

Industrial Ethernet 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.

Why buy this product

- ✓ 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

Packing unit	1 pc
GTIN	 4 046356 517706
Weight per Piece (excluding packing)	2700.0 g
Custom tariff number	85176200
Country of origin	Germany

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Technical data

Dimensions

Width	287 mm
Height	125 mm
Depth	115 mm

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)
Air pressure (operation)	80 kPa ... 108 kPa (2000 above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (3500 m above sea level)

SFP interface

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

Copper interface

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

Interface expansion

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

Function

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,
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Technical data

Function

	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	Web-based management (HTTP)
	SNMPv1/v2/v3
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)
Supported browsers	Internet Explorer 5.5 or higher
Redundancy	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)
PROFINET IO device function	PROFINET device
	PROFIenergy
	Fast Startup
PROFINET IO specification	Version 1.1
PROFINET IO conformance class	Conformance-Class B
Additional functions	DHCP Option 82 (Relay Agent)
	Link aggregation (up to 8 trunks)
	BootP
	DHCP-Client
	MAC-based Port Security
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)
Signal contact control voltage	24 V (typical)
Signal contact control current	190 mA (maximum)

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 (redundant)
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Supply voltage

Residual ripple	3.6 V _{pp} (within the permitted voltage range)
Supply voltage range	18.5 V DC ... 30.2 V DC
Typical current consumption	800 mA (Up to 2.5 A, depends on the configuration)
Max. current consumption	2.5 A

General

Mounting type	DIN rail
Type AX	Stand-alone
Net weight	2700 g
Material base plate	Die-cast aluminum, corrosion-resistant

Connection data

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	7 mm

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Test standard	IEC 61000-4-2 (ESD)
Test result	Criterion B, Class 3
Test standard	IEC 61000-4-3 (immunity to radiated interference)
Test result	Criterion A, 10 V/m
Test standard	IEC 61000-4-4 (burst)
Test result	Criterion A, 1 kV
Test standard	IEC 61000-4-5 (surge)
Test result	Criterion B
Test standard	IEC 61000-4-6 (immunity to conducted interference)
Test result	Criterion A, 10 V _{rms}
Test standard	EN 55022 (emitted interference)
Test result	Class A
Type of test	Shock in acc. with EN 60068-2-27/IEC 60068-2-27
Test result	Operation: 25g, 11 ms duration, semi-sinusoidal shock impulse
Type of test	Shock in acc. with EN 60068-2-27/IEC 60068-2-27
Test result	Storage/Transport: 50g, 11 ms duration, semi-sinusoidal shock impulse
Type of test	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

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Standards and Regulations

Test result	1 m
Noise emission	EN 61000-6-3/-4
Noise immunity	EN 61000-6-2:2005
Vibration (storage/transport)	5g, 150 Hz, in acc. with IEC 60068-2-6
Free from substances that could impair the application of coating	In acc. with VW specification
Vibration (operation)	In acc. with IEC 60068-2-6: 5g, 150 Hz

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

Approvals

Approvals

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

Ex Approvals

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Approvals

Approvals submitted

Approval details

UL Listed 

cUL Listed 

PROFenergy

PROFINET

EAC

EAC

cULus Listed 

Accessories

Accessories

Assembly adapter

Adapter - FL DIN RA - 2891053



The FL DIN RA is installed in a standard, 19-inch rack (EIA-310-D, IEC 60297-3-100) to allow DIN rail mounted equipment to be rack mounted.

