CONNECTION TECHNOLOGY SYSTEMS

IPS-3120-PoE++
Expansion Module
Managed Industrial PoE Gigabit Ethernet Switch

Quick Installation Guide

Version 0.91

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FCC Warning

This equipment has been tested and found to comply with the limits for a Class-A digital device, pursuant to Part 15 of the FCC Rules. These limitations are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if the equipment is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your local distributors or an experienced radio/TV technician for help.
- Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications to the equipment, which are not approved by the party responsible for compliance, could affect the user’s authority to operate the equipment.

Revision History

Version	Date	Description
0.90	20170727	First release
0.91	20171208	Modify the dimension

Table of Contents

1. OVERVIEW

This IPS-3120-PoE++ Expansion Module is an IP30 rated switch with integrated DIN-Rail mount. The industrial gigabit managed Ethernet switch has 8 IEEE 802.3at compliant ports (30W/port) and 4 dual-rate (100/1000) SFP slots, suitable for applications that require high bandwidth and long distance communication.
To prevent unregulated voltage, the IPS-3112-PoE++ supports both EFT and ESD protections which allow the PoE switch function in harsh environments, as well as supports power redundancy by dual-power design for reverse polarity protection. The built-in relay warning function alerts users when occurring power failures.

1.1 Package Contents

- PoE+ Switch x 1
- Quick Installation Guide x 1 and User manual CD x 1

Note:

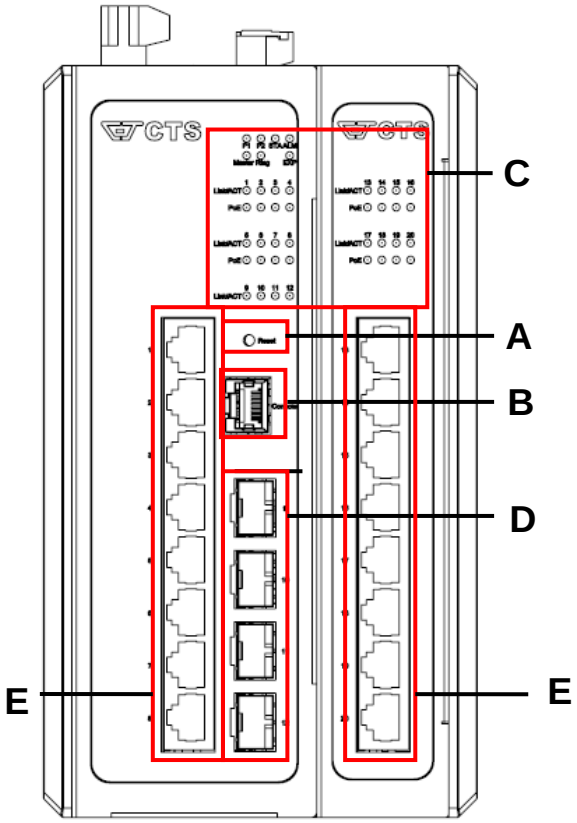
If the DC voltage is supplied by an external circuit, please use a protection device on the power supply input. The industrial Ethernet switch's hardware specs, ports, cabling information, and wiring installation will be described within this user manual.

1.2 Dimension

Model	IPS-3120-PoE++ Expansion Module
Dimension (without DIN rail clip)	115mm x 135mm x 200mm(WxDxH)
Weight	3Kg

1.3 Panel

Front Panel



A. Reset Button:

- Insert a pin or paper clip to press the Reset Button for 5 seconds to restart the system.
- Insert a pin or paper clip to press the Reset Button for 10 seconds to reset the device back to defaults.

