

Manual

Elinx EIRP410-2SFP-T

8 Ports 10/100 PoE with 2 combo 10/100/1000 or 100/1000 SFP Ports
Unmanaged Din Rail Ethernet Switch



EIRP410-2SFP-T

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Introduction

The EIRP410-2SFP-T is an industrial Managed Ethernet switch that has 8 10/100TX PoE ports and 2 10/100/1000T/Mini-GBIC Combo ports.

Features

- System Interface/Performance
 - RJ-45 ports support Auto MDI/MDI-X Function
 - Embedded 8-ports PoE
 - SFP (Mini-GBIC) supports 100/1000 Dual Mode
 - Store-and-Forward Switching Architecture
 - Back-plane (Switching Fabric): 5.6Gbps
 - 1Mbits Packet Buffer
 - 8K MAC Address Table
 - Supports Wide Operating Temperature (-40°C ~ 75°C)
- Power Supply
 - Redundant Power Design
- Case/Installation
 - IP-30 Protection
 - DIN Rail and Wall Mount Design
- Relay Alarm
 - Relay output for port breakdown, power fail and alarm

Package Contents

- 8 Ports 10/100 PoE with 2 combo 10/100/1000 or 100/1000 SFP Ports Industrial Switch
- User manual
- Pluggable Terminal Block
- 2 wall mount plates and 6 screws
- One DIN-Rail (attached on the switch)



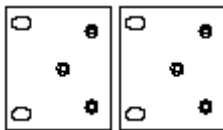
8 10/100TX + 2 10/100/1000T/100/1000 SFP Combo with 8 PoE Injectors Industrial Switch



User Manual



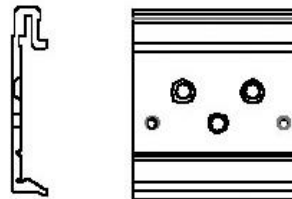
block connector



Wall Mount Plate



Screws



DIN-Rail

Hardware Description

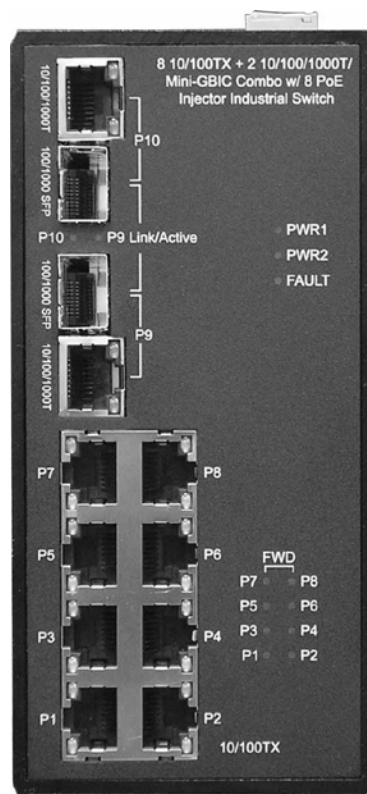
The following information is an introduction to the Industrial switch's hardware spec, port, cabling information, and wiring installation will be described.

Physical Dimension

8 Ports 10/100 PoE with 2 combo 10/100/1000 or 100/1000 SFP Ports Industrial Switch dimension (W x D x H) are **72mm x 105mm x 152mm**

Front Panel

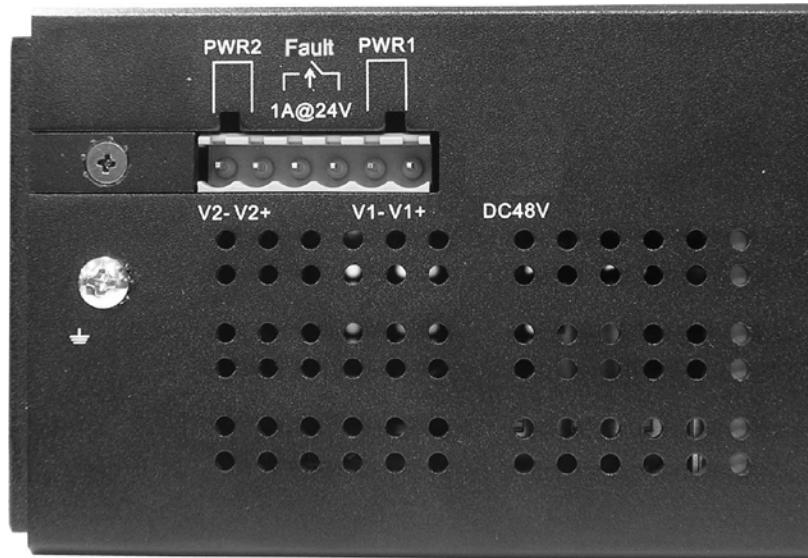
The Front Panel of the 8 Ports 10/100 PoE with 2 combo 10/100/1000 or 100/1000 SFP Ports Industrial Switch is shown as below:



