

S-1110P-XT 10/100/1000 Industrial Temperature PoE Media Converters

PoE / PoE+ Ethernet to Fiber Converters



- 10/100/1000Base-T to 100/1000Base-X Fiber
- Supplies IEEE 802.3 PoE & PoE+ PSE power
- Compatible with legacy pre-standard PoE devices
- Fix fiber ports or empty slot for **Cisco** and other **industry standard SFPs**
- Advanced features: PD Reset, Smart Link Pass-Through, Fiber Fault Alert, Auto-MDIX and Loopback
- -40°F to +167°F (-40°C to +75°C) extended temperature support
- Terminal block power connector

The **S-1110P-XT Industrial Temperature PoE Media Converters** address the need for transparently connecting 10/100/1000 Ethernet equipment that operate in extreme temperatures to fiber while providing Power over Ethernet (PoE) to standards-based PoE and PoE+ compliant devices.

The S-1110P-XT PoE Media Converters will operate in industrial grade temperatures of **-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. Boasting this extended temperature feature along with a rugged steel casing, the S-1110P-XT Media Converter provides an economical path to extend the distance between two industrial devices subjected to harsh environments and severe temperatures such as security cameras, wireless access points, alarms, traffic controllers, sensors and tracking devices.

Perle **PoE Media Converters** are classified as Power Sourcing Equipment (PSE). While using standard UTP cables that carry Ethernet data, Perle PoE media converters can also provide power to Powered Devices (PDs) that support the IEEE 802.3af PoE standard (15.4W of power) or the IEEE 802.3at PoE+ standard (30W of power). **Learn more about PoE.**

Perle **10/100/1000 PoE Ethernet to Fiber Converters** provide an economical path to extend the distance of an existing network with fiber cabling. At the same time they function as PoE injectors to power devices like IP cameras and Wi-Fi devices over copper UTP cabling.

Network Administrators can "see-everything" with Perle's advanced features such as Auto-Negotiation, Auto-MDIX, Link Pass-Through, Fiber Fault Alert, and 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 Perle's **S-1110P-XT Industrial Temperature Gigabit PoE Media Converters** the smart choice for IT professionals.

S-1110P-XT Industrial Temperature 10/100/1000 PoE Media Converter Features

Power Over Ethernet (PSE)

- Performs the Power Sourcing Equipment (PSE) function for IEEE 802.3af (15.4 watts PoE) and IEEE 802.3at (up to 30 watts PoE+) compliant devices.
 - Available in PoE and PoE+ models
 - PoE+ models support both Type 1 (PoE) and Type 2 (PoE+) PD gear
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Advanced Power Management

- Enable/Disable PSE power by UTP port
 - PD signature detection
 - Over-Current Protection
 - PD power classification detection (Class 0,1,2,3,4)
-

PD Power Reset

Ideal for remotely resetting equipment, this configurable function performs a momentary power reset to the attached Powered Device (PD). When enabled, the media converter will, upon loss of fiber RX, turn off PSE output power supplied to the PD device for 2 seconds then turn the power back on and leave it on until such time that another fiber RX link is lost (after it was re-established). When disabled, a loss of fiber RX has no effect on PSE power to the PD device(s).

Powered Device Support

Support is included for a broad range of PD (Powered Devices)

- IEEE Standard PoE/PoE+ (Alternative A and B)
 - Legacy High Capacitance PDs
 - Legacy Wireless Access Points
-

Power Strain Relief strap

Included with all models, a strain relief strap is provided to ensure a solid and secure power connection to the media converter. Ideal for areas that may be exposed to vibration.

SFP Speed Sensing

Automatically detects whether a **Gigabit or Fast Ethernet fiber SFP** has been inserted and adjusts accordingly.

Auto-Negotiation (802.3u)

The media converter supports auto negotiation. The 1000Base-X fiber interface negotiates according to 802.3 clause 37. The 10/100/1000Base-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

Auto-MDIX (automatic medium-dependant interface crossover) detects the signaling on the copper Ethernet 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 120ns of delay skew between the 1000Base-T pairs.

