

Extending Distances to Axis Network Cameras with Omnitron PoE Media Converters



An Omnitron Systems and Axis Communications Solutions Guide

Omnitron Systems is an Approved Axis Communications Technology Partner

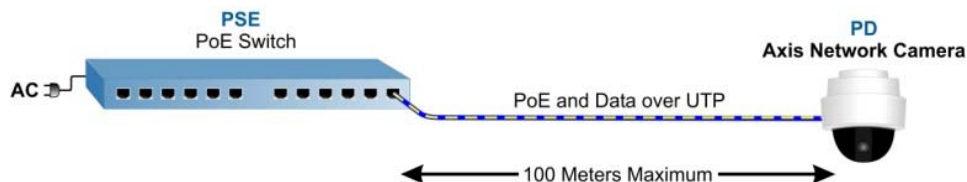
Omnitron Systems has joined the Axis Communications Technology Partner Program and created a solution to extend the reach to PoE-powered Axis network cameras with fiber optic cabling.



[OmniConverter™ PoE media converters](#) are field-tested and fully interoperable with [Axis network cameras](#). OmniConverter PoE media converters enable distance extension with fiber cabling to Axis network cameras installed in locations beyond the 100 meter distance limitation of copper UTP cabling, and provide PoE (802.3af), PoE+ (802.3at) and HPOE (60W) power. Omnitron is the only company that provides plug-and-play 60W PoE media converters in this small form factor.

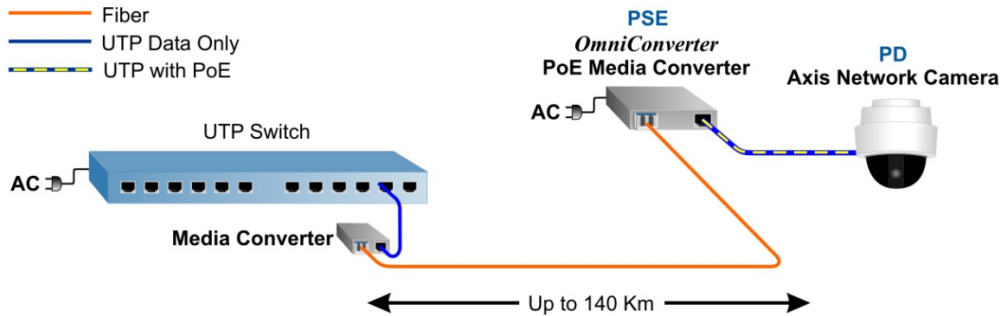
Overcome the Security Network Distance Challenge

The maximum reach of Power-over-Ethernet is 100 meters using Ethernet on unshielded twisted pair (UTP) LAN cabling. This distance limitation challenges network engineers to find alternate solutions when PoE Powered Equipment (PD) must be located more than 100 meters from the Ethernet Power Source Equipment (PSE).



How to Deploy OmniConverter Media Converters

A common solution to overcome the distance and bandwidth limitations of UTP cable is to use fiber optic cable. OmniConverter media converters are installed at the remote end of the fiber run with an AC or DC power source, where it converts the fiber to copper, and functions as a PSE to send DC power to the PD over the UTP cabling. OmniConverter PoE media converters function like PoE mini-switches, and inject PoE (15.4 Watts), PoE+ (32.4 Watts) and HPOE (60 Watts).

