

Product Specifications

Industrial 1-port Ultra PoE to 2-port 802.3bt/at Gigabit PoE Extender

IPOE-E172

Version 1.0

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Change History:

Revision	Date	Author	Change List
Version 1.0	2017/8/28	Marc Liao	Initial release

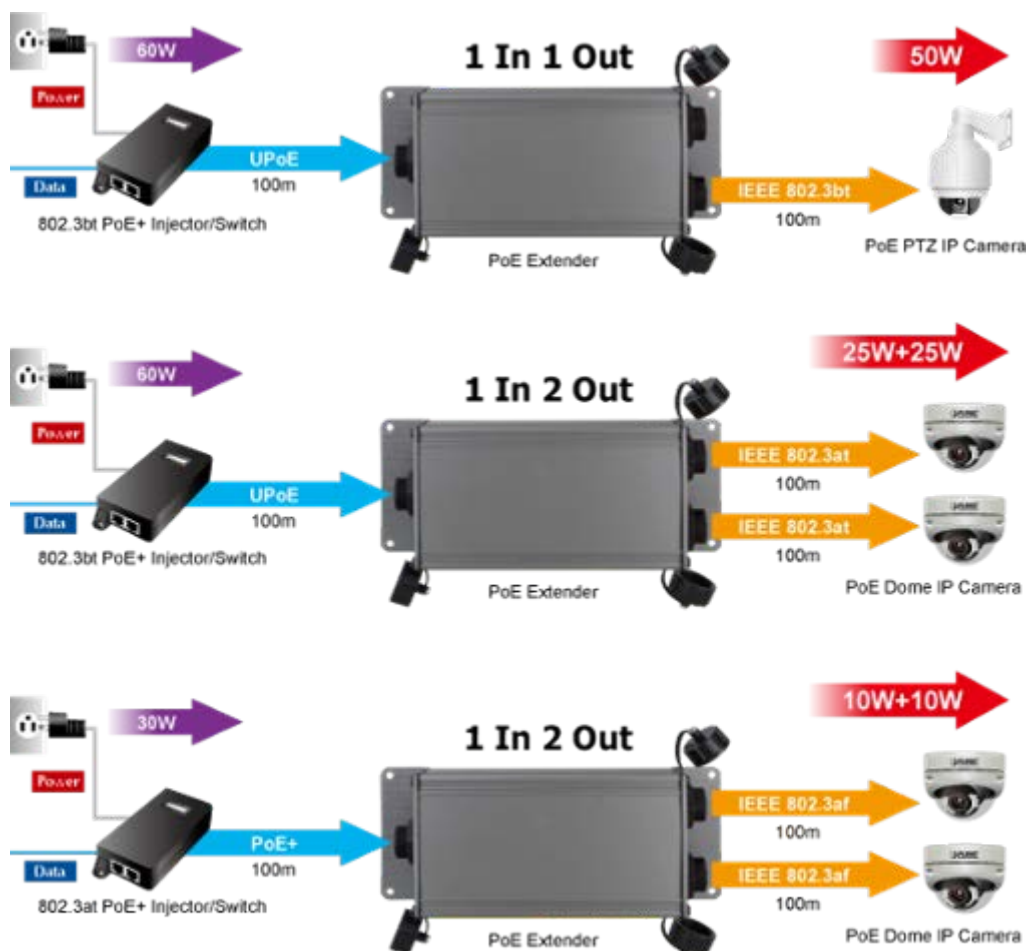
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1. PRODUCT DESCRIPTION



Ultra PoE Solution for Breaking RJ45 100m Limitation

PLANET IPOE-E172 is an industrial IP63-rated 1-port Ultra PoE to 2-port 802.3bt/at Gigabit PoE Extender designed especially for point to multipoint PoE application. The IPOE-E172 can obtain a maximum of 95-watt PoE power from ultra PoE input port and supplies a maximum of 60-watt PoE power budget for 2 PoE output ports, extending both the **Gigabit Ethernet Data** and **IEEE 802.3bt/802.3at Power over Ethernet** over the UTP cable. The IPOE-E172 provides a simple solution for adding PoE ports without running more cabling and achieves more flexible network applications without requiring an external power adapt



Weather-proof RJ45 Ethernet Connector and Shielded Plug

The IPOE-E172 is ideal for installing an extended range of outdoor PoE devices such as outdoor PoE wireless access points, outdoor PoE IP cameras, outdoor PoE IP intercoms and much more. The IPOE-E172 is equipped with 3-port 10/100/1000BASE-T auto-negotiation weather-proof RJ45 connectors and 3 shielded RJ45 plugs for direct attach applications. These shielded RJ45 plugs can make the general UTP cable weather-proof. When connected to the weather-proof RJ45 connector, it provides tight and strong connection, and ensures it comes with the industrial protection rating of IP63 capable of withstanding humidity, dirt, dust, shock, vibrations, heat and cold.

