance.

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

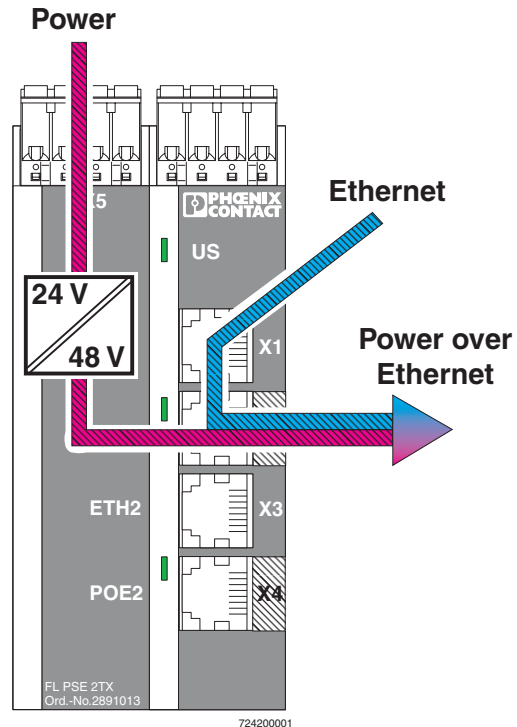


Figure 2 PoE method for ETH1 ↔ PoE1

Midspan Insertion

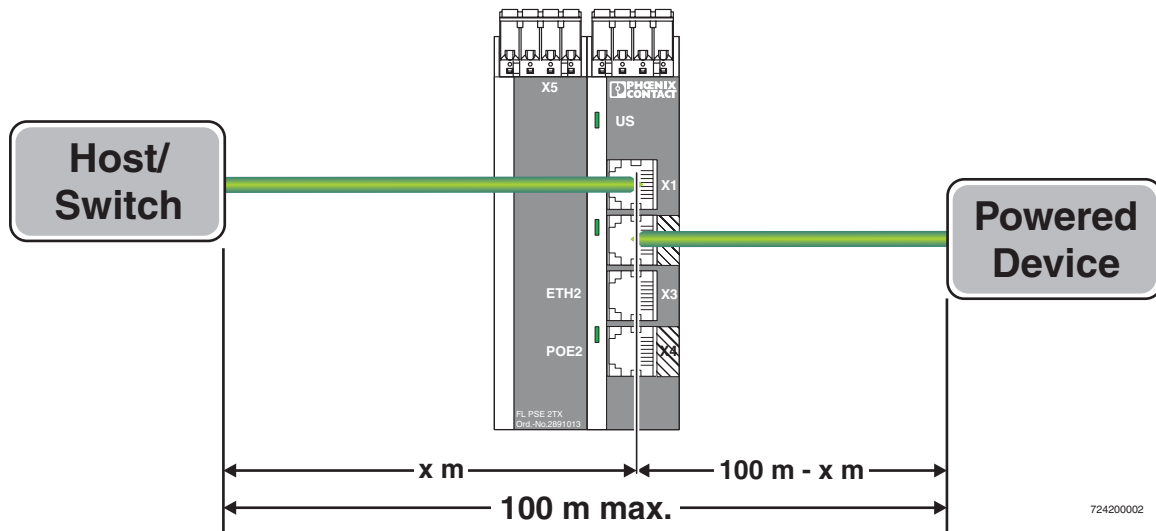
Devices transmitting the data of the active components and simultaneously supplying the Ethernet cables with power operate according to the "midspan insertion" method. Midspan insertion modules can simply be used to retrofit existing network infrastructures or they can be applied when only a small part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