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Product Specifications

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

IPOE-270 Series

Version 1.0

Change History:

Revision	Date	Author	Change List
Version 1.0	2020/2/27	Marc Liao	Initial Release

Author	Marc Liao	Editor:	Marc Liao
Reviewed by:		Approved by:	Kent Kang

1. PRODUCT DESCRIPTION

Compact and Robust Industrial 802.3bt PoE++ Network Solution

PLANET IPOE-270 2-port industrial IEEE 802.3bt PoE++ injector hub series features two **10/100/1G/2.5G/5GBASE-T 90-watt 802.3bt type-4 PoE++ injector ports**. With a total PoE budget of 180 watts, it delivers 802.3bt PoE++ power over Ethernet UTP cables which allow data and power to transmit simultaneously to a remote 802.3bt/at powered device (PD). The IPOE-270 series provides a quick, safe and cost-effective 802.3bt PoE++ network solution for small businesses and enterprises. It is designed to perfectly upgrade an existing network infrastructure to 802.3bt PoE++ network system without replacing the existing Ethernet switches and also enables centralization of the power supply.

The IPOE-270 series includes two models: IPOE-270 and IPOE-270-12V.

Model	DC Redundant Power Input	PoE Standard	PoE Budget
IPOE-270	48~56V DC		180 watts
IPOE-270-12V	12~56V DC	IEEE 802.3bt PoE++	180 watts

802.3bt PoE++ Meets High Power Demands of Powered Devices

As the IPOE-270 series adopts the IEEE 802.bt PoE++ standard and PoH technology, it is capable to source up to **90 watts** of power by using all the four pairs of standard Cat5e/6 Ethernet cabling to deliver power and full-speed data to each remote PoE compliant PD. It possesses triple amount of power capability than the conventional 802.3at PoE+ and is an ideal solution to satisfy the growing demand for higher power consuming network PDs, such as:

- PoE PTZ speed dome cameras
- Network devices
- Thin clients
- AIO (all-in-one) touch PCs, point of sale (POS) and information kiosks
- Remote digital signage displays
- PoE lightings

Quick and Easy 802.3bt/at PoE Network Deployment

The IPOE-270 series is installed between a regular Ethernet Switch and the PDs. Two ports are network (Ethernet) ports for data input while the other two ports are PoE++ ports for data and power output. Both power and data are transferred simultaneously over the UTP cables to various 802.3bt/at PDs without affecting the existing network performance and functions.

With data and Power over Ethernet from one unit, the IPOE-270 series can reduce power cable deployment and eliminate the need for dedicated electrical outlets on the wall, ceiling or any unreachable place.

Intelligent LED Indicator for Power Input and Real-time PoE Usage

The IPOE-270 series helps users to monitor the current status of power input and PoE power usage easily and efficiently via its advanced LED indication. The **"Power Input"** allows user to know the status of dual DC power input. The "**PoE Usage"** displayed on the panel of the IPOE-270 series has three amber LED indicators of different power usages indicating **60W, 120W** and **180W**. Via the power usage LED, the IPOE-270 series enables the administrator to monitor the status of the power usage of the connected PDs in real time.

Convenient and Reliable Power System

To facilitate the 802.3bt PoE++ usage with commonly-used **12~54V DC** power input for transportation and industrial-level applications, the IPOE-270-12V adopts the 12~54V DC to 54V **power boost** technology to solve power source issue but does not require special power supplies. Its wide-ranging voltages design is suitable for worldwide operability with high availability applications requiring dual or backup power inputs.

High Power Budget for PoE Extension

With up to 90-watt PoE output capability, the IPOE-270 series can extend much longer distance by using PLANET PoE Extender for powering up the PoE PD which can be installed over more than 100 meters away.

Stable Operating Performance under Difficult Environments

Today, the PoE demand expands from commercial applications to many critical networks in the harsh environment. The IPOE-270 series provides a high level of immunity against electromagnetic interference and heavy electrical surges typical of environments found on plant floors or in curb-side traffic control cabinets.

