

OmniConverter® GHPoEBT/M

Managed 6-Port 60/100W IEEE 802.3bt PoE Gigabit Switches

The OmniConverter GHPoEBT/M replaces the GHPoE/M and is recommended for all new designs.

The OmniConverter GHPoEBT/M are compact 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.

The OmniConverter PoE switches are standard Layer 2 Ethernet switches that forward frames to any port based on their MAC address.

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.

Models with two fiber or two copper uplink ports support redundant uplinks, industrial ring Media Redundancy Protocol (MRP), Rapid Spanning Tree Protocol (RSTP) and daisy-chain configurations for high availability industrial network applications.

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 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 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 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.



SFPs not included

KEY FEATURES

- Managed 1G 60W and 100W PoE Ethernet Switch
- Supports the IEEE 802.3bt 60W or 100W
- 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; Active/Active and Active/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 IGMP and IPv6 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
- PoE Watchdog Self-Healing function / PoE Heartbeat Monitoring 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 configured as two separate switches
- Directed Switch mode prevents flooding of multicast video traffic
- Free 24/7/365 Technical Support

ADDITIONAL FEATURES

- Two 10/100/1000 copper or 100M*/1G fiber uplink ports
- Four 10/100/1000 copper user ports
- ST, SC and LC fixed fiber ports or standard, CWDM or DWDM Gigabit SFP transceivers

*100Mbps supported with 100M SGMII SFP Transceivers

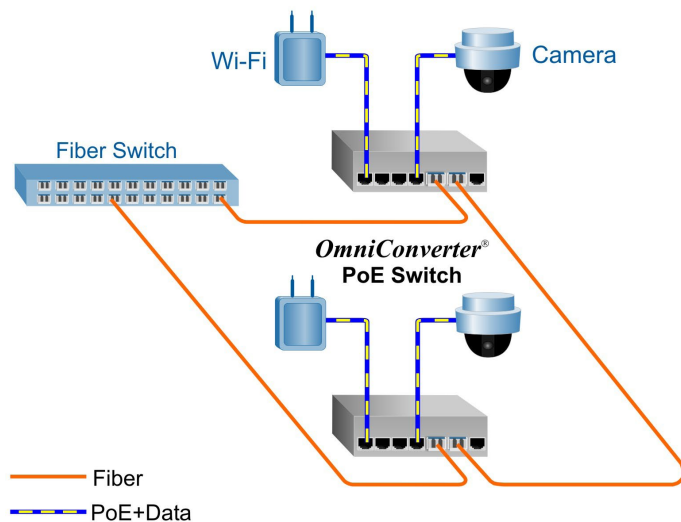
- AC to DC Power Adapter or 2-Pin DC terminal
- Wall, Rack and DIN-rail mountable
- Fan-less design for long life
- Commercial (0° to 50°C), wide (-40° to 60°C) and extended (-40° to 75°C) operating temperature ranges
- TAA, BAA and NDAA compliant, and Made in the USA

APPLICATIONS

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.

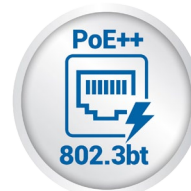
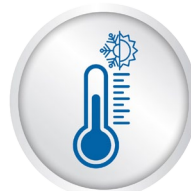
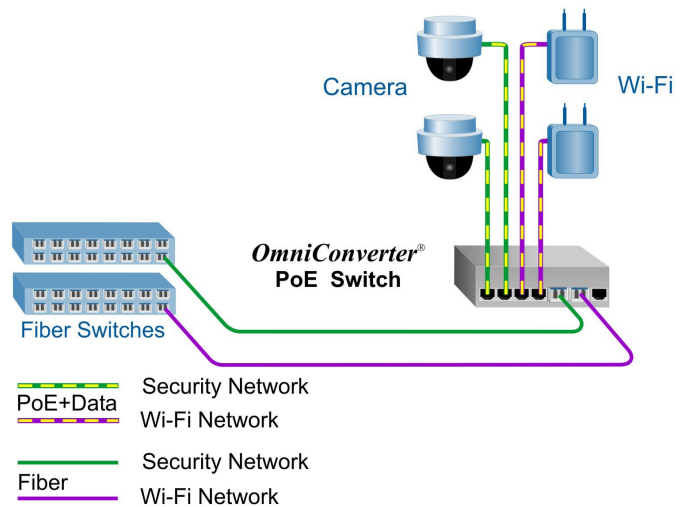
Using this network architecture combined with ring protection protocols such as Media Redundancy Protocol (MRP) or Rapid Spanning Tree Protocol (RSTP) facilitates a highly resilient network required in mission critical applications.



