

Industrial Ethernet Switch - FL SWITCH 2708 - 1106615

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Managed Switch 2000, 8 M12 ports 10/100/1000 Mbps, degree of protection: IP65/IP66/IP67, PROFINET Conformance-Class B

Your advantages

- ✓ Robust IP67 housing
- ✓ Easy panel mounting

Key Commercial Data

Packing unit	1 pc
GTIN	 4 063151 001674
GTIN	4063151001674
Weight per Piece (excluding packing)	1,420.000 g
Custom tariff number	85176200
Country of origin	Germany

Technical data

Dimensions

Width	60 mm
Height	226 mm
Depth	46 mm

Ambient conditions

Degree of protection	IP65
	IP66
	IP67
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 %
Permissible humidity (storage/transport)	5 % ... 95 %

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Technical data

Ambient conditions

Air pressure (operation)	79 kPa ... 108 kPa up to 2000 m above mean sea level (Without derating)
Air pressure (storage/transport)	79 kPa ... 108 kPa up to 2000 m above mean sea level (Without derating)

Interfaces

Interface	Ethernet
No. of ports	8 (M12 ports)
Note on the connection method	Auto negotiation and autocrossing
Transmission physics	Copper
Transmission speed	10/100/1000 Mbps
Transmission length	100 m (per segment)
Signal LEDs	Data receive, link status

Function

Basic functions	Store-and-forward switch, complies with IEEE 802.3
Configuration memory	max. 8 GByte (SD card)
Management	Web-based management (HTTP/HTTPS)
	Role-based user management (LDAP, RADIUS)
	SNMPv1/v2/v3
	Command-line interface (Telnet, SSH)
Diagnostic functions	RMON History
	LLDP (Link Layer Discovery Protocol)
	SNMP-Traps
	N:1-Portmirroring
	ACD (Address Conflict Detection)
	SysLog
	CRC-Surveillance
Filter functions	Quality of Service (8 priority classes)
	Class of Service
	DiffServ/DSCP
	Port-Priorisierung
	VLAN (up to 32 VLANs)
	IGMP Snooping/Querier (v1/v2)
	Auto-Query-Port
	Extended Multicast Filtering
Redundancy	MRP (Media Redundancy Protocol)
	RSTP (Rapid Spanning Tree Protocol)
	FRD (Fast Ring Detection)
	Large Tree Support

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Technical data

Function

	LACP (Link Aggregation Control Protocol)
	PROFINET S2 system redundancy
Additional functions	Jumbo frames (max. 9,600 bytes)
	Transmission of MMS and GOOSE (IEC 61850-8-1)
	Transmission of Modbus TCP
MAC address table	8k
Latency	$\geq 1.9 \mu\text{s}$ (Store-and-Forward mode, 10/100/1000 Mbps, depending on the frame size)
IP parameterization	DHCP-Client
	DHCP Option 82 (Relay Agent)
	DHCP server (pool-based, port-based)
	BootP
	DCP (Discovery and Configuration Protocol)
PROFINET device function	PROFINET device
	Fast Startup
PROFINET conformance class	Conformance-Class B
Time synchronization	SNTP (Simple Network Time Protocol)
Status and diagnostic indicators	LEDs: US1, US2 (power supply), Fail, 2 LEDs per Ethernet port (Link/Activity and Speed)

Security functions

Port security	MAC-based, RADIUS (IEEE 802.1X), MAC Authentication Bypass
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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 _{pp} (within the permitted voltage range)
Supply voltage range	9 V DC ... 57 V DC
Typical current consumption	260 mA (at U _S = 24 V DC and 25 °C ambient temperature)
Max. current consumption	0.77 A (U _S = min, T _{amb} = max)
Current consumption	260 mA

General

Mounting type	Wall mounting
Type AX	Stand-alone
Net weight	1400 g
Housing material	Zinc die-cast

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Technical data

General

Note	Support by phone or on-site (fee is charged)
Latency	≥ 1.9 μs (Store-and-Forward mode, 10/100/1000 Mbps, depending on the frame size)
MTTF	461.15 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	149.69 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	19.78 Years (SN 29500 standard, temperature 70°C, operating cycle 100%)

