

TL-PoE170S

New Production Introduction





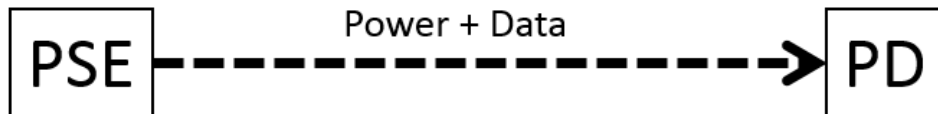
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PoE Standard

Power over Ethernet, or PoE, describes any of several standards or ad hoc systems that pass electric power along with data on twisted-pair Ethernet cabling. This allows a single cable to provide both data connection and electric power to devices such as wireless access points (WAPs), Internet Protocol (IP) cameras, and voice over Internet Protocol (VoIP) phones.



PSE: Power Sourcing Equipment

PD: Powered Devices



PoE Standard

- IEEE 802.3af-2003: PoE, max power delivered by PSE:15.4W
- IEEE 802.3at-2009: PoE+, max power delivered by PSE:30.0W
- **IEEE 802.3bt-2018: PoE++, max power delivered by PSE:100W**

Comparison of PoE parameters

Property	802.3af (802.3at Type 1) "PoE"	802.3at Type 2 "PoE+"	802.3bt Type 3 "4PPoE" ^[26] /"PoE++"	802.3bt Type 4 "4PPoE" ^[26] /"PoE++"
Power available at PD ^[note 1]	12.95 W	25.50 W	51 W	71 W
Maximum power delivered by PSE	15.40 W	30.0 W	60 W	100 W ^[note 2]
Voltage range (at PSE)	44.0–57.0 V ^[27]	50.0–57.0 V ^[27]	50.0–57.0 V	52.0–57.0 V
Voltage range (at PD)	37.0–57.0 V ^[28]	42.5–57.0 V ^[28]	42.5–57.0 V ^[29]	41.1–57.0 V
Maximum current I _{max}	350 mA ^[30]	600 mA ^[30]	600 mA per pair ^[29]	960 mA per pair ^[29]
Maximum cable resistance per pairset	20 Ω ^[31] (Category 3)	12.5 Ω ^[31] (Category 5)	12.5 Ω ^[29]	12.5 Ω ^[29]
Power management	Three power class levels (1-3) negotiated by signature	Four power class levels (1-4) negotiated by signature or 0.1 W steps negotiated by LLDP	Six power class levels (1-6) negotiated by signature or 0.1 W steps negotiated by LLDP ^[32]	Eight power class levels (1-8) negotiated by signature or 0.1 W steps negotiated by LLDP
Derating of maximum cable ambient operating temperature	None	5 °C (9 °F) with one mode (two pairs) active	10 °C (20 °F) with more than half of bundled cables pairs at I _{max} ^[33]	10 °C (20 °F) with temperature planning required
Supported cabling	Category 3 and Category 5 ^[25]	Category 5 ^[25] ^[note 3]	Category 5	Category 5
Supported modes	Mode A (endspan), Mode B (midspan)	Mode A, Mode B	Mode A, Mode B, 4-pair Mode	4-pair Mode Mandatory

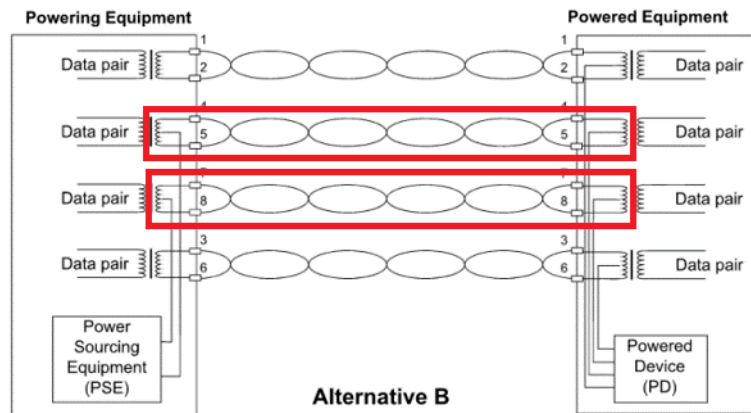
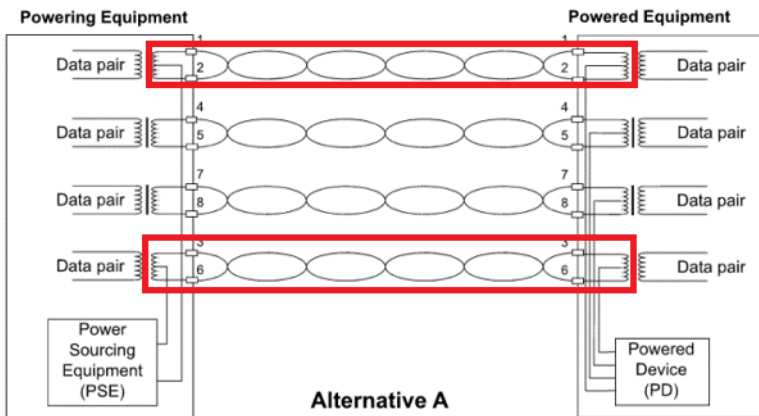
The new PoE standards supports higher output power.

