Omnitron Systems

miConverter® **GX/T**
Media Converter

User Manual

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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.

Technical Support:

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Address: Omnitron Systems Technology
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General

This user manual support the following models.

Fiber Type and Distance	Connector Types		Tx Lambda (nm)	Rx Lambda (nm)
	ST	SC		
MM/DF/220m	1220-0	1222-0	850	850
SM/DF/12km	1221-1	1223-1	1310	1310
SM/DF/34km	-	1223-2	1310	1310
SM/DF/80km	-	1223-3	1550	1550
SM/DF/110km	-	1223-4	1550	1550
SM/DF/140km	-	1223-5	1550	1550
MM/SF/550m	-	1230-0	1310	1550
MM/SF/550m	-	1231-0	1550	1310
SM/SF/20km	-	1230-1	1310	1550
SM/SF/20km	-	1231-1	1550	1310
SM/SF/40km	-	1230-2	1310	1550
SM/SF/40km	-	1231-2	1550	1310
SFP	1239-0			
Model numbers are followed by **-pt**, where **p** indicates the specific type of power option and **t** indicates the temperature range. See the data sheet for more information.				

Description

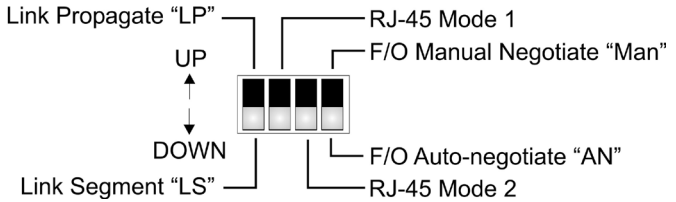
The miConverter GX/T is a 10/100/1000BASE-T copper to 1000BASE-X fiber media converter that supports jumbo frames. The GX/T features fixed fiber, 100Mbps and 1000Mbps Small Form Pluggable (SFP) transceivers that support multimode, single-mode and single-mode single-fiber options.

Both the fiber port and the RJ-45 port support auto-negotiation. The auto-negotiation feature can be disabled on both ports (for manual configuration) using DIP-switches on the product.

See data sheet for available models and powering options.

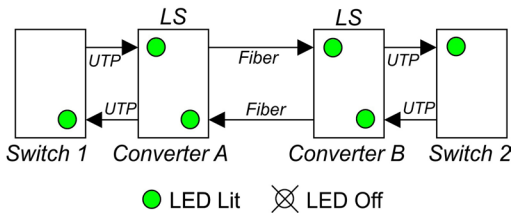
WARNING!
Before inserting the Power Adapter, verify that the power on the unit is appropriate for your AC line voltage source.

DIP-Switch Settings



In order to accommodate different user needs, the GX/T supports two different linking modes. In default configuration, the module operates in Link Segment.

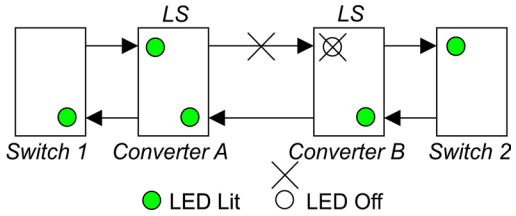
Normal Operation



Link Segment/Link Propagate "LS/LP"

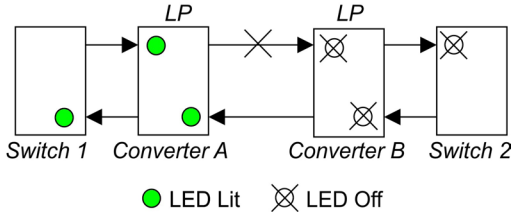
Setting the DIP-switch to LS (Link Segment), a port transmits a Link signal independently of any received Link at any other port. For example, the RJ-45 port transmits a Link regardless of the fiber receiving a Link.

Fiber Fault with Link Segment



Setting the DIP-switch to LP (Link Propagate), a port transmits a Link signal only when receiving a Link at its other port. For example, the RJ-45 port transmits a Link only when receiving a Link at the fiber port.

