

# Switch - FL SWITCH GHS 4G/12 - 2700271

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Ethernet Gigabit Modular Switch with four 1000 Mbps combo ports and 4 10/100 Mbps RJ45 slots, can be extended by up to 24 ports

Gigabit Modular Switch with 4 integrated Gigabit ports, modules can be added to extend to up to 24 Ethernet ports

## Product Description

The Gigabit Modular Switch is a high-performance managed switch, which covers the port requirements of industrial applications in a modular and flexible way. It also supports all popular Gigabit and Fast Ethernet transmission standards, IT standard protocols, and the PROFINET and Ethernet/IP automation protocols. For use in the production backbone or automation cell, the FL SWITCH GHS 4G/12 has four integrated Gigabit ports which can either be used via SFP modules or twisted pair connections. In addition to the four integrated 100 Mbps TX ports, up to 16 more 100 Mbps ports can be used via interface modules.

## Product Features

- Connection of connection media that can be assembled in the field, such as POF, HCS, and GI HCS
- Quick and easy local configuration options with the new operator/display interface
- Security in the automation network according to IEEE 802.1X
- Connection of Gigabit fiberglass via FL SFP plug-in modules
- Optional Layer 3 functions (static routing) can be activated



## Key commercial data

|                         |               |
|-------------------------|---------------|
| <b>package_quantity</b> | 1             |
| <b>GTIN</b>             | 4046356517706 |

## Technical data

Note:

|                                |                                                                           |
|--------------------------------|---------------------------------------------------------------------------|
| <b>Utilization restriction</b> | EMC: class A product, see manufacturer's declaration in the download area |
|--------------------------------|---------------------------------------------------------------------------|

## Dimensions

|               |        |
|---------------|--------|
| <b>Width</b>  | 287 mm |
| <b>Height</b> | 125 mm |
| <b>Depth</b>  | 115 mm |

## Ambient conditions

|                             |      |
|-----------------------------|------|
| <b>Degree of protection</b> | IP20 |
|-----------------------------|------|

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## Technical data

### Ambient conditions

|                                                 |                                             |
|-------------------------------------------------|---------------------------------------------|
| <b>Ambient temperature (operation)</b>          | -20 °C ... 55 °C (no condensation)          |
| <b>Ambient temperature (storage/transport)</b>  | -20 °C ... 70 °C                            |
| <b>Permissible humidity (operation)</b>         | 10 % ... 95 % (no condensation)             |
| <b>Permissible humidity (storage/transport)</b> | 10 % ... 95 % (no condensation)             |
| <b>Air pressure (operation)</b>                 | 80 kPa ... 108 kPa (2000 above sea level)   |
| <b>Air pressure (storage/transport)</b>         | 66 kPa ... 108 kPa (3500 m above sea level) |
| <b>Noise immunity</b>                           | EN 61000-6-2:2005                           |

### SFP interface

|                             |                             |
|-----------------------------|-----------------------------|
| <b>Interface</b>            | Ethernet (combo)            |
| <b>No. of ports</b>         | 4 (SFP ports or RJ45 ports) |
| <b>Transmission speed</b>   | 1000 MBit/s (full duplex)   |
| <b>Transmission physics</b> | FO                          |
| <b>Transmission physics</b> | Copper                      |

### Copper interface

|                                  |                                   |
|----------------------------------|-----------------------------------|
| <b>Interface</b>                 | Ethernet (RJ45)                   |
| <b>No. of ports</b>              | 4                                 |
| <b>Transmission speed</b>        | 10/100 MBit/s                     |
| <b>Connection method</b>         | RJ45                              |
| <b>Note on connection method</b> | Auto negotiation and autocrossing |
| <b>Transmission physics</b>      | Copper                            |

### Interface expansion

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| <b>Interface</b>                 | Ethernet                                     |
| <b>No. of ports</b>              | 2 (Per interface module)                     |
| <b>Connection method</b>         | via interface module                         |
| <b>Note on connection method</b> | Max. 4 interface modules (without extension) |
| <b>Transmission speed</b>        | 10/100 MBit/s (full duplex)                  |
| <b>Transmission physics</b>      | Multimode fiberglass                         |
| <b>Transmission physics</b>      | Single mode fiberglass                       |
| <b>Transmission physics</b>      | POF-SCRJ                                     |
| <b>Transmission physics</b>      | GI-HCS fibers                                |
| <b>Transmission physics</b>      | Copper                                       |
| <b>Transmission physics</b>      | PoE                                          |

