OmniConverter® GPoE+/S

10/100/1000 Media Converter with Power over Ethernet (PoE/PoE+)
Enhanced Version*

The OmniConverter GPoE+/S are multi-port IEEE 802.3at PoE+ Ethernet media converters that feature one or two uplink ports and one or two 10/100/1000 RJ-45 PoE+ user ports.

The GPoE+/S provides up to 30W PoE+ per RJ-45 user port and supports frame sizes up to 10,240 bytes. The uplink ports can be fixed fiber or SFP receptacle or 10/100/1000 RJ-45 copper ports.

The GPoE+/S supports Directed Switch mode, which directs multicast traffic (such as video) only to the appropriate uplink port, preventing the multicast video traffic from flooding other network ports.

Models with two fiber port support redundant fiber uplinks for critical applications that require protection and restoration in the event of a fiber failure. The second fiber port can also be used to cascade multiple media converters.

Models with two fiber ports also support Dual Device mode that enables the module to operate as two independent and isolated Ethernet media converters. In Dual Device mode, the GPoE+/S provides separate and independent data traffic paths between the two uplink ports and two user ports.

Configurable features include link modes and a PoE power reset function that enables the attached PD device, such as a camera or access point, to be re-initialized remotely, eliminating the need for costly truck rolls to remote PD sites. When a problem with a PD is detected, the fiber port on the module can be disconnected, triggering the PoE power reset function.

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

The GPoE+/S support fixed-fiber connectors and 100Mbps or 1000Mbps SFP transceiver receptacles, enabling easy adaptability to different fiber types, distances and wavelengths. The media converters also support 10/100/1000 SGMII or 1Gbps SERDES copper transceivers and 100Mbps and 1000Mbps standard, CWDM and DWDM fiber transceivers in a variety of distances and fiber types.

The GPoE+/S 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 an external 100 to 240V AC power adapters.

***See the Model Comparison table on page 5 for the comparison of the previous/old and the enhanced models.**

SFPs not included

KEY FEATURES

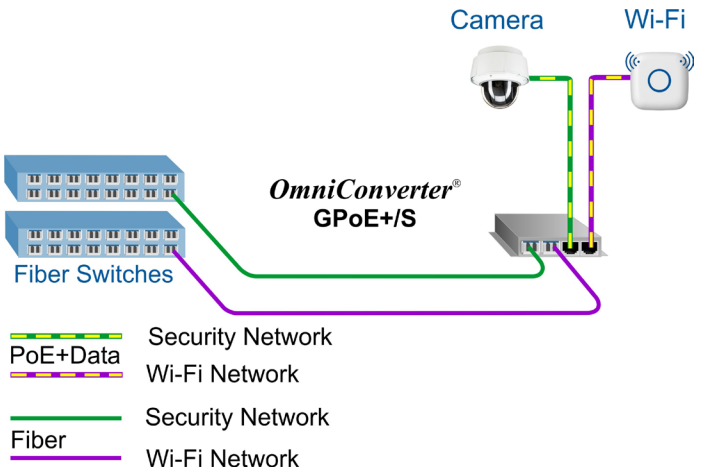
- IEEE 802.3af/at multi-port Gigabit Media Converter
- Compact size
- Dual Device mode for operating as two separate media converters
- Directed Switch mode prevents flooding of multicast video traffic
- Configurable PoE Power Reset
- Uplink redundancy on models with two uplink ports
- Automatic Link Recovery
- Two SFP or two 10/100/1000 RJ-45 uplink ports
- Supports 10/100/1000 and 1G copper SFP transceivers
- Supports 100Mbps and 1000Mbps fiber SFPs
- One ST or SC fixed Gigabit fiber connectors
- One or two 10/100/1000 RJ-45 PoE/PoE+ user ports
- Commercial (0º to 50ºC), wide (-40º to 60ºC) and extended (-40º to 75ºC) operating temperature ranges
- TAA, BAA and NDAA compliant, and Made in the USA
- Lifetime Warranty and free 24/7 Technical Support

APPLICATIONS

Dual Device Mode Application

This Dual Device feature is extremely useful when two isolated networks domains share a single network distribution location.

