OmniConverter® FPoE+/S

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

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

The FPoE+/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 RJ-45 copper.

The OmniConverter FPoE+/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 media converters. In Dual Device mode, the FPoE+/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 FPoE+/S supports fixed fiber connectors or Small Form Pluggable (SFP) transceiver receptacles, enabling easy adaptability to different fiber types, distances and wavelengths. SFP models support 100Mbps standard, CWDM and DWDM transceivers in a variety of distances and fiber types.

The FPoE+/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

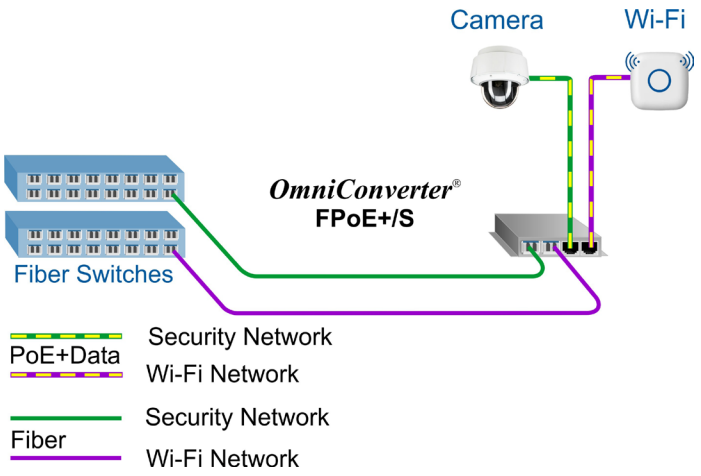
- IEEE 802.3af/at multi-port Fast Ethernet Media Converter
- Compact size
- Dual Device mode for operating as two separate media converters
- Directed Switch mode prevents flooding of multicast video traffic
- Configurable PoE Power Reset
- Uplink redundancy on models with two uplink ports
- Automatic Link Recovery
- Two 100Mbps SFP or two 10/100 RJ-45 uplink ports
- One ST or SC fixed Fast Ethernet fiber connectors
- One or two 10/100 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.

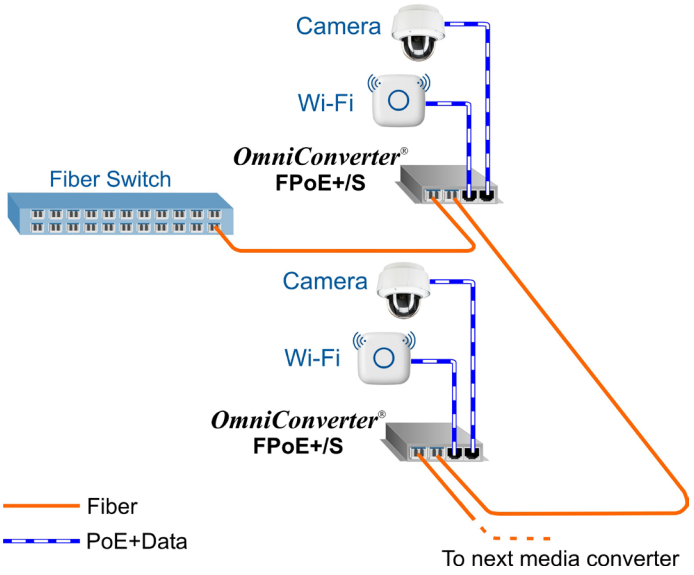
The example below depicts a scenario where a surveillance security (green) network and a Wi-Fi (purple) network are sharing a single hub distribution location. Using the two uplinks and the Dual Switch mode facilitates using a single PoE media converter driving both the Cameras and the Wi-Fi Access Points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

