Industrial 2-port Multi-Gigabit 802.3bt PoE++ Injector Hub

IPOE-270/IPOE-270-12V

User's Manual

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1. Package Contents

Thank you for purchasing PLANET Industrial 2-port Multi-Gigabit 802.3bt PoE++ Injector Hub, IPOE-270/IPOE-270-12V. In the following sections, the term "Industrial PoE++ Injector Hub" means the IPOE-270 or IPOE-270-12V.

Open the box of the Industrial PoE++ Injector Hub and carefully unpack it. The box should contain the following items:

Industrial PoE++ Injector Hub x 1	QR Code Sheet x 1	
Wall-mount Kit x 1	DIN-rail Kit x 1	RJ45 Dust Caps x 4

If any of these are missing or damaged, please contact your dealer immediately.

2. Product Specifications

Model	IPOE-270	IPOE-270-12V
Hardware Specifications		
Copper Ports	2-pair 10/100/1G/2.5G/5GBASE-T RJ45: ■ Data input port 1 and PoE output port 1 ■ Data input port 2 and PoE output port 2	
Connector	Removable 4-pin terminal block Pins 1 and 2 for Power 1; Pins 3 and 4 for Power 2	

LED Indicator	System:
	  Power 1 (Green)
	  Power 2 (Green)
	PoE Usage:
	  60W/120W/180W (Amber)
	802.3bt PoE++ Port:
	  PoE-in-use x 1 (Green: bt, Amber: at)	

Network Cable	Twisted-pair cable up to 100 meters (328ft) 10BASE-T: 4-pair UTP Cat. 3, 4, 5, 5e, 6 100BASE-TX: 4-pair UTP Cat. 5, 5e, 6 1000BASE-T: 4-pair UTP Cat. 5e, 6 2.5G/5GBASE-T: 4-pair UTP Cat. 6, 6A, 7	
Data Rate	10/100/1000/2500/5000Mbps	
Power Requirements	48~54V DC, redundant power with reverse polarity protection	12~54V DC, redundant power with reverse polarity protection

Power Consumption (Ethernet Full Loading)	**System ON without loading**
	  48V DC: 1.4 watts/4.7BTU
	  52V DC: 1.5 watts/5.1BTU
	  54V DC: 1.6 watts/5.4BTU
	
	Full loading with PoE
	  48V DC (120W PoE budget): 128 watts/436BTU
	  52V DC (180W PoE budget): 177 watts/603BTU
	  54V DC (180W PoE budget): 187 watts/638BTU
		System ON without loading
		  12V DC: 1.8 watts/6.1BTU
		  24V DC: 2.4 watts/8.1BTU
		  48V DC: 2.4 watts/8.1BTU
		  52V DC: 2.6 watts/8.8BTU
		  54V DC: 2.1 watts/7.1BTU
		Full loading with PoE
		  12V DC (60W PoE budget): 60 watts/204BTU
		  24V DC (120W PoE budget): 124 watts/423BTU
		  48V DC (120W PoE budget): 120 watts/409BTU

		52V DC (180W PoE budget): 188 watts/641BTU 54V DC (180W PoE budget): 188 watts/641BTU
Dimensions	41 x 70 x 115 mm (W x D x H)	
Weight	284g	387g
Enclosure	IP30 metal case	
Installation	DIN-rail kit and wall-mount kit	
ESD Protection	6KV	
Surge Protection	6KV	
Power over Ethernet		
PoE Standard	IEEE 802.3bt PoE++, 4-pair PSE Compatible with IEEE 802.3at PoE+ PSE	
PoE Power Supply Type	End-span + Mid-span	
Power Pin Assignment	End-span: 1/2 (-), 3/6 (+); Mid-span: 4/5 (+), 7/8 (-)	
Per PoE Port Output Power	95 watts	
PoE Power Budget (max.)	120W@48V DC input 180W@52V/54V DC input	60W@12V DC input 120W@24V/48V DC input 180W@52V/54V DC input
PoE DIP Switch	DIP switch for the following operation modes: ■ BT mode (Default) ■ Legacy and Force modes	
Number of devices that can be powered	2	
Standards Conformance		
Regulatory Compliance	FCC Part 15 Class A, CE	
Stability Testing	IEC 60068-2-32 (free fall) IEC 60068-2-27 (shock) IEC 60068-2-6 (vibration)	

Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3bz 2.5G/5GBASE-T IEEE 802.3at Power over Ethernet Plus IEEE 802.3bt Power over Ethernet Plus Plus
Environment	
Temperature	Operating: -40~75 degrees C Storage: -40~75 degrees C
Humidity	Operating: 5~90% (non-condensing) Storage: 5~90% (non-condensing)

