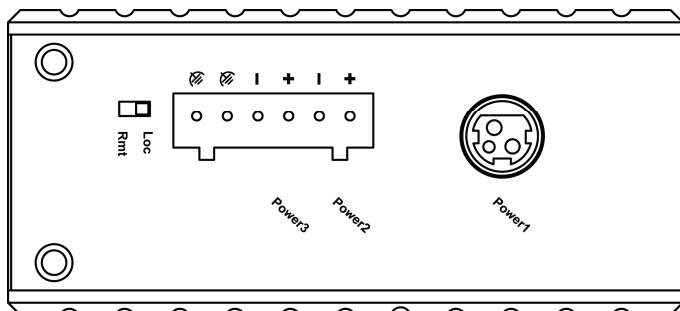


10/100Base-TX Hardened Ethernet Extender

This quick start guide describes how to install and use the Hardened Ethernet Extender. The Hardened Ethernet Extender introduced here provides one channel for Ethernet over existing coaxial cable. This is the Hardened Ethernet Extender of choice for harsh environments constrained by space.

Physical Description

The Terminal Block and Power Inputs



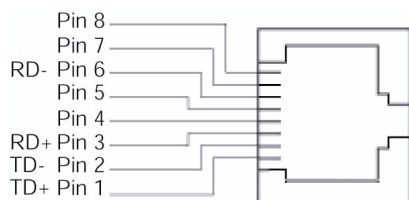
Power Input Assignment		
Power1		12VDC DC Jack
Power2	+	12-48VDC
	-	Power Ground
Power3	+	12-48VDC
	-	Power Ground
		Terminal Block
		Earth Ground
DIP Switch Assignment		
Loc	The device operates in local mode	
Rmt	The device operates in remote mode	

- 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: 12VDC.

The 10/100Base-TX Connector

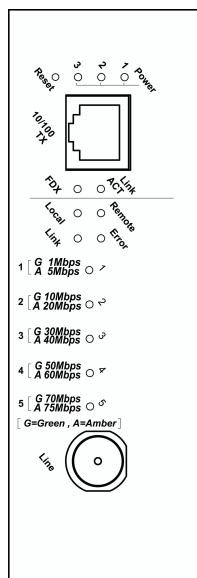
The 10/100Base-TX Connection

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	NC	NC
5	NC	NC
6	Input Receive Data -	Output Transmit Data -
7	NC	NC
8	NC	NC

The Port Status LEDs



LEDs	State	Indication
Power1	Steady	Power on
Power2	Off	Power off
Power3	Off	Power off
Ethernet		
Link/ACT	Steady	Valid network connection established
	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
	Off	Neither valid network connection established nor transmitting/receiving data
FDX	Steady	Connection in full-duplex mode FDX stands for FULL-DUPLEX
	Off	Connection in half-duplex mode

Ethernet Extender	
Remote	The device operates in remote mode
Local	The device operates in local mode
Error	Error occurred
Link	A valid connection established
1	Green, 1-5Mbps, up to 2,600M (8,530ft.) Amber, 6-10Mbps, up to 2,400M (7,874ft.)
2	Green, 11-16Mbps, up to 2,000M (6,561ft.) Amber, 17-20Mbps, up to 1,800M (5,905ft.)
3	Green, 21-29Mbps, up to 1,600M (5,249ft.) Amber, 30-43Mbps, up to 1,400M (4,593ft.)
4	Green, 44-54Mbps, up to 1,200M (3,937ft.) Amber, 55-63Mbps, up to 1,000M (3,280ft.)
5	Green, 64-74Mbps, up to 600M (1,968ft.) Amber, 75-85Mbps, up to 200M (656ft.)

10/100Base-TX Hardened Ethernet Extender

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.
- Complies with EN50155, EN50121-3-2, and EN50121-4 railway application requirements.
- Operates transparent to higher layer protocols such as TCP/IP.
- Ethernet port (RJ-45 connector): Supports IEEE802.3/802.3u/802.3x. Auto-negotiation: 10/100Mbps, full/half-duplex. Auto MDI/MDIX.
- Ethernet Extender port (BNC connector): Symmetrical on the VDSL, full-duplex 85Mbps communications link over existing coaxial cable.
- Provides BNC to F-Type connector.
- One DIP switch for configuring Local (Loc) and Remote (Rmt).
- Ten speeds with speed indicator LEDs on front panel of unit, up to 85Mbps @ about 200meters (656ft.), down to 1Mbps @ about 2,600meters (8,530ft.).
- Operating voltage and Max. current consumption: 0.6A @ 12VDC, 0.3A @ 24VDC, 0.15A @ 48VDC. Power consumption: 7.2W Max.
- Power Supply: Redundant 12-48VDC Terminal Block power inputs and 12VDC DC Jack with 100-240VAC external power supply.
- Field Wiring Terminal: Use Copper Conductors Only, 60/75°C, 12-24 AWG torque value 7 lb-in.
- Operating temperature range @ -40°C to 70°C (-40°F to 158°F). Tested for functional operation @ -40°C to 85°C (-40°F to 185°F). UL508 Industrial Control Equipment certified Maximum Surrounding Air Temperature @ 75°C (167°F).
- For use in Pollution Degree 2 Environment.
- Supports Din-Rail or Panel Mounting installation.

Ethernet Extender Mode Settings

Ethernet Extender mode settings are made very simple by means of a switch at the top panel of the Ethernet Extender. The switch has two positions for Ethernet Extender mode settings. Refer to the table below for more details. One device must be set to Loc and the other to Rmt when two devices are connected.

Loc	Rmt
The device operates in local mode	The device operates in remote mode

Self-diagnostic Test Procedure

- Two Hardened Ethernet Extenders are connected in pairs by BNC connectors over coaxial cable.
- One Hardened Ethernet Extender is configured as local unit located at local site of Ethernet extension by setting mode switch at top panel of this Hardened Ethernet Extender to Loc (local mode).
- The other Hardened Ethernet Extender is configured as remote unit located at remote site of Ethernet extension by setting mode switch at top panel of this Hardened Ethernet Extender to Rmt (remote mode).
- Connect supplied power supplies to Terminal Block or DC Jack power input on top panel of these two Hardened Ethernet Extenders to power on these two Hardened Ethernet Extenders.
- LED 5 on front panel of these two Hardened Ethernet Extenders might light on in amber or green color if these two Hardened Ethernet Extenders are connected in pairs by BNC connectors over a short coaxial cable (less than 200 meters). This means that these two Hardened Ethernet Extenders could operate in normal condition since they finally negotiate a best performance for symmetrical transmission.

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.

