

# Industrial Ethernet Switch - FL SWITCH 4012T-2GT-2FX ST - 2891161

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Managed Ethernet switch with twelve RJ45 ports at 10/100 Mbps, two RJ45 ports at 10/100/1000 Mbps and two ST fiber optic ports at 100 Mbps. Wide operating temperature of -40 °C ... +75 °C.

## Product Description

FL SWITCH 4000 managed industrial Ethernet switches combine Gigabit interfaces with extensive network performance for the most demanding applications. Security features with complete IEEE redundancy (STP/RSTP/MST) and 15 ms recovery time extended ring redundancy optimize network uptime. Unique web customization provides a simplified user interface for today's applications and scalable functionality for future needs. A comprehensive mix of 10/100 Mbps and Gigabit fiber optic connections combine performance with installed cost savings.

## Product Features

- Unique cleanup function hides unused configuration pages, reducing complexity, maintenance and startup times
- Secure web-based and SNMP-based management
- Extensive web diagnostics with configurable LED and remote alarm contacts
- Twelve 10/100 Mbps ports for device connections, two Gigabit RJ45 ports for network trunk lines, and two 100 Mbps multi-mode fiber optic SC interfaces for remote connections
- -40 to 75°C ambient temperature



## Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	1.0 g
Custom tariff number	85176200
Country of origin	Taiwan

## Technical data

### Note

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

Width	66 mm
Height	173 mm

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### Dimensions

Depth	140 mm
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### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 75 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
Air pressure (operation)	57 kPa ... 108 kPa (up to 4850 m above mean sea level)
Air pressure (storage/transport)	57 kPa ... 108 kPa (up to 4850 m above mean sea level)

### Interfaces

Interface 1	Ethernet (RJ45)
No. of ports	12 (RJ45 ports)
Connection method	RJ45
Note on connection method	Auto negotiation and autocrossing
Transmission physics	Ethernet in RJ45 twisted pair
Transmission speed	10/100 MBit/s
Transmission length	100 m
Interface 2	Fiber optic interface
No. of ports	2 (ST multi-mode)
Connection method	ST
Transmission physics	multi-mode fiberglass
Transmission speed	100 MBit/s (full duplex)
Interface 4	Ethernet (RJ45)
Connection method	RJ45
Note on connection method	Auto negotiation and autocrossing
Transmission physics	Ethernet in RJ45 twisted pair
Transmission speed	10/100/1000 MBit/s
Transmission length	100 m

### Function

Basic functions	Managed switch
Status and diagnostic indicators	LEDs: U <sub>S1</sub> , U <sub>S2</sub> (redundant voltage supply), link and activity per port

### Network expansion parameters

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

### Supply voltage

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### Supply voltage

Supply voltage	24 V DC (redundant)
Residual ripple	3.6 V <sub>PP</sub> (within the permitted voltage range)
Supply voltage range	12 V DC ... 48 V DC
Typical current consumption	474 mA (24 V DC)

### General

Mounting type	NS 35 (IEC 60715) DIN rail
Type AX	Block design
Net weight	1285 g
Housing material	Aluminum

### Connection data

Connection method	Pluggable COMBICON screw connections,
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	7 mm

### Standards and Regulations

Developed in acc. with standard	IEC 61000-6.2
Test standard	IEC 61000-4-2 (ESD)
Test result	Criterion B
Test standard	IEC 61000-4-3 (immunity to radiated interference)
Test result	Criterion A
Test standard	IEC 61000-4-4 (burst)
Test result	Criterion A
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
Test standard	IEC 61000-4-8 (immunity to magnetic fields)
Test result	Criterion A
Test standard	EN 55022 (emitted interference)
Test result	Class A
Test section	Supply voltage/functional earth ground 500 V 1 min.
Type of test	Shock in acc. with EN 60068-2-27/IEC 60068-2-27

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### Standards and Regulations

Test result	30g, 11 ms half-sine shock pulse
Type of test	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6
Test result	5g, 150 Hz, Criterion 3
Type of test	Free fall in acc. with IEC 60068-2-32
Test result	1 m
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2:2005

## Classifications

### eCl@ss

eCl@ss 5.1	19030117
eCl@ss 6.0	19170106
eCl@ss 8.0	19170106

### ETIM

ETIM 4.0	EC000734
ETIM 5.0	EC000734

## Approvals

### Approvals

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#### Approvals

UL Listed / cUL Listed / EAC / cULus Listed

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#### Ex Approvals

UL Listed / cUL Listed / cULus Listed

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#### Approvals submitted

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## Approval details

UL Listed
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## Approvals

cUL Listed

EAC

cULus Listed 