深圳市拓视盾科技有限公司
Shenzhen Tstone Technology Co. ,Ltd

SPECIFICATION FOR APPROVAL

CUSTOMER :

PRODUCT NAME: Gigabit Pass-through 30W Passive PoE Combiner

PRODUCT MODEL: TSD-PD12HG

BRAND : TST（OEM/ODM）

DATE : 2024 / 06 / 26

DRAWING			CUSTOMER APPROVE
DESIGNED	CHECKED	APPROVED	
VANNE	YOUTRONG	Mark	
DATE	2024 / 06 / 26		Please return the visa after confirmation, thank you!

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MODEL: TSD-PD12HG

What Is PoE

PoE (Power over Ethernet) refers to the technology that can transmit data signals for some IP-based terminals (such as IP phones, wireless LAN access point APs, IP cameras, etc.) without any changes to t he existing Ethernet Cat.5 cabling infrastructure, and can also provide DC power supply for such devices.

A complete PoE system consists of two parts: Power Sourcing Equipment (PSE) and Powered Device (PD). The PSE device is the device that powers the Ethernet client device and is also the manager of th e entire PoE (Power-over-Ethernet) process. The PD device is the PSE load that receives the power suppl y, that is, the client device of the PoE system. Based on the IEEE 802.3af/at standard, the two establish information about the connection status, device type, power consumption level and other aspects of the P D of the power receiving device, and use this as the basis for PSE to supply power to the PD through Ethernet.

The Principle of PoE

The standard Category 5 cable has four twisted pairs, but only two pairs are used in l0M BASE-T and 100M BASE-T. IEEE80 2.3af/at allows two uses: (1) When the idle pin is used for power supply, pins 4 and 5 are connected as the positive pole, and pins 7 and 8 are connected as the negative pole. (2) Pin 1 and pin 2 are connected as the positive pole, and pin 3 and 6 are connected as the negative pole.

The Advantages of PoE

1. Save labor and material costs. Compared with the traditional wiring method of weak current engineering, PoE only needs to install a network cable to make the IP equipment work normally. In many cases, PoE is more advantageous in the places where it is difficult to deploy AC power. As the number of network devices in the system increases, the use of PoE eliminates the need for local power supply for the equipment, which will greatly reduce deployment costs and simplify their manageability.

2. Easy to install and manage. Customers can autonomously and securely mix PoE devices and legacy devices within the system, and can coexist with existing Ethernet cables. PoE devices are compatible with the management system of existing network devices and can share the management platform with existing network devices.

3. Good security. The Power Sourcing Equipment（PSE） in a PoE system will only supply power to the Powered Device （PD） that needs to be powered. Only when the Device that needs to be powered is connected and the protocol is successfully identified, the power supply equipment will have a voltage output and supply power to the powered device, thus eliminating the risk of leakage and short circuit on the line.

Product Introduction

The TSD-PD12HG is a passive gigabit PoE combiner with a maximum output power of 30W. It does not support the IEEE802.3af/at PoE standard protocol. This product is a through-type combiner, and its internal circuit does not have a boost or buck function. It inputs 12~56V DC power and outputs 12~56V passive PoE signals.

The TSD-PD12HG merges and converts the received DC and data signals and then outputs one passive PoE signal. It can support high-power PoE terminal devices, such as PoE IPCs, PoE wireless APs, and other devices.

Product Description

TSD-PD12HG Input Port:

RJ45 Crystal Head: Input Data Signal;

DC Female Socket: Input 12-56V DC Signal;

TSD-PD12HG Output Port:

RJ45 Network Port: Output passive PoE Signal, Output Voltage: 12-56V.

Size and structure: 285*28*23mm (L*W*H), the wire length being 204mm. DC socket specification: 5.5*2.1mm. Overall material: High-temperature resistant and environmentally friendly ABS plastic casing, color: matte black.

The TSD-PD12HG uses RJ45+ and RJ78-pin power supplies. It offers a maximum output power of 30W and a self-adapting transmission rate of 10/100/1000Mbps. It supports a wide input voltage range of DC12-56V and an output voltage range of DC12-56V.

The TSD-PD12HG has obtained CE, FC, and RoHS certifications, and its EMC parameters comply with IEC 61000-4-2/3/4/5/6 standards. The circuitry includes protection against lightning strikes, short circuits, overloads, and high temperatures. This product is sold well in many countries and regions worldwide.

