OmniConverter® GPoE+/Sx

Unmanaged 6 and 10 Port PoE/PoE+ Gigabit Ethernet Switch

The OmniConverter GPoE+/Sx is a compact unmanaged PoE and PoE+ Ethernet switch that feature copper or fiber uplink ports and four or eight 10/100/1000 PoE/PoE+ RJ-45 copper user ports.

The OmniConverter GPoE+/Sx is a standard Layer 2 Ethernet switch that forwards frames to any port based on their MAC address.

All models 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 or two copper uplink ports support daisy-chain configurations or redundant uplinks for critical applications that require protection and sub 50ms restoration in the event of an uplink failure.

Models with two fiber or two copper uplink ports also support Dual Device mode that enables the switches to operate as two independent and isolated Ethernet switches.

The GPoE+/Sx modes of operation can be configured using easily accessible DIP-switches. Each DIP-switch function is labeled on the side of the OmniConverter for ease of identification and use.

The OmniConverter PoE switches are available with fixed fiber ST, SC, and LC connectors or Small Form Pluggable (SFP) transceiver receptacles. Fiber ports support multimode or single-mode and dual fiber or single-fiber with distances up to 140km. SFP models support a variety of distances in standard, CWDM and DWDM wavelengths.

The GPoE+/Sx automatically negotiate and deliver the power level required by a Powered Device (PD) partner. The GPoE+/Sx can deliver up to 30 Watts of power per user port.

The switches feature 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.

All models can be wall mounted, rack mounted or DIN-rail mounted using an optional mounting clip. They are available with an external 100 to 240V AC power adapter or with a DC terminal connector.

SFPs not included

KEY FEATURES

- Unmanaged 6 and 10 port PoE/PoE+ Ethernet switch
- Dual Device mode for operating as two separate switches
- Directed Switch mode prevents flooding of multicast video traffic
- Configurable PoE Power Reset
- Uplink redundancy on models with two uplink ports
- Two 10/100/1000 copper or 100M*/1G fiber uplink ports
- Four or eight 10/100/1000 copper user ports
- ST, SC and LC fixed fiber ports or standard, CWDM or DWDM Gigabit SFP transceivers
- AC to DC Power Adapter or 2-Pin DC terminal
- Wall, Rack and DIN-rail mountable
- Fan-less design for long life
- 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
- Free 24/7/365 Technical Support

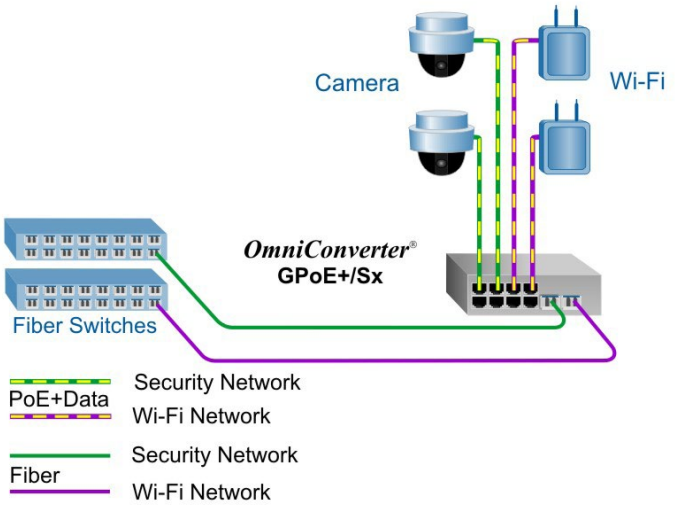
*100Mbps supported with 100M SGMII SFP Transceivers