Configuration memory

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Accessories

Program / configuration memory - FL SD FLASH/L3/MRM - 2700607



Parameterization memory, plug-in, with MRM and Layer 3 functionality

Program / configuration memory - FL SD FLASH/MRM - 2700270



Parameterization memory, plug-in, with MRM functionality

Data cable by the meter

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



Fiberglass cable, duplex 50/125 μm , by the meter, without connector, for indoor installation

FO cable - PSM-LWL-GDO- 50/125 - 2799432



Fiberglass cable, duplex 50/125 μm , by the meter, without connector, for outdoor installation

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



PROFINET HCS GI fiber cables, duplex 200/230 μm , increased bandwidth for Ethernet applications in particular. Robust PUR outer sheath. Heavy version suitable for drag chains and indoor installation, sold by the meter without plugs

Data cable preassembled

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Accessories

FO patch cable - FL MM PATCH 1,0 LC-LC - 2989158



FO patch cable - FL MM PATCH 2,0 LC-LC - 2989255



FO patch cable - FL MM PATCH 5,0 LC-LC - 2901799



FO patch cable - FL MM PATCH 1,0 LC-SC - 2989161



FO patch cable - FL MM PATCH 2,0 LC-SC - 2989268



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Accessories

FO patch cable - FL MM PATCH 2,0 LC-SC - 2989268



FO patch cable - FL MM PATCH 1,0 LC-ST - 2989174



FO patch cable - FL MM PATCH 2,0 LC-ST - 2989271



FO patch cable - FL MM PATCH 5,0 LC-ST - 2901801



FO patch cable - FL MM PATCH 1,0 LC-SCRJ - 2901802



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Accessories

FO patch cable - FL MM PATCH 2,0 LC-SCRJ - 2901803



FO patch cable - FL MM PATCH 5,0 LC-SCRJ - 2901804



FO patch cable - FL MM PATCH 1,0 SC-SC - 2901805



FO patch cable - FL MM PATCH 1,0 SC-SC - 2901805



FO patch cable - FL MM PATCH 5,0 SC-SC - 2901808



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Accessories

FO patch cable - FL MM PATCH 1,0 SC-ST - 2901809



FO patch cable - FL MM PATCH 2,0 SC-ST - 2901810



FO patch cable - FL MM PATCH 5,0 SC-ST - 2901811



FO patch cable - FL MM PATCH 1,0 SC-SCRJ - 2901812



FO patch cable - FL MM PATCH 2,0 SC-SCRJ - 2901813



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Accessories

FO patch cable - FL MM PATCH 2,0 SC-SCRJ - 2901813



FO patch cable - FL MM PATCH 1,0 ST-ST - 2901815



FO patch cable - FL MM PATCH 2,0 ST-ST - 2901816



FO patch cable - FL MM PATCH 5,0 ST-ST - 2901817



FO patch cable - FL MM PATCH 1,0 ST-SCRJ - 2901820



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Accessories

FO patch cable - FL MM PATCH 2,0 ST-SCRJ - 2901821



FO patch cable - FL MM PATCH 5,0 ST-SCRJ - 2901822



FO patch cable - FL SM PATCH 1,0 LC-LC - 2989187



FO patch cable - FL SM PATCH 2,0 LC-LC - 2989284



FO patch cable - FL SM PATCH 5,0 LC-LC - 2901826



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Accessories

FO patch cable - FL SM PATCH 1,0 LC-SC - 2989190



FO patch cable - FL SM PATCH 2,0 LC-SC - 2989297



FO patch cable - FL SM PATCH 5,0 LC-SC - 2901827



FO patch cable - FL SM PATCH 1,0 LC-ST - 2989242



FO patch cable - FL SM PATCH 2,0 LC-ST - 2989349



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Accessories

FO patch cable - FL SM PATCH 5,0 LC-ST - 2901828



FO patch cable - FL SM PATCH 1,0 SC-SC - 2901829



FO patch cable - FL SM PATCH 2,0 SC-SC - 2901830



FO patch cable - FL SM PATCH 5,0 SC-SC - 2901831



FO patch cable - FL SM PATCH 1,0 SC-ST - 2901832



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Accessories

FO patch cable - FL SM PATCH 2,0 SC-ST - 2901833



FO patch cable - FL SM PATCH 5,0 SC-ST - 2901834



FO patch cable - FL SM PATCH 1,0 ST-ST - 2901836



FO patch cable - FL SM PATCH 1,0 ST-ST - 2901836



FO patch cable - FL SM PATCH 5,0 ST-ST - 2901838



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Accessories

FO patch cable - FOC-GDM-RUGGED-1016/IP20/... - 2901558



rugged GOF installation cable (IP20 heads only) for inner areas with highly tear-proof aramid strain-relief elements. Individual elements consist of highly flexible FRNC material. The cable is halogen-free, ozone and UV resistant and has a rugged polyurethane (PUR) outer sheath.

