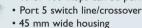
# Our infrastructure components at a glance:

### FL HUB 8TX-ZF Order No.: 2832551

### 8 TP-R|45 ports • 10 or 100 mbps can be permanently set





## Order No.: 2832564

- 10 or 100 mbps can be permanently set
- Port 5 switch line/crossover
- 90 mm wide housing



- Autocrossing Floating alarm contact
- Redundant 24 V DC supply



- Floating alarm contact
- Redundant 24 V DC supply



#### **FL SWITCH 8TX** Order No.: 2832218

- 8 TP-RJ45 ports 10/100 mbps
- (autonegotiation) Autocrossing
- Floating alarm contact

# Redundant 24 V DC supply

# Managed Compact Switch



#### **FL SWITCH MCS 16TX** Order No.: 2832700

- Fully managed switch IEEE 802.3
- 16 ports twisted pair

IEEE 802.3

glass fiber

**Lean Managed Switches** 

FL SWITCH LM 8TX

• 8 TP-RJ45 ports 10/100 mbps

Web server; SNMP; RSTP

· Alarm contact; redundant power

FL SWITCH LM 4TX/2FX

• 4 TP-RJ45 ports 10/100 mbps

Web server; SNMP; RSTP

Alarm contact; redundant power

• Extended temperature range

• 4 TP-RJ45 ports 10/100 mpbs

• 2 ports 100BASE-FX multimode glass fiber

Extended temperature range

Order No.: 2832632

(autonegotiation)

(-25 to +75°C)

• Autocrossing

(-25 to +75°C)

Order No.: 2891916

Order No.: 2832658

10/100BASE-T(X)

filtering, virtual LANs

Fast redundancy

• 2 ports 100BASE-FX multimode

• Integrated web server, multicast

• SNMP, IGMP snooping, RSTP

- 10/100BASE-T(X) Integrated web server, multicast filtering, virtual LANs
- SNMP, IGMP snooping, RSTP Fast redundancy

### FL SWITCH MCS 14TX/2FX Order No.: 2832713 Fully managed switch • 14 ports twisted pair

# FL HUB 16TX-ZF

- 16 TP-RJ45 ports 10/100 mbps

#### **FL SWITCH 5TX** Order No.: 2832085

- 5 TP-RJ45 ports 10/100 mbps



#### FL SWITCH 4TX/FX Order No.: 2832810

- 4 TP-RJ45 ports 10/100 mbps
- 1 port 100BASE-FX multimode glass fiber
- Autocrossing



# (GL)

- Autocrossing
  - Web server; SNMP; RSTP

FL SWITCH LM 4TX/2FX SM

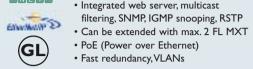
· Alarm contact; redundant power

• 2 ports 100BASE-FX single-mode glass fiber

• Extended temperature range (-25 to +75°C)

# **Modular Managed Switch**





- Order No.: 2832328 / 2832522 (GL-certified) • Fully managed switch IEEE 802.3
  - Head station with 4 integrated slots (8 ports) 10/100 mbps
  - Integrated web server, multicast
- FL MXT Order No.: 2832331 / 2832535 (GL-certified)
  - Extension module with 4 slots (8 ports)



Interface modules for Modular Managed Switch



- - Order No.: 2832357 FL IF 2TX VS-RJ-F
- Order No.: 2832344 2 TP-RJ45 ports 10/100 mbps
- 2 x R|45 connection from below ① or from the front 2 Variosub RJ45 can be used