Environmentally Hardened Design

With industrial-level IP63-rated aluminum case, the IPOE-E172 provides a high level of immunity against electromagnetic interference, and is able to protect itself from dust and water ingress and to operate under the temperature range from **-40 to 75 degrees C**. All these features ensure the highest level of reliability for mission-critical applications in any difficult environment.



Intelligent PoE Power Budget Alert

The IPOE-E172 helps users to monitor the current status of PoE power usage easily via its advanced LED indication, which is called "**Budget Alert**" on the front panel of the IPOE-E172. When the PoE output power is reaches 50 watts, this Budget Alert LED will light up.



Plug and Play, and Easy Cabling Installation

The IPOE-E172 is quite easy to be installed by simply Plug and Play. It is used between a power source equipment (PSE) and a powered device (PD). The IPOE-E172 injects power to the PD without affecting the data transmission performance. The IPOE-E172 offers a cost-effective and quick solution to doubling the standard range of PoE from 100 to 200 meters. The IPOE-E172 is designed in a compact box containing three RJ45 ports, of which one "**PoE IN**" port functions as **PoE (Data and Power) input** and the other two "**PoE OUT**" ports on the other side function as **PoE (Data and Power) output**. The "**PoE OUT**" port is also the power injector that transmits DC voltage over the Cat5/5e/6 cable and transfers data and power simultaneously between the PSE and PD.

2. PRODUCT FEATURES

➤ Physical Port

- **3 10/100/1000BASE-T** Gigabit RJ45 interfaces
 - 1-port **data + power input**
 - 2-port **data + power output**

➤ Power over Ethernet

- 1-port data + power input
 - Complies with IEEE 802.3bt/at Power over Ethernet end-span/mid-span PD
 - Supports PoE input power up to 95 watts
- 2-port data + power output
 - Complies with IEEE 802.3af/802.3at/802.3bt Power over Ethernet/end-span + mid-span PSE
 - Up to 1 IEEE 802.3bt device powered
 - Up to 2 IEEE 802.3af/802.3at devices powered
 - Supports total PoE budget up to 60 watts for 2 PoE output ports
 - Auto detects powered device (PD)
- Extends the range of PoE to an additional 100 meters (328ft.)
- Forwards both Ethernet **data** and **PoE** power to remote device

➤ Layer 2 Features

- Hardware-based 10/100Mbps, half/full duplex and 1000Mbps full duplex mode, flow control, auto-negotiation and auto MDI/MDI-X
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- Integrates address look-up engine, supporting 2K absolute MAC addresses
- 9K jumbo frame support in 1000Mbps duplex mode
- Automatic address learning and address aging
- Supports CSMA/CD protocol

➤ Industrial Case and Installation

- IP63-rated aluminum case
- Wall-mount design

- Waterproof and dustproof
- Supports 2000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- No external power cable required for installation
- **Plug and Play** installation

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	RTL8368MBI	x 1
PD Chipset:	PD70210A	x 1
PSE Chipset:	Microsemi PD69208	x 1
Switch EEPROM:	AT24C16C	x 1
PoE MCU	W78E054D	x 1

3.2 FUNCTION SPECIFICATIONS

Model	IPOE-E172
Hardware Specifications	
Network Connector	PoE In Port 1 x 10/100/1000BASE-T Ethernet with 802.3bt/at PoE “Data + Power” in, auto MDI/MDI-X, auto-negotiation RJ45 connector PoE Out Port 2 x 10/100/1000BASE-T Ethernet with IEEE 802.3af/at/bt PoE “Data + Power” 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
Data Buffer	1Mbit
Switch Fabric	6Gbps
Switch Throughput	4.46Mpps @ 64 bytes
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Jumbo Frame	9KB
ESD Protection	2KV DC
EFT Protection	2KV DC
Enclosure	IP63 aluminum case
Installation	Wall-mount kit
LED Display	System: PWR (green) Budget Alert (orange) PoE Input Port: LNK/ACT (orange) PoE Input Port: 1000 (green) Per PoE Output Port: LNK/ACT (green) Per PoE Output Port: PoE-in-Use (orange)
Cable	Twisted-pair cable : 10BASE-T: 2-pair UTP Cat3, 4, 5 up to 100 meters 100BASE-TX: 2-pair UTP Cat5, 5e up to 100 meters 1000BASE-T: 4-pair UTP Cat5e, 6 up to 100 meters
Power Consumption	60watts/204BTU (Full loading with PoE function)
Power over Ethernet	
PoE Standard	PoE In Port IEEE 802.3bt/at Power over Ethernet end-span/mid-span PD class 4 PD Per PoE Out Port IEEE 802.3bt 4-Pair Power over Ethernet end-span + mid-span PSE IEEE 802.3at Power over Ethernet Plus end-span + mid-span PSE IEEE 802.3af Power over Ethernet end-span + mid-span PSE

