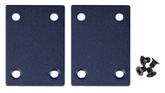
1. Packet Contents

Thank you for purchasing PLANET Industrial 1-Port 802.3bt PoE++ to 4-Port 802.3af/at Gigabit PoE Extender, IPOE-E174. In the following sections, the term **"Industrial PoE Extender"** means the IPOE-E174.

Open the box of the IPOE-E174 and carefully unpack it. The box should contain the following items:

Industrial PoE Extender x 1	User's Manual x 1
RJ45 Dust Cap x 5	Wall Mounting Kit x 1 

If any of these are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

2. Hardware Introduction

This section describes the functionalities of the Industrial PoE Extender's components.

2.1 Front Panel

Figure 2-1 shows the front panel of Industrial PoE Extender.

Figure 2-1: IPOE-E174 Front Panel

2.2 LED Indicators

➢ System

LED	Color	Function
30W IN	Green	**Lights** to indicate the IPOE-E174 is working in 2-pair mode and offers up to 30-watt power.
60W IN	Green	**Lights** to indicate the IPOE-E174 is working in 4-pair mode and offers more than 60-watt power.
90W+ IN	Green	**Lights** to indicate the IPOE-E174 is working in 4-pair mode and offers more than 90-watt power.

➢ PoE Power Usage

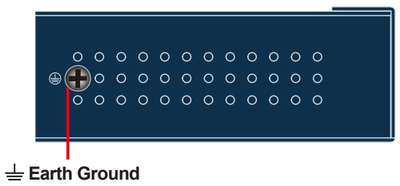
LED	Color	Function
20W	Amber	**Blinks** to indicate the system is providing 10W ~ 20W PoE power.
		Lights to indicate the system is providing 20W ~ 30W PoE power.
40W	Amber	**Blinks** to indicate the system is providing 30W ~ 40W PoE power.
		Lights to indicate the system is providing 40W ~ 50W PoE power.
60W	Amber	**Blinks** to indicate the system is providing 50W ~ 60W PoE power.
		Lights to indicate the system is providing 60W+ PoE power.

➢ Per PoE Output Port (Port 1 ~ 4)

LED	Color	Function
LNK/ACT	Green	**Lights** to indicate the port is linked up.
		Blinks to indicate that the IPOE-E174 is actively sending or receiving data over that port.
PoE-in-Use	Amber	**Lights** to indicate the port is providing PoE power.
		OFF to indicate the connected device is not a PoE PD.

2.3 Grounding the Device

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



Note

EMD (Lightning) DAMAGE IS NOT CONVERED UNDER WARRANTY.

3. Installation

This section describes the functionalities of the Industrial PoE Extender's components and guides you to installing it on the DIN rail and wall. Please read this chapter completely before continuing.

Note

This following pictures show how to install the device. However, the device in the picture is not the IPOE-E174.

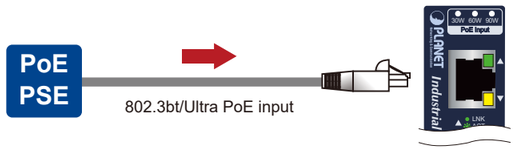
3.1 DIN-rail Mounting Installation

3.2 Wall-mount Plate Mounting

3.3 Connecting IPOE-E174 to PSE

The Industrial PoE Extender has five RJ45 ports of which one is the **PoE++ In** port connected to the PSE and the other four are **PoE+ Out** ports connected to the PDs.

Step 1: Connect a standard Cat5e/6 UTP cable from a remote **PSE**, such as PoE switch, to the **"PoE++ In"** port of the IPOE-E174.



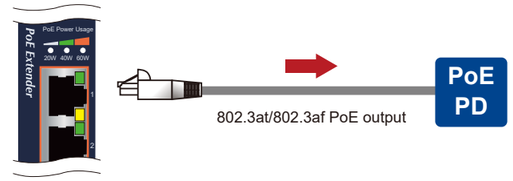
Step 2: The PSE delivers both Ethernet Data and PoE power over UTP cable to the IPOE-E174 and the **"PoE IN"** LED will be lit steadily.

