

FL SWITCH 1001T-4POE

Ethernet switch with four PoE+ ports and one standard port

Data sheet
3219_en_E

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1 Description

The FL SWITCH 1001T-4POE switch is a five-port unmanaged Ethernet switch supporting PoE+ (Power-over-Ethernet) on four ports. The switch is classified as power source equipment (PSE) and meets the IEEE 802.3at specification. When powering IEEE 802.3at-compliant powered devices (PD), the integrated power supply can provide up to 34.2 W from each PoE+ port and eliminates the need for additional wiring.

Features

- Compliant with IEEE 802.3at
- PoE ports can supply 30 W per port
- End point PSE
- Automatic detection of IEEE 802.3at or 802.3af PD
- Alternative B power approach: power via unused RJ45 pins
- PoE status LED per port
- Wide -40°C to 75°C ambient operating temperature
- Auto negotiation and auto cross
- Wide 18 to 57 V DC power supply input range
- Redundant power supply inputs



Make sure you always use the latest documentation.
It can be downloaded from the product at phoenixcontact.net/products.



This data sheet is valid for all products listed on the following page:

2 Ordering data

Description	Type	Order No.	Pcs./Pkt.
PoE+ Ethernet switch conforms to IEEE 802.3at. Includes four PoE+ ports and one standard RJ45 port, all with 10/100 Mbps speeds.	FL SWITCH 1001T-4POE	2891064	1
Accessories	Type	Order No.	Pcs./Pkt.
PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm ² , number of positions: 7, pitch: 5 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin	MSTB 2,5/ 7-ST	1754546	50
Primary-switched QUINT POWER power supply for DIN rail mounting with free choice of output characteristic curve and SFB (Selective Fuse Breaking) technology, input: 1-phase, output: 48 V DC/5 A	QUINT4-PS/1AC/48DC/5	2904610	1
Primary-switched QUINT POWER power supply for DIN rail mounting with free choice of output characteristic curve and SFB (Selective Fuse Breaking) technology, input: 1-phase, output: 48 V DC / 10 A Primary-switched power supply unit, QUINT POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 48 V DC/10 A	QUINT4-PS/1AC/48DC/10	2904611	1
Primary-switched TRIO power supply for DIN rail mounting, input: 1-phase, output: 48 V DC/5 A, dynamic boost, tool-free fast connection technology for solid and stranded conductors with ferrule Primary-switched power supply unit, TRIO POWER, Push-in connection, DIN rail mounting, output: 48 V DC/5 A	TRIO-PS-2G/1AC/48DC/5	2903159	1
Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single phase, output: 48 V DC/10 A Primary-switched power supply unit, TRIO POWER, Push-in connection, DIN rail mounting, output: 48 V DC/10 A	TRIO-PS-2G/1AC/48DC/10	2903160	1
Primary-switched UNO power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/150 W Primary-switched power supply unit, UNO POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 24 V DC/6.25 A	UNO-PS/1AC/24DC/150W	2904376	1
Primary-switched UNO power supply for DIN rail mounting, input: single-phase, output: 24 V DC/240 W Primary-switched power supply unit, UNO POWER, Screw connection, DIN rail mounting, output: 24 V DC/10 A	UNO-PS/1AC/24DC/240W	2904372	1
Factoryline Power over Ethernet splitter (PD) for separating power and data according to IEEE 802.3af and at, no configuration required, can be used with 10, 100, 1000 Mbps networks, 24 V DC output voltage	FL PD 1001 T GT	2891042	1

Accessories	Type	Order No.	Pcs./Pkt.
Surge protection in accordance with Class E _A (CAT6 _A), for Gigabit Ethernet (up to 10 Gbps), token ring, FDDI/ CDDI, ISDN, and DS1. Suitable for Power over Ethernet (PoE+) "Mode A" and "Mode B". RJ45 attachment plug with separate grounding cable and ground connection snap-on foot for NS 35 DIN rails.	DT-LAN-CAT.6+	2881007	1
Patch cable, CAT5, assembled, 0.5 m Patch cable, 1 Gbps, CAT5 (Cable/conductor)	FL CAT5 PATCH 0,5	2832263	1
Patch cable, CAT5, assembled, 1 m Patch cable, degree of protection: IP20, CAT5 (Cable/conductor)	FL CAT5 PATCH 1,0	2832276	1
Patch cable, CAT5, assembled, 2 m Patch cable, 1 Gbps, CAT5 (Cable/conductor)	FL CAT5 PATCH 2,0	2832289	1
Patch cable, degree of protection: IP20, number of positions: 8, 10 Gbps, CAT6 _A , cable outlet: straight	NBC-R4AC-R4AC-IE8A/.../...	1411854	1
Patch cable, CAT6 _A , 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 2.0 m Patch cable, degree of protection: IP20, cable length: 2 m, number of positions: 8, 10 Gbps, CAT6 _A	NBC-R4AC/10G-R4AC/10G-94F/2,0	1408360	1
Patch cable, CAT6 _A , 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 3.0 m Patch cable, degree of protection: IP20, cable length: 3 m, number of positions: 8, CAT6 _A	NBC-R4AC/10G-R4AC/10G-94F/3,0	1408365	1
The FL DIN RA is installed in a standard, 19-inch rack (EIA-310-D, IEC 60297-3-100) to allow DIN rail mounted equipment to be rack mounted.	FL DIN RA	2891053	1
Dust protection caps for RJ45 socket Dust protection, color: black	FL RJ45 PROTECT CAP	2832991	10
End clamp, width: 9.5 mm, color: gray End clamp, width: 9.5 mm, height: 32.8 mm, material: PA, length: 48.6 mm, color: gray (Mounting)	E/NS 35 N	0800886	50

