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Managed Ethernet switch with eight RJ45 ports at 10/100 Mbps and two SFP ports at 1000 Mbps. Wide operating temperature of - $40^{\circ}$ C ... + $75^{\circ}$ 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.

#### Your advantages

- ☑ Unique cleanup function hides unused configuration pages, reducing complexity, maintenance and startup times

- -40 to 75°C ambient temperature
- ✓ VLANs
- Web-based management, SNMP



# **Key Commercial Data**

Packing unit	1 pc
GTIN	4 046356 764308
GTIN	4046356764308
Weight per Piece (excluding packing)	1,250.000 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	54.4 mm
Height	146.4 mm
Depth	125 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	8 (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
Signal LEDs	Data receive, link status
Interface	SFP module
No. of ports	2 (SFP ports)
Transmission physics	Depending on the SFP module
Transmission speed	100/1000 Mbps (full duplex)
Transmission length	up to 80 km (Depending on the fiber/SFP module used)
Signal LEDs	Data receive, link status

# 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 <sub>S1</sub> , U <sub>S2</sub> (redundant voltage supply), link and activity per port

Network expansion parameters



# Technical data

# 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 (Hazardous locations)
Residual ripple	3.6 V <sub>PP</sub> (within the permitted voltage range)
Supply voltage range	12 V DC 48 V DC (Ordinary locations)
Typical current consumption	278 mA (at U <sub>S</sub> = 24 V DC)
Inrush current	7.8 mA (200 µs)

# General

Mounting type	DIN rail
Type AX	Block design
Net weight	1280 g
Housing material	Aluminum
MTTF	29.8 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 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
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



# Technical data

# Standards and Regulations

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

# Classifications

# eCl@ss

eCl@ss 10.0.1	19170401
eCl@ss 4.0	27250500
eCl@ss 4.1	27250500
eCl@ss 5.0	19030100
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
ETIM 7.0	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				
EAC / EAC / cULus	Listed			
L Listed / cULus List	ed			
U <sub>L</sub> LISTED	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324		
CUL	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324		
EAC		EAC-Zulassung		
EAC		RU *- DE.A*08.B.00739		
EAC		RU *- DE.A*30.B.01735		
C UL US				
	L Listed / cULus List	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm  ERE  ERE		

Accessories

Data cable preassembled



#### Accessories

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

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.



#### Accessories

Patch cable

Patch cable - FL CAT5 PATCH 0,5 - 2832263



Patch cable, CAT5, assembled, 0.5 m

Patch cable - FL CAT5 PATCH 1,0 - 2832276



Patch cable, CAT5, assembled, 1 m

Patch cable - FL CAT5 PATCH 2,0 - 2832289



Patch cable, CAT5, assembled, 2 m

#### PCB plug

Printed-circuit board connector - MSTB 2,5/8-ST - 1754562



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm², number of positions: 8, pitch: 5 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

Protective cap



#### Accessories

Dust protection - FL RJ45 PROTECT CAP - 2832991



Dust protection caps for RJ45 socket

### Safety locking

Port Guard Security Element - FL SEC PAC 4TX - 2832865

Layer1 security elements for four RJ45 network connections for use with patch boxes and panels



#### 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.



### Accessories

Surge protection for information technology

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



Surge protection in accordance with Class  $E_A$  (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.

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