Prisma Optical Media Converters Industrial Ethernet 10/100 Switching Mini Media Converters

Mini Media Converters

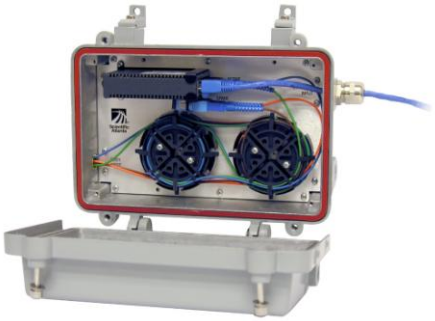
The Prisma Mini Media Converter measures less than 3.5 inches deep and 2 inches wide, and has both data connections on the same side of the unit. The Prisma Mini Media Converter allows operation in extreme temperatures, and offers several power and mounting options.

Figure 1. Prisma Mini Media Converter

The Prisma Mini Media Converter includes one fiber port that always operates at 100 Mbps FDX and one twisted pair port that autosenses the connected device speed and duplex mode: 10 Mbps or 100 Mbps and HDX or FDX. An operating temperature of up to 65°C makes it perfect for use in extreme temperature conditions. The converter may be powered using the included AC power adapter, a USB power cord, or the 4-terminal DC power block that has an extended voltage range (5 to 50 VDC). Additionally, the converter complies with the IEEE 802.3af PoE standard. The PoE technology allows the Prisma Mini Media Converter to be a Powered Device (PD) and draw power when connected to Power Sourcing Equipment (PSE) that is also compliant with the IEEE 802.3af standard.

The Prisma Mini Media Converter Outdoor Housing gives the cable operator the ability to strand mount the Prisma Mini Media Converter. The outdoor housing is water-tight and EMI-tight. Up to a four-fiber stub can be brought into the housing. Either one or two fibers will connect to the Prisma Mini Media Converter. The remaining dark fibers can be stowed as spares. A water-tight and EMI-tight fitting for entry of a shielded Ethernet cable into the housing is supplied with the assembly. The Prisma Mini Media Converter in the outdoor housing is powered over Ethernet.

Figure 2. Prisma Mini Media Converter Outdoor Housing



Features

- Low cost, high flexibility - same small unit connects both 10 Mbps and 100 Mbps copper to 100 Mbps fiber
- Temperature hardened for use in extreme temperatures
- Several power options are available for a variety of applications
  - Includes 4-terminal DC power block
  - Supports IEEE 802.3af PoE standard; draws power from power sourcing equipment
  - Includes country-specific, high-reliability AC power adapter
  - Use converter with USB power cord
  - Use more than one of these options for redundancy
- Plug-and-Play Operation
  - User-friendly 10/100 auto-negotiation technology
  - AutoCross feature for twisted pair connection on all converters
- Space saving alternative
  - Standalone unit has small, rugged enclosure with compact, external power supply
  - Includes DIN clips for mounting (parallel or perpendicular) on a DIN-rail
- Hardened strand-mount media enclosure for installation in harsh environments
- Quality product - Made in America with a 6-year warranty on converter and power adapter

Application Examples

An IEEE 802.3af compliant switch supplies power to the Prisma Mini Media Converter powered device. The converter does not require an external power supply.

Figure 3. 2-Fiber Block Diagram

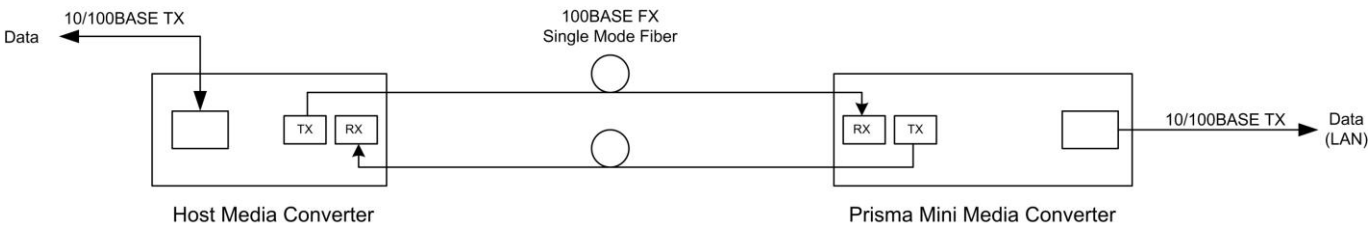
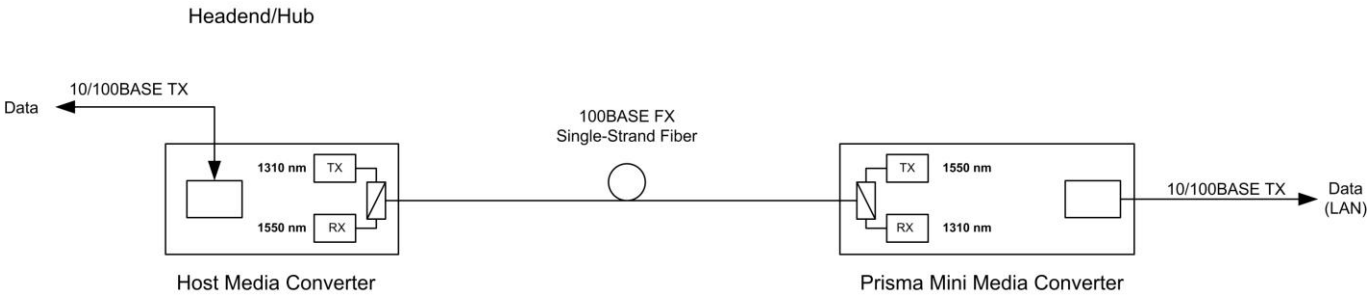


