

OmniConverter® GPoE/S and GPoE+/S

Industrial 10/100/1000 Media Converter with Power over Ethernet (PoE or PoE+)

The OmniConverter GPoE/S and GPoE+/S are industrial multi-port media converters that convert 10/100/1000BASE-T copper to 1000BASE-X or 100BASE-X fiber and support Power-over-Ethernet (PoE and PoE+). Classified as Power Sourcing Equipment (PSE), they can provide power to one or two Powered Devices (PDs) using standard UTP cables that carry the Ethernet data.

OmniConverter PoE media converters provide network distance extension with fiber optic cabling, and function as a PoE injectors.

The GPoE/S provides up to 15.40W PoE (IEEE 802.3af) per RJ-45 port, and the GPoE+/S provides up to 30W PoE+ (IEEE 802.3at) per RJ-45 port. All OmniConverter models support frame sizes up to 10,240 bytes.

Models with two Small Form Pluggable (SFP) fiber receptacles support redundant fiber uplinks for critical applications that require protection and sub 50ms restoration in the event of a fiber failure. The second fiber port can also be used to cascade multiple media converters, or as another switch port.

Configurable features include link modes and a PoE power reset function that enables a PD device to be re-initialized remotely, eliminating the need for costly truck rolls to remote PD sites. When a problem with a PD is identified, the fiber port on a managed switch can be shut down or disconnected, triggering the PoE power reset function on the OmniConverter. The PoE power to the PD is disabled for 2 seconds when a loss of receive fiber link is detected by the OmniConverter.

Link modes can be configured to propagate loss-of-link faults to managed devices, immediately notifying administrators of network outages.

OmniConverter media converters support fixed-fiber connectors and 100Mbps or 1000Mbps SFP transceiver receptacles, enabling easy adaptability to different fiber types, distances and wavelengths. They support SFPs for multimode and single-mode dual fiber; and single-mode single-fiber, in standard, CWDM and DWDM wavelengths.

The compact standalone OmniConverter media converters can be tabletop mounted, wall mounted, or DIN-rail mounted using an optional DIN-rail mounting kit. They can also be mounted on a 1U 19" rack-mount shelf. They are available with DC input power via terminal connectors or external 100 to 240V AC power adapters.



SFPs not included

KEY FEATURES

- Industrial multi-port PoE media converter
- Extended operating temperature range of -40° to 75°C
- 10/100/1000BASE-T copper to 1000BASE-X or 100BASE-X fiber media converter
- Supports 100BASE-X or 1000BASE-X standard, CWDM and DWDM SFP transceivers
- Supports frame sizes up to 10,240 bytes
- The GPoE/S supports IEEE 802.3af PoE on one or two RJ-45 copper ports
- The GPoE+/S supports IEEE 802.3at PoE+ on one or two RJ-45 copper ports
- Multiple port configurations:
 - 2 Port Device: 1 Fiber + 1 RJ-45
 - 3 Port Device: 2 Fiber + 1 RJ-45
 - 3 Port Device: 1 Fiber + 2 RJ-45
 - 4 Port Device: 2 Fiber + 2 RJ-45
- Redundant protected fiber link option (using dual SFP transceivers)
- Compatible with legacy pre-IEEE standard powered devices
- Configurable PoE power reset
- Available in AC and DC models
- Integrated wall mount brackets
- Made in the USA
- Lifetime Warranty and free 24/7 Technical Support