Smart Link Pass-Through

When the Link Mode switch is placed into Smart Link Pass-Through mode, the copper Ethernet port will reflect the state of the 1000Base-X 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 802.3xy)

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 media converter supports pause negotiation on the 10/100/1000Base-T connection and 1000Base-X fiber connection.

- With Autoneg on the device will advertise sym and asymmetric pause
 - With Autoneg off – Pause receive and send will be disabled
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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	- PoE models: 46 - 57 vDC - PoE+ models: 52 - 57 vDC			
Power Consumption	3.5 Watts			
Power Over Ethernet (PSE)	- PoE models: maximum to 15.4 watts - PoE+ models: up to 30 watts			

PoE Options	- Alternative A (power on pins 1,2 and 3,6) - Alternative B (power on pins 4,5 and 7,8) - Legacy PoE (IE wireless access points) - (reverse polarity on pins 4,5 and 7,8) - Legacy large capacitor detect (pins 4,5 and 7,8)
Power Connector	2-Pin pluggable terminal block
Indicators	
Power (PWR)	This green LED is turned on when power is applied to the media converter. Otherwise it is off. The LED will blink slowly when either fiber port is in Loopback test mode. The LED will blink quickly if there is a hardware failure where the reason code can be identified through a combination of FDF,LKF, FDC and PSE indicator LEDs
Fiber link on / Receive activity (LKF 1/2)	- This green LED is operational only when power is applied. The LED will blink along with transmit/receive data on the fiber port. - If a loss of link on the copper port results in a Link Passthrough condition to the fiber port, this LED will blink at a rate of once every 2 seconds until the condition is cleared.
Copper link on / Receive activity (LKC 1/2)	- This green LED is operational only when power is applied. The LED will blink along with transmit/receive data on the 10/100/1000 UTP port - If a loss of link on the copper port results in a Link Passthrough condition to the fiber port, this LED will blink at a rate of once every 2 seconds until the condition is cleared.
Fiber Duplex (FDF 1/2)	This green LED is operational only when power is applied. The LED is on when the 10/100/1000Base-X link is operational in full duplex mode. The LED is off when in half duplex. If the Auto-Neg switch is turned off, this LED will always be on
Copper Duplex (FDC 1/2)	This green LED is operational only when power is applied. The LED is on when the 10/100/1000Base-T link is operational in full duplex mode. The LED is off when in half duplex
100/1000	This multi-color LED is operational only when power is applied. The LED is green when the speed of the copper ethernet port is running at 1000 Mbps. The LED is yellow when the speed of the copper Ethernet port is running at 100 Mbps. The LED is off when in 10 Mbps.

PSE Status (PSE 1/2)	This LED will signify the status of the PSE function. Using multi-color and blinking the unit will show the following status for the PSE; • GREEN — Solid: The PSE has successfully detected a compliant PD and is applying power over the UTP (for legacy pin out simply show active power when applied) • YELLOW — Solid: The PSE is not active. This means the PSE has been configured to provide power, but the PD is : ◦ Not connected ◦ Has not detected a compliant PD and is not applying power ◦ PSE has turned off power for Reset function • OFF — PSE function switch disabled • RED — Blinking: Error Conditions ◦ Capacitance too High — 1 blink ◦ Resistance too Low or short circuit — 2 blinks ◦ Resistance too high or open circuit — 3 blinks
Switches - accessible through a side opening in the chassis	
Auto-Negotiation (802.3u)	• <i>Enabled (Default)</i> - The media converter uses 802.3u Auto-negotiation on the 10/100/1000Base-T interface. It is set to advertise full duplex, half duplex, pause and remote fault capabilities. • <i>Disabled</i> - The media converter sets the port according to the position of the speed and duplex switches.

