Industrial Ethernet Switch - FL SWITCH 2105 - 2702665

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The figure shows a version of the product

Managed Switch 2000, 5 RJ45 ports 10/100/1000 Mbps, degree of protection: IP20, PROFINET Conformance-Class A

Your advantages

- Suitable for PROFINET and EtherNet/IP™ networks
- Unmanaged Mode
- Easy and fast startup and commissioning with the FL NETWORK MANAGER software
- Configuration memory
- RSTP
- MRP client
- DHCP client, DHCP server (port-based)
- VLANs
- Web-based management, SNMP

RoHS COMPLETE line

Key Commercial Data

Packing unit	1 pc
GTIN	4 055626 283425
GTIN	4055626283425

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area

Dimensions

Width	45 mm
Height	130 mm
Depth	115 mm

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Technical data

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	0 °C ... 60 °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)	86 kPa ... 108 kPa (1500 m above sea level)
Air pressure (storage/transport)	86 kPa ... 108 kPa (1500 m above sea level)
Degree of pollution	2

Interfaces

Interface	Ethernet (RJ45)
No. of ports	5 (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

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
Filter functions	Quality of Service (8 priority classes)
	Class of Service
	DiffServ/DSCP
	Port-Priorisierung
	VLAN (up to 8 VLANs)
	IGMP Snooping/Querier (v1/v2)
	Auto-Query-Port
	Extended Multicast Filtering
Redundancy	MRP (Media Redundancy Protocol)
	RSTP (Rapid Spanning Tree Protocol)

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Function

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	≥ 1.9 µs (Store-and-Forward mode, 10/100/1000 Mbps, depending on the frame size)
IP parameterization	DHCP-Client
	DHCP server (port based)
	BootP
PROFINET conformance class	Conformance-Class A
Time synchronization	SNTP (Simple Network Time Protocol)
Status and diagnostic indicators	LEDs: US (power supply), 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 (single)
Residual ripple	3.6 V_{PP} (within the permitted voltage range)
Supply voltage range	18 V DC ... 32 V DC
Typical current consumption	225 mA (at U_S = 24 V DC and 25 °C ambient temperature)
Max. current consumption	0.35 A (At U_S = 18 V DC and 60°C ambient temperature)
Current consumption	225 mA

General

Mounting type	DIN rail
Type AX	Book type
Net weight	369 g
Housing material	Polycarbonate fiber reinforced
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	398.76 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	174.97 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	31.76 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

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Technical data

Connection data

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 61000-6-4 (interference) Class A
Conducted noise emission	EN 61000-6-2 EN 61000-6-4 (conducted interference) Class A
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)	2g, criterion 1 according to IEC 60068-2-6
Free from substances that could impair the application of coating	Yes
Vibration (operation)	2g, according to IEC 60068-2-6
Shock (operation)	30g (EN 60068-2-27)
UL, USA	UL 61010-1, Ed.3 / UL 61010-2-201, Ed.1
UL, Canada	CSA C22.2 NO.61010-2-201:14, Ed.1 / CSA C22.2 NO.61010-1-12, Ed.3

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

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Classifications

eCl@ss

eCl@ss 7.0	19170106
eCl@ss 9.0	19170106

ETIM

ETIM 3.0	EC000734
ETIM 4.0	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
UNSPSC 20.0	43222612
UNSPSC 21.0	43222612

Approvals

Approvals

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UL Listed / cUL Listed / EAC / CC-Link IE Field / cULus Listed

Ex Approvals

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705

cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705

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Approvals

EAC	EAC	RU*-DE.*.B.00741/19
CC-Link IE Field	CC-Link IE Field	Ref. No. 100
cULus Listed	c UL us LISTED	

Accessories

Accessories

Data cable preassembled

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



Patch cable, degree of protection: IP20, number of positions: 8, 10 Gbps, CAT6$_A$, cable outlet: straight, Ethernet

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

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Accessories

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



Patch cable, degree of protection: IP20, cable length: 1 m, number of positions: 4, 100 Mbps, CAT5, material: PA 6.6, PROFINET

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



Patch cable, degree of protection: IP20, cable length: 2 m, number of positions: 4, 100 Mbps, CAT5, material: PA 6.6, PROFINET

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



Patch cable, degree of protection: IP20, cable length: 5 m, number of positions: 4, 100 Mbps, CAT5, material: PA 6.6, PROFINET

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

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Accessories

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

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

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Accessories

Patch cable - FL CAT5 PATCH 1,0 - 2832276



Patch cable, CAT5, assembled, 1 m

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 °, plug-in system: MINI COMBICON, Locking: without, mounting: without, type of packaging: packed in cardboard

PCB connector - MCVW 1,5/ 5-ST-3,81GY7035BD2US - 1034103



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, screw head form: L Slotted, conductor/PCB connection direction: -90 °, plug-in system: MINI COMBICON, Locking: without, mounting: without, type of packaging: packed in cardboard

Protective cap

Dust protection - FL RJ45 PROTECT CAP - 2832991



Dust protection caps for RJ45 socket

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PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstr. 8
32825 Blomberg
Germany
Tel. +49 5235 300
Fax +49 5235 3 41200
http://www.phoenixcontact.com