Omnitron Systems

# *OmniConverter*® GPoE+/SX

## Unmanaged

## 4-Port PoE/PoE+ Fiber Switch

# User Manual

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**General and Copyright Notice**



**Warranty**

This network product and the included AC/DC power adapter are warranted to the original purchaser (Buyer) against defects in material and workmanship for a period of two (2) years from the date of shipment. The warranty for the network product (excluding the AC/DC power adapter) can be extended to five (5) years by registering the product at www.omnitron-systems.com/support within ninety (90) days from the date of shipment. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective with the same product or with a product with at least the same functionality.

For warranty service, the product must be sent to an Omnitron designated facility, at Buyer's expense. Omnitron will pay the shipping charge to return the product to Buyer's designated US address using Omnitron's standard shipping method.

**Limitation of Warranty**

The foregoing warranty shall not apply to product malfunctions resulting from improper or inadequate use and/or maintenance of the equipment by Buyer, Buyer-supplied equipment, Buyer-supplied interfacing, unauthorized modifications or tampering with equipment (including removal of equipment cover by personnel not specifically authorized and certified by Omnitron), or misuse, or operating outside the environmental specification of the product (including but not limited to voltage, ambient temperature, radiation, unusual dust, etc.), or improper site preparation or maintenance.

No other warranty is expressed or implied. Omnitron specifically disclaims the implied warranties of merchantability and fitness for any particular purpose.

The remedies provided herein are the Buyer's sole and exclusive remedies. Omnitron shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any legal theory.

**Environmental Notices**

The equipment covered by this manual must be disposed of or recycled in accordance with the Waste Electrical and Electronic Equipment Directive (WEEE Directive) of the European Community directive 2012/19/EU on waste electrical and electronic equipment (WEEE) which, together with the RoHS Directive 2011/65/EU, for electrical and electronic equipment sold in the EU after July 1, 2006. Such disposal must follow national legislation for IT and Telecommunication equipment in accordance with the WEEE directive: (a) Do not dispose waste equipment with unsorted municipal and household waste. (b) Collect equipment waste separately. (c) Return equipment using collection method agreed with Omnitron.

The equipment is marked with the WEEE symbol shown to indicate that it must be collected separately from other types of waste. In case of small items the symbol may be printed only on the packaging or in the user manual. If you have questions regarding the correct disposal of equipment go to www.omniton-systems.com/support or e-mail to Omnitron at intlinfo@omnitron-systems.com.

# *OmniConverter* GPoE+/SX
# User Manual

## Product Overview

The OmniConverter GPoE+/SX is a multi-port media converter that converts 10/100/1000BASE-T copper to 1000BASE-X or 100BASE-X fiber, and supports Power-over-Ethernet (PoE and PoE+). OmniConverter GPoE+/SX media converters provide network distance extension with fiber cabling, and function as PoE injectors providing power to four Powered Device (PDs) over standard UTP cables that carry Ethernet data.

*OmniConveter GPoE+/SX*

Equipment that provides DC power over twisted-pair cable is known as Power Sourcing Equipment (PSE). Equipment that is powered over twisted-pair cable is known as a Powered Device (PD).

The GPoE+/SX is a PSE that provides up to 34.20W PoE+ (IEEE 802.3at) per RJ-45 port and supports frame sizes up to 10,240 bytes.

## Installation Procedure

1) Configure DIP-switches

2) Apply AC Power

3) Apply DC Power

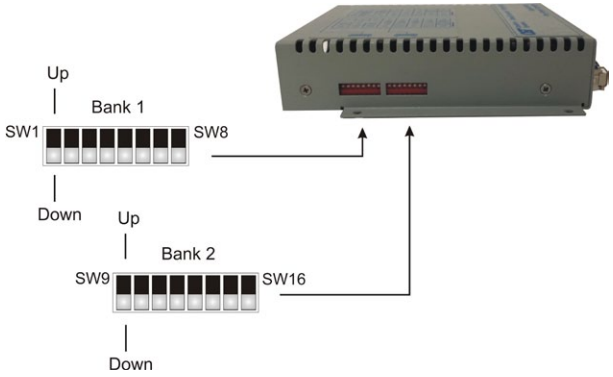
4) Connect Cables

5) Verify Operation

### 1) Configure DIP-switches

DIP-switches are located on the side of the OmniConverter GPoE+/SX. The DIP-switches are used to configure ports and PoE/PSE options.