Link Mode	Link Mode provides a transparency to the state of the copper link allowing for simplified trouble shooting from the devices connected to the media converter. <i>Normal (Default — Up)</i> • With Fiber Auto Negotiation enabled when the copper link goes down the 1000Base-X link is brought down. The 1000Base-X link will advertise Remote Fault (Link Fault). • With Fiber Auto Negotiation disabled the state of the copper link has no effect on the 1000Base-X link. <i>Smart Link Pass Through (Down)</i> • With Fiber Auto Negotiation enabled the behavior is as follows. When the copper link goes down the 1000Base-X link is brought down. The 1000Base-X link will advertise Remote Fault (Link Fault). When Remote Fault (Link Fault) is received on the 1000Base-X interface the copper transmitter will be turned off. When the copper receiver is off the 1000Base-X transmitter will be turned off. When the 1000Base-X receiver goes off the copper transmitter will be turned off. • With Fiber Auto-Negotiation disabled the behavior is as follows. When the copper receiver is off the 1000Base-X transmitter will be turned off. When the 1000Base-X receiver goes off the copper transmitter will be turned off.
Fiber Fault Alert	The Fiber Fault Alert switch has meaning when Auto-Negotiation is disabled • <i>Enabled (Default - Up)</i> When the 1000Base-X receiver is off the 1000Base-X transmitter is turned off. Periodically the 1000Base-X receiver will be turned on for a short period to allow the condition to clear if the 1000Base-X link partner is using a similar feature. • <i>Disabled (Down)</i>
Loopback	The media converter can perform a loopback on the 1000Base-X fiber interface. • <i>Disabled (Default - Up)</i> • <i>Enabled</i> - The 1000Base-X receiver is looped to the 1000Base-X transmitter. The copper transmitter is taken off the interface.
Speed Copper	• 100 (Default) • 10
Duplex Copper	• Full (Default) • Half

Fiber Negotiation	• <i>Up</i>: The Media Converter will negotiate Ethernet parameters on the fiber connection. This will ensure that the most optimal connection parameters will be in effect. If connecting to another Perle Media Converter, this parameter should be set to Auto. The Media Converter Module will advertise 1000Mbps, Full and Half Duplex, no Pause. • <i>Down</i>: The Media Converter Module's fiber will be fixed to 1000Mbps, Full Duplex.
Auto-MDIX (Internal Strap)	• If Auto-Negotiation (802.3u) is enabled, the media converter determines the current cable pinout to use on the copper interface. If Auto-Negotiation (802.3u) is disabled the Media converter will use the RX Energy method on the copper interface to set the port MDI or MDIX whichever is appropriate. • Enabled (Default) - 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. • Disabled - If the partner device on the other end of the cable does not have the Auto-MDIX feature a specific cable, either a straight-through or crossover will be required to ensure that the media converter's transmitter and the partner devices transmitter are connected to the others receiver. The Media converter's 100Base-TX port is configured as MDI-X with this switch setting.
PSE Power	• Settable for each UTP port available. • When enabled (UP), the media converter will perform a Power Sourcing Equipment (PSE) function as per IEEE802.3af or 802.3at standards (relevant model). • Default is 'enabled'
PD Power Reset	• This is a technique to perform a power reset on a PD device(s) attached. • When enabled (down), the media converter will upon loss of link on any fiber port, turn off PSE output power to the PD device(s) for 2 seconds then turn the power back on. The power remains on until any fiber link transitions from up to down again. • With Passthrough enabled (Link Mode enabled and Fiber Auto-Negotiation enabled), a loss of link on the fiber resulting from a loss of link on the copper, a PD Power Reset will still occur. • When PD Power Reset disabled, loss of fiber link has no effect on PSE power to the PD device(s).