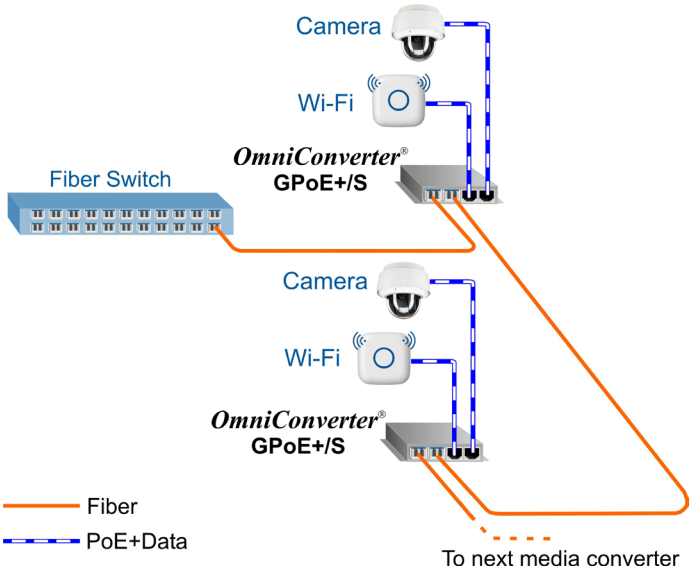
The example below depicts a scenario where a surveillance security (green) network and a Wi-Fi (purple) network are sharing a single hub distribution location. Using the two uplinks and the Dual Switch mode facilitates using a single PoE media converter driving both the Cameras and the Wi-Fi Access Points while maintaining isolation between the networks.

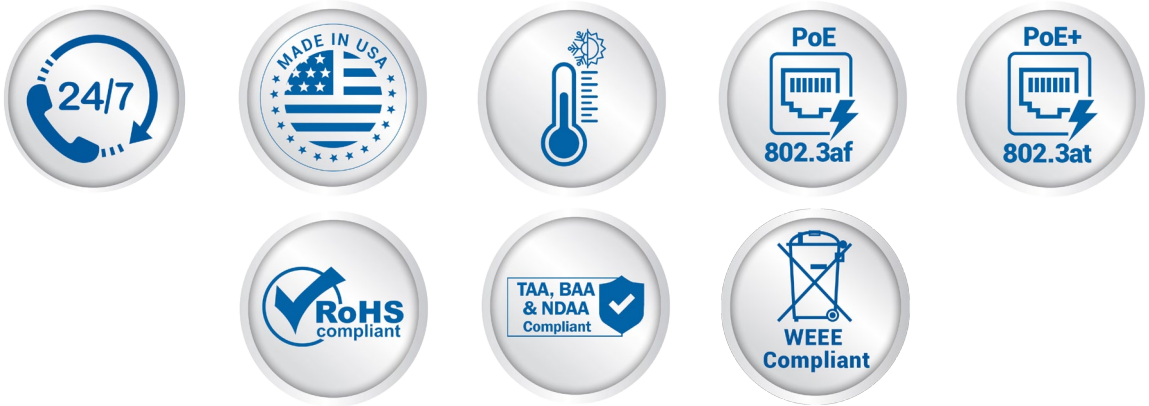


Daisy Chain Application

This example demonstrates the daisy chain capabilities of the OmniConverter media converters. In this application each media converter connects to its neighboring converter via its uplink ports. The daisy chain can continue to additional converter using this method of connectivity.

Each OmniConverter media converter provides connectivity to the fiber links, and power to IP cameras and Wi-Fi access points at each location along the daisy chain.





ACCESSORIES

Model Number	Description
8250-0	DIN Rail Mounting Kit
8251-0	DIN Rail Mounting Clip
8260-0	1U Rack Mount Shelf (four module per shelf)

