



## SPECIFICATION FOR APPROVAL

CUSTOMER : \_\_\_\_\_

PRODUCT NAME : Waterproof Single-port PoE Combiner

PRODUCT MODEL : TSD-C030PG

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: Waterproof single-port PoE Combiner**

### **MODEL: TSD-CO30PG**



## **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 10M BASE-T and 100M BASE-T. IEEE802.3af/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) Pins 1 and 2 are connected as the positive pole, and pins 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-CO30PG is a combiner compliant with the IEEE802.3af/at PoE standard protocols. The product inputs 6-36V DC power and network signals, and outputs 48V 0.65A PoE signals with a maximum output power of 30W.

The TSD-CO30PG combiner has excellent waterproof performance and can supply power to outdoor PoE terminal devices that are far from AC 90-240V power sources and only receive solar power. The product is mainly applied in wireless APs, outdoor bridges, network cameras and outdoor speakers, etc.



## Product Description

Interface configuration of TSD-CO30PG:

Input interfaces:

5.5\*2.1mm DC female socket: inputs 6V~36V DC power

RJ45 network port 1: inputs data signals

Output interface:

RJ45 network port 2: outputs PoE signals (48V 0.65A 30W)

Housing dimensions: 63\*71\*36mm (L\*W\*H); overall length: 42cm; length with waterproof four-piece set: 47.5cm. DC female socket specification: 5.5\*2.1mm. Body color: frosted black; body material: super-hard high and low temperature resistant plastic shell.

The EMC parameters of TSD-CO30PG meet the requirements of IEC 61000-4-2/3/4/5/6 standards, and it has obtained CE, FC, and RoHS certifications. The internal circuit is equipped with functions such as overheating protection, overvoltage protection, over-current protection, and short-circuit protection. The TSD-CO30PG combiner inputs DC 6V~36V and network signals, with an output voltage of 48V 0.65A and a maximum output power of 30W. Transmission rate: 10/100/1000M adaptive transmission; power supply pins: RJ12+ RJ36-.

TSD-CO30PG is a waterproof combiner specially designed for outdoor PoE power supply scenarios. The product can work in harsh environments such as humidity, high temperature or low temperature. TSD-CO30PG can combine data and power to transmit through a single network cable, effectively simplifying equipment installation and management, and reducing users' line deployment costs.

## Product Features

- IEEE802.3af /at PoE protocols
- IEC 61000-4-2/3/4/5/6 standards
- CE, FC, RoHS certifications
- Input: DC 6V~36V and Data
- Output: PoE 48V 0.65A
- Maximum output power: 30W



- Power supply via RJ12+ and RJ36-
- 10/100/1000M adaptive transmission
- 5.5\*2.1mm DC female socket
- Super-hard high and low temperature resistant plastic shell
- Overheat protection, short-circuit protection, overvoltage protection, overload protection
- Waterproof function
- Original electronic components from international famous brands, with high precision and high performance
- High-power, high-conductivity and low-impedance transistors, featuring excellent reliability and temperature resistance
- Environmentally friendly and high-temperature resistant PCB material, with environmentally friendly lead-free process
- Pure copper pin connectors to ensure stable contact
- Equipped with standard waterproof four-piece set

## Specifications

| Product parameter table |  |
|-------------------------|--|
| Product Name            | Waterproof Single-port PoE Combiner    |
| Product Model           | TSD-CO30PG                             |
| PoE Standard            | IEEE802.3af/at                         |
| Input Voltage           | DC 6V~36V                              |
| Output                  | PoE 48V 0.65A 30W                      |
| Conversion Efficiency   | $\geq 85\%$                            |
| PoE Pin                 | PoE: RJ12+ RJ36- powered               |
| Conversion Mode         | /                                      |
| Data Rate               | 10/100/1000Mbps adaptive transmission  |
| Transmission Distance   | 100 meters(Category 5e Cable (Cat5e) ) |
| Surge Protection        | 4KV                                    |



