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

SPECIFICATION FOR APPROVAL

CUSTOMER :

PRODUCT NAME: Pass-through 30W Passive PoE Combiner

PRODUCT MODEL: TSD-PD12H

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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PRODUCT: Pass-through 30W Passive PoE Combiner

MODEL: TSD-PD12H

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 the 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 the entire PoE (Power-over-Ethernet) process. The PD device is the PSE load that receives the power supply, 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 PD 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

TSD-PD12H is a direct-through passive PoE combiner with a maximum output power of 30W. It does not support the IEEE 802.3af/at PoE standard protocol. The internal circuit does not have a voltage regulation function. It takes 12-56V DC input and outputs 12-56V passive PoE signal.

The TSD-PD12H can receive DC and data signals, and after merging and conversion, it outputs one passive PoE signal. It can provide PoE power supply for high-power terminal devices and supports the operation of devices such as PoE IPC and PoE wireless AP.

The TSD-PD12H is available in two colors - black and white, allowing users to choose.

Product Description

The TSD-PD12H has two input channels and one output channel. The RJ45 crystal connector: for input data signal; the DC socket: for input of 12-56V DC signal; the RJ45 network port: for output of passive PoE signal, with a direct connection output, and the output voltage: 12-56V.

Size and structure: 170*19*20mm (Length*Width*Height), with a center length of 142mm. DC socket specification: 5.5*2.1mm. Overall material: High-temperature resistant and environmentally friendly ABS plastic casing, colors: frosted white, frosted black.

The maximum output power of TSD-PD12H is 30W. The transmission rate is 10/100Mbps adaptive transmission. It supports a wide voltage input range of DC 12~56V, and an output voltage range of DC 12~56V. The power supply pins are: RJ45 + RJ78 -.

TSD-PD12H has obtained certifications such as CE, FCC, and RoHS, and its EMC parameters meet the requirements of IEC 61000-4-2/3/4/5/6 standards. The circuit has protection functions against lightning strikes, short circuits, overloads, and high temperatures. The product is sold in many countries and regions around the world.

Product Features

- Input: Wide-voltage DC 12V~56V
- Output: passive PoE wide-voltage DC 12V~56V
- Adaptive transmission rate of 10/100Mbps
- Power pins: RJ45+ RJ78-
- 4KV surge protection
- Overheat protection, overvoltage protection, overload protection, and short-circuit protection

- Conversion efficiency greater than 85%
- Through-type input and output
- DC socket specification: 5.5*2.1mm
- High-temperature-resistant and environmentally friendly ABS plastic casing
- EMC complies with IEC 61000-4-2/3/4/5/6 standard requirements
- Certified by CE, FCC, and RoHS
- Equipped with original high-precision electronic components from international brands, ensuring stable performance
- High-power, high-conductivity, low-impedance transistors for stable performance and minimal heat generation
- High-temperature-resistant PCB made of environmentally friendly material, using lead-free and eco-friendly manufacturing processes

Specifications

Product parameter table	
Product Name	Pass-through 30W Passive PoE Combiner
Product Model	TSD-PD12H
PoE Standard	/
Input Voltage	DC12-56V
Output	Passive PoE: DC 12-56V
Conversion Efficiency	≧85%
PoE Pin	PoE: RJ45+ RJ78- powered
Conversion Mode	/
Data Rate	10/100Mbps adaptive transmission
Transmission Distance	100 meters(Category 5e Cable (Cat5e))
Surge Protection	4KV
Circuit Protection	overheat protection, overcurrent protection overvoltage protection, short circuit protection
LED Indicator	/