3 Technical data

General data	
Width	55 mm
Height	117 mm
Depth	78 mm
Weight	685 g
Mounting type	DIN rail
Ambient temperature (operation)	-40°C ... 75°C
Ambient temperature (storage/transport)	-40°C ... 85°C
Permissible humidity (operation)	5% ... 95% (non-condensing)
Permissible humidity (storage/transport)	5% ... 95% (non-condensing)
Air pressure (operation)	86 kPa ... 108 kPa (1500 m above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (3500 m above sea level)
Degree of protection	IP20
Power	
Connection method	COMBICON plug-in screw terminal block
Conductor cross section, rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section, flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section [AWG]	24 ... 12
Supply voltage	24 V DC
Supply voltage range	18 V DC ... 57 V DC
Residual ripple	3.6 V _{PP} (within the permitted voltage range)
Current consumption, typical	148 mA (at U _S = 24 V DC)
Current consumption, maximum	6.2 A
Inrush current	18 A (57 V DC for 100 µs)
Inrush current	10 A (24 V DC for 100 µs)
Ethernet	
Connection method	RJ45 jack
Transmission speed	10/100 Mbps
Transmission length	100 m (Between transmitter/receiver)
No. of channels	1 (RJ45 ports)
Ethernet (PoE)	
Connection method	RJ45 jack
Transmission speed	10/100 Mbps
Transmission length	100 m (Between transmitter/receiver)
No. of channels	4 (RJ45 ports)
Signal contact	
Control voltage	24 V DC
Control current	100 mA

Electrical isolation/isolation of the voltage areas

Supply voltage/functional ground	500 V AC, 1 min.
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Mechanical tests

Vibration resistance in acc. with EN 60068-2-6/ IEC 60068-2-6	5g, 150 Hz, Criterion 3
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Shock in acc. with EN 60068-2-27/IEC 60068-2-27	25g, 11 ms half-sine shock pulse
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Conformance with EMC directives

IEC 61000-4-2 (ESD)	Criterion B
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IEC 61000-4-3 (immunity to radiated interference)	Criterion A
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IEC 61000-4-4 (burst)	Criterion B
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IEC 61000-4-5 (surge)	Criterion B
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IEC 61000-4-6 (immunity to conducted interference)	Criterion A
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IEC 61000-4-8 (immunity to magnetic fields)	Criterion A
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EN 55022 (emitted interference)	Criterion A
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4 Structure

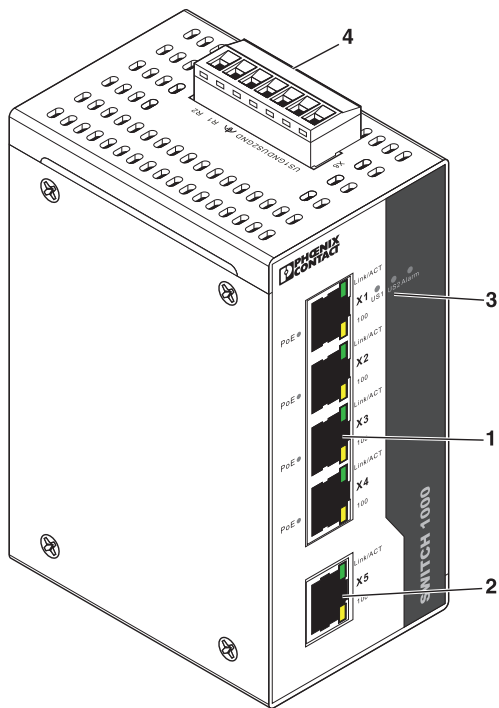


Figure 1 Connectors and LEDs

- 1 PoE RJ45 ports
- 2 Standard RJ45 port
- 3 LEDs
- 4 Power supply/remote alarm connector

