1. Package Contents

Thank you for purchasing PLANET IPOE-171 Single-port 10/100/1000Mbps series injector.

Model	LAN Port Speed	PoE Standard	PoE Budget
IPOE-171-60W	10/100/1000Mbps	IEEE 802.3at/bt	60 watts
IPOE-171-95W	10/100/1000Mbps	IEEE 802.3at/bt	95 watts

Please unpack the box of the device carefully, and the box should contain the following items:

- 802.3bt PoE injector x 1
- User's manual x 1
- Dust cap x 2
- Wall-mount Kit x 1

If any item is found missing or damaged, please contact your local reseller for replacement.

2. Product Specifications

Product		IPOE-171-60W	IPOE-171-95W
Hardware Specifications			
Interface	Input Port	1 x RJ45 STP Data In	
	Output Port	1 x RJ45 STP PoE (Data + Power) Out	
	Input Power Terminal Block	1	
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	
LED Indicators		System: Power 1 (Green), Power 2 (Green), Fault (Red) PoE Port: PoE-in-Use x 1 (Amber) PoE Usage: PoE Usage x 3 (Amber)	
Data Rate		10/100/1000Mbps	
Dimensions (W x D x H)		135 x 87.8 x 32 mm	
Weight		430g	470g
Power Requirements		DC 52~56V, 2A max.	DC 12~48V, 5A max.
Unit Output Voltage		DC 50~53V	DC 54V

Power Consumption	75 watts max.	120 watts max.
No. of devices that can be powered	1	
Installation	DIN-rail kit or wall-mount ear	
Alarm	Provides one relay output for power failure Alarm Relay current carry ability: 1A @ DC 24V	
Enclosure	IP30 slim type metal case	
Power over Ethernet		
PoE Standard	IEEE 802.3at/bt PSE	
PoE Power Output Budget	DC 50~53V / 60-watt PoE via 4-pair DC 50~53V / 30-watt PoE via 2-pair	DC 54V / 95-watt PoE via 4-pair DC 54V / 30-watt PoE via 2-pair
PoE Power Output	Max. 60W@1m cable Max. 51W@100m cable	-DC 24V~48V input: Max. 89.5W@1m cable Max. 75W@100m cable -DC 12V input: Max. 60W@1m cable Max. 52W@100m cable
PoE Power Supply Type	End-span + Mid-span	
Power Pin Assignment	Pair 1 End-span: 1/2 (-), 3/6 (+) Pair 2 Mid-span: 4/5 (+), 7/8 (-)	

PoE Mode	**Standard:** To provide power to the PD devices that follow the IEEE 802.3at/bt standard. **Legacy:** To provide power to the PD devices that do not fully follow the IEEE 802.3af/at/bt standard. Besides, the Legacy mode supports PoH and Ultra PoE.
Standards Conformance	
Standards Compliance	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3ab 1000BASE-T Gigabit Ethernet IEEE 802.3bt 4-pair Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3af Power over Ethernet
Regulatory Compliance	FCC Part 15 Class A, CE
Environment	
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C
Operating Humidity	5 ~ 90%, relative humidity, non-condensing
Storage Humidity	5 ~ 90%, relative humidity, non-condensing

Caution

1. As IEEE 802.3bt device provides high power, please use high-quality network cable and RJ45 connector.
2. The maximum PoE output power depends on the cable length, the quality of cable, and DC input voltage.

3. Product Outlook

3.1 Product Outlook

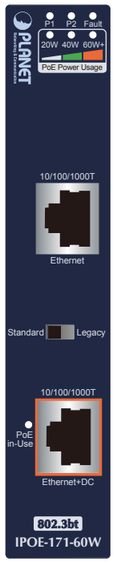

Figure 1: IPOE-171-60W outlook

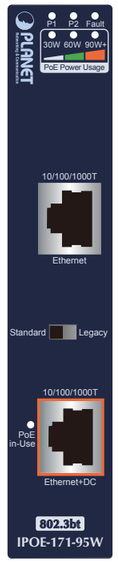

Figure 2: IPOE-171-95W outlook

IPOE-171-60W LED Indicators:

