Using your WS-GPOE-12-48v 1U high rack mount
Gigabit power injector for 802.3af or 48 volt devices

Single Supply version

Dual supply version

- **WS-GPOE-12-48v60w** with a 60 watt supply, use the Mode A input - use for IP phones
- **WS-GPOE-12-48v120w** with a 120 watt supply, use the Mode A input
- **WS-GPOE-12-48v240w** with 2x 120 watt supplies – connect one to each A / B input
- **WS-GPOE-12-56v120w** with a 120 watt supply, use the Mode A input
- **WS-GPOE-12-56v240w** with 2x 120 watt supplies – connect one to each A / B input

This device injects power passively. 48 Volts is available all the time, there is no autonegotiation with the attached client device. This device has no switching function – there is no configuration needed, and VLANs and other management features of any switch will be handled transparently thru the injector.

Power and Data is shared on all 4 pairs in the Ethernet cable – this device works to allow power on the same wires as data – therefore all 4 pairs can support Ethernet data. We can answer your questions at Skype: wifiqos or Phone 512-479-0317. We also offer 48, 24, 18, 15 and 12 volt power supplies – so if you need something else, please call.

Connect one or two power supplies to the DC input, Then connect the AC power to the power supply, then plug in one device on the POE side at a time. You will see a Sync light on your switch. As the load increases, the load light will turn on, then change color per the table below.

The WS-GPOE-12 has 2 power supply connectors – each is 2.1mm x 5.5mm. Each powers ½ of the pairs in the Ethernet cable – all 12 PoE outputs will be powered by each input – just on different pairs. See the Mode A and Mode B table below. All 802.3af client devices have diodes to extract the power from both sets of pairs. Practically, this means that under normal operation – the load will be distributed between the two power supplies – the distribution will not be exactly equal, but with typical wiring distances the load will be uniformly balanced between the two supplies.

URL: http://wifi-texas.com/   Skype:wifiqos

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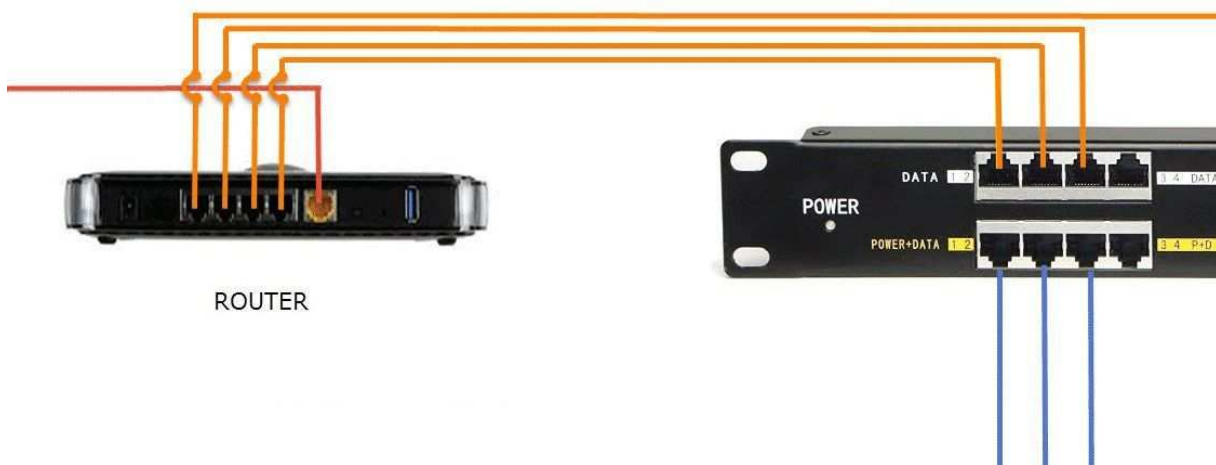
Connect the LAN port to your Ethernet switch.   This device handles all 10/100/1000 mb modes – so all gigabit and fast Ethernet switches are compatible. Power is provided on the POE ports on pins 1 and 2 (minus) and 3 and 6 (plus) and also on pins 4 and 5 (plus) and 7 and 8 (minus).

1-4 Rj45 socket	LED1	5-8 Rj45 socket	LED2	9-12 Rj45 socket	LED3
Port current 0-20ma	off		off		off
Port current 0-400ma	green		green		green
Port current >400ma	yellow		yellow		yellow

The Master LED shows green if there is power – more than 12 volts. Each socket has two 650 ma current limiters – one for pins 36 and one for pins 45. This device will shut down the power if the current exceeds .65 amps per side.   It will restore power if the load is less than 650 ma.   Groups of 4 sockets share one "current sensor" LED. There are three LED's – one for each group of 4 sockets.

(note – first production showed Red at 400 ma – this is not a fault condition)

Fuse for each port limits current to 650 mA – it will self reset when the overload is removed.