Note

1. When the LED turns steady green, it means the IPOE-E174 is being powered successfully with PoE.
2. If the LED is not lit, please check the remote PSE or the cable connecting to a PC or a network device to see if the cable is correct. Or with an 802.3at device such as the target PD, check whether the power injection is correct.
3. Never connect any **non-standard** PoE PSE to the IPOE-E174; it will damage the device permanently.
4. Refer to Chapter 2.2 for more information about LED function.

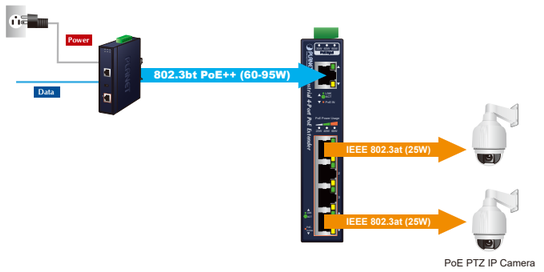
3.4 Connecting IPOE-E174 to PD

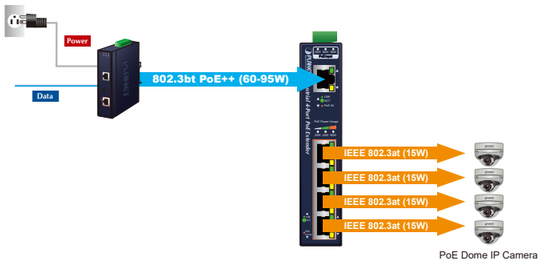
Step 1: Connect the additional Cat5e/6 cable from the **PoE+ Out** of the IPOE-E174 to a remote **PD**.



Step 2: The **PoE+ Out** port is also the power injector, which transmits DC voltage to the Cat5e/6 cable and transfers data and power simultaneously between the PSE and PD.

Step 3: Once the IPOE-E174 detects the existence of an IEEE 802.3at/af device, the **PoE-in-Use** LED indicator will be lit steadily, showing it is providing power.





Note

1. If the connected device is not fully complying with IEEE 802.3af/at standard or in-line power device, the PoE-in-Use LED indicator of the IPOE-E174 will not be lit steadily.
2. According to IEEE 802.3af/at standard, the IPOE-E174 will not inject power to the cable if not connecting to a standard IEEE 802.3af/at device.
3. **DO NOT** connect any PSE to port 1~ port 4 of the IPOE-E174; it may damage the device permanently.

4. Power over Ethernet Budget

The following table lists how many PoE devices can be powered by the IPOE-E174 under 1m distance:

Power Source	PoE Output Budget*	Max. Number of PDs supported	
95W PoH PSE	75 watts max.	Class 4 PD@25 watts	3 units
		Class 3 PD@12.9 watts	4 units
		Class 2 PD@7 watts	4 units
90W 802.3bt PoE++ Type 4 PSE	75 watts max.	Class 4 PD@25 watts	3 units
		Class 3 PD@12.9 watts	4 units
		Class 2 PD@7 watts	4 units
60W 802.3bt PoE++ Type 3 PSE	50 watts max.	Class 4 PD@25 watts	2 units
		Class 3 PD@12.9 watts	3 units
		Class 2 PD@7 watts	4 units
30W 802.3at PoE+ PSE	25 watts max.	Class 3 PD@12.9 watts	1 units
		Class 2 PD@7 watts	3 units

Remarks:

1. The PoE output budget means the aggregated power output of the 4 PSE ports.
2. The aggregated power consumption will be below 60 watts if with PoE+ PSE.
3. Please check the **power input LED** for optimal power output.