Front Panel of the PoE Industrial Switch

Top View

The top view of the 8 Ports 10/100 PoE with 2 combo 10/100/1000 or 100/1000 SFP Ports Industrial Switch has one terminal block connector of two DC power inputs.



Top View of the PoE Injectors Industrial Switch

LED Indicators

The diagnostic LEDs located on the front panel of the industrial switch provide real-time information of operation and status. The following table provides the description of the LED status and their meanings for the switch.

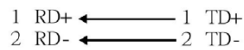
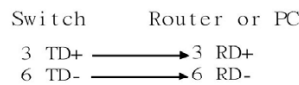
LED	Status	Meaning	
PWR1	Green	Power 1 is active	
	OFF	No power inputs	
PWR2	Green	Power 2 is active	
	OFF	No power inputs	
Fault	Red	Power input 1 or 2 is inactive	
	OFF	Power 1 & Power 2 are both active or no power inputs	
P9, P10 (RJ-45)	Upper LED	Green	Connected to network
		Blinking	Networking is active
		OFF	Not connected to network
	Lower LED	Green	The port is operating at speed of 1000M
		OFF	The port is disconnected or not operating at speed of 1000M
Link/Active (P9, P10)	Green	SFP port is linking	
	Blinks	Data is transmitting or receiving	
	OFF	Not connected to network	
P1 ~ P8 (Green)	Green	Connected to network	
	Blinking	Networking is active	
	OFF	Not connected to network	
P1 ~ P8 (Yellow)	Yellow	Ethernet port full duplex	
	Blinking	Collision of packet occurs	
	OFF	Ethernet port half duplex or not connected to network	
FWD (P1 ~ P8)	Green	A powered device is connected utilizing Power over Ethernet on the port	
	OFF	No device is connected or power forwarding fails	

Ports

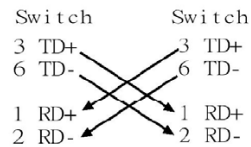
RJ-45 ports

The RJ45 copper ports support auto MDI/MDIX operation. This feature allows network connections to computers, servers, or other switches using straight-through or crossover cables (See Figure below). Straight-through cable connections: pins 1, 2, 3 and 6, at one end of the cable, are connected straight-through to pins 1, 2, 3 and 6 at the other end of the cable. The table below shows the 10BASE-T/100BASE-TX MDI and MDI-X port pin outs.

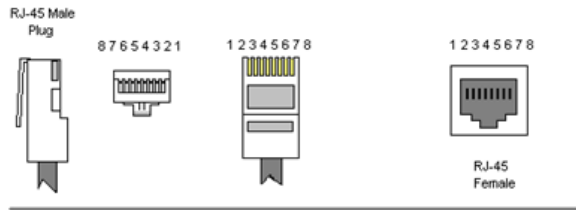
Pin	MDI-X Signal Name	MDI Signal Name
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)