|                    |   |
|--------------------|---|
| Circuit Protection | Overheat protection, overvoltage protection<br>Over-current protection, short circuit protection            |
| LED Indicator      | /   |
| Interface          | Input Port(DC female socket) : DC IN<br>LAN Port ( RJ45 Jack1) : Data IN<br>PoE Port (RJ45 Jack2) : PoE OUT |
| Function           | /   |
| Material           | Super-hard high and low temperature resistant plastic shell   |
| Color              | Matte black   |
| Accessories        | Equipped with standard waterproof four-piece set  |
| EMC                | IEC 61000-4-2/3/4/5/6   |
| Temperature        | -20~60°C For Operating<br>-30~80°C For Storage  |
| Humidity           | RH95% MAX (Non-condensation)  |
| Weight             | N.W: 172g   |
| Dimension          | 475* 71* 36mm(L* W* H (with waterproof four-piece set))   |
| Package            | EPE foam + Cartons (142* 114* 42mm)   |

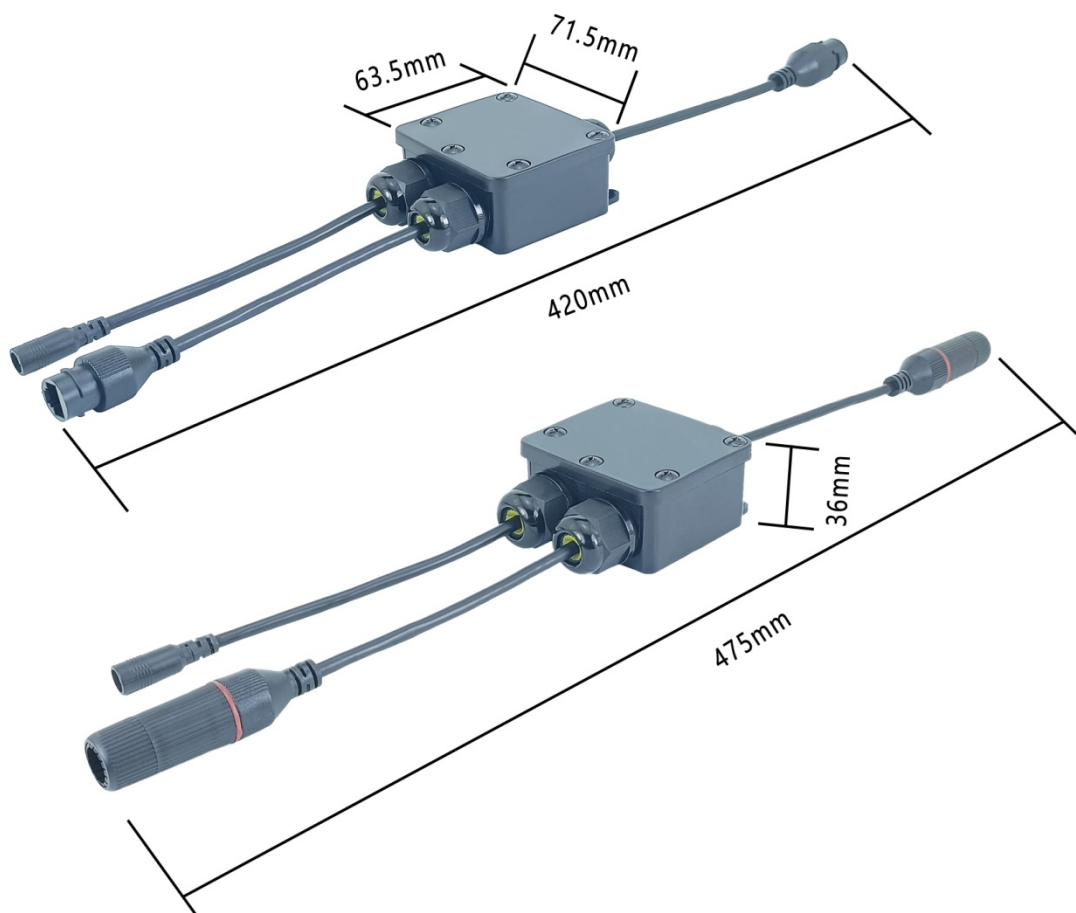
## Product Applications

The TSD-CO30PG combiner can combine power and data signals to supply power to PoE terminal devices. It is mainly applied in wireless APs, network cameras, smart buildings, IP telephones, and other outdoor solar-powered devices.

