OmniConverter® 10GPoEBT/M

Managed 6 Port 60/100W IEEE 802.3bt 10Gigabit Ethernet Switches

SFPs not included

The OmniConverter 10GPoEBT/M is a managed Ethernet switch that features two 1/10G uplink ports and four 10/100/1000 RJ-45 IEEE 802.3bt 60W or 100W PoE user ports.

All models support Directed Switch mode, which directs multicast traffic (such as video) only to the appropriate uplink port, preventing multicast traffic from flooding other network ports.

The switches support redundant uplinks, industrial ring Media Redundancy Protocol (MRP), Spanning Tree protocol and daisy-chain configurations for high availability industrial network applications.

The switches support Dual Device mode that enables the 10GPoEBT/M to operate as two independent and isolated Ethernet switches.

The mode of operation can be configured using easily accessible DIP-switches or using Web, Telnet, SSH, SNMPv1/v2c/v3 or Serial Console management interfaces. IPv4 and IPv6 are supported on the switches. These management interfaces provide access to filtering and security options, such as, broadcast storm prevention, IGMP, IEEE 802.1x, RADIUS, TACACS+ and Access Control Lists. Email notification and alarm reporting is provided.

The OmniConverter switches are available with Small Form Pluggable (SFP) transceiver receptacle ports. The SFP ports support 10/100/1000BASE-T, 1000BASE-T and 10GBASE-T copper transceivers. They also support 1G and 10G multimode or single-mode fiber, dual or single-fiber and standard, CWDM and DWDM wavelengths.

The switches feature a PoE Power Reset function that enables the user to remotely power-cycle and reset each PD, such as a camera or access point. They also feature a configurable Heartbeat Reset function that automatically pings the attached PDs and automatically power cycles and resets the PDs when detecting a heartbeat loss. The Power Reset and the Heartbeat Reset functions save time and expense by eliminating the need to dispatch manpower to remote network sites.

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

KEY FEATURES

- Managed 1/10G 60W and 100W PoE Ethernet Switch
- Modbus Industrial Protocol for device management and monitoring
- Supports IPv4 and IPv6
- IEEE 802.1x, RADIUS, TACACS+ and ACL
- Email Notification
- Rapid and Multiple Spanning Tree Protocol
- Media Redundancy Protocol (MRP)
- IEEE 802.1ax LAG and LACP; Act/Act and Act/Standby
- IEEE 802.1Q VLAN tagging and IEEE 802.1ad Q-in-Q
- Broadcast / Multicast / Unicast Storm Prevention
- DHCP Relay Option 82, DHCPv6 and DHCPv6 Relay
- IPv4 Internet Group Management (IGMP) and IPv6 Multicast Listener Discovery (MLD) snooping
- Rate Limiting, Queue prioritization and Class of Service
- IEEE 802.1ab Link Layer Discovery Protocol
- Static MAC configuration and blocking of unknown Unicast/Multicast addresses
- Heartbeat signal to verify connectivity to the PD and Configurable PoE Power Reset.
- PoE power management with LLDP MED and MDI TLV, and PoE Power Multi-Day Scheduler
- Management via Web, Telnet, SSH, SNMPv1/v2c/v3 and serial interfaces
- Easy to use Hierarchical Command Line Interface
- SNMP management via Omnitron's NetOutlook® management software, or third-party SNMP software
- Dual Device mode for operating as two separate switches
- Directed Switch mode prevents flooding of multicast video traffic
- Free 24/7/365 Technical Support

ADDITIONAL FEATURES

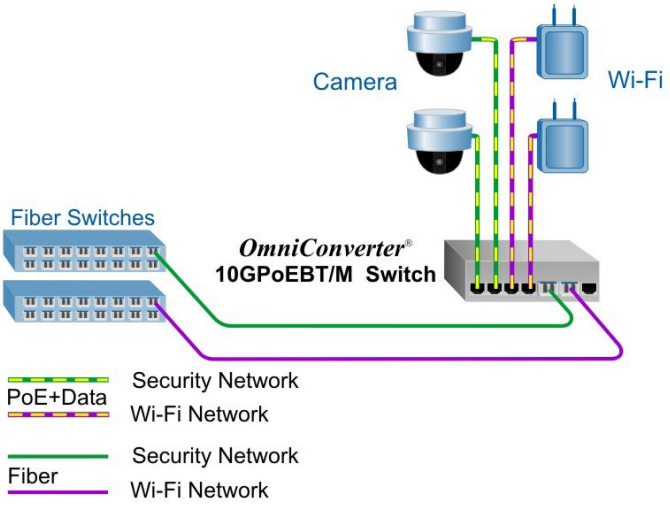
- Two 1/10G SFP/SFP+ transceiver uplink ports
- Supports copper and fiber SFP transceivers
- Supports 10M, 100M, 1G and 10Gbps copper SFP/SFP+ transceivers
- Four 10/100/1000 copper 60W or 100W PoE user ports
- AC to DC Power Adapter or 2-Pin DC terminal
- Wall, Rack and DIN-rail mountable
- Fan-less 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

