IP-POE16 / IP-POE24

User manual

User Manual

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Regulatory Information

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

For Pluggable Equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.

WARNING: The mains plug is used as disconnect device, the disconnect device shall remain readily operable.

The Product is designed for IT Power Distribution System.

NOTE: (1) The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. (2) To avoid unnecessary radiation interference, it is recommended to use a shielded RJ45 cable.

FCC Statement

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 limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.

Caution!
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: (1) The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. (2) To avoid unnecessary radiation interference, it is recommended to use a shielded RJ45 cable.

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Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into “Warnings” and “Cautions”

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

	
Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

Warnings

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- While using this product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 100~240 VAC or 12 VDC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.
- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Thank you for purchasing our product. If there is any question or request, please do not hesitate to contact the dealer.

The figures in the manual are for reference only.

This manual is applicable to the models listed in the following table.

Model
IP-POE16
IP-POE24

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Chapter 1 Product Overview

1.1 Introduction

IP-POE16/IP-POE24 is a 16/24-Port 10/100Mbps + 2-Port Gigabit TP/SFP Combo Unmanaged PoE Switch. It provides 16/24 10/100Mbps auto-negotiation RJ45 ports and 2 Gigabit TP/SFP combos.
IP-POE16/IP-POE24 (Ports 1-16/24) supports IEEE 802.3af PoE (15.4W) and IEEE 802.3at PoE+ (30W) powering. The whole PoE output is 230W (DS-3E0318P-E) and 370W (DS-3E0326P-E). By using Cat 5 twisted pair, the device can provide data and power for APs, IP cameras, IP phones, and other PoE devices. Moreover, with using Cat 5e Ethernet cable and enabling extend mode, the transmission distance of data and power can be as long as 250m.

1.2 Package Contents

Open your package and check the followings.

Item	Number
Switch	1
Power cord	1
Footpads	4
User Manual	1
Screws	8
L-shaped brackets	2

If any item is incorrect, missing, or damaged, please keep the original package and contact the vendor for replacement immediately.

1.3 Front Panel

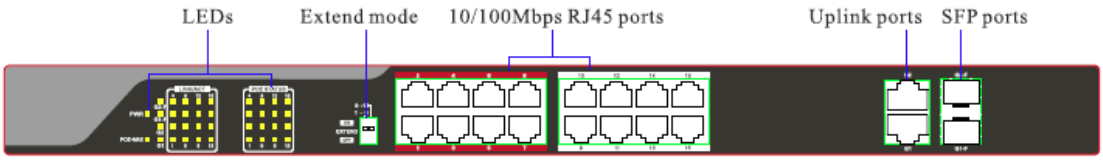

Figure 1.1 IP-POE16

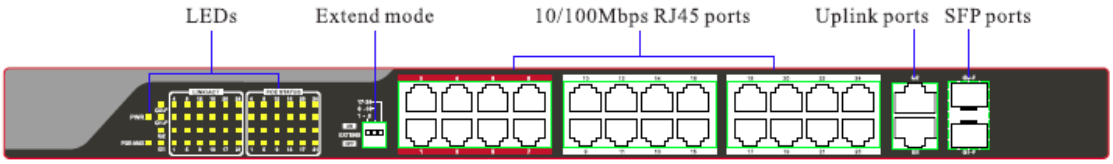

Figure 1.2 IP-POE24

Table 1.1 Description of LEDs

LED	Status	Description
PWR	Solid	The device is connected to the power supply properly.
	Off	The device is connected improperly or not connected to the power supply.
LINK/ACT	Solid	The corresponding port is connected properly.
	Blinking	The corresponding port is transmitting data.
	Off	The corresponding port is connected improperly or not connected.
POE STATUS	Solid	The corresponding port is connected with a PD (Powered Device) and powers the PD properly.
	Blinking	The PoE output of the corresponding port exceeds 30W.
	Off	The corresponding port is no PoE power output or no PD connected.
POE-MAX	Solid	The PoE power gets to the alarm value, and the available PoE power is less than 6W.
	Blinking	The PoE power gets to the maximum.
	Off	The PoE power works properly, and the available PoE power is more than 6W.
G1/G2	Solid	The corresponding port is connected.
	Blinking	The corresponding port is transmitting data…
	Off	The corresponding port is connected improperly or disconnected.
G1-F/G2-F	Solid	The corresponding port is connected properly.
	Off	The corresponding port is connected improperly or not connected.

*If G-F port (G2-F/G2-F) is connected, LEDs of G (G1/G2) ports will not light.

➘ **Extend Mode**

Details for enabling extend mode:

Status	Status	Description
EXTEND 1-8	Default	Ports 1-8: 100M
	ON	Ports 1-8: 10M with Extend Mode being enabled
EXTEND 9-16	Default	Ports 9-16: 100M
	ON	Ports 9-16: 10M with Extend Mode being enabled
EXTEND 17-24	Default	Ports 17-24: 100M
*Only for IP-POE24	ON	Ports 17-24: 10M with Extend Mode being enabled

Cautions

1. To guarantee the extend mode performance, please use Cat 5e or better Ethernet cable and configure the speed and duplex of the remote device to be "Auto Negotiation".