Figure 4. Single-Strand Fiber Block Diagram



The Prisma Mini Media Converter ships from the factory with DIN clips, allowing installation on a DIN-rail. When installing multiple Prisma Mini Media Converters on a DIN-rail, you can use one DC input source, then cascade from one DC block to the next until reaching the maximum current available.

Redundancy and Back-Up Power

When connecting multiple Prisma Mini Media Converters to a power sourcing switch, connect the PSE switch to an Uninterrupted Power Supply (UPS) so that the switch and each connected device have redundant power, allowing the use of spare UPS outlets for additional equipment. When not using a UPS but still requiring redundancy, use a combination of the power options offered by the Prisma Mini Media Converter. For example, connect a Prisma Mini Media Converter to a PSE switch while also using a second power source such as an AC power adapter, DC terminal block, or USB cable. With this connection, if the main power source (the PSE) fails, the second power source (if available) will then seamlessly supply power to the converter.

Specifications

Table 1. Optical Specifications

Prisma Mini Media Converter – CWDM	**Value**
Wavelength Spacing	20 nm
Tx Wavelength	nominal ± 6 nm
Avg. Distance	80 km
Tx optical output range	-3 to +2 dBm
Rx optical input range	+2 to -36 dBm
Prisma Mini Media Converter TX/SSFX-SM1310 *(single-strand fiber)*	**Value**
Tx / Rx Wavelength	1310 / 1550 nm
Avg. Distance	20 km
Tx optical output range	-6 to -13 dBm
Rx optical input range	0 to -32 dBm
Prisma Mini Media Converter TX/SSFX-SM1310/Plus *(single-strand fiber)*	**Value**
Tx / Rx Wavelength	1310 / 1550 nm
Avg. Distance	40 km
Tx optical output range	0 to -5 dBm
Rx optical input range	0 to -34 dBm
Prisma Mini Media Converter TX/SSFX-SM1310/Long *(single-strand fiber)*	**Value**
Tx / Rx Wavelength	1310 / 1550 nm
Avg. Distance	60 km
Tx optical output range	0 to -5 dBm
Rx optical input range	0 to -34 dBm
Prisma Mini Media Converter TX/SSFX-SM1550 *(single-strand fiber)*	**Value**
Tx / Rx Wavelength	1550 / 1310 nm
Avg. Distance	20 km
Tx optical output range	-6 to -13 dBm
Rx optical input range	0 to -32 dBm
Prisma Mini Media Converter TX/SSFX-SM1550/Plus *(single-strand fiber)*	**Value**
Tx / Rx Wavelength	1550 / 1310 nm
Avg. Distance	40 km
Tx optical output range	-3 to -8 dBm
Rx optical input range	0 to -34 dBm
Prisma Mini Media Converter TX/SSFX-SM1550/Long *(single-strand fiber)*	**Value**
Tx / Rx Wavelength	1550 / 1310 nm
Avg. Distance	60 km
Tx optical output range	0 to -5 dBm
Rx optical input range	0 to -34 dBm

