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## Industrial Ethernet Switch - FL SWITCH 1605 M12-2700200

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Ethernet switch, 5 Ethernet ports on the front in M12 format, automatic detection of 10 or 100 Mbps data transmission rate, coupling of network segments with different transmission speeds, auto crossing function, P67 protection

## Product Description

## Ethernet interface

The FL SWITCH 1605 M12 has five front Ethernet ports in M12 format. Only CAT5/CAT6 Ethernet cables with D-coded M12 connectors can be connected to these. The data transmission rate is 10 Mbps or 100 Mbps . In addition, each port has an Autocrossing function at 100 Mbps : It is not necessary to distinguish between 1:1 and crossover Ethernet cables.

Switching properties of FL SWITCH 1605 M12
-Store-and-forward:
All data telegrams that are received by the switch are saved and their validity is checked. Invalid or faulty data packets (>1522 bytes or CRC errors) and fragments (<64 bytes) are rejected. Valid data telegrams are forwarded by the switch. The switch always forwards the data using the data transmission speed that is used in the destination network segment.
-Multi-address function:
The switch independently learns the addresses for termination devices, which are connected via a port, by evaluating the source addresses in the data telegrams. Only packets with unknown addresses, with a source address of this port or with a multicast/broadcast address in the destination address field are forwarded via the corresponding port. The switch can store up to 4096 addresses in its address table with an aging time of 40 seconds. This is important when more than one termination device is connected to one or more ports. In this way, several independent subnetworks can be connected to one switch.

- Quality of Service (QoS)

With help from the Quality of Service function, the switch can preferentially process PROFINET traffic. To do so, the switch detects the Ethernet packets by means of QoS priority and forwards on the higher priority Ethernet packets
Why buy this product
Robust IP67 housing

- Easy panel mounting


## Ethernet

## Key Commercial Data

| Packing unit | 1 STK |
| :---: | :---: |
| GTIN |  |

## Technical data

Dimensions

| Width | 30 mm |
| :--- | :--- |
| Height | 200 mm |
| Depth | 41 mm |

## Industrial Ethernet Switch - FL SWITCH 1605 M12-2700200

## Technical data

Ambient conditions

| Degree of protection | IP65/IP66/IP67 |
| :--- | :--- |
| Ambient temperature (operation) | $-40^{\circ} \mathrm{C} \ldots 70^{\circ} \mathrm{C}$ |
| Ambient temperature (storage/transport) | $-40^{\circ} \mathrm{C} \ldots 70^{\circ} \mathrm{C}$ |
| Permissible humidity (operation) | $10 \% \ldots 95 \%$ |
| Permissible humidity (storage/transport) | $10 \% \ldots 95 \%$ (non-condensing) |
| Air pressure (operation) | $86 \mathrm{kPa} \ldots 108 \mathrm{kPa}(2000 \mathrm{~m}$ above sea level) |
| Air pressure (storage/transport) | $66 \mathrm{kPa} \ldots 108 \mathrm{kPa}(3500 \mathrm{~m}$ above sea level) |

## Interfaces

| Interface 1 | Ethernet |
| :--- | :--- |
| No. of ports | 5 (M12 socket) |
| Connection method | M12 |
| Note on connection method | D-coded |
| Transmission physics | Twisted pair connection |
| Transmission speed | $10 / 100 \mathrm{MBit} / \mathrm{s}$ |
| Transmission length | 100 m (per segment) |
| Signal LEDs | Data receive, link status |

Function

| Basic functions | Unmanaged switch/auto negotiation, complies with standard IEEE <br> 802.3, store-and-forward switching mode, 2 priority classes according to <br> IEEE802.1p, PTCP filter |
| :--- | :--- |
| PROFINET IO conformance class | Conformance-Class A |
| Status and diagnostic indicators | LEDs: US (power supply), 2 LEDs per Ethernet port (Link and Activity) |

## Network expansion parameters

| Cascading depth | Network, linear, and star structure: any |
| :--- | :--- |
| Maximum conductor length (twisted pair) | 100 m |

Supply voltage

| Supply voltage | $24 \mathrm{~V} \mathrm{DC} \mathrm{(M12} \mathrm{connector)}$ |
| :--- | :--- |
| Residual ripple | 3.6 V PP |
| Supply voltage range | $18 \mathrm{~V} \mathrm{DC} \ldots 32 \mathrm{~V} \mathrm{DC}$ |
| Typical current consumption | 40 mA (at $\mathrm{U}_{\mathrm{S}}=24 \mathrm{~V}$ DC) |
| Max. current consumption | $40 \mathrm{~mA}(+10 \mathrm{~mA}$ per port) |
| Current consumption | $40 \mathrm{~mA} \ldots 0.08 \mathrm{~A}$ (at 24 V DC) |