*DIP-switch Bank Locations*

The table below provides a description of each DIP-switch position and function.

| Switch | 1 Fiber, 4 RJ-45 | 2 Fiber, 4 RJ-45 |
|---|---|---|
| 1 | Mode Of Operation | |
| 2 | | |
| 3 | MAC Learning | |
| 4 | Pause Capability | |
| 5 | Port 1 Speed (SFP models only) | |
| 6 | Reserved | Port 2 Speed (Dual SFP models only) |
| 7 | Reserved | Fiber Mode of Operation |
| 8 | Reserved | |
| 9 | First RJ-45 Port: Auto Negotiation/Manual | |
| 10 | First RJ-45 Port: Speed | |
| 11 | First RJ-45 Port: Duplex | |
| 12 | First RJ-45 Port: PoE | |
| 13 | | |
| 14 | Second RJ-45 Port: PoE | |
| 15 | | |
| 16 | POE Reset | |

*DIP-switch Definitions*

### SW1 and SW2: Mode of Operation

The OmniConverter supports four modes of operation; Switch, Directed Switch, MUX and MUX LP

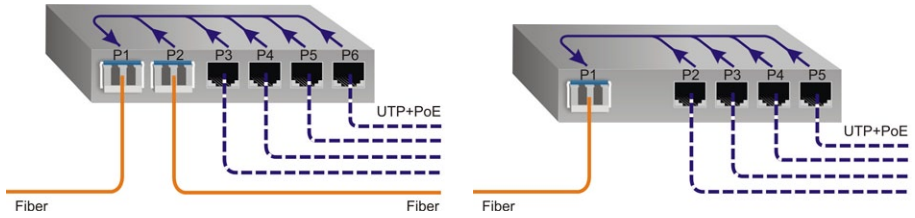
Modes are described with MAC learning enabled. When MAC learning is disabled, unicast packets are forwarded to all ports.

| SW1 | SW2 | Function |
|---|---|---|
| DOWN | DOWN | Switch Mode (factory default) |
| DOWN | UP | Directed Switch Mode |
| UP | DOWN | MUX Mode |
| UP | UP | MUX/LP Mode |

*Modes of Operation*

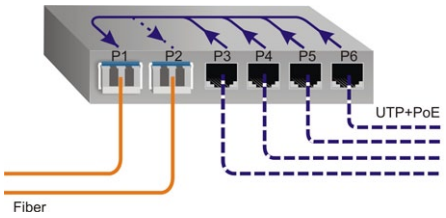
When configured for Switch Mode, the unit operates as a standard layer 2 switch. Data flow will follow MAC address mapping.

When configured for Directed Switch Mode, traffic from Ports 2 - 6 or Ports 2 - 5 (depending on the model) is only forwarded to the fiber uplink Port 1, preventing the broadcast traffic from flooding other network ports. Incoming traffic from Port 1 follows MAC address mapping.




*Directed Switch Mode*

When a model with two fiber ports is configured for Direct Switch Mode and Redundant Mode (per DIP-switches 7 and 8), traffic is forwarded to both the primary and secondary ports. The secondary port will block all traffic while the primary port is active. When the primary port goes down, the secondary port will be active and all traffic will be forwarded out the port.

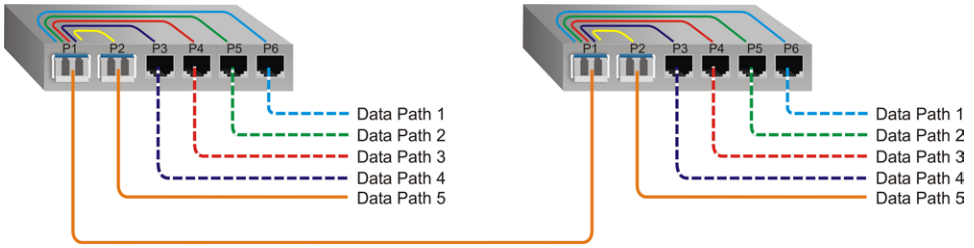



*Directed Switch Mode with Redundant Mode*

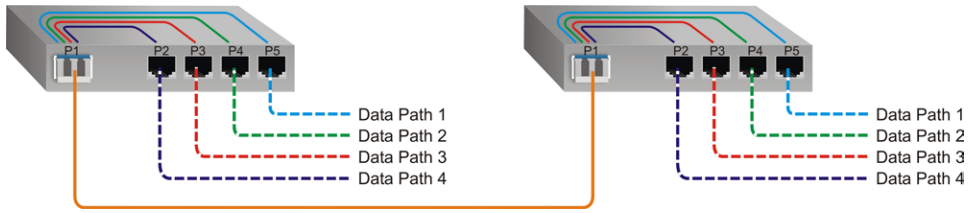
MUX Mode requires an OmniConverter GPoE+/SX on both ends of the fiber link (operates in pairs).

