

***iConverter*[®] 10GXT and 10GXX**

10G Media Converters



User Manual

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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.

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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.

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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 2015/863/EU, for electrical and electronic equipment sold in the EU after July 2019. 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.omnitron-systems.com/support or e-mail to Omnitron at intlinfo@omnitron-systems.com.

Safety Warnings and Cautions



ATTENTION: Observe precautions for handling electrostatic discharge sensitive devices.



WARNING: Potential damage to equipment and personal injury.



WARNING: Risk of electrical shock.

OmniConverter® 10GXT and 10GXX User Manual

Product Overview

iConverter 10GXT

The iConverter 10GXT is a 100/1000 RJ-45 copper to 1G/10G SFP/SFP+ rate-switching fiber media converter. The SFP/SFP+ uplink port supports 1000BASE-X or 10GBASE-R Small Form Pluggable transceivers.

The RJ-45 access port supports 100/1000 and Half/Full-Duplex auto-negotiation.

iConverter 10GXX

The iConverter 10GXX is a 100M/1G SFP fiber to 1G/10G SFP/SFP+ rate-switching fiber media converter. The 10GXX access port supports 100BASE-X or 1000BASE-X fiber transceivers and the uplink port supports 1000BASE-X or 10GBASE-R fiber transceivers.

The 100M/1G SFP transceiver port supports auto-negotiation.

Common Features

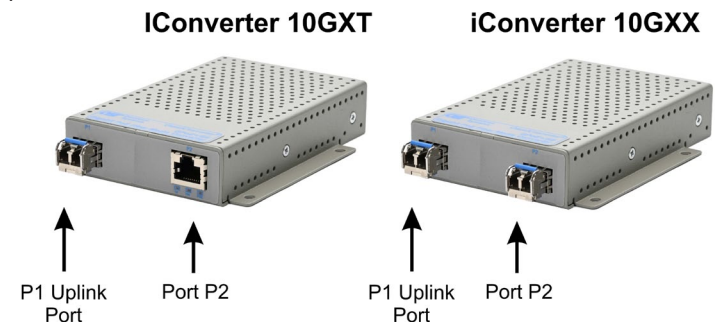
The iConverter 10GXT and 10GXX support frame sizes from 64 bytes to 10,240 bytes and support a variety of Link Modes to facilitate quick fault detection, isolation and reporting.

The uplink port support 10/100/1000BASE-T, 1000BASE-T and multi-gigabit 10M/100M/1G/2.5G/5G/10GBASE-T copper transceivers, and 1G and 10G multimode or single-mode fiber, dual or single-fiber transceivers in standard, CWDM and DWDM wavelengths.

The access port of the 10GXX supports 10/100/1000BASE-T and 1000BASE-T copper transceivers, and 100M and 1G multimode or single-mode fiber, dual or single-fiber transceivers in standard, CWDM and DWDM wavelengths.

Front Panel

The front of the module provides access to the user ports (RJ-45 or SFP) and uplink ports.



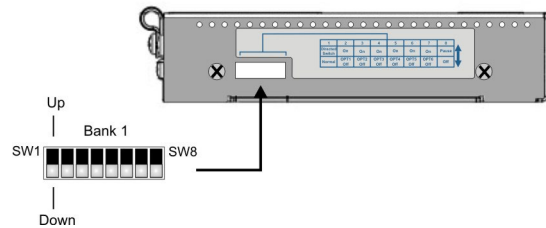
Front Panel Layout

Installation Procedure

- 1) Configure DIP-switches
- 2) Installing the Module
- 3) Apply Power
- 4) Connect Cables
- 5) Verify Operation

1) Configure DIP-switches

DIP-switches are located on the side of the module. The DIP-switches are used to configure modes of operation and networking features.



DIP-switch Bank Locations

The table below provides a description of each DIP-switch position and function for each model. Factory default is the DOWN position.

