

FL SWITCH 2206-2FX SM - Industrial Ethernet Switch



2702331

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Managed Switch 2000, 6 RJ45 ports 10/100 Mbps, 2 SC single mode 100 Mbps, PROFINET Conformance-Class B, Extended temperature range

Your advantages

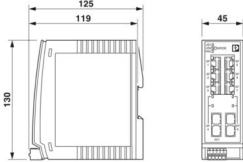
- DHCP client, DHCP server (pool-based and port-based), DHCP option 82
- RSTP
- Ambient temperature -40 °C ... 70 °C
- VLANs
- MRP (client and manager)
- Configuration memory
- Slim design
- Web-based management, SNMP
- Easy and fast startup and commissioning with the FL NETWORK MANAGER software
- Suitable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

Commercial data

Item number	2702331
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN17
Product key	DNN121
Catalog page	Page 309 (C-6-2019)
GTIN	4055626136486
Weight per piece (including packing)	429.8 g
Weight per piece (excluding packing)	260 g
Customs tariff number	85176200
Country of origin	DE

Technical data

Dimensions

Dimensional drawing		
Width		45 mm
Height		130 mm
Depth		119 mm

Notes

General	Support by phone or on-site (fee is charged)
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Material specifications

Housing material	Polycarbonate fiber reinforced
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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)
Signal LEDs	Data receive, link status
No. of channels	6 (RJ45 ports)

Ethernet FO

Number of interfaces	2
Connection method	SC
Transmission speed	100 Mbps (full duplex)
Transmit capacity, minimum	-15 dBm
Transmit capacity, maximum	-7 dBm
Minimum receiver sensitivity	-34 dBm
Maximum receiver sensitivity	-3 dBm
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)

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	26000 m (fiberglass with F-G 9/125 0.5 dB/km)
Wavelength	1300 nm
Signal LEDs	Data receive, link status
No. of channels	2 (SC single mode)

Output data

Digital

Output name	Alarm output
Output name	Alarm output

Product properties

Type	Book type
Product type	Switch
Product family	Managed Switch 2000
MTTF	343.16 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	153.37 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	18.66 Years (SN 29500 standard, temperature 70°C, operating cycle 100%)
Special properties	Extended temperature range
Signal delay	≥ 6.5 μs (Store and Forward mode, 10/100 Mbps, depending on the frame size)

Insulation characteristics

Protection class	III (VDE 0106)
Degree of pollution	2

Switch functions

Diagnostic functions	RMON History
	LLDP (Link Layer Discovery Protocol)
	SNMP-Traps
	N:1-Portmirroring
	ACD (Address Conflict Detection)
	SysLog
	CRC-Surveillance
Basic functions	Store-and-forward switch, complies with IEEE 802.3
Signal contact control voltage	typ. 24 V DC
PROFINET conformance class	Conformance-Class B
PROFINET device function	PROFINET device
	Fast Startup
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
IP parameterization	DHCP-Client
	DHCP Option 82 (Relay Agent)
	DHCP server (pool-based, port-based)
	BootP
	DCP (Discovery and Configuration Protocol)
MAC address table	8k
Management	Web-based management (HTTP/HTTPS)
	Role-based user management (LDAP, RADIUS)
	SNMPv1/v2/v3
	Command Line Interface (Telnet, SSH)
Redundancy	MRP (Media Redundancy Protocol)
	RSTP (Rapid Spanning Tree Protocol)
	FRD (Fast Ring Detection)
	Large Tree Support
	LACP (Link Aggregation Control Protocol)
	PROFINET S2 system redundancy
Status and diagnostic indicators	LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link/Activity and Speed)
Additional functions	Transmission of MMS and GOOSE (IEC 61850-8-1)
	Transmission of Modbus/TCP
Time synchronization	SNTP (Simple Network Time Protocol)

Security functions

Port security	MAC-based, RADIUS (IEEE 802.1X), MAC Authentication Bypass
Basic functions	Store-and-forward switch, complies with IEEE 802.3

Electrical properties

Local diagnostics	US1/2 Supply voltage US1, US2 Green LED
	FAIL Div. LED red
	LINK Link status Green LED
Maximum power dissipation for nominal condition	6.75 W ($U_S = \text{Min}$, $T_{\text{amb}} = \text{Max}$, $DO_1 = \text{Max}$)
Test voltage	500 V DC
Test section	for one minute 500 V DC
Transmission medium	Copper
	FO

