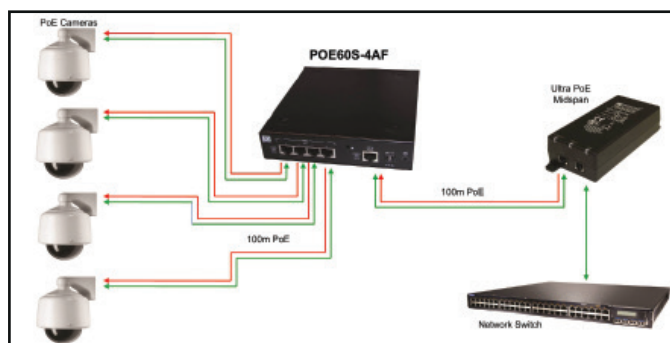




## POE60S-4AF User Manual

### Power over Ethernet and Data Extender

Power over Ethernet has a range of about 100 meters from the network switch or midspan. Should PoE be needed at distances greater than 100 meters, solutions might include rewiring and moving network midspans, all of which may require extensive labor and may be costly. Phihong has developed a more cost effective option with the POE60S-4AF. Users can double the effective PoE Range of their devices to 200 meters.



Using standard RJ45 connecting Ethernet cables the POE60S-4AF takes its power from an Ultra or Mega PoE midspan (75W or greater). The output is converted to be IEEE802.3af compatible 15.4W per port. The device can also act as a switchdata repeater by itself. It has an optional 75W DC power adapter, the PSC75U-560 which can power all four ports at 15.4W per port.

This extender makes expanding a network easy. The POE60S-4AF makes it possible to add an additional 4 security cameras 200 meters from a network switch. The first Ethernet cable not exceeding 100 meters should be laid from the switch to a midpoint where the POE60S-4AF is connected; additional cables not exceeding 100 meters each should run from the extender to the security cameras. As this device is built with plug-and-play technology there is no additional software or hardware installation required. Upon powering up, the device will work automatically taking the necessary power from the midspan and relaying it on to the IEEE802.3af compatible device.

Compatible IEEE802.3af devices include but are not limited to Security Cameras, IP Telephones, and wireless network and access controllers.

#### Installation Sequence:

- 1) Using the appropriate Ethernet cable, Category 5e or above, connect the PoE In/WLAN to the Ultra PoE(75W) (POE OUT) in the midspan communications cabinet.
- 2) Using the same type of cable as before, connect the "Power Out" to the given devices, i.e. security cameras.
- 3) Wait a few seconds to allow for connectivity

Data (IN/OUT)	Full Duplex - Solid Green Half Duplex - Off Blinking LED indicates fault
	100M - Solid Green 10M - Off
	Ethernet activity - Yellow blinking
PoE Input	On: Input power OK Off: No power or voltage low
PoE Output (per port)	On: POE output OK Off: No POE output

Should any fault occur with the connection, the LED's will indicate as per the direction above.

Input Power	Phihong's Ultra or Mega Power (75W or better). or equivalent or optional DC power adapter
Output Power	4 ports at IEEE802.3af standard: 15.4W per port for 62W total power
Ethernet Cable	Designed to operate with Categories 5e or 6. All cables must be the same category for full functionality.
Dimensions	174x154x38mm (6.85x6.06x1.5in)
Weight	0.9kg (1.98lb)
Operating Temperature	-40 to +60 °C -40 to +149 °F



## FAQ

### What are the benefits to using PoE?

Power over Ethernet is best suited to users who want to expand and extend the capabilities of their existing network switches. PoE uses standard Category 5e or 6 cables and uses them to transfer both data and power to remote locations. Since extensive wiring is not needed, these remote locations are able to be easily changed. PoE power standards are also universal. Unlike traditional power supplies which are only compatible with specific standards to their region, PoE is able to self regulate to work with a variety of international power standards. PoE also offers more flexibility in power events, such as a surge or brownout.

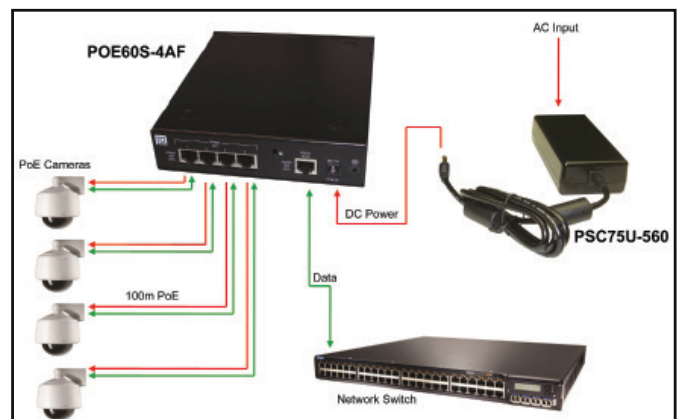
### Why am I limited to 100 meters?

