

# Industrial Ethernet Switch - FL SWITCH 1924 - 2891057

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Ethernet switch, 24 Ethernet ports on the front in RJ45 format, automatic detection of 10, 100 or 1000 Mbps data transmission rate, coupling of network segments with different transmission speeds, auto crossing function, installs in 19-in. (482 mm) rack



## Product Description

### Ethernet interface

The FL SWITCH 1924 has 24 Ethernet ports in RJ45 format. It is mounted in a 19-in. (482 mm) rack with AC power. The data transmission speed is 10 Mbps, 100 Mbps or 1000 Mbps. The switch also supports jumbo frames. Each port has an auto crossing function. It is not necessary to make a distinction between 1:1 or crossover Ethernet cables. Mounting brackets and power cords for EEC (CEE 7/4) and North America (NEMA 5-15) are included. User supplies screws for bracket to rack connection.

### Switching properties of FL SWITCH 1924

#### –Store-and-forward:

All data telegrams that are received by the switch have their validity checked. Invalid or faulty data packets (>9216 bytes or CRC errors) and fragments (<64 bytes) are rejected. Valid data telegrams are forwarded by the switch. The switch always forwards the data using the data transmission speed that is used in the destination network segment.

#### –Multi-address function:

The switch independently learns the addresses for termination devices, which are connected via a port, by evaluating the source addresses in the data telegrams. Only packets with unknown addresses, with a source address of this port or with a multicast/broadcast address in the destination address field are forwarded via the corresponding port. The switch can store up to 8192 MAC addresses in its address table.

#### –Quality of service (QoS): IEEE 802.1P/Q

The FL SWITCH 1924 switches are capable of reading Ethernet packets that have already been assigned a priority level by a managed switch. In case of heavy traffic, packets with a priority level between 4 and 7 are considered high priority and processed before packets with a priority level between 0 and 3 (2:1 ratio). After prioritization the packets are forwarded without modification.

#### –Grounding

The metal RJ45 socket housings are connected to earth/ground. For maximum noise immunity, shielded RJ45 connectors and cables should be used.

## Your advantages

- ✓ Jumbo frame support (frame size up to 9216 bytes/frame)
- ✓ Quality of service (QoS) support (2 queues)
- ✓ Power supply range of 100 ... 240 V AC at 50/60 Hz
- ✓ MAC address table size is 8192 (8k) entries
- ✓ Two power cords are included. For North America, a NEMA 5-15 3-pin plug (type A). For EEC, a CEE 7/4 (type F)

**RoHS**

## Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 763158

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GTIN	4046356763158
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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	482 mm
Height	44 mm
Depth	210 mm

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	0 °C ... 60 °C
Ambient temperature (storage/transport)	-25 °C ... 70 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Air pressure (operation)	86 kPa ... 108 kPa (2000 m above sea level)

### Interfaces

Interface	Ethernet
No. of ports	24 (RJ45 ports)
Transmission physics	Twisted pair connection
Transmission speed	10/100/1000 Mbps
Transmission length	100 m (per segment)
Signal LEDs	Activity, link status

### Function

Basic functions	Unmanaged switch / auto negotiation, complies with IEEE 802.3, store and forward switching mode
Additional functions	Autonegotiation
MAC address table	8192
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	120 V AC
	220 V AC
Supply voltage range	100 V AC ... 240 V AC (50/60 Hz)
Typical current consumption	312 mA (100 V AC)
Max. current consumption	0.4 A (maximum)
Inrush current	23 A (200 µs @ 230 V AC)

### General

Mounting type	Rack mount, includes brackets
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## Technical data

### General

Type AX	Stand-alone
Net weight	2730 g
MTTF	30.4 Years (MIL-HDBK-217F standard, temperature 25°C, operating cycle 100%)

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive 2004/108/EC and for low-voltage directive 2006/95/EC
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, 10 ... 150 Hz
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2:2005

