

## Industrial Ethernet Switch - FL SWITCH 3016T - 2891059

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Managed Ethernet switch with 16 RJ45 ports at 10/100 Mbps and operating temperature of -40°C ... +75°C


### Product Description

FL SWITCH 3000 managed industrial Ethernet switches combine extensive network performance and security features with complete IEEE redundancy (STP/RSTP/MST) and 15 ms recovery time extended ring redundancy. Unique web customization provides a simplified user interface for today's applications and scalable functionality for future needs. A comprehensive mix of fiber optic and copper port connections meets a wide range of applications.

### Your advantages

- Unique cleanup function hides unused configuration pages, reducing complexity, maintenance and startup times
- Auto negotiation and autocrossing detection simplifies installation and setup
- Security options with cable locking
- Secure web-based and SNMP-based management
- Extensive web diagnostics with configurable LED and remote alarm contacts
- RJ45 ports support a transmission speed of 10/100 Mbps; fiber optic ports support 100 Mbps
- 40 to 75°C and -10 to 60°C ambient temperature versions

### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 764278
GTIN	4046356764278
Weight per Piece (excluding packing)	1,540.000 g
Custom tariff number	85176200
Country of origin	Taiwan

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## 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
Depth	140 mm

### 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	Ethernet (RJ45)
No. of ports	16 (RJ45 ports)
Note on the connection method	Auto negotiation and autocrossing
Transmission physics	Ethernet in RJ45 twisted pair
Transmission speed	10/100 Mbps
Transmission length	100 m

### Function

Basic functions	Store and forward switch, Extended Ring and IEEE redundancy, Multicast control, IGMP snooping, trunking, Port and Tagging VLANs, Port and IEEE 802.1x security, SNMP V3 and Https security, SNTP, web customization, user accounts
Redundancy	ERR (Extended ring redundancy)
Status and diagnostic indicators	LEDs: $U_{S1}$ , $U_{S2}$ (redundant voltage supply), link and activity per port
Signal contact control voltage	250 V AC
Signal contact control current	1 A

### 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 <sub>pp</sub> (within the permitted voltage range)
Supply voltage range	12 V DC ... 48 V DC
Typical current consumption	261 mA (at U <sub>S</sub> = 24 V DC)
Inrush current	4.76 A (5.5 ms)

### General

Mounting type	DIN rail
Type AX	Block design
Net weight	1245 g
Housing material	Aluminum
MTTF	47.5 Years (MIL-HDBK-217F standard, temperature 25°C, operating cycle 100%)

### 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

Type of test	Shock in acc. with EN 60068-2-27/IEC 60068-2-27
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
Conformance	CE-compliant
ATEX	# II 3 G Ex nA nC IIC T4 Gc
IECEX	Ex nA nC IIC T4 Gc
UL, USA/Canada	Class I, Div. 2, Groups A, B, C, D

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 10;

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## Technical data

### Environmental Product Compliance

	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"
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## Classifications

### eCl@ss

eCl@ss 10.0.1	19170401
eCl@ss 4.0	27250501
eCl@ss 4.1	27250501
eCl@ss 5.0	19030117
eCl@ss 5.1	19030100
eCl@ss 6.0	19170100
eCl@ss 7.0	19170106
eCl@ss 8.0	19170106
eCl@ss 9.0	19170106

### ETIM

ETIM 3.0	EC000734
ETIM 4.0	EC000734
ETIM 5.0	EC000734
ETIM 6.0	EC000734

### UNSPSC

UNSPSC 6.01	43172901
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201410
UNSPSC 13.2	43201410
UNSPSC 18.0	43222612
UNSPSC 19.0	43222612
UNSPSC 20.0	43222612
UNSPSC 21.0	43222612

## Approvals

### Approvals

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## Approvals

### Approvals

UL Listed / cUL Listed / UL Listed / cUL Listed / EAC

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### Ex Approvals

UL Listed / cUL Listed / IECEx / ATEX / UL Listed / cUL Listed

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### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
EAC			RU *- DE.A*08.B.00739

## Accessories

### Accessories

Data cable preassembled

Patch cable - NBC-R4AC-R4AC-IE8A/.../... - 1411854



Patch cable, degree of protection: IP20, number of positions: 8, 10 Gbps, CAT6<sub>A</sub>, cable outlet: straight

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### Accessories

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Patch cable - NBC-R4AC/10G-R4AC/10G-94F/2,0 - 1408360



Patch cable, CAT6<sub>A</sub>, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 2.0 m

Patch cable - NBC-R4AC/10G-R4AC/10G-94F/3,0 - 1408365



Patch cable, CAT6<sub>A</sub>, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 3.0 m

### End block

End clamp - E/NS 35 N - 0800886



End clamp, width: 9.5 mm, color: gray

### Mounting rail adapter

DIN rail 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.

### Patch cable

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## Accessories

Patch cable - FL CAT5 PATCH 0,5 - 2832263



Patch cable, CAT5, assembled, 0.5 m

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Patch cable - FL CAT5 PATCH 1,0 - 2832276



Patch cable, CAT5, assembled, 1 m

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Patch cable - FL CAT5 PATCH 2,0 - 2832289



Patch cable, CAT5, assembled, 2 m

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## PCB plug

Printed-circuit board connector - MSTB 2,5/ 2-ST - 1754449



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 2, pitch: 5 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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Printed-circuit board connector - MSTB 2,5/ 5-ST - 1754504



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 5, pitch: 5 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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### Accessories

#### Protective cap

Dust protection - FL RJ45 PROTECT CAP - 2832991



Dust protection caps for RJ45 socket

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#### Surge protection for information technology

Surge protection device - DT-LAN-CAT.6+ - 2881007



Surge protection in accordance with Class E<sub>A</sub> (CAT6<sub>A</sub>), for Gigabit Ethernet (up to 10 Gbps), token ring, FDDI/CDDI, ISDN, and DS1. Suitable for Power over Ethernet (PoE+) "Mode A" and "Mode B". RJ45 attachment plug with separate grounding cable and ground connection snap-on foot for NS 35 DIN rails.