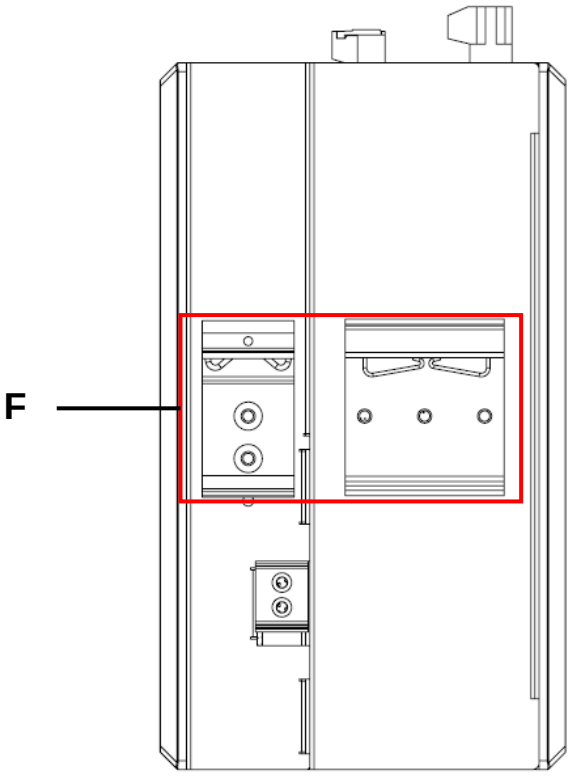
B. Console port (RJ-45 to RS-232)

C. LEDs

D. 100/1000Mbps SFP port(s)

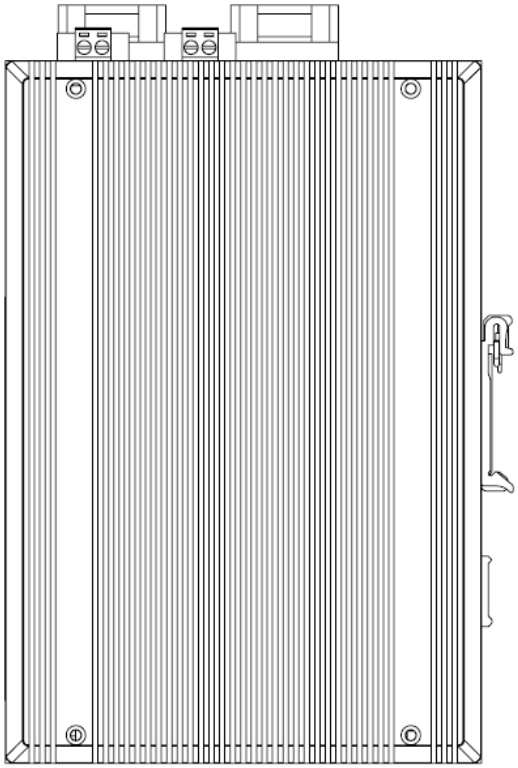
E. 10/100/1000Mbps RJ-45 port(s)

Rear Panel

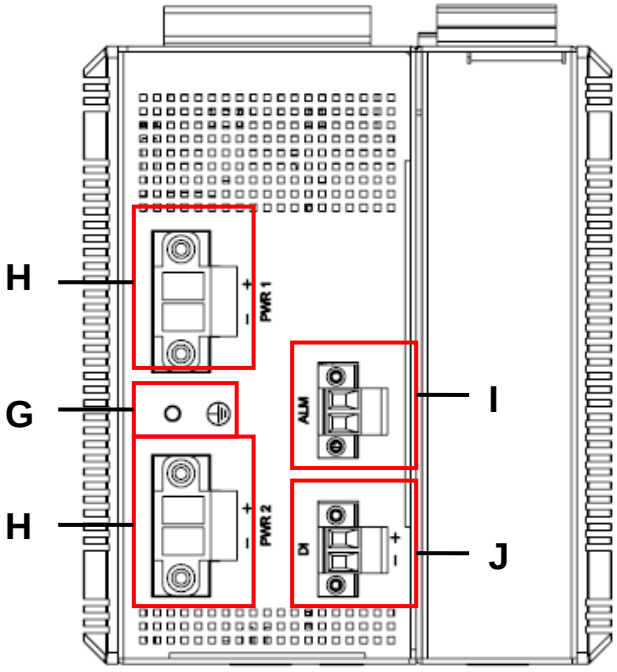


F. Din-Rail metal spring

Side Panel



Top Panel



G. Ground screw
H. Power input 1, Power input 2: The input voltage range is 48~54VDC, suggest to use 12 AWG wire gauge.
I. Relay Alarm: The default setting is normal open, the capacity of relay alarm is 1A/30VDC.
J. Digital Input: 12~54VDC.