### Function

|                        |                                                                                                                                                                                                                                                                                                                                |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Basic functions</b> | Store-and-forward switch, smart mode, port mirroring, multicast filtering, IGMP snooping, VLAN, Media Redundancy Protocol (MRP according to IEC 62439), Rapid Spanning Tree (RSTP), Fast Ring Detection (FRD), Large Tree Support, IEEE 802.1X security, port security, PROFINET IO device, GMRP, GVRP, SNTP, 2 digital inputs |
| <b>Management</b>      | Integrated management agent, SNMP protocol (private MIB, MIB-2, RMON MIB, Bridge MIB), integrated Web server function, CLI, serial access                                                                                                                                                                                      |

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## Technical data

### Function

|                                         |                                                                                                                                                                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Supported browsers</b>               | Internet Explorer 5.5 or higher                                                                                                                                                                                                        |
| <b>Redundancy</b>                       | Spanning Tree 802.1d, Rapid Spanning Tree 802.1w, Fast Ring Detection, Media Redundancy Protocol (MRP) as per IEC 62439                                                                                                                |
| <b>Status and diagnostic indicators</b> | Large operator display (contains IP address and other parameters), 2 status LEDs per Ethernet port: LINK and selection of Status Activity, 100, full duplex, supply voltage $U_{S1}$ and $U_{S2}$ (redundant supply voltage), and FAIL |

### Network expansion parameters

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

### Supply voltage

|                                    |                                                          |
|------------------------------------|----------------------------------------------------------|
| <b>Supply voltage</b>              | 24 V DC                                                  |
| <b>Residual ripple</b>             | 3.6 V <sub>PP</sub> (within the permitted voltage range) |
| <b>Supply voltage range</b>        | 18.5 V DC ... 30.2 V DC                                  |
| <b>Typical current consumption</b> | 800 mA (Up to 2.5 A, depends on the configuration)       |
| <b>Max. current consumption</b>    | 2.5 A                                                    |

### Mechanical tests

|                     |                                                                        |
|---------------------|------------------------------------------------------------------------|
| <b>Type of test</b> | Shock in acc. with EN 60068-2-27/IEC 60068-2-27                        |
| <b>Test result</b>  | Operation: 25 g, 11 ms duration, semi-sinusoidal shock impulse         |
| <b>Type of test</b> | Shock in acc. with EN 60068-2-27/IEC 60068-2-27                        |
| <b>Test result</b>  | Storage/Transport: 50 g, 11 ms duration, semi-sinusoidal shock impulse |
| <b>Type of test</b> | Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6           |
| <b>Test result</b>  | Operation/Storage/Transport: 5 g, 150 Hz, Criterion 3                  |
| <b>Type of test</b> | Free fall in acc. with IEC 60068-2-32                                  |
| <b>Test result</b>  | 1 m                                                                    |

### Conformity with EMC directives

|                      |                                                    |
|----------------------|----------------------------------------------------|
| <b>Test standard</b> | IEC 61000-4-2 (ESD)                                |
| <b>Test standard</b> | IEC 61000-4-3 (immunity to radiated interference)  |
| <b>Test result</b>   | Criterion A, 10 V/m                                |
| <b>Test standard</b> | IEC 61000-4-4 (burst)                              |
| <b>Test standard</b> | IEC 61000-4-5 (surge)                              |
| <b>Test result</b>   | Criterion B                                        |
| <b>Test standard</b> | IEC 61000-4-6 (immunity to conducted interference) |
| <b>Test standard</b> | EN 55022 (emitted interference)                    |
| <b>Test result</b>   | Class A                                            |

### General

|                            |                                        |
|----------------------------|----------------------------------------|
| <b>Mounting type</b>       | DIN rail                               |
| <b>Type AX</b>             | Stand-alone                            |
| <b>Weight</b>              | 2700 g                                 |
| <b>Material base plate</b> | Die-cast aluminum, corrosion-resistant |

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## Technical data

### General

|                |                 |
|----------------|-----------------|
| Noise emission | EN 61000-6-3/-4 |
|----------------|-----------------|

## classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 24010504 |
| eCl@ss 4.1 | 24010504 |
| eCl@ss 5.0 | 19030117 |
| eCl@ss 5.1 | 19030117 |
| eCl@ss 6.0 | 19170106 |
| eCl@ss 7.0 | 19170106 |
| eCl@ss 8.0 | 19170106 |

### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC000734 |
| 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

UL Listed / cUL Listed / UL Listed / cUL Listed / PROFInergy / PROFINET / cULus Listed /

