

Industrial Ethernet Switch - FL SWITCH 2314-2SFP - 1006191

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Managed Switch 2000, 14 RJ45 ports 10/100/1000 Mbps, 2 SFP ports 100/1000 Mbps, degree of protection: IP20, PROFINET Conformance-Class B

The figure shows a version of the product

Your advantages

- ✓ Suitable for PROFINET and EtherNet/IP™ networks
- ✓ Easy and fast startup and commissioning with the FL NETWORK MANAGER software
- ✓ Configuration memory
- ✓ RSTP
- ✓ DHCP client, DHCP server (pool-based and port-based), DHCP option 82
- ✓ VLANs
- ✓ MRP (client and master)
- ✓ Web-based management, SNMP
- ✓ -40°C ... +70°C ambient temperature



Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 477503
GTIN	4055626477503

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
	Use in potentially explosive areas is not permitted in China.

Dimensions

Width	85 mm
Height	130 mm

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Dimensions

Depth	115 mm
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Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)
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)
Degree of pollution	2

Interfaces

Interface	Ethernet (RJ45)
No. of ports	14 (RJ45 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
Interface	SFP module
No. of ports	2 (SFP ports)
Transmission physics	Depending on the SFP module
Transmission speed	100/1000 Mbps (full duplex)
Transmission length	up to 80 km (Depending on the fiber/SFP module used)
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
	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

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Function

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
	LACP (Link Aggregation Control Protocol)
Additional functions	Jumbo frames (Max. 9,600 bytes)
	Transmission of MMS and GOOSE (IEC 61850-8-1)
MAC address table	8k
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 (alarm contact), 2 LEDs per Ethernet port (Link/Activity and Speed)
Signal contact control voltage	typ. 24 V DC

Security functions

Port security	MAC-based, RADIUS (IEEE 802.1X)
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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	12 V DC ... 57 V DC
Typical current consumption	460 mA (at U _S = 24 V DC and 25 °C ambient temperature)
Max. current consumption	2 A (U _S = Min, T _{amb} = Max, DO _I = Max)

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Supply voltage

Current consumption	325 mA
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General

Mounting type	DIN rail
Type AX	Book type
Net weight	470 g
Housing material	Polycarbonate fiber reinforced
Note	Support by phone or on-site (fee is charged)
MTTF	379.84 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	199.41 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	27.52 Years (SN 29500 standard, temperature 55°C, operating cycle 100%)

Connection data

Connection method	Push-in spring connection
Conductor cross section solid min.	0.25 mm²
Conductor cross section solid max.	1.5 mm²
Conductor cross section flexible min.	0.25 mm²
Conductor cross section flexible max.	1.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	9 mm

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Interference emission	EN 61000-6-2 EN 61000-6-3 (noise emission) Class B
Conducted noise emission	EN 61000-6-2 EN 61000-6-3 (conducted emissions) Class B
Immunity to surge	EN 61000-6-2 EN 61000-4-5 (surge) Criterion A
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 61000-6-4
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
Shipbuilding approval	Tested in accordance with IEC 60945 and IACS E10
Vibration (operation)	in acc. with IEC 60068-2-6: 5g, 150 Hz
Shock (operation)	30g (EN 60068-2-27)
ATEX	# II 3 G Ex ec IIC T4 Gc

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Standards and Regulations

IECEX	Ex ec IIC T4 Gc
UL, USA	UL 60079-0, Ed.6 / UL 60079-7, Ed.5
UL, USA/Canada	Class I, Div. 2, Groups A, B, C, D T4 Class I, Zone 2, IIC T4
UL, Canada	CSA C22.2 NO.60079-0, Ed.3 / CSA C22.2 NO.60079-7:16
Noxious gas test	ISA S71.04.2013 G3 Harsh Group A

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"

Classifications

eCl@ss

eCl@ss 10.0.1	19170401
eCl@ss 11.0	19170401
eCl@ss 4.0	27250501
eCl@ss 4.1	27250501
eCl@ss 5.0	19030100
eCl@ss 5.1	19030100
eCl@ss 6.0	19170100
eCl@ss 7.0	19170106
eCl@ss 8.0	19170106
eCl@ss 9.0	19170106

ETIM

ETIM 3.0	EC000734
ETIM 4.0	EC000734
ETIM 5.0	EC000734
ETIM 6.0	EC000734
ETIM 7.0	EC000734

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201410
UNSPSC 13.2	43222612
UNSPSC 18.0	43222612
UNSPSC 19.0	43222612

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Classifications

UNSPSC

UNSPSC 20.0	43222612
UNSPSC 21.0	43222612

Approvals

Approvals

Approvals

UL Listed / cUL Listed / EAC / DNV GL / LR / RINA / ABS / NK / CC-Link IE Field / BV / BSH / cULus Listed

Ex Approvals

IECEx / ATEX / UL Listed / cUL Listed / cULus Listed

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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EAC			RU*- DE.*.B.00741/19
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DNV GL		https://approvalfinder.dnvgl.com/	TAA00000YV
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LR		http://www.lr.org/en	17/20056
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RINA		http://www.rina.org/en	ELE130419XG
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ABS		http://www.eagle.org/eagleExternalPortalWEB/	17- HG1592765-1-PDA
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Approvals

NK	ClassNK	http://www.classnk.or.jp/hp/en/	TA19464M
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CC-Link IE Field	CC-Link IE Field		Ref. No. 184
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BV		http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials	48146/A1 BV
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BSH			1045
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cULus Listed			
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Accessories

