SR-100-XT DIN Rail Media Converters

Industrial Fast Ethernet Copper to Fiber Converters

- 100Base-TX to 100Base-X Fiber Media Converters
- Link copper to multimode or single mode fiber
- Dual fiber ST/SC or Single fiber SC connectors
- Extend network distances up to 40km
- -40°C to +75°C (-40°F to +167°F) extended operating temperature
- Advanced Features: Link Pass-Through, Far-End Fault, Auto-MDIX
- Triple Power Input: Dual Terminal block power connector & T-Bus

Perle **SR-100-XT DIN Rail Media Converters** transparently connect UTP copper to fiber in industrial grade operating temperatures **-40°F to +167°F (-40°C to +75°C)**. Equipment found in **traffic management, oil and gas pipelines, weather tracking, industrial and outdoor applications** must function in temperatures that cannot be supported by a commercial based media converter. These Fast Ethernet Media Converters are ideal for use with industrial devices subjected to harsh environments and severe temperatures such as security cameras, wireless access points, alarms, traffic controllers, sensors and tracking devices.

- Extend the data transmission distance of IP-based devices by connecting their 100Base-TX Copper interface to fiber.
- Extend the distance of an existing industrial network by linking CAT5/6/7 cabling to multimode or single mode fiber.
- Protect Ethernet data from EMI noise and interference by inter-connecting your copper-Ethernet devices over fiber in industrial plants.

An SR-100-XT Media Converter is also available with **an SFP slot**.

Network Administrators can "see-everything" with Perle's advanced features such as Auto-Negotiation, Auto-MDIX, Link Pass-Through, Far End Fault, and Remote Loopback. This allows for more efficient troubleshooting and less on-site maintenance. These cost and time saving features, along with a lifetime warranty and free worldwide technical support, make **SR-100-XT Fast Ethernet Media Converters** the smart choice for IT professionals.

SR-100-XT Industrial Media Converter Features: 100Base-TX to 100Base-X

DIN Rail Enclosure

Easily mount on a DIN rail or inside distribution boxes using native DIN Rail enclosure with grounding clip. No need for add-on brackets.

Auto-Negotiation

The media converter supports auto negotiation on the fast ethernet 100Base-TX interface.

Auto-MDIX

Auto-MDIX (automatic medium-dependant interface crossover) detects the signaling on the 100Base-TX interface to determine the type of cable connected (straight-through or crossover) and automatically configures the connection when enabled. With Auto-MDIX enabled, either a straight-through or crossover type cable can be used to connect the media converter to the device on the other end of the cable.

Link Pass-Through

With Link Pass-Through the state of the 100Base-TX receiver is passed to the 100Base-X transmitter to make the media converter appear transparent to the end devices that are connected. In addition, if Far-End Fault is enabled the media converter can turn off the 100Base-TX transmitter when a FAR-End Fault is received.

Using Link Pass-Through with Far-End Fault minimizes data loss when a fault occurs. Should a fault occur, the end devices have the indication of a failure available to them making trouble shooting easier.

Far-End Fault (FEF)

The media converter implements the 802.3 standard for Far-End Fault for the indication and detection of remote fault conditions on the 100Base-X fiber connection. With Far-End Fault enabled the media converter transmits the Far-End Fault Indication over the 100Base-X fiber connection whenever a receive failure is detected on the 100Base-X fiber connection. The media converter continuously monitors the 100Base-X fiber connection for a valid signal.

The action the media converter takes on receiving a Far-End Fault Indication is dependent on the Link Pass Through switch setting.

Duplex

Full and half duplex operation supported.

Pause (IEEE 802.3xy)

Pause signaling is an IEEE feature that temporarily suspends data transmission between two devices in the event that one of the devices becomes overwhelmed. The fast ethernet media converter supports pause negotiation on the 100Base-TX copper connection.

VLAN

The media converter is transparent to VLAN tagged packets.

Remote LoopBack

The media converter is capable of performing a loopback on the fiber port.

Specifications				
Lifetime limited warranty	**Reach, RoHS and WEEE Compliant**	**HTSUS Number:** 8517.62.0020	**UNSPSC Code:** 43201553	**ECCN:** 5A991

Power	
Input Supply Voltage	Triple voltage 12 / 24 / 48 VDC (9.6 – 60 VDC) input supporting: • 2 x Terminal Block power input and • 1 x T-Bus power input
Current	0.09 A (@ 24VDC)
Power Consumption	2.6 watts (@ 24VDC)
Power Connector	Dual input Terminal Block and/or T-Bus
Indicators	
Power / TST	This green LED is turned on when power is applied to the media converter. Otherwise it is off. The LED will blink fast/slow when in Loopback test mode or hardware error.
Fiber link on / Receive activity (LKF)	• On: Fiber link present. • Blinking slowly: Fiber link disabled because of copper link loss. • Blinking quickly: Fiber link present and receiving data. • Off: No fiber link present