PoE Power Options (Internal Straps)	- Set to Alternative A (default): Pins 3,6 Neg, Pins 1,2 Pos - Set to Alternative B: Pins 7,8 Neg, Pins 4,5 Pos - Set to Legacy Pre-Standard: Pins 7,8 Pos, Pins 4,5 Neg
Connectors	
10/100/1000Base-T	- RJ45 connector 2 pair CAT5, EIA/TIA 568A/B or better cable for 10/100. 4 pair CAT5 UTP cable for Gigabit.
Magnetic Isolation	1.5kv
Fixed Fiber	- Dual multimode or single mode (Duplex) fiber - SC, ST - Single strand fiber (Simplex) - SC - LC - obtained by inserting an SFP (LC) in an SFP slot model
Small Form Factor Pluggable (SFP) slot	- SFP slot models: Empty slot for 100Base-X SFP modules supplied by Perle, Cisco or other manufacturers of MSA compliant SFPs. - Hot insertion and removable (hot swappable).
Filtering	
Filtering	1024 MAC Addresses
Frame Specifications	
Buffer	1000 Kbits frame buffer memory
Size	- Maximum frame size of 10,240 bytes -- Gigabit - Maximum frame size of 2048 bytes -- Fast Ethernet
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)	20.5
MTBF (Hours)*	• 370,535 Hours (models with fixed fiber ports) • 432,168 Hours (models with empty SFP slot) <i>Calculation model based on MIL-HDBK-217-FN2 @ 30°C</i>
Chassis	Metal with an IP20 ingress protection rating
Mounting	
Din Rail Kit	Optional
Rack Mount Kit	Optional
Product Weight and Dimensions	
Weight	0.45 Kg, 1.0 lbs (no power adaptor)
Dimensions	150 x 95 x 26 mm, 5.9 x 3.7 x 1.0 inches
Packaging	
Shipping Weight	0.52 kg, 1.1 lbs
Shipping Dimensions	150 x 210 x 40 mm, 5.9 x 11 x 2.8 inches
Regulatory Approvals	
Emissions	• FCC Part 15 Class A • CISPR 32 / EN 55032 • EN61000-3-2
Immunity	CISPR 35 / EN 55035
Electrical Safety	• UL/EN/IEC 62368-1 • CAN/CSA C22.2 No. 62368-1 • UL 60950-1 • IEC 60950-1(ed 2); am1, am2 • EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 • 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.
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Product List



S-1110PP-SFP-XT - 10/100/1000 Gigabit Ethernet Standalone Industrial Temperature Media Rate Converter with PoE+ (PoEP) Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-X or 100Base-X - SFP Slot (empty) . Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090660



S-1110P-SFP-XT - 10/100/1000 Gigabit Ethernet Standalone Industrial Temperature Media Rate Converter with PoE Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-X or 100Base-X - SFP Slot (empty). Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090560



S-1110P-M2SC05-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.]. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090500



S-1110P-M2ST05-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.]. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090510



S-1110P-S2SC10-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX/LH 1310 nm single mode (SC) [10 km/6.2 miles] or multimode (SC) [550 m/1804 ft.] using a mode conditioning adapter. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090520



S-1110P-S2ST10-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX/LH 1310 nm single mode (ST) [10 km/6.2 miles]. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090530



S-1110P-S1SC10U-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single strand fiber, single mode (SC) [10 km/6.2 miles]. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090540



S-1110P-S1SC10D-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single strand fiber, single mode (SC) [10 km/6.2 miles]. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090550



S-1110PP-M2SC05-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE+ (PoEP) Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.]. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090600



S-1110PP-M2ST05-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE+ (PoEP) Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.]. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090610



S-1110PP-S2SC10-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE+ (PoEP) Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX/LH 1310 nm single mode (SC) [10 km/6.2 miles] or multimode (SC) [550 m/1804 ft.] using a mode conditioning adapter. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090620



S-1110PP-S2ST10-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE+ (PoEP) Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX/LH 1310 nm single mode (ST) [10 km/6.2 miles] or multimode (SC) [550 m/1804 ft.] using a mode conditioning adapter. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090630



S-1110PP-S1SC10U-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE+ (PoEP) Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single strand fiber, single mode (SC) [10 km/6.2 miles]. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090640



S-1110PP-S1SC10D-XT - 10/100/1000 Gigabit Ethernet Stand-Alone Industrial Temperature Media Rate Converter with PoE+ (PoEP) Power Sourcing. 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single strand fiber, single mode (SC) [10 km/6.2 miles]. Extended Temperature, terminal block power connector for external power source.

Power Cord & Part Number(s)

None

05090650

Related Accessories

Accessories



DIN Rail Mounting Kit for 4 & 8 port IOLAN desktop models, all Stand-Alone Media Converters and all Stand-alone Ethernet Extenders. Two of these brackets are required for the 8 port STS8-D model.

04030840



Standalone media converter wall / rack mount bracket

05059999