Straight Through Cable Schematic



Cross Over Cable Schematic



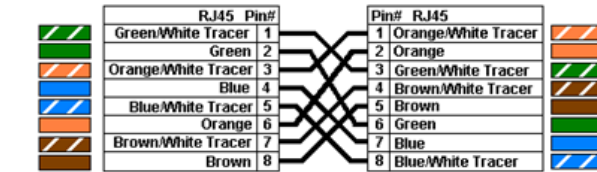
Color Standard
EIA/TIA T568A

Ethernet Patch Cable



Color Standard
EIA/TIA T568A

Ethernet Crossover Cable



*"A" is earlier

2006.06.28

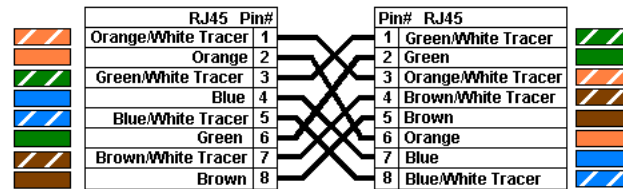
Color Standard
EIA/TIA T568B

Ethernet Patch Cable



Color Standard
EIA/TIA T568B

Ethernet Crossover Cable



*"B" is most recent

Common Ethernet Crossover Cables may only cross connect the Orange & Green pairs

2006.06.28

Cross Over Cable Schematic

2 Mini-GBIC combo port

2 auto-detect combo Giga ports — RJ45 or fiber. The gigabit Ethernet ports are shared with the mini-GBIC ports. RJ45 UTP (Gigabit Ethernet) ports can operate in half/full-duplex modes and work at speeds of 10/100/1000Mbps that support auto-sensing technology to enable each port to detect the connecting speed. The mini-GBIC port is a socket for a mini-GBIC (SFP) fiber transceiver.

Cabling

- Use four twisted-pair, Category 5e or above cabling for RJ-45 port connection. The cable between the switch and the link partner (switch, hub, workstation, etc.) must be less than 100 meters (328 ft.) long.
- Use the mini-GBIC ports to uplink to another switch by inserting the mini-GBIC (SFP) transceiver.

To connect the transceiver and LC cable, please follow the steps shown below:

First, insert the transceiver into the SFP module. Notice that the triangle mark is the bottom of the module.

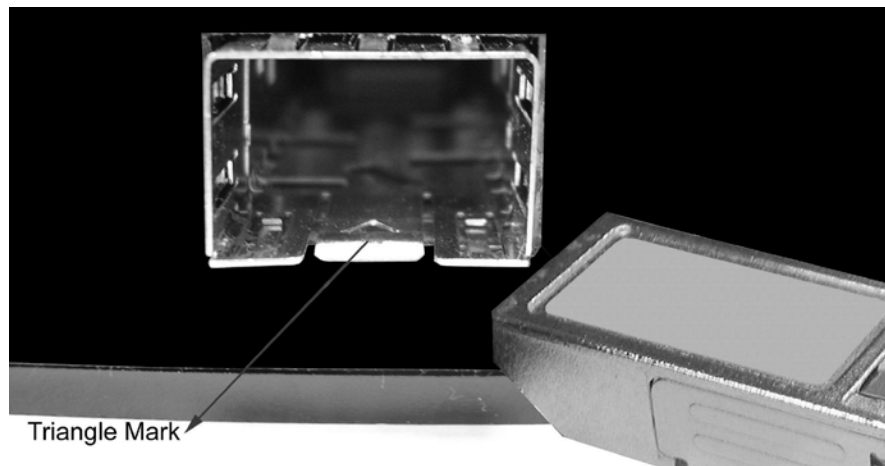


Figure 2.8: Transceiver to the SFP module

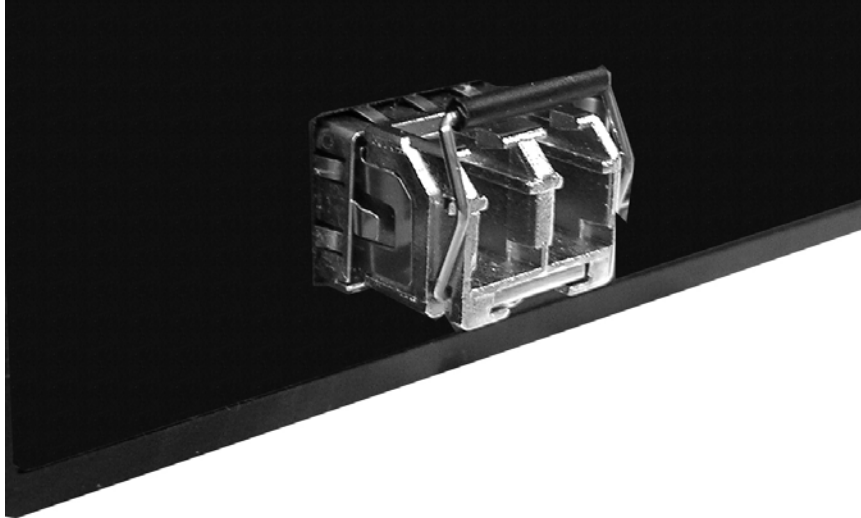


Figure 2.9: Transceiver Inserted

Second, insert the fiber cable LC connector into the transceiver.