Supply

Supply voltage (DC)	24 V DC (redundant)
Supply voltage range	9 V DC ... 57 V DC
Power supply connection	via COMBICON, max. conductor cross section 1.5 mm ²
Residual ripple	3.6 V _{PP} (within the permitted voltage range)

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Max. current consumption	1.5 A ($U_S = \text{Min}$, $T_{\text{amb}} = \text{Max}$, $DO_1 = \text{Max}$)
Typical current consumption	235 mA (at $U_S = 24 \text{ V DC}$ and 25 °C ambient temperature)
Current consumption	260 mA

Function

Signal contact control voltage	typ. 24 V DC
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Connection data

Connection method	Push-in spring connection
Note on the connection method	Use only copper connecting cables providing the permitted temperature range ($-40 \text{ °C} \dots 75 \text{ °C}$).
Conductor cross section, rigid	$0.25 \text{ mm}^2 \dots 1.5 \text{ mm}^2$
Conductor cross section, flexible	$0.25 \text{ mm}^2 \dots 1.5 \text{ mm}^2$
Conductor cross section AWG	24 ... 16
Stripping length	9 mm

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	$-40 \text{ °C} \dots 70 \text{ °C}$
Ambient temperature (storage/transport)	$-40 \text{ °C} \dots 85 \text{ °C}$
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)
Shock (operation)	30g (EN 60068-2-27)
Vibration (operation)	in acc. with IEC 60068-2-6: 5g, 150 Hz
Air pressure (operation)	80 kPa ... 110 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)

Standards and regulations

Free from substances that could impair the application of coating	Yes
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Approvals

Shipbuilding approval	Tested in accordance with IEC 60945 and IACS E10
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ATEX

Identification	Ⓜ II 3 G Ex ec IIC T4 Gc
Certificate	DEMKO 16 ATEX 1709X

IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX ULD 16.0018 X

UL, USA/Canada

Identification	cULus
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UL Ex, USA / Canada

Identification	Class I, Division 2, Groups A, B, C, and D, T4
	Class I, Zone 2, AEx ec IIC T4
	Ex ec IIC T4 Gc X
Certificate	E366272
Note	UL 60079-0 Ed. 6 / UL 60079-7 Ed. 5, CSA 22.2 No. 60079-0 Ed. 3 / CSA C22.2 No. 60079-7 Ed. 2

EAC Ex

Identification	2Ex e IIC T4 Gc X
Certificate	RU C-DE.HB49.B.00118/21

The following continue to apply for EAC Ex:

Identification	При монтаже использовать подходящий допущенный корпус со степенью защиты не ниже IP66.
	На корпусе/шкафу управления должна быть размещена предупреждающая надпись, запрещающая открывать корпус или шкаф во взрывоопасной зоне.
	Эксплуатация устройства допускается только при условии, что все оптические порты заняты подключенными устройствами или закрыты прилагаемыми заглушками.

CCC / China-Ex

Identification	Ex ec IIC T4 Gc
Certificate	2022122310115629

Corrosive gas test

Identification	ISA S71.04.2013 G3 Harsh Group A
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UKCA Ex (UKEX)

Identification	Ⓜ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIMA22UKEX2702910X

DNV GL data

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

Conformance with EMC directives	EN 61000-6-2 EN 61000-4-2 (ESD) Criterion B
	EN 61000-6-2 EN 61000-4-3 (electromagnetic fields) Criterion A
	EN 61000-6-2 EN 61000-4-4 (EFT burst) Criterion A
	EN 61000-6-2 EN 61000-4-5 (surge) Criterion A
	EN 61000-6-2 EN 61000-4-6 (line noise immunity) Criterion A
	EN 61000-6-2 EN 61000-6-4 (interference) Class A

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	EN 61000-6-2 EN 61000-6-4 (conducted interference) Class A
Noise immunity	EN 61000-6-2
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 61000-6-4

System properties

Functionality

Basic functions	Store-and-forward switch, complies with IEEE 802.3
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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

ECLASS

ECLASS-11.0	19170401
ECLASS-12.0	19170401
ECLASS-13.0	19170401

ETIM

ETIM 9.0	EC000734
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UNSPSC

UNSPSC 21.0	43222600
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Environmental product compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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