2. If Extend mode is disabled, the transmission distance of PoE powering and data is up to 150m by using Cat 5e or better Ethernet cable.

➘ **RJ45 ports & SFP combos**

Model	10/100Mbps RJ45 ports	10/100/1000Mbps RJ45 ports	1000Mbps SFP combos (G1-F/G2-F)
IP-POE16	16	2	2
IP-POE24	24	2	2

Note that:

1. Ports 1-8 are with high priority by default, which take advantage over other ports to process key data or video data.

2. Ports 1-16/24 support IEEE 802.3af and IEEE 802.3at PoE power;

3. When SFP combos (G1-F/G2-F) and G1/G2 port are connected, SFP combos will get priority over G1/G2 to work.

4. SFP module is not included in the device packaging. Please prepare by yourself if needed.

1.4 Rear Panel

The rear panels of IP-POE16/IP-POE24-E are similar. Here take IP-POE24 as a guide.

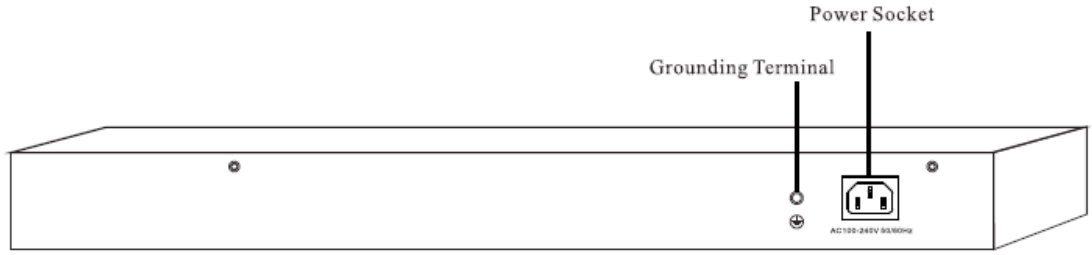

Figure 1.2 IP-POE24

➘ **Power Socket**

Used for connecting the included power cord for power supply. Please use the included power cord to connect the device to power supply.

➘ **Grounding Terminal**

Used for connecting the grounding cable for lightning-resisting. The grounding details refer to Section **2.3 Grounding**

Chapter 2 Device Installation

(Here IP-POE24 is taken as an installation guide, which also applies to IP-POE16.)

2.1 Installation Notes

To guarantee device longevity and your personal safety, please follow notes below.

Safety Alert

- Wear antistatic gloves while installing, and connect the device to power after finishing other installations.
- Use the included power cord to power the device.
- Make sure the input voltage matches the value which is marked on the device's label.
- Place the device in a well-ventilated and dry environment.
- Do not open the cabinet of the device.
- Disconnect the device from the power supply if cleanup is required for the case.
- Position the device away from strong current or electro-magnetic fields.

 **Cautions**

There is a seal covering one of the screws in the case of the device. In the event a repair is needed, please keep this seal intact. The user should not break the seal without permission of the service agent, to avoid a warranty voiding situation.

Environmental Requests

➘ **Temperature/Humidity**

Item	Temperature	Humidity
Operation Environment	32°F – 104°F	10% - 90% RH (non-condensing)
Storage Environment	-40°F -158°F	5% - 90% RH (non-condensing)

➘ **Antistatic Precautions**

Dust may lead to electrostatic absorption. To protect the device from static electricity harm, please pay attention to the following:

- Keep the device environment air clean. (A regular dusting is necessary)
- Make sure the device is grounded well.

➘ **Lightning Protection**

During a lightning storm, a sudden current may damage the device. To protect the device from lightning strike or strong current, please:

- Make sure the device, the installation desktop/rack and power outlet on the wall all are well-grounded.
- Cable the device properly; and if you need to cable outdoors, it is advisable to set up with a signal lightning arrester.

➘ **Mounting Standards**

No matter whether it is rack-mounting or desktop-mounting, follow the instructions below.

- The rack/desktop is stable and sturdy enough.
- Place the device in a clean, dry and well-ventilated environment. Keep at least 10cm free on all sides for cooling.
- Do not place any heavy or big size object on the device.
- Keep at least 1.5cm vertical distance between each device while installing it an equipment rack.

Tools

Things you'll need but should be prepared by yourself.

