

## Industrial Ethernet Switch - FL SWITCH 1004N-FX - 1084159

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Ethernet switch, 4 TP RJ45 ports, 1 FO port, 100 Mbps full duplex in SC-D format, automatic detection of data transmission speed of 10 or 100 Mbps (RJ45), autocrossing function

### Your advantages

- ✓ Auto negotiation and autocrossing detection simplifies installation and setup
- ✓ Local diagnostic indicators with LEDs
- ✓ RJ45 ports support a transmission speed of 10/100 Mbps
- ✓ QoS-prioritized (Quality of Service) messages
- ✓ PROFINET conformance Class A for real-time data exchange, alarms, and diagnostics
- ✓ Energy-efficient Ethernet in accord. with IEEE 802.3az
- ✓ PROFINET PTCP filter for reliable communication on PROFINET networks
- ✓ Enhanced traffic prioritization for automation protocols



### Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	220.000 g
Country of origin	Taiwan

### Technical data

#### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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#### Dimensions

Width	22.5 mm
Height	117 mm
Depth	84 mm

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## Technical data

### Ambient conditions

Degree of protection	IP30
Ambient temperature (operation)	-10 °C ... 60 °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)	79 kPa ... 108 kPa up to 2000 m above mean sea level (Without derating)
Air pressure (storage/transport)	79 kPa ... 108 kPa up to 2000 m above mean sea level (Without derating)

### Interfaces

Interface	Ethernet (RJ45)
No. of ports	4 (RJ45 ports)
Note on the connection method	Auto negotiation and autocrossing
Transmission physics	Ethernet in RJ45 twisted pair
Transmission speed	10/100 Mbps
Transmission length	100 m (per segment)
Signal LEDs	Data receive, link status
Interface	Ethernet FO
No. of ports	1 (SC multi-mode)
Transmission physics	multi-mode fiberglass
Transmission speed	100 Mbps (full duplex)
Transmit capacity, minimum	-20 dBm
Transmit capacity, maximum	-14 dBm
Minimum receiver sensitivity	-31 dBm
Maximum receiver sensitivity	0 dBm
Transmission length	8 km (fiberglass with F-G 62.5/125 0.7 dB/km F1000)
	4.29 km (fiberglass with F-G 50/125 0.7 dB/km F1200)
Wavelength	1300 nm

### Function

Basic functions	Unmanaged switch
	Autonegotiation
	Store and Forward switching mode
Additional functions	100 BASE-TX/100BASE-FX (IEEE 802.3u)
	Quality of Service (QoS) prioritization (IEEE 802.1p)
	Energy-efficient Ethernet (IEEE 802.3az)
	10Base-T (IEEE 802.3)
MAC address table	2k
PROFINET conformance class	Conformance-Class A

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## Technical data

### Function

Status and diagnostic indicators	LEDs: U <sub>S</sub> , link and activity per port
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### Network expansion parameters

Cascading depth	Network, linear, and star structure: any
Maximum conductor length (twisted pair)	100 m

### Supply voltage

Supply voltage	24 V DC
	24 V AC (50/60 Hz)
Residual ripple	3.6 V <sub>PP</sub> (within the permitted voltage range)
Supply voltage range	9 V DC ... 32 V DC
	18 V AC ... 30 V AC (50/60 Hz)
Typical current consumption	59 mA
Max. current consumption	230 mA

### General

Mounting type	DIN rail
Net weight	137 g
Housing material	Polycarbonate fiber reinforced
MTTF	115.1 Years (MIL-HDBK-217F standard, temperature 25°C, operating cycle 100%)
	427.5 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	279.5 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))

### Connection data

Connection method	Push-in spring connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	10 mm

### Standards and Regulations

Type of test	Free fall in accordance with EN 61131-2
Vibration (storage/transport)	5g, 150 Hz, in acc. with IEC 60068-2-6
Vibration (operation)	in acc. with IEC 60068-2-6: 5g, 150 Hz
Shock (operation)	30g (EN 60068-2-27)
UL, USA / Canada	UL 61010-1, UL 61010-2-201, UL 62368-1

# Industrial Ethernet Switch - FL SWITCH 1004N-FX - 1084159

## Technical data

### Standards and Regulations

	Class I, Div. 2, Groups A, B, C, D, T4 Class I, Zone 2, Group IIC, T4
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### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Classifications

### eCl@ss

eCl@ss 10.0.1	19170402
eCl@ss 11.0	19170402
eCl@ss 9.0	19170106

### ETIM

ETIM 7.0	EC000734
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### UNSPSC

UNSPSC 18.0	43222612
UNSPSC 19.0	43222612
UNSPSC 20.0	43222612
UNSPSC 21.0	43222612

## Approvals

### Approvals

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#### Approvals

UL Listed / cUL Listed / UL Listed / cUL Listed / EAC

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#### Ex Approvals

UL Listed / cUL Listed / cULus Listed

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### Approval details

# Industrial Ethernet Switch - FL SWITCH 1004N-FX - 1084159

## Approvals

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140403
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140403
UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
EAC			RU D- DE.GB09.B.00312

## Accessories

### Accessories

#### Assembly adapter

##### Mounting plate - FL DIN-RAIL ADAPTER 22.5 - 1085485



The FL DIN-RAIL ADAPTER 22.5 is designed to allow products 22.5 mm wide to be mounted flush to a standard 35 mm DIN rail, in any orientation.

##### Mounting plate - FL PANEL ADAPTER 22.5 - 1085488



The FL PANEL ADAPTER 22.5 is designed to allow products 22.5 mm wide to be mounted flush to a panel, in any orientation.