Switch	Position	Top Legend	10GXT	10GXX
			Function	
SW1	DOWN	Normal	Link Modes	
	UP	Directed		
SW2	DOWN	Off		
	UP	On		
SW3	DOWN	Off	Reserved for future use	Reserved for future use
	UP	On		
SW4 - SW8	DOWN	Off	Reserved for future use	Reserved for future use
	UP	On		
General Settings			L2CP Frames Tunneled	L2CP Frames Tunneled

SW1 - SW2: Link Modes

SW5	SW6	Function
DOWN	DOWN	Link Segment
UP	DOWN	Link Propagate Port 1 to Port 2
DOWN	UP	Link Propagate Port 2 to Port 1
UP	UP	Symmetrical Link Propagate

These DIP-switches configure the link mode settings. It is recommended to have link modes Down position (default) during the initial installation. After the circuit has been tested and operational, configure the module for the desired mode. [See Link Mode application note for more information.](#)

Link Segment

In Link Segment mode, all ports operate independently. A loss of a receive link signal will only affect the port detecting the loss of signal. All the other ports will continue to generate a link signal.

Asymmetrical Link Propagate

In Asymmetrical Link Propagate mode, faults are propagated based on the port notation. Port 1 to Port 2 notation indicates the direction the loss of link signal will propagate. A loss of receive link on Port 1 causes Port 2 to drop its link due to the propagated state (Port 1 to Port 2). The loss of link on Port 2 does not cause the loss of link to propagate. The loss only propagates in the Port 1 to Port 2 direction.

Symmetrical Link Propagate

In Symmetrical Link Propagate mode, the loss of a receive link signal will continue to propagate through to the next port in the network causing the port to drop link.

SW3 - SW8: Reserved on all models

These DIP-switches must be left in the factory default DOWN position.

2) Installing the Module

Wall Mounting

The wall mounting height of the module should be less than or equal to 2 meters (6.6 feet) from the floor. Use the four mounting holes on the module to secure the module to the wall. The module can accommodate #6 screws (not included).

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

The accessory cables should have their own strain relief and do not pull down on the module.

Rack Mounting

The module can be rack mounted using the optional Rack Mount Shelf (8260-0). Refer to the Rack Mount Shelf user manual (040-08260-001x) for the proper installation guidelines. The user manual is available on the iConverter Rack Mount Shelf product page at: www.omnitron-systems.com

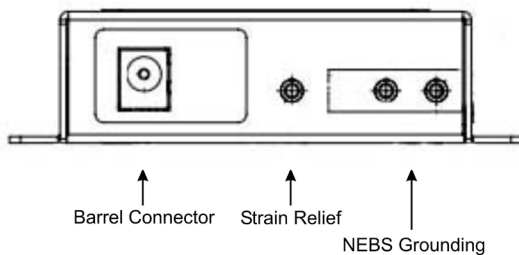
DIN-Rail Mounting

The module can be DIN-rail mounted using the optional DIN-rail Mounting Bracket (8250-0) or the optional DIN-rail Mounting Clip (8251-0). Refer to the user manuals (040-08250-001x or 040-08251-001x) for the proper installation guidelines.

3) Apply Power

AC Power

Secure the ground wire to the ground screw. See the figure below for the location of the grounding screws.



Barrel Connector for AC/DC Power Adapter

Route the power cord through the provided strain relief for additional support and connect the barrel or DIN connector (depending on the model) at the end of the wire on the AC/DC adapter to the barrel or DIN connector on the module. Connect the AC/DC adapter to the AC outlet. Confirm that the module has powered up properly by checking the Power LED located on the front of the switch.

The AC power requirements for each port configuration is outlined in the table below. Voltage ranges are inclusive of tolerances.

10GXT	100 - 240VAC 50 - 60Hz 0.93A @ 240VAC (max) 2.1 mm Barrel
10GXX	100 - 240VAC 50 - 60Hz 0.93A @ 240VAC (max) 2.1 mm Barrel

Make sure to disconnect the power and ground cables before removing the module.

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.

DC Power

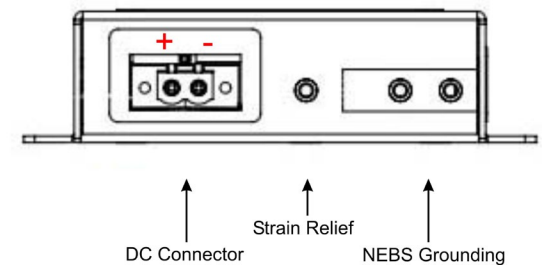
This module is intended for installation in restricted access areas. ("Les matériels sont destinés à être installés dans des EMBLEMES À ACCÈS RESTREINT"). A restricted access area can be accessed only through the use of a special key, or other means of security.