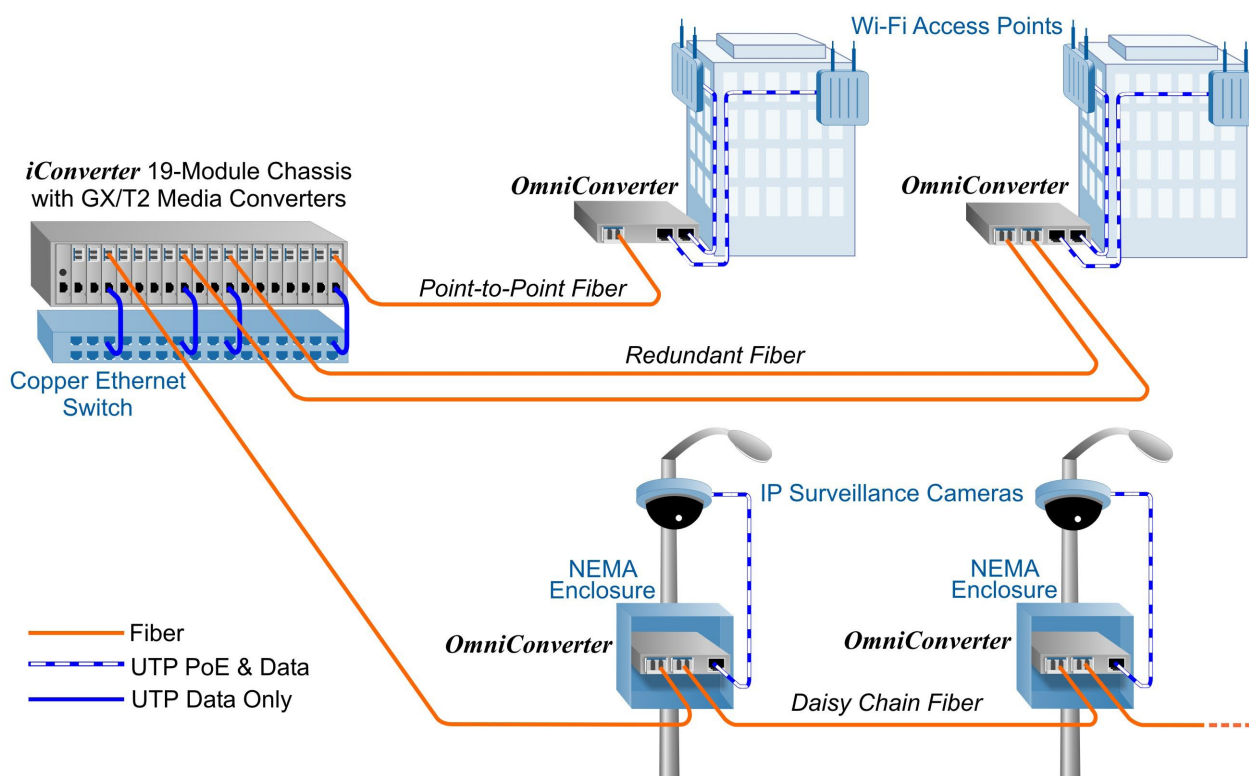
APPLICATION

In this application diagram, OmniConverter PoE injector media converters are deployed to overcome the distance limitation of UTP copper cabling by enabling fiber connectivity to PoE powered Wi-Fi access points and IP surveillance cameras. The fiber originates from a data closet or network hub location. Gigabit fiber is distributed from a copper Ethernet switch with iConverter GX/T2 media converters installed in a high-density 19-module chassis.

On the top half of the diagram, Wi-Fi access points are installed on buildings in a business complex. A Gigabit point-to-point fiber run is terminated with an OmniConverter PoE media converter installed near a convenient AC or DC power source. The OmniConverter converts the fiber to copper and injects Power over Ethernet (PoE or PoE+) with dual RJ-45 ports to power two Wi-Fi access points.

Redundant fiber links are run to another location where an OmniConverter with dual fiber ports provides protected fiber link redundancy, media conversion and PoE power for two Wi-Fi access points. The OmniConverter provides fiber failover protection in less than 50ms if there is a loss of fiber link.

On the bottom half of the diagram, OmniConverter PoE media converters are deployed in NEMA enclosures installed on light poles to provide fiber connectivity and PoE power to IP surveillance cameras. The dual fiber ports on the OmniConverters enable a fiber daisy chain architecture that connects multiple IP surveillance cameras. One port is the fiber uplink, and the other port is the fiber downlink to the next OmniConverter. Daisy chains are useful when deploying multiple PoE or PoE+ devices in a linear fashion along city streets, highways, rail lines, border fences, or pipelines.