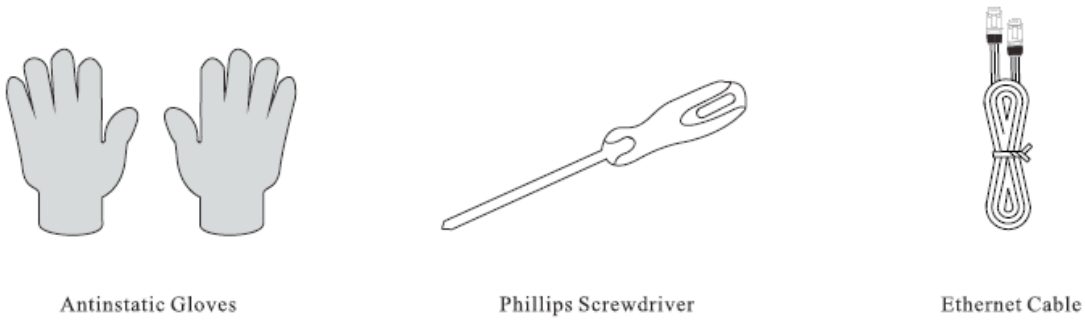

Figure 2.1 Installation Tools

2.2 Installation

The device supports two types of installation: rack-mounting and desktop-mounting. Install your device according to the tools you have.

Rack-mounting

You can install the device in a standard 19-inch rack with the accessories (L-shaped brackets and screws) that come with the box.

1) Fix the rack on the ground, stable and level; and ground the device well.

2) Fix L-shaped brackets to the device with screws. (Shown as below)

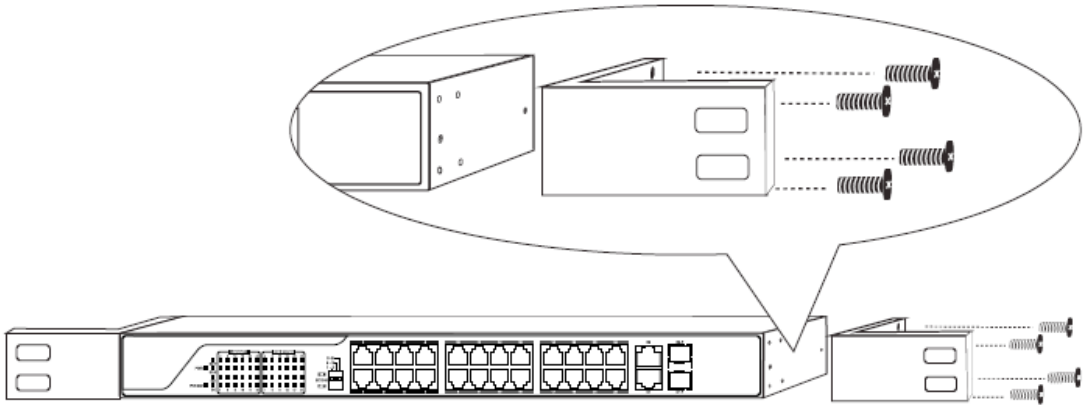

Figure 2.2 L-shaped bracket installation

3) Adjust the device to a nice height and fix the device to the rack with screws (self-prepared). (Shown as below)

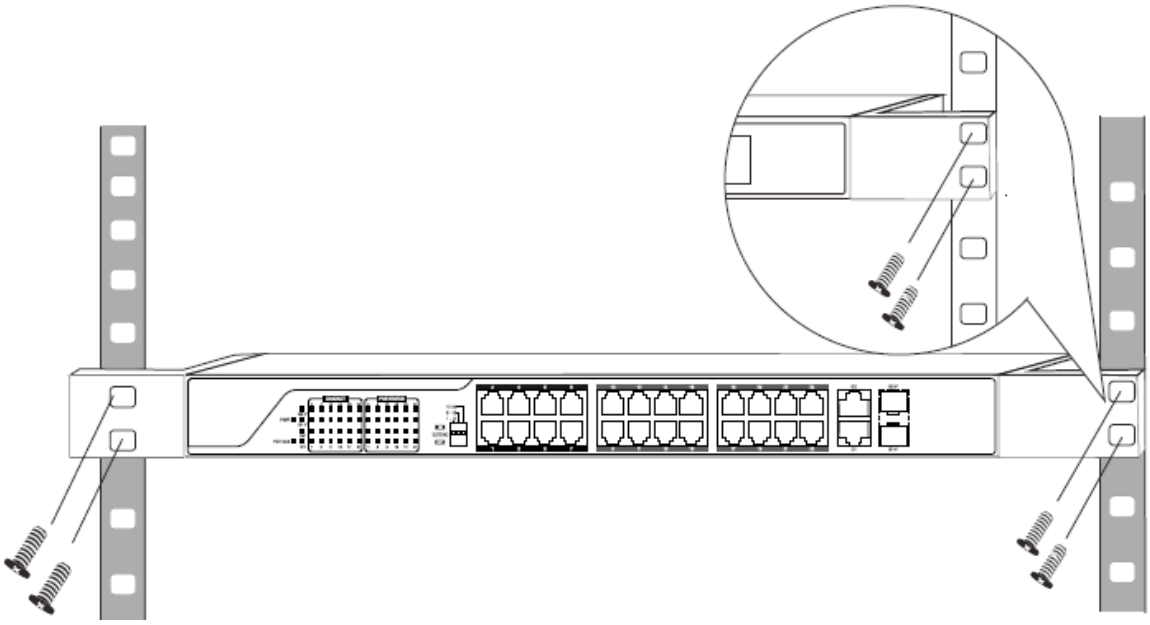

Figure 2.3 Fix to the rack

Desktop-mounting

Also, you can install the device on a desktop.

