# FL SWITCH GHS 12G/8-L3 - Industrial Ethernet Switch

2700787

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Gigabit Modular Switch with integrated routing function

Ethernet Gigabit Modular Switch with eight 10/100/1000 Mbps RJ45 slots and four 1000 Mbps SFP ports, can be extended by an extension station to up to 28 ports, with integrated routing function

## 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, the FL SWITCH GHS 12G/8 is the first switch, which has integrated 12 Gigabit ports and also supports the accommodation of interface modules for up to 16 additional 100 Mbps ports. With the integrated Layer 3 license, the switch can be configured as a router. The GHS switch can provide routing in up to 28 different subnetworks. With VRRP (Virtual Redundancy Routing Protocol) it can also be operated as a redundant router.

## Your advantages

- Integrated routing function
- Connection of Gigabit fiberglass via FL SFP plug-in modules
- Security in the automation network according to IEEE 802.1X
- 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

## Commercial data

| | |
|---|---|
| Item number | 2700787 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN17 |
| Product key | DNN123 |
| GTIN | 4046356647144 |
| Weight per piece (including packing) | 2,990 g |
| Weight per piece (excluding packing) | 2,700 g |
| Customs tariff number | 85176200 |
| Country of origin | DE |

# Technical data

## Dimensions

| | |
|---|---|
| Width | 289 mm |
| Height | 127 mm |
| Depth | 122 mm |

## Notes

Note on application

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

## Material specifications

| | |
|---|---|
| Material base plate | Die-cast aluminum, corrosion-resistant |
| Housing surface material | Stainless steel, smooth, corrosion-resistant |

## Mounting

| | |
|---|---|
| Mounting type | DIN rail mounting |

## Interfaces

Ethernet

| | |
|---|---|
| Connection method | RJ45 |
| Note on the connection method | Auto negotiation and autocrossing |
| Transmission speed | 10/100/1000 Mbps |
| Transmission physics | Copper |
| Transmission length | 100 m (per segment) |
| Signal LEDs | Supply voltage, data transmission, error, link, activity |
| No. of channels | 8 (RJ45 ports) |

Ethernet

| | |
|---|---|
| Connection method | via interface module |
| Note on the connection method | Max. 4 interface modules (without extension) |
| Transmission speed | 10/100 Mbps (full duplex) |
| Transmission physics | multi-mode fiberglass |
| | Single-mode fiberglass |
| | POF-SCRJ |
| | GI-HCS fibers |
| | Copper |
| | PoE |
| Signal LEDs | Data receive, link status |
| No. of channels | 2 (Per interface module) |

Ethernet (SFP)

| | |
|---|---|
| Connection method | SFP |
| Transmission speed | 1000 Mbps (full duplex) |

| | |
|---|---|
| Transmission physics | FO |
| Transmission length | up to 80 km (Depending on the fiber/SFP module used) |
| Wavelength | 850 nm / 1310 nm / 1550 nm |
| No. of channels | 4 (SFP ports) |

Serial (RS-232)

| | |
|---|---|
| Connection method | RS-232-C, 6-pos. MINI-DIN socket (PS/2) |

## Output data

Signal contact

| | |
|---|---|
| Control voltage | 24 V (typical) |
| Control current | 190 mA (maximum) |

## Product properties

| | |
|---|---|
| Product type | Switch |
| Product family | Managed Switch GHS |
| Type | Stand-alone |
| MTTF | 78.04 Years (SN 29500 standard, temperature 25°C, operating cycle 21%) |
| | 47.91 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%) |
| | 13.92 Years (SN 29500 standard, temperature 55°C, operating cycle 100%) |

Insulation characteristics

| | |
|---|---|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |

Switch functions

| | |
|---|---|
| Supported browsers | Internet Explorer 5.5 or higher |
| Signal contact control voltage | 24 V (typical) |
| Signal contact control current | 190 mA (maximum) |
| PROFINET conformance class | Conformance Class B |
| PROFINET device function | PROFINET device |
| | PROFIenergy |
| | Fast Startup |
| PROFINET specification | Version 1.1 |
| Status and diagnostic indicators | LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link and switchable Activity/Speed/Duplex), DI1, DI2 (Digital Input), UI (supply voltage for ext. sensor), and large operator display (display of IP address and other parameters) |
| Basic functions | Store-and-forward switch complies with IEEE 802.3, 8 priority classes according to IEEE 802.1p, smart mode, port mirroring, multicast filtering, IGMP snooping, VLANs, 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, SNMPv3, HTTPS, PROFINET device, GMRP, GVRP, SNTP, 2 digital inputs |
| Management functions | Web-based management (HTTP) |
| | SNMPv1/v2/v3 |