FL IF MEM 2TX-D

• 2 TP-RJ45 ports 10/100 mbps

Variosub RI45 can be used

FL IF TX/HCS 100-D

connection from below

650 nm wavelength

FL IF 2HCS 100-D

Order No.: 2832742

• 2 ports HCS fiber

• 650 nm wavelength

• Range: 100 m with HCS fiber

Order No.: 2832739

• 2 RI45 connections from below

1 port in twisted pair and 1 in HCS fiber

• 1 RJ45 connection and 1 F-SMA

• 2 x F-SMA connection from below

• Range: 100 m with HCS fiber

**FL IF TX/POF 10/100-D** 

• 1 RJ45 connection and 1 F-SMA

• Range: 50 m with polymer fiber

connection from below

650 nm wavelength

• 1 port in twisted pair and 1 in polymer

Order No.: 2832807

Order No.: 2832483

Configuration memory



# FL IF 2POF 10/100-D



### Order No.: 2832852 • 2 ports in polymer fiber



#### • 2 x F-SMA connection from below • Range: 50 m with polymer fiber • 650 nm wavelength



### FL IF 2POF SCRI-D Order No.: 2891084 • 2 ports 100 mbps polymer/HCS fiber

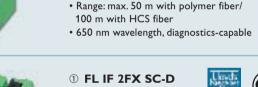












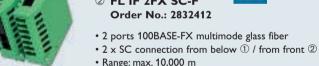








• 1,300 nm wavelength





# 2 ports 100BASE-FX multimode glass fiber



### FL IF 2 FX ST-D Order No.: 2884033

• 2 ports 100BASE-FX multimode glass fiber





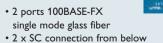




### • 2 x ST connection from below • Range: max. 10,000 m • 1,300 nm wavelength









## **Ethernet device interfaces**

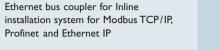
FL IL 24 BK-ETH/IP-PAC

Order No.: 2863986





Eller/Millip D





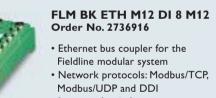
Order No.: 2832962 **ILB PN 24 DI16 DIO16-2TX** 

and Profinet with integrated switch



### Ethernet-I/O server for coupling INTERBUS devices of generation 4





- Ethernet bus coupler for the
- Integrated switch
- Ethernet connection: 2 x M12 plug connection, D-coded 8 digital inputs
- IP65/IP67 protection To form a powerful local bus station, the Fieldline modular system offers further digital and analog I/O local bus devices with M12 and M8 connection methods.

• PoE-relevant 48V DC is generated from

# Wireless components



FL Bluetooth AP\* Order No.: 2737999

• WLAN access point for the wireless

• 2 external omni-directional antennas

• WEP64/128-bit data encryption, TKIP or AES

standards IEEE 802.11 b and g

• Supply voltage: 24 V DC ① or

• PoE (Power over Ethernet)

230 V AC (2)

IP65 protection

- Bluetooth Access Point External antenna
- Supply voltage: 9 V DC...30 V DC • 128 bit data encoding
- IP20 protection





Ethernet block I/O for Modbus TCP/IP



#### **FL WLAN EC 802-11\*** Order No.: 2884130 • Ethernet client adapter for the wireless

• PoE (Power over Ethernet)

• IP65 protection

- standards IEEE 802.11 b and g • 2 external omni-directional antennas
- Supply voltage: 24 V DC • WEP64/128-bit data encryption, TKIP or AES



### FL WLAN 24 DAP 802-11\* Order No.: 2884279

- WLAN dual access point for the wireless standards IEEE 802.11 b and g • 4 external omni-directional antennas
- Supply voltage: 24 V DC • WEP64/128-bit data encryption, TKIP or AES
- \*With regard to country-specific approvals, please contact your Phoenix Contact sales partner.

• PoE (Power over Ethernet)

• IP65 protection







# Order No.: 2891055

### Patch cable



FL CAT5 PATCH 0.3 Order No.: 2832250 - 0.3 m long

Order No.: 2832263 - 0.5 m long FL CAT5 PATCH 1,0

Order No.: 2832276 - 1.0 m long

FL CAT5 PATCH 1.5 Order No.: 2832221 - 1.5 m long

FL CAT5 PATCH 2,0

FL CAT5 PATCH 0,5



FL CAT5 PATCH 5,0 Order No.: 2832580 - 5.0 m long

> Order No.: 2832616 - 7.5 m long FL CAT5 PATCH 10,0

FL CAT5 PATCH 7,5

Patch cable in CAT 5e, pre-assembled, 8-wire, line (1:1)