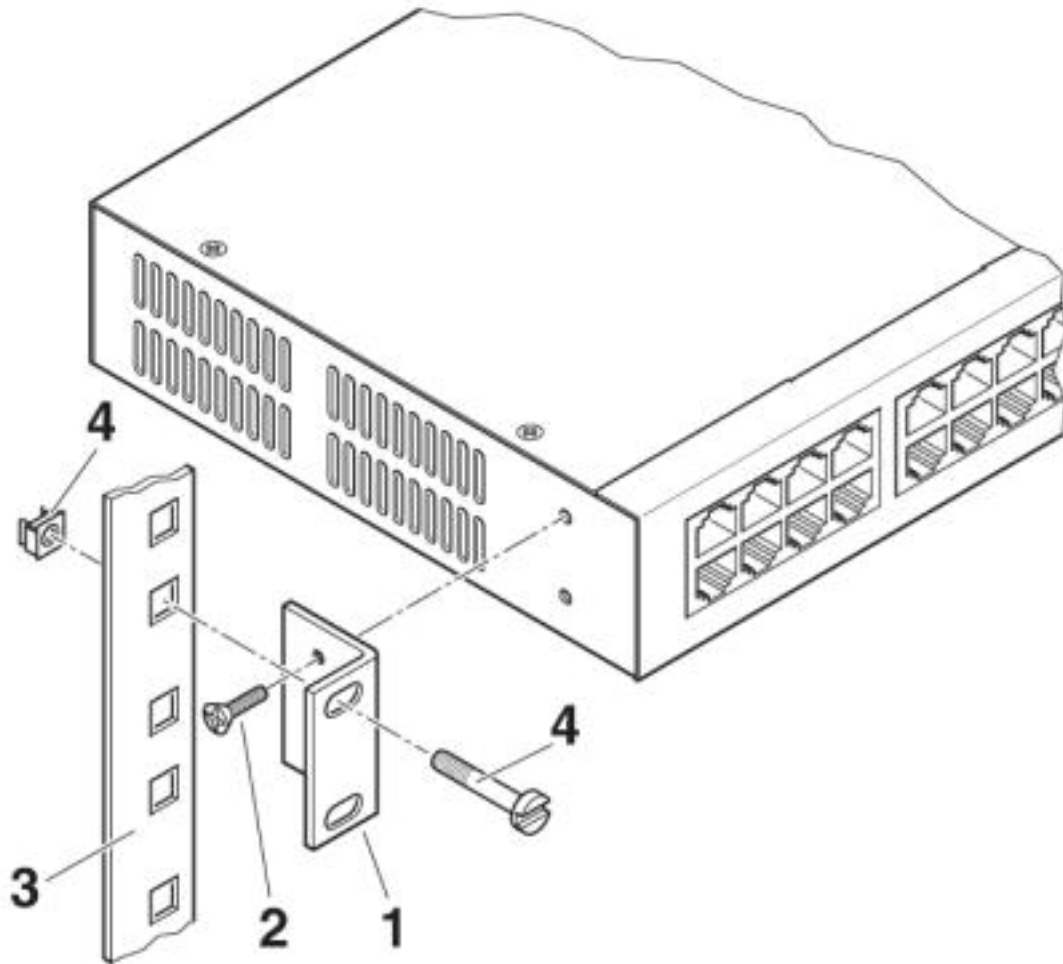
### Environmental Product Compliance

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"