Diagnostic indicators

Name	Color	Status	Meaning
U _{S1} /U _{S2}	Green	On	Supply voltage present
		Off	no supply voltage
Alarm	Red	On	US1 or US2 is too low or missing
		Off	Normal operation
LINK/ACT	Green	On	Link is connected
		Flashing	Data transmission active
100	Orange	On	100 Mbps link
		Off	10 Mbps link
PoE	Orange	On	Powered device connected
		Flashing (2.5 s) ¹	Power management event
		Flashing (1.25 s) ¹	Port overload, short circuit, or failure
		Flashing (0.8 s) ²	Port overload
		All LEDs flashing (0.3 s) ¹	PoE voltage out of range or over temperature condition
		Off	Powered device disconnected
1 Valid for hardware version 13 and later			
2 Valid up to hardware version 12			

5 Installation



This device is designed for SELV and PELV operation according to IEC 61140/EN 61140.

Mounting

Position the device on the upper edge of the DIN rail and snap it into place with a downward motion.

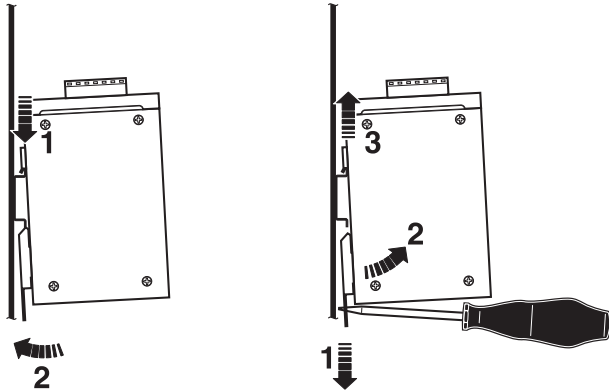


Figure 2 Assembly/removal

Removing

Pull the release lever open using a screwdriver. Rotate the device upward and remove from DIN rail.

Power supply

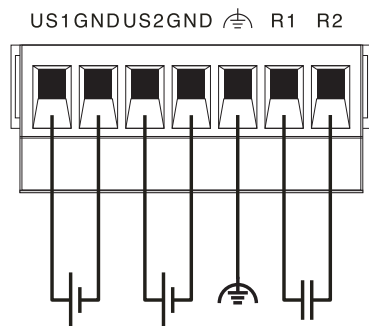


Figure 3 Redundant power supply connection

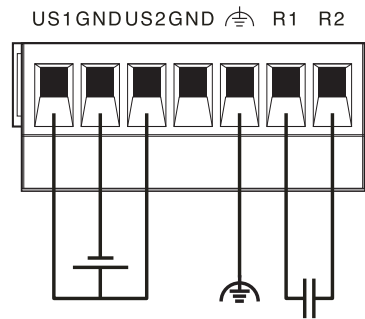


Figure 4 Single power supply connection

Use power conductors 0.2 to 2.5 mm² (24 to 12 AWG).
Torque wire clamp screws 0.5 to 0.6 Nm (5 to 7 lb-in.).

Alarm contacts

Connect the alarm contacts (R1 and R2) to an appropriate monitoring device. If either power supply fails (≤ 12 V) or a port fails (LNK), the internal dry contacts close.

Ethernet connection

Use only twisted-pair cables with an impedance of 100 Ω .

Pin	Assignment	Function
1	RX/TX	Data
2	RX/TX	Data
3	TX/RX	Data
4	POE *	57 V DC
5	POE *	57 V DC
6	TX/RX	Data
7	POE *	0 V DC
8	POE *	0 V DC

* POE pins are unused in standard RJ45 ports



Never connect a POE port on one switch to the POE port on another switch. Damage to the switch may occur. When connecting two FL SWITCH 1001T-4POE switches, always use the standard port (X5) on one of the switches.

6 Switching characteristics

Store and forward

All data telegrams received by the switch are saved and their validity checked. Invalid or faulty data packets (>10240 bytes or CRC errors) and fragments (<64 bytes) are rejected. Valid data telegrams are forwarded by the switch. The switch always forwards the data using the data transmission speed that is used in the destination network segment.

Multi-address function

The MAC address table size is 2048.

The switch independently learns the addresses for termination devices, which are connected via a port, by evaluating the source addresses in the data telegrams. Only packets with unknown addresses, with a source address of this port or with a multicast/broadcast address in the destination address field, are forwarded via the corresponding port. The switch can store addresses in its address table with an aging time of five minutes. This is important when more than one termination device is connected to one or more ports. In this way, several independent subnetworks can be connected to one switch.



A restart deletes the entire address table.