

# Industrial Ethernet Switch - FL SWITCH LM 4TX/2FX SM-E - 2891864

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Ethernet Lean Managed Switch with four 10/100 Mbps RJ45 ports and two 10/100 Mbps FX-SC single-mode ports, preconfigured for Ethernet/IP

## Product description


The compact lean managed switches (LM) make it possible to set up flexible and economical managed Ethernet networks in an automation environment. Its huge range of connection variants and extended temperature range of -40 °C to +70 °C enable it to perfectly cover the requirements of industrial applications. The integrated software allows networks to be redundantly set up, diagnosed and monitored using IT standard protocols.

## Why buy this product

- Web-based management, SNMP
- Compact housing
- Comprehensive fiber optic versions
- Configuration can be stored externally
- 40°C ... +70°C ambient temperature
- Configurable alarm contact



## Key commercial data

Packing unit	1 pc
GTIN	
Weight per Piece (excluding packing)	230.0 g
Custom tariff number	85176200
Country of origin	Germany

## Technical data

### Note:

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

Width	45 mm
Height	99 mm

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## Technical data

### Dimensions

Depth	112 mm
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### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	30 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	30 % ... 95 % (non-condensing)
Air pressure (operation)	80 kPa ... 108 kPa (2000 above sea level)
Air pressure (storage/transport)	70 kPa ... 108 kPa (3000 above sea level)
Noise immunity	EN 61000-6-2:2005

### Interfaces

Interface 1	Ethernet (RJ45)
No. of ports	4 (RJ45 ports)
Connection method	RJ45
Note on connection method	Auto negotiation and autocrossing
Transmission physics	Copper
Transmission speed	10/100 MBit/s
Transmission length	100 m (per segment)
Interface 2	Ethernet FO
No. of ports	2 (SC single-mode)
Connection method	SC
Transmission physics	Single mode fiberglass
Transmission speed	100 MBit/s (full duplex)
Transmission length	36000 m (fiberglass with F-G 9/125 0.36 dB/km)
	32000 m (fiberglass with F-G 9/125 0.4 dB/km)
	26000 m (fiberglass with F-G 9/125 0.5 dB/km)
Wavelength	1300 nm
Interface 5	Serial (V.24 (RS-232))
Connection method	V.24 (RS-232-C), 6-pos. MINI-DIN socket (PS/2)

### Function

Basic functions	Store-and-forward switch complies with IEEE 802.3 2, priority classes according to IEEE 802.1 P TCP/IP protocol, BootP-compatible, port mirroring, integrated web server function, multicast filtering, IGMP snooping, VLAN, Rapid Spanning Tree (RSTP), DHCP server, PTCP filter
Supported browsers	Internet Explorer 5.5 or higher
Redundancy	Rapid Spanning Tree 802.1w, Fast Ring Detection
Status and diagnostic indicators	Per Ethernet 2 status LEDs: LINK and status activity, 100, full duplex, supply voltage $U_{S1}$ and $U_{S2}$ (redundant supply voltage)

### Network expansion parameters

Cascading depth	Network, linear, and star structure: any
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## Technical data

### Network expansion parameters

Maximum conductor length ((twisted pair)	100 m
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### Supply voltage

Supply voltage	24 V DC
Residual ripple	3.6 V <sub>PP</sub> (within the permitted voltage range)
Supply voltage range	18.5 V DC ... 30.5 V DC
Typical current consumption	400 mA (at U <sub>S</sub> = 24 V DC)

### General

Mounting type	DIN rail
Type AX	Block design
Weight	230 g
Noise emission	EN 61000-6-3/-4

### Mechanical tests

Type of test	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6
Test result	Operation/Storage/Transport: 5 g, 150 Hz, Criterion 3

## Classifications

### eCl@ss

eCl@ss 4.0	27250501
eCl@ss 4.1	27250501
eCl@ss 5.0	27250501
eCl@ss 5.1	27250501
eCl@ss 6.0	27250501
eCl@ss 7.0	27250501
eCl@ss 8.0	19170125

### ETIM

ETIM 2.0	EC000734
ETIM 3.0	EC000734
ETIM 4.0	EC000734
ETIM 5.0	EC000734

### UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201410
UNSPSC 13.2	43201410

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## Approvals

### Approvals

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#### Approvals

UL Listed / UL Listed / cUL Listed / cUL Listed / cULus Listed

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#### Ex Approvals


UL Listed / cUL Listed / UL Listed / cUL Listed / cULus Listed

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#### Approvals submitted

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### Approval details

UL Listed 

UL Listed 

cUL Listed 

cUL Listed 

cULus Listed 

## Accessories

### Accessories

Connector set

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### Accessories

#### RJ45 connector - FL PLUG RJ45 GR/2 - 2744856



RJ45 connector, shielded, with bend protection sleeve, 2 pieces, gray for straight cables, for assembly on site. For connections that are not crossed, it is recommended that you use the connector set with gray bend protection sleeve.

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#### RJ45 connector - FL PLUG RJ45 GN/2 - 2744571



RJ45 connector, shielded, with bend protection sleeve, 2 pieces, green for crossed cables, for assembly on site. For connections that are crossed, it is recommended that the connector set with green bend protection sleeves is used.