3. Hardware Introduction

3.1 Device Front Panel

The front panels of the Industrial PoE++ Injector Hubs consist of Ethernet interfaces and LED indicators.
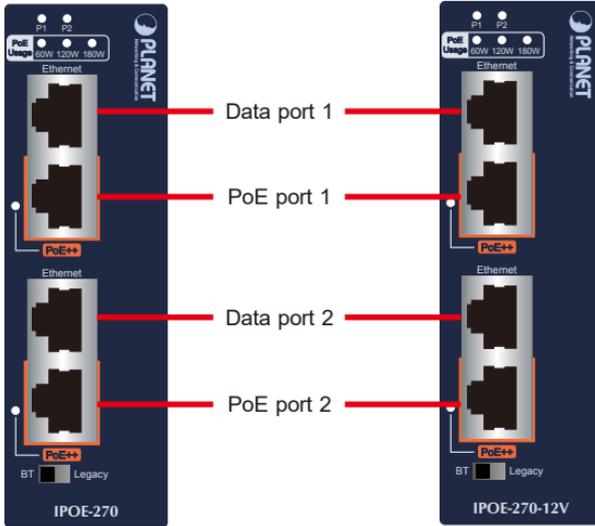
■ **Front View**

Figure 1: IPOE-270 Front View   **Figure 2:** IPOE-270-12V Front View

LED Definition

■ **System LEDs**

LED	Color	Function
P1	Green	Lights to indicate DC power input 1 has power.
P2	Green	Lights to indicate DC power input 2 has power.
PoE Usage	Amber	**60W, 120W, 180W** Lights to indicate the system consumes over 60-/120-/180-watt PoE power budget. Blinks to indicate the system consumes less 60-/120-/180-watt PoE power budget.

■ 802.3bt PoE++ TP Interface LEDs

LED	Color	Function
802.3bt PoE++ PoE-in-Use	Green	Lights to indicate that the port is providing 802.3bt PoE++ power to remote powered device.
		Off to indicate that the port is not providing PoE power to remote powered device.
	Amber	Lights to indicate that the port is providing 802.3at PoE+ power to remote powered device.
		Off to indicate that the port is not providing PoE power to remote powered device.

■ DIP Switch

PoE Mode	Description
802.3bt (Default)	The Standard mode is to provide power to the PD device that follows the IEEE 802.3af/at/bt standard.
Legacy	The Legacy mode supports Ultra PoE. It is to provide power to the PD devices that do not fully follow the IEEE 802.3af/at/bt standard.

⚠ Caution	The IPOE-270 series also supports Force Power Mode in the Legacy mode. If the output power of IPOE-270 series in the Legacy Mode is less than 1 watt for 20 seconds, the Force Mode will be enabled for 2 seconds. If the loading is still less than 1 watt, the Legacy Mode will be enabled again.

💣 Warning	The IPOE-270 series in the Force Mode will also provide a maximum 95-watt power to the PD. TO PREVENT THE DEVICES FROM DAMAGE, please make sure the remote devices support either the Legacy or Force Mode before turning the DIP switch to the Legacy Mode.

📝 Note	Adjust the DIP switch to the desired mode before powering on the IPOE-270 series.

3.2 Device Upper Panel

The upper panels of the Industrial PoE++ Injector Hubs consist of one terminal block connector within two power inputs.
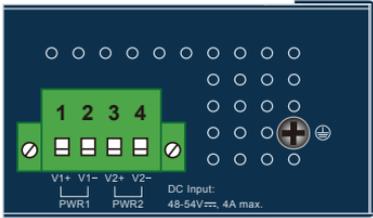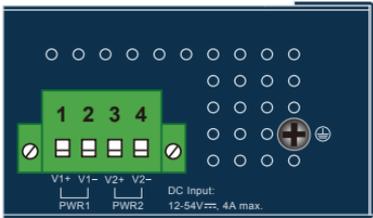

Figure 3: IPOE-270 Top View

Figure 4: IPOE-270-12V Top View

## 3.3 Wiring the Power Inputs

The terminal block connector on the top panel of Industrial PoE++ Injector Hub is used for two DC redundant power inputs. Please follow the steps below to insert the power wire.

⚠ Caution	When performing any of the procedures like inserting the wires or tightening the wire-clamp screws, make sure the power is OFF to prevent from getting an electric shock.