FO patch cable - FOC-GDM-RUGGED-1016/... - 1402193



rugged GOF installation cable for inner areas with highly tear-proof aramid strain-relief elements. Individual elements consist of highly flexible FRNC material. The cable is halogen-free, ozone and UV resistant and has a rugged polyurethane (PUR) outer sheath.

FO patch cable - FOC-GDO-1017/IP20/... - 2901559



Highly rugged GOF round cable (IP20 heads only) for assembly and for outdoor installation with integrated moisture barrier as well as rodent-proof scrim. Individual elements made from highly flexible FRNC material. The wire is ozone and UV resistant with a very rugged polyethylene outer sheath.

FO patch cable - FOC-PN-HCS-GI-1005/IP20/... - 2901554



PROFINET HCS GI installation cable for assembly (IP20 heads only), suitable for drag chains, for indoor installation, gradient index fibers. Individual elements made from highly flexible FRNC material. Halogen-free, ozone and UV resistant with a polyurethane (PUR) outer sheath.

FO patch cable - FOC-PN-HCS-GI-1005/... - 1402189



HCS-GI installation cable for assembly for fixed installation in the inner area, with gradient index fibers for the highest performance requirements, as well as individual elements made of highly flexible FRNC material. The cable is halogen-free, ozone and UV resistant and has a rugged polyurethane (PUR) outer sheath.

Extension module

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Accessories

Extension module - FL FXT - 2989307



Expansion, 8 Ethernet ports

Media module - FL IF 2TX VS-RJ-F - 2832344



Interface module for connecting twisted pair cable, RJ45, connection direction forward

Media module - FL IF 2TX VS-RJ-D - 2832357



Interface module for connecting twisted pair cable, RJ45, connection direction downward

Media module - FL IF 2FX SC-F - 2832412



Fiber optic interface module for connecting 100 Base-FX multi-mode glass fibers (1300 nm), SC, connection direction forward

Media module - FL IF 2FX SC-D - 2832425



Fiber optic interface module for connecting 100 Base-FX multi-mode glass fibers (1300 nm), SC, connection direction downward

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Accessories

Media module - FL IF 2FX SM SC-D - 2832205



FO interface module for connecting 100 Base-FX single mode glass fibers (1300 nm), SC, connection direction downward

Media module - FL IF 2FX ST-D - 2884033



Fiber optic interface module for connecting 100 Base-FX multi-mode glass fibers (1300 nm), ST, connection direction downward

Media module - FL IF 2POF SCRJ-D - 2891084



Fiber optic interface module for connecting 100 Base-FX POF/PCF fibers (650 nm), SC-RJ, connection direction downward

Media module - FL IF 2PSE-F - 2832904



Interface module for connecting PoE twisted pair ports, RJ45, connection direction forward

Parameterization memory

Memory - SD FLASH 256MB - 2988120



Program and configuration memory, plug-in, 256 MB

Programming cable

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Accessories

Connecting cable - COM CAB MINI DIN - 2400127



Connecting cable, for connecting the controller to a PC (RS-232) for PC WORX with flow control, 3 m in length

SFP module

Media module - FL SFP SX - 2891754



Gigabit SFP module for transmission up to 1 km with a wavelength of 850 nm.

Media module - FL SFP LX - 2891767



Gigabit SFP module for transmission up to 30 km with a wavelength of 1310 nm.

Media module - FL SFP LH - 2989912



Gigabit SFP module for transmission up to 80 km with a wavelength of 1,550 nm.