Product Features

- Input: Wide-voltage DC12V - 56V
- Output: passive PoE wide-voltage DC12V - 56V
- EMC complies with the requirements of IEC 61000 - 4 - 2/3/4/5/6 standards
- Certified by CE, FCC, RoHS
- Adaptive transmission rate of 10/100/1000Mbps
- Power supply pins: RJ45 + RJ78 –
- 4KV surge protection

- Overheat protection, overvoltage protection, overload protection, short-circuit protection
- Conversion efficiency greater than 85%
- Through-type input and output
- 5.5*2.1 mm DC female socket
- High-temperature-resistant and environmentally-friendly ABS plastic shell
- International brand original high-precision electronic components, stable performance
- High-power, high-conductivity and low-impedance transistors, stable performance and low heat generation
- High-temperature-resistant PCB environmentally-friendly material, lead-free and environmentally-friendly process

Specifications

Product parameter table	
Product Name	Gigabit Pass-through 30W Passive PoE Combiner
Product Model	TSD-PD12HG
PoE Standard	/
Input Voltage	DC 12-56V
Output	PoE: DC 2-56V
Conversion Efficiency	≧85%
PoE Pin	PoE: RJ45+ RJ78- powered
Conversion Mode	/
Data Rate	10/100/1000Mbps adaptive transmission speed
Transmission Distance	100 meters(Category 5e Cable (Cat5e))
Surge Protection	4KV
Circuit Protection	overheat protection, overcurrent protection overvoltage protection, short circuit protection
LED Indicator	/
Interface	Input Port (DC female socket) : DC 12-56V IN Input Port (RJ45 connector) : Data IN Output Port (RJ45 Jack) : passive PoE OUT (RJ45+ RJ78-)
Function	/

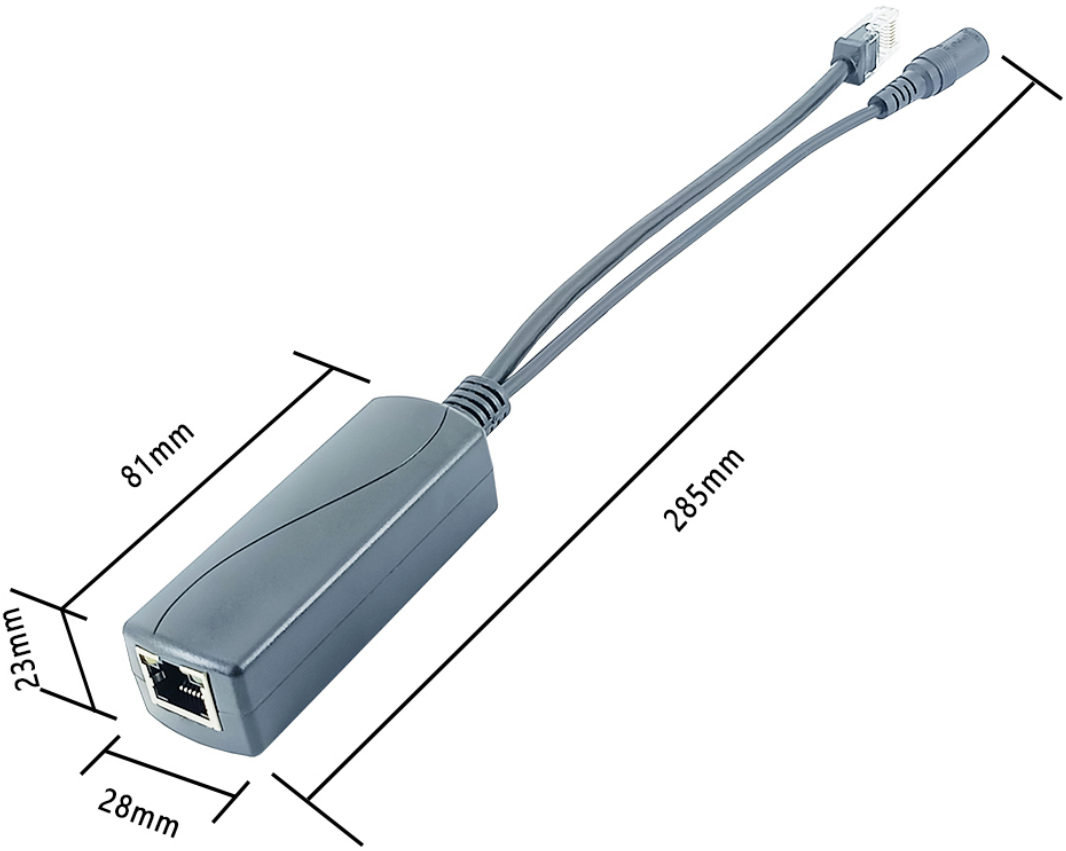
Material	High-temperature-resistant and environmentally friendly ABS plastic
Color	Matte black
Accessories	/
EMC	IEC 61000-4-2/3/4/5/6
Temperature	-30～60℃ For Operating -30～80℃ For Storage
Humidity	RH95% MAX (Non-condensation)
Weight	N.W: 45g
Dimension	285mm*28mm*23mm
Package	Transparent LDPE Packaging Bag