Fiber Fault with Link Propagate



RJ-45 Mode Configuration

When configured for auto-negotiation, Pause is always advertised. Each port will resolve Pause capability independently during auto-negotiation. If NO Pause is resolved, the port will not send or respond to Pause frames.

Mode 1	Mode 2	RJ-45 Mode of Operation
Down	Down	Port set to auto-negotiation. The following modes are advertised. 1000F, 1000H, 100F, 100H, 10F, 10H, and pause.
Down	Up	Manual Operation - 100 HDX
Up	Down	Manual Operation - 10 FDX
Up	Up	Manual Operation - 100 FDX

F/O Manual/Auto "Man/AN"

Setting this DIP-Switch to Auto-Negotiate "AN" (factory setting) enables the fiber port to determine duplex mode automatically. If a connection can not be established, the fiber port will automatically attempt to connect to the device by reconfiguring to manual mode.

If the connected device cannot provide the proper signal to indicate its own mode of operation or the fiber port can establish a link after attempting a manual connection, this DIP-Switch should be set to Manual "Man." This feature allows connections with legacy devices that do not support auto-negotiation.

NOTE: When the fiber port is configured for Manual Mode, a link may not occur with the connected device. Configure both devices to Manual mode to establish a link.

Mounting and Cable Attachment

The GX/T can be wall mounted using the optional mounting bracket kit (1091-0) or using the included Velcro® strips. Installation of the module should be such that the air flow in the front, back, side and top vents of the switch are not compromised or restricted.

For AC models:

AC power adapter is available in US, Universal and Country/Region specific models. Country/Region specific models feature optional interchangeable connectors, allowing for compatibility with electrical outlet types found around the world.

This product should only be used with Omnitron Supplied Power Unit.

To power the module using the USB cable, connect the USB Standard Type A connector to a USB port on the computer. Then connect the connector at the other end of the cable (barrel connector) to the connector on the back of the miConverter. Confirm that the module has powered up properly by checking the power status LED located on the top of the module.

To power the module using the AC/DC adapter, connect the AC/DC adapter to the AC outlet. Then connect the barrel connector at the end of the cable to the back of the miConverter. Confirm that the module has powered up properly by checking the power status LED located on the top of the module.

For DC models:

To power the unit using a DC power source, prepare a power cable using a two-conductor insulated wire (not supplied). The DC connector can accept a wire thickness up to 12AVG 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 power cables to the GX/T unit by fastening the stripped ends to the DC power connector.

Connect the power wires to the DC power source. The Power LED should indicate the presence of power.

WARNING: Note the wire colors used in making the positive and negative connections. Use the same color assignment for the connection at the DC power source.

Insert the SFP Fiber transceiver into the SFP receptacle on the GX/T.

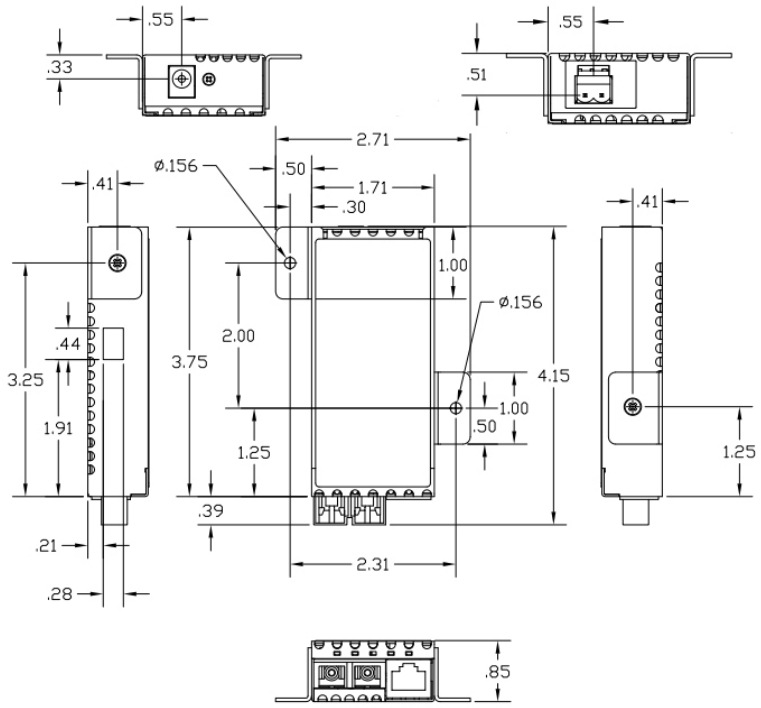
NOTE: The release latch of the SFP Fiber transceiver must be in the closed (up) position before insertion.