## Drawings

## Industrial Ethernet Switch - FL SWITCH 1924 - 2891057

Application drawing

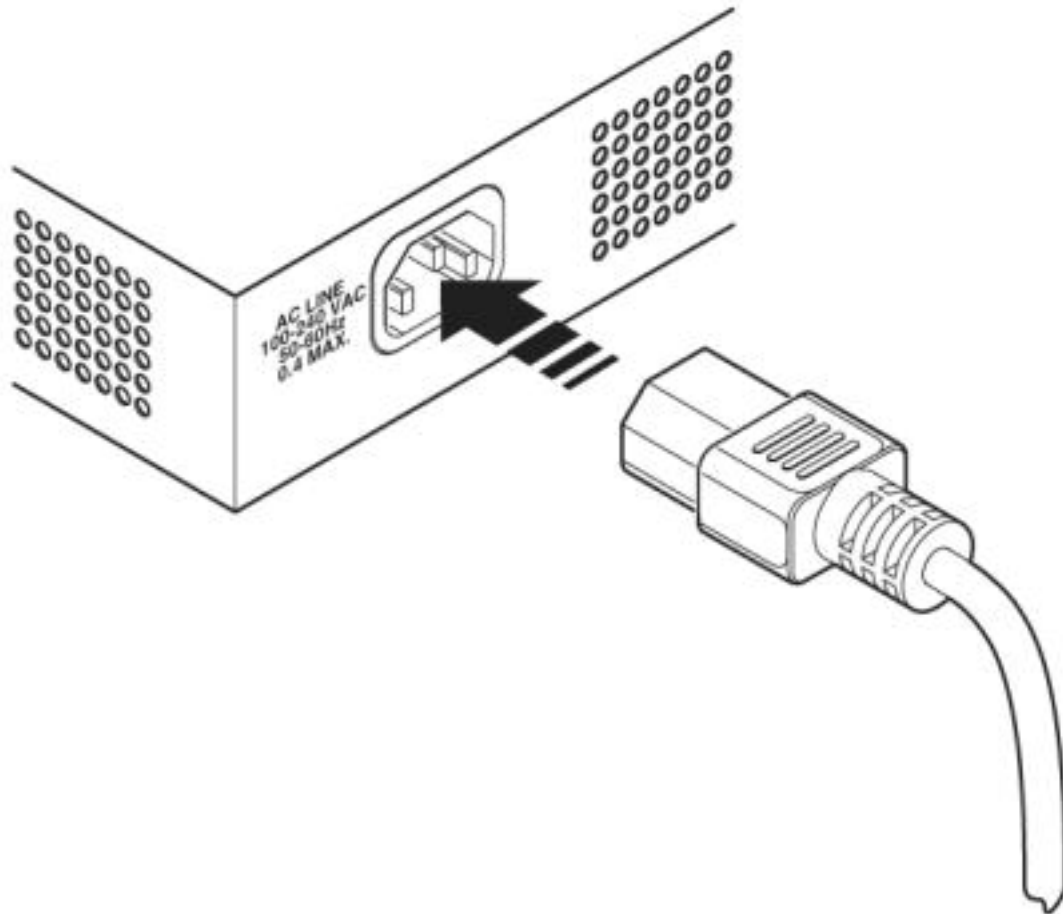


Attach the brackets to each side of the switch with the included screws (as shown).

Install the switch in the rack using the rack hardware.

## Industrial Ethernet Switch - FL SWITCH 1924 - 2891057

Schematic diagram



Two power cords are included and provide line, neutral and ground conductors:

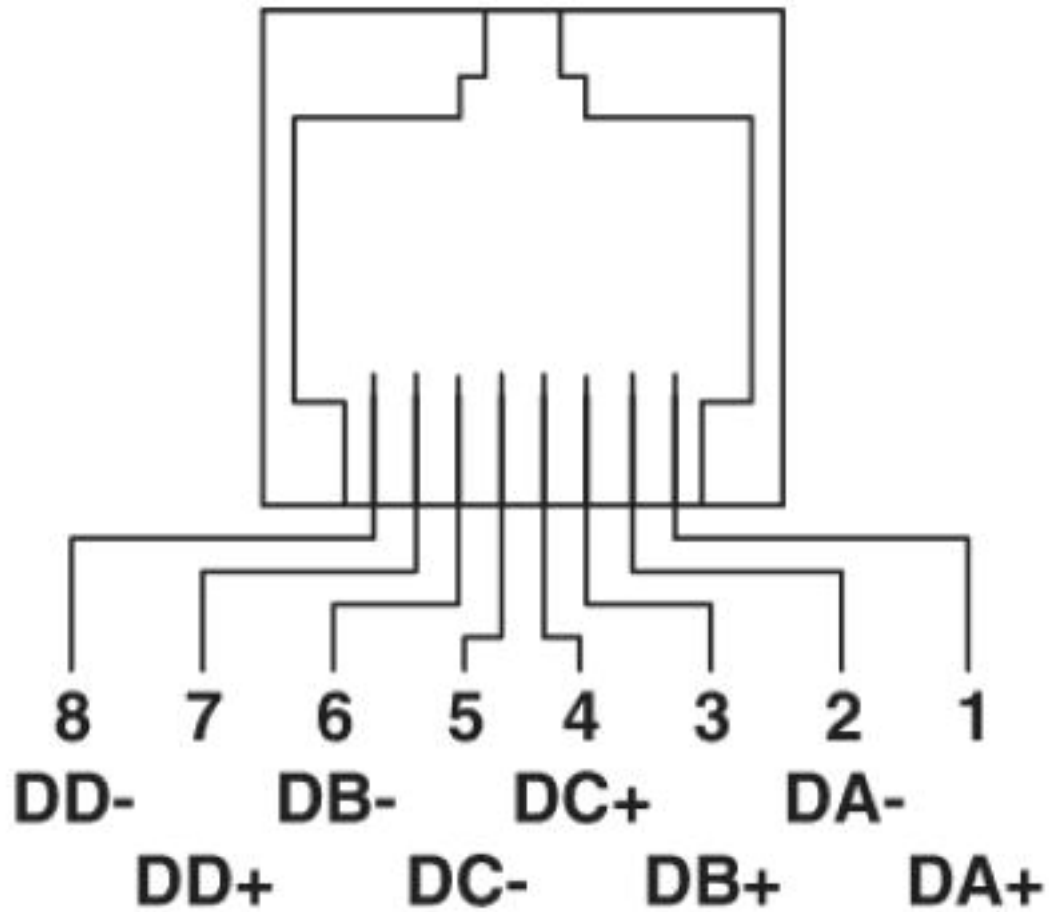
For North American markets the power cord uses a NEMA 5-15 plug.