Power / Voltage Requirements and Specifications per IEEE

Description	IEEE 802.3af PoE	IEEE 802.3at PoE+
Power Supply Voltage Range	46.0 to 57.0 VDC	51.0 to 57.0 VDC
Voltage Range at PSE port Output	44.0 to 56.0 VDC	50.0 to 56.0 VDC
Maximum Power from PoE/PSE port	15.4 watts	30 watts
Minimum Voltage at PoE/PD port input*	37.0 VDC	42.5 VDC
Minimum Power at PoE/PD port*	12.95 watts	25.5 watts

* at 100 meters using Cat5

SPECIFICATIONS

Description	OmniConverter® GPoE/S 10/100/1000BASE-T to 1000BASE-X or 100BASE-X Fiber Media Converter with PoE	OmniConverter® GPoE+/S 10/100/1000BASE-T to 1000BASE-X or 100BASE-X Fiber Media Converter with PoE+
Standard Compliances	IEEE 802.3, IEEE 802.3af (15.40 watts max)	IEEE 802.3, IEEE 802.3af (15.40 watts max), IEEE 802.3at (30 watts max)
PoE Supported Modes	IEEE Alternate A (Alt A), IEEE Alternate B (Alt B), Cisco Legacy and High Cap	
Regulatory Compliances (* Pending)	Safety: UL 62368-1*, UL 60950-1, IEC 62368-1*, IEC 60950-1, EN 62368-1*, EN 60950-1, CAN/CSA C22.2 No. 62368-1-14*, CAN/CSA C22.2 No. 60950-1, CE Mark EMC: EN 55032/EN 55024 CE Emissions/Immunity EMI: CISPR 32, FCC 47 Part 15 Subpart B Class A EMS: IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV (DC models), IEC 61000-4-4 EFT: Power: 1 kV; Signal: 1 kV (AC models), IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV (DC models), IEC 61000-4-5 Surge: Power: 1 kV Line/Line; 2 kV Line/Gnd; Signal: 2 kV (AC models), IEC 61000-4-6 CS: Signal: 3 V, IEC 61000-4-8 (Magnetic Field) 30A/m, IEC 61000-4-11 (Voltage Dips, interrupts) IP Rating: IP20 Protection	
Environmental	RoHS, WEEE, REACH	
Frame Size	Up to 10,240 bytes	
Port Types	Copper: 10/100/1000BASE-T (RJ-45) Fiber: 100BASE-X (SFP) 1000BASE-X (ST, SC, SFP) 1000BASE-BX (SC, SFP)	
Cable Types	Copper: EIA/TIA 568A/B, Cat 5 UTP and higher Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm	
AC Power Requirements (Models with AC/DC Adapters)	1 RJ-45 Port 100 - 240VAC/47 to 63Hz 0.21A @ 120VAC (typical) 2 RJ-45 Ports 100 - 240VAC/50 - 60Hz 0.36A @ 120VAC (typical)	1 RJ-45 Port 100 - 240VAC/47 to 63Hz 0.34A @ 120VAC (typical) 2 RJ-45 Ports 100 - 240VAC/50 - 60Hz 0.63A @ 120VAC (typical)
DC Power Requirements (Models with DC Terminals)	1 RJ-45 Port +/-44 to +/-57VDC; 0.46A @ 48VDC 3 Pin Terminal (isolated) 2 RJ-45 Ports +/-44 to +/-57VDC; 0.79A @ 48VDC 3 Pin Terminal (isolated)	1 RJ-45 Port +/-44 to +/-57VDC; 0.74A @ 48VDC 3 Pin Terminal (isolated) 2 RJ-45 Ports +/-44 to +/-57VDC; 1.37A @ 48VDC 3 Pin Terminal (isolated)
Dimensions (W x D x H)	4.5" x 6.0" x 1.0" (114.3 mm x 152.4 mm x 25.4 mm)	
Weight	Module Only: 1.1 lbs. (498.9 grams) Module w/ Adapter: 1.6 lbs. (725.7 grams)	Module Only: 1.1 lbs. (498.9 grams) Module w/ Adapter: 2.3 lbs. (1043.3 grams)
Operating Temperature (See Temperature Derating Table)	Industrial: -40 to 75°C (-20°C AC cold start) Storage: -40 to 80°C	
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
MTBF (hours)	Module Only: 474,000 AC/DC Adapter: 100,000	Module Only: 474,000 AC/DC Adapter: 100,000
Warranty	Lifetime warranty with 24/7/365 free Technical Support	