1) Place the device bottom on a stable and flat desktop.

2) Paste the four footpad stickers to the corresponding four corners of the device bottom.

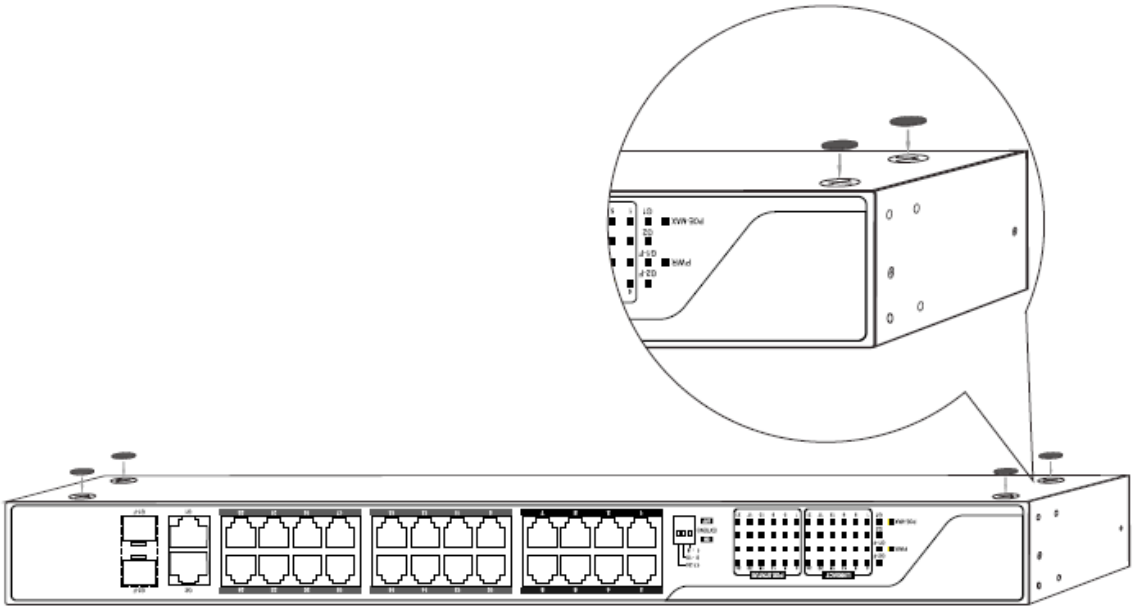

Figure 2.4 Paste the footpads

3) Then place the device correctly on the desktop.

2.3 Grounding

Grounding is not only important for lightning arresting and anti-interference, but for your own personal safety. Please select the proper method to ground your device.

With grounding bar

If a grounding bar is available at the installation site, follow either of the two installations to ground the device.

A. Connect to the Grounding Bar Directly

1) Connect one end of the grounding cable to the binding post on the grounding bar.

2) Connect the other end of the grounding cable to the grounding terminal and fix the screw.

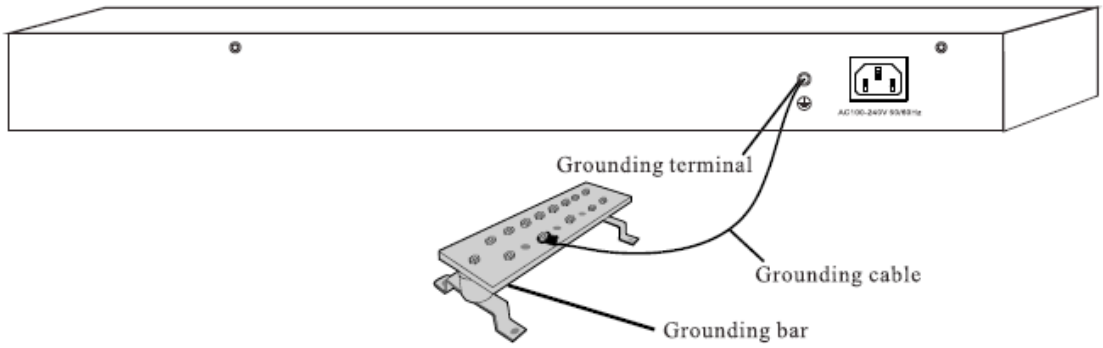

Figure 2.5 Connect to the grounding bar

B. Connect to another grounded device

1) Connect one end of the grounding cable to the grounding terminal of the grounded device and fix the screw.

2) Connect to the other end of the grounding cable to the grounding terminal of the device and fix the screw.