Power can be transmitted over an Ethernet cable to distances that exceed 100 meters depending on the amount of power being put out by the midspan and loss on the cable across the distance. If the port powering the Ethernet puts out 15.4W (IEEE802.3af standard) of power and the distance is 100 meters then the power could dissipate to 12.95W in the worst case scenario by the time it reaches the end device. PoE is possible over distances greater than 100 meters but is not guaranteed or recommended as the IEEE specification guarantees only 100 meters for data transmission. Should a distance exceed 100 meters or more then an Ethernet extender such as Phihong's POE60S-4AF or POE61S-4AF are recommended. Although power is possible at greater distances, users may experience severe data loss after traveling 100 meters or more.

### Will I be able to use this device with my midspan that has an output of 15.4 or 30W per port?

No. In order for this device to operate the user must be using an Ultra or Mega PoE power injector or equivalent. Because this device detects an internal signature resistance of 12.5K, if it does not detect an output of 75W or better then it will not work. Phihong has developed several Ultra and Mega PoE midspans and single port power injectors that put out at full power 75-

95W per port which is ideal for the POE60S-4AF to be fully functional. The POE60S-4AF has an optional 75W DC input with Phihong's PSC75U-560 in the event that 75W PoE is unavailable. This option does however require that AC power be readily available to the Desktop Adapter so that it may power the POE60S-4AF.



### Do I need a special configuration for my network?

No, the POE60S-4AF is set to DHCP and will obtain an IP address automatically from the network. It should not affect any existing network applications. The device acts as an extender and switch only. The data and power will enter the device and be relayed on to the powered devices. There should be no change as if it were one continuous cable. Phihong does recommend professional installation to ensure that should any faults occur at installation, a technician is on hand to handle any problems should they arise.

### Where should I install my PoE Extender?

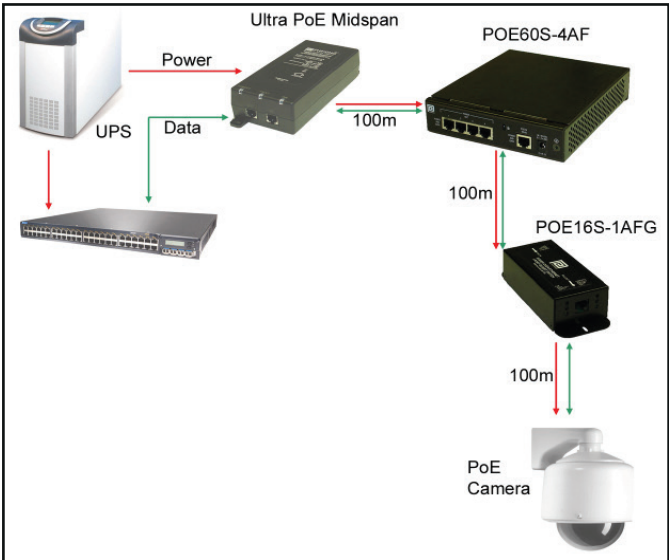
Your new PoE extender can be installed anywhere between the midspan or power injector and the device that needs powering provided that the extender's input and output connecting cables do not exceed the 100 meter limit. The device can be surface mounted including walls, tables and in select environments to a ceiling, but under no circumstances may the device use the connecting Ethernet cables as support.



# FAQ and Troubleshooting

Can I use this device with equipment that is not PoE ready?  
No, this device will not act as a splitter to divide the data over Ethernet and power via a DC cable. There is a list of available splitters available on the website [www.berger-stromversorgungen.de](http://www.berger-stromversorgungen.de) This unit may act as a data switch to relay data only over 100 meters.

Can I connect multiple devices to extend my reach beyond 200 meters?  
Yes it is possible to add more than one device to extend the reach of PoE; however only one can be a POE61S-4AF and it must be connected directly into the Ultra or Mega PoE midspan power injector. To extend the connection an additional 100m to 300 or more, then Phihong recommends the POE16S-1AFG extender which will be available in the first half of 2010. Since the POE60S-4AF has an internal signature resistance at 12.5K and its output must detect 25K signature resistance, the device will not work if connected to another POE61S-4AF or POE60S-4AF.



If your question is not listed here and need further information please contact Phihong Sales. For a full listing of available contact information please visit the Contact Us section of the Berger Stromversorgungen website [www.berger-stromversorgungen.de](http://www.berger-stromversorgungen.de)



Features	
Input	Phihong Ultra (75W) or Mega PoE (95W) or optional DC Power Adapter
Output	4 Ports at 15.4W max. per port; IEEE802.3af compatible
Ease of Installation	DHCP Detection
Safety Approval	CE Certified

Troubleshooting  
Detection:  
Once a compliant load is attached to the input and output RJ45 connectors, the Green LED for POWER IN will illuminate as well as the POWER OUT LED for each connected port indicating that the power is connected. If data is being transferred then a yellow LED will blink for DATA IN and under each connected port. A 100M Data Rate and Full Duplex will yield Green LEDS for DATA in and DATA OUT for each connected port. The LEDs will not illuminate if Half Duplex or 10M Data Rate. Should the load be non-complaint all LEDs will remain off.

Phihong is not responsible for any error, and reserves the right to make changes without notice.