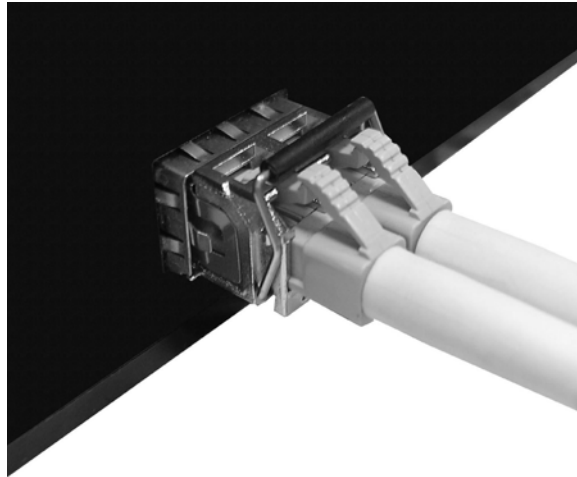


Figure 2.10: LC connector to the transceiver

To remove the LC connector from the transceiver, press the upper side of the LC connector to release from the transceiver and pull it out.

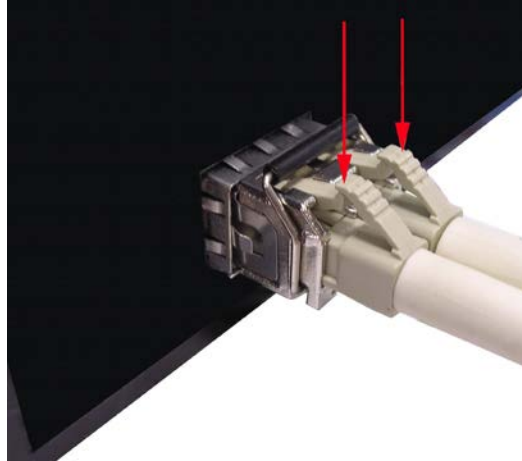


Figure 2.11: Remove LC connector

Second, push down the metal loop and pull the transceiver out by the plastic handle.

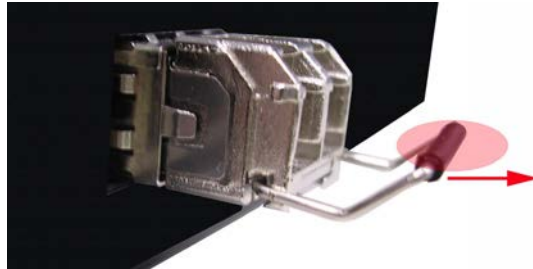
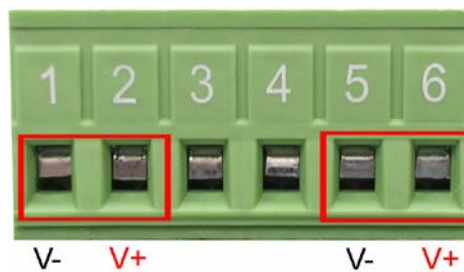