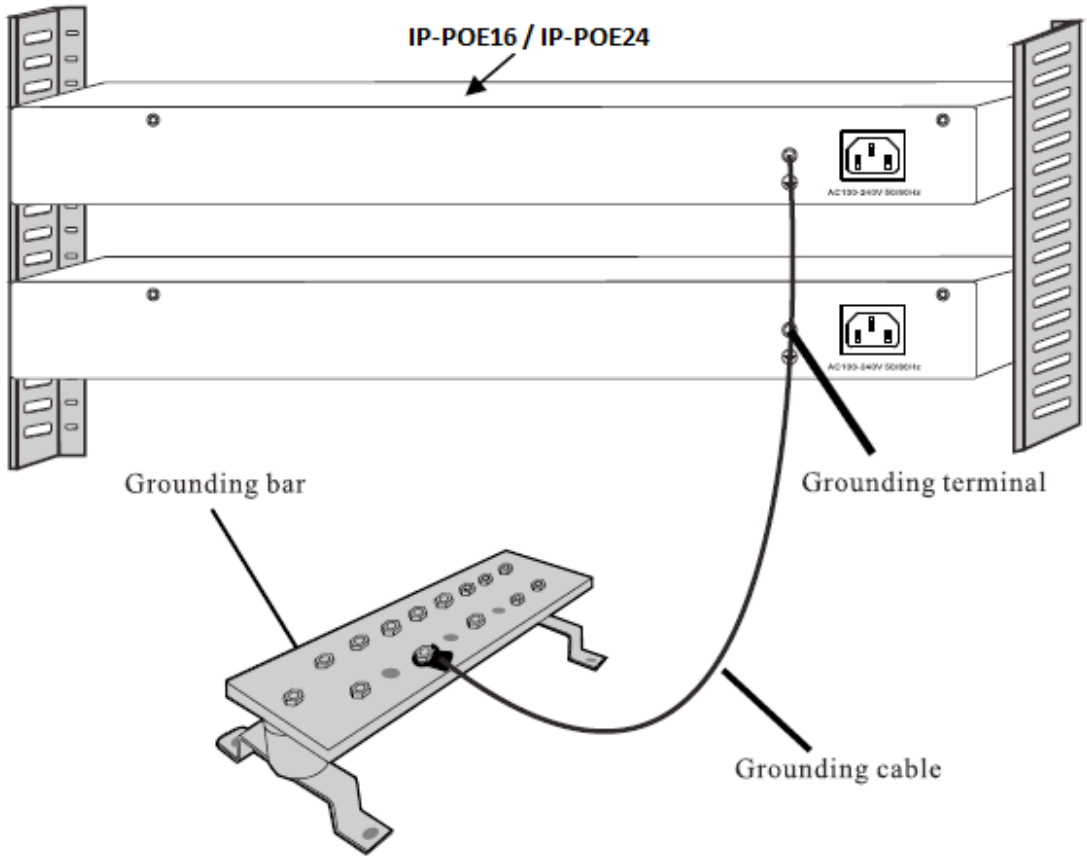

Figure 2.6 Connect to a grounded device

Cautions

Connect the grounding cable to the earth ground system in the equipment room. Do not connect it to a fire main or lighting fixture.

Without grounding bar

- If there is no ground bar but earth ground nearby and the grounding body is allowed to be buried, follow below steps:

1) Bury an angle steel or steel pipe (≥0.5m) into the earth.

2) Weld one end of the grounding cable to the angle steel or steel pipe and embalm the welding point.

3) Connect the other end of the grounding cable to the grounding terminal and fix the screw.

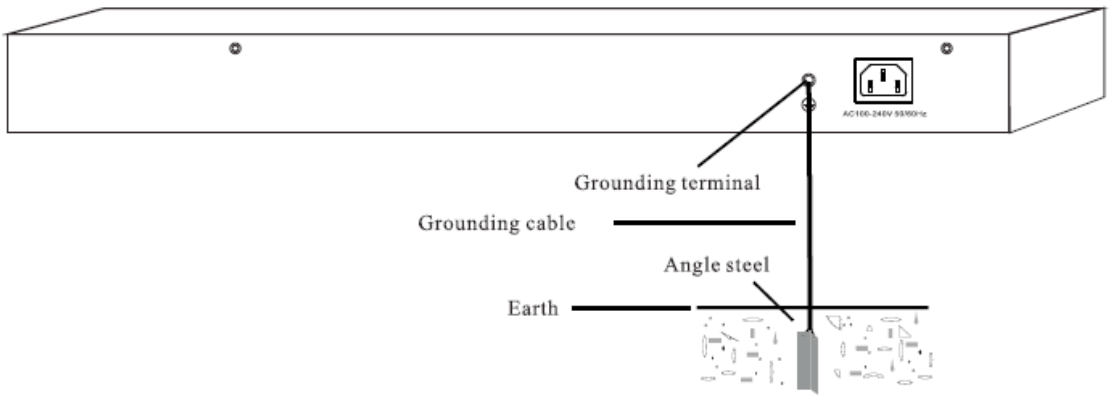

Figure 2.7 Ground with an angle steel

- If both ground bar and the conditions for burying the grounding body are not available, an AC-powered Ethernet switch can be grounded using the PE (Protecting Earth) wire of the AC power supply.

