

# Industrial Ethernet Switch - FL SWITCH SFN 6TX/2FX ST - 2891411

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Ethernet switch, 6 TP RJ45 ports, 2 FO ports, 100 Mbps full duplex in ST-D format, automatic detection of data transmission speed of 10 or 100 Mbps (RJ45), autocrossing function

## Your advantages

- Auto negotiation and autocrossing detection simplifies installation and setup
- The switch also offers cable locking and port blocking
- Local diagnostic indicators with LEDs
- RJ45 ports support a transmission speed of 10/100 Mbps; fiber optic ports support 100 Mbps
- QoS-prioritized (Quality of Service) messages

## Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 100861
GTIN	4046356100861

## Technical data

### Note

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

Width	50 mm
Height	120 mm
Depth	70 mm

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	0 °C ... 60 °C
Ambient temperature (storage/transport)	-20 °C ... 70 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

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## Technical data

### Ambient conditions

Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
Air pressure (operation)	86 kPa ... 108 kPa (up to 1500 m above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (up to 3500 m above sea level)

### Interfaces

Interface	Ethernet (RJ45)
No. of ports	6 (RJ45 ports)
Note on the connection method	Auto negotiation and autocrossing
Transmission physics	Ethernet in RJ45 twisted pair
Transmission speed	10/100 Mbps
Interface	Fiber optic interface
No. of ports	2 (ST multi-mode)
Transmission physics	multi-mode fiberglass
Transmission speed	100 Mbps (full duplex)
Transmission length	2000 m (Fiberglass 50/125)
	2000 m (Fiberglass 62.5/125)
Wavelength	1300 nm

### Function

Basic functions	Unmanaged switch / auto negotiation, complies with IEEE 802.3, store and forward switching mode
Additional functions	Autonegotiation
Status and diagnostic indicators	LEDs: U <sub>S</sub> , 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

Supply voltage	24 V DC
Residual ripple	3.6 V <sub>PP</sub> (within the permitted voltage range)
Supply voltage range	9 V DC ... 32 V DC
Typical current consumption	230 mA (at U <sub>S</sub> = 24 V DC)

### General

Mounting type	DIN rail
Type AX	Block design
Net weight	365 g
Housing material	Aluminum
MTTF	56.8 Years (MIL-HDBK-217F standard, temperature 25°C, operating cycle 100%)

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Noise emission	EN 61000-6-4

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### Standards and Regulations

Noise immunity	EN 61000-6-2:2005
Vibration (storage/transport)	5g, 150 Hz, in acc. with IEC 60068-2-6
Vibration (operation)	in acc. with IEC 60068-2-6: 5g, 150 Hz

### 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	19170402
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 2.0	EC000734
ETIM 3.0	EC000734
ETIM 4.0	EC000734
ETIM 5.0	EC000734
ETIM 6.0	EC000734
ETIM 7.0	EC000734

### UNSPSC

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

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## Approvals

### Approvals

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#### Approvals

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

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#### Ex Approvals

UL Listed / cUL Listed / 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 140324
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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
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EAC			RU*- DE.*.B.00741/19
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KC		<a href="http://eng.kcc.go.kr/user/ehpMain.do">http://eng.kcc.go.kr/user/ehpMain.do</a>	MSIP-REI- PCK-FL28914
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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
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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
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## Accessories

### Accessories

Data cable preassembled

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## 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

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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

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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

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Patch cable - NBC-R4AC/1,0-93B/R4AC - 1408968



PROFINET patch cable, shielded, star-quad, 22 AWG stranded (7-wire), green, straight RJ45 male connector/IP20 to straight RJ45 male connector/IP20, length: 1.0 m

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Patch cable - NBC-R4AC/2,0-93B/R4AC - 1408969



PROFINET patch cable, shielded, star quad, 22 AWG stranded (7-wire), green, straight RJ45 plug/IP20, to straight RJ45 plug/IP20, length: 2 m

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## Accessories

Patch cable - NBC-R4AC/5,0-93B/R4AC - 1408970



PROFINET patch cable, shielded, star quad, 22 AWG stranded (7-wire), green, straight RJ45 plug/IP20 to straight RJ45 plug/IP20, length: 5 m

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FO patch cable - FOC-ST:PA-SC:PA-OM2:D01/1 - 1115574



Multi-mode OM2 duplex jumper, ST-SC, UPC polishing, length 1 m

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FO patch cable - FOC-ST:PA-SC:PA-OM2:D01/2 - 1115573



Multi-mode OM2 duplex jumper, ST-SC, UPC polishing, length 2 m

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FO patch cable - FOC-ST:PA-ST:PA-OM2:D01/1 - 1115560



Multi-mode OM2 duplex jumper, ST-ST, UPC polishing, length 1 m

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FO patch cable - FOC-ST:PA-ST:PA-OM2:D01/2 - 1115557



Multi-mode OM2 duplex jumper, ST-ST, UPC polishing, length 2 m

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## Accessories

Fiber optic cable - FOC-LC:PA-ST:PA-OM2:D01/1 - 1115588



Multi-mode OM2 duplex jumper, LC-ST, UPC polishing, length 1 m

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Fiber optic cable - FOC-LC:PA-ST:PA-OM2:D01/2 - 1115587



Multi-mode OM2 duplex jumper, LC-ST, UPC polishing, length 2 m

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## End block

End clamp - E/NS 35 N - 0800886



End clamp, width: 9.5 mm, color: gray

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## 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

Patch cable - FL CAT5 PATCH 0,5 - 2832263



Patch cable, CAT5, assembled, 0.5 m

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## Accessories

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/ 4-ST - 1754481



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 4, pitch: 5 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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## Protective cap

Dust protection - FL RJ45 PROTECT CAP - 2832991



Dust protection caps for RJ45 socket

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## 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

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## Surge protection for information technology



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### Accessories

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.

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