ORDERING INFORMATION

OmniConverter GPoE/S IEEE 802.3af 15W Models											
Fiber Type	Distance	Connector Type			Tx / Rx Lambda (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Power (dBm)	Max. Rx Power (dBm)	Min Attenuation (dB)	Link Budget (dB)
		ST	SC	SFP							
MM/DF	220/550m ¹	9400-0-ypZ	9402-0-ypZ	-	850 / 850	-10	-4	-17	-3	-	7
SM/DF	12km	9401-1-ypZ	9403-1-ypZ	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	9401-2-ypZ	9403-2-ypZ	-	1310 / 1310	-5	0	-23	-3	3	18
SM/DF	80km	-	9403-3-ypZ	-	1550 / 1550	-5	0	-23	-3	3	18
SM/DF	110km	-	9403-4-ypZ	-	1550 / 1550	0	5	-24	-3	8	24
SM/DF	140km	-	9403-5-ypZ	-	1550 / 1550	2	5	-28	-8	13	30
MM/SF ²	550m	-	9410-0-ypZ	-	1310 / 1550	-9	-3	-18	-3	-	9
MM/SF ²	550m	-	9411-0-ypZ	-	1550 / 1310	-9	-3	-18	-3	-	9
SM/SF ²	20km	-	9410-1-ypZ	-	1310 / 1550	-9.5	-3	-20	-3	-	10.5
SM/SF ²	20km	-	9411-1-ypZ	-	1550 / 1310	-9.5	-3	-20	-3	-	10.5
SM/SF ²	40km	-	9410-2-ypZ	-	1310 / 1550	-3	0	-20	-3	3	17
SM/SF ²	40km	-	9411-2-ypZ	-	1550 / 1310	-3	0	-20	-3	3	17
SFP (x1)	-	-	-	9419-0-ypZ	-	-	-	-	-	-	-
SFP (x2)	-	-	-	9419-1-ypZ	-	-	-	-	-	-	-

¹ 62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m.
² When using single-fiber (SF) models, the Tx wavelength on one end has to match the Rx wavelength on the other.
 MM = Multimode, SM = Single-mode, DF = Dual Fiber, SF = Single-fiber

Base Model Number: 94xx-x-ypZ

Select the model from ordering table above.

Add # of RJ-45 ports (y) and power option (p) to the model type selected.

Number of RJ-45 Ports (y):

1 = One RJ-45 Ports	2 = Two RJ-45 Ports
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Power Options (p):

1 = External AC/DC Adapter, 100 - 240 VAC included, with US Power Cord	8 = External AC/DC Adapter, 100 - 240 VAC included, with Japanese Power Cord
2 = External AC/DC Adapter, 100 - 240 VAC included, No Power Cord	9 = Direct DC 3 pin terminal connector, no AC/DC power adapter

Operating Temperature:

Z = Extended temperature (-40 to 75°C)

Contact Omnitron for other fiber options. Order the appropriate SFPs separately. [Visit the Omnitron Optical Transceivers web page.](#)

AC/DC Adapter Temperature Derating Total Available Wattage to RJ-45 Ports							
Model	RJ-45 Ports	Watts Required	40°C	50°C	60°C	70°C	75°C
GPoE/S	1	15 watts	Full Power	Full Power	Full Power	Full Power	Full Power
	2	30 watts	Full Power	Full Power	Full Power	Full Power	Full Power

The AC/DC Adapter Temperature derating table is not applicable to models with DC Terminal (see Ordering table for Direct DC power option 9). The DC Terminal models will provide full PoE power over the operating temperature range of the module as long as the DC input voltage meets the requirements stated in the specification table.