The IPOE-270 series can be easily installed by way of Plug and Play and operates stably under temperature range from **-40 to 75 degrees C** which enables the users to conveniently apply the device in almost any location of the network. The IPOE-270 series is also equipped with a compact IP30 standard metal case that allows either DIN-rail or wall mounting for space-limited environment.

DIN-rail Mounting   **Wall Mounting**   **Side Wall Mounting**
(Space saving)

2. PRODUCT FEATURES

➤ **Physical Ports**

 ■ **Two 10/100/1G/2.5G/5GBASE-T** Gigabit RJ45 interfaces

 − 2-port **data + power input**

 ■ **Two 10/100/1G/2.5G/5GBASE-T** Gigabit RJ45 interfaces

 − 2-port **data + power output**

➤ **Power Requirements**

 ■ 1 terminal block for master and slave power input with reverse polarity protection

 ■ Power Range: 48 ~ 56V DC redundant power (IPOE-270)

 ■ Power Range: 12 ~ 56V DC redundant power (IPOE-270-12V)

➤ **Power over Ethernet**

 ■ 2-port data + power output

 − Complies with 802.3bt Power over Ethernet Plus Plus end-span and mid-span PSE

 − Backward compatible with IEEE 802.3at Power over Ethernet Plus end-span/mid-span PSE

 − Up to 2 IEEE 802.3at/IEEE 802.3bt PoE devices powered

 − Supports PoE output power up to 90 watts for each PoE port

 − All PoE ports support 802.3at end-span/mid-span PoE 36-watt injector function

 − Auto detects powered device (PD)

 − Circuit protection prevents power interference between ports

 ■ Forwards both Ethernet **data** and **PoE** power to remote device over a 100-meter (328ft.) distance

➤ **LED Indicators**

 ■ LED indicators for power LEDs (Power 1 and Power 2)

 ■ LED indicators for PoE Usage (60W,120W and 180W)

➤ **Industrial Case and Installation**

 ■ IP30 metal case

 ■ DIN-rail and wall-mount designs

 ■ Supports 6KV DC Ethernet ESD protection

 ■ -40 to 75 degrees C operating temperature

 ■ Plug and Play installation

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

PoE PSE Chipset:	Microsemi PD69200T4	x 1
PoE PSE Controller:	Microsemi PD69200C	x 1

3.2 Functional 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 (**Amber**)	

Data Rate	10/100/1000/2500/5000Mbps	
Power Requirements	**48~56V DC**, redundant power with reverse polarity protection	**12~56V 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
	  56V 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
	  56V DC (180W PoE budget): 185 watts/631BTU
		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
		  56V DC: 2.2 watts/7.5BTU
		
		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
		  56V DC (180W PoE budget): 184 watts/627BTU

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	

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ESD Protection	6KV
Surge Protection	6KV
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
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 (-)
PoE Power Budget (max.)	120W@48V DC input 180W@52V/54V/56V DC input	60W@12V DC input 120W@24V/48V DC input 180W@52V/54V/56V DC input
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)

3.3 Physical Specifications

■ **DIMENSIONS**

41 x 70 x 115 mm (W x D x H)

