SR-1000-SFP DIN Rail Media Converter

Gigabit Copper to Fiber Converter

- 1000Base-T to 1000Base-X Fiber Media Converter
- Link copper to multimode or single mode fiber
- Empty slot for **Cisco** and other **industry standard SFPs**
- Advanced Features: Link Pass-Through, Far-End Fault, Auto-MDIX
- Triple Power Input: Dual Terminal block power connector & T-Bus

The Perle **SR-1000-SFP DIN Rail Media Converter** transparently connects UTP copper to fiber. The pluggable fiber optics port allows for flexible network configurations using **SFP transceivers supplied by Perle**, **Cisco** or other manufacturers of MSA compliant SFPs. This Gigabit Media Converter provides an economical path to:

- extend the distance of an existing network by linking CAT5/6/7 cabling to multimode or single mode fiber
- extend the distance between two copper-based devices or networks
- protect Ethernet data from EMI noise and interference by inter-connecting your copper-Ethernet devices over fiber in industrial plants.

An SR-1000-SFP Media Converter is also available with support for **-40°C to +75°C (-40°F to +167°F) extended operating temperatures** .

Network Administrators can rest assured with Perle's advanced features such as Auto-Negotiation, Auto-MDIX, Link Pass-Through, Far End Fault, and Pause which make the end to end link completely transparent. 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 the **SR-1000-SFP Gigabit Media Converter** the smart choice for IT professionals.

SR-1000-SFP Fiber Media Converter Features: 1000Base-T to 1000Base-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. The 1000Base-X fiber interface negotiates according to 802.3 clause 37. The 1000Base-T negotiates according to 802.3 clause 28 and 40. The 1000Base-X will link up with its partner after the highest common denominator (HCD) is reached and the copper has linked up with its partner. The 1000Base-X will continue to cycle through negotiation transmitting a remote fault of offline (provided this is enabled through the switch setting) until the copper is linked up and the HCDs match.

The media converter supports auto-negotiation of full duplex, half duplex, remote fault, full duplex pause, asymmetric pause and Auto MDI-X.

Auto-MDIX with Skew Correction

Auto-MDIX (automatic medium-dependant interface crossover) detects the signaling on the 1000Base-T interface to determine the type of cable connected (straight-through or crossover) and automatically configures the connection when enabled. The media converter can also correct for wires swapped within a pair.

The media converter will adjust for up to 64ns of delay skew between the 1000Base-T pairs.

Smart Link Pass-Through

When Smart Link Pass-Through mode is enable, the Ethernet copper port will reflect the state of the Ethernet fiber media converter port. This feature can be used whether fiber auto-negotiation is enabled or disabled.

Fiber Fault Alert

With Fiber Fault Alert the state of the 1000Base-X receiver is passed to the 1000Base-X transmitter. This provides fault notification to the partner device attached to the 1000Base-X interface of the media converter. If the 1000Base-X transmitter is off, as a result of this fault, it will be turned on periodically to allow the condition to clear should the partner device on the 1000Base-X be using a similar technique. This eliminates the possibility of lockouts that occur with some media converters. Applies only when fiber auto-negotiation is disabled.

Pause (IEEE 802.3x)

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 media converter supports pause negotiation on the 1000Base-T copper connection and 1000Base-X fiber connection.

Duplex

Full and half duplex operation supported.

Jumbo Packets

Transparent to jumbo packets up to 10KB.

VLAN

Transparent to VLAN tagged packets.

Remote LoopBack

Capable of performing a loopback on the 1000Base-X fiber interface.

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	2.16 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: 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
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 both the copper and the fiber connection. This will ensure the most optimal connection parameters will be in effect. If connecting to another Perle Gigabit Media Converter, this parameter should be set to Auto. Off: The fiber Negotiation should only be turned off, if the fiber link partner does not support fiber link negotiations
Smart Link Pass-Through	Standard Mode (Default-Up): In this mode, if Fiber Negotiation is set to OFF, 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 link or copper link can take place without affecting the other connection. However, if the Fiber Negotiation (switch 2) is set to Auto, then a loss of link on the copper side will result in a loss of link on the fiber side but not vice versa. Smart Link Pass-Through (Down): 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.

Pause	Enabled (Default-Up): In this mode, when Fiber Negotiation has been turned off, the media converter will use this setting for its Ethernet parameter negotiation on the copper connection. With this Pause switch in the Enabled position, the media converter will advertise support for Symmetrical and Asymmetrical Pause. Disabled: The media converter will not advertise 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.
Fiber Fault Alert (FFA)	Enabled (Default-Up): In this mode, when Fiber negotiation is turned on, if the media converter detects a loss of fiber signal on the fiber receiver it will immediately disable its fiber transmitter signal. This notifies the fiber link partner that an error condition exists on the fiber connection. If the remote media converter is set up for FFA Enabled and the local media converter is set up with Smart 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 Smart Link Pass-Through mode, the effect will be the same as FFA since the link loss on the fiber receiver will result in bringing down the copper link, which will in turn cause the transmit fiber link to be brought down. Disabled: In this mode, the media converter will not monitor for fiber fault.
Duplex Mode	Auto (Default-Up): In this mode, when Fiber Negotiation has been turned off, the media converter will use this Duplex setting for its Ethernet parameter negotiation on the copper connection. In the Auto position, the media converter will advertise support for both Full and Half Duplex mode. The resultant negotiation will provide the most optimum connection. Half: In this mode, the media converter will force the negotiation to Half Duplex mode
Cables and Connectors	
1000Base-T	RJ45 connector, 4 pair CAT 5 (UTP or STP) or better cable

Small Form Factor Pluggable (SFP) slot	• SFP slot models: Empty slot for 1000Base-X **SFP modules supplied by Perle**, **Cisco** or other manufacturers of MSA compliant SFPs. • Hot insertion and removable (hot swappable).
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	1000 Kbits frame buffer memory
Size	Maximum frame size of 10,240 bytes
Packet Transmission Characteristics	
Bit Error Rate (BER)	$<10^{-12}$
Environmental Specifications	
Operating Temperature	-10°C to 60°C (14°F to 140°F)
Storage Temperature	-25°C to 70°C (-13°F to 158°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)*	696,927 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

Product List

SR-1000-SFP- Gigabit Industrial Media Converter: 1000BASE-T (RJ-45) [100 m/328 ft] to 1000BASE-X SFP Slot (empty). DIN Rail case, terminal block (Combicon) power connector for external power source

Power Cord & Part Number(s)

None

05091620

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