Figure 2.12: Pull out from the transceiver

Wiring the Power Inputs

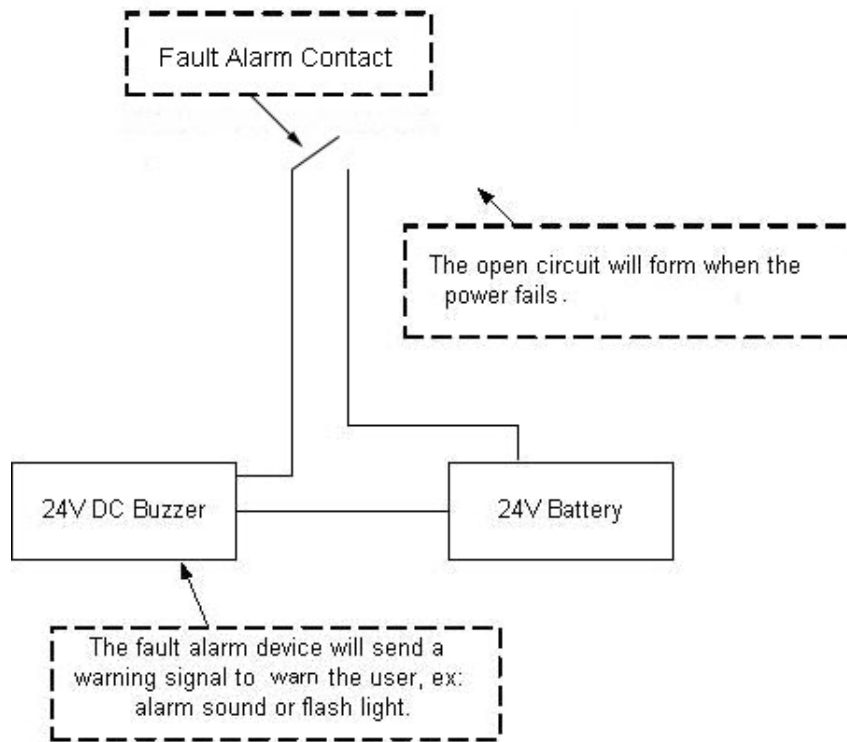


Wiring the Fault Alarm Contact

The fault alarm contact is wired to pins 3 and 4 of the terminal block connector as the picture shows below. When the wires are inserted, the connected device will detect the fault status. The fault status includes power failure or port link failure. Once one of the mentioned states occur, an open circuit will exist. An application example for the fault alarm contact is shown on the next page:



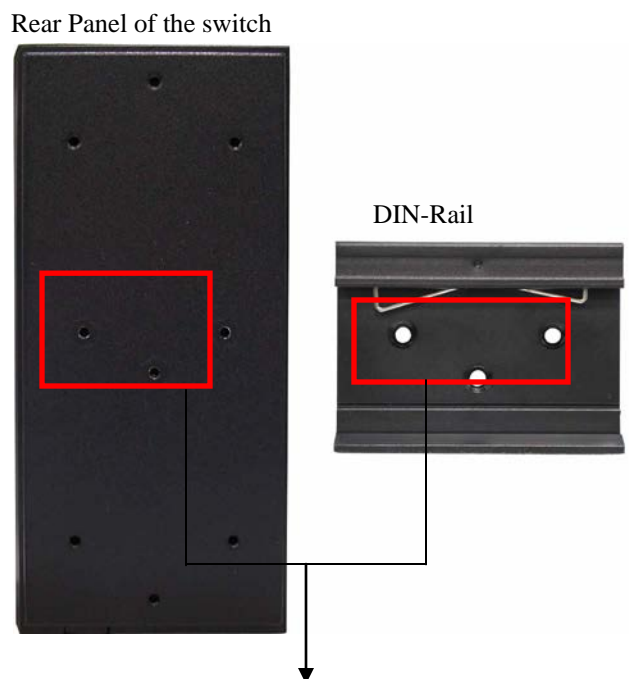
Note *The wire gauge for the terminal block should be in the range between 12-24 AWG.*



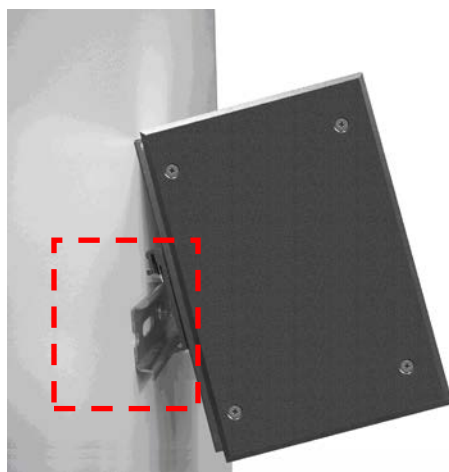
Mounting Installation

DIN-Rail Mounting

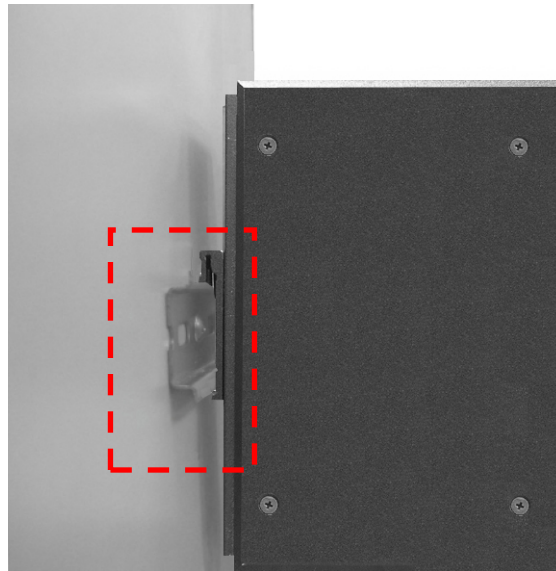
The DIN-Rail is installed at the factory and maybe removed if needed.