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.

The DC power requirements for each port configuration is outlined in the table below. Voltage ranges are inclusive of tolerances.

10GXT	9 to 16VDC; 0.51A @ 12VDC 2 Pin Terminal
10GXX	9 to 16VDC; 0.54A @ 12VDC 2 Pin Terminal

Appropriate overloading protection should be provided on the DC power source outlets utilized.



2-Pin Terminal for DC Power

WARNING REGARDING EARTHING GROUND:

- o 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.
- o 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.
- o The DC supply source is to be located within the same premises as this equipment.
- o There shall be no switching or disconnecting devices in the earthed circuit conductor between the DC source and the earthing electrode conductor.

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

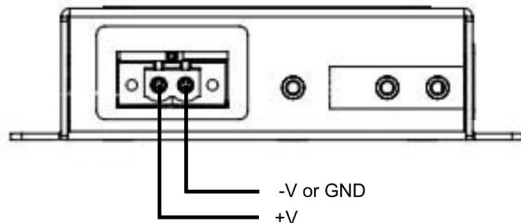
Locate the DC circuit breaker of the external power source, and switch the circuit breaker to the OFF position.

Prepare a power cable using a three conductor insulated wire (not supplied) with 12AWG to 14AWG thickness. Cut the power cable to the length required.

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

Connect the ground wire to the grounding screws on the back of the module.

Connect the power cables to the module by fastening the stripped ends to the DC power connector.



DC Models Rear View: Power Connections

WARNING: The positive lead of the power source must be connected to the “+” terminal on the module and the negative lead of the power source to the “-” terminal on the module as shown above.

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 module are installed, the Power LED will indicate the presence of power.

During the installation, ensure that the ground potentials are maintained throughout the system connections. This includes but not limited to the power source ground and any shielded cabling grounds.

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.

Make sure to disconnect the power and ground cables before removing the equipment.

4) Connect Cables

- Insert the SFP/SFP+ transceiver into the SFP receptacle on the front of the module. Refer to the SFP or SFP+ data sheets for supported 1G and 10G transceivers. The data sheets are available on the SFP+ and SFP Transceiver product page at: www.omnitron-systems.com

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

- Connect an appropriate multimode or single-mode fiber cable to the fiber port on the front of the module. It is important to ensure that the transmit (TX) is attached to the receive side of the transceiver at the other end and the receive (RX) is attached to the transmit side. When using single-fiber (SF) SFP/SFP+ transceivers, 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.
- Connect the RJ-45 Ethernet port on the 10GXT using the appropriate cable type for the speed of the interface (see Specification Table) to an external Ethernet device.

5) Verify Operation

Verify the module is operational by viewing the LED indicators.

Power LED Indicators		
Legend	Indicator	Description
Pwr	OFF	Unit not powered
	Green - ON	Unit powered

10GXT LED Indicators		
Legend	Indicator	Description
P1 "Link"	OFF	Port Not Linked
	Green - ON	Port is linked. Speed determined by the P1 "Rate" LED
	Green - Blinking at 10Hz	Port Tx/Rx activity at the speed determined by the P1 "Rate" LED
	Amber - Blinking at 1Hz	Fault condition
P1 "Rate"	OFF	No link
	Green - one blink	Port linked at 10M, 100M or 1G
	Green - two blinks	Port linked at 2.5G
	Green - three blinks	Port linked at 5G
	Green - four blinks	Port linked at 10G
P2 "Link"	OFF	Port Not Linked
	Green - ON	Port linked at the speed determine by the P2 "Rate" LED
	Green - Blinking at 10Hz	Port Tx/Rx activity at the speed determined by the P2 "Rate" LED
P2 "Rate"	OFF	Port Not Linked
	Green - two blinks	Port linked at 100Mbps
	Green - three blinks	Port linked at 1000Mbps