SPECIFICATIONS

Description	**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 802.3at (30 watts max)	
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, UKCA EMC: EN 55032/24 CE Emissions/Immunity, IEC 61000-6-4 Industrial Emissions, IEC 61000-6-2 Industrial 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: 10 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: 10 V, IEC 61000-4-8 (Magnetic Field) 30A/m, IEC 61000-4-11 (Voltage Dips, interrupts) IP Rating: IP30D Protection ACT: TAA, BAA,NDAA	
Environmental	RoHS, WEEE, REACH	
PoE Power Modes	IEEE Alterative A (Alt A)	
Frame Size	Up to 10,240 bytes	
Port Types	Copper: 10/100/1000BASE-T (RJ-45) Fiber: 100BASE-X (SFP), 1000BASE-X (ST, SC, LC, SFP), 10/100/1000 SGMII (RJ-45 SFP), 1G SERDES (RJ-45 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/50 to 60Hz; 0.33A @ 120VAC (typical)	2 RJ-45 Ports 100 - 240VAC/50 - 60Hz 0.62A @ 120VAC (typical)
DC Power Requirements (Models with DC Terminals)	1 RJ-45 Port 46 to 57VDC; 0.62A @ 56VDC 2 Pin Terminal (isolated)	2 RJ-45 Ports 46 to 57VDC; 1.16A @ 56VDC 2 Pin Terminal (isolated)
	A minimum DC input voltage of 50VDC is required to guarantee 25.5 watts (802.3at) at the end of 100 meters of Cat 5 or better	
Dimensions (W x D x H)	3.8" x 4.8" x 1.0" (96.5 mm x 121.9 mm x 25.4 mm)	
Weight	Module Only: 1.0 lbs. (453.6 grams) Module w/ Adapter: 1.9 lbs. (852.6 grams)	
Operating Temperature (See Temperature Derating Table)	Commercial: 0 to 50°C Wide: -40 to 60°C (-20°C AC cold start) Extended: -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: 584,000 AC/DC Adapter: 100,000	
Warranty	Lifetime warranty with 24/7/365 free Technical Support	

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 (at 100 meters using Cat5 Cable)	37.0 VDC	42.5 VDC
Minimum Power at PoE/PD port (at 100 meters using Cat5 Cable)	12.95 watts	25.5 watts

ORDERING INFORMATION

The previous/old version of the GPoE/S and GPoE+/S are no longer in production. GPoE/S models 9400 - 9419 and GPoE+/S 9420 - 9439 are replaced with the enhanced models below.

Step 1: Choose a Base Part Number (xxxxN-x-ypt)

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 Att (dB)	Link Budget (dB)
		ST	SC	SFP	RJ-45							
MM/DF	220/550m[1]	9420N-0-ypt	9422N-0-ypt	-	-	850 / 850	-10	-4	-17	-3	-	7
SM/DF	12km	9421N-1-ypt	9423N-1-ypt	-	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	9421N-2-ypt	9423N-2-ypt	-	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	80km	-	9423N-3-ypt	-	-	1550 / 1550	-5	0	-23	-3	3	18
SM/DF	110km	-	9423N-4-ypt	-	-	1550 / 1550	0	5	-24	-3	8	24
SM/DF	140km	-	9423N-5-ypt	-	-	1550 / 1550	2	5	-28	-8	13	30
MM/SF[2]	550m	-	9430N-0-ypt	-	-	1310 / 1550	-9	-3	-18	-3	-	9
MM/SF[2]	550m	-	9431N-0-ypt	-	-	1550 / 1310	-9	-3	-18	-3	-	9
SM/SF[2]	20km	-	9430N-1-ypt	-	-	1310 / 1550	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	20km	-	9431N-1-ypt	-	-	1550 / 1310	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	40km	-	9430N-2-ypt	-	-	1310 / 1550	-3	0	-20	-3	3	17
SM/SF[2]	40km	-	9431N-2-ypt	-	-	1550 / 1310	-3	0	-20	-3	3	17
RJ-45 (x1)	100m	-	-	-	9438N-0-ypt	-	-	-	-	-	-	-
RJ-45 (x2)	100m	-	-	-	9438N-1-ypt	-	-	-	-	-	-	-
SFP (x1)	-	-	-	9439N-0-ypt	-	-	-	-	-	-	-	-
SFP (x2)	-	-	-	9439N-1-ypt	-	-	-	-	-	-	-	-

[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

Contact Omnitron for other fiber options. Order the appropriate 100Mbps or 1000Mbps SFPs separately. Visit the Omnitron Optical Transceivers web page.

Contact Omnitron for conformal coating options.

Step 2: Choose the number of RJ-45 ports (xxxxN-x-ypt)

1 = One RJ-45 Ports
2 = Two RJ-45 Ports

Step 3: Choose a Power Option (xxxxN-x-ypt)

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

Step 4: Choose an Operating Temperature Range Option (xxxxN-x-ypt)

<leave blank> = Commercial temperature (0 to 50°C)
W = Wide temperature (-40 to 60°C)
Z = Extended temperature (-40 to 75°C)

AC/DC Adapter Temperature Derating - Total Available Wattage to RJ-45 Ports							
Model	RJ-45 Ports	Watts Required	Watts Available @40°C	Watts Available @50°C	Watts Available @60°C	Watts Available @70°C	Watts Available @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.