APPLICATIONS

Dual Device Mode Application

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

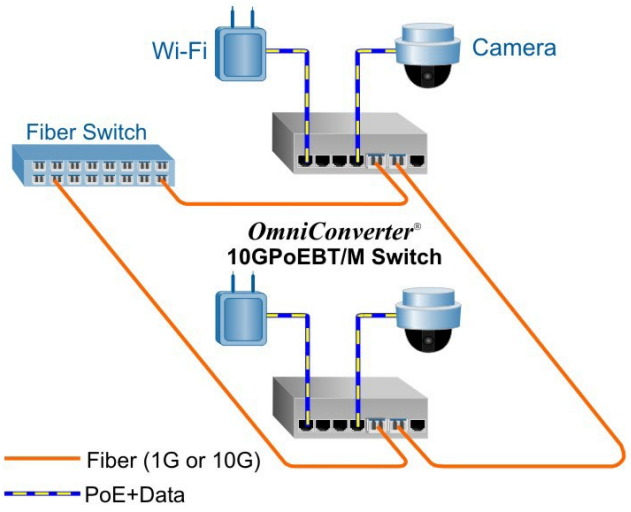
The example below depicts a scenario where a surveillance security (green) network and a Wi-Fi (purple) network are sharing a single distribution location. Using the two uplinks and the Dual Device mode facilitates using a single PoE switch driving both the Cameras and the Wi-Fi Access Points while maintaining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



Daisy-Chain and Ring Topology Network Application

This example demonstrates the daisy chaining and ring capabilities of the OmniConverter. In this application each OmniConverter switch connects to its neighboring switches via its uplink ports eventually closing the ring.

Using this network architecture combined with ring protection protocols such as Media Redundancy Protocol (MRP) or Rapid Spanning Tree Protocol (RSTP) facilitates a highly resilient network required in mission critical applications.



Power / Voltage Requirements and Specifications per IEEE				
Description	**IEEE 802.3af PoE**	**IEEE 802.3at PoE+**	**IEEE 802.3.bt PoE (60W Type 3)**	**IEEE 802.3bt PoE (100W Type 4)**
Power Supply Voltage Range	46.0 to 57.0 VDC	51.0 to 57.0 VDC	51.0 to 57.0 VDC	53.0 to 57.0 VDC
Voltage Range at PSE port Output	44.0 to 56.0 VDC	50.0 to 56.0 VDC	50.0 to 56.0 VDC	52.0 to 56.0 VDC
Maximum Power from PoE/PSE port	15.4 watts	30 watts	60 watts	100 watts
Minimum Voltage at PoE/PD port input (at 100 meters using Cat5 Cable)	37.0 VDC	42.5 VDC	42.5 VDC	41.1 VDC
Minimum Power at PoE/PD port (at 100 meters using Cat5 Cable)	12.95 watts	25.5 watts	51 watts	71 watts

SPECIFICATIONS

Description	**OmniConverter® 10GPoEBT/M** 10/100/1000BASE-T with 1/10G Gigabit Fiber Managed 6 Port IEEE 802.3bt 60/100W PoE Ethernet Switch
Standard Compliances	IEEE 802.3, IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1ab, IEEE 802.1ax, IEEE 802.1w RSTP/MSTP, RFC 5424, RFC 4541, RFC 2710, IEC 624339-2, SMTP, SNTP, RADIUS, TACACS+, IEEE 802.1x, IEEE 802.3af (15.40 watts), IEEE 802.3at (30 watts), IEEE 802.3bt (60 and 100 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: IP20 Protection ACT: TAA, BAA, NDAA
Environmental	REACH, RoHS and WEEE
Management	IPv4 and IPv6 address, Web, Telnet, SSH, SNMPv1/v2c/v3 In-Band management via Ethernet port, Out-of-band management via serial port
PoE Modes	IEEE Alternate A (Alt A) and 4-Pair
Frame Size	Up to 10,240 bytes
Port Types	Copper: 10/100/1000BASE-T (RJ-45) SFP/SFP+: 10GBASE-X Fiber or 10GBASE-T Copper Transceivers, 1000BASE-X Fiber or 1000BASE-T Copper or 10/100/1000BASE-T SGMII Copper Transceivers, Serial: RS-232 (RJ-45)
Cable Types	Copper: EIA/TIA 568A/B, Cat 5 UTP and higher Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm Serial: Category 3 and higher
AC Power Requirements (Models with AC/DC Adapters)	100 - 240VAC/50 - 60Hz 3.5A max at 115VAC, 2.5A max at 230VAC Supplied adapter provides 250W
DC Power Requirements (Models with DC Terminals)	60W Models: +46 to +57VDC; 4.47A @ 56VDC 2 Pin Terminal (isolated) 100W Models: +46 to +57VDC; 7.33A @ 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	Module Only: 1.6 lbs. (735 grams) Module with AC/DC Adapter: 3.7 lbs. (1703 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 power adapter Storage: -40 to 80°C
Humidity	5 to 95% (non-condensing)
Altitude	-100m to 4,000m (operational)
MTBF (hours)	Module Only: 272,000 AC/DC Adapter: 100,000
Warranty	5 year product warranty with 24/7/365 free Technical Support, 2 year AC power adapter warranty

ORDERING INFORMATION

Step 1: Choose the Base Part Number (xxxxB-x-xx-pt)

Model Number	Description
3160B-0-24-pt	OmniConverter 10GPoEBT/M 2 x SFP/SFP+ uplink port and 4 x RJ-45 IEEE 802.3bt 60W user ports
3162B-0-24-pt	OmniConverter 10GPoEBT/M 2 x SFP/SFP+ uplink port and 4 x RJ-45 IEEE 802.3bt 100W user ports
Contact Omnitron for other fiber options. Order the appropriate SFPs separately. Visit the Omnitron Optical Transceivers web page.	

Step 2: Choose the Power Option (xxxxB-x-xx-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 3: Choose the Operating Temperature Range Option (xxxxB-x-xx-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	Watts Required	Watts Available @ 40°C	Watts Available @ 50°C	Watts Available @ 60°C
10GPoEBT/M 60W	240 watts	240 watts	175 watts	115 watts
10GPoEBT/M 100W	400 watts	240 watts	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 tables.				

ACCESSORIES

Accessories			
Model Number	**Description**	**Model Number**	**Description**
8251-0	DIN-Rail Mounting Clip	8260-0	19” rack mount shelf