The TSD-CO30PG has excellent waterproof performance and can be flexibly used in various complex environments to solve the power supply problems of user equipment in harsh environments, effectively expand the network coverage range, reduce the complexity of equipment wiring and save user time. The performance and quality of the product have received unanimous praise from users.

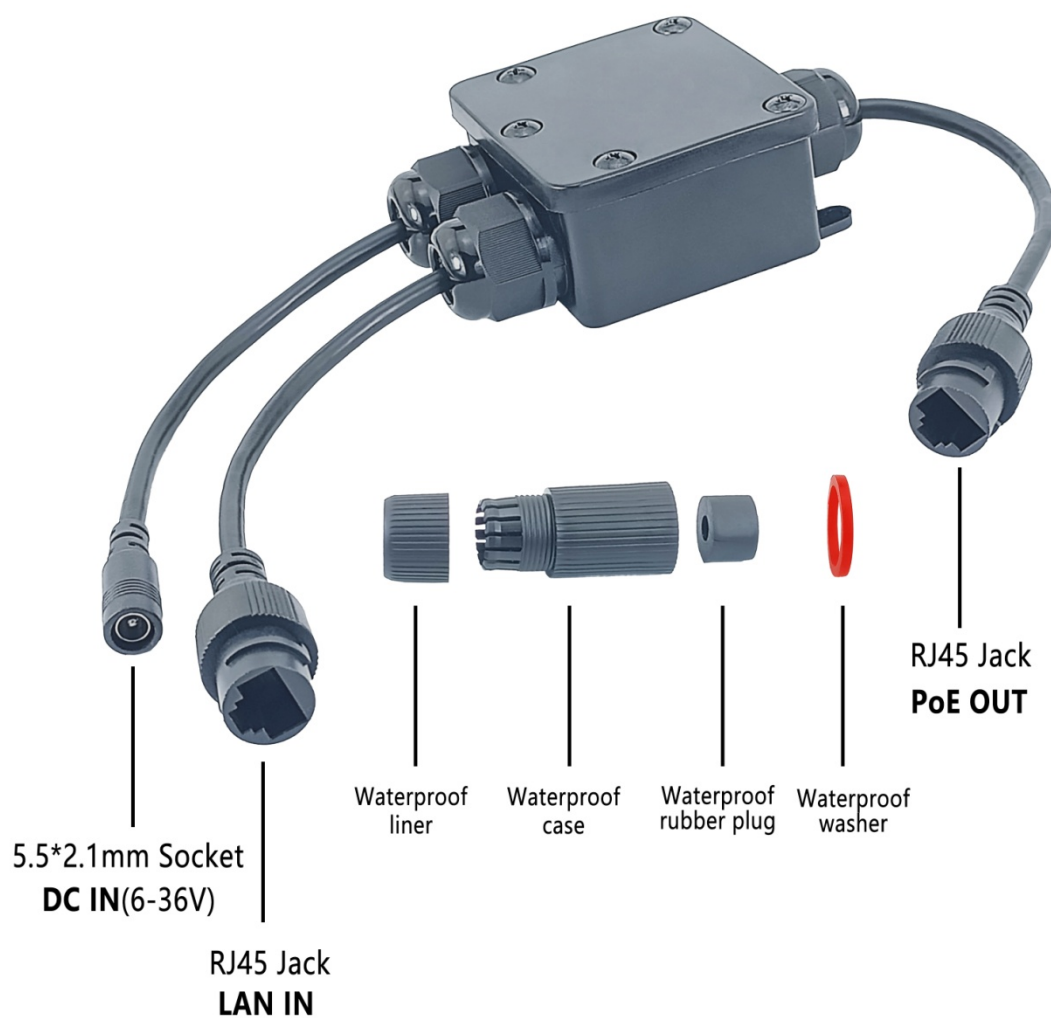


## Dimensions





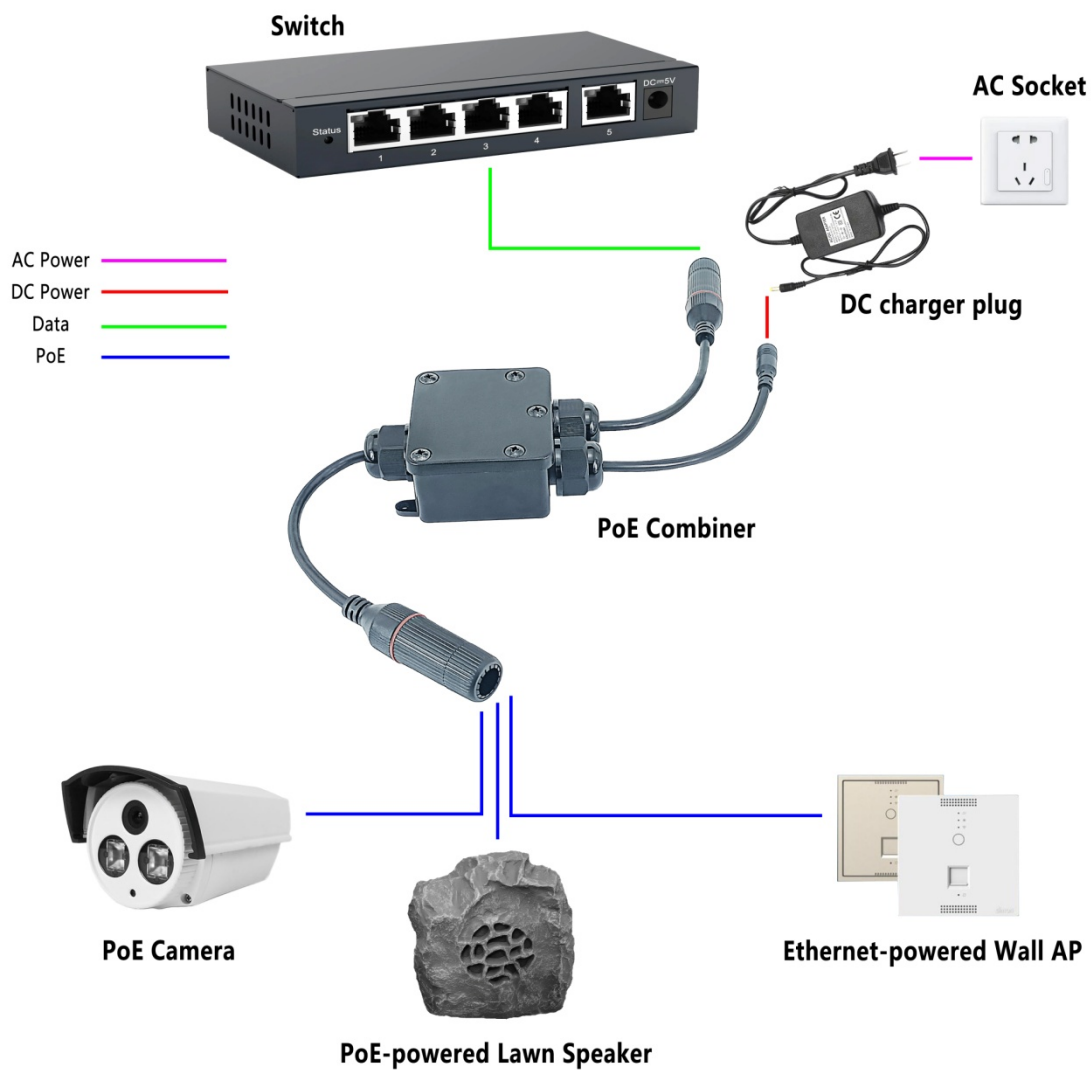
## Interface Definition







## Topology Diagram for Product Installation and Application





## Application Scenarios



Wireless ceiling-mounted AP



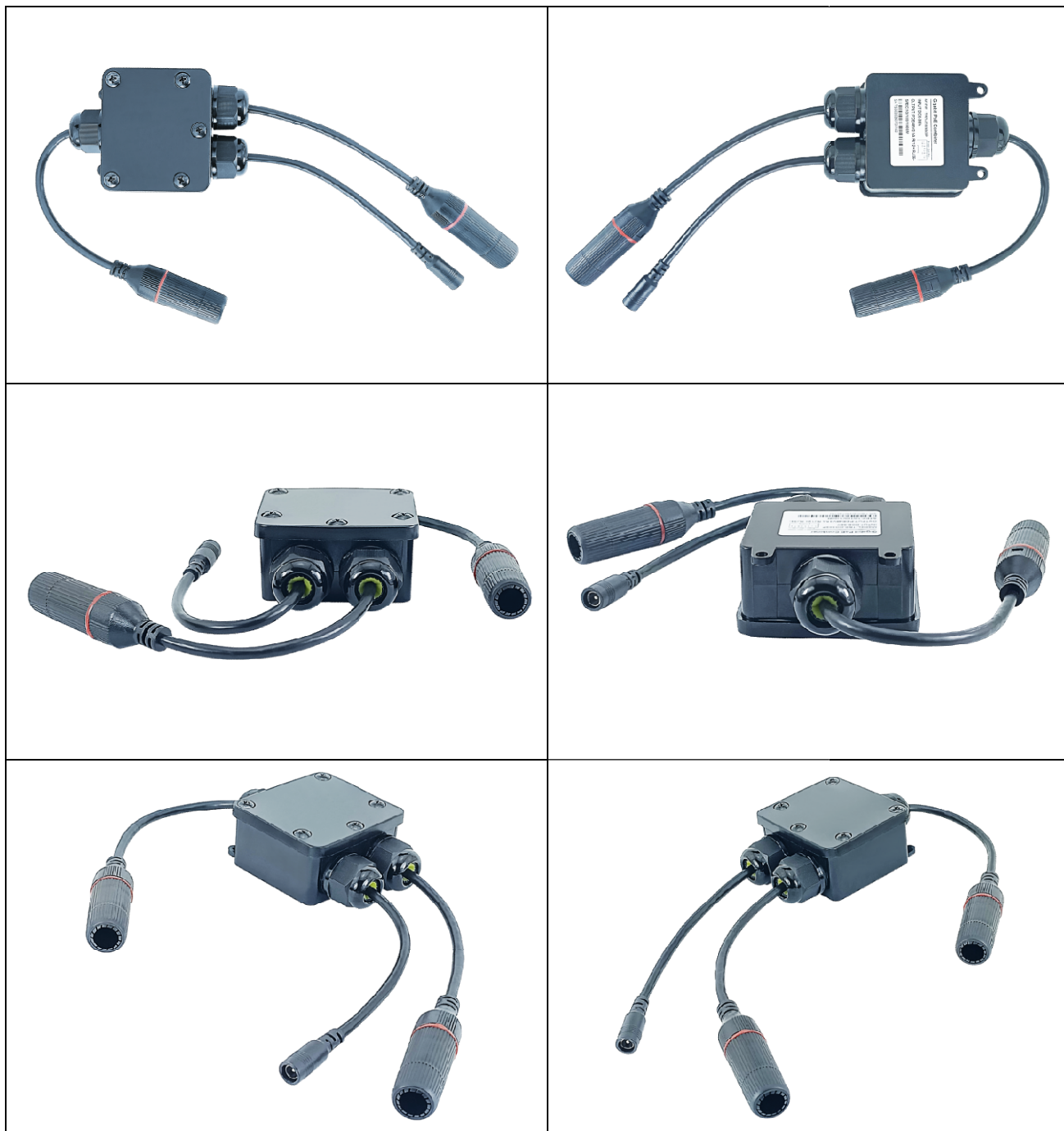
PoE camera



PoE Lawn Speaker



## Product Detail





## Product Package



Package Size : 142\*112\*42 mm (L\*W\*H)

MPQ : 1 PCS

N.W : 172 g

G.W : 212 g

| Packing List                       |        |
|------------------------------------|--------|
| Item                               | Number |
| TSD-CO30PG                         | 1      |
| standard waterproof four-piece set | 2      |
| Operation manual                   | 1      |