2. LED Indicators

LED	Definition	Color	Operation
P1	Power	Off	Device is powered down.
		Green	Device is powered on.
P2	Power	Off	Device is powered down.
		Green	Device is powered on.
STA	System Status	Orange	System is booting up.
		Green	System is working normally.
		Green Blinking	When upgrade procedure is completed, the Status LED indicator will blink 3 times in green.
		Orange Blinking	When the system is set back to default factory setting, the Status LED indicator will blink 3 times in orange.
			When the system is restarted, the Status LED indicator will blink once in orange.
			System is undergoing upgrading procedure.
ALM	Alarm	Off	Power supplies link up.
		Orange	One of power supplies links down.
Master	Role	Off	The role of switch is slave.
		Green	The role of switch is master.
Ring	Function	Off	Ring Detection is disabled.
		Green	Ring Detection is enabled.
EXP	Expansion Module	Off	Expansion module is not installed.
		Green	Expansion module is installed and runs in good operation.
		Orange	Expansion module is installed, yet runs in abnormal operation.
LINK/ACT	Port Status	Off	Port link is down
		Orange	Link is up and works at 10/100Mbps.
		Orange Blinking	Receiving and transmitting data.
		Green	Link is up and works at 1000Mbps.
		Green Blinking	Receiving and transmitting data.
PoE	Port Status	Off	PoE is disabled.
		Green	PoE is enabled and starts providing power.

3. Installation

To properly install the PoE Gigabit Ethernet Switch, please follow the procedures listed below. Procedures covered in this chapter are described below in separate sections.

ATTENTION

Be sure to power off before installing or wiring your Managed Industrial PoE Gigabit Ethernet Switch.

Be sure to calculate the maximum possible current in each power wire and common wire. If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

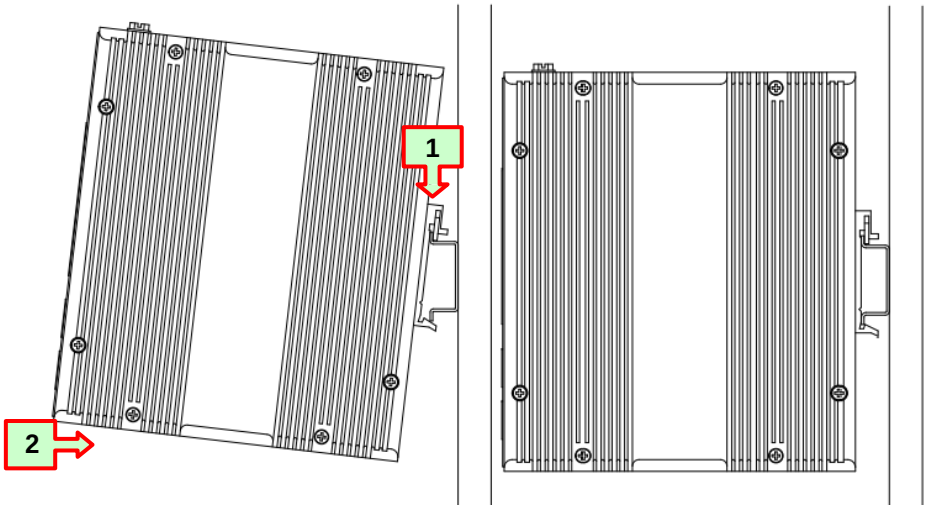
Be sure to read and follow important guidelines as below:

- Do not run signal or communications wiring and power wiring through the same wire conduit. Wires with different signal characteristics should be routed separately to avoid interference.
- It is recommended that wiring which shares similar electrical characteristics can be bundled together.
- Keep input wiring and output wiring separate and label the wiring to all devices in the system if necessary.

