Power over Ethernet became the new IEEE standard in 2003 allowing users to send both power and data to network devices without significant modification to their existing network structure. Security applications become the obvious choice for this new type of networking, now with the ability to power cameras and access points in places without local AC wiring.

A significant part of security networking is preparing for emergency situations in which devices must be fully operational even in power outage events. One option would be to have emergency generators ready to be connected to the midspan communications cabinet. A less expensive option is to employ splitters with battery charging capabilities so that essential security applications might be operational even without PoE. Smaller devices that use a 12V battery and either have a local memory or do not always require data transfer are ideal for use with the POE14-137.

POE14-137

IEEE802.3af Compliant Midspan

PoE

Data

Data only

13.7V Power only to charge battery

Door Access Keypad with internal memory and 12V backup battery.
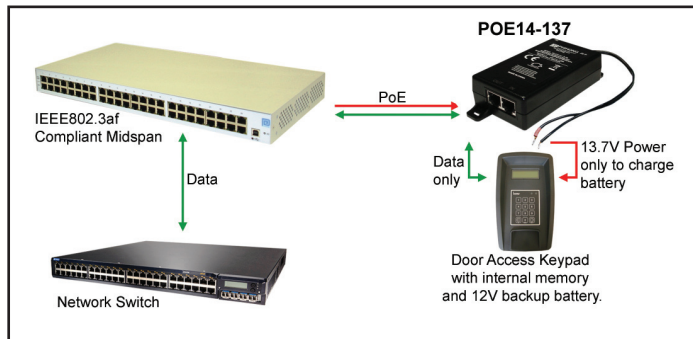
Network Switch

By using your standard Category 5 or above Ethernet cables, the POE14 can take its power from the network switch or midspan/power injector if applicable. The device will then split the power into a desired voltage and the data will run separately as well. The POE14-137 comes in a single output voltage of 13.7 which is used for charging 12V batteries. The diagram above shows the basic set up of a POE14 Splitter connected to a non-poe ready keypad access point. The Splitter is table mounted adjacent to the keypad and takes the power from the Ethernet and divides it into a data Ethernet and a DC power line to the device. Due to length restrictions on the DC output cable, the POE14-137 must be immediately adjacent to the powered device for operation. The POE14-137 may only take power from an IEEE802.3af compatible

midspan such as the POE20U-560(G). Recommended uses of the POE14-137 include security scenarios for use in simple door access with battery backup. Examples might include lighting or a door access keypad with local memory and a 12V backup battery for operation during power events including blackouts.

Installation Sequence:
1. Using the appropriate Category 5 or 6 Ethernet cable, connect the PoE In to the midspan.
2. Using the same category Ethernet cable, connect the PoE Out to the input RJ45 jack located on the device.
3. Connect the DC Power cable from the splitter to the battery on the powered device.
4. Allow a few moments for the Green LED to light up assuring that everything is connected.

Input Power	IEEE802.3af compatible, 36-57VDC
Output Power	13.7W at 13.7V DC
Ethernet	Categories 5, 5e or 6
Input/Output Connectors	PoE and Data - RJ45 DC Cable - Tips marked to indicate polarity
Safety	CE Certified
Dimensions	94 x 52 x 30mm (3.7 x 2.0 x 1.2in)
Weight	0.1kg (0.22lb)
Operating Temperature	0 to +40°C 32 to +104°F

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DATA
POWER

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POE TECHNOLOGY

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 5 or 6 cables and uses them to transfer both data and power to remote locations. Since extensive AC 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 IEEE802.3 standard and is not guaranteed or recommended. Should a distance exceed 100 meters or more then Phihong offers a selection of PoE extenders. Although power is possible at greater distances, users may experience severe data loss after traveling 100 meters or more.

What is the difference between IEEE802.3af and IEEE802.3at?

In 2003 IEEE created a standard for Power over Ethernet called IEEE802.3af which uses a voltage range of 44-57VDC and a maximum output of 15.4W. Then in 2009 IEEE ratified the IEEE802.3at standard which expanded the existing standard to include applications requiring up to 25.95W of power for use on higher power PoE devices such as WiMAX or Pan/Tilt/Zoom Security Cameras, and would be used on networks with Gigabit compatibility. To meet the new standard, the PoE output is increased at the output port to 33.6W per port on a midspan. The POE14-137 is compliant with all parts of the IEEE802.3af standard.

This device splits my data and power; can I charge batteries with the DC output power?

Yes the POE14-137 has been designed specifically to meet this function. While the rest of the POE14 series does have a DC output voltage, it is not enough to charge a 12V battery for back up usage. To meet this need the user would need greater than 12V to generate a charge; the POE14-137 has an output voltage of 13.7V to meet this need. Practical applications could be back up energy for door access or lighting in the case of power failure in an emergency situation.

Do I need a special configuration for my network?

No, all Phihong PoE splitter technology is considered "plug and play" which means that there is no software or firmware installations required for the device to operate on the network. All that is needed is the correct output by the midspan and Ethernet cables (category 5 or above). Phihong recommends professional installation should any issues arise.

Where should I install my PoE Splitter?

Your new PoE Splitter may be installed to be wall or table mounted. The unit should be installed immediately adjacent to the device to allow for proper connection to the battery via the DC cable as this may not be extended to accommodate space requirements.

Can I use this device with equipment that is not PoE ready?

Yes, this splitter is compatible with non-PoE ready equipment. Ensure that you check the voltage requirements for your device to ensure that the splitter will not provide an output voltage higher or lower than your device requirements. There is a listing above of the available models with their output voltages. Check to see if your device can be covered by one of the available standard devices.

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 Phihong website www.phihong.com.

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