Accessories

Configuration memory

Program / configuration memory - FL SD FLASH/MRM - 2700270



Parameterization memory, plug-in, with MRM functionality

Data cable preassembled

FO patch cable - FL MM PATCH 1,0 LC-LC - 2989158



Assembled FO cable, break out cable, multimode fiberglass 50/125 µm (OM2), connector: LC/LC, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 1 m

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Accessories

FO patch cable - FL SM PATCH 1,0 LC-LC - 2989187



Assembled fiber optic cable, break-out cable, fiberglass single mode 9/125 µm (OS2, Low Water Peak Fiber), connector: LC/LC, degree of protection: IP20, for installation in cable ducts or control cabinets, length: 1 m

Patch cable - NBC-R4AC-R4AC-IE8A/.../... - 1411854



Patch cable, degree of protection: IP20, number of positions: 8, 10 Gbps, CAT6_A, cable outlet: straight

Patch cable - NBC-R4AC/10G-R4AC/10G-94F/2,0 - 1408360



Patch cable, CAT6_A, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 2.0 m

Patch cable - NBC-R4AC/10G-R4AC/10G-94F/3,0 - 1408365



Patch cable, CAT6_A, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 3.0 m

Patch cable - NBC-R4AC/1,0-93B/R4AC - 1408968



PROFINET patch cable, shielded, star-quad, 22 AWG stranded (7-wire), green, straight RJ45 male connector/IP20 to straight RJ45 male connector/IP20, length: 1.0 m

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Accessories

Patch cable - NBC-R4AC/2,0-93B/R4AC - 1408969



PROFINET patch cable, shielded, star quad, 22 AWG stranded (7-wire), green, straight RJ45 plug/IP20, to straight RJ45 plug/IP20, length: 2 m

Patch cable - NBC-R4AC/5,0-93B/R4AC - 1408970



PROFINET patch cable, shielded, star quad, 22 AWG stranded (7-wire), green, straight RJ45 plug/IP20 to straight RJ45 plug/IP20, length: 5 m

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

End block

End clamp - E/NS 35 N - 0800886



End clamp, width: 9.5 mm, color: gray

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.

Network management software

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Accessories

Software - FL NETWORK MANAGER BASIC - 2702889



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

Parameterization memory

Memory - SD FLASH 512MB - 2988146



Program and configuration memory, plug-in, 512 Mbyte.

Program / configuration memory - SD FLASH 2GB - 2988162



Program and configuration memory, for extending the internal flash memory, pluggable, 2 GB.

Patch cable

Patch cable - FL CAT5 PATCH 0,5 - 2832263



Patch cable, CAT5, assembled, 0.5 m

Patch cable - FL CAT5 PATCH 1,0 - 2832276



Patch cable, CAT5, assembled, 1 m

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Accessories

Patch cable - FL CAT5 PATCH 2,0 - 2832289



Patch cable, CAT5, assembled, 2 m

PCB plug

Printed-circuit board connector - FK-MCP 1,5/ 5-ST-3,81GY35BD1-5 - 1015782



PCB connector, nominal cross section: 1.5 mm², color: light gray, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 5, Number of rows: 1, Number of positions per row: 5, number of connections: 5, product range: FK-MCP 1,5/...-ST, pitch: 3.81 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Stecksystem: MINI COMBICON, Locking: without, type of packaging: packed in cardboard

PCB connector - MCVW 1,5/ 5-ST-3,81GY7035BD2DO - 1034096



PCB connector, nominal cross section: 1.5 mm², color: light gray, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 5, Number of rows: 1, Number of positions per row: 5, number of connections: 5, product range: MCVW 1,5/...-ST, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: -90 °, Stecksystem: MINI COMBICON, Locking: without, type of packaging: packed in cardboard

Protective cap

Dust protection - FL RJ45 PROTECT CAP - 2832991



Dust protection caps for RJ45 socket

SFP module

Media module - FL SFP FX - 2891081



The small form-factor plug-in module provides a fiber optic interface with a data transmission speed of 100 Mbps with a wavelength of 1310 nm (long).

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Accessories

Media module - FL SFP FX SM - 2891082



The small form-factor plug-in module provides a fiber optic interface with a data transmission speed of 100 Mbps with a wavelength of 1310 nm (long).

Media module - FL SFP SX - 2891754



Gigabit SFP module for transmission up to 1 km with a wavelength of 850 nm.

Media module - FL SFP SX2 - 2702397



Gigabit SFP module for transmission up to 2 km with a wavelength of 1310 nm.

Media module - FL SFP LX10-B - 1025401



Gigabit SFP module for transmission up to 10 km with a wavelength of 1310 nm.

Media module - FL SFP LX - 2891767



Gigabit SFP module for transmission up to 30 km with a wavelength of 1310 nm.

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Accessories

Media module - FL SFP LX40 - 1113081



Gigabit SFP module for transmission up to 40 km with a wavelength of 1310 nm

Media module - FL SFP LH - 2989912



Gigabit SFP module for transmission up to 80 km with a wavelength of 1,550 nm.

Media module - FL SFP WDM10-SET - 2702442



Gigabit SFP WDM set for transmission up to a maximum of 10 km on a single fiber with a wavelength of 1310/1550 nm.

Media module - FL SFP FE WDM20-SET - 2702439



Fast Ethernet SFP WDM set for transmission up to a maximum of 20 km on a single fiber with a wavelength of 1310/1550 nm.

Media module - FL SFP GT - 2989420



Gigabit SFP module for transmission up to 100 m.

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