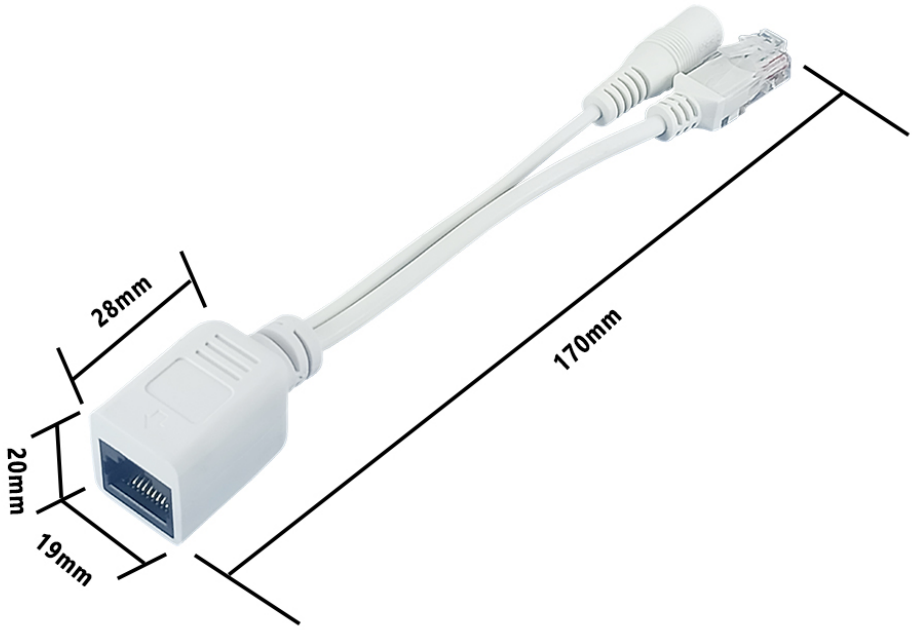
Interface	Input Port (DC female socket) : DC 12-56V IN Input Port (RJ45 connector) : Data IN Output Port (RJ45 Jack) : Passive PoE OUT (RJ45+ RJ78-)
Function	/
Material	High-temperature-resistant and environmentally friendly ABS plastic
Color	Matte white and matte black
Accessories	/
EMC	IEC 61000-4-2/3/4/5/6
Temperature	-30～60℃ For Operating -30～80℃ For Storage
Humidity	RH95% MAX (Non-condensation)
Weight	N.W: 26 g
Dimension	170*19*20mm (L*W*H)
Package	Transparent LDPE Packaging Bag

Product Applications

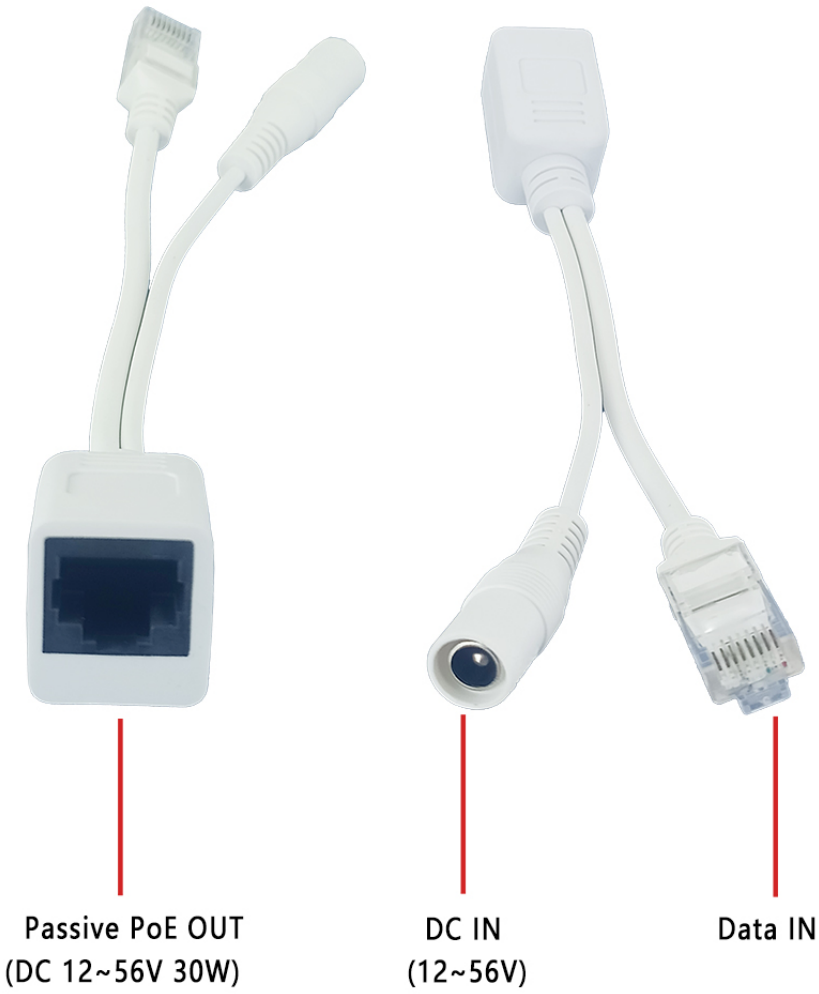
The TSD-PD12H is small, lightweight, and easy to install and use. With a maximum output power of 30W, it can be flexibly applied in various indoor and outdoor wiring scenarios to meet the diverse needs of users. It supports the operation of high-power IP devices such as cameras and wireless APs. The TSD-PD12H has won unanimous praise from equipment manufacturers and end users for its stable operation, excellent performance, and flexible deployment.

The TSD-PD12H does not support the IEEE802.3af/at standard protocol. When powering, it supplies power directly to the terminal device without going through a detection process. Therefore, users should be aware that the power-receiving device should be compatible with the output voltage of the TSD-PD12H; otherwise, it may cause the device to malfunction.