When configured for MUX Mode, the OmniConverter GPoE+/SX tunnels traffic coming in on one GPoE+/SX to the corresponding port on the other GPoE+/SX. So data traffic from the RJ-45 ports on one GPoE+/SX is routed to the matching RJ-45 ports on the other GPoE+/SX.



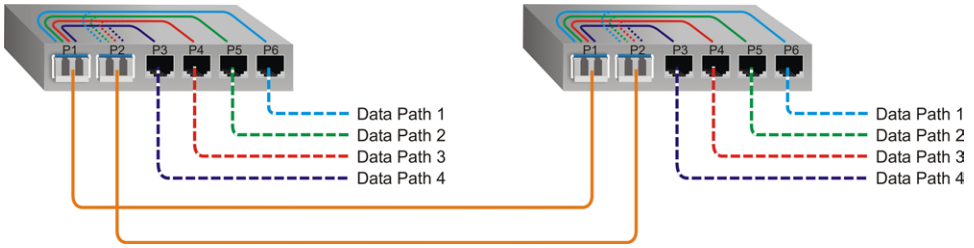



*MUX Mode with Two Fiber Ports*




*MUX Mode with One Fiber Port*

When a model with two fiber ports is configured for MUX Mode and Redundant Mode (per DIP-switches 7 and 8), traffic is forwarded to both the primary and secondary ports. The secondary port will block all traffic while the primary port is active. When the primary port goes down, the secondary port will be active and all traffic will be forwarded out the port.




*MUX Mode with Redundant Mode*

When configured MUX/LP Mode, Link Propagate is added to the MUX Mode functionality. The loss of link on the fiber port (P1) will cause the link to drop on all copper ports (P3 through P6) and the second fiber port (P2).

When a model with two fiber ports is configured for MUX/LP Mode and Redundant Mode, the loss of link on both fiber port (P1 and P2) will cause the link to drop on all copper ports (P3 through P6).

**SW3: MAC Learning - "On/Off"**

When this DIP-switch is in the "On" position (factory default), all ports on the unit will learn the source MAC address of each received packet and store the address so packets destined for the stored addresses can be forwarded to the appropriate

interface on the unit. When the DIP-switch is in the “Off” position, learning is turned off and all received unicast packets are forwarded to all ports.

**SW4: Pause - “Off/On”**

In auto-negotiation mode, setting the DIP-switch to the Down “Off” position (factory default) allows the unit to advertise no Pause capability on all ports. In auto-negotiation mode, setting this DIP-switch to the Up “On” position allows the unit to advertise Symmetrical and Asymmetrical Pause capability and all ports. In the manual mode, this DIP-switch determines the Pause behavior.

**SW5: Port 1 Speed - “Auto/100”**

SW5 is valid on models with SFP ports.

The OmniConverter supports 1000BASE-X and 100BASE-X SFPs. This DIP-switch is used to configure the OmniConverter for the speed of the installed SFPs. Setting this DIP-switch to the Down “Auto” position (factory default) automatically configures the fiber port to the correct speed matching the installed transceiver. Setting this DIP-switch to the Up “100” position enables the fiber port to accept 100BASE-X SFPs.

When an RJ-45 transceiver is installed in a SFP receptacle or for fixed fiber models, setting this DIP-switch to Up “100” position enables the port to operate at 100Mbps.

**SW6: Port 2 Speed - “Auto/100”**

SW6 is valid on models with two SFP ports.

The OmniConverter supports 1000BASE-X and 100BASE-X SFPs. This DIP-switch is used to configure the OmniConverter for the speed of the installed SFPs. Setting this DIP-switch to the Down “Auto” position (factory default) automatically configures the fiber port to the correct speed matching the installed transceiver. Setting this DIP-switch to the Up “100” position enables the fiber port to accept 100BASE-X SFPs.

When an RJ-45 transceiver is installed in a SFP receptacle or for fixed fiber models, setting this DIP-switch to Up “100” position enables the port to operate at 100Mbps.

**SW7 and SW8: Fiber Mode of Operation**

SW7 and SW8 are valid on models with two fiber ports.

