This quick start guide describes how to install and use the Hardened Ethernet Extender. This is the Hardened Ethernet Extender of choice for harsh environments constrained by space.

Physical Description
The Port Status LEDs and Power Inputs
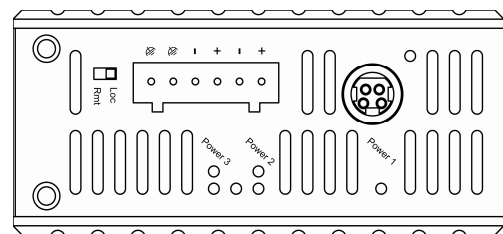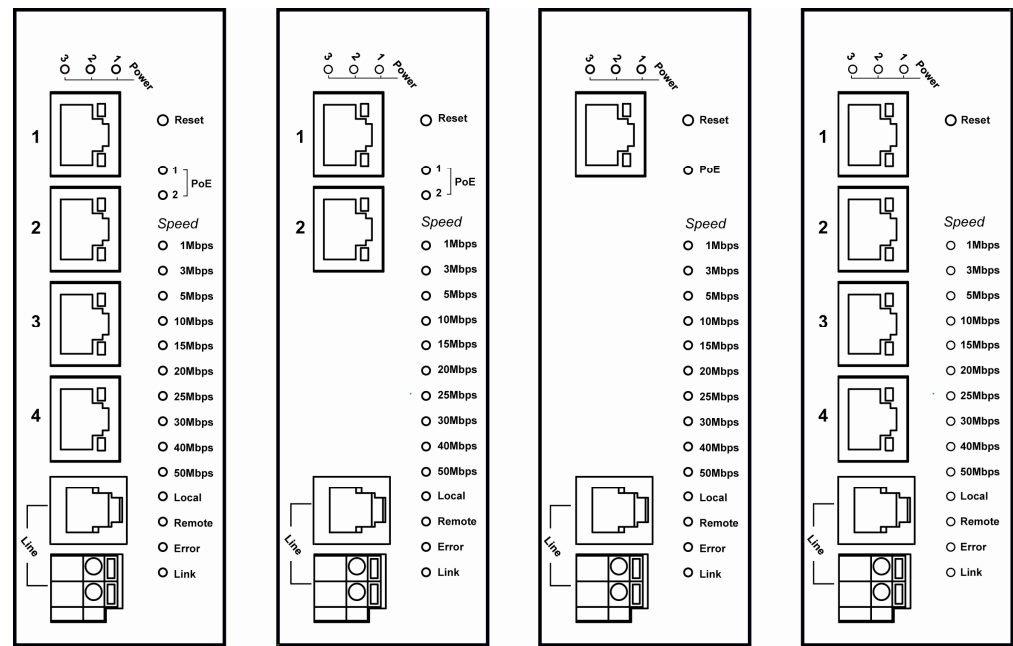
Power Input Assignment		
Power1	48VDC	DC Jack
Power2	+ 24-48VDC	
	− Power Ground	
Power3	+ 24-48VDC	Terminal Block
	− Power Ground	
⏚	Earth Ground	
DIP Switch Assignment		
Loc	The device operates in local mode	
Rmt	The device operates in remote mode	

LEDs	State	Indication
Power1	Steady	Power on
Power2 Power3	Off	Power off
Ethernet		
PoE	Steady	Powered Device (PD) is connected
	Off	Powered Device (PD) is disconnected
Link/ACT (Green)	Steady	Valid network connection established
	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
	Off	Neither valid network connection established nor transmitting/receiving data
Speed (Yellow)	Steady	Valid port connection at 100Mbps
	Off	Valid port connection at 10Mbps
Ethernet Extender		
Remote	Steady	The device operates in remote mode
Local	Steady	The device operates in local mode
Error	Steady	Error occurred
Link	Steady	A valid connection established

Ethernet Extender	
Speed	Distance
1Mbps	1,900 M (6,232 ft.)
3Mbps	1,800 M (5,904 ft.)
5Mbps	1,600 M (5,249 ft.)
10Mbps	1,400 M (4,593 ft.)
15Mbps	1,200 M (3,936 ft.)
20Mbps	1,000 M (3,280 ft.)
25Mbps	800 M (2,624 ft.)
30Mbps	700 M (2,296 ft.)
40Mbps	600 M (1,968 ft.)
50Mbps	300 M (984 ft.)

- PoE LED is only available for Hardened IEEE802.3at PoE PSE Ethernet Extender version.
- DC Terminal Block Power Inputs: There are two pairs of power inputs can be used to power up this Ethernet Extender. Redundant power supplies function is supported. You only need to have one power input connected to run the Ethernet Extender.
- DC JACK Power Input: 48VDC.