1. First, insert the top of the DIN-Rail into the track.



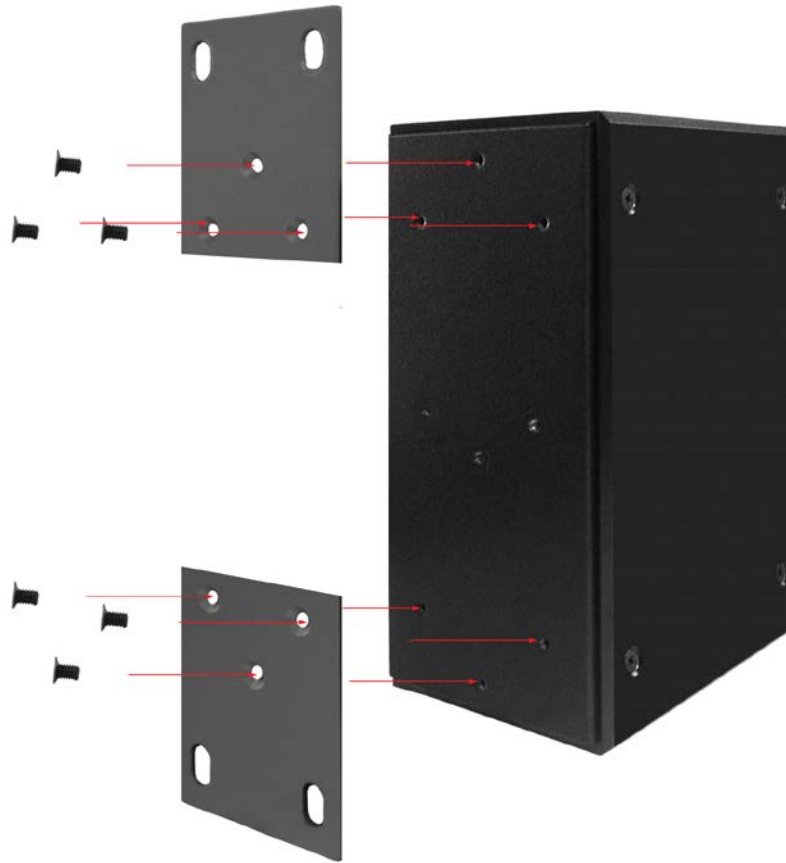
2. Lightly push the DIN-Rail into the track.