Modes are described with MAC learning enabled. All modes of operation using MAC address mapping with send data to all ports when MAC learning is disabled.

| SW7 | SW8 | Function |
|---|---|---|
| DOWN | DOWN | Switch Mode (factory default) |
| DOWN | UP | Dual Device Mode |
| UP | DOWN | Redundant Mode - no return to primary (Port 1) |
| UP | UP | Redundant Mode - return to primary (Port 1) |

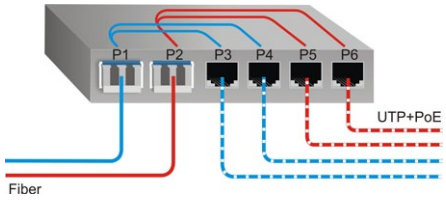
*Fiber Mode of Operation*



When configured for Switch Mode (factory default), the unit operates as a standard layer 2 switch. Data flow will follow MAC address mapping.

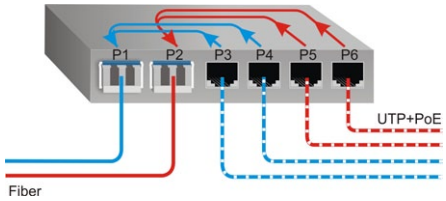
Dual Device Mode is only supported on OmniConverter GPoE+/SX with two fiber ports.

When configured for Dual Device Mode, the OmniConverter is configured as two independent media converters. P1 is associated with P3 and P4 as illustrated with the blue lines and P2 is associated with P5 and P6 as illustrated with the red lines. Data flow will follow MAC address mapping.



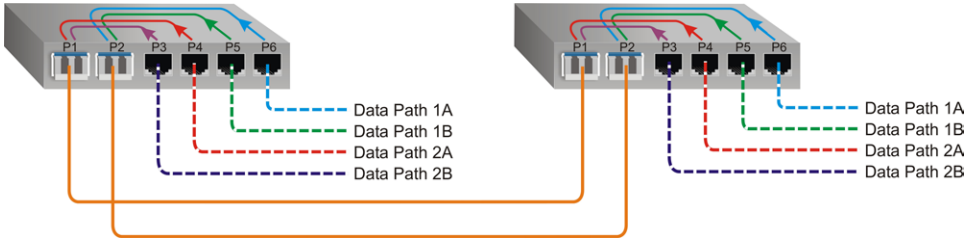

*Dual Device Mode*

When configured for Dual Device Mode and Directed Switch Mode, the traffic from Ports 3 and 4 is only forwarded to Port 1 and Ports 5 and 6 are only forwarded to Port 2. This prevents broadcast traffic from flooding other network ports. Incoming traffic from Port 1 and Port 2 follows MAC address mapping.




*Dual Device with Directed Switch Mode*

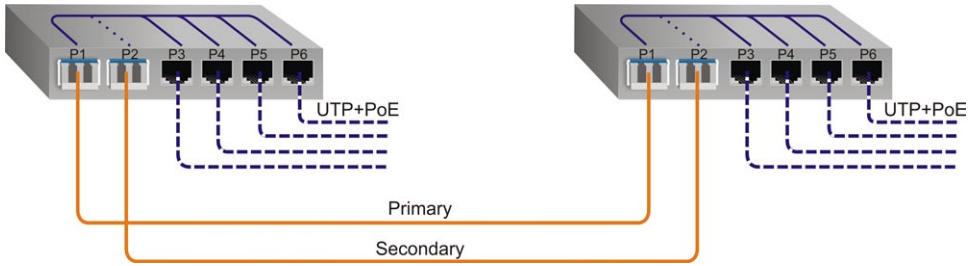
When configured for Dual Device Mode and MUX Mode, the GPoE+/SX is configured as two independent media converters. Since MUX Mode is also enabled, the GPoE+/SX operates with another GPoE+/SX and tunnels traffic coming in on one GPoE+/SX to the corresponding port on the other GPoE+/SX. So data traffic from the RJ-45 ports on one GPoE+/SX is routed to the matching RJ-45 ports on the other GPoE+/SX.




*Dual Device with MUX Mode*

Redundant Mode is only supported on OmniConverter GPoE+/SX with two fiber ports.

When configured for Redundant Mode 'no return to primary', the fiber ports operate as redundant links. A fault on the primary fiber port (Port 1), will cause a fail over to the secondary fiber port (Port 2) within 50msec. Port 1 will become the secondary port once the port has been restored.




*Fiber Redundancy*

When configured for Redundant Mode 'return to primary', a fault on the primary fiber port (Port 1), will cause a fail over to the secondary fiber port (Port 2) within 50msec. Once the fault on Port 1 the unit will return to the primary fiber port (Port 1) after the fiber link has been restored for 6 seconds.