APPLICATIONS

Dual Device Mode Application

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

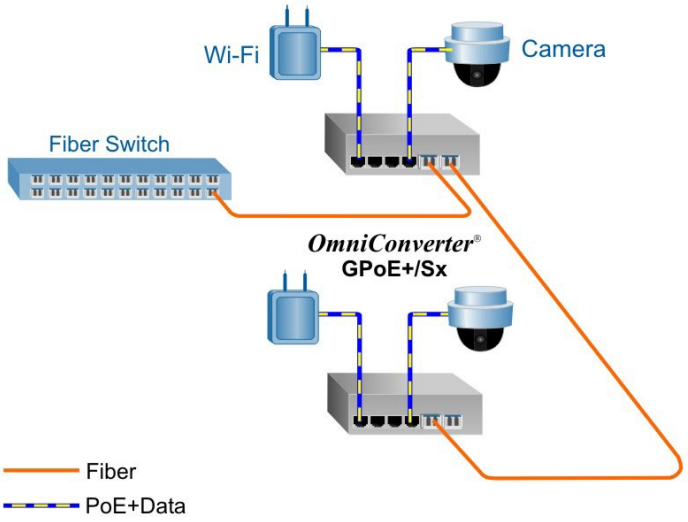
The example below depicts a scenario where a surveillance security (green) network and a Wi-Fi (purple) network are sharing a single hub distribution location. Using the two uplinks and the Dual Switch mode facilitates using a single PoE switch driving both the Cameras and the Wi-Fi Access Points while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

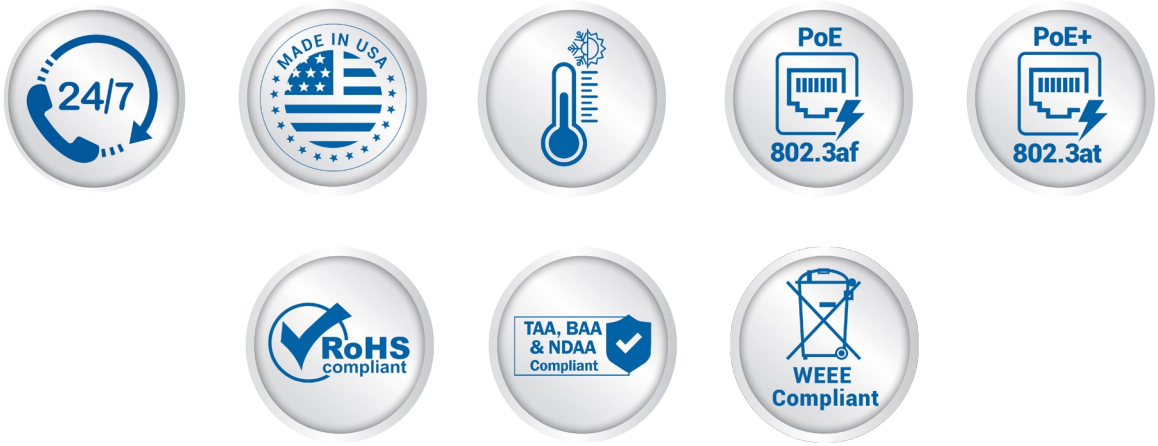


Daisy Chain Application

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

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





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

SPECIFICATIONS

Description	**OmniConverter® GPoE+/Sx** 10/100/1000BASE-T with Fiber or Copper Uplinks Unmanaged 6 or 10 Port PoE/PoE+ Ethernet Switch
Standard Compliances	IEEE 802.3, IEEE 802.3af (15.40 watts), IEEE 802.3at (30 watts)
Regulatory Compliances	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: IP20 Protection ACT: TAA, BAA, NDAA
Environmental	REACH, RoHS and WEEE
PoE Modes	IEEE Alternate A (Alt A)
Frame Size	Up to 10,240 bytes
Port Types	Copper: RJ-45: 10/100/1000BASE-T Fiber: Fixed: ST, SC, LC 1000BASE-X Fiber SFP: 10/100/1000BASE-T SGMII Copper Transceiver or 100BASE-X SGMII Fiber Transceiver or 1000BASE-X SERDES Fiber Transceivers
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)	100 - 240VAC/50 - 60Hz 3.5A max at 115VAC 2.5A max at 230VAC
DC Power Requirements (Models with DC Terminals)	4 RJ-45 Ports: +46 to +57VDC; 2.31A @ 56VDC 2 Pin Terminal (isolated) 8 RJ-45 Ports: +46 to +57VDC; 4.47A @ 56VDC 2 Pin Terminal (isolated)
Dimensions (W x D x H)	6.28” x 5.2” x 1.5” (159.5 mm x 132.1 mm x 38.1 mm)
Weight	4 RJ-45 Ports: Module Only: 1.5 lbs. (677 grams) Module with AC/DC Adapter: 3.6 lbs. (1645 grams) 8 RJ-45 Ports: Module Only: 1.7 lbs. (755 grams) Module with AC/DC Adapter: 3.8 lbs. (1723 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 - not available for models with AC/DC Adapters Storage: -40 to 80°C
Humidity	5 to 95% (non-condensing)
Altitude	-100m to 4,000m (operational)
MTBF (hours)	Module Only: 285,000 AC/DC Adapter: 100,000
Warranty	5 year product warranty with 24/7/365 free Technical Support and 2 year AC power adapter warranty

