

# FL SWITCH 2208 - Industrial Ethernet Switch



2702327

<https://www.phoenixcontact.com/us/products/2702327>

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Managed Switch 2000 series, 8 RJ45 ports 10/100 Mbps, 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

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

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2702327       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | DN17          |
| Product key                          | DNN121        |
| GTIN                                 | 4055626128931 |
| Weight per piece (including packing) | 347 g         |
| Weight per piece (excluding packing) | 230 g         |
| Customs tariff number                | 85176200      |
| Country of origin                    | DE            |

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## Technical data

### Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Width               | 45 mm  |
| Height              | 130 mm   |
| Depth               | 119 mm   |

### 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               | 8 (RJ45 ports)                    |

### Output data

#### Digital:

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

### Product properties

|                |   |
|----------------|---|
| Product type   | Switch  |
| Product family | Managed Switch 2000   |
| Type           | Book type   |
| MTTF           | 494.02 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)<br>235.18 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%) |

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|                    |   |
|--------------------|---|
|                    | 29.73 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

|                                |  |
|--------------------------------|--|
| 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)                |

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|                                  |   |
|----------------------------------|---|
|                                  | 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)   |
| <b>Security functions</b>        |   |
| Port security                    | MAC-based, RADIUS (IEEE 802.1X), MAC Authentication Bypass  |
| Basic functions                  | Store-and-forward switch, complies with IEEE 802.3  |

## Electrical properties

|   |   |
|---|---|
| Current consumption                             | 190 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 | 4.95 W ( $U_S = \text{Min}$ , $T_{\text{amb}} = \text{Max}$ , $DO_1 = \text{Max}$ ) |
| 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  |

## 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 mm <sup>2</sup>                     |
| Residual ripple             | 3.6 V <sub>PP</sub> (within the permitted voltage range)                           |
| Max. current consumption    | 1.3 A ( $U_S = \text{Min}$ , $T_{\text{amb}} = \text{Max}$ , $DO_1 = \text{Max}$ ) |
| Typical current consumption | 185 mA (at $U_S = 24$ V DC and 25 °C ambient temperature)                          |
| Current consumption         | 190 mA   |

## Function

|                                |              |
|--------------------------------|--------------|
| 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) |
| pluggable                         | yes  |
| Conductor cross-section, rigid    | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Conductor cross-section, flexible | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| 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

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

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|  |  |
|--|--|
|  | 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 | Ⓜ 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 B                  |
|                                 | EN 61000-6-2 EN 61000-4-6 (line noise immunity) Criterion A    |
|                                 | EN 61000-6-2 EN 61000-6-4 (interference) Class A               |
| Noise immunity                  | EN 61000-6-2 EN 61000-6-4 (conducted interference) Class A     |
|                                 | EN 61000-6-2   |

## Noise emission

|                       |              |
|-----------------------|--------------|
| Standards/regulations | 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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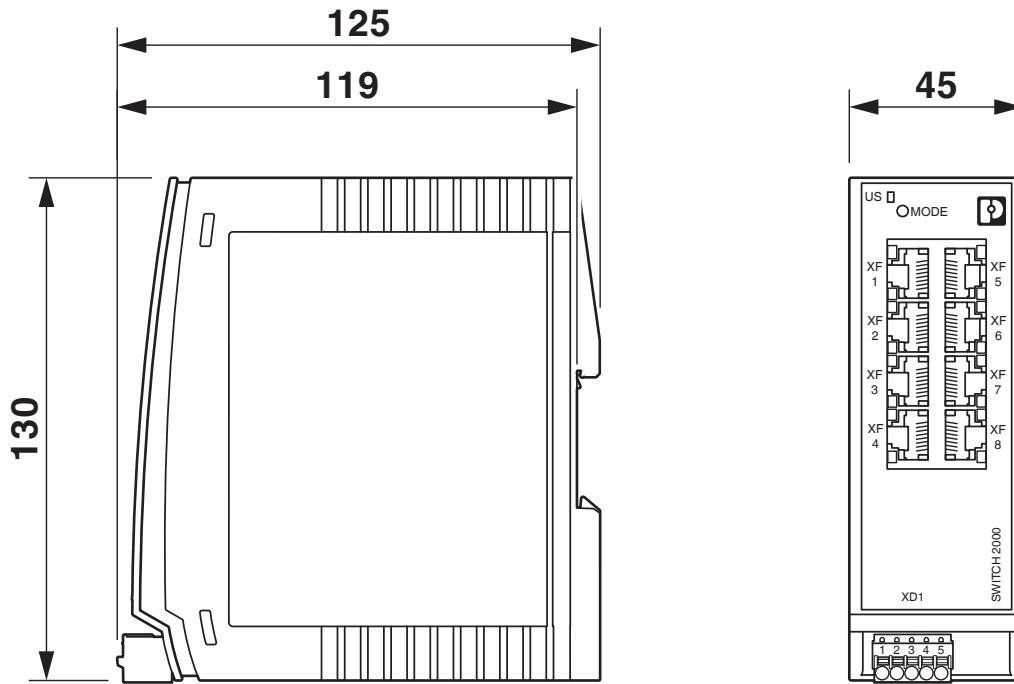
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## Drawings

Dimensional drawing



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702327>



**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



**IECEX**

Approval ID: IECEX ULD 16.0018X



**ATEX**

Approval ID: DEMKO 16 ATEX 1709X

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**CCC**

Approval ID: 2022122310115629



**cULus Listed**

Approval ID: E366272

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## Classifications

### ECLASS

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

### ETIM

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

### UNSPSC

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

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## 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                                | 2cc7e68e-fb40-475d-8aab-109b0538d94b |

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 12.52 kg CO2e |
|---------|---------------|

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