3.1 DIN-Rail Mounting

Mounting steps:

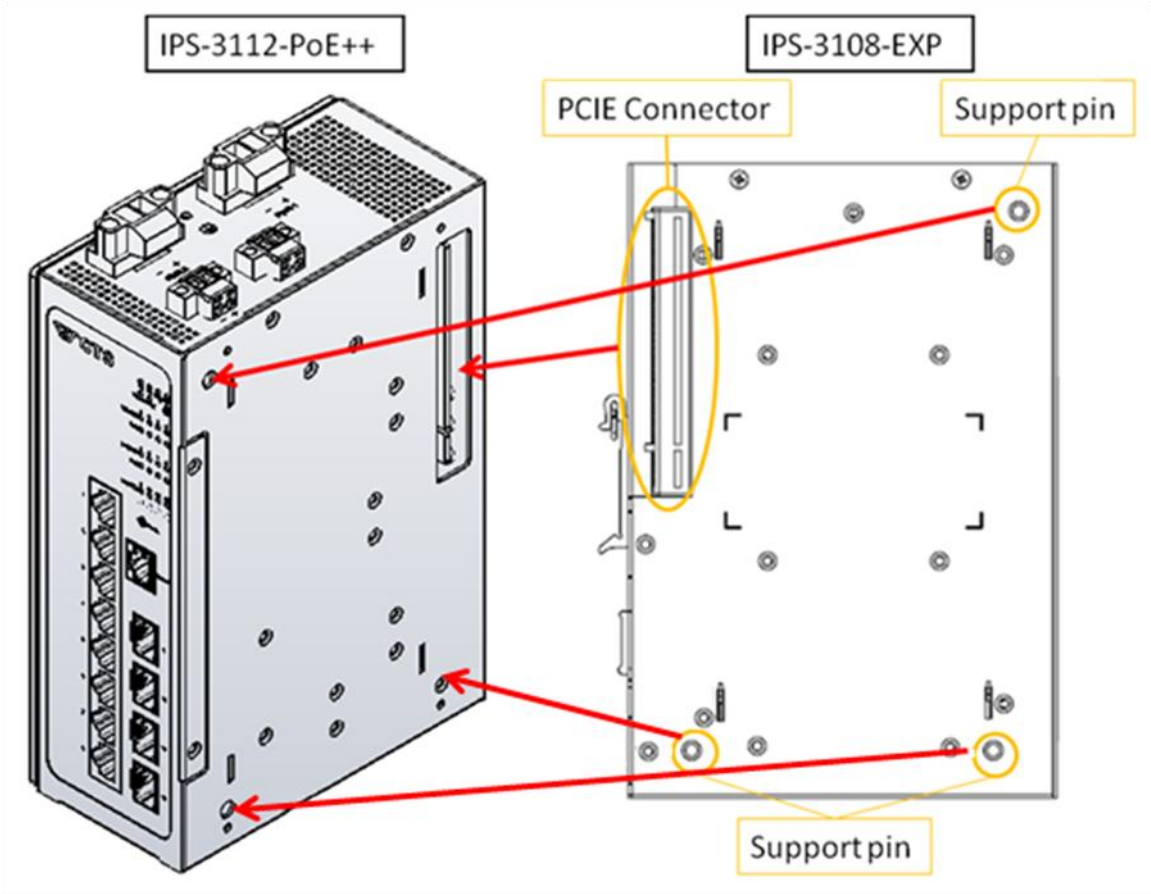
1. Hook the unit onto the din-rail.
2. Push the bottom of the unit towards the din-rail until it locks in place.