PoE Power	PoE In Port 44~57V DC, max. 75 watts
	Per PoE Out Port 44~55V DC, max. 60 watts
Power Pin Assignment	Per PoE Out Port 1/2 (-), 3/6 (+); 4/5 (+), 7/8 (-)
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 802.3x Flow Control IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3bt 4-Pair Power over Ethernet
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)
Accessory	
Standard Accessories	User's Manual x1 Waterproof RJ45 Connector x3 Waterproof RJ45 Cap x 3 Wall-mounted Kit x 1

3.3 PHYSICAL SPECIFICATIONS:

Dimensions:

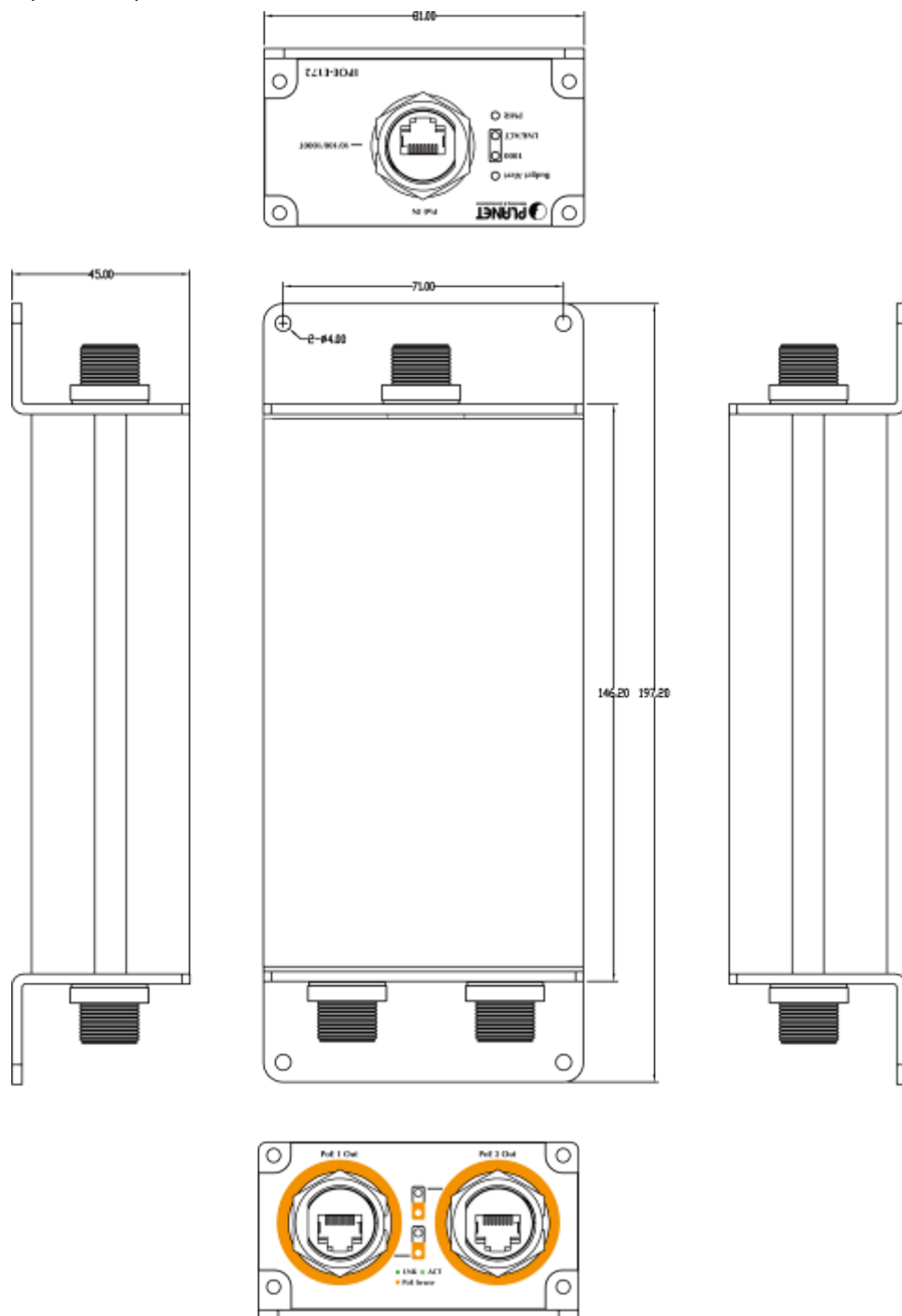
199.6 x 81 x 40 mm (W x D x H)