■ **Weight:**

IPOE-270: 284g
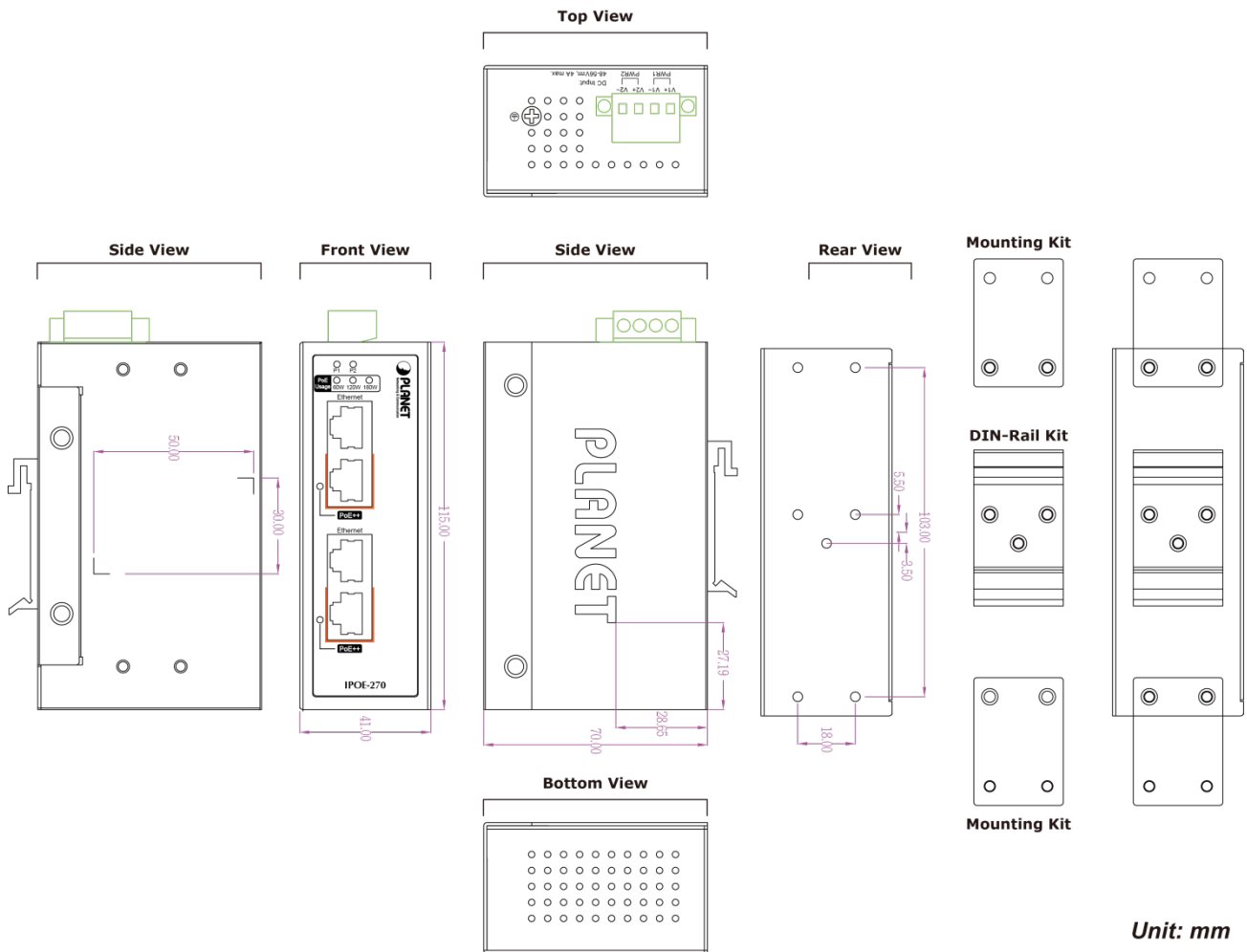
IPOE-270-12V: 387g

■ **Diagram**
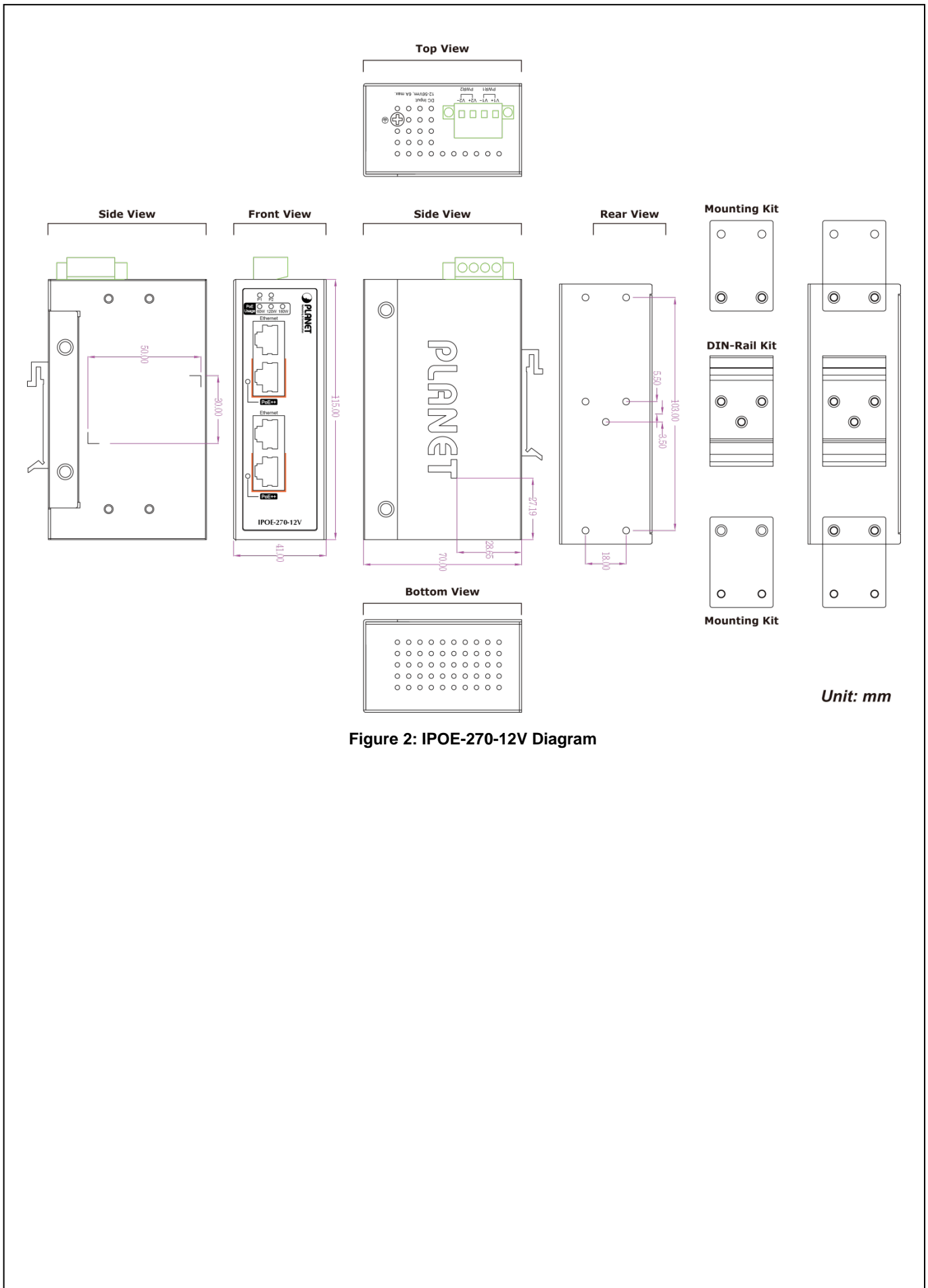

Figure 1: IPOE-270 Diagram

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Top View

Side View   **Front View**   **Side View**   **Rear View**   **Mounting Kit**

DIN-Rail Kit

Mounting Kit

Bottom View

Unit: mm

Figure 2: IPOE-270-12V Diagram

Front Panels

<div align="center">