10GXX LED Indicators		
Legend	Indicator	Description
P1 "Link"	OFF	Port Not Linked
	Green - ON	Port is linked. Speed determined by the P1 "Rate" LED
	Green - Blinking at 10Hz	Port Tx/Rx activity at the speed determined by the P1 "Rate" LED
	Amber - Blinking at 1Hz	Fault condition
P1 "Rate"	OFF	No link
	Green - one blink	Port linked at 10M, 100M or 1G
	Green - two blinks	Port linked at 2.5G
	Green - three blinks	Port linked at 5G
	Green - four blinks	Port linked at 10G
P2 "Link"	OFF	Port Not Linked
	Green - ON	Port linked at the speed determine by the P2 "Rate" LED
	Green - Blinking at 10Hz	Port Tx/Rx activity at the speed determined by the P2 "Rate" LED
P2 "Rate"	OFF	Port Not Linked
	Green - one blink	Port linked at 10Mbps
	Green - two blinks	Port linked at 100Mbps
	Green - three blinks	Port linked at 1000Mbps

Compliance for 10GXT and 10GXX

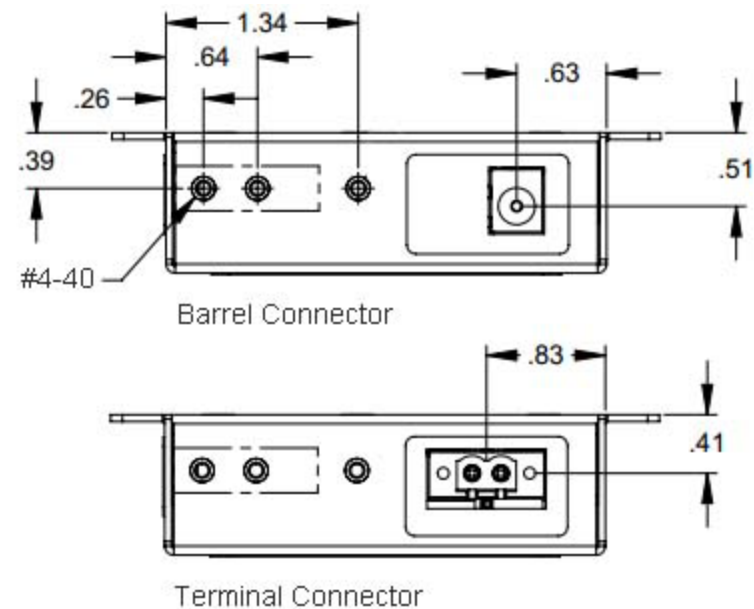
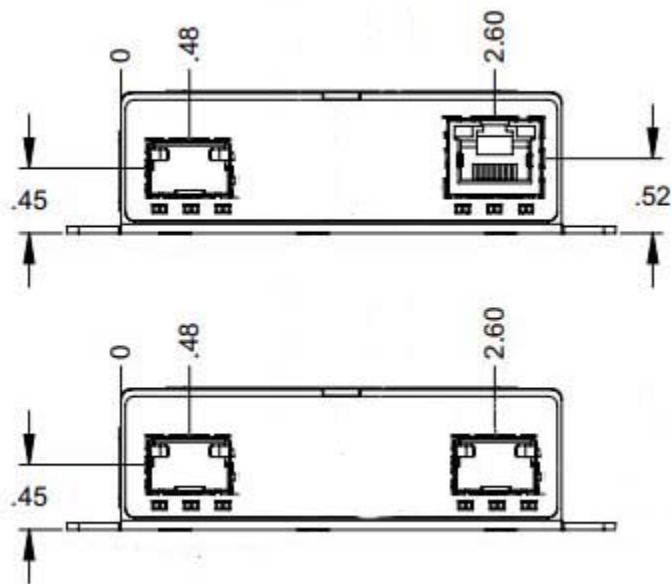
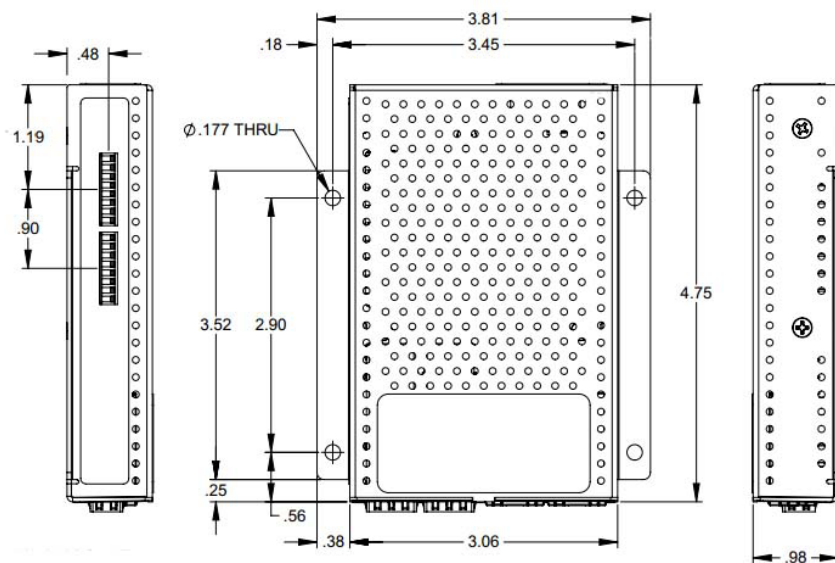
Regulatory Compliances *Pending	Safety:	UL 62368-1*, UL 60950-1*, IEC 62368-1*, IEC 60950-1*, EN 62368-1*, EN 60950-1*, CAN/CSA C22.2 No. 62368-1-14*, CAN/CSA C22.2 No. 60950-1*, CE Mark, UKCA
	EMC: EMI: EMS:	EN 55032/24 CE Emissions/Immunity CISPR 32, FCC 47 Part 15 Subpart B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 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: 3 Vrms, IEC 61000-4-8 (Magnetic Field) 30 A/m, IEC 61000-4-11 (Voltage Dips, interrupts)
	IP Rating:	IP30D Protection
	ACT:	TAA, BAA, NDAA