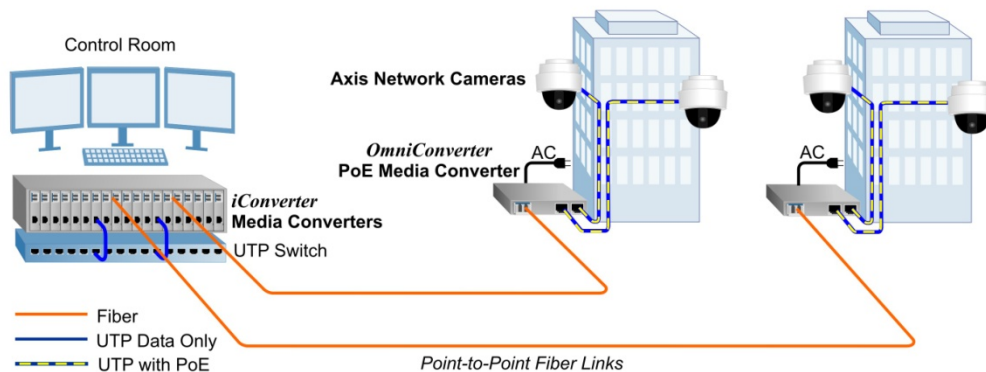


OmniConverter Deployment Scenarios

OmniConverter PoE converters are multi-port media converters that are available with up to four RJ-45 ports, and one or two fiber ports that support multiple network architectures, including point-to-point, daisy-chain, and redundant fiber link topologies.

Point-to-point Fiber

A point-to-point architecture uses dedicated fiber links, and is best suited for applications where the Ethernet switch resides in a central wiring closet, or monitoring station and the fiber connections are deployed in a star topology.

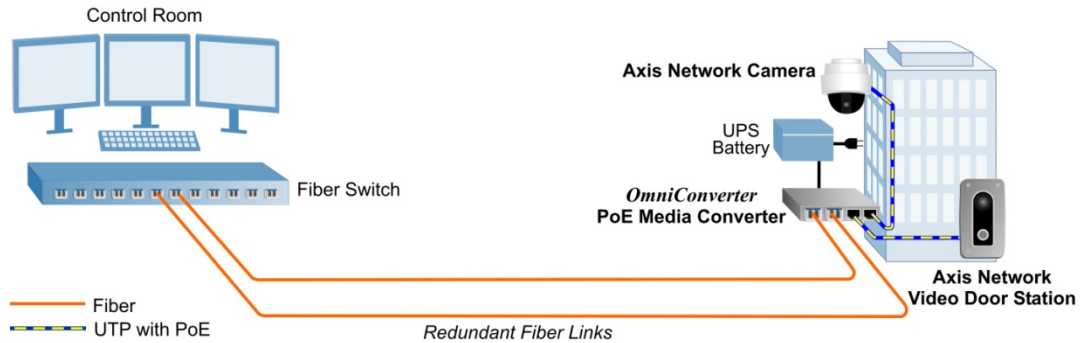


In this application, Axis network cameras are deployed on buildings. At the Control Room, fiber is distributed from a copper Ethernet switch using a high-density chassis of iConverter media converters that provide reliable fiber connectivity and preserve the investment in the existing switch equipment.

The dedicated fiber links are run to OmniConverter PoE media converters with two RJ-45 ports that provide data and power to two Axis cameras installed on the buildings.

Redundant Fiber

Redundant fiber architecture uses two fiber links that are deployed in high-security applications that need mission-critical network uptime. One fiber is the active primary link that carries the data traffic, and the other is in standby mode. In the event of a failure in the primary link, the traffic is switched to the standby fiber. Typically, the two fibers are routed in “geo-diverse” paths that are widely separated so that a physical disturbance to one cable will not affect the other.