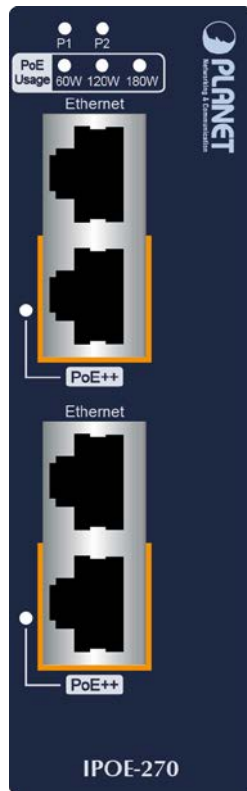**Figure 3: IPOE-270 Front Panel**   **Figure 4: IPOE-270-12V Front Panel**
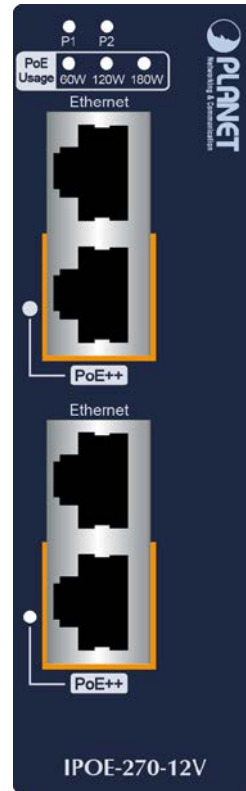
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■   **LED Definition**

■   **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	Amber	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.
	Green	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.