The new PoE standards are backward compatible.

802.3af/at (2-Pair mode)

Alternative A: deliver power with data over **two pairs**, pins 1-2 and 3-6.

Alternative B: deliver power with data over **two pairs**, pins 4-5 and 7-8.



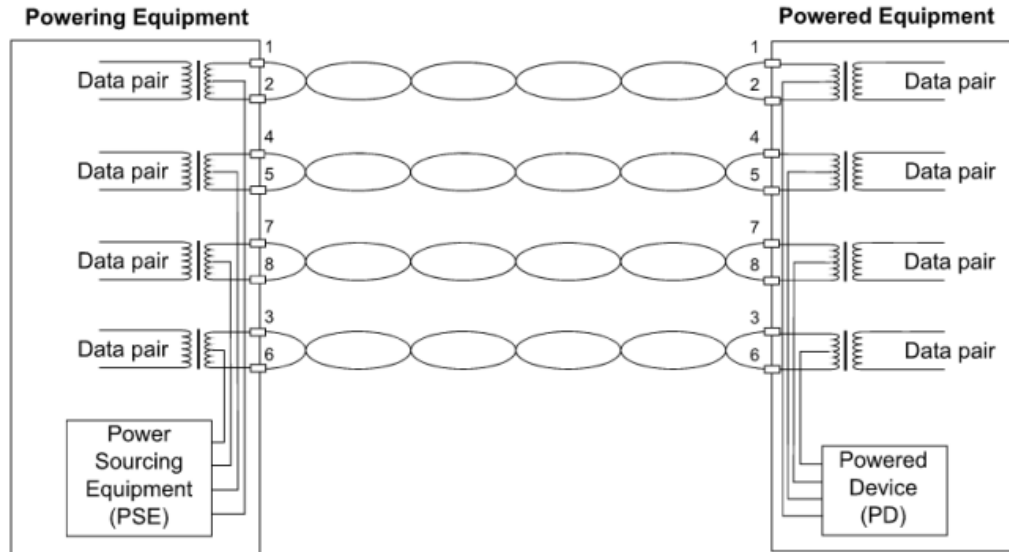
TP-Link PoE switches, injectors only support Mode A.

A PSE shall implement Alternative A, Alternative B, or both.

PDs should support both Mode A and Mode B in normal circumstances by PoE standard.

802.3bt (4-Pair Mode)

4-Pair Mode: deliver power with data over all 4 pairs.



Note: Since 802.3bt use 4-pair mode(all pins of cable), it doesn't have the difference of Alternative A and Alternative B.



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Product Overview



W x D x H: 154.7 x 70 x 42 mm

1*RJ45 data-in port: 10/100/1000Mbps

1*RJ45 power + data-out port: 10/100/1000Mbps

Socket: 100-240 V, 50/60 Hz, 1.6 A

Rated output voltage: 53.5V(Typical)

Max. PoE Wattage per Port by PSE: 60W

PoE Standard: 802.3af, 802.3at, 802.3bt

Mounting: Desktop/Wall



Product Comparison

Brand	TP-Link	Cudy	Trendnet
Model	TL-POE170S	POE300	TPE-117GI v2
Port Speed	1000Mbps	1000Mbps	1000Mbps
PoE Standard	802.3af/at/bt	802.3af/at/at 4pairs(60w)*	802.3af/at/bt
PoE Output	60W	60W	60W
Operating Temperature	0-45°C	0-45°C	0-40°C
Mounting	Desktop/Wall	Desktop/Wall	Desktop/Wall
Dimensions	155*70*42 mm	145*60*40mm	154*73*36mm