Product Applications

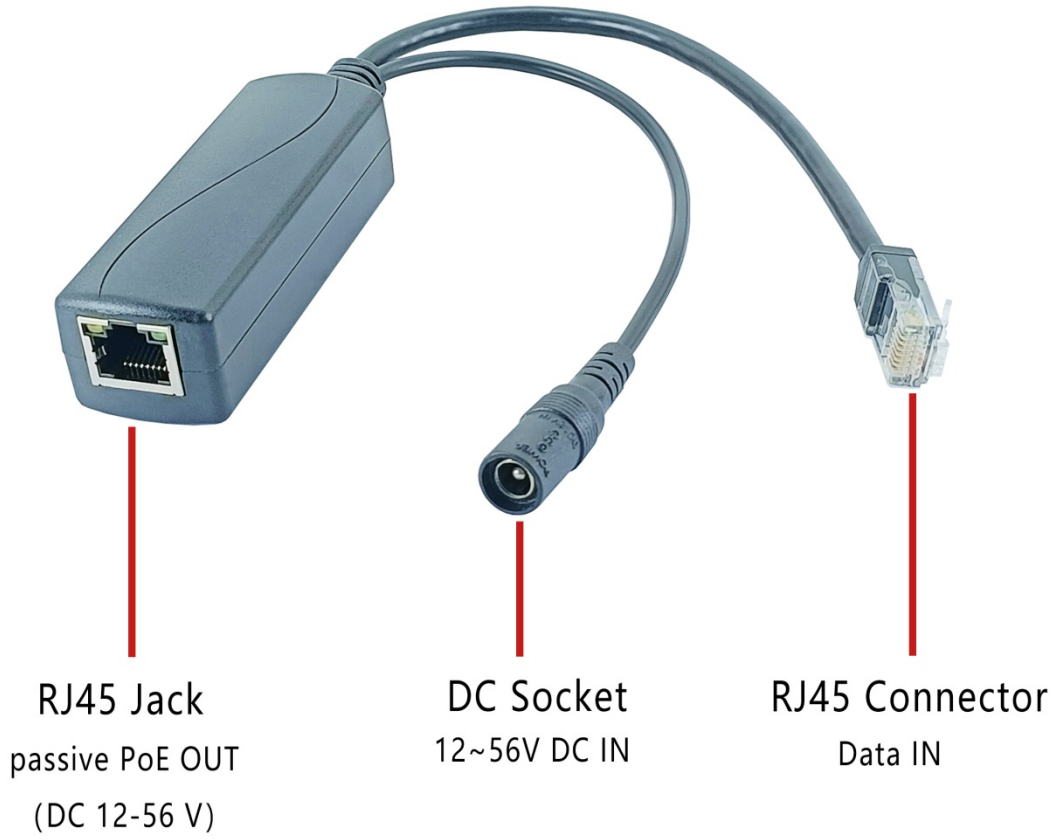
The TSD-PD12HG offers a maximum output power of 30W and supports a wide range of input and output voltages, enabling flexible application in various indoor and outdoor wiring scenarios to meet diverse voltage requirements. The TSD-PD12HG supports high-power IP devices such as cameras and wireless access points, and its flexible deployment has earned praise from both equipment manufacturers and end users.

TSD-PD12HG does not support the IEEE802.3af/at standard protocol and directly supplies power to the terminal device without handshake protocol detection. Therefore, users should pay attention to the following: when using, the input voltage of the powered device should be compatible with the output voltage of TSD-PD12HG. Otherwise, the powered device may not work properly.