Copper link on / Receive activity (LKC)	• On: Copper link is present. • Blinking slowly: Copper link present and receiving data. • Blinking quickly: Copper link disabled because of fiber link loss. • Off: No copper link present
Switches - accessible by sliding the chassis open	
	
Auto-Negotiation	Auto (Default - Up): In this mode of operation the media converter will negotiate Ethernet parameters on the copper connection. This will ensure the most optimal connection parameters will be in effect. If the copper link partner does not support Auto negotiation, the media converter will default to 100 Mbps and Half Duplex mode. Off: Auto Negotiation should only be turned off, if the copper link partner does not support Auto Negotiation. When the Auto Negotiation switch is set to the OFF position, the media converter will operate at 100 Mbps and Full Duplex mode.
Smart Link Pass-Through	Smart Link Pass-Through (Default - Up): In this mode, the link state on one connection is directly reflected through the media converter to the other connection. If link is lost on one of the connections, then the other link will be brought down by the media converter. If the installation has a media converter on both ends of the fiber link and both are setup for Link Pass-Through, then a loss of copper link on the far end device will propagate through both media converters and will result in a loss of copper link at the near end device. This would, therefore, resemble a direct copper connection. Standard Mode (Down): In this mode, the links on the fiber and copper sides can be brought up and down independently of each other. A loss of link on either the fiber ports or copper ports can take place without affecting the other connection
Pause	Auto (Deafult-Up): When Auto Negotiation has been set to Auto, the media converter will use this setting for its Ethernet parameter negotiation on the copper connection. Half: The media converter will not negotiate support for the Pause feature.

Loopback	Disabled (Default-Up): The loopback feature is disabled. This is the normal position for regular operation. The switch must be set to this position for data to pass through the media converter. Enabled: This is a test mode. All data received on the receive (RX) fiber connection is looped back to the transmit (TX) fiber connection. The state of the copper is not relevant and no data or link status is passed through to the copper side.
Far-End Fault (FEF)	Enabled (Default-Up): If the media converter detects a loss of fiber signal on the fiber receiver, it will immediately send a FEF on the fiber link. This notifies the fiber link partner that an error condition exists on the fiber connection. If the remote media converter is set up for FEF, and the local media converter is set up with Link Pass-Through, a loss of fiber link on either the transmit or receive line will be passed through to the local copper connection to notify the connected device. If the media converter has been set to Link Pass-Through mode, the effect will be the same as FEF since the link loss on the fiber receiver will bring down the copper link, which will in turn cause the transmit fiber link to be brought down. Disabled: The media converter will not monitor for or generate Far End Fault.
Cables and Connectors	
100Base-TX	RJ45 connector, 2 pair CAT 5 (UTP or STP) or better cable
Fixed Fiber	Dual multimode or single mode (Duplex) fiber - SC, ST Single strand fiber (Simplex) – SC
Magnetic Isolation	1.5kv
Fiber Optic Cable	• Multimode: 62.5 / 125, 50/125, 85/125, 100/140 micron • Single Mode: 9/125 micron (ITu-T 625)
Filtering	
Filtering	1024 MAC Addresses
Frame Specifications	
Buffer	512 Kbits frame buffer memory
Size	Maximum frame size of 2048 bytes

Packet Transmission Characteristics	
Bit Error Rate (BER)	$<10^{-12}$
Environmental Specifications	
Operating Temperature	-40°C to 75°C (-40°F to 167°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Operating Humidity	5% to 90% non-condensing
Storage Humidity	5% to 95% non-condensing
Operating Altitude	Up to 3,048 meters (10,000 feet)
Heat Output (BTU/HR)	7.37
MTBF (Hours)	694,621 Hours *Calculation model based on MIL-HDBK-217-FN2 @ 30°C*
Chassis	Molded plastic DIN Rail case with an IP20 ingress protection rating
Mounting	
Din Rail Kit	Native
Product Weight and Dimensions	
Weight	0.12 kg, 0.26 lbs
Dimensions	114 x 100 x 22.5mm, 4.5 x 3.9 x 0.88 inches
Packaging	
Shipping Weight	0.17 kg, 0.37 lbs
Shipping Dimensions	145 x 105 x 30 mm, 5.7 x 4.1 x 1.2 inches

Regulatory Approvals	
Emissions	• FCC 47 Part 15 Class A • EN55011 (CISPR11) • ICES-003 • EN61000-6-4 (Emissions for industrial environments) • CISPR 32 / EN 55032 • EN61000-3-2
Immunity	• CISPR 35 / EN 55035 • EN 61000-4-2 (ESD) • EN 61000-4-3 (RS) • EN 61000-4-4 (EFT) • EN 61000-4-5 (Surge) • EN 61000-4-6 (CS) • EN 61000-4-8 (PFMF) • EN 61000-4-11 • IEC/EN 61000-6-2 (General Immunity for Industrial Environments)
Safety	• UL/EN/IEC 62368-1 (previously 60950-1) • CAN/CSA C22.2 No. 62368-1 • CE
Laser Safety	EN 60825-1 Fiber optic transmitters on this device meet Class 1 Laser safety requirements per IEC-60825 FDA/CDRH standards and comply with 21CFR1040.10 and 21CFR1040.11.