**SW9, SW10 and SW11: First RJ-45 Port Configuration**

| SW9 AN/Man | SW10 100/10 | SW11 FDX/HDX | RJ-45 Mode of Operation |
|---|---|---|---|
| AN | 10 or 100 | FDX or HDX | The RJ-45 port is set to auto-negotiation with the following modes advertised: 1000FDX, 1000HDX, 100FDX, 100HDX, 10FDX, 10HDX |
| MAN | 100 | FDX | The RJ-45 port is set to manual negotiation and is forced to 100FDX. |
| MAN | 100 | HDX | The RJ-45 port is set to manual negotiation and is forced to 100HDX. |
| MAN | 10 | FDX | The RJ-45 port is set to manual negotiation and is forced to 10FDX. |
| MAN | 10 | HDX | The RJ-45 port is set to manual negotiation and is forced to 10HDX. |

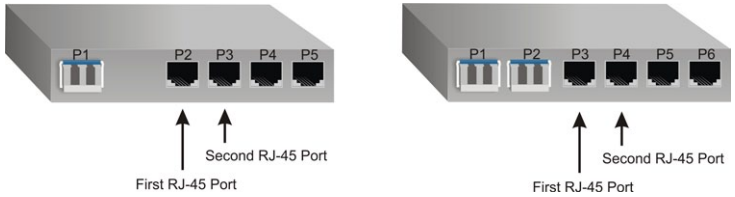
*First RJ-45 Port Configuration Matrix*

**SW12: First RJ-45 Port PoE - "On/Off"**

The OmniConverter automatically detects the attached PD and provides the equipment with the necessary power.

This DIP-switch controls the power sourcing function for the first RJ-45 port (the first RJ-45 port is closest to the fiber port). When this DIP-switch in the Down "On" position (factory default), the power sourcing function is enabled. When the DIP-switch is in the Up "Off" position, the power sourcing function is disabled.






*First and Second RJ-45 Port Designations*

**SW13: First RJ-45 Port Forced PoE Power - "Norm/Force"**

The unit will automatically detect, classify and power the attached PD. When this DIP-switch is in the Down "Norm" position (factory default), the unit will automatically detect, classify and power the attached PD with up to 34.2 watts per port.

When detection and classification can not be performed (because of non-standard equipment), the unit can be configured to supply the required power by setting this DIP-switch to the Up "Force" position. The unit will supply up to 34.2 watts of power depending on the connected PD.

**SW14: Second RJ-45 Port PoE/PSE Power - "On/Off"**

The OmniConverter automatically detects the attached PD and provides the equipment with the necessary power.

This DIP-switch controls the power sourcing function for the second RJ-45 port. When this DIP-switch in the Down "On" position (factory default), the power sourcing function is enabled. When the DIP-switch is in the Up "Off" position, the power sourcing function is disabled.

**SW15: Second RJ-45 Port Forced PoE Power - "Norm/Force"**

The unit will automatically detect, classify and power the attached PD. When this DIP-switch is in the Down "Norm" position (factory default), the unit will automatically detect, classify and power the attached PD with up to 34.2 watts per port.

When detection and classification can not be performed (because of non-standard equipment), the unit can be configured to supply the required power by setting this DIP-switch to the Up "Force" position. The unit will supply up to 34.2 watts of power depending on the connected PD.

**SW16: PSE Reset - "Off/P1 Lk Loss"**

The OmniConverter can be configured to disable (reset) the PoE output power for 5 seconds after a loss of receive link on any fiber port. This feature is typically used to allow a PD to re-initialize after a failure on the incoming fiber.

When this DIP-switch is in the Down "Off" position (factory default), PoE output power does not reset on fiber link loss. When this DIP-switch is in the Up "P1 Lk Loss" position, the unit will disable PoE output power for 5 seconds following a loss of receive link on any fiber port.

When Redundant Mode is enabled, the loss of fiber link on one fiber port will not cause the PD to be re-initialized even though the PSE Reset is enabled. The PD will be re-initialized on a loss of receive link on both fiber ports.

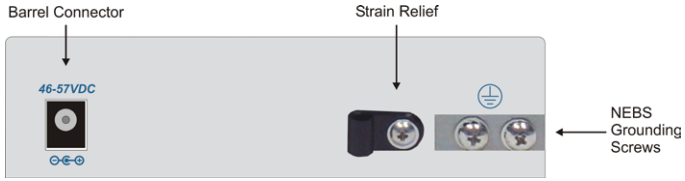
When Dual Device Mode is enabled, the loss of fiber link will re-initialize the PDs associated with the that fiber port. Port 3 and 4 will drop PSE power when a loss of receive link on Port 1 is detected. Port 5 and 6 will drop PSE power when a loss of receive link on Port 2 is detected.