Connection data

Connection method	M12 connector (A-coded)
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Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Interference emission	EN 61000-6-3 (conducted emissions) Class B
Conducted noise emission	EN 61000-6-3 (conducted emissions) Class B
Immunity to surge	EN 61000-6-2 EN 61000-4-5 (surge) Criterion B
Immunity to burst	EN 61000-6-2 EN 61000-4-4 (EFT burst) Criterion A
Immunity to EF	EN 61000-6-2 EN 61000-4-3 (electromagnetic fields) Criterion A
Immunity to ESD	EN 61000-6-2 EN 61000-4-2 (ESD) Criterion B
Immunity to conducted interference	EN 61000-6-2 EN 61000-4-6 (line noise immunity) Criterion A
Type of test	Free fall in accordance with EN 61131-2
Noise emission	EN 61000-6-3
Noise immunity	EN 61000-6-2
Vibration (storage/transport)	5g, 150 Hz, in acc. with IEC 60068-2-6
Free from substances that could impair the application of coating	Yes
Vibration (operation)	in acc. with IEC 60068-2-6: 5g, 150 Hz
Shock (operation)	30g (EN 60068-2-27)

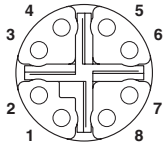
Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

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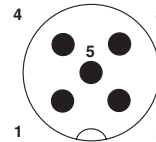
Schematic diagram



Assignment of the LAN female connector

- Pin 1 DB+
- Pin 2 DB-
- Pin 3 DA+
- Pin 4 DA-
- Pin 5 DC+
- Pin 6 DC-
- Pin 7 DD-
- Pin 8 DD+

Schematic diagram



Connection of the supply voltage

- PIN 1 Us1
- PIN 2 GND
- Pin 3 GND
- Pin 4 Us2
- Pin 5 functional ground

Classifications

eCl@ss

eCl@ss 10.0.1	19170401
eCl@ss 11.0	19170401
eCl@ss 9.0	19170106

ETIM

ETIM 7.0	EC000734
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UNSPSC

UNSPSC 18.0	43222612
UNSPSC 19.0	43222612
UNSPSC 20.0	43222612
UNSPSC 21.0	43222612

Approvals

Approvals

Approvals

cULus Listed / EAC

Ex Approvals

Approval details

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Approvals

cULus Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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EAC			RU D- DE.GB09.B.00312
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Accessories

Accessories

Circular connector (cable-side)

Data connector - SACC-PO12MSX-8CT-CL SH - 1021783



Data connector, Ethernet CAT6_A (10 Gbps), PROFINET CAT6_A (10 Gbps), 8-position, shielded, Plug straight M12 Push-Pull, Coding: X, Crimp connection, knurl material: PA 6.6, external cable diameter 6.5 mm ... 10 mm, without crimp contacts

Data connector - SACC-PO12MSD-4CT-CM SH PN - 1021830



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug straight M12 Push-Pull, Coding: D, Crimp connection, knurl material: PA 6.6, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Data cable preassembled

Network cable - NBC-M12MRX/1,0-94F/M12MRX - 1080720



Network cable, Ethernet CAT6_A (10 Gbps) CAT6_A (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug angled M12 / IP67, coding: X, on Plug angled M12 / IP67, coding: X, cable length: 1 m

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Accessories

Network cable - NBC-M12MRX/2,0-94F/M12MRX - 1080721



Network cable, Ethernet CAT6_A (10 Gbps) CAT6_A (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug angled M12 / IP67, coding: X, on Plug angled M12 / IP67, coding: X, cable length: 2 m

Network cable - NBC-M12MSX/ 1,0-94C/M12MSX - 1125028



Network cable, Ethernet CAT5 (1 Gbps) CAT5 (1 Gbps), 8-position, PUR, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12 / IP67, coding: X, on Plug straight M12 / IP67, coding: X, cable length: 1 m

Network cable - NBC-M12MSX/1,0-94F/M12MRX - 1080724



Network cable, Ethernet CAT6_A (10 Gbps) CAT6_A (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12 / IP67, coding: X, on Plug angled M12 / IP67, coding: X, cable length: 1 m

Network cable - NBC-M12MSX/2,0-94F/M12MRX - 1080725



Network cable, Ethernet CAT6_A (10 Gbps) CAT6_A (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12 / IP67, coding: X, on Plug angled M12 / IP67, coding: X, cable length: 2 m

Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726



Network cable, Ethernet CAT6_A (10 Gbps) CAT6_A (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12 / IP67, coding: X, on Plug angled M12 / IP67, coding: X, cable length: 5 m

Drivers and interfaces

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Accessories

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

Network management software

Software - FL NETWORK MANAGER BASIC - 2702889



FL Network Manager, SNMP-based configuration and firmware update software, for easy startup of Managed Switches