LED	Color	Function
P1	Green	Lights to indicate power 1 has power.
P2	Green	Lights to indicate power 2 has power.
FAULT	Red	Lights to indicate either power 1 or power 2 has no power.
PoE-in-Use	Amber	Lights to indicate the device is providing PoE power.
PoE Usage	Amber	● **Monitor DC input voltage:** When user powers on POE-171-60W, the injector will detect the DC input voltage and then PoE Usage LED will flash three times. 20W: Flashing three times means the DC input voltage is 48~50.9V. 40W: Flashing three times means the DC input voltage is 51~52.9V. 60W+: Flashing three times means the DC input voltage is 53~56V. ● **Monitor power usage:** **20W:** 1. Off to indicate the PoE usage is less than 9W. 2. Blinks to indicate that the PoE usage is around 10W to 19W. 3. Lights to indicate the PoE usage is around 20W to 29W. **40W:** 1. Blinks to indicate that the PoE usage is around 30W to 39W. 2. Lights to indicate the PoE usage is around 40W to 49W. **60W+:** 1. Blinks to indicate that the PoE usage is around 50W to 59W. 2. Lights to indicate the PoE usage is at the maximum.

IPOE-171-95W LED Indicators:

LED	Color	Function
P1	Green	Lights to indicate power 1 has power.
P2	Green	Lights to indicate power 2 has power.
FAULT	Red	Lights to indicate either power 1 or power 2 has no power.
PoE-in-Use	Amber	Lights to indicate the device is providing PoE power.
PoE Usage	Amber	**30W:** 1. Off to indicate the PoE usage is less than 14W. 2. Blinks to indicate that the PoE usage is around 15W to 29W. 3. Lights to indicate the PoE usage is around 30W to 44W. **60W:** 1. Blinks to indicate that the PoE usage is around 45W to 59W. 2. Lights to indicate the PoE usage is around 60W to 74W. **90W+:** 1. Blinks to indicate that the PoE usage is around 75W to 89W. 2. Lights to indicate the PoE usage is at the maximum.

PoE Mode of IPOE-171 series:

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

Note

After changing the PoE mode, please power off and then on the PoE injector to make the change effective.

3.2 Industrial PoE++ Injector Upper Panel

The upper panel of the IPOE-171 series has one terminal block connector where there are two DC power inputs.

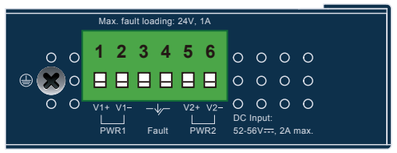

Figure 3: IPOE-171-60W upper panel.

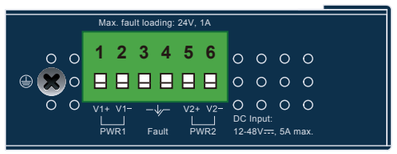

Figure 4: IPOE-171-95W upper panel.

3.3 Wiring the Power Inputs

The 6-contact terminal block connector on the top panel of the IPOE-171 series is used for two DC redundant power inputs. Please follow the steps below to insert the power wire.

Step 1: Insert Positive / Negative DC power wires into Contacts 1 and 2 for POWER 1, or 5 and 6 for POWER 2.

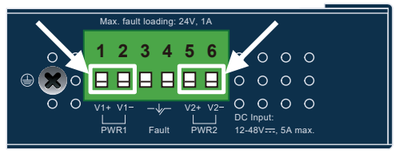

Figure 5: Power input pins.

Step 2: Tighten the wire-clamp screws for preventing the wires from loosening.

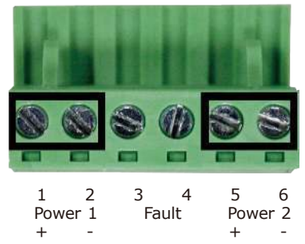

Figure 6: PWR1 & PWR2 Pins of Terminal Block.

Note

1. The wire gauge for the terminal block should be in the range between 12 ~ 24 AWG.
2. As the DC input connector of the IPOE-171 series is polarity protected, connecting Positive / Negative DC power wires to the wrong pins will not damage the unit.

3.4 Wiring the Fault Alarm Contact

The fault alarm contacts are in the middle of the terminal block connector as the picture shows below. After inserting the wires, the IPOE-171 series will detect the fault status of the power failure and then form an open circuit. The following illustration shows an application example for wiring the fault alarm contacts.

