

FL SWITCH LM 4TX/2FX SM

Order No.: 2891916




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Ethernet lean managed switches with four RJ45 ports, 10/100 Mbps, with auto crossing and auto negotiation and two glass fiber SC 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.



Commercial data

GTIN (EAN)	 4 046356 092487
sales group	K000
Pack	1 pcs.
Customs tariff	85176200
Catalog page information	Page 97 (AX-2011)

Product notes

WEEE/RoHS-compliant since:
02/11/2008



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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.

Technical data

Interfaces

Interface 1	Ethernet
No. of ports	4 (RJ45 ports)
Connection method	RJ45 female connector, auto negotiation
Transmission physics	Copper
Transmission speed	10/100 MBit/s
Interface 2	Fiber optic interface
No. of ports	2 (SC single-mode)
Connection method	SC duplex
Transmission length	36000 m (glass fiber with F-G 9/125 0.36 dB/km)
	32000 m (glass fiber with F-G 9/125 0.4 dB/km)
	26000 m (glass fiber with F-G 9/125 0.5 dB/km)
Wavelength	1300 nm
Interface 3	Serial (V.24 (RS-232))
Connection method	V.24 (RS-232-C), 6-pos. MINI-DIN female connector (PS/2)

Function

Basic functions	Store and forward switch complies with IEEE 802.3 2 priority classes in acc. with IEEE802.1 P TCP/IP protocol, BootP-capable, port mirroring, integrated web server function, multicast filtering, IGMP snooping, Rapid Spanning Tree (RSTP)
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
Maximum conductor length ((twisted pair)	100 m

Supply voltage

Supply voltage	24 V DC
Residual ripple	3.6 V _{PP} (within the permitted voltage range)
Supply voltage range	18.5 V DC ... 30.5 V DC
Typical current consumption	400 mA (at $U_S = 24$ 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

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

Certificates / Approvals



Certification

BV, CUL, DNV, GL, UL

Accessories

Item	Designation	Description
Cable/conductor		
2832250	FL CAT5 PATCH 0,3	Patch cable, CAT5, assembled, 0.3 m
2832263	FL CAT5 PATCH 0,5	Patch cable, CAT5, assembled, 0.5 m
2832276	FL CAT5 PATCH 1,0	Patch cable, CAT5, assembled, 1.0 m
2832221	FL CAT5 PATCH 1,5	Patch cable, CAT5, assembled, 1.5 m
2832629	FL CAT5 PATCH 10,0	Patch cable, CAT5, assembled, 10.0 m
2832289	FL CAT5 PATCH 2,0	Patch cable, CAT5, assembled, 2.0 m
2832292	FL CAT5 PATCH 3,0	Patch cable, CAT5, assembled, 3.0 m
2832580	FL CAT5 PATCH 5,0	Patch cable, CAT5, assembled, 5.0 m
2832616	FL CAT5 PATCH 7,5	Patch cable, CAT5, assembled, 7.5 m
2891369	FL CAT6 PATCH 12,5	Patch cable, CAT6, pre-assembled, 12.5 m
2891372	FL CAT6 PATCH 15,0	Patch cable, CAT6, pre-assembled, 15.0 m
2891576	FL CAT6 PATCH 20,0	Patch cable, CAT6, pre-assembled, 20.0 m
2989161	FL MM PATCH 1,0 LC-SC	Assembled fiber optic cable, break-out cable, glass fiber multi-mode 50/125 µm, connector: LC/SC duplex, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 1 meter
2901805	FL MM PATCH 1,0 SC-SC	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, connector: SC Duplex / SC-Duplex, protection type: IP20, for installation in cable ducts or control cabinets, length: 1 meter
2901812	FL MM PATCH 1,0 SC-SCRJ	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 1 meter
2901809	FL MM PATCH 1,0 SC-ST	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, connector: SC Duplex / B-FOC, protection type: IP20, for installation in cable ducts or control cabinets, length: 1 meter
2989268	FL MM PATCH 2,0 LC-SC	Assembled fiber optic cable, break-out cable, glass fiber multi-mode 50/125 µm, connector: LC/SC duplex, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 2 meter
2901807	FL MM PATCH 2,0 SC-SC	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, connector: SC Duplex / SC-Duplex, protection type: IP20, for installation in cable ducts or control cabinets, length: 2 meters
2901813	FL MM PATCH 2,0 SC-SCRJ	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, connector: SC Duplex / SCRJ, protection type: IP20, for installation in cable ducts or control cabinets, length: 2 meters

2901810	FL MM PATCH 2,0 SC-ST	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 2 meters
2901800	FL MM PATCH 5,0 LC-SC	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, plug: LC / SC-Duplex, protection type: IP20, for installation in cable ducts or control cabinets, length: 5 meters
2901808	FL MM PATCH 5,0 SC-SC	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, connector: SC Duplex / SC-Duplex, protection type: IP20, for installation in cable ducts or control cabinets, length: 5 meters
2901814	FL MM PATCH 5,0 SC-SCRJ	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 meters
2901811	FL MM PATCH 5,0 SC-ST	Assembled FO cable, break out cable, multi-mode glass fiber 50/125 µm, connector: SC Duplex / B-FOC (ST), protection type: IP20, for installation in cable ducts or control cabinets, length: 5 meters
2730611	PRG CAB MINI DIN	Connection cable, to connect Remote Field Controllers to a PC (RS-232) for PC WORX, 3 m in length
1654400	VS-PC-2XGOF-50-SCRJ/ SCDU-1	Assembled fiber optic cable, break-out cable, glass fiber multi-mode 50/125 µm, SCRJ/IP20 on SC-duplex/IP20, for installation inside control cabinets, length: 1 m

Female insert

1654358	VS-SCRJ-GOF-KU	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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General

0800886	E/NS 35 N	End clamp, width: 9.5 mm, color: gray
2891165	FL PF 2TX CAT5E	Patch field with two RJ45 CAT5e network connections
2891178	FL PF 8TX CAT5E	Patch field with eight RJ45 CAT5e network connections
2832991	FL RJ45 PROTECT CAP	Dust protection caps for RJ45 female connector

Plug/Adapter

2744571	FL PLUG RJ45 GN/2	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.
2744856	FL PLUG RJ45 GR/2	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.

Software

2832166	FL SNMP OPC SERVER	SNMP-OPC server, German and English, for monitoring and configuration of SNMP-capable equipment in HMI and SCADA systems
2831044	FL SWT	Factory Manager, multilingual, configuration and diagnostics software for ETHERNET networks in automation

Tools

2744869	FL CRIMPTOOL	Crimping pliers, for assembling the RJ45 connectors FL PLUG RJ45..., for assembly on site
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