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|---|---|
| Diagnostic functions | RMON History |
| | N:1-Portmirroring |
| | LLDP (Link Layer Discovery Protocol) |
| | SNMP-Traps |
| Filter functions | Quality of Service (8 priority classes) |
| | Port-Priorisierung |
| | VLAN (up to 223 VLANs) |
| Redundancy functions | MRP (Media Redundancy Protocol) |
| | RSTP (Rapid Spanning Tree Protocol) |
| | FRD (Fast Ring Detection) |
| | Large Tree Support |
| | STP (Spanning Tree Protocol) |
| | MSTP (Multiple Spanning Tree Protocol) |
| Additional functions | DHCP Option 82 (Relay Agent) |
| | Link aggregation (up to 8 trunks) |
| | BootP |
| | DHCP-Client |
| | MAC-based Port-Security |
| | Jumbo frames |

## Electrical properties

| | |
|---|---|
| Power consumption | typ. 19 W (without plugged-in interface modules) |
| Local diagnostics | US1/2 Supply voltage US1, US2 Green LED |
| | FAIL Div. LED red |
| | LINK Link status Green LED |
| | MODE Data transmission speed Green LED |
| | MODE Data transmission speed Green/orange LED |
| Maximum power dissipation for nominal condition | 19.2 W |
| Transmission medium | Copper |
| | FO |

### Supply

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|---|---|
| Supply voltage (DC) | 24 V DC (redundant) |
| Supply voltage range | 18.5 V DC ... 30.2 V DC |
| Power supply connection | Via COMBICON, max. conductor cross-section 2.5 mm² |
| Residual ripple | 3.6 $V_{PP}$ (within the permitted voltage range) |
| Max. current consumption | 2.7 A |
| Typical current consumption | 800 mA (up to 2.7 A, depends on the configuration) |
| Ground connection | Via DIN rail |

## Connection data

| | |
|---|---|
| Connection method | Screw connection |
| pluggable | yes |
| Conductor cross-section, rigid | 0.2 mm² ... 2.5 mm² |
| Conductor cross-section, flexible | 0.2 mm² ... 2.5 mm² |

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|---|---|
| Conductor cross-section AWG | 24 ... 12 |
| Stripping length | 7 mm |

## Environmental and real-life conditions

Ambient conditions

| | |
|---|---|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -20 °C ... 55 °C (non-condensing) |
| Ambient temperature (storage/transport) | -20 °C ... 70 °C |
| Permissible humidity (operation) | 10 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 10 % ... 95 % (non-condensing) |
| Vibration (operation) | in acc. with IEC 60068-2-6: 5g, 150 Hz |
| Air pressure (operation) | 80 kPa ... 108 kPa (2000 m above mean sea level) |
| Air pressure (storage/transport) | 66 kPa ... 108 kPa (3500 m above sea level) |

## Standards and regulations

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|---|---|
| Free from substances that could impair the application of coating | In acc. with VW specification |

## EMC data

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|---|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| Conformance with EMC directives | IEC 61000-4-2 (ESD) Criterion B, Class 3 |
| | IEC 61000-4-3 (immunity to radiated interference) Criterion A, 10 V/m |
| | IEC 61000-4-4 (burst) Criterion A, 1 kV |
| | IEC 61000-4-5 (surge) Criterion B |
| | IEC 61000-4-6 (immunity to conducted interference) Criterion A, 10 Vrms |
| | EN 55022 (emitted interference) Class A |
| Noise immunity | EN 61000-6-2:2005 |

Noise emission

| | |
|---|---|
| Standards/regulations | EN 61000-6-3/-4 |

## System properties

System requirements

| | |
|---|---|
| Supported browsers | Internet Explorer 5.5 or higher |

## Signaling

| | |
|---|---|
| Status display | LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link and switchable Activity/Speed/Duplex), DI1, DI2 (Digital Input), UI (supply voltage for ext. sensor), and large operator display (display of IP address and other parameters) |

## Classifications

### ECLASS

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

### ETIM

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|---|---|
| ETIM 9.0 | EC000734 |

### UNSPSC

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

## Environmental product compliance

EU RoHS

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|---|---|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 6(c), 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 | 3635ad76-5ad6-4e73-93a0-8737aeb66499 |

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