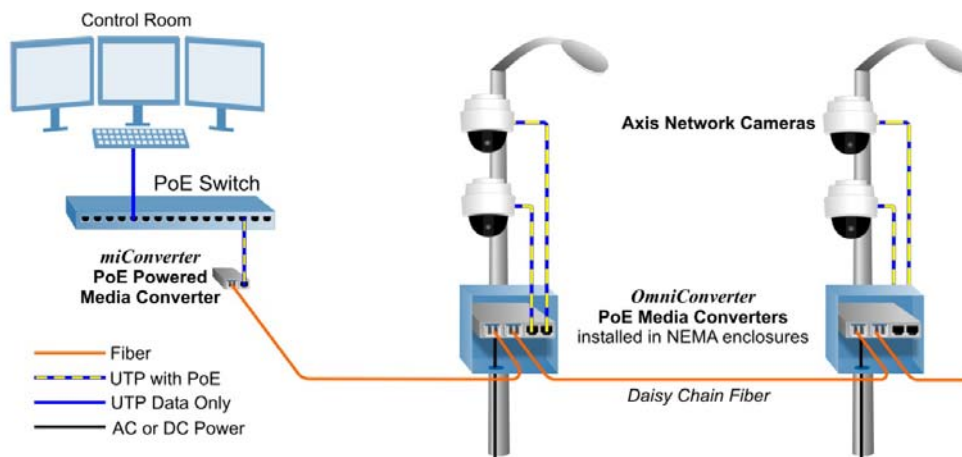


In this application, an Axis network camera and an Axis Network Video Door Station are deployed on a building in a large, high-security complex. Redundant fiber links are distributed from a fiber switch in the Control Room.

The redundant fiber links are run to an OmniConverter PoE media converter with two fiber ports that is powered by a UPS for battery back-up power. In the event a fiber link is cut and power is shut off, the OmniConverter switches traffic to the standby fiber in less than 50ms, and the camera will continue to send image data over the standby fiber link to the Control Room.

Daisy Chain

Daisy Chain fiber deployments preserve fiber infrastructure by connecting multiple devices in a linear bus topology. This architecture can be used along border fences, streets and highways, subways, rail lines and pipelines.



In this application, Axis network cameras are deployed on light poles along a city street. At the Control Room, fiber is distributed from a PoE switch using a miConverter PoE powered media converter that draws power from the PoE switch and eliminates the need for a separate power cable and adapter.

The fiber is run to the first OmniConverter PoE media converter with two fiber ports. One fiber port is the fiber uplink, and the other fiber port is the fiber downlink that connects to the next OmniConverter. Each OmniConverter has two RJ-45 ports that provide data and power to two Axis cameras; eliminating two separate PoE midspan/powering injectors typically required at each light pole.

[OmniConverter PoE media converters](#) support the IEEE 802.3af PoE (15.4W) or 802.3at PoE+ (34.2W) standards, and 60W High-Power HPoE (60W). Models are available in Gigabit 1000BASE-X fiber to 10/100/1000 RJ-45 and Fast Ethernet 100BASE-FX fiber to 10/100 RJ-45.

A variety of port configurations are available, including single or dual SFP and single or up to four RJ-45 ports. Models with dual SFP ports support critical applications that require redundancy and sub 50ms switch over in the event of a fiber failure. The product is DC powered and available with an optional external 100 - 240VAC universal power adapter.

OmniConverter GPoE+/SX

These are Gigabit media converters and switches that provide PoE (15.4W) or PoE+ (34.2W) and support four RJ-45 ports and up to two fiber ports. The GPoE+/SX models provide several advanced features and switch modes that can be configured with DIP-switches.



OmniConverter FPoE/SL, FPoE/S and FPoE+/S

These are Fast Ethernet media converters with one or two fiber ports, and one or two 10/100 RJ-45 ports that PoE (15.4W) or PoE+ (34.2W). They support advanced features with DIP-switch configuration, and are also available in industrial temperature hardened models.



OmniConverter FPoE/SE and FPoE+/SE

These are cost-effective Fast Ethernet media converters with a smaller form factor. The SE models have one fiber port, and one or two 10/100 RJ-45 ports that provide PoE (15.4W) or PoE+ (34.2W).



OmniConverter GPoE/S, GPoE+/S and GHPoE/S

These are Gigabit Ethernet media converters with one or two fiber ports, and one or two 10/100/1000 RJ-45 ports that provide PoE (15.4W), PoE+ (34.2W) or HPoE (60W). They support advanced features with DIP-switch configuration, and are also available in industrial temperature hardened models.



OmniConverter GPoE/SE and GPoE+/SE

These are cost-effective Gigabit Ethernet media converters with a smaller form factor. The SE models have one fiber port, and one or two 10/100/1000 RJ-45 ports that provide PoE (15.4W) or PoE+ (34.2W).



Contact Omnitron Systems Today for more Information

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