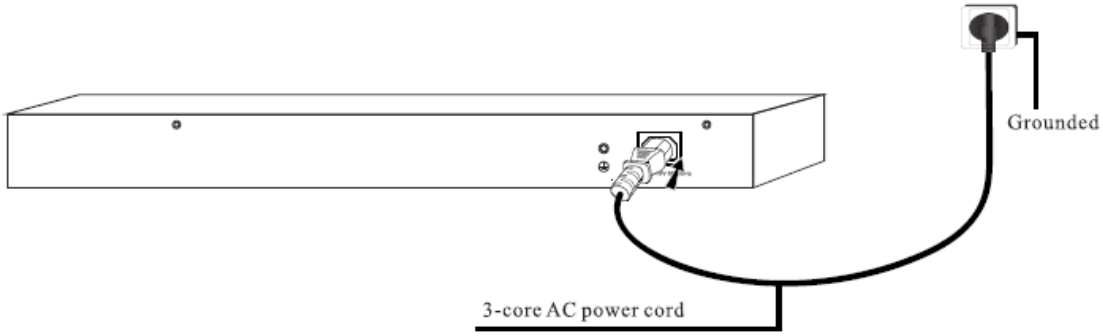

Figure 2.8 Ground with 3-core AC power cord

Cautions

Make sure that the PE wire of the AC power supply has been well grounded at the side of the power distribution room or AC power supply transformer.

Chapter 3 Physical Connection

3.1 Connect to RJ45 Ports

Connect the switch to a remote device with Ethernet cable via RJ45 port. G1 and G2 are uplink ports. Ports 1-16/24 support IEEE 802.3af and IEEE 802.3at PoE supply, and the PD can be wireless AP, IP phone or IP camera, etc. By default, PoE features of Ports 1-16/24 are enabled.

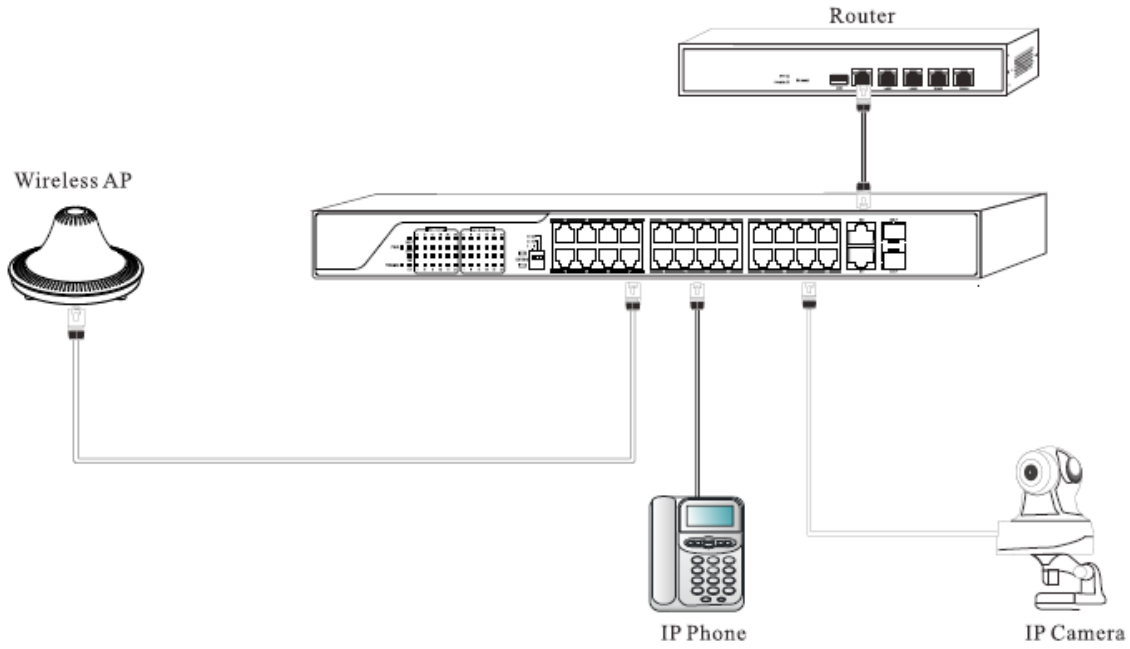

Figure 3.1 RJ45 port connection

***Note that**:*

1. *Cat 5e or better Ethernet cable is recommended. As each RJ45 port supports MDI/MDIX auto-negotiating, either parallel or crossover cable is available.*
2. *The device supports dynamic PoE supply. Namely, the device will power the PD properly and automatically.*

3.2 Connect to SFP Combo

1) Insert your optical module into the SFP port (G1-F/G2-F).

