

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



2989828

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

The figure shows a version of the product

## 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  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ , 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.

## Your advantages

- Configurable alarm contact
- Ambient temperature  $-40^{\circ}\text{C}$  ...  $70^{\circ}\text{C}$
- Web-based management, SNMP
- Configuration can be stored externally
- Compact housing
- Comprehensive fiber optic versions

## Commercial data

Item number	2989828
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DN17
Product key	DNN121
GTIN	4046356342391
Weight per piece (including packing)	313.7 g
Weight per piece (excluding packing)	230 g
Customs tariff number	85176200
Country of origin	DE

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## Technical data

### Dimensions

Width	45 mm
Height	99 mm
Depth	112 mm

### Mounting

Mounting type	DIN rail mounting
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### Interfaces

#### Ethernet (RJ45)

Connection method	RJ45
Note on the connection method	Auto negotiation and autocrossing
Transmission speed	10/100 Mbps
Transmission physics	Copper
Transmission length	100 m (per segment)
No. of channels	4 (RJ45 ports)

#### Ethernet FO

Connection method	SC
Transmission speed	100 Mbps (full duplex)
Transmission physics	Single-mode fiberglass
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
No. of channels	1 (SC single mode)

#### Serial (RS-232)

Connection method	RS-232-C, 6-pos. MINI-DIN socket (PS/2)
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### Product properties

Product type	Switch
Product family	Lean Managed Switch
Type	Block design

#### Insulation characteristics

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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#### Switch functions

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

## Security functions

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 mirroring, integrated web server function, multicast filtering, IGMP snooping, VLAN, Rapid Spanning Tree (RSTP), DHCP server, PTCP filter
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## Electrical properties

Local diagnostics	US Supply voltage Green LED
	Link status Green LED
	Telegrams received Yellow LED
Maximum power dissipation for nominal condition	6 W
Transmission medium	Copper
	FO

## Supply

Supply voltage (DC)	24 V DC (redundant)
Supply voltage range	18.5 V DC ... 30.5 V DC
Power supply connection	Via COMBICON, max. conductor cross-section 2.5 mm <sup>2</sup>
Residual ripple	3.6 V <sub>pp</sub> (within the permitted voltage range)
Typical current consumption	250 mA (at U <sub>S</sub> = 24 V DC)

## Connection data

Connection method	Screw connection
Conductor cross-section, rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section, flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>

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Conductor cross-section AWG	24 ... 12
Stripping length	7 mm

## Environmental and real-life conditions

### 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)
Vibration (operation)	in acc. with IEC 60068-2-6: 5g, 150 Hz
Air pressure (operation)	80 kPa ... 108 kPa (2000 m above mean sea level)
Air pressure (storage/transport)	70 kPa ... 108 kPa (3000 m above sea level)

## EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Conformance with EMC directives	IEC 61000-6-2 IEC 61000-4-2 (ESD) Criterion B
	IEC 61000-4-3 (immunity to radiated interference) Criterion A
	IEC 61000-4-4 (burst) Criterion B
	IEC 61000-4-5 (surge) Criterion B
	IEC 61000-4-6 (immunity to conducted interference) Criterion A
Noise immunity	EN 61000-6-2:2005

### Noise emission

Standards/regulations	EN 61000-6-3/-4
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## System properties

### Functionality

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 mirroring, integrated web server function, multicast filtering, IGMP snooping, VLAN, Rapid Spanning Tree (RSTP), DHCP server, PTCP filter
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### System requirements

Supported browsers	Internet Explorer 5.5 or higher
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## Signaling

Status display	LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link/Activity and Speed)
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## Classifications

### UNSPSC

UNSPSC 21.0	43222612
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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