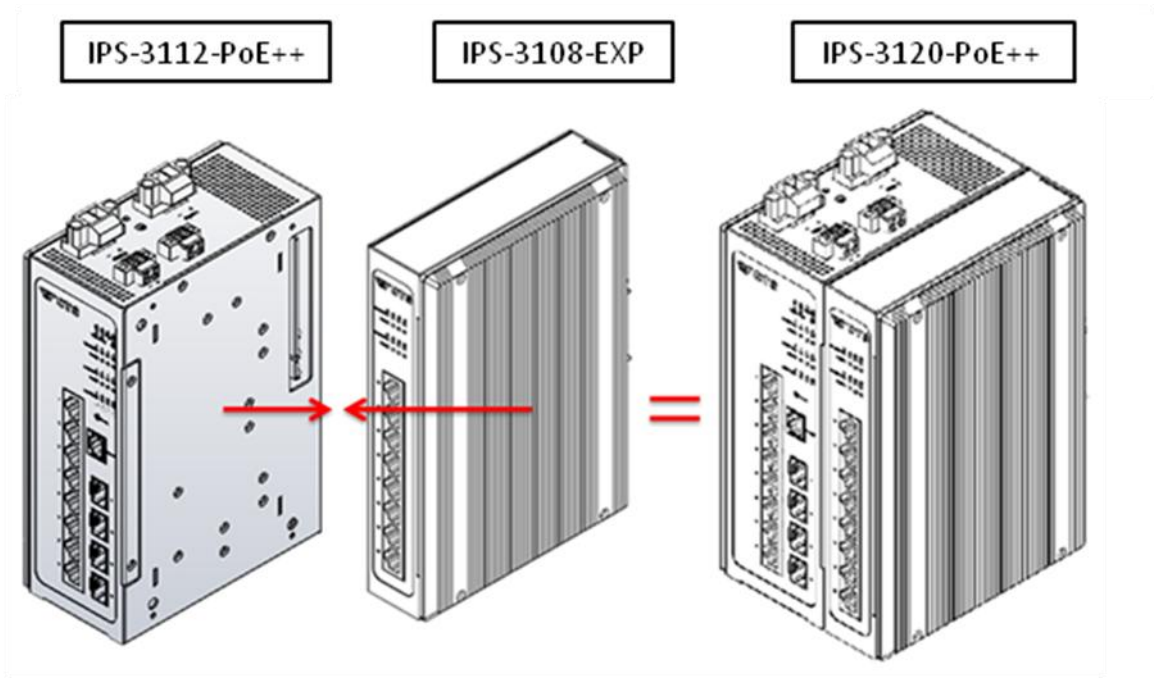


3.2 Assemble and Disassemble IPS-3120-PoE++ Expansion Module

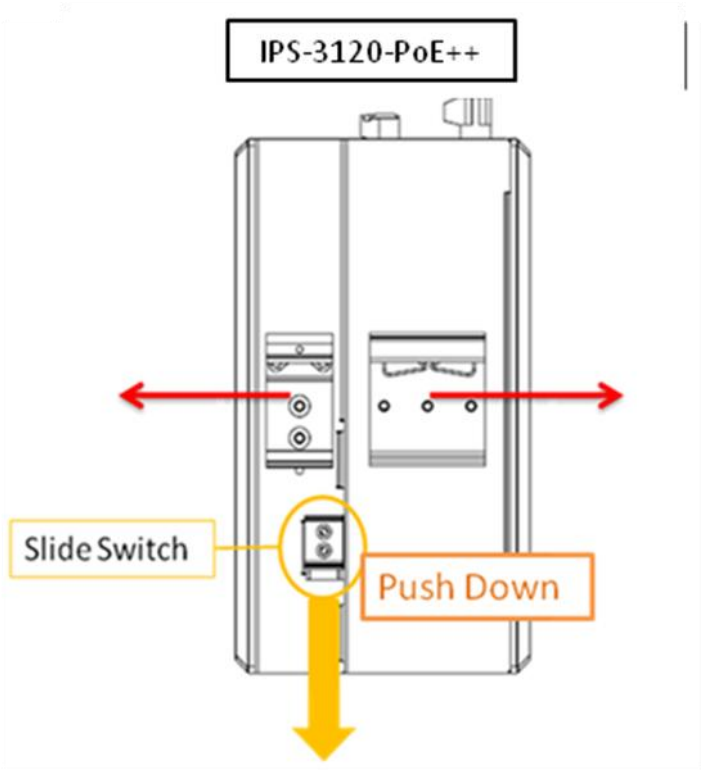
Combine two models into one model.
If you want to use both your IPS-3108-EXP and IPS-3112-PoE++ as an IPS-3120-PoE++.
Dock IPS-3108-EXP into the IPS-3112-PoE++ as shown in the illustration below.