➢ **Top Panels**
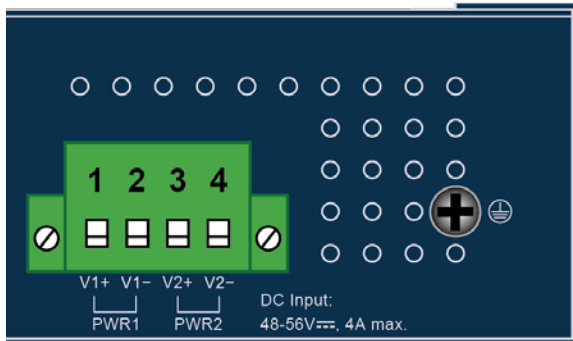
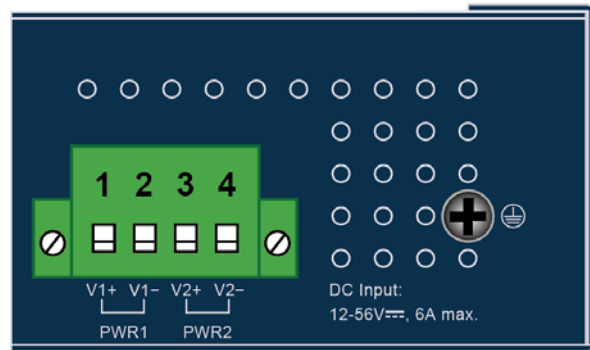**Figure 5: IPOE-270 Top Panel**

Figure 5: IPOE-270-12V Top Panel

3.4 Environmental Specifications

Operating:

Temperature: -40°C ~ 75 degrees C

Relative Humidity: 5% ~ 90% (non-condensing)

Storage:

Temperature: -40°C ~ 85 degrees C

Relative Humidity: 5% ~ 90% (non-condensing)

3.5 Electrical Specifications

IPOE-270:

■ **Input Voltage: 48~56V DC**, redundant power with reverse polarity protection

■ **Power Consumption:**

Mode	Input Voltage	Power Consumption	
System Power on:	48V DC	1.4 watts	4.7BTU
	52V DC	1.5 watts	5.1BTU
	54V DC	1.6 watts	5.4BTU
	56V DC	1.6 watts	5.4BTU
System and PoE full loading for power consumption:	48V DC (120W PoE budget)	128 watts	436BTU
	52V DC (180W PoE budget)	177 watts	603BTU
	54V DC (180W PoE budget)	187 watts	638BTU
	56V DC (180W PoE budget)	185 watts	631BTU

IPOE-270-12V:

- **Input Voltage: 12~56V DC**, redundant power with reverse polarity protection
- **Power Consumption:**

Mode	Input Voltage	Power Consumption	
System Power on:	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
	56V DC	2.2 watts	7.5BTU
System and PoE full loading for power consumption:	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
	56V DC (180W PoE budget)	184 watts	627BTU

3.6 Regulatory Compliance

FCC Part 15 Class A, CE

3.7 Reliability

MTBF > 100,000Hrs @ 25 degrees C

3.8 Basic Packing

- User's Manual x 1
- Wall Mounting Kit x 1
- DIN-rail Kit x1
- RJ45 Dust Cap x 4

3.9 Packing Information

Box Dimensions (W x D x H)   200 x 132 x 68 mm

Weight   TBD kg

Carton Dimensions (W x D x H)   445 x 442 x 390 mm

Carton Weight (total)   TBD kg

Quantity   30pcs in one carton