**2) Apply AC Power**

To power the unit using the AC/DC adapter, connect the AC/DC adapter to the AC outlet. Route the power cord through the provided strain relief for additional support. Then connect the barrel plug at the end of the wire on the AC/DC adapter to the 2.1mm DC barrel connector (center-positive) on the unit. Confirm that the unit has powered up properly by checking the Power LED located on the front of the installed unit.

Installation of the equipment should be such that the air flow in the front, back, side and top vents of the chassis are not compromised or restricted.

If the installation requires NEBS grounding, secure the grounding wire to the ground lug. See the figure below for the location of the grounding lug.




*Rear View with AC Power Connector*

**WARNING!!!**

**NEVER ATTEMPT TO OPEN THE CHASSIS OR SERVICE THE POWER SUPPLY. OPENING THE CHASSIS MAY CAUSE SERIOUS INJURY OR DEATH. THERE ARE NO USER REPLACEABLE OR SERVICEABLE PARTS IN THIS UNIT.**

**3) Apply DC Power**

Power source should be available within 5 ft. of the chassis. The over current protection for connection with centralized DC shall be provided in the building installation, and shall be a UL listed circuit breaker rated 20 Amps, and installed per the National Electrical Code, ANSI/NFPA-70.

This equipment requires 46 to 57VDC @ 2.72 Amp max rated power. For PoE+, this equipment requires 52 to 57VDC (see Specification table). Appropriate overloading protection should be provided on the DC power source outlets utilized.



**WARNING:** Only a DC power source that complies with safety extra low voltage (SELV) requirements can be connected to the DC-input power supply.

**WARNING REGARDING EARTHING GROUND:**

- This equipment shall be connected to the DC supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the DC supply system earthing electrode is connected.
- This equipment shall be located in the same immediate area (such as adjacent cabinets) as any other equipment that has a connection between the earthed conductor of the same DC supply circuit and the earthing conductor, and also the point of earthing of the DC system. The DC system shall not be earthed elsewhere.
- The DC supply source is to be located within the same premises as this equipment.
- There shall be no switching or disconnecting devices in the earthed circuit conductor between the DC source and the earthing electrode conductor.

Locate the DC circuit breaker of the external power source, and switch the circuit breaker to the OFF position.

Prepare a power cable using a three conductor insulated wire (not supplied) with a 14 AWG gauge minimum. Cut the power cable to the length required.

Strip approximately 3/8 of an inch of insulation from the power cable wires.

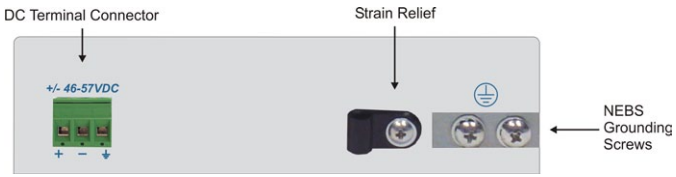
Route the power cables through the provided strain relief for additional support. Connect the power cables to the OmniConverter by fastening the stripped ends to the DC power connector.

WARNING: Note the wire colors used in making the positive, negative and ground connections. Use the same color assignment for the connection at the circuit breaker.

Connect the power wires to the circuit breaker and switch the circuit breaker ON. If any units are installed, their Power LED should indicate the presence of power.

Installation of the equipment should be such that the air flow in the front, back, side and top vents of the chassis are not compromised or restricted.

If the installation requires NEBS grounding, secure the grounding wire to the ground lug. See the figure below for the location of the grounding lug.




*Rear View with DC Power Connector*

**WARNING!!!**

**NEVER ATTEMPT TO OPEN THE CHASSIS OR SERVICE THE POWER SUPPLY. OPENING THE CHASSIS MAY CAUSE SERIOUS INJURY OR DEATH. THERE ARE NO USER REPLACEABLE OR SERVICEABLE PARTS IN THIS UNIT.**



**4) Connect Cables**

a. When using the SFP model, insert the SFP Fiber transceiver into the SFP receptacle on the front of the unit (see the SFP Data Sheet 091-17000-001 for supported Gigabit and Fast Ethernet transceivers).