3. Check the DIN-Rail to insure proper fit.
4. To remove the industrial switch from the track, reverse steps above.

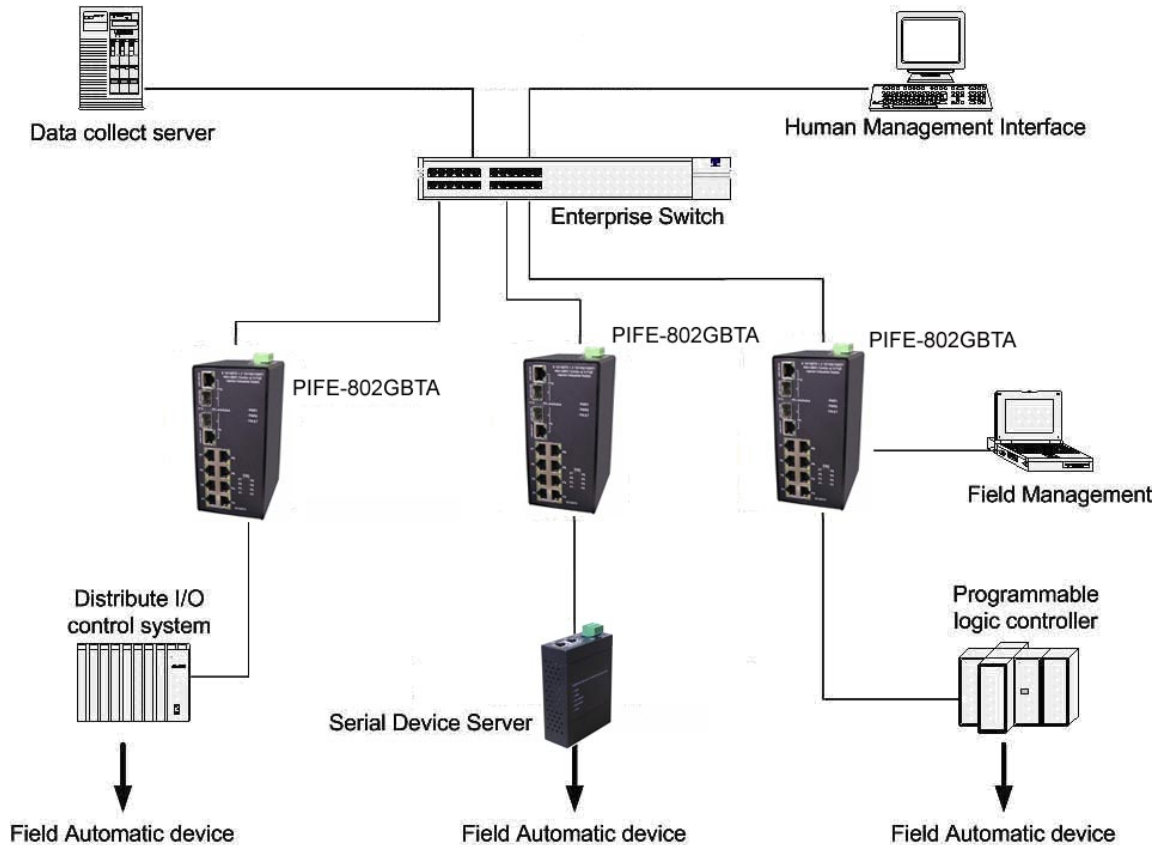
Wall Mount Plate Mounting

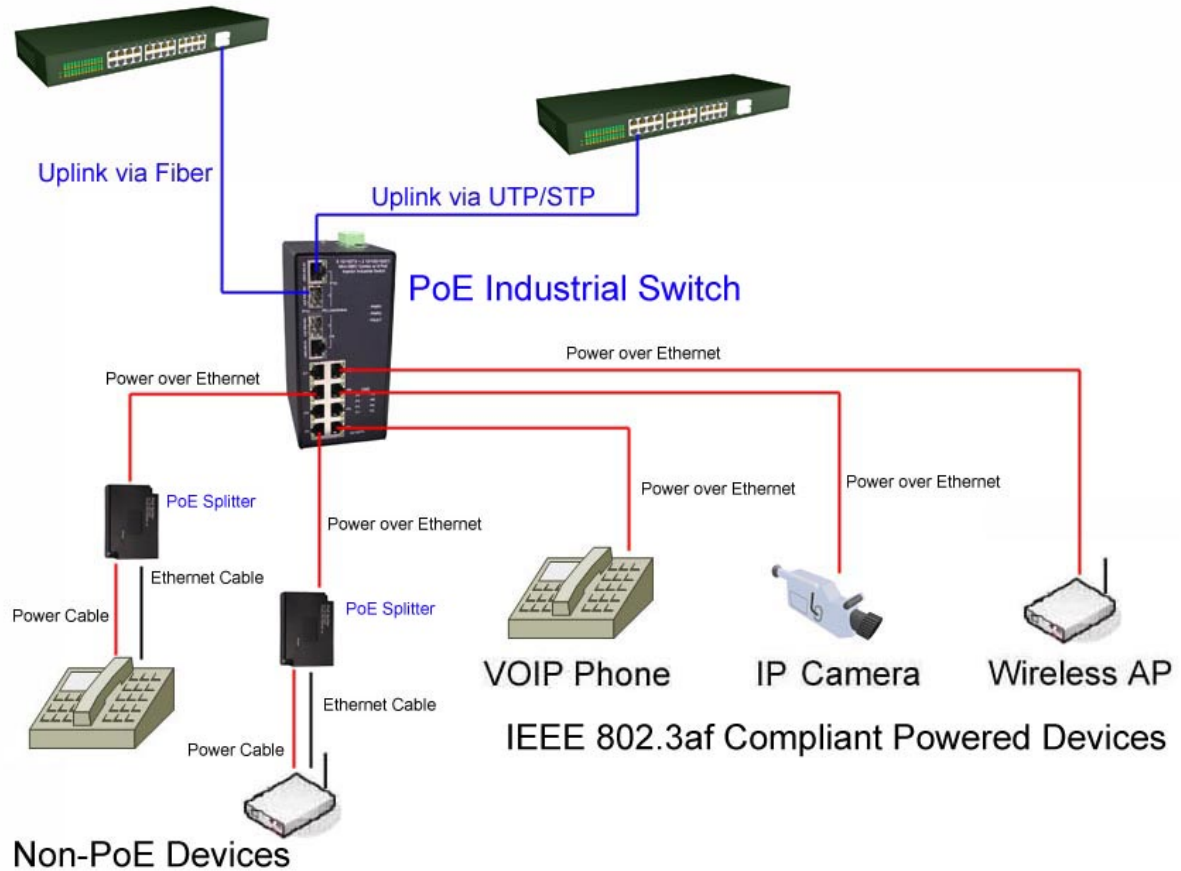
1. Remove the DIN-Rail from the industrial switch.
2. Install the wall mount plate on the rear panel of the industrial switch.