1. Insert positive and negative DC power wires into contacts 1 and 2 for POWER 1, or contacts 3 and 4 for POWER 2.
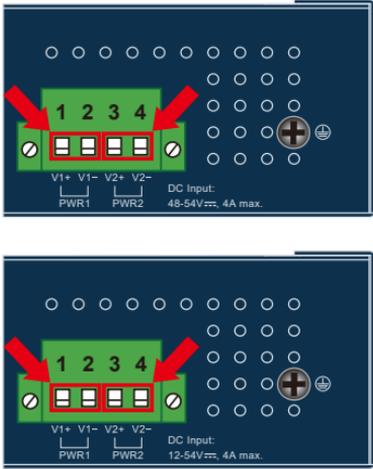
2. Tighten the wire-clamp screws for preventing the wires from loosening.


```
1    2    3    4
Power 1   Power 2
+    -    +    -
```
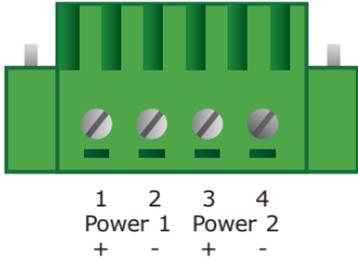
Note	The wire gauge for the terminal block should be in the range between 12 and 24 AWG.

Caution	PWR1 and PWR2 must provide exactly the same DC voltage for power load balance while operating with dual power input.

3.4 Grounding the Device

Users **MUST** complete grounding wired with the device; otherwise, a sudden lightning could cause fatal damage to the device.

⏚ **Earth Ground**
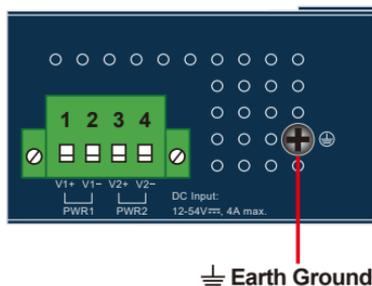
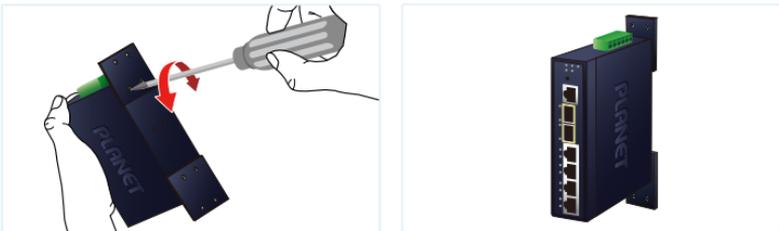| Note	EMD (Lightning) DAMAGE IS NOT COVERED UNDER WARRANTY.

4. Installation

This section guides you to installing the Industrial PoE++ Injector Hub on the DIN-rail and wall. Please read this chapter completely before continuing.
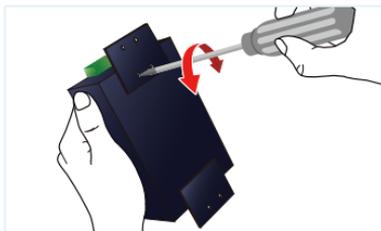
4.1 DIN-rail Mounting Installation