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.



SPECIFICATIONS

| | | | | |
|---|---|---|---|--|
| Description | OmniConverter® GHPoEBT/M (60/100W BT) 10/100/1000BASE-T with Fiber or Copper Uplinks Managed 6 Port IEEE 802.3bt 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, SNMP, RADIUS, TACACS+, IEEE 802.1x, IEEE 802.3af (15.40 watts), IEEE 802.3at (30 watts), IEEE 802.3bt (60 and 100 watts max) | | | |
| Regulatory Compliances | <p>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</p> <p>EMC: EN 55032/24 CE Emissions/Immunity, IEC 61000-6-4 Industrial Emissions, IEC 61000-6-2 Industrial Immunity</p> <p>EMI: CISPR 32, FCC 47 Part 15 Subpart B Class A</p> <p>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)</p> <p>IP Rating: IP20 Protection</p> <p>ACT: TAA, BAA, NDAA</p> | | | |
| Environmental | REACH, RoHS and WEEE | | | |
| PoE Modes | IEEE Alternate A (Alt A) and 4-Pair | | | |
| Management | IPv4 and IPv6 address, Web, Telnet, SSH, SNMPv1/v2c/v3 In-Band management via Ethernet port, Out-of-band management via serial port | | | |
| 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 | |
| | Serial: | RJ-45: | RS-232 | |
| 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 | | | |
| DC Power Requirements (Models with DC Terminals) | 60W BT Models: +46 to +57VDC; 4.46A @ 56VDC 2 Pin Terminal (isolated) | | 100W BT Models: +46 to +57VDC; 7.31A @ 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 Adapters Storage: -40 to 80°C | | | |
| Humidity | 5 to 95% (non-condensing) | | | |
| Altitude | -100m to 4,000m (operational) | | | |
| MTBF (hours) | Module Only: 266,000 | | AC/DC Adapter: 100,000 | |
| Warranty | 5 year product warranty with 24/7/365 free Technical Support and 2 year AC power adapter warranty | | | |

| Power / Voltage Requirements and Specifications per IEEE | | | | |
|---|------------------|-------------------|-------------------------------|--------------------------------|
| Description | IEEE 802.3af PoE | IEEE 802.3at PoE+ | IEEE 802.3bt 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 |

ORDERING INFORMATION

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

| OmniConverter GHPoEBT/M IEEE 802.3bt 60W 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 Atten (dB) | Link Budget (dB) |
| | | ST | SC | LC | SFP | RJ-45 | | | | | | | |
| MM/DF | 220/550m ¹ | 3100B-0-14-pt | 3102B-0-14-pt | 3106B-0-14-pt | - | - | 850/850 | -10 | -4 | -17 | -3 | - | 7 |
| MM/DF | 2km | - | 3102B-6-14-pt | - | - | - | 1310/1310 | -9.5 | -3 | -19.5 | -3 | - | 10 |
| SM/DF | 12km | 3101B-1-14-pt | 3103B-1-14-pt | 3107B-1-14-pt | - | - | 1310/1310 | -9.5 | -3 | -19.5 | -3 | - | 10 |
| SM/DF | 34km | - | 3103B-2-14-pt | - | - | - | 1310/1310 | -5 | 0 | -23 | -3 | 3 | 18 |
| SM/DF | 80km | - | 3103B-3-14-pt | - | - | - | 1550/1550 | -5 | 0 | -23 | -3 | 3 | 18 |
| SM/DF | 110km | - | 3103B-4-14-pt | - | - | - | 1550/1550 | 0 | 5 | -24 | -3 | 8 | 24 |
| SM/DF | 140km | - | 3103B-5-14-pt | - | - | - | 1550.1550 | 2 | 5 | -28 | -8 | 13 | 30 |
| MM/SF ² | 220/550m ¹ | - | 3110B-0-14-pt | - | - | - | 1310/1550 | -9 | -3 | -18 | -3 | - | 9 |
| MM/SF ² | 220/550m ¹ | - | 3111B-0-14-pt | - | - | - | 1550/1310 | -9 | -3 | -18 | -3 | - | 9 |
| SM/SF ² | 20km | - | 3110B-1-14-pt | - | - | - | 1310/1550 | -9.5 | -3 | -20 | -3 | - | 10.5 |
| SM/SF ² | 20km | - | 3111B-1-14-pt | - | - | - | 1550/1310 | -9.5 | -3 | -20 | -3 | - | 10.5 |
| SM/SF ² | 40km | - | 3110B-2-14-pt | - | - | - | 1310/1550 | -3 | 0 | -20 | -3 | 3 | 17 |
| SM/SF ² | 40km | - | 3111B-2-14-pt | - | - | - | 1550/1310 | -3 | 0 | -20 | -3 | 3 | 17 |
| SFP (x1) | - | - | - | - | 3119B-0-14-pt | - | - | - | - | - | - | - | - |
| SFP (x2) | - | - | - | - | 3119B-0-24-pt | - | - | - | - | - | - | - | - |
| RJ-45 (x2) | 100m | - | - | - | - | 3119B-1-24-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 Power Option (xxxxB-x-xx-pt)