Order No.: 2832629 - 10.0 m long

## Network management software







FL OPC SNMP AGENT





Order No.: 2831044 Configuration and diagnostics software for Ethernet networks in an automation



Software for monitoring and configuration of SNMP-capable devices in HMI and SCADA systems

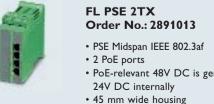


Software for the integration of OPC-based

automation solutions in company-wide network management systems

# **Power over Ethernet (PoE)**

24V DC internally









 PSE Endspan IEEE 802.3af 2 PoE ports

Labeling field

Set of 4 security elements for patch angles and SFN

Insert SCRJ-SCRJ for angled patch connector

Insert RJ45-RJ45 for angled patch connector

Patch box

① FL PBX 8TX

Patch box

Angled patch connector

FL PF ..2TX..

FL PF ..8TX..

elements (3)

FL SEC PAC 4TX

Order No.: 2832685

Order No.: 1654358

Order No.: 1652952

① FL PF 2TX CAT5E

② FL PF 2TX CAT 6

Order No.: 2891068

3 FL PF SEC 2TX

Order No.: 2832687

FL PF 8TX CAT5E

Order No.: 2891178

Order No.: 2891071

Order No.: 2832690

• Angled patch connector with 2 or 8 RJ45

or CAT 5e including layer 1 security

network connections in CAT 5e ①, CAT 6 ②

2 FL PF 8TX CAT 6

3 FL PF SEC 8TX

Order No.: 2891165

Order No.: 2832496

2 FL PBX 6TX/4FX

Order No.: 2832506

• Pre-assembled with 8 RI45 connections ①

Individual modules can be retrofitted

or with 6 RI45 and 4 SC-RI connections 2







We make

Ethernet easy.

PHOENIX CONTACT

**FL M LABEL** 

Economic reasons are leading to Ethernet being implemented more and more often as a uniform communication system for the exchange of data between the factory and the management level. In order to ensure smooth operation of the production plants, it is necessary to have industrial-grade devices. It is for this reason, that Phoenix Contact has put its many years of experience in fieldbus communication and in machine and plant engineering to use and has developed the Factory Line Industrial Ethernet products, a complete portfolio of matching hardware and software components on the basis of Ethernet. The products are both simple to install and handle and adapt flexibly to the requirements of the particular application. A gateway connects existing INTERBUS systems, thus allowing the seamless horizontal and vertical flow of information. A comprehensive service package tailored to the individual requirements of the user rounds off the range. Find out for yourself!

PHOENIX CONTACT



With our new Power over Ethernet modules FL IF 2PSE-F and FL PSE 2TX, the supply voltage and data can be transmitted together via an Ethernet cable. With this, termination devices, such as WLAN and Bluetooth access points, as well as IP telephony and cameras, can be easily integrated in the Ethernet network. Further, when installing in difficult-to-reach places, such as walls or ceilings, the separate supply connection can be omitted. This saves time and money. Even the fault tolerance of the termination devices can be increased by using a central uninterrupted power supply (UPS).

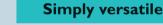


### Simply powerful

The manageable switches from Phoenix Contact are not only characterized by 2.4 Gbit full wire speed backplanes. The Managed Modular Switch (MMS) and the Managed Compact Switch (MCS) also provide extensive software features, which allow your automation solution to be

Based on the extensive integration of Profinet in the Factory Line product family, MMS and MCS, for example, can be completely configured as Profinet devices. The optimized redundancy mechanism of the firmware Version 4.0 allows to switch to the redundant Ethernet and Profinet networks in the event of an error without interference. This allows you to further increase the availability of your Profinet network.





