# FL SWITCH 2204-2TC-2SFX - Industrial Ethernet Switch

2702334

https://www.phoenixcontact.com/us/products/2702334

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CRA-READY



Managed Switch 2000 series, 4 RJ45 ports 10/100 Mbps, 2 SFP ports 100 Mbps, 2 Combo ports, degree of protection: IP20, Ambient temperature (operation): -40 °C ... 70 °C, Supply voltage range: 12 V DC ... 57 V DC, PROFINET Conformance Class B, Extended temperature range, Development process certified in accordance with IEC 62443-4-1, Product certified in accordance with IEC 62443-4-2

## Your advantages

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

ELEKTROGERÄTE RÜCKNAHME

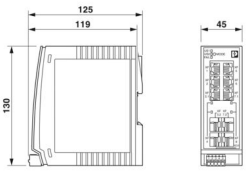
## Commercial data

| | |
|---|---|
| Item number | 2702334 |

| | |
|---|---|
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN17 |
| Product key | DNN121 |
| GTIN | 4055626129006 |
| Weight per piece (including packing) | 375.6 g |
| Weight per piece (excluding packing) | 310 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) |

Note on application

| | |
|---|---|
| Note on application | Only for industrial use |

Utilization restriction

| | |
|---|---|
| EMC note | EMC: class A product, see manufacturer's declaration in the download area |

### Material specifications

| | |
|---|---|
| Color (Housing) | gray (RAL 7042) |
| Color (Cover) | light gray (RAL 7035) |
| 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 | 4 (RJ45 ports) |

Ethernet (SFP)

| | |
|---|---|
| Number of interfaces | 2 |
| Connection method | SFP |
| Transmission speed | 100 Mbps (full duplex) |

| | |
|---|---|
| Transmission physics | Depending on the SFP module |
| Transmission length | up to 40 km (Depending on the fiber/SFP module used) |
| Signal LEDs | Data receive, link status |
| No. of channels | 2 (SFP ports) |

Ethernet (combo)

| | |
|---|---|
| Number of interfaces | 2 |
| Connection method | SFP/RJ45 |
| Note on the connection method | Auto negotiation and autocrossing |
| Transmission speed | 10/100 Mbps (full duplex) |
| Transmission physics | Depending on the SFP module |
| Transmission length | up to 40 km (Depending on the fiber/SFP module used) |
| Signal LEDs | Data receive, link status |
| No. of channels | 2 (Combo ports) |

## Output data

Digital:

| | |
|---|---|
| Output name | Alarm output |

Signal contact

| | |
|---|---|
| Output name | Digital output |
| Control voltage | typ. 24 V DC |
| Actuation voltage range | 12 V DC ... 57 V DC |
| Current carrying capacity | typ. 100 mA |
| | max. 0.7 A (1 minute) |

## Product properties

| | |
|---|---|
| Product type | Switch |
| Product family | Managed Switch 2000 |
| Type | Book type |
| MTTF | 362.94 Years (SN 29500 standard, temperature 25°C, operating cycle 21%) |
| | 158.13 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%) |
| | 19.77 Years (SN 29500 standard, temperature 70°C, operating cycle 100%) |
| Special properties | Extended temperature range |
| | Development process certified in accordance with IEC 62443-4-1 |
| | Product certified in accordance with IEC 62443-4-2 |
| 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

| | |
|---|---|
| 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 |
| Signal contact control voltage | typ. 24 V DC |
| PROFINET conformance class | Conformance Class B |
| PROFINET device function | PROFINET device |
| | Fast Startup |
| Status and diagnostic indicators | LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link/Activity and Speed) |
| Basic functions | Store-and-forward switch, complies with IEEE 802.3 |
| Management functions | 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 functions | 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 |
| Time synchronization | SNTP (Simple Network Time Protocol) |
| Additional functions | Transmission of MMS and GOOSE (IEC 61850-8-1) |
| | Transmission of Modbus/TCP |

Security functions

| | |
|---|---|
| Port security | MAC-based, RADIUS (IEEE 802.1X), MAC Authentication Bypass |

## Electrical properties

| | |
|---|---|
| Current consumption | 250 mA |
| 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 | 7.8 W ($U_S$ = Min, $T_{amb}$ = Max, $DO_I$ = Max) |
| Test section | 24 V supply / functional ground 500 V DC 1 min |
| | Ethernet interface/all other potentials 2.25 kV DC 1 min |
| Transmission medium | Copper |
| | FO |