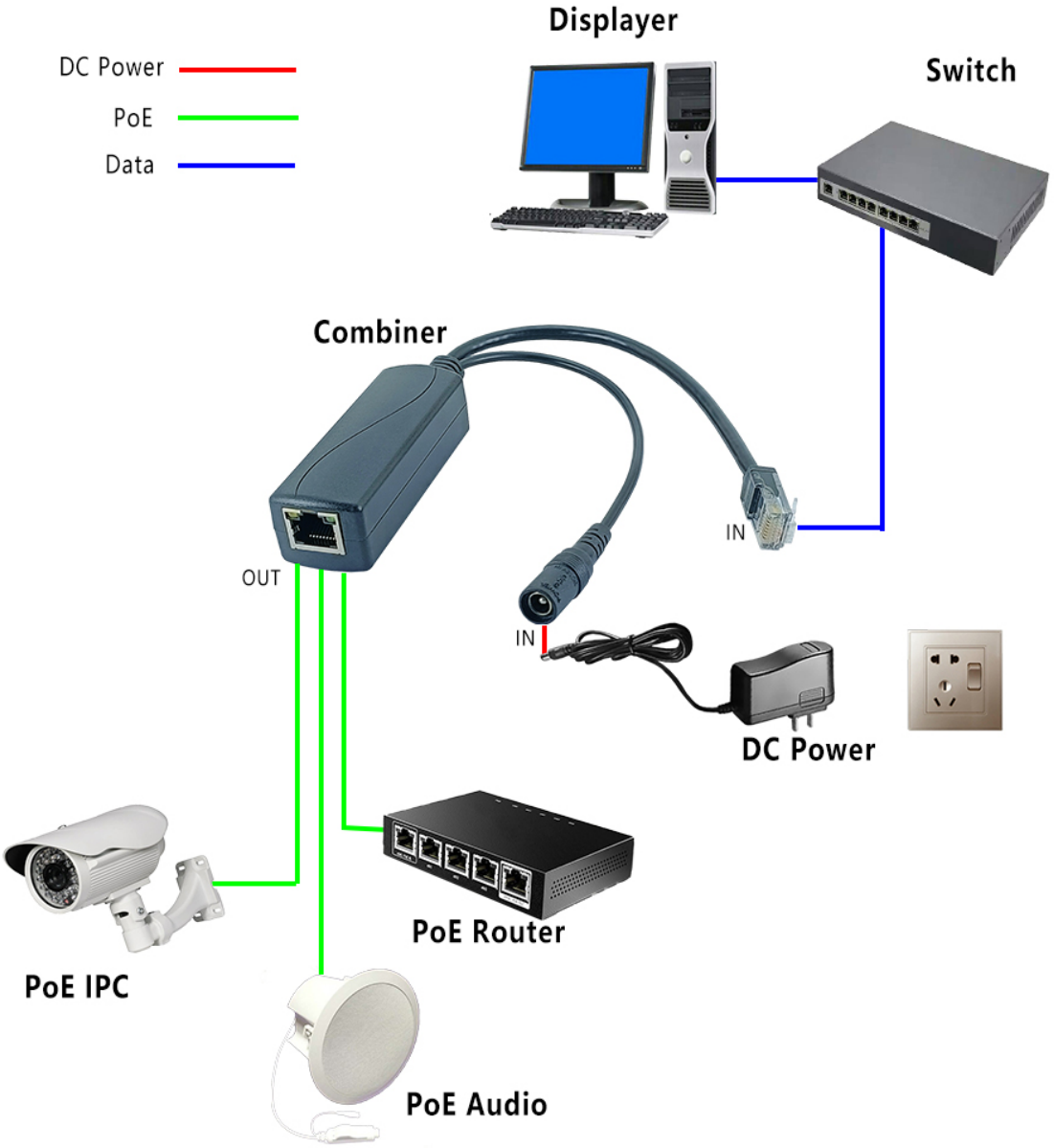
Dimensions



Interface Definition



Topology Diagram for Product Installation and Application



Application Scenarios

<table>
<tr><td>  </td><td rowspan="3">  </td></tr>
<tr><td>PoE camera</td></tr>
<tr><td>  </td></tr>
<tr><td>PoE Wireless access points</td><td>PoE speakers</td></tr>
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Product Detail

	
	
	

Product Package

Package Size: 250*73*2.5 mm(L*W*H)

MPQ: 1 PCS

N.W: 45 g

G.W: 49 g

Packing List	
Item	**Number**
TSD-PD12HG	1
AC power cord	0
Operation manual	0