For European markets the power cord uses a CEE 7/4 plug.

Both power cords use a common plug (IEC 60320-1 type C13) for connecting to the FL SWITCH 1924.

## Industrial Ethernet Switch - FL SWITCH 1924 - 2891057

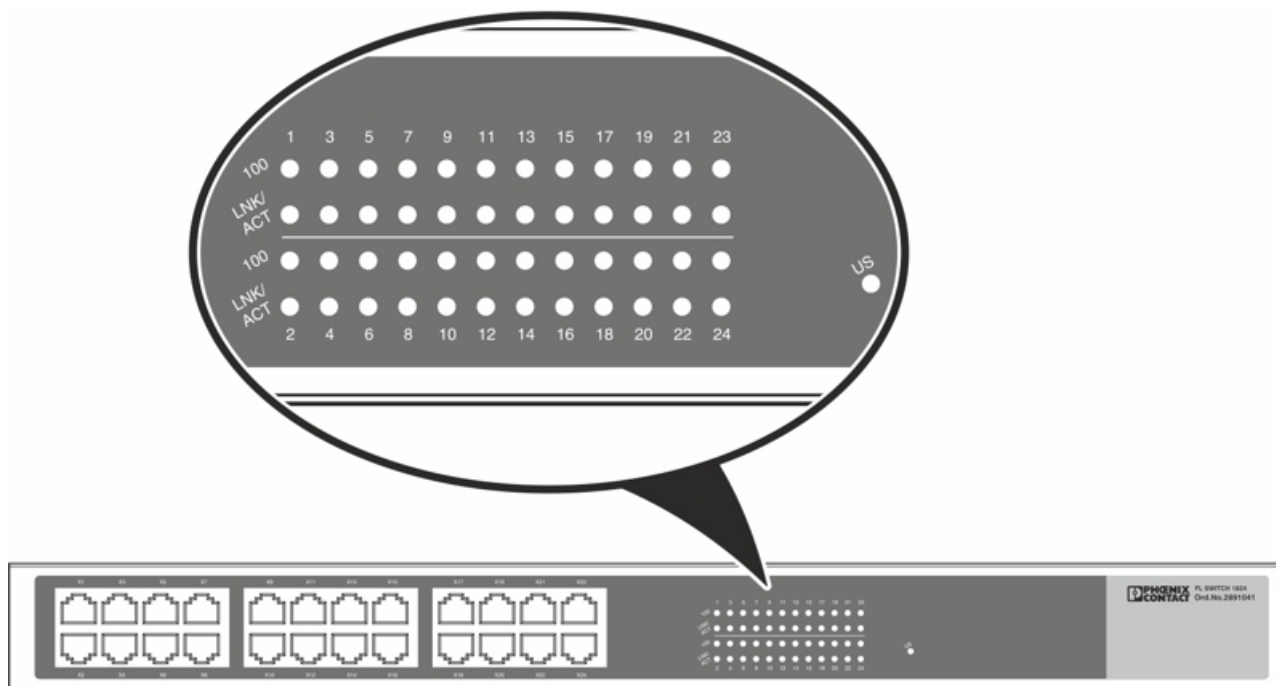
Schematic diagram



RJ45 pinout for 1000 Mbps

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Schematic diagram



The US LED indicates power is present.

Each port has 2 LEDs:

- When the 100 LED is illuminated, the port is operating at 100 Mbps. When off, it is operating at 10 Mbps.
- The LNK/ACT LED is illuminated when the port is connected and off when not connected. Flashing indicates data transfer (RX or TX).

### Classifications

eCl@ss

eCl@ss 10.0.1	19170402
eCl@ss 4.0	24010500
eCl@ss 4.1	24010500
eCl@ss 5.0	19030100
eCl@ss 5.1	19030100

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### Classifications

#### eCl@ss

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	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

### Approvals

#### Approvals

##### Approvals

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

##### Ex Approvals

#### Approval details

UL Listed





<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 140403



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### Approvals

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 140403
EAC			RU *- DE.A*08.B.00739
KC		<a href="http://eng.kcc.go.kr/user/ehpMain.do">http://eng.kcc.go.kr/user/ehpMain.do</a>	MSIP-REI- PCK-2891057
cULus Listed			

### 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

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

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### Accessories

#### Patch cable

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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#### 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.

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