### Supply

| | |
|---|---|
| Supply voltage (DC) | 24 V DC (redundant) |
| Supply voltage range | 12 V DC ... 57 V DC |
| Power supply connection | via COMBICON, max. conductor cross-section 1.5 mm² |
| Residual ripple | 3.6 $V_{PP}$ (within the permitted voltage range) |
| Max. current consumption | 1.4 A ($U_S$ = Min, $T_{amb}$ = Max, $DO_I$ = Max) |
| Typical current consumption | 250 mA (at $U_S$ = 24 V DC and 25 °C ambient temperature) |
| Current consumption | 250 mA |
| Ground connection | Via DIN rail |
| Functional grounding | The functional ground of the module is grounded when it is snapped onto a grounded DIN rail |

## 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) |
| pluggable | yes |
| Conductor cross-section, rigid | 0.25 mm² ... 1.5 mm² |
| Conductor cross-section, flexible | 0.25 mm² ... 1.5 mm² |
| 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 | Ⓔx 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

| | |
|---|---|
| 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 | Install the device in a suitable, approved housing with at least IP66 protection. |
| | The housing/control cabinet must be equipped with a warning sign prohibiting opening in the potentially explosive area. |
| | The operation of devices is permitted if all optical ports are connected or sealed with the supplied filler plugs. |

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 | Ⓔx II 3 G Ex ec IIC T4 Gc |
| Certificate | PxCIMA22UKEX2702910X |

Shipbuilding 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

| | |
|---|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| 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 |

Noise emission

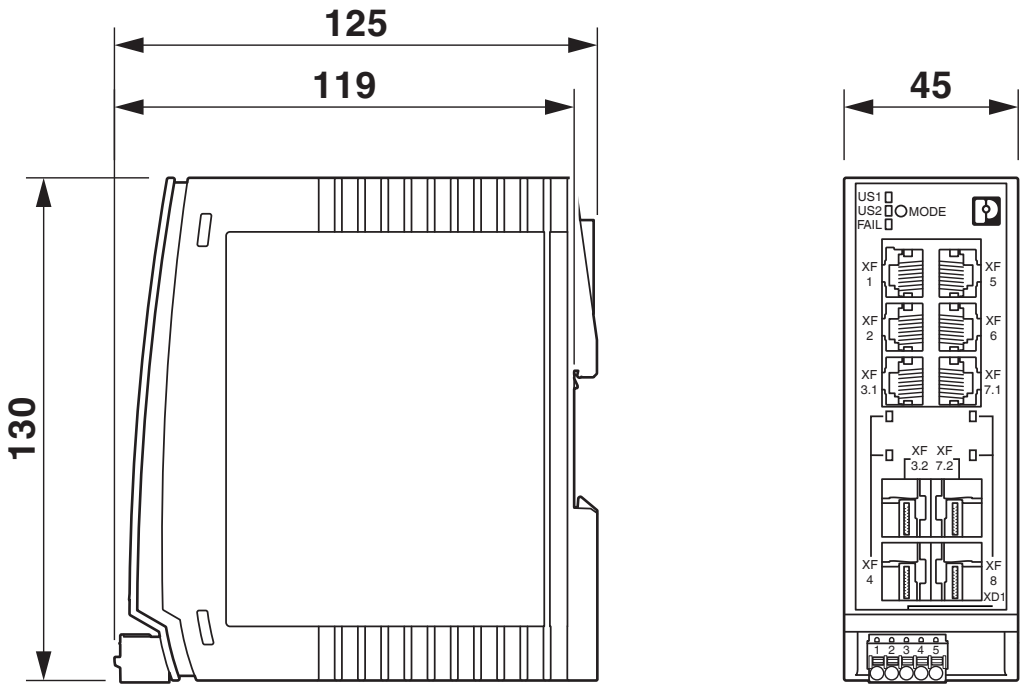
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|---|---|
| Standards/regulations | EN 61000-6-4 |

## Signaling

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

## Drawings

Dimensional drawing



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2702334

**DNV GL**
Approval ID: TAA00000YV

**LR**
Approval ID: LR22250919TA

**NK**
Approval ID: TA24215M

**BV**
Approval ID: 48146_B1 BV

**BSH**
Approval ID: Nr. 966

**RINA**
Approval ID: ELE014724XG001

**ABS**
Approval ID: 21_2066186_1_PDA

**cULus Listed**
Approval ID: E238705

**Cybersecurity Certificate**
Approval ID: 968 CSP 1043.00 25

**ABS**
Approval ID: 26-0501235-PDA

**IECEx**
Approval ID: IECEx ULD 16.0018X

**ATEX**
Approval ID: DEMKO 16 ATEX 1709X

**CCC**
Approval ID: 2022122310115629

**cULus Listed**
Approval ID: E366272

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 19170401 |
| ECLASS-15.0 | 19170401 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC000734 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 43222600 |

## Environmental product compliance

EU RoHS

| | |
|---|---|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|---|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|---|---|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| SCIP | 0219e4b4-cdfe-45aa-b00e-75e137a2b425 |

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https://www.phoenixcontact.com

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com