5. Technical Specifications

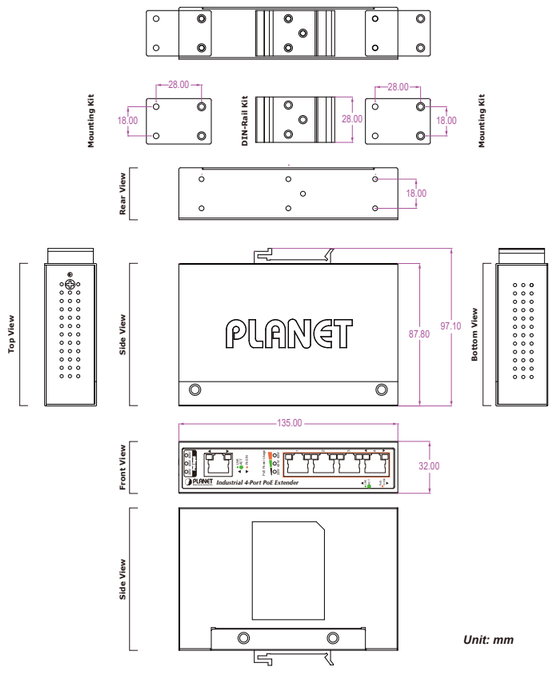
Model	IPOE-E174
Hardware Specifications	
Network Connector	**PoE In Port** - 1 x 10/100/1000BASE-T Ethernet with 802.3bt PoE++ **"Data + DC"** in - Auto MDI/MDI-X, auto-negotiation RJ45 connector
	PoE Out Port - 4 x 10/100/1000BASE-T Ethernet with IEEE 802.3af/at PoE **"Data + DC"** out - Auto MDI/MDI-X, auto-negotiation RJ45 connector
Switch Architecture	Store-and-Forward switch architecture
MAC Address Table	2K MAC address table with auto learning function
Switch Fabric	10Gbps
Switch Throughput	7.44Mpps @ 64Bytes
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Jumbo Frame	9Kbytes
ESD Protection	Air 8KV DC Contact 6KV DC
Surge Protection	6KV
Enclosure	IP30 metal case
Installation	DIN-rail kit and wall-mount ear

Dimensions (W x D x H)	32 x 87.8 x 135 mm
Weignt	430g
Power Consumption	5.6 watts/19.11 BTU (Power On) 6.5 watts/22.18 BTU (Full loading without PoE function) 82.3 watts/280.82 BTU (Full loading with PoE function)
Power over Ethernet	
PoE Standard	**PoE in Port** - IEEE 802.3bt PoE++ Type 4 standard PD - PoH (Power over HDBASE-T) - IEEE 802.3at PoE+ end-span/mid-span PD
	Per PoE Out Port IEEE 802.3at Power over Ethernet Plus end-span PSE
PoE Power	**PoE in Port** 50~57V DC, max. 95 watts **Per PoE Out Port** 44~55V DC, max. 30.8 watts
Power Pin Assignment	**PoE in Port** 1/2(-), 3/6(+), 4/5(+), 7/8(-) or 1/2(+), 3/6(-), 4/5(+), 7/8(-) **Per PoE out Port** 1/2(+), 3/6(-)

PoE Power Budget	75 watts (max.) @ 802.3bt PoE++ Type 4 input 60 watts (max.) @ 802.3bt PoE++ Type 3 input 75 watts (max.) @ PoH input 25 watts (max.) @ 802.3at PoE+ input
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC60068-2-32 free fall IEC60068-2-27 shock IEC60068-2-6 vibration
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3x Flow Control IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3bt Power over Ethernet Plus Plus
Environment	
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -40 ~ 85 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

6. Physical Dimensions

The IPOE-E174's dimensions (W x D x H) are 32 x 87.8 x 135 mm.



Customer Support

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

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

Switch support team mail address:
supporth@planet.com.tw

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PLANET Networking & Communication

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User's Manual

www.PLANET.com.tw

1-Port 802.3bt PoE++ to 4-Port 802.3af/at Gigabit PoE Extender

IPOE-E174

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

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