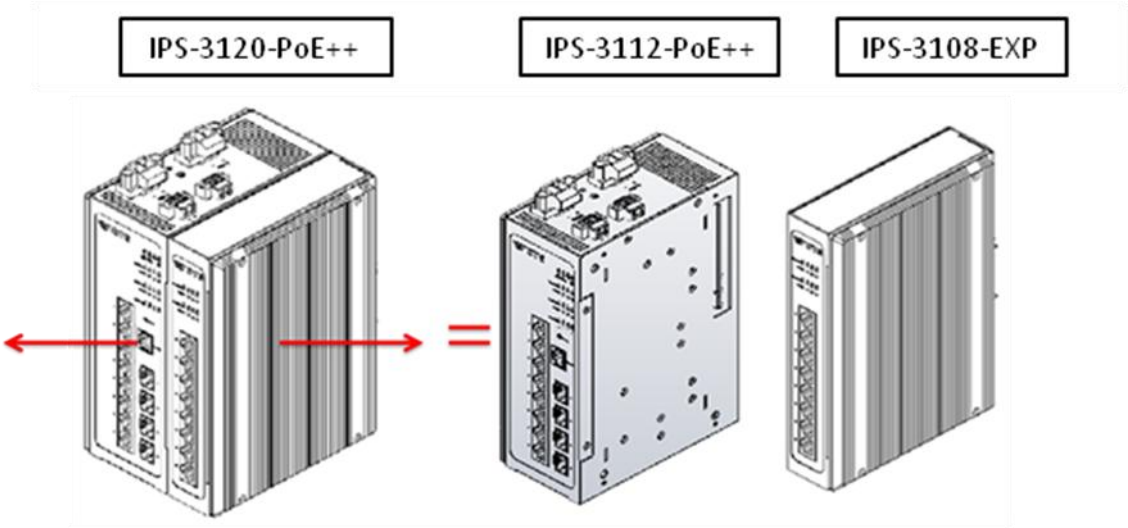
Assemble: 1 PCIE connector and 3 support pins on the IPS-3108-EXP aligned with the corresponding holes on the IPS-3112-PoE++, and then close together, when hears the click sound, that has been completed close, 2 devices will combine into IPS-3120-PoE++ Expansion Module.





Disassemble: There is a slide switch on the rear side of the IPS-3112-PoE++, push the slide switch down to the bottom, both hands hold IPS-3112-PoE++ and IPS-3108-EXP respectively, and separate it, then it restored to 2 devices.





3.3 Powering the Managed Industrial PoE Gigabit Ethernet Switch

The Managed Industrial PoE Gigabit Ethernet Switch can be used with DC power 48-54 VDC with the terminal block. The terminal block is located on the upper panel of the Managed Industrial PoE Gigabit Ethernet Switch. Before powering the Managed Industrial PoE Gigabit Ethernet Switch, please make sure that network cables and power cables are securely connected.

ATTENTION

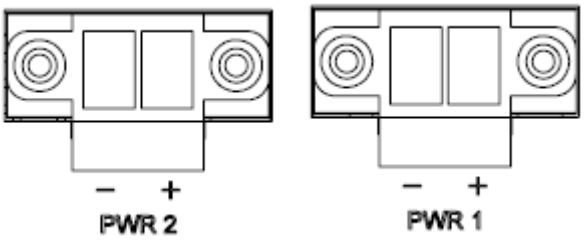
Before connecting the Managed Industrial PoE Gigabit Ethernet Switch to the DC power inputs, make sure the DC power source voltage is stable.