**NOTE: The release latch of the SFP Fiber transceiver must be in the closed (up) position before insertion.**

b. Connect an appropriate multimode or single-mode fiber cable to the fiber port on the front of the unit. It is important to ensure that the transmit (TX) is attached to the receive side of the device at the other end and the receive (RX) is attached to the transmit side. When using single-fiber (SF) models, the TX wavelength must match the RX wavelength at the other end and the RX wavelength must match the TX wavelength at the other end.

c. Connect the Ethernet 10/100/1000 UTP port via a Category 5 or better cable to an external 10BASE-T, 100BASE-TX or 1000BASE-T Ethernet device.

| RJ-45 Pinout | Alternative B |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | Vport Positive |
| 5 | Vport Positive |
| 6 | |
| 7 | Vport Negative |
| 8 | Vport Negative |

*Voltage Polarity for PoE Options*

## 5) Verify Operation

Verify the OmniConverter is operational by viewing the LED indicators.

| Power LED Indicators | | |
|---|---|---|
| **Legend** | **Indicator** | **Description** |
| Pwr | OFF | Unit not powered |
| | Green - ON | Unit powered |
| | Amber - ON | Over temperature condition |

*Power LED Indicators*

| Fiber Ports LED Indicators - SFP Models | | |
|---|---|---|
| **Legend** | **Indicator** | **Description** |
| 100 | OFF | No link |
| | Green - ON | Port linked at 100Mbps |
| | Green - Blinking at 10Hz | Port data activity at 100Mbps |
| | Green - Blinking at 1Hz | Port linked at 100Mbps and in redundant standby mode |
| | Amber - Blinking at 1Hz | Port linked at 100Mbps and receiving Far End Fault Indicator (FEFI) |
| 1000 | OFF | No link |
| | Green - ON | Port linked at 1000Mbps |
| | Green - Blinking at 10Hz | Port data activity at 1000Mbps |
| | Green - Blinking at 1Hz | Port linked at 1000Mbps and in redundant standby mode |
| | Amber - Blinking at 1Hz | Port linked at 1000Mbps and receiving AN Remote Fault |
| 10 (100+1000) | OFF | No link |
| | Green - ON | Port linked at 10Mbps |
| | Green - Blinking at 10Hz | Port data activity at 10Mbps |
| | Green - Blinking at 1Hz | Port linked at 10Mbps and in redundant standby mode |
| Stat | OFF | Transceiver does not support digital diagnostics or no transceiver (SFP) is installed |
| | Green - ON | Transceiver (SFP) supports digital diagnostics and no alarm is detected |
| | Amber - ON | Transceiver (SFP) supports digital diagnostics and alarms are present |

*Fiber LED Indicator - SFP Models*



| Fiber Ports LED Indicators - Fixed Fiber Models | | |
|---|---|---|
| **Legend** | **Indicator** | **Description** |
| 1000 | OFF | No link |
| | Green - ON | Port linked at 1000Mbps |
| | Green - Blinking at 10Hz | Port data activity at 1000Mbps |
| | Green - Blinking at 1Hz | Port linked at 1000Mbps and in redundant standby mode |
| | Amber - Blinking at 1Hz | Port linked at 1000Mbps and receiving AN Remote Fault |

*Fiber LED Indicators - Fixed Fiber Models*

| RJ-45 Ports LED Indicators | | |
|---|---|---|
| **Legend** | **Indicator** | **Description** |
| 100 | OFF | No link |
| | Green - ON | Port linked at 100Mbps |
| | Green - Blinking at 10Hz | Port data activity at 100Mbps |
| | Amber -ON | Port linked at 100Mbps Half-duplex |
| | Amber - Blinking (10Hz) | Port data activity at 100Mbps Half-duplex |
| 1000 | OFF | No link |
| | Green - ON | Port linked at 1000Mbps |
| | Green - Blinking at 10Hz | Port data activity at 1000Mbps |
| | Amber -ON | Port linked at 1000Mbps Half-duplex |
| | Amber - Blinking (10Hz) | Port data activity at 1000Mbps Half-duplex |
| 10 (100+1000) | OFF | No link |
| | Green - ON | Port linked at 10Mbps |
| | Green - Blinking at 10Hz | Port data activity at 10Mbps |
| | Amber -ON | Port linked at 10Mbps Half-duplex |
| | Amber - Blinking (10Hz) | Port data activity at 10Mbps Half-duplex |
| PSE | Green - ON | Port PSE is active |
| | Amber - ON | Port PSE error/inactive |
| | Amber - Blinking at 1Hz | Port PSE inactive due to resistance too low (< 15k ohms) or short circuit detected |
| | Amber - Blinking at 10Hz | Port PSE inactive due to resistance to high (33k to 500k ohms) |
| | OFF | Port PSE inactive |