The demands on modern automation systems are varied. For this reason, we have extended the proven SF switch family by additional infrastructure components. With the new SFN switches, networks can be quickly and inexpensively extended up to the field level. Thanks to its narrow housing design, the variable port number and versatile connection method, as well as the high performance up to 1000 mbps on all ports, the SFN switches implement all automation tasks economically. To increase the network security, they can be equipped with layer 1 security elements which protect against unauthorized

### **Standard switches**









#### **FL SWITCH SFN 5TX** Order No.: 2891152

- 5 TP-RJ45 ports 10/100 mbps
- (autonegotiation) Autocrossing
- 30 mm wide housing Lockable ports (accessory)

### FL SWITCH SFN 8TX Order No.: 2891929

- 8 TP-RJ45 ports 10/100 mbps (autonegotiation) Autocrossing
- 53 mm wide housing • Lockable ports (accessory)

FL SWITCH SFN 7TX/FX

Order No.: 2891097

(SC-D)

Autocrossing

53 mm wide housing

Lockable ports (accessory)

### Order No.: 2891673 • 8 TP-RJ45 ports 10/100/1000 mbps

**FL SWITCH SFN 8GT** 

- · Autonegotiation, autocrossing 53 mm wide housing
- Lockable ports (accessory)

**FL SWITCH SFN 7GT/SX** 

• 7 TP-RJ45 ports 10/100/1000 mbps

Autonegotiation, autocrossing

Lockable ports (accessory)

• 1 port 100BASE-SX multimode glass fiber

Order No.: 2891518

53 mm wide housing

(SC-D)

#### FL SWITCH SFN 4TX/FX Order No.: 2891851

- 4 TP-RJ45 ports 10/100 mbps • 7 TP-RJ45 ports 10/100 mbps (autonegotiation • 1 port 100BASE-FX multimode glass fiber
- 1 port 100BASE-FX multimode glass fiber (SC-D)
- Autocrossing • 30 mm wide housing

FL SWITCH SFN 4TX/FX ST

Lockable ports (accessory)

### FL SWITCH SFN 7TX/FX ST Order No.: 2891110

- 4 TP-RJ45 ports 10/100 mbps • 1 port 100BASE-FX multimode glass fiber
- (ST or BFOC)

Order No.: 2891453

- Autocrossing
- Lockable ports (accessory)

- 7 TP-RJ45 ports 10/100 mbps
- 30 mm wide housing
- Lockable ports (accessory)

#### FL SWITCH SFN 6GT/2SX Order No.: 2891398

- 1 port 100BASE-FX multimode glass fiber (ST or BFOC)
- Autocrossing • 53 mm wide housing

#### · Autonegotiation, autocrossing 53 mm wide housing

• 6 TP-RJ45 ports 10/100/1000 mbps

• 2 ports 100BASE-SX multimode glass fiber

# Lockable ports (accessory)

(SC-D)

### FL SWITCH SFN 6TX/2FX Order No.: 2891314

- 6 TP-RJ45 ports 10/100 mbps
- (SC-D) Autocrossing
- 53 mm wide housing
- Lockable ports (accessory)

### FL SWITCH SFN 6GT/2LX Order No.: 2891987

- 6 TP-RJ45 ports 10/100/1000 mbps
- 2 ports 100BASE-FX multimode glass fiber 2 ports 100BASE-LX single-mode glass fiber
  - · Autonegotiation, autocrossing 53 mm wide housing

Order No.: 2891563

Lockable ports (accessory)

#### FL SWITCH SFN 6TX/2FX ST Order No.: 2891411

- 6 TP-RJ45 ports 10/100 mbps
- 2 ports 100BASE-FX multimode glass fiber (ST or BFOC)
- Autocrossing • 53 mm wide housing
- Lockable ports (accessory)

# • 6 TP-RJ45 ports 10/100/1000 mbps

• 2 ports 100BASE-LX single-mode glass fiber

FL SWITCH SFN 6GT/2LX-20

· Autonegotiation, autocrossing 53 mm wide housing

(long haul)

- Lockable ports (accessory)

### Standard switches



Autocrossing

Floating alarm contact

Order No.: 2832726

• 7 TP-RJ45 ports 10/100 mbps

• 1 port 100BASE-FX multir

glass fiber (SC-D)

Floating alarm contact

Order No.: 2832933

glass fiber (SC-D)