Weight:

373g

Diagram:

Dimensions (W x D x H): 199.6 x 81 x 40 mm



Front View



LED Definition:

➤ System

LED	Color	Function
PWR	Green	Lights to indicate the IPOE-E172 has power.

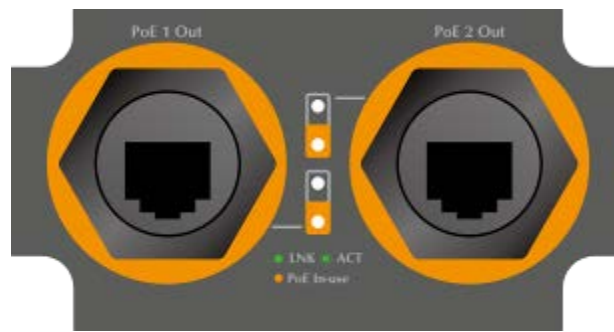
➤ PoE Input Port

LED	Color	Function
LNK/ACT	Orange	Blinks to indicate that the IPOE-E172 is actively sending or receiving data over that port.
1000	Green	Lights to indicate the IPOE-E172 is successfully connecting to the network at 1000Mbps.
		Off to indicate the IPOE-E172 is successfully connecting to the network at 10Mbps or 100Mbps.

➤ Budget Alert Port

LED	Color	Function
Budget Alert	Orange	Lights to indicate the IPOE-E172 PoE output power is 50 watts or over.
		Off to indicate that the IPOE-E172 PoE output power is not over 50 watts.
		Blink 4 times, when the IPOE-E172 power on by Ultra PoE.
		Blink 2 times, when the IPOE-E172 power on by 802.3at PoE.

Rear View



➤ PoE Output Port (Port 1 ~ 2)

LED	Color	Function
LNK/ACT	Green	Lights to indicate the port is linked up at 10/100/1000Mbps.
		Blinks to indicate that the IPOE-E172 is actively sending or receiving data over that port.
PoE-in-Use	Orange	Lights to indicate the port is providing PoE power.
		Off to indicate the connected device is not a PoE Powered Device (PD).

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: -40°C ~75 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -40°C ~85 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATIONS

Power over Ethernet Capability

With different distance and different PoE input source, it will inflect the PoE output capability. Please refer to the table below.



When PSE/PoE Switch output is DC 52V

A (Distance)	B (Distance)	C (Watts)
60M	2M	33
60M	20M	30
60M	60M	25
60M	100M	21
100M	2M	28
100M	20M	26
100M	60M	21
100M	100M	19

When PSE/PoE Switch output is DC 56V

A (Distance)	B (Distance)	C (Watts)
60M	2M	50
60M	20M	48
60M	60M	39
60M	100M	34
100M	2M	44
100M	20M	39
100M	60M	33
100M	100M	28

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

Stability Testing:

- IEC60068-2-32 (free fall)
- IEC60068-2-27 (shock)
- IEC60068-2-6 (vibration)

3.7 RELIABILITY

MTBF > 100,000Hrs @ 25 degrees C

3.8 BASIC PACKAGING

- IPOE-E172 x 1
- User's Manual x 1
- Waterproof RJ45 Connector x 3
- Waterproof RJ45 Cap x3
- Wall-mounted Kit x 1

3.9 PACKING DIMENSIONS

Box Dimensions:	280 (W) × 133 (D) × 66 mm (H)
Carton Dimensions:	580 (W) × 360 (D) × 305 mm (H)
Total Weight:	TBD (gross weight)
Quantity:	20pcs in one carton