## Industrial Ethernet Switch - FL SWITCH 1004N-FX - 1084159

### Accessories

#### Data cable preassembled

Patch cable - NBC-R4AC-R4AC-IE8A/.../... - 1411854



Patch cable, degree of protection: IP20, number of positions: 8, 10 Gbps, CAT6<sub>A</sub>, cable outlet: straight, Ethernet

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Patch cable - NBC-R4AC/10G-R4AC/10G-94F/2,0 - 1408360



Patch cable, CAT6<sub>A</sub>, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 2.0 m

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Patch cable - NBC-R4AC/10G-R4AC/10G-94F/3,0 - 1408365



Patch cable, CAT6<sub>A</sub>, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 3.0 m

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Patch cable - NBC-R4AC/1,0-93B/R4AC - 1408968



Patch cable, degree of protection: IP20, cable length: 1 m, number of positions: 4, 100 Mbps, CAT5, material: PA 6.6, PROFINET

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Patch cable - NBC-R4AC/2,0-93B/R4AC - 1408969



Patch cable, degree of protection: IP20, cable length: 2 m, number of positions: 4, 100 Mbps, CAT5, material: PA 6.6, PROFINET

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## Industrial Ethernet Switch - FL SWITCH 1004N-FX - 1084159

### Accessories

Patch cable - NBC-R4AC/5,0-93B/R4AC - 1408970



Patch cable, degree of protection: IP20, cable length: 5 m, number of positions: 4, 100 Mbps, CAT5, material: PA 6.6, PROFINET

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FO patch cable - FOC-LC:PA-SC:PA-OM2:D01/1 - 1115607



Multi-mode OM2 duplex jumper, LC-SC, UPC polishing, length 1 m

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FO patch cable - FOC-LC:PA-SC:PA-OM2:D01/2 - 1115605



Multi-mode OM2 duplex jumper, LC-SC, UPC polishing, length 2 m

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FO patch cable - FOC-SC:PA-SC:PA-OM2:D01/1 - 1115536



Multi-mode OM2 duplex jumper, SC-SC, UPC polishing, length 1 m

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FO patch cable - FOC-SC:PA-SC:PA-OM2:D01/2 - 1115535



Multi-mode OM2 duplex jumper, SC-SC, UPC polishing, length 2 m

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## Industrial Ethernet Switch - FL SWITCH 1004N-FX - 1084159

### Accessories

FO patch cable - FOC-ST:PA-SC:PA-OM2:D01/1 - 1115574



Multi-mode OM2 duplex jumper, ST-SC, UPC polishing, length 1 m

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FO patch cable - FOC-ST:PA-SC:PA-OM2:D01/2 - 1115573



Multi-mode OM2 duplex jumper, ST-SC, UPC polishing, length 2 m

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FO patch cable - FOC-LC:PA-SC:PA-OM4:D01/1 - 1115601



Multi-mode OM4 duplex jumper, LC-SC, UPC polishing, length 1 m

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FO patch cable - FOC-LC:PA-SC:PA-OM4:D01/2 - 1115600



Multi-mode OM4 duplex jumper, LC-SC, UPC polishing, length 2 m

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FO patch cable - FOC-SC:PA-SC:PA-OM4:D01/1 - 1115424



Multi-mode OM4 duplex jumper, SC-SC, UPC polishing, length 1 m

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## Industrial Ethernet Switch - FL SWITCH 1004N-FX - 1084159

### Accessories

FO patch cable - FOC-SC:PA-SC:PA-OM4:D01/2 - 1115423



Multi-mode OM4 duplex jumper, SC-SC, UPC polishing, length 2 m

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### End block

End clamp - E/NS 35 N - 0800886



End clamp, width: 9.5 mm, color: gray

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### Patch cable

Patch cable - FL CAT5 PATCH 0,5 - 2832263



Patch cable, CAT5, assembled, 0.5 m

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Patch cable - FL CAT5 PATCH 1,0 - 2832276



Patch cable, CAT5, assembled, 1 m

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Patch cable - FL CAT5 PATCH 2,0 - 2832289



Patch cable, CAT5, assembled, 2 m

## Industrial Ethernet Switch - FL SWITCH 1004N-FX - 1084159

### Accessories

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#### PCB plug

PCB connector - FKCT 2,5/ 3-ST KMGY BD:US,GND - 1087544



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: light gray, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of rows: 1, Number of positions per row: 3, product range: FKCT 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Locking clip: - Locking clip, plug-in system: CLASSIC COMBICON, Locking: without, mounting: without, type of packaging: packed in cardboard

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Printed-circuit board connector - FKCT 2,5/ 3-ST KMGY - 1998263



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: light gray, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 3, Number of rows: 1, Number of positions per row: 3, number of connections: 3, product range: FKCT 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Locking clip: - Locking clip, plug-in system: CLASSIC COMBICON, Locking: without, mounting: without, type of packaging: packed in cardboard

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#### Protective cap

Dust protection - FL RJ45 PROTECT CAP - 2832991



Dust protection caps for RJ45 socket

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#### Surge protection for information technology

Surge protection device - DT-LAN-CAT.6+ - 2881007



Surge protection in accordance with Class E<sub>A</sub> (CAT6<sub>A</sub>), for Gigabit Ethernet (up to 10 Gbps), token ring, FDDI/CDDI, ISDN, and DS1. Suitable for Power over Ethernet (PoE++ / 4PPoE) "Mode A" and "Mode B". RJ45 attachment plug with separate grounding cable and ground connection snap-on foot for NS 35 DIN rails.

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