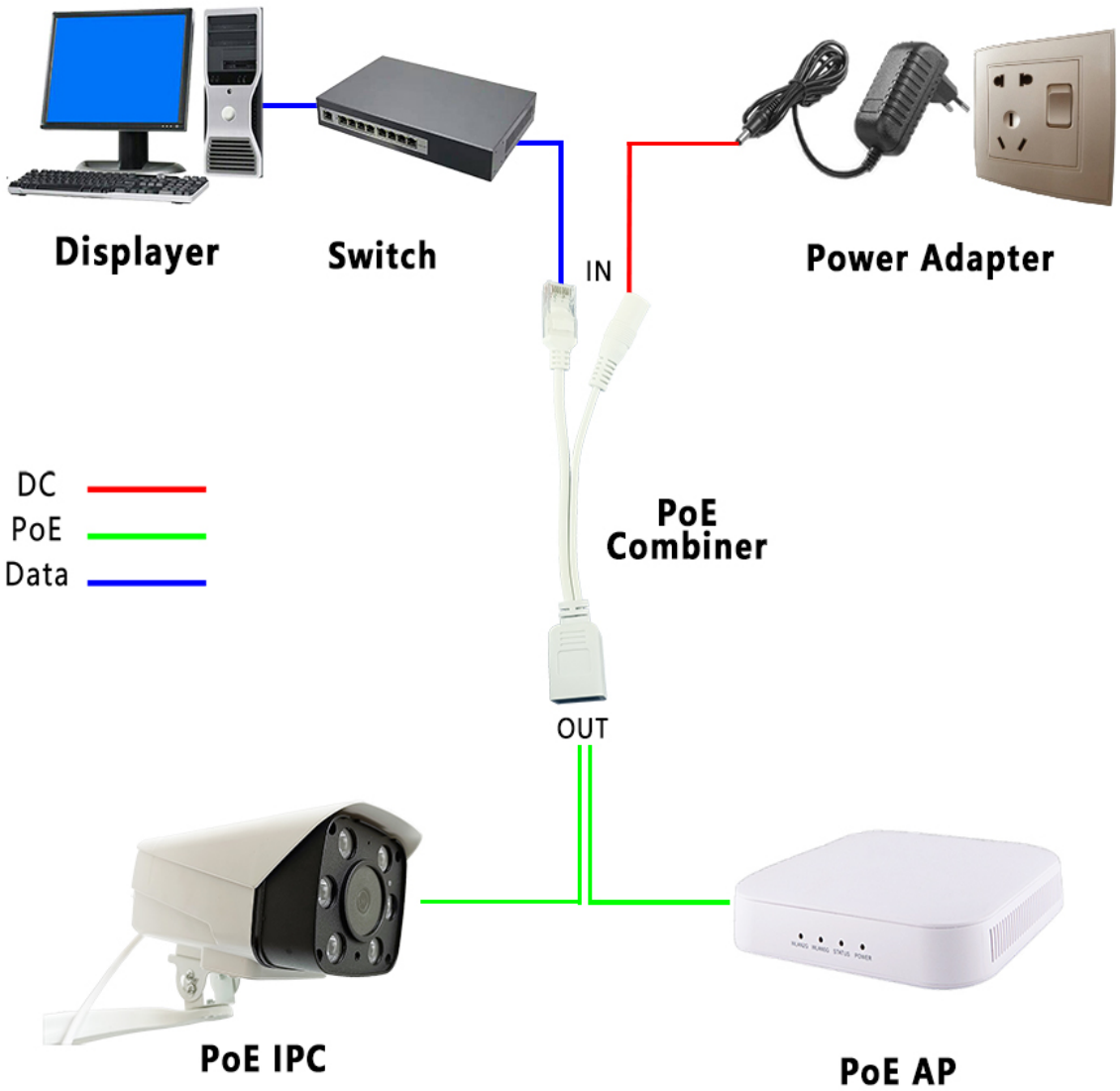
Dimensions



Interface Definition



Topology Diagram for Product Installation and Application



Application Scenarios

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Wireless AP</td><td>PoE IPC</td></tr>
<tr><td colspan="2">  </td></tr>
<tr><td colspan="2">PoE Router</td></tr>
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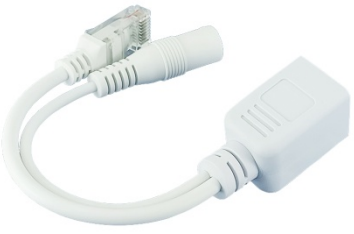
Product Detail

Product Package

Package Size: 250*73*2 mm (L*W*H)

MPQ: 1 PCS

N.W: 26 g

G.W: 30 g