Floating alarm contact

Redundant 24 V DC supply

• 6 TP-RJ45 ports 10/100 mbps

2 ports 100BASE-FX multi

Autocrossing

Redundant 24V DC supply

#### **FL SWITCH SF** 7TX/FX ST

- Order No.: 2832577
- 8 TP-RJ45 ports 10/100 mbps • 7 TP-RJ45 ports 10/100 mbps

FL SWITCH SF 7TX/FX FL SWITCH SF

FL SWITCH SF 6TX/2FX FL SWITCH SF

• 1 port 100BASE-FX multimode

6TX/2FX ST

Order No.: 2832674

• 6 TP-RJ45 ports 10/100 mbps

• 2 ports 100BASE-FX multimode

- glass fiber (ST or BFOC) • Floating alarm contact
- Redundant 24 V DC supply

#### FL SWITCH SF 15TX/FX Order No.: 2832661

FL SWITCH SF 16TX

• 16 TP-RI45 ports 10/100 mbps

Order No.: 2832849

(autonegotiation)

• Floating alarm contact

• Redundant 24 V DC supply

Autocrossing

- 15 TP-RJ45 ports 10/100 mbps
- glass fiber (SC-D) Autocrossing

• 1 port 100BASE-FX multimode

- glass fiber (ST or BFOC) Floating alarm contact
- Floating alarm contact Redundant 24 V DC supply Redundant 24 V DC supply

# **FL SWITCH SF** 14TX/2FX

Fax

Department

Zip code/city

PHOENIX CONTACT GmbH & Co. KG

32823 Blomberg, Germany

Fax: ++49 / 52 35 / 3-1 07 99

Tel.: ++49 / 5235 / 3-00

www.phoenixcontact.de

I would like a personal consultation without obligation.

- Order No.: 2832603 Order No.: 2832593 4 TP-RJ45 ports 10/100 mbps
- 3 ports 100BASE-FX multimode glass fiber (ST or BFOC)
- Autocrossing Floating alarm contact Redundant 24 V DC supply • Redundant 24 V DC supply
- 14 TP-RI45 ports 10/100 mbps (autonegotiation)
- 2 ports 100BASE-FX multimode glass fiber (SC-D)
- Autocrossing
- Floating alarm contact

# • Redundant 24 V DC supply

## **Media converters**



### FL MC 10/100BASE-T/FO 660 Order No. 2708193

- Converter for converting 10/100BASE-T to polymer/HCS fiber (660 nm)
- SC-RJ-FO connection • Range with polymer fibers: 70 m
- Range with HCS fibers: 300 m at 10 mbps or 100 m at 100 mbps



### FL MC 10/100BASE-T/FO G1300 ST Order No. 2708986

- Converter for converting from 10/100BASE-T(X) to multimode glass fibers (1,300 nm) according to the FX standard
- BFOC (ST®)-FO connection • Range: max. 10,000 m
- Transparent autonegotiation, LINK through FL MC 10/100BASE-T/FO G1300
- Converter for converting from 10/100BASE-T(X) to multimode glass fibers (1,300 nm) according to the FX standard

Order No.: 2708164

SC-Duplex FO connection

Range: max. 10,000 m • Transparent autonegotiation, LINK through



## Order No.: 2832470

Converter board for interface modules FL IF TX/POF ... to convert to polymer fibers



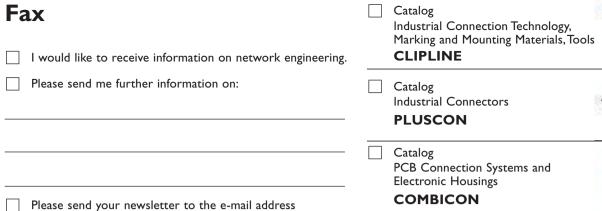
### FL MC 10/100BASE-T/FO G1300 SM Order No.: 2708177

- Converter for converting from 10/100BASE-T(X) to single-mode glass fibers (1,300 nm) according to the
- SC-Duplex FO connection • Range: max. 36,000 m
- Transparent autonegotiation, LINK through **FL COM SERVER RS232**





- Com port redirector software
- Modbus TCP, RTU and ASCII to master and slaves • PPP routing
- LAN modem



Catalog

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TRABTECH

Signal Converters

INTERFACE









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