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### Data cable preassembled

#### Fiber optic cables - VS-PC-2XGOF-50-SCRJ/SCDU-1 - 1654400



Assembled fiber optic cable, break-out cable, fiberglass multi-mode 50/125 µm, SCRJ/IP20 on SC-duplex/IP20, for installation inside control cabinets, length: 1 m

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#### FO patch cable - FL MM PATCH 1,0 LC-SC - 2989161



Assembled fiber optic cable, break-out cable, fiberglass multi-mode 50/125 µm, connector: LC/SC duplex, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 1 m

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#### FO patch cable - FL MM PATCH 2,0 LC-SC - 2989268



Assembled fiber optic cable, break-out cable, fiberglass multi-mode 50/125 µm, connector: LC/SC duplex, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 2 m

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### Accessories

#### FO patch cable - FL MM PATCH 5,0 LC-SC - 2901800



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, plug: LC / SC-Duplex, protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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#### FO patch cable - FL MM PATCH 1,0 SC-SC - 2901805



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / SC-Duplex, protection type: IP20, for installation in cable ducts or control cabinets, length: 1 m

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#### FO patch cable - FL MM PATCH 2,0 SC-SC - 2901807



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / SC-Duplex, protection type: IP20, for installation in cable ducts or control cabinets, length: 2 m

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#### FO patch cable - FL MM PATCH 5,0 SC-SC - 2901808



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / SC-Duplex, protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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#### FO patch cable - FL MM PATCH 1,0 SC-ST - 2901809



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / B-FOC, protection type: IP20, for installation in cable ducts or control cabinets, length: 1 m

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## Accessories

### FO patch cable - FL MM PATCH 2,0 SC-ST - 2901810



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 2 m

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### FO patch cable - FL MM PATCH 5,0 SC-ST - 2901811



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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### FO patch cable - FL MM PATCH 1,0 SC-SCRJ - 2901812



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 1 m

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### FO patch cable - FL MM PATCH 2,0 SC-SCRJ - 2901813



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / SCRJ, protection type: IP20, for installation in cable ducts or control cabinets, length: 2 m<sup>^</sup>

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### FO patch cable - FL MM PATCH 5,0 SC-SCRJ - 2901814



Assembled FO cable, break out cable, multi-mode fiberglass 50/125 µm, connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 m

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## Drivers and interfaces

# Industrial Ethernet Switch - FL SWITCH LM 4TX/2FX SM-E - 2891864

## Accessories

Software - FL SNMP OPC SERVER - 2832166



SNMP-OPC server, German and English, for monitoring and configuration of SNMP-capable equipment in HMI and SCADA systems

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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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## Fiber optics connector (device side)

Fiber optic coupling - VS-SCRJ-GOF-KU - 1654358



SCRJ coupling insert, duplex, for VS-PP-19-1HE-16-F patch panel and VS-TO...F...terminal outlets and VS-SI-FP-2F front plate, can be used for glass multi-mode, HCS and polymer fiber types

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## Network management software

Software - FL SWT - 2831044



Factory Manager, multilingual, configuration and diagnostics software for ETHERNET networks in automation

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## Patch cable

Patch cable - FL CAT5 PATCH 0,3 - 2832250



Patch cable, CAT5, assembled, 0.3 m

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### Accessories

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, 1.0 m

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Patch cable - FL CAT5 PATCH 1,5 - 2832221



Patch cable, CAT5, assembled, 1.5 m

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Patch cable - FL CAT5 PATCH 2,0 - 2832289



Patch cable, CAT5, assembled, 2.0 m

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Patch cable - FL CAT5 PATCH 3,0 - 2832292



Patch cable, CAT5, assembled, 3.0 m

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## Industrial Ethernet Switch - FL SWITCH LM 4TX/2FX SM-E - 2891864

### Accessories

Patch cable - FL CAT5 PATCH 5,0 - 2832580



Patch cable, CAT5, assembled, 5.0 m

Patch cable - FL CAT5 PATCH 7,5 - 2832616



Patch cable, CAT5, assembled, 7.5 m

Patch cable - FL CAT5 PATCH 10,0 - 2832629



Patch cable, CAT5, assembled, 10.0 m

Security element - FL SEC PAC 4TX - 2832865



Layer1 security elements for four RJ45 network connections for use with patch boxes and panels

Patch panel

Patch panels - FL PF 2TX CAT5E - 2891165



Patch field with two RJ45 CAT5e network connections

## Industrial Ethernet Switch - FL SWITCH LM 4TX/2FX SM-E - 2891864

### Accessories

Patch panels - FL PF 8TX CAT5E - 2891178



Patch field with eight RJ45 CAT5e network connections

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### Programming cable

Connecting cable - PRG CAB MINI DIN - 2730611



Connecting cable, for connecting the controller to a PC (RS-232) for PC Worx, 3 m in length

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### Protective cap

Dust protection - FL RJ45 PROTECT CAP - 2832991



Dust protection caps for RJ45 socket

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### Universal tools

Assembly tool - FL CRIMPTOOL - 2744869



Crimping pliers, for assembling the RJ45 plugs FL PLUG RJ45..., for assembly on site

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Software - IPASSIGN - 2701094



IPAssign is an easy to use tool for setting the IP address of devices which rely on BOOTP. No installation or administrative rights are required to use IPAssign. With a simple selection, you can filter out all of the devices except those from Phoenix Contact.

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