

# Industrial Ethernet Switch - FL SWITCH LM 4TX/1FX SM ST - 2989925

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Ethernet Lean Managed Switch with four 10/100 Mbps RJ45 ports and one 100 Mbps FX-ST single-mode port

## Product Description


The compact Lean Managed Switches (LM) enable the flexible and cost-effective creation of managed Ethernet networks in automation applications. Thanks to the wide range of connection versions and the extended temperature range of -40°C to +70°C, it optimally meets the requirements of industrial applications. It supports PROFINET conformance class A. And its integrated software enables the redundant creation, diagnostics, and monitoring of networks 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 STK
GTIN	 4 046356 342407
GTIN	4046356342407
Weight per Piece (excluding packing)	320.000 g
Custom tariff number	85176200
Country of origin	Germany

## Technical data

### Note

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## 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
Depth	112 mm

### 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 m above sea level)
Air pressure (storage/transport)	70 kPa ... 108 kPa (3000 m above sea level)

### Interfaces

Interface 1	Ethernet (RJ45)
No. of ports	4 (RJ45 ports)
Connection method	RJ45
Note on the connection method	Auto negotiation and autocrossing
Transmission physics	Copper
Transmission speed	10/100 Mbps
Transmission length	100 m (per segment)
Interface 2	Ethernet FO
No. of ports	1 (ST single mode)
Connection method	ST
Transmission physics	Single-mode fiberglass
Transmission speed	100 Mbps (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 (RS-232)
Connection method	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 802.1p, TCP/IP protocol, BootP-compatible, port
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## Technical data

### Function

	mirroring, integrated web server function, multicast filtering, IGMP snooping, VLAN, Rapid Spanning Tree (RSTP), DHCP server, PTCP filter
Management	Web-based management (HTTP)
	SNMP v1/v2
	Serial interface (V.24)
Diagnostic functions	1:1-Portmirroring
Filter functions	Quality of Service
	VLAN (up to 8 VLANs)
	IGMP Query
	Auto-Query-Port
	Extended Multicast Filtering
Supported browsers	Internet Explorer 5.5 or higher
Redundancy	STP (Spanning Tree Protocol)
	RSTP (Rapid Spanning Tree Protocol)
	FRD (Fast Ring Detection)
	Large Tree Support
PROFINET conformance class	Conformance-Class A
Status and diagnostic indicators	LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link/Activity and Speed)

### 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 (redundant)
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	250 mA (at U <sub>S</sub> = 24 V DC)

### General

Mounting type	DIN rail
Type AX	Block design
Net weight	230 g

### Connection data

Connection method	Screw 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>

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## Technical data

### Connection data

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	7 mm

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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
Type of test	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6
Test result	Operation/Storage/Transport: 5g, 150 Hz, Criterion 3
Noise emission	EN 61000-6-3/-4
Noise immunity	EN 61000-6-2:2005
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

### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Classifications

### eCl@ss

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
eCl@ss 7.0	19170106

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## Classifications

### eCl@ss

eCl@ss 8.0	19170106
eCl@ss 9.0	19170106

### ETIM

ETIM 2.0	EC000734
ETIM 3.0	EC000734
ETIM 4.0	EC000734
ETIM 5.0	EC000734
ETIM 6.0	EC000734

### UNSPSC

UNSPSC 6.01	43172901
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201410
UNSPSC 13.2	43222612

## Approvals


### Approvals

#### Approvals

UL Listed / cUL Listed / GL / BV / DNV / GL-SW / LR / PRS / GL / cULus Listed

#### Ex Approvals

### Approval details

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 140324
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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 140324
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## Approvals

GL		<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	59820-08 HH
BV		<a href="http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials">http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials</a>	23316/B0 BV
DNV		<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	A-13936
GL-SW			59820-08 HH
LR		<a href="http://www.lr.org/en">http://www.lr.org/en</a>	14/20060
PRS		<a href="http://www.prs.pl/">http://www.prs.pl/</a>	TE/2105/880590/16
GL		<a href="http://www.gl-group.com/newbuilding/approvals/index.html">http://www.gl-group.com/newbuilding/approvals/index.html</a>	
cULus Listed			

## Accessories

### Accessories

#### Drivers and interfaces

#### Software - FL SNMP OPC SERVER V3 - 2701139



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

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### Accessories

Software - FL SNMP OPC AGENT V3 - 2701136



SNMP-OPC agent, German and English, for integrating OPC-based automation solutions in company-wide network management 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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### Mounting rail adapter

DIN rail adapter - FL DIN RA - 2891053



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.

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### Network management software

Software - FL VIEW 32 LITE - 2701744



FL VIEW, SNMP-based software in English, for the detection and display of Ethernet networks. 32 nodes (network devices) can be monitored in one Class C subnetwork with this version.

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### Patch cable

## Industrial Ethernet Switch - FL SWITCH LM 4TX/1FX SM ST - 2989925

### Accessories

Patch cable - FL CAT5 PATCH 1,0 - 2832276



Patch cable, CAT5, assembled, 1 m

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### Programming cable

Connecting cable - COM CAB MINI DIN - 2400127



Connecting cable, for connecting the controller to a PC (RS-232) for PC WORX with flow control, 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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### Services

Service material - FL START-UP SUPPORT - 2701426



Startup of Phoenix Contact network components and support regarding analysis, consultation/planning or configuration/startup together with a responsible person employed by the initiator.

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### Accessories

#### Service material - FL MAINTENANCE SUPPORT - 2701424



Troubleshooting in an Ethernet communication network together with a responsible person employed by the initiator.

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#### Service material - FL TRAINING - 2701427



Training for network standards, Ethernet security or wireless with Phoenix Contact components

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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.

This product is free and only available from the "Downloads" tab.

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