Accessories	
Model Number	Description
8250-0	DIN Rail Mounting Kit
8251-0	DIN Rail Mounting Clip
8260-0	1U Rack Mount Shelf

ORDERING INFORMATION

OmniConverter GPoE+/S IEEE 802.3at 30W Models											
Fiber Type	Distance	Connector Type			Tx / Rx Lambda (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Power (dBm)	Max. Rx Power (dBm)	Min Attenuation (dB)	Link Budget (dB)
		ST	SC	SFP							
MM/DF	220/550m ¹	9420-0-ypZ	9422-0-ypZ	-	850 / 850	-10	-4	-17	-3	-	7
SM/DF	12km	9421-1-ypZ	9423-1-ypZ	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	9421-2-ypZ	9423-2-ypZ	-	1310 / 1310	-5	0	-23	-3	3	18
SM/DF	80km	-	9423-3-ypZ	-	1550 / 1550	-5	0	-23	-3	3	18
SM/DF	110km	-	9423-4-ypZ	-	1550 / 1550	0	5	-24	-3	8	24
SM/DF	140km	-	9423-5-ypZ	-	1550 / 1550	2	5	-28	-8	13	30
MM/SF ²	550m	-	9430-0-ypZ	-	1310 / 1550	-9	-3	-18	-3	-	9
MM/SF ²	550m	-	9431-0-ypZ	-	1550 / 1310	-9	-3	-18	-3	-	9
SM/SF ²	20km	-	9430-1-ypZ	-	1310 / 1550	-9.5	-3	-20	-3	-	10.5
SM/SF ²	20km	-	9431-1-ypZ	-	1550 / 1310	-9.5	-3	-20	-3	-	10.5
SM/SF ²	40km	-	9430-2-ypZ	-	1310 / 1550	-3	0	-20	-3	3	17
SM/SF ²	40km	-	9431-2-ypZ	-	1550 / 1310	-3	0	-20	-3	3	17
SFP (x1)	-	-	-	9439-0-ypZ	-	-	-	-	-	-	-
SFP (x2)	-	-	-	9439-1-ypZ	-	-	-	-	-	-	-

¹ 62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m.
² When using single-fiber (SF) models, the Tx wavelength on one end has to match the Rx wavelength on the other.
 MM = Multimode, SM = Single-mode, DF = Dual Fiber, SF = Single-fiber

Base Model Number: 94xx-x-ypZ

Select the model from ordering table above.

Add # of RJ-45 ports (y) and power option (p) to the model type selected.

Number of RJ-45 Ports (y):

1 = One RJ-45 Ports	2 = Two RJ-45 Ports
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Power Options (p):

1 = External AC/DC Adapter, 100 - 240 VAC included, with US Power Cord	8 = External AC/DC Adapter, 100 - 240 VAC included, with Japanese Power Cord
2 = External AC/DC Adapter, 100 - 240 VAC included, No Power Cord	9 = Direct DC 3 pin terminal connector, no AC/DC power adapter

See AC/DC Adapter Temperature table below when ordering AC Powered models (power option 1, 2 or 8)

The Direct DC input models (power option 9) will provide full PoE power over the operating temperature range of the module as long as the DC input voltage meets the requirements stated in the specification table. See specification table on page 3

Operating Temperature:

Z = Extended temperature (-40 to 75°C)

Contact Omnitron for other fiber options. Order the appropriate SFPs separately. [Visit the Omnitron Optical Transceivers web page.](#)

AC/DC Adapter Temperature Derating Total Available Wattage to RJ-45 Ports							
Model	RJ-45 Ports	Watts Required	40°C	50°C	60°C	70°C	75°C
GPoE+/S	1	30 watts	Full Power	Full Power	Full Power	Full Power	Full Power
	2	60 watts	Full Power	Full Power	Full Power	Full Power	50 watts

The AC/DC Adapter Temperature derating table is not applicable to models with DC Terminal (see Ordering table for Direct DC power option 9). The DC Terminal models will provide full PoE power over the operating temperature range of the module as long as the DC input voltage meets the requirements stated in the specification table.

Accessories	
Model Number	Description
8250-0	DIN Rail Mounting Kit
8251-0	DIN Rail Mounting Clip
8260-0	1U Rack Mount Shelf

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