Specifications

Description	iConverter 10GXT 100/1000BASE-T Copper to 1G/10G SFP/SFP+ Fiber Media Converter
Standard Compliances	IEEE 802.3, 802.3u, 802.3ab, 802.3z and 802.3ae
Environmental	RoHS, WEEE, REACH
Frame Size	Up to 10,240 bytes
Port Types	RJ-45: 100/1000BASE-T SFP: 1000BASE-X Fiber Transceivers, 1000BASE-T Copper Transceivers, 10/100/1000BASE-T SGMII Copper Transceivers SFP+: 10GBASE-X Fiber Transceivers, 10GBASE-T Copper Transceivers 10/100/1000/2.5G/5G/10GBASE-T Multi-rate Copper Transceivers
Cable Types	Copper: EIA/TIA 568A/B, Cat 5 UTP and higher Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm
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. (454 grams) Module w/ Adapter: 1.5 lbs. (680 grams)
Operating Temperature	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 (hours)	Module Only: 468,140 AC/DC Adapter: 100,000
Warranty	Lifetime warranty with registration and 24/7/365 free Technical Support

Description	iConverter 10GXX 100M/1G SFP Fiber to 1G/10G SFP/SFP+ Fiber Media Converter
Standard Compliances	IEEE 802.3, 802.3u, 802.3ab, 802.3z and 802.3ae
Environmental	RoHS, WEEE, REACH
Frame Size	Up to 10,240 bytes
Port Types	Access: 100BASE-X Fiber Transceivers, 1000BASE-X Fiber Transceivers, 1000BASE-T Copper Transceivers, 10/100/1000BASE-T SGMII Copper Transceivers Uplink: 10GBASE-X Fiber Transceivers, 10GBASE-T Copper Transceivers 10/100/1000/2.5G/5G/10GBASE-T Multi-rate Copper Transceivers
Cable Types	Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm
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. (454 grams) Module w/ Adapter: 1.5 lbs. (680 grams)
Operating Temperature	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 (hours)	Module Only: 489,830 AC/DC Adapter: 100,000
Warranty	Lifetime warranty with registration and 24/7/365 free Technical Support

Mechanical



Customer Support Information

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

Phone: (949) 250-6510
 Fax: (949) 250-6514
 Address: Omnitron Systems Technology, Inc.
 38 Tesla
 Irvine, CA 92618, USA
 Email: support@omnitron-systems.com
 URL: www.omnitron-systems.com