Network Application

This segment provides the samples to help user have more actual idea of industrial switch application. For a sample application of the industrial switch, see the figures below.





Troubleshooting

- Verify that you are using the appropriate power supply adapter. Do not use the power adapter with DC output higher than the power rating of the device.
- Select the proper UTP/STP cable to construct your network. Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100 Ω Category 3, 4 or 5 cable for 10Mbps connections, 100 Ω Category 5 cable for 100Mbps connections. Insure the length of any twisted-pair connection does not exceed 100 meters (328 feet).
- **Diagnosing LED Indicators:** The Switch can be easily monitored through panel LED's. The LED's will provide an easy way of detecting power or communication problems.
- If the Industrial switch LED indicators function normal and the connected cables are correct but the packets still cannot transmit, please check your system's Ethernet devices' configuration or status. The Ping test is a common method to check Ethernet devices connections on the network.

Technical Specification

<i>Standard</i>	<p>IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX/FX IEEE802.3ab 1000Base-T IEEE802.3z Gigabit fiber IEEE802.3x Flow Control and Back Pressure IEEE802.3af Power over Ethernet</p>
Protocol	CSMA/CD
Transfer Rate	<p>14,880 pps for 10Base-T Ethernet port 148,800 pps for 100Base-TX/FX Fast Ethernet port 1,488,000 pps for Gigabit Fiber Ethernet port</p>
Packet Buffer	1Mbits
MAC address	8K MAC address table
LED	<p>8 ports 10/100TX : Link/Activity (Green), Full duplex/Collision (Yellow), Power Feeding (Green) Giga port: Link/Activity (Green) Per unit: Power 1 (Green), Power 2 (Green), Fault (Red)</p>
Network Cable	<p>10Base-T: 2-pair UTP/STP Cat. 3, 4, 5, 5e cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5/5E cable EIA/TIA-568 100-ohm (100m) 1000Base-TX: 2-pair UTP/STP Cat. 5E cable EIA/TIA-568 100-ohm (100m)</p>
Optical cable	<p>Distance: Multi mode: 0 to 5 km, 1300 nm (50/125 μm, 800 MHz*km) 0 to 4 km, 1300 nm (62.5/125 μm, 500 MHz*km) Single mode: 0 to 40 km, 1310 nm (9/125 μm, 3.5 PS/(nm*km)) 0 to 80 km, 1550 nm (9/125 μm, 19 PS/(nm*km))</p>

	Min. TX Output: Multi mode: -20 dBm Single mode: 0 to 40 km, -5 dBm; 0 to 80 km, -5 dBm Max. TX Output: Multi mode: -14 dBm Single mode: 0 to 40 km, 0 dBm; 0 to 80 km, 0 dBm Sensitivity: -36 to -32 dBm (Single mode); -34 to -30 dBm (Multi mode)
Back-plane (Switching Fabric)	5.6Gbps
Packet throughput ability	8.3Mpps at 64bytes
Power Supply	External Power Supply: DC 48V Redundant power DC 48V with connective removable terminal block
Power Consumption	140 Watts (maximum)
Install	DIN rail kit and wall-mount ear for DIN-type cabinet install and wall mounting
Operating Temperature	-40°C ~ 75°C (Wide Operating Temperature model) -10°C ~ 60°C (standard model)
Operating Humidity	5% to 95% (Non-condensing)
Storage Temperature	-40°C to 85°C
Case Dimension	IP-30, 72 mm (W) x 105 mm (D) x 152mm (H)
EMI	FCC Class A CE EN61000-4-2/3/4/5/6/8/11/12 CE EN61000-6-2 CE EN61000-6-4

Safety	UL cUL CE/EN60950-1
Stability testing	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)