Passive vs 802.3af/at PoE

Passive PoE	Power is on all the time only PoE capable devices should be plugged in devices can take from 0 to 30 watts per port
802.3af PoE	Up to 15 watts per port of power is available power is applied only if the device accepts PoE current is limited to 300 ma per port
802.3at PoE	Up to 25 watts per port of power is available power is applied only if the device accepts PoE current is limited to 500 ma per port A 802.3at client plugged into a Passive or 802.3af may operate in low power mode

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Mode A and B power inputs

Usage	Mode A - DC Input RJ45 pins 12- 36+	Mode B - DC Input RJ45 pins 45+ 78-	Note
802.3at (passive)	56 volts	56 Volts	for up to 300 watts total or 60 watts per port
802.3af (passive)	48 volts	48 volts or none	Load balancing or Redundancy
802.3af (passive) + 24v	48 or 48 volts	24 volts	Passive and 802.3af at the same time
Passive 24v	None	24 volts	Mikrotik, UBNT, OpenMesh, Tranzeo
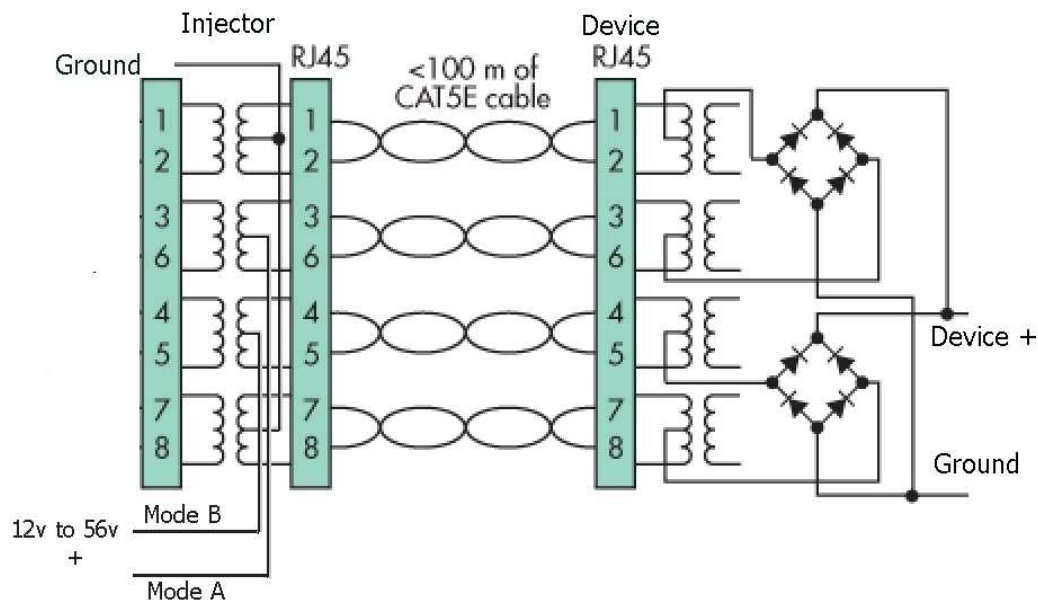
568A vs 568B wiring and power polarity – Mode A

You can use either 568A (green wires on pins 12, orange on 36) or 568B wiring (orange on pins 12, green on 36).   Your client device can accept either wiring.   Because of this, the polarity makes no difference in PoE devices in mode A.   If your device states 12+ and 36- , you can use an Ethernet crossover cable.

Cambium / Canopy reverse PoE – mode B

Some Mode B devices (like Cambium and Canopy) require reverse polarity on pins 45 and 78. Please see our blue "WS-CS-RJ45" device which does the reversal.

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10/100 and gigabit compatibility

	10/100 Switch	Gigabit switch
10/100 Device	Works	Works
10/100/1000 or "gigabit" Device	Works	Works

How PoE works

A device needs power to operate.   Not volts or amps – power expressed as watts.

That power can be supplied at different voltages.   The electronics inside the device needs usually about 3.3 or 5 volts. But at low voltages, the wires from power supply have a lot of loss beyond about 5 feet.   So for short distance power, most IP phones and Cameras are shipped with a 12v or 24v power supply because 12v supplies are cheap.   But these same devices, when powered via the Ethernet cable, use 48 volts.   This is the 802.3af standard voltage.   802.3at using 56v – because the loss is even lower.

Is 120 watts going to damage my device?

No.   High **Voltage** can damage a device, because if the **voltage** is higher than allowed, the circuitry in the device "breaks down" **drawing** a lot of **power**, and that power will melt things. But at any allowed voltage – the device takes only the power it needs to operate - you cannot "push" power.

Other Products from WiFi-Texas

12, 16 and 24 port rack mount passive or 802.3at

8 port wall mount passive or 802.3at

PoE Tester

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