

FL SWITCH 2206-2FX SM - Industrial Ethernet Switch



2702331

<https://www.phoenixcontact.com/cn/products/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

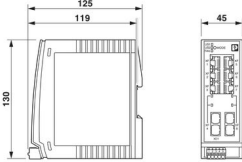
- DHCP client, DHCP server (pool-based and port-based), DHCP option 82
- RSTP
- Ambient temperature -40 °C ... 70 °C
- VLANs
- MRP (client and manager)
- Configuration memory
- Slim design
- Web-based management, SNMP
- Easy and fast startup and commissioning with the FL NETWORK MANAGER software
- Suitable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

Commercial data

| | |
|--------------------------------------|---------------------|
| Item number | 2702331 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DNN121 |
| 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 | 8517623200 |
| 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) |
|---------|--|

Material specifications

| | |
|------------------|--------------------------------|
| Housing material | Polycarbonate fiber reinforced |
|------------------|--------------------------------|

Mounting

| | |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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 |
|-------------|--------------|

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) |
| Max. current consumption | 1.5 A ($U_S = \text{Min}$, $T_{\text{amb}} = \text{Max}$, $DO_1 = \text{Max}$) |

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| | |
|-----------------------------|---|
| Typical current consumption | 235 mA (at $U_S = 24$ V DC and 25 °C ambient temperature) |
| Current consumption | 260 mA |

Function

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|--------------------------------|--------------|
| Signal contact control voltage | typ. 24 V DC |
|--------------------------------|--------------|

Connection data

| | |
|-----------------------------------|---|
| Connection method | Push-in spring connection |
| Note on the connection method | Use only copper connecting cables providing the permitted temperature range (-40 °C ... 75 °C). |
| Conductor cross section, rigid | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross section, flexible | 0.25 mm ² ... 1.5 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 °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) |
| 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 |
|---|-----|

Approvals

| | |
|-----------------------|--|
| Shipbuilding approval | Tested in accordance with IEC 60945 and IACS E10 |
|-----------------------|--|

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 |
|----------------|-------|

UL Ex, USA / Canada

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| | |
|----------------|---|
| 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 |
|----------------|----------------------------------|

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 |
| | EN 61000-6-2 EN 61000-6-4 (conducted interference) Class A |
| Noise immunity | EN 61000-6-2 |

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| | |
|-------------------------------|---|
| 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 |
|-----------------|--|

Signaling

| | |
|----------------|---|
| Status display | LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link/Activity and Speed) |
|----------------|---|

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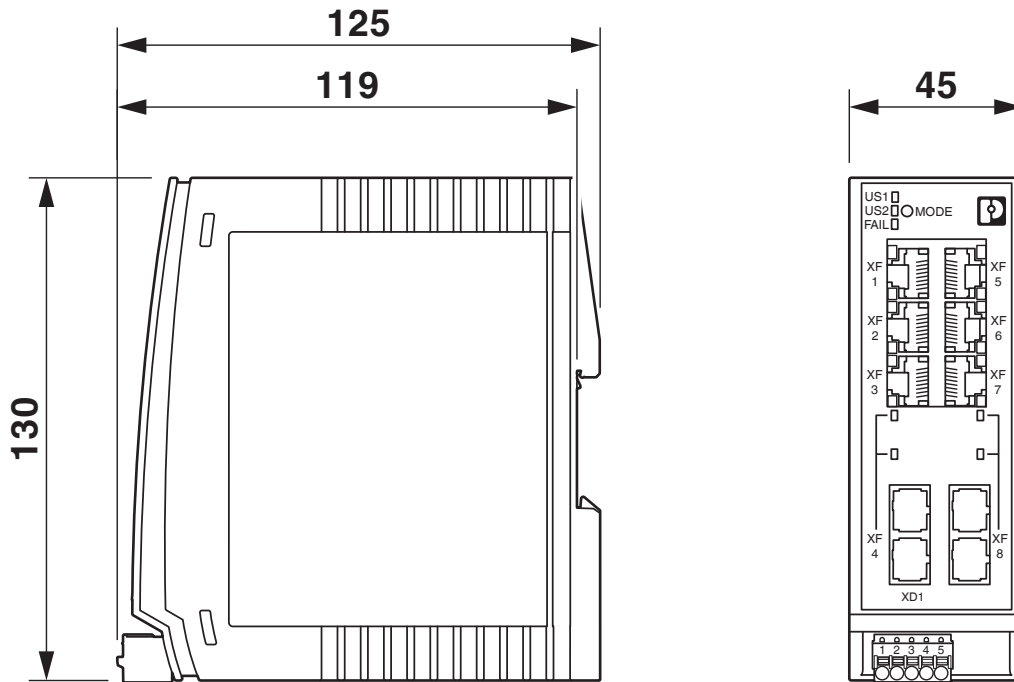


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Drawings

Dimensional drawing



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/cn/products/2702331>



EAC

Approval ID: RU*-DE.*.B.00741/19



DNV GL

Approval ID: TAA00000YV



LR

Approval ID: LR22250919TA



NK

Approval ID: TA19464M



BV

Approval ID: 48146/A1 BV

BSH

Approval ID: Nr. 966



RINA

Approval ID: ELE162721XG

ABS

Approval ID: 21-2066186-PDA

UAE-RoHS

Approval ID: 23-02-63230



cULus Listed

Approval ID: E238705



cUL Listed

Approval ID: FILE E 366272

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IECEx

Approval ID: IECEx ULD 16.0018X



ATEX

Approval ID: DEMKO 16 ATEX 1709X



CCC

Approval ID: 2022122310115629

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Classifications

ECLASS

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

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC000734 |
|----------|----------|

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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