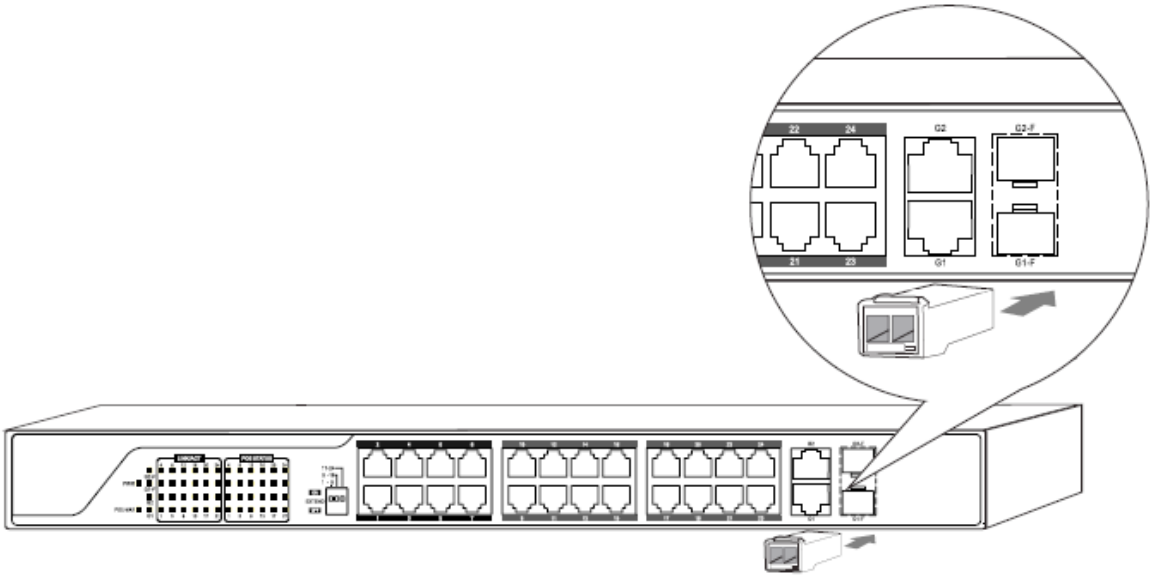

Figure 3.2 Insert optical module

2) Insert the remote optical fiber to the module correctly. (RX fiber into the port labeled RX on the module; and TX fiber into the TX)

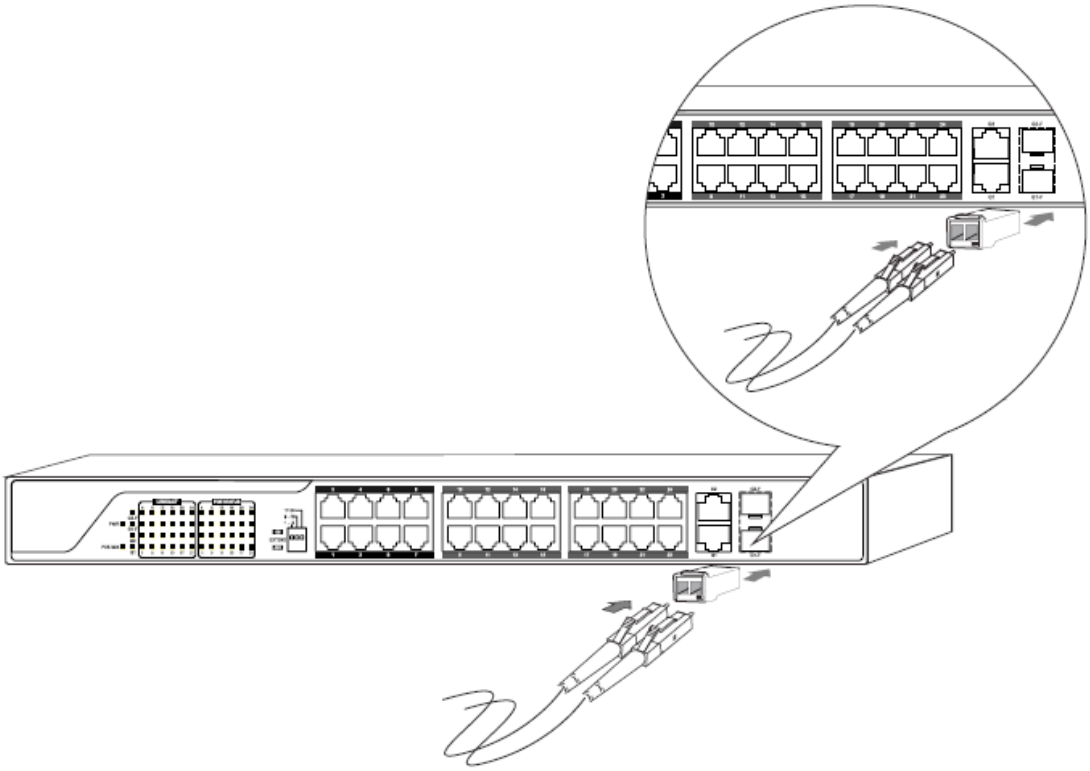

Figure 3.3 Insert optical fiber

3.3 Check the Cabling

Once installation is completed, check the cabling of the device as the following:

- The operating power supply should accord with rated input standard.
- Ports cablings and grounding cable are correctly connected.
- If there is outdoor cabling, connect a lightning protector to the cable before you plug the cable into the port.