Table 2. Physical Specifications

Electrical	**Value**
Standards Compliance & Feature Highlights	User-friendly, plug-and-play operation Includes country-specific, high-reliability power adapter IEEE 802.3 10Base-T twisted pair IEEE 802.3u 100Base-TX twisted pair IEEE 802.3u 100Base-FX fiber IEEE 802.3af Power Over Ethernet Features Auto-Negotiation AutoCross for MDI-II/MDI-X Store-and-forward operation 50/125µm or 62.5/125µm multi-mode fiber 9/125µm single-mode fiber Available for single-strand fiber Also use with a USB power cable Includes 4-terminal DC power block Broadcast storm protection Supports over-sized packets up to 1916 bytes DIN Clip: Designed for use on a DIN-35 rail
Connectors	RJ-45, and ST or SC
Dimensions (W x D x H)	1.80 in. x 3.35 in. x 0.83 in. (4.57 cm x 8.51 cm x 2.11 cm)
Environmental	**Value**
Operating Temperature (CWDM version)	-13 to +149°F (-25 to +65°C) excluding AC wall adapter 32 to 122°F (0 to 50°C) with AC wall adapter
Operating Temperature (Single-Strand Fiber version)	-49 to +158°F (-45 to +70°C) excluding AC wall adapter 32 to 122°F (0 to 50°C) with AC wall adapter
Storage Temperature	-49 to 185° F (-45 to +85° C)
Humidity	5 to 95% (non-condensing)
Power	AC Wall Adapter: 100/240 ±10% VAC input, 5 VDC output DC Input Voltage: 5 to 50 VDC on terminal and jack
Regulatory Approvals	FCC Class B, UL/cUL, CSA, CE

Ordering Information

Table 3. Ordering Information

Prisma Mini Media Converter 10/100 Switching Media Converters - Single-Strand Fiber	Part Number
Prisma Mini Media Converter, TP-TX/SSFX-SM1310-SC/UPC, (1310xmt/1550rcv), 20 km	4013095
Prisma Mini Media Converter, TP-TX/SSFX-SM1310/PLUS-SC/UPC, (1310xmt/1550rcv), 40 km	4013097
Prisma Mini Media Converter, TP-TX/SSFX-SM1310/LONG-SC/UPC, (1310xmt/1550rcv), 60 km	4012325
Prisma Mini Media Converter, TP-TX/SSFX-SM1550-SC/UPC, (1550xmt/1310rcv), 20 km	4013096
Prisma Mini Media Converter, TP-TX/SSFX-SM1550/PLUS-SC/UPC, (1550xmt/1310rcv), 40 km	4013098
Prisma Mini Media Converter, TP-TX/SSFX-SM1550/LONG-SC/UPC, (1550xmt/1310rcv), 60 km	4012336
Prisma Mini Media Converter 10/100 Switching Media Converters - CWDM, SC/UPC	**Part Number**
Prisma Mini Media Converter, TP-TX/FX-SM1430-SC/UPC (with AC power adapter)	4012141
Prisma Mini Media Converter, TP-TX/FX-SM1450-SC/UPC (with AC power adapter)	4012142
Prisma Mini Media Converter, TP-TX/FX-SM1470-SC/UPC (with AC power adapter)	4012143
Prisma Mini Media Converter, TP-TX/FX-SM1490-SC/UPC (with AC power adapter)	4012144
Prisma Mini Media Converter, TP-TX/FX-SM1510-SC/UPC (with AC power adapter)	4012145
Prisma Mini Media Converter, TP-TX/FX-SM1530-SC/UPC (with AC power adapter)	4012146
Prisma Mini Media Converter, TP-TX/FX-SM1550-SC/UPC (with AC power adapter)	4012147
Prisma Mini Media Converter, TP-TX/FX-SM1570-SC/UPC (with AC power adapter)	4012148
Prisma Mini Media Converter, TP-TX/FX-SM1590-SC/UPC (with AC power adapter)	4012149
Prisma Mini Media Converter, TP-TX/FX-SM1610-SC/UPC (with AC power adapter)	4012150
Prisma Mini Media Converter 10/100 Switching Media Converters - CWDM, SC/APC	**Part Number**
Prisma Mini Media Converter, TP-TX/FX-SM1430-SC/APC (with AC power adapter)	4012173
Prisma Mini Media Converter, TP-TX/FX-SM1450-SC/APC (with AC power adapter)	4012174
Prisma Mini Media Converter, TP-TX/FX-SM1470-SC/APC (with AC power adapter)	4012175
Prisma Mini Media Converter, TP-TX/FX-SM1490-SC/APC (with AC power adapter)	4012176
Prisma Mini Media Converter, TP-TX/FX-SM1510-SC/APC (with AC power adapter)	4012177
Prisma Mini Media Converter, TP-TX/FX-SM1530-SC/APC (with AC power adapter)	4012178
Prisma Mini Media Converter, TP-TX/FX-SM1550-SC/APC (with AC power adapter)	4012179
Prisma Mini Media Converter, TP-TX/FX-SM1570-SC/APC (with AC power adapter)	4012180
Prisma Mini Media Converter, TP-TX/FX-SM1590-SC/APC (with AC power adapter)	4012181
Prisma Mini Media Converter, TP-TX/FX-SM1610-SC/APC (with AC power adapter)	4012182
Prisma Mini Media Converter - Accessories	**Part Number**
Prisma Mini Media Converter, Hardened Housing, strand-mount	4011868

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