10/100Base-TX and Ethernet Extender Connectors

10/100Base-TX Connection
The following lists the pinouts of 10/100Base-TX RJ-45 port.
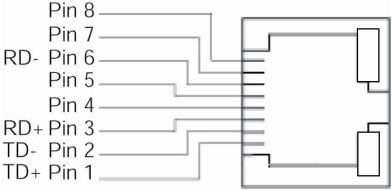
Pin	Regular Ports	Uplink ports
1	Output Transmit Data +	Input Receive Data +
2	Output Transmit Data -	Input Receive Data -
3	Input Receive Data +	Output Transmit Data +
4	Positive (VCC+)	Positive (VCC+)
5	Positive (VCC+)	Positive (VCC+)
6	Input Receive Data -	Output Transmit Data -
7	Negative (VCC-)	Negative (VCC-)
8	Negative (VCC-)	Negative (VCC-)

- Pin 4, 5 Positive (VCC+) and Pin 7, 8 Negative (VCC-) are only available for Hardened IEEE802.3at PoE PSE Ethernet Extender version.
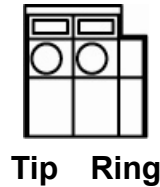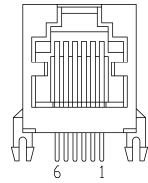
Ethernet Extender Connection

The RJ-11 and Terminal Block port pinouts
Pin 3: Tip, Pin 4: Ring.

Use a telephone line to connect two RJ-11 or Terminal Block ports between two Hardened Ethernet Extenders.

Tip   Ring

Warning: Impropriate operation might cause the damage of Terminal Block.

Functional Description

- Meets NEMA TS1/TS2 Environmental requirements: temperature, shock, and vibration for traffic control equipment.
- Meets EN61000-6-2 & EN61000-6-4 EMC Generic Standard Immunity for industrial environment.
- Operates transparent to higher layer protocols such as TCP/IP.
- Ethernet port: Supports IEEE802.3/802.3u/802.3x. Auto-negotiation: 10/100Mbps, full/half-duplex; Auto MDI/MDIX.
- Complies with IEEE802.3at standard for high power input required device and also compatible with IEEE802.3af powered devices (Only available for Hardened IEEE802.3at PoE PSE Ethernet Extender version).
- Ethernet Extender port (RJ-11 & Terminal Block): Symmetrical on the VDSL, full-duplex 50Mbps communications link over existing copper telephone line.
- One DIP switch for configuring Local (Loc) and Remote (Rmt).
- Ten speeds with speed indicator LEDs on front panel of unit, up to 50Mbps @ about 300 meters (984 ft.), down to 1Mbps @ about 1,900 meters (6,232 ft.).
- 4-port 10/100Base-TX (2-port IEEE802.3at PoE PSE) Ethernet Extender: 2.88A @ 24VDC, 1.44A @ 48VDC. Power consumption: 69.12W Max.
- 2-port IEEE802.3at PoE PSE Ethernet Extender: 2.88A @ 24VDC, 1.44A @ 48VDC. Power consumption: 69.12W Max.
- 1-port IEEE802.3at PoE PSE Ethernet Extender: 1.6A @ 24VDC, 0.8A @ 48VDC. Power consumption: 38.4W Max.
- 4-port 10/100Base-TX Ethernet Extender: 0.36A @ 24VDC, 0.18A @ 48VDC. Power consumption: 8.64W Max.
- Power Supply: Redundant 24-48VDC Terminal Block power inputs and 48VDC DC JACK with 100-240VAC external power supply.
- Field Wiring Terminal Markings: Use Copper Conductors Only, 60/75℃, wire range 12-24 AWG, torque value 7 lb-in.
- Operating temperature range @ -40℃ to 75℃ (-40℉ to 167℉). Tested for functional operation @ -40℃ to 85℃ (-40℉ to 185℉). UL508 Industrial Control Equipment certified Maximum Surrounding Air Temperature @ 75℃ (167℉).
- For use in Pollution Degree 2 Environment.
- Supports Din-Rail, Panel, and Rack Mounting installation.

Assembly, Startup, and Dismantling

- Assembly: Place the Hardened Ethernet Extender on the DIN rail from above using the slot. Push the front of the Hardened Ethernet Extender toward the mounting surface until it audibly snaps into place.
- Startup: Connect the supply voltage to start up the Hardened Ethernet Extender via the terminal block (or DC JACK).
- Dismantling: Pull out the lower edge and then remove the Hardened Ethernet Extender from the DIN rail.