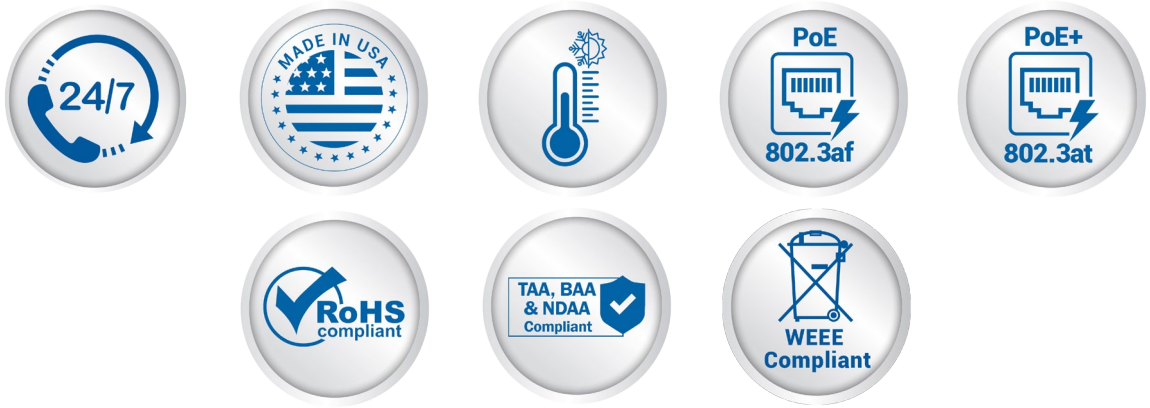


Daisy Chain Application

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 FPoE+/S** 10/100BASE-T to 100BASE-X Fiber Media Converter with PoE+	
Standard Compliances	IEEE 802.3, IEEE 802.3af (15.40 watts), IEEE 802.3at (30 watts)	
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	REACH, RoHS and WEEE	
PoE Power Modes	IEEE Alterative A (Alt A)	
Frame Size	Up to 10,240 bytes	
Port Types	Copper: 10/100BASE-T (RJ-45) Fiber: 100BASE-X (ST, 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/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, 0.78A @ 56VDC 2 Pin Terminal (isolated)	2 RJ-45 Ports: 46 to 57VDC, 1.45A @ 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 (hrs)	Module: 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 FPoE/S and FPoE+/S are no longer in production. FPoE/S models 9300 - 9319 and FPoE+/S 9320 - 9339 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 Attenuation (dB)	Link Budget (dB)
		ST	SC	SFP	RJ-45							
MM/DF	5km	9320N-0-ypt	9322N-0-ypt	-		1310 / 1310	-24	-14	-31	-14	-	7
SM/DF	30km	9321N-1-ypt	9323N-1-ypt	-		1310 / 1310	-15	-8	-31	-8	-	16
SM/DF	60km	9321N-2-ypt	9323N-2-ypt	-		1310 / 1310	-5	0	-31	-3	3	26
SM/DF	120km	-	9323N-3-ypt	-		1550 / 1550	-5	0	-31	-3	3	26
MM/SF[1]	5km	-	9330N-0-ypt	-		1310 / 1550	-8	0	-28	0	-	20
MM/SF[1]	5km	-	9331N-0-ypt	-		1550 / 1310	-8	0	-28	0	-	20
SM/SF[1]	20km	-	9330N-1-ypt	-		1310 / 1550	-15	-5	-30	-3	-	15
SM/SF[1]	20km	-	9331N-1-ypt	-		1550 / 1310	-15	-5	-30	-3	-	15
SM/SF[1]	40km	-	9330N-2-ypt	-		1310 / 1550	-8	0	-30	-3	3	22
SM/SF[1]	40km	-	9331N-2-ypt	-		1550 / 1310	-8	0	-30	-3	3	22
RJ-45 (x1)	100m	-	-	-	9338N-0-ypt	-	-	-	-	-	-	-
RJ-45 (x2)	100m	-	-	-	9338N-1-ypt	-	-	-	-	-	-	-
SFP (x1)	-	-	-	9339N-0-ypt		-	-	-	-	-	-	-
SFP (x2)	-	-	-	9339N-1-ypt		-	-	-	-	-	-	-

[1] 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 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) **- Check the Derating Table for available wattage for models with AC/DC Power Adapter**