### Approval details



# Switch - FL SWITCH GHS 4G/12 - 2700271

approvals

cUL Listed 

PROFenergy

PROFINET

cULus Listed 

accessories

**Extension module**

FL FXT - 2989307



FL IF 2TX VS-RJ-F - 2832344



FL IF 2TX VS-RJ-D - 2832357



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### accessories

FL IF 2FX SC-F - 2832412



FL IF 2FX SC-D - 2832425



FL IF 2FX SM SC-D - 2832205



FL IF 2FX ST-D - 2884033



FL IF 2POF SCRJ-D - 2891084



FL IF 2PSE-F - 2832904



# Switch - FL SWITCH GHS 4G/12 - 2700271

## accessories

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### SFP module

FL SFP SX - 2891754



FL SFP LX - 2891767



FL SFP LH - 2989912



### Configuration memory

FL SD FLASH/L3/MRM - 2700607



FL SD FLASH/MRM - 2700270



### Parameterization memory

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### accessories

SD FLASH 256MB - 2988120



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### Data cable preassembled

FL MM PATCH 1,0 LC-LC - 2989158



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FL MM PATCH 2,0 LC-LC - 2989255



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FL MM PATCH 5,0 LC-LC - 2901799



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FL MM PATCH 1,0 LC-SC - 2989161





## Switch - FL SWITCH GHS 4G/12 - 2700271

### accessories

FL MM PATCH 2,0 LC-SC - 2989268



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FL MM PATCH 2,0 LC-SC - 2989268



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FL MM PATCH 1,0 LC-ST - 2989174



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FL MM PATCH 2,0 LC-ST - 2989271



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FL MM PATCH 5,0 LC-ST - 2901801



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FL MM PATCH 1,0 LC-SCRJ - 2901802



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### accessories

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FL MM PATCH 2,0 LC-SCRJ - 2901803



FL MM PATCH 5,0 LC-SCRJ - 2901804



FL MM PATCH 1,0 SC-SC - 2901805



FL MM PATCH 1,0 SC-SC - 2901805



FL MM PATCH 5,0 SC-SC - 2901808



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### accessories

FL MM PATCH 1,0 SC-ST - 2901809



FL MM PATCH 2,0 SC-ST - 2901810



FL MM PATCH 5,0 SC-ST - 2901811



FL MM PATCH 1,0 SC-SCRJ - 2901812



FL MM PATCH 2,0 SC-SCRJ - 2901813



FL MM PATCH 2,0 SC-SCRJ - 2901813



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### accessories

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FL MM PATCH 1,0 ST-ST - 2901815



FL MM PATCH 2,0 ST-ST - 2901816



FL MM PATCH 5,0 ST-ST - 2901817



FL MM PATCH 1,0 ST-SCRJ - 2901820



FL MM PATCH 2,0 ST-SCRJ - 2901821



## Switch - FL SWITCH GHS 4G/12 - 2700271

### accessories

FL MM PATCH 5,0 ST-SCRJ - 2901822



FL SM PATCH 1,0 LC-LC - 2989187



FL SM PATCH 2,0 LC-LC - 2989284



FL SM PATCH 5,0 LC-LC - 2901826



FL SM PATCH 1,0 LC-SC - 2989190



FL SM PATCH 2,0 LC-SC - 2989297



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### accessories

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FL SM PATCH 5,0 LC-SC - 2901827



FL SM PATCH 1,0 LC-ST - 2989242



FL SM PATCH 2,0 LC-ST - 2989349



FL SM PATCH 5,0 LC-ST - 2901828



FL SM PATCH 1,0 SC-SC - 2901829



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### accessories

FL SM PATCH 2,0 SC-SC - 2901830



FL SM PATCH 5,0 SC-SC - 2901831



FL SM PATCH 1,0 SC-ST - 2901832



FL SM PATCH 2,0 SC-ST - 2901833



FL SM PATCH 5,0 SC-ST - 2901834



FL SM PATCH 1,0 ST-ST - 2901836



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### accessories

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FL SM PATCH 1,0 ST-ST - 2901836



FL SM PATCH 5,0 ST-ST - 2901838



FOC-GDM-RUGGED-1016/IP20/... - 2901558



FOC-GDM-RUGGED-1016/... - 1402193



FOC-GDO-1017/IP20/... - 2901559





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### accessories

FOC-GDO-1017/... - 1402194



FOC-PN-HCS-GI-1005/IP20/... - 2901554



FOC-PN-HCS-GI-1005/... - 1402189



### Data cable by the meter

PSM-LWL-GDM-RUGGED- 50/125 - 2799322



PSM-LWL-GDO- 50/125 - 2799432



## Switch - FL SWITCH GHS 4G/12 - 2700271

### accessories

FL FOC PN-C-HCS-GI-200/230 - 2313410



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### accessories

IPASSIGN - 2701094



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## Drawings

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