Wiring the terminal blocks

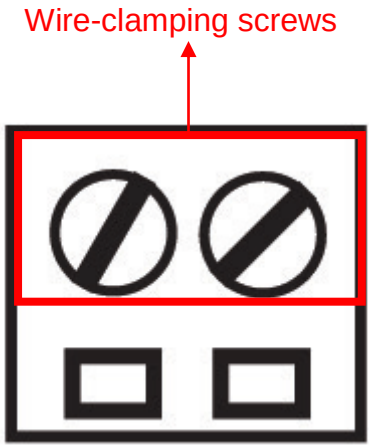
PWR1 and PWR2 power input are two pairs of contacts on the terminal block for power redundancy purpose. The redundant power supply will take over seamlessly when one power source is down to protect your device or network from the loss of power.

Power Input Configuration

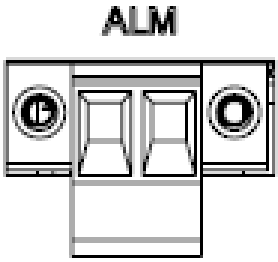
Insert the positive and negative wires into the “+” and “-” contacts on the terminal block. The input voltage range is 48~54VDC, suggest to use 12 AWG wire gauge.



Tighten the wire-clamping screws to fix DC wires by using a flat-head screwdriver.



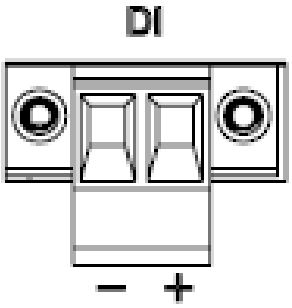
Relay Alarm Output Configuration
Relay alarm has 2 contacts on the terminal block used to connect alarm devices such as speakers or LEDs to alert users when the redundant power or a port link is disconnected. The default setting is normal open and the capacity of relay alarm is 1A/30VDC.



Tighten the wire-clamping screws to fix alarm-device wires by using a flat-head screwdriver as above.

Digital Input (DI) is a pair of digital input connection on the terminal blocks used to detects if a voltage is above/below a specific threshold.

Digital Input Configuration
Insert the positive and negative wires into the “+” and “-” contact on the terminal blocks.



Tighten the wire-clamping screws to fix the wires by using a flat-head screwdriver as above.

Note: *If there is no power redundancy, the relay alarm is not available.*

4. Web Console Configuration

Web Console Configuration Information

Default IP address: **192.168.0.1**

Default Login Account: **admin**

Default login Password:

Notes: By default, the password is not enabled. Press "Enter" key of the computer keyboard directly.

5. Trouble Shooting

It is easy to use and maintain this Industrial PoE Gigabit Ethernet Switch. The procedures are suggested when you want to identify faults, perform hardware replacement and firmware upgrading.

5.1 Fault Identification

Identifying faults can greatly reduce the time required to find the problem and solution. Users may perform local or remote checks to find the problems.

- Verify you have the right power cord or adapter. Never use a power supply or adapter with a non-compliant DC output voltage or it will burn the equipment.

- Select the proper UTP or STP cable in order to construct the network. Use an unshielded twisted-pair (UTP) or shield twisted-pair (STP) cable for RJ-45 connections: 100Ω Category 5e for 10M/100Mbps.

Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

- Diagnosing LED Indicators: To assist in identifying problems, the switch can be easily monitored with the LED indicators which help to identity if any problems exist.
  - Please refer to the LED Indicators section for LED light indication.

- If the power indicator LED does not turn on when the power cord is plugged in, the user may have a problem with the power cord. Check for loose power connections, power losses or surges at the power outlet.
  - Please contact us for technical support service, if the problem still cannot be resolved.

- If the industrial switch LED indicators are normal and the connected cables are correct but the packets still cannot transmit, please check the system's Ethernet devices' configuration or status.

5.2 Hardware Replacement Procedures

ATTENTION

The Industrial PoE Gigabit Ethernet Switch contains no user-serviceable parts. DO NOT, UNDER ANY CIRCUMSTANCES, open and attempt to repair it.

Failure to observe this warning could result in personal injury or death from electrical shock.

Failure to observe the above warning will immediately void any Warranty.

6. Download URLs

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