Connect the RJ-45 port via a Category 5 or better cable to a 10BASE-T, 100BASE-TX or 1000BASE-T Ethernet device.

When connecting the dual-fiber models, the miConverter transmitter (Tx) must attach to the receiver side of its link partner; the receiver (Rx) must attach to the transmitter.

When using single-fiber (SF) media converter models, the Tx wavelength on one end has to match the Rx wavelength on the other. Based on this guideline, the SF media converter models must be used in pairs, such as the 1230-1 matched with the 1231-1.

Mechanical



LED Indicators

LED	Color	Description
Power "Pwr"	Green	**OFF:** No power **ON:** Power applied
Fiber Link "F/O"	Green	**OFF:** No fiber link **ON:** Fiber link at 100Mbps* or 1000Mbps **Blinking (1Hz) with AN Solid Green:** Energy detected **Blinking (10Hz):** Data activity
Fiber Negotiation "AN"	Green	**OFF:** Manual mode **ON:** Auto-negotiation mode **Blinking (1Hz):** Configured as AN but linked in manual mode
Error Condition "F/O" + "AN"	Green	**OFF:** N/A **AN Solid Green with FO Blinking (1Hz):** AN error or Remote Fault detected**
RJ-45 Link "100"	Green	**OFF:** No RJ-45 link **ON:** RJ-45 link at 100Mbps **Blinking (10Hz):** Data activity
RJ-45 Link "1000"	Green	**OFF:** No RJ-45 link **ON:** RJ-45 link at 1000Mbps **Blinking (10Hz):** Data activity
RJ-45 Link "100" + "1000"	Green	**OFF:** No RJ-45 link **ON:** RJ-45 link at 10Mbps **Blinking (10Hz):** Data activity

* When 100M SFP transceiver installed

** Remote Fault Detect is only available when 1000M transceivers are installed.

Specification

Standard Compliances	IEEE 802.3	
Regulatory Compliances	Safety: EMI: ACT:	UL, cUL, CE, UKCA FCC Class A TAA, BAA, NDAA
Environmental	RoHS, WEEE, REACH	
Frame Size	Fixed Fiber Models: Up to 9K bytes SFP Model: Up to 10,240 bytes	
Port Types	Copper: Fiber:	10/100/1000BASE-T (RJ-45) 100BASE-X (SFP) 1000BASE-X (ST, SC, SFP) 1000BASE-BX (SC Single-Fiber, SFP)
Cable Types	Copper: Fiber:	EIA/TIA 568A/B, Cat 5 UTP and higher Multimode: 50/125µm, 62.5/125µm Single-mode: 9/125µm
AC Power Requirements	AC Adapter:	100 - 240VAC/50 - 60Hz 0.02A @ 120VAC (max)
DC Power Requirements	DC Input: (AC Adapter)	5.0 to 12.0VDC 0.35A @ 5VDC 2.5mm Barrel Connector
	DC Input: (Terminal)	5.0 to 12.0VDC 0.35A @ 5VDC 2-Pin Terminal Connector
Dimensions W x D x H	1.71" x 4.10" x 0.84" (43.4 mm x 104.1 mm x 21.3 mm)	
Weight	Module: W/ AC Adapter:	4 oz. (113.4 grams) 12 oz. (340.2 grams)
Temperature	Commercial: Wide: Extended: Industrial: Storage:	0 to 50°C -40 to 60°C -40 to 75°C -40 to 85°C -50 to 85°C
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
MTBF (hrs)	Module: 878,000 US AC Adapter: 250,000 Universal AC Adapter: 100,000	
Warranty	Lifetime warranty with 24/7/365 free Technical Support	

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