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
FPoE+/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
9300 - 9311	FPoE/S 15 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE RJ-45	9320N - 9331N	**FPoE+/S** 30 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE+ RJ-45
9319	FPoE/S 15 W per RJ-45 User Port SFP with 1 or 2 PoE RJ-45	9339N	**FPoE+/S** 30 W per RJ-45 User Port 1 or 2 SFP with 1 or 2 PoE+ RJ-45
9320 - 9331	FPoE+/S 30 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE+ RJ-45	9320N - 9331N	**FPoE+/S** 30 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE+ RJ-45
9339	FPoE+/S 30 W per RJ-45 User Port SFP with 1 or 2 PoE RJ-45	9339N	**FPoE+/S** 30 W per RJ-45 User Port 1 or 2 SFP with 1 or 2 PoE+ RJ-45
9340 - 9351	FPoE/SL 15 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE RJ-45	9320N - 9331N	**FPoE+/S** 30 W per RJ-45 User Port Fixed Fiber with 1 or 2 PoE+ RJ-45
9359	FPoE/SL 15 W per RJ-45 User Port SFP with 1 or 2 PoE RJ-45	9339N	**FPoE+/S** 30 W per RJ-45 User Port 1 or 2 SFP with 1 or 2 PoE+ RJ-45

Features	Previous/Old Model FPoE/SL, FPoE/S and FPoE+/S	Enhanced Model FPoE+/S	Benefits
Copper Uplink Ports	N/A	One or two ports	Product flexibility
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 - FPoE/SL IEEE 802.3af - FPoE/S IEEE 802.3af/at - FPoE+/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 FPoE/SL, FPoE/S and FPoE+/S Models				
Previous/Old FPoE/SL Model	**Previous/Old FPoE/S Model**	**Previous/Old FPoE+/S Model**	**Enhanced FPoE+/S Model**	**Enhanced FPoE+/S Product Description**
9340-0-ypt	9300-0-ypt	9320-0-ypt	9320N-0-ypt	1310 / 1310 MM ST 5km 7dB
9342-0-ypt	9302-0-ypt	9322-0-ypt	9322N-0-ypt	1310 / 1310 MM SC 5km 7dB
9341-1-ypt	9301-1-ypt	9321-1-ypt	9321N-1-ypt	1310 / 1310 SM ST 30km 16dB
9343-1-ypt	9303-1-ypt	9323-1-ypt	9323N-1-ypt	1310 / 1310 SM SC 30km 16dB
9341-2-ypt	9301-2-ypt	9321-2-ypt	9321N-2-ypt	1310 / 1310 SM ST 60km 26dB
9343-2-ypt	9303-2-ypt	9323-2-ypt	9323N-2-ypt	1310 / 1310 SM SC 60km 26dB
9343-3-ypt	9303-3-ypt	9323-3-ypt	9323N-3-ypt	1550 / 1550 SM SC 120km 26dB
9350-0-ypt	9310-0-ypt	9330-0-ypt	9330N-0-ypt	1310 / 1550 MM-SF SC 5km 20dB
9351-0-ypt	9311-0-ypt	9331-0-ypt	9331N-0-ypt	1550 / 1310 MM-SF SC 5km 20dB
9350-1-ypt	9310-1-ypt	9330-1-ypt	9330N-1-ypt	1310 / 1550 SM-SF SC 20km 15dB
9351-1-ypt	9311-1-ypt	9331-1-ypt	9331N-1-ypt	1550 / 1310 SM-SF SC 20km 15dB
9350-2-ypt	9310-2-ypt	9330-2-ypt	9330N-2-ypt	1310 / 1550 SM-SF SC 40km 22dB
9351-2-ypt	9311-2-ypt	9331-2-ypt	9331N-2-ypt	1550 / 1310 SM-SF SC 40km 22dB
9359-0-ypt	9319-0-ypt	9339-0-ypt	9339N-0-ypt	1 x SFP
9359-1-ypt	9319-1-ypt	9339-1-ypt	9339N-1-ypt	2 x SFP