Product List

SR-100-SC2-XT- Fast Ethernet Industrial Media Converter: 100Base-TX (RJ-45) [100 m/328 ft] to 100BASE-FX 1310nm multimode (SC) [2 km/1.2 miles], -40F to +167F (-40C to +75C) extended operating temperature support. DIN Rail case, terminal block (Combicon) power connector for external power source

Power Cord & Part Number(s)

None

05091200

SR-100-ST2-XT- Fast Ethernet Industrial Media Converter: 100Base-TX (RJ-45) [100 m/328 ft] to 100BASE-FX 1310nm multimode (ST) [2 km/1.2 miles], -40F to +167F (-40C to +75C) extended operating temperature support. DIN Rail case, terminal block (Combicon) power connector for external power source

Power Cord & Part Number(s)

None

05091210

SR-100-SC20-XT- Fast Ethernet Industrial Media Converter: 100Base-TX (RJ-45) [100 m/328 ft] to 100Base-LX 1310nm single mode (SC) [20 km/12.4 miles], -40F to +167F (-40C to +75C) extended operating temperature support. DIN Rail case, terminal block (Combicon) power connector for external power source

Power Cord & Part Number(s)

None

05091220

SR-100-ST20-XT- Fast Ethernet Industrial Media Converter: 100Base-TX (RJ-45) [100 m/328 ft] to 100Base-LX 1310nm single mode (ST) [20 km/12.4 miles], -40F to +167F (-40C to +75C) extended operating temperature support. DIN Rail case, terminal block (Combicon) power connector for external power source

Power Cord & Part Number(s)

None

05091230

SR-100-SC40-XT- Fast Ethernet Industrial Media Converter: 100Base-TX (RJ-45) [100 m/328 ft] to 100Base-LX 1310nm single mode (SC) [40 km/24.9 miles], -40F to +167F (-40C to +75C) extended operating temperature support. DIN Rail case, terminal block (Combicon) power connector for external power source

Power Cord & Part Number(s)

None

05091240

SR-100-ST40-XT- Fast Ethernet Industrial Media Converter: 100Base-TX (RJ-45) [100 m/328 ft] to 100Base-LX 1310nm single mode (ST) [40 km/24.9 miles], -40F to +167F (-40C to +75C) extended operating temperature support. DIN Rail case, terminal block (Combicon) power connector for external power source

Power Cord & Part Number(s)

None

05091250

SR-100-SC20U-XT- Fast Ethernet Industrial Media Converter: 100Base-TX (RJ-45) [100 m/328 ft] t 100Base-BX 1310nm TX / 1550nm RX single strand fiber, single mode (SC) [20 km/12.4 miles], -40F to +167F (-40C to +75C) extended operating temperature support. DIN Rail case, terminal block (Combicon) power connector for external power source

Power Cord & Part Number(s)

None

05091260

SR-100-SC20D-XT- Fast Ethernet Industrial Media Converter: 100Base-TX (RJ-45) [100 m/328 ft] to 100Base-BX 1550nm TX / 1310nm RX single strand fiber, single mode (SC) [20 km/12.4 miles], -40F to +167F (-40C to +75C) extended operating temperature support. DIN Rail case, terminal block (Combicon) power connector for external power source

Power Cord & Part Number(s)

None

05091270

Related Accessories

Accessories

Transmit power voltage and data across the bus. 4 parallel positions and 1 serial position. UL 8A / cUL 6A, 150 V. Width 22.5cm. Carton of 5. For use with SR and SRS DIN Rail Media Converters.

22038528

Power Supplies

TRIO-PS/1AC/48DC/10 Power Supply - DIN-Rail 48 VDC , 480 Watt power supply with universal 85 to 264 VAC, 30 to 56V DC output range adjustable, -25 to 70°C extended

28665018

UNO-PS/1AC/24DC/60W DIN-Rail Power Supply: 24 VDC, 60 Watt with universal 85 to 264 VAC, -25 to 70°C extended operating temperature.

29029928

UNO-PS/1AC/24DC/150W Power Supply - DIN-Rail 24 VDC , 150 Watt power supply with universal 85 to 264 VAC, -25 to 70°C extended operating temperature

29043768