4.2 Wall-mount Plate Mounting

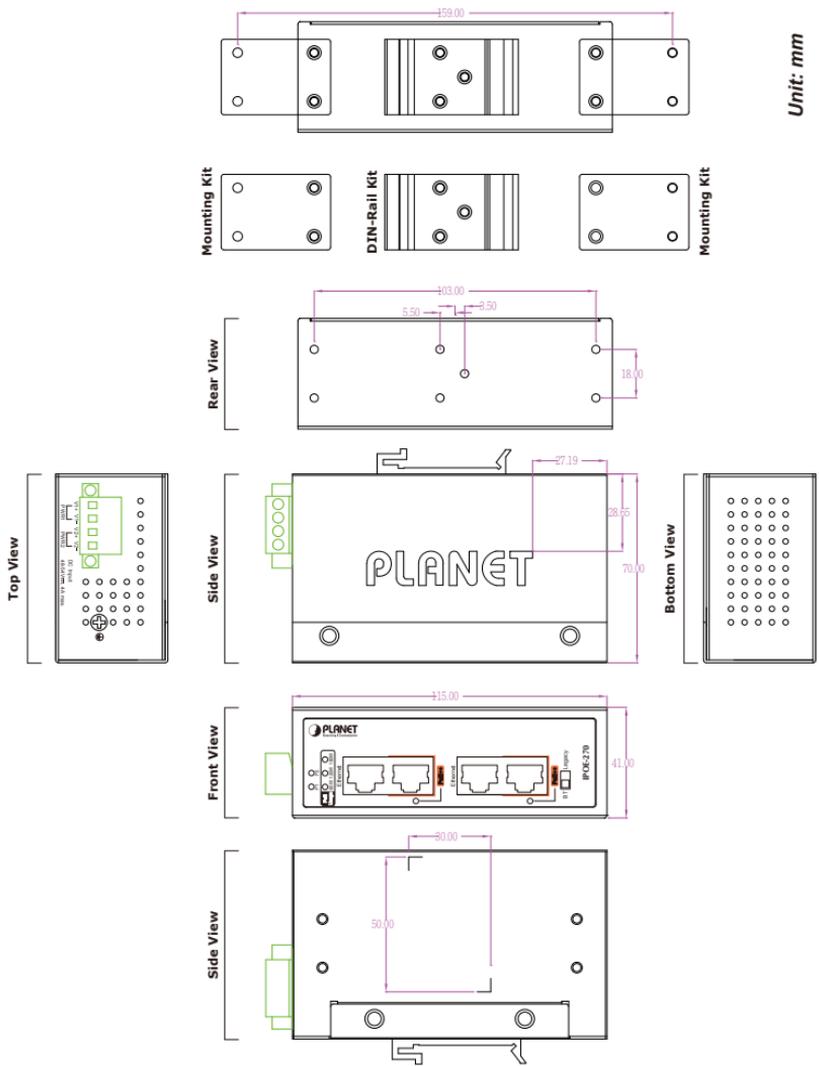## 4.3 Side Wall-mount Plate Mounting

⚠️ Caution	You must use the screws supplied with the wall-mounting brackets. Damage caused to the parts by using incorrect screws would invalidate your warranty.

5. Three-View Diagram

■ **IPOE-270**

Figure 5: IPOE-270 Three-View Diagram
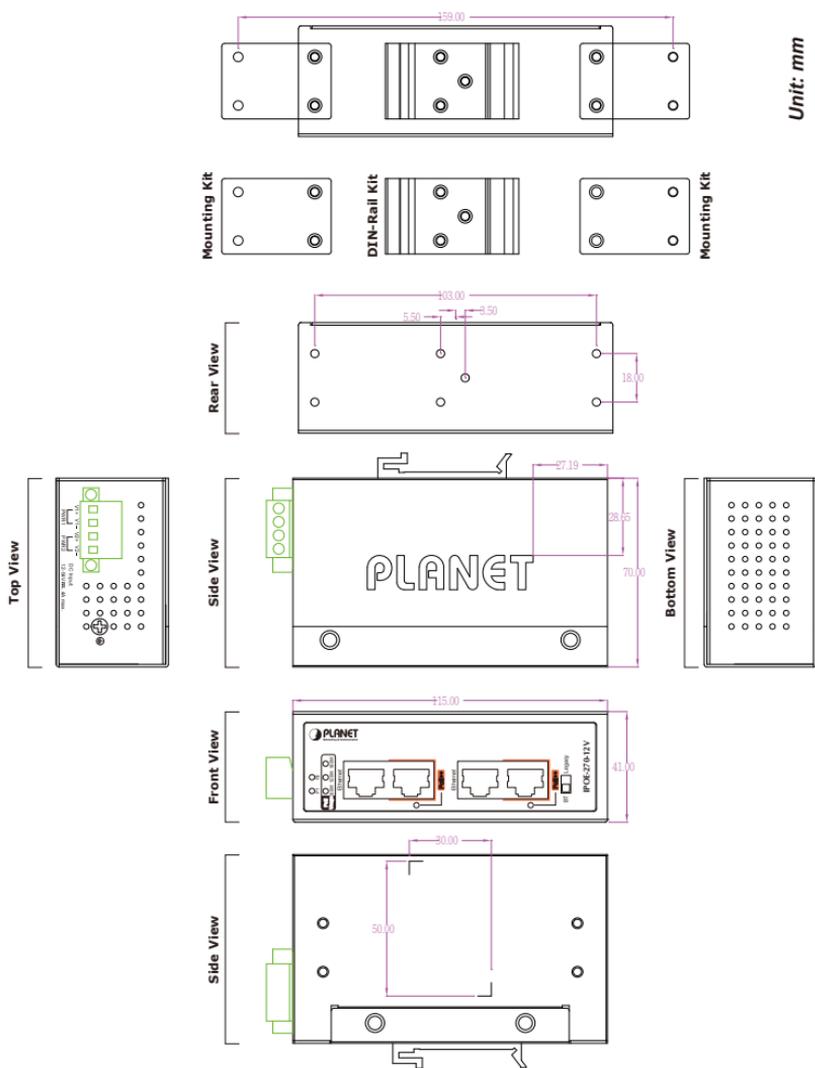
■ **IPOE-270-12V**

Unit: mm

Figure 6: IPOE-270-12V Three-View Diagram

6. Customer Support

Thank you for purchasing PLANET products. You can browse our online FAQ resource on PLANET web site first to check if it could solve your issue. If you need more support information, please contact PLANET support team.

PLANET online FAQs:
http://www.planet.com.tw/en/support/faq

Support team mail address:
support@planet.com.tw

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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.

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.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.