Figure 7: Fault Pin of Terminal Block.

Note

1. The wire gauge for the terminal block should be in the range between 12 ~ 24 AWG.
2. Alarm relay circuit accepts up to 24V, max. 1A currents.

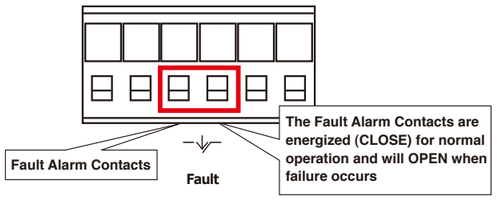

Figure 8: Fault Alarm Contact

4. Mounting Installation

This section describes how to install the industrial device and make connections to it. Please read the following sections and perform the procedures in the order being presented.

Note

In the installation steps below, this manual uses PLANET Industrial Switch as an example. The steps for PLANET Industrial Slim-type Switch, Industrial Media/ Serial Converter and Industrial PoE devices are similar.

4.1 DIN-rail Mounting Installation

4.2 Wall-mount Plate Mounting

5. Hardware Installation

The following section describes the hardware features of the IPOE-171 series. Before connecting any network device to it, please read this chapter carefully.

5.1 Before Installation

Before your installation, it is recommended to check your network environment. If there is any IEEE 802.3bt device that needs to be powered on and works normally, the IPOE-171 series is the solution that supplies power to this Ethernet device conveniently and easily. If there is difficulty in finding a power socket for the AC-DC connection to your non-IEEE 802.3at/bt networked device, the IPOE-171 series with POE-172S / IPOE-171S can supply DC power to this Ethernet device conveniently and easily.

Note

1. In the installation steps below, this manual uses the IPOE-171-60W as an example. Except the input voltage, the steps for the IPOE-171-95W are similar.
2. Note that the input power range of the IPOE-171-60W is **52 ~ 56V DC** and the input power range of IPOE-171-95W is **12 ~ 48V DC**.

5.2 IPOE-171-60W Installation

1. Connect the power ranging from 52V DC to 56V DC to the 6-pin terminal block of the IPOE-171-60W. The power LED will be steadily on.
2. Connect a standard Ethernet cable from an Ethernet switch or PC workstation to **"Ethernet"** port of the IPOE-171-60W.

3. Connect the long cable to the **"Ethernet+DC"** port.
4. Connect with IEEE 802.3af/at/bt devices. Due to the capability of IEEE 802.3af/at/bt Power over Ethernet, the IPOE-171-60W can directly connect with any IEEE 802.3at/bt end-nodes, such as PTZ (Pan, Tilt & Zoom) IP cameras, PTZ speed dome cameras, color touch screens, Voice over IP (VoIP) telephones and multi-channel wireless LAN access points which support IEEE 802.3af/at/bt In-line Power over Ethernet port.

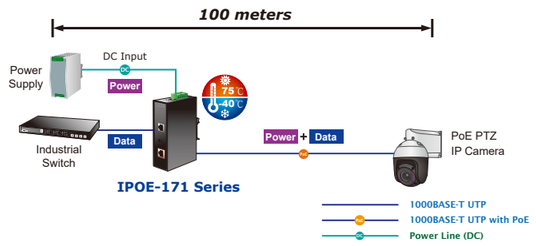

Figure 9: Connecting architecture with IEEE 802.3at/bt device

Once the IPOE-171-60W detects the existence of an IEEE 802.3at/bt device, the **PoE-in-Use** LED indicator will be steadily on to show it is providing power.

Note

1. According to IEEE 802.3at/bt Power over Ethernet, the IPOE-171-60W will not inject power to the cable if not connected to IEEE 802.3at/bt device.
2. Depending on the length of cable, the PoE power which PD receives is different.

6. Customer Support

Thank you for purchasing PLANET products. You can browse our online FAQ resource at the 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?method=category&c1=2

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

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PLANET Networking & Communication

User's Manual

Industrial 802.3bt Gigabit PoE++ Injector

IPOE-171 Series

FCC Warning

This device 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.

PLANET Technology Corp.
10F., No. 96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan

Warning:
This device is compliant with Class A of CISPR 32.
In a residential environment this device may cause radio interference.

2350-AF0510-002