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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, IP67 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	4 046356 499781

Technical data

Dimensions

Width	30 mm
Height	200 mm
Depth	41 mm

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Technical data

Ambient conditions

Degree of protection	IP65/IP66/IP67
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Permissible humidity (operation)	10 % ... 95 %
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)
Air pressure (operation)	86 kPa ... 108 kPa (2000 m above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (3500 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 MBit/s
Transmission length	100 m (per segment)
Signal LEDs	Data receive, link status

Function

Basic functions	Unmanaged switch/auto negotiation, complies with standard IEEE 802.3, store-and-forward switching mode, 2 priority classes according to 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 V DC (M12 connector)
Residual ripple	3.6 V_{PP}
Supply voltage range	18 V DC ... 32 V DC
Typical current consumption	40 mA (at U_S = 24 V DC)
Max. current consumption	40 mA (+ 10 mA per port)
Current consumption	40 mA ... 80 mA (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

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General

	Connect FE using a mounting screw when mounting on a conductive surface. When mounting on a non-conductive surface, FE is connected using the mounting screw via a cable lug.

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 V/m
Test standard	EN 61000-4-3 (electromagnetic fields)
Test result	Criterion A, 10 V/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: 30g, 6 ms continuous testing, 5g 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

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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

cUL Recognized

EAC

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Approvals

cULus Recognized c ℞ us
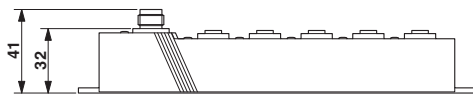
Drawings

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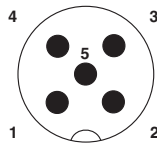
Connecting the supply voltage
PIN 1 Us
PIN 2 n.c.
Pin 3 GND
Pin 4 n.c.
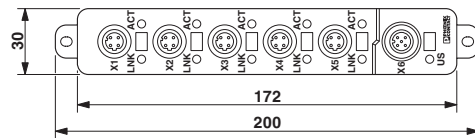Pin 5 Functional earth ground

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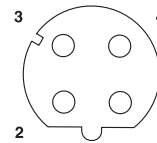
Assignment of the LAN socket
Pin 1 Transmit +
Pin 2 Receive +
Pin 3 Transmit -
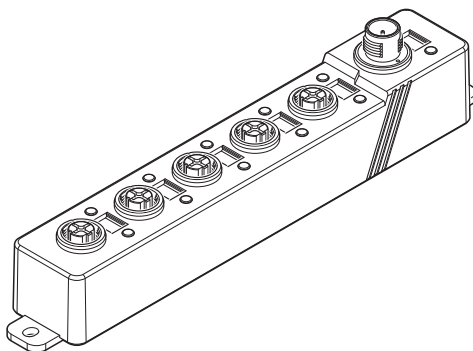Pin 4 Receive -

Dimensional drawing

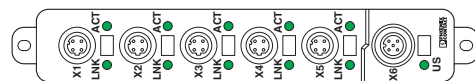Side view (dimensions in mm)

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: U_{S1} LED

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