MODEL COMPARISON

Previous/Old Base Model	Previous/Old Description	Enhanced Base Model	Enhanced Description
9400 - 9411	GPoE/S 15 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE RJ-45	9420N - 9431N	**GPoE+/S** 30 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE+ RJ-45
9419	GPoE/S 15 W per RJ-45 User Port 1 or 2 SFP with 1 or 2 PoE RJ-45	9439N	**GPoE+/S** 30 W per RJ-45 User Port 1 or 2 SFP with 1 or 2 PoE+ RJ-45
9420 - 9431	GPoE+/S 30 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE+ RJ-45	9420N - 9431N	**GPoE+/S** 30 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE+ RJ-45
9439	GPoE+/S 30 W per RJ-45 User Port 1 or 2 SFP with 1 / 2 PoE+ RJ-45	9439N	**GPoE+/S** 30 W per RJ-45 User Port 1 or 2 SFP with 1 or 2 PoE+ RJ-45

Features	Previous/Old Model GPoE/S and GPoE+/S	Enhanced Model GPoE+/S	Benefits
Copper Uplink Ports	N/A	One or two ports	Product flexibility
RJ-45 SFP Support	N/A	10/100/1000 SGMII 1G SERDES	Allows for multiple SFP transceiver options
Dimensions (W x D x H)	4.5" x 6.0" x 1.0"	3.8" x 4.8" x 1.0"	Compact size
PoE Power Level	IEEE 802.3af - GPoE/S IEEE 802.3af/at - GPoE+/S	IEEE 802.3af/at	15W and 30W versions in one model
Dual Device Mode	N/A	Models with dual uplink ports	Two independent and isolated Ethernet media converters
Directed Switch Mode	N/A	✓	Prevents multicast (video) traffic from flooding other network ports
Legacy pre-IEEE Power Standards	✓	Alternative A Power Mode	No configuration for the user
IP Protection	IP20	IP30D	Provides increased enclosure protection

For all models, # of RJ-45 User Ports (y) = 1 or 2, Power Option (p) = 1,2,8 and 9 and Temperature Option (t) = blank, W and Z

Replacement Guide for the Previous/Old GPoE/S and GPoE+/S Models			
Previous/Old GPoE/S Model	**Previous/Old GPoE+/S Model**	**Enhanced GPoE+/S Model**	**Enhanced GPoE+/S Product Description**
9400-0-ypt	9420-0-ypt	9420N-0-ypt	850 / 850 MM ST 220/550M 7dB
9402-0-ypt	9422-0-ypt	9422N-0-ypt	850 / 850 MM SC 220/550M 7dB
9401-1-ypt	9421-1-ypt	9421N-1-ypt	1310 / 1310 SM ST 12km 10dB
9403-1-ypt	9423-1-ypt	9423N-1-ypt	1310 / 1310 SM SC 12km 10dB
9401-2-ypt	9421-2-ypt	9421N-2-ypt	1310 / 1310 SM ST 34km 18dB
9403-2-ypt	9423-2-ypt	9423N-2-ypt	1310 / 1310 SM SC 34km 18dB
9403-3-ypt	9423-3-ypt	9423N-3-ypt	1550 / 1550 SM SC 80km 18dB
9403-4-ypt	9423-4-ypt	9423N-4-ypt	1550 / 1550 SM SC 110km 24dB
9403-5-ypt	9423-5-ypt	9423N-5-ypt	1550 / 1550 SM SC 140km 30dB
9410-0-ypt	9430-0-ypt	9430N-0-ypt	1310 / 1550 MM-SF SC 550m 9dB
9411-0-ypt	9431-0-ypt	9431N-0-ypt	1550 / 1310 MM-SF SC 550m 9dB
9410-1-ypt	9430-1-ypt	9430N-1-ypt	1310 / 1550 SM-SF SC 20km 10.5dB
9411-1-ypt	9431-1-ypt	9431N-1-ypt	1310 / 1550 SM-SF SC 20km 10.5dB
9410-2-ypt	9430-2-ypt	9430N-2-ypt	1310 / 1550 SM-SF SC 40km 17dB
9411-2-ypt	9431-2-ypt	9431N-2-ypt	1550 / 1310 SM-SF SC 40km 17dB
9419-0-ypt	9439-0-ypt	9439N-0-ypt	1 x SFP
9419-1-ypt	9439-1-ypt	9439N-1-ypt	2 x SFP