| |
|---|
| 1 = External AC/DC Adapter, 100 - 240 VAC included, with US Power Cord - See AC/DC Adapter Temperature table |
| 2 = External AC/DC Adapter, 100 - 240 VAC included, No Power Cord - See AC/DC Adapter Temperature table |
| 8 = External AC/DC Adapter, 100 - 240 VAC included, with Japanese Power Cord - See AC/DC Adapter Temperature table |
| 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 |
| GHPoEBT/M 60W | 240 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 table above..

| 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 (xxxxB-x-xx-pt)

| OmniConverter GHPoEBT/M IEEE 802.3bt 100W 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 Atten (dB) | Link Budget (dB) |
| | | ST | SC | LC | SFP | RJ-45 | | | | | | | |
| MM/DF | 220/550m ¹ | 3140B-0-14-pt | 3142B-0-14-pt | 3146B-0-14-pt | - | - | 850/850 | -10 | -4 | -17 | -3 | - | 7 |
| MM/DF | 2km | - | 3142B-6-14-pt | - | - | - | 1310/1310 | -9.5 | -3 | -19.5 | -3 | - | 10 |
| SM/DF | 12km | 3141B-1-14-pt | 3143B-1-14-pt | 3147B-1-14-pt | - | - | 1310/1310 | -9.5 | -3 | -19.5 | -3 | - | 10 |
| SM/DF | 34km | - | 3143B-2-14-pt | - | - | - | 1310/1310 | -5 | 0 | -23 | -3 | 3 | 18 |
| SM/DF | 80km | - | 3143B-3-14-pt | - | - | - | 1550/1550 | -5 | 0 | -23 | -3 | 3 | 18 |
| SM/DF | 110km | - | 3143B-4-14-pt | - | - | - | 1550/1550 | 0 | 5 | -24 | -3 | 8 | 24 |
| SM/DF | 140km | - | 3143B-5-14-pt | - | - | - | 1550.1550 | 2 | 5 | -28 | -8 | 13 | 30 |
| MM/SF ² | 220/550m ¹ | - | 3150B-0-14-pt | - | - | - | 1310/1550 | -9 | -3 | -18 | -3 | - | 9 |
| MM/SF ² | 220/550m ¹ | - | 3151B-0-14-pt | - | - | - | 1550/1310 | -9 | -3 | -18 | -3 | - | 9 |
| SM/SF ² | 20km | - | 3150B-1-14-pt | - | - | - | 1310/1550 | -9.5 | -3 | -20 | -3 | - | 10.5 |
| SM/SF ² | 20km | - | 3151B-1-14-pt | - | - | - | 1550/1310 | -9.5 | -3 | -20 | -3 | - | 10.5 |
| SM/SF ² | 40km | - | 3150B-2-14-pt | - | - | - | 1310/1550 | -3 | 0 | -20 | -3 | 3 | 17 |
| SM/SF ² | 40km | - | 3151B-2-14-pt | - | - | - | 1550/1310 | -3 | 0 | -20 | -3 | 3 | 17 |
| SFP (x1) | - | - | - | - | 3159B-0-14-pt | - | - | - | - | - | - | - | - |
| SFP (x2) | - | - | - | - | 3159B-0-24-pt | - | - | - | - | - | - | - | - |
| RJ-45 (x2) | 100m | - | - | - | - | 3159B-1-24-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 Power Option (xxxxB-x-xx-pt)

| |
|---|
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| 2 = External AC/DC Adapter, 100 - 240 VAC included, No Power Cord - See AC/DC Adapter Temperature table |
| 8 = External AC/DC Adapter, 100 - 240 VAC included, with Japanese Power Cord - See AC/DC Adapter Temperature table |
| 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) |
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| 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 |
| GHPoEBT/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 table above..

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

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