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# Switch - FL SWITCH LM 4TX/2FX SM ST-E - 2989938

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Ethernet Lean Managed Switches with four RJ45 ports, 10/100 Mbps, and two fiberglass ST FO ports (single mode), 100 Mbps (100Base-FX), SNMP management, redundancy via Rapid Spanning Tree (IEEE 802.1w) and fast ring detection, VLAN, multicast filtering, IGMP snooping.

## 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	0
Minimum order quantity	1
GTIN	 4 046356 342490
Custom tariff number	85176200
Country of origin	GERMANY

## Technical data

### Interfaces

Interface 1	Ethernet (RJ45)
No. of ports	4 (RJ45 ports)
Connection method	RJ45
Transmission physics	Copper
Transmission speed	10/100 MBit/s
Transmission length	100 m (per segment)
Interface 2	Ethernet FO
No. of ports	2 (ST single mode)

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## Technical data

### Interfaces

Connection method	ST
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)
Transmission length	32000 m (fiberglass with F-G 9/125 0.4 dB/km)
Transmission length	26000 m (fiberglass with F-G 9/125 0.5 dB/km)
Transmission length	2800 m
Wavelength	1300 nm

### Function

Basic functions	Store-and-forward switch complies with IEEE 802.3 2, priority classes in acc. with 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
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 US1 and US2 (redundant supply voltage)

### 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
Residual ripple	3.6 VPP (within the permitted voltage range)
Supply voltage range	18.5 V DC ... 30.5 V DC
Typical current consumption	400 mA (at US = 24 V DC)

### General data

Width	45 mm
Height	99 mm
Depth	112 mm
Mounting type	DIN rail
Type AX	Block-oriented
Weight	230 g
Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	30 % ... 95 % (no condensation)
Permissible humidity (storage/transport)	30 % ... 95 % (no condensation)
Air pressure (operation)	80 kPa ... 108 kPa (2000 above sea level)
Air pressure (storage/transport)	70 kPa ... 108 kPa (3000 above sea level)
Noise emission	EN 61000-6-3/-4
Noise immunity	EN 61000-6-2:2005



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## Technical data

### Conformity with EMC directives

Developed in acc. with standard	IEC 61000-6.2
Test standard	IEC 61000-4-2 (ESD)
Test result	Criterion B
Test standard	IEC 61000-4-3 (immunity to radiated interference)
Test result	Criterion A
Test standard	IEC 61000-4-4 (burst)
Test result	Criterion B
Test standard	IEC 61000-4-5 (surge)
Test result	Criterion B
Test standard	IEC 61000-4-6 (immunity to conducted interference)
Test result	Criterion A

## Classifications

### eclass

eCl@ss 4.0	27250501
eCl@ss 4.1	27250501
eCl@ss 5.0	19030117
eCl@ss 5.1	19030117
eCl@ss 6.0	19170106

### etim

ETIM 2.0	EC000734
ETIM 3.0	EC000734
ETIM 4.0	EC000734

### unspsc

UNSPSC 6.01	43172901
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201410
UNSPSC 13.2	43201410

## Accessories

### Accessories

#### Cable/conductor

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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## Accessories

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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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## Female insert

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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## Plug/Adapter

RJ45 plug 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 plug 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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## Software

Software - FL SWT - 2831044



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

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## Tools

## Switch - FL SWITCH LM 4TX/2FX SM ST-E - 2989938

### Accessories

Assembly tool - FL CRIMPTOOL - 2744869



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

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Dust protection - FL RJ45 PROTECT CAP - 2832991



Dust protection caps for RJ45 female connector

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End clamp - E/NS 35 N - 0800886



End clamp, width: 9.5 mm, color: gray

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Patch panels - FL PF 2TX CAT5E - 2891165



Patch field with two RJ45 CAT5e network connections

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Patch panels - FL PF 8TX CAT5E - 2891178



Patch field with eight RJ45 CAT5e network connections

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