Accessories			
Model Number	**Description**	**Model Number**	**Description**
8251-0	DIN-Rail Mounting Clip	8260-0	19” rack mount shelf (up to 2 modules)

ORDERING INFORMATION

Step 1: Choose the Base Part Number (xxxx-x-xy-pt)

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 Atten (dB)	Link Budget (dB)
		ST	SC	LC	SFP	RJ-45							
MM/DF	220/550m[1]	9440-0-1y-pt	9442-0-1y-pt	9446-0-1y-pt	-	-	850/850	-10	-4	-17	-3	-	7
MM/DF	2km	-	9442-6-1y-pt	-	-	-	1310/1310	-9.5	-3	-19.5	-3	-	10
SM/DF	12km	9441-1-1y-pt	9443-1-1y-pt	9447-1-1y-pt	-	-	1310/1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	-	9443-2-1y-pt	-	-	-	1310/1310	-5	0	-23	-3	3	18
SM/DF	80km	-	9443-3-1y-pt	-	-	-	1550/1550	-5	0	-23	-3	3	18
SM/DF	110km	-	9443-4-1y-pt	-	-	-	1550/1550	0	5	-24	-3	8	24
SM/DF	140km	-	9443-5-1y-pt	-	-	-	1550/1550	2	5	-28	-8	13	30
MM/SF[2]	220/550m[1]	-	9450-0-1y-pt	-	-	-	1310/1550	-9	-3	-18	-3	-	9
MM/SF[2]	220/550m[1]	-	9451-0-1y-pt	-	-	-	1550/1310	-9	-3	-18	-3	-	9
SM/SF[2]	20km	-	9450-1-1y-pt	-	-	-	1310/1550	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	20km	-	9451-1-1y-pt	-	-	-	1550/1310	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	40km	-	9450-2-1y-pt	-	-	-	1310/1550	-3	0	-20	-3	3	17
SM/SF[2]	40km	-	9451-2-1y-pt	-	-	-	1550/1310	-3	0	-20	-3	3	17
SFP (x1)	-	-	-	-	9459-0-1y-pt	-	-	-	-	-	-	-	-
SFP (x2)	-	-	-	-	9459-0-2y-pt	-	-	-	-	-	-	-	-
RJ-45 (x2)	100m	-	-	-	-	9459-1-2y-pt	-	-	-	-	-	-	-

[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 SFPs separately. Visit the Omnitron Optical Transceivers web page.

Step 2: Choose the number of RJ-45 Ports (xxxx-x-xy-pt)

4 = Four RJ-45 Ports
8 = Eight RJ-45 Ports

Step 3: Choose the Power Option (xxxx-x-xy-pt)

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 the Operating Temperature Range Option (xxxx-x-xy-pt)

<leave blank> = Commercial temperature (0 to 50°C)
W = Wide temperature (-40 to 60°C)
Z = Extended temperature (-40 to 75°C) - not available for models with AC/DC Power Adapters

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
GPoE+/Sx	4	120 watts	Full Power	Full Power	115 watts
	8	240 watts	Full Power	175 watts	115 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 on page 3.					