General

| Mounting type | Wall mounting |
| :--- | :--- |
| Type AX | Stand-alone |
| Net weight | 280.1 g |
| Housing material | PBT |
| Material base plate | High-grade steel $(1.4301 / 1.4016)$ |
| Note | NOTE: Meet noise immunity requirements |

## Industrial Ethernet Switch - FL SWITCH 1605 M12-2700200

## Technical data

General


Standards and Regulations

| Developed in acc. with standard | Noise emission test according to EN 61000-6-3 |
| :---: | :---: |
| Test standard | EN 61000-6-3 (noise emission) |
| Test result | Class B |
| Test standard | EN 55011 (emitted interference) |
| Test result | Class B |
| Test standard | EN 55022 (emitted interference) |
| Test result | Class B |
| Test standard | EN 61000-4-2 (ESD) |
| Test result | Criterion B |
| Test standard | EN 61000-4-3 (electromagnetic fields) |
| Test result | Criterion A, $20 \mathrm{~V} / \mathrm{m}$ |
| Test standard | EN 61000-4-3 (electromagnetic fields) |
| Test result | Criterion A, $10 \mathrm{~V} / \mathrm{m}$ |
| Test standard | EN 61000-4-4 |
| Test result | Criterion A, 2.2 kV |
| Test standard | EN 61000-4-5 (surge) |
| Test result | Criterion A, interfaces 1 kV |
| Test section | Between the Ethernet ports 1500 V AC 1 min. |
|  | 24 V supply (US) / FE 500 V DC 1 min . |
| Type of test | Shock in acc. with EN 60068-2-27/IEC 60068-2-27 |
| Test result | Operation: 30 g , 6 ms continuous testing, 5 g 30 ms continuous testing |
| Type of test | Shock in acc. with EN 60068-2-27/IEC 60068-2-27 |
|  | Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 |
| Test result | Operation/Storage/Transport: 5g, 150 Hz , Criterion 3 |
| Type of test | Free fall in acc. with IEC 60068-2-32 |
| Test result | 0.5 m |
| Type of test | Vibration resistance according to IEC 61373, EN 61373 |
| Test result | Category 1, Class B |
| Connection in acc. with standard | CUL |

## Classifications

eCl@ss

| eCl@ss 4.0 | 24010504 |
| :--- | :--- |
| eCl@ss 4.1 | 24010504 |
| eCl@ss 5.0 | 19030117 |
| eCl@ss 5.1 | 19030117 |

Industrial Ethernet Switch - FL SWITCH 1605 M12-2700200
Classifications
eCl@ss

| eCl@ss 6.0 | 19170106 |
| :--- | :--- |
| eCl@ss 7.0 | 19170106 |
| eCl@ss 8.0 | 19170106 |

ETIM

| ETIM 4.0 | EC000734 |
| :--- | :--- |
| ETIM 5.0 | EC000734 |

UNSPSC

| UNSPSC 6.01 | 43172015 |
| :--- | :--- |
| UNSPSC 7.0901 | 43201404 |
| UNSPSC 11 | 43172015 |
| UNSPSC 12.01 | 43201410 |
| UNSPSC 13.2 | 43201410 |

Approvals
Approvals

Approvals
UL Recognized / cUL Recognized / EAC / cULus Recognized

Ex Approvals

Approvals submitted

Approval details

UL Recognized
$\square$

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## Approvals

## cULus Recognized cilus

## Drawings

Schematic diagram


Connecting the supply voltage
PIN 1 Us
PIN 2 n.c.
Pin 3 GND
Pin 4 n.c.
Pin 5 Functional earth ground

## Dimensional drawing



Side view (dimensions in mm)

Schematic diagram


Assignment of the LAN socket
Pin 1 Transmit +
Pin 2 Receive +
Pin 3 Transmit -
Pin 4 Receive -

Dimensional drawing


Top view (dimensions in mm)

Product drawing


Product drawing


X1 - X5: Ethernet connection
X6: Supply voltage
ACT: ACT LEDs
LNK: Link LED
US: $\mathrm{U}_{\mathrm{S} 1}$ LED

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[^0]:    EAC