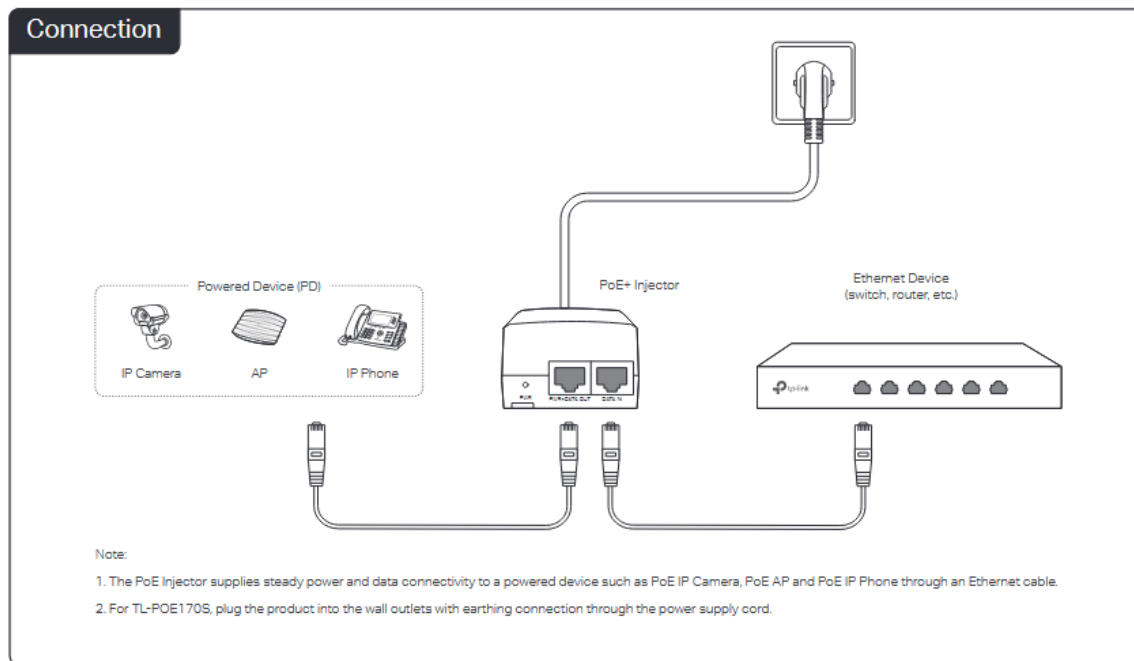
Note: POE300 doesn't support 802.3bt, but it use 4-pair mode to increase the output power(60w).

Application Scenario

1. There is no power outlet near the place where the network equipment is installed.
2. It's inconvenient to install a power outlet where the network equipment is installed, such as outdoor.
3. **The power of PD exceeds 30W(802.3at).**

PSE: TL-POE170S

Typical PD: PTZ IPC,
WiFi6 AP, Ceiling light





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QA



1. Is TL-POE170S compatible with all TP-Link EAP?

A: TL-POE170S is temporarily incompatible with the PDs supporting 802.3af/at and 24V passive PoE simultaneously. But EAP225 v3/3.2/v4, EAP225-Outdoor v1, EAP235 v1. TL-POE170S will be compatible with these EAPs before mass production.

2. What type of cables should be used?

A: It's recommended to use category 5 or above cables.

3. How far away TL-POE170S can provide PoE network connection?

A: 100m(328ft.), but it is affected by the cable quality and max power consumption of PD .

QA



4. Can the PoE injector supply power to a PoE device which doesn't have a gigabit PoE port?

A: Yes, all RJ45 ports of the PoE injector support 10/100/1000 Mbps.

5. What can I do if my PoE injector doesn't supply power to the powered device or the supplied power is unstable?

A1: Ensure the PD is PoE-compliant and its connecting port supports the PoE function.

A2: Ensure the power consumption of the PD doesn't exceed the maximum power supply of the PoE injector, otherwise the overload protection of the PoE injector will be activated. The quality and length of the Ethernet cable may influence the reception of the power supply.

6. Will we release other switches/PoE injectors supporting PoE++?

A: Yes, 6-Port 10G L2+ Managed Switch with 4-Port PoE++ is under development.

Thanks for Watching

The bottom of the slide features several overlapping, semi-transparent blue geometric shapes. These shapes include a large light blue trapezoid on the left, a medium teal rectangle in the center, and a dark blue trapezoid on the right. The shapes are layered, with the dark blue one being the most prominent in the foreground.