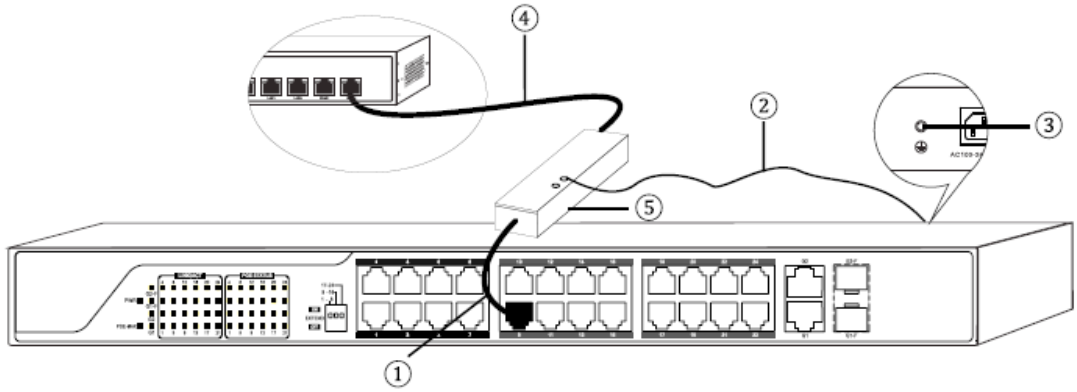

Figure 3.4 Lightning protector connection

① Ethernet cable ③ Grounding terminal ⑤ Lightning protector
② Grounding cable ④ Outdoor cabling

3.4 Connect to Power Supply

Please use the included power cord for power supply.

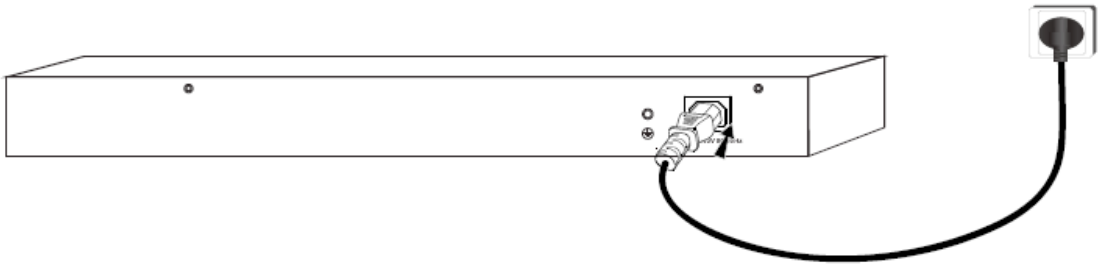

Figure 3.5 Power connection

Appendix Technical Specifications

Item		IP-POE24	IP-POE16
Interfaces	10/100Mbps RJ45	24	16
	10/100/1000Mbps RJ45	2 (G1, G2)	2 (G1, G2)
	1000Mbps SFP	2 (G1-F, G2-F)	2 (G1-F, G2-F)
	High priority ports	1-8	1-8
Performance	Store-and-forward	Supported	
	MAC Table	4k	4k
	MAC Learning	Auto-learning/ Auto-aging	
	Switching Capacity	8.8Gbps	7.2Gbps
PoE Power	PoE standard	IEEE 802.3af, IEEE 802.3at	
	PoE Powering Mode	Supports 8 pins powering, which means pins 1,2,3,6 and pins 4,5,7,8 can power simultaneously	
	PoE Port	1-24	1-16
	Max Port Output	30W	30W
	Max Total Output	370W	230W
Extend Mode		Supported	
Lightning-proof Ranking	RJ45 port lightning proof	4KV	
	Power source lightning proof	6KV	
Power Input		100-240V AC, 50/60Hz	
Physical Environment	Operating Environment	Temperature: 32°F-104°F Humidity: 10%-90% RH non-condensing	
	Storage Environment	Temperature: -40°F-158°F Humidity: 5%-90% RH non-condensing	
Transmission Speed		Ethernet: 10Mbps (Half Duplex) / 20Mbps (Full Duplex) Fast Ethernet: 100Mbps (Half Duplex) / 200Mbps (Full Duplex) Gigabit Ethernet: 2000Mbps (Full Duplex)	
Transmission Medium		Ethernet: Cat 3 or better UTP/STP Fast Ethernet: Cat 5 or better UTP/STP Gigabit Ethernet: Recommended to use Cat 5e or Cat 6 UTP/STP 1000Base-SX: MMF (Multimode optical fiber) 1000Base-LX: MMF (Multimode optical fiber) or SMF (Single Mode Fiber)	
Network Standard		IEEE 802.3, IEEE 802.3u, IEEE802.3ab, IEEE 802.3af, IEEE802.3at, IEEE 802.3x, IEEE802.3z	