*RJ-45 LED Indicators*

## Specifications

| | | |
|---|---|---|
| **Description** | **OmniConverter GPoE+/Sx**<br>10/100/1000BASE-T to 1000BASE-X<br>Unmanaged Ethernet Switch with PoE+ | |
| **Standard Compliances** | IEEE 802.3, IEEE 802.3af (15.40 watts),<br>IEEE 802.3at (30 watts) | |
| **Regulatory Compliances*** | UL, CE, FCC Class A | |
| **Environmental** | REACH, RoHS and WEEE | |
| **PoE Modes** | 4 RJ-45 Ports:<br>IEEE Alternate B (Alt B) | 8 RJ-45 Ports:<br>IEEE Alternate A (Alt A) |
| **Frame Size** | Up to 10,240 bytes | |
| **Port Types** | Copper: 10/100/1000BASE-T (RJ-45)<br>Fiber: 100BASE-X (SFP) - 4 RJ-45 Port model only<br>1000BASE-X (ST, SC, LC, SFP) | |
| **Cable Types** | Copper: EIA/TIA 568A/B, Cat 5 UTP and higher<br>Fiber: Multimode: 50/125, 62.5/125µm<br>Single-mode: 9/125µm | |
| **AC Power Requirements**<br>**(Models with AC/DC Adapters)** | 4 RJ-45 Ports:<br>100 - 240VAC/50 - 60Hz<br>1.23A @ 120VAC (typical) | 8 RJ-45 Ports:<br>100 - 240VAC/50 - 60Hz<br>2.4A @ 120VAC (typical) |
| **DC Power Requirements**<br>**(Models with DC Terminals)** | 4 RJ-45 Ports:<br>+/-46 to +/-57VDC;<br>2.72A @ 48VDC<br>3 Pin Terminal (isolated) | 8 RJ-45 Ports:<br>+/-46 to +/-57VDC;<br>5.21A @ 48VDC<br>2 Pin Terminal (isolated) |
| | A minimum DC input voltage of 50VDC is required to guarantee 25.5 watts (for 802.3at) at the end of 100 meters on Cat 5 cable or better. | |
| **Dimensions** | 4 RJ-45 Ports:<br>W: 5.76" x D: 6.0" x H: 1.4"<br>L: 146.3 mm x B: 152.4 mm x H: 35.6 mm | 8 RJ-45 Ports:<br>W: 6.28" x D: 5.2" x H: 1.5"<br>L: 159.5 mm x B: 132.1 mm x H: 38.1 mm |
| **Weight** | 4 RJ-45 Ports:<br>Module Only: 1.1 lbs.; 499 grams<br>w/ AC/DC Adapter: 1.6 lbs.; 726 grams | 8 RJ-45 Ports:<br>Module Only: 1.5 lbs.; 700 grams<br>w/ AC/DC Adapter: 4.1 lbs.; 1680 grams |
| **Operating Temperature**<br>**(See Temperature Derating Table)** | Commercial: 0 to 50°C<br>Wide: -40 to 60°C (-20°C AC cold start)<br>Extended: -40 to 75°C - not available for models with AC/DC Adapters<br>Storage: -40 to 80°C | |
| **Humidity** | 5 to 95% (non-condensing) | |
| **Altitude** | -100m to 4,000m (operational) | |
| **MTBF (hours)** | 4 RJ-45 Ports:<br>Module Only: 345,600<br>AC/DC Adapter: 100,000 | 8 RJ-45 Ports:<br>Module Only: 265,100<br>AC/DC Adapter: 100,000 |
| **Warranty** | 5 year product warranty with 24/7/365 free Technical Support<br>2 year AC power adapter warranty | |

* Pending



| AC/DC Adapter Temperature Derating<br>Total Available Wattage to RJ-45 Ports | | | | | |
|---|---|---|---|---|---|
| Model | RJ-45 Ports | Watts Required | 40°C | 50°C | 60°C |
| GPoE+/Sx | 4 | 120 watts | Full Power | Full Power | Full Power |
| | 8 | 240 watts | Full Power | 175 watts | 120 watts |

The AC/DC Adapter Temperature derating table is not applicable to models with DC Terminal (see Ordering table for Direct DC -9 option). 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.

### Customer Support Information

If you encounter problems while installing this product, contact Omnitron Technical Support: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