



# Managed Hardened 10/100BASE-TX Ethernet Extender

EIRM-EXTEND



## PRODUCT FEATURES

- Extends Ethernet communications up to 1900 meters
- Complies with NEMA TS1 & TS2 environmental requirements for traffic control equipment
- Complies with IEC61000-6-2 EMC generic standard immunity for industrial environments
- Supports SNMP management and monitoring of connected devices.
- Operates transparent to higher layer protocols such as TCP/IP
- Ethernet port: 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX
- Ethernet extender (RJ-11 and Terminal Block) ports
- Supports DIN rail panel rack mounting installation
- Ten communications speeds with speed indicator LEDs on front panel of unit. From 50Mbps@about 300 meters (984 ft.) to 1Mbps@ about 1,900 meters (6,232 ft.)
- Supports external hardware watch dog
- Supports web, CLI, SNMP management interface
- Link status (for VDSL, Ethernet),
- Redundant power inputs: 12 to 32VDC (terminal block);12VDC (DC jack)
- -40°C to 75°C (-40°F to 167°F) operating temperature range
- Hardened IP30 aluminum case; DIN or panel mount

B&B Electronics' Industrial Hardened EIRM-EXTEND is a point-to-point Managed Ethernet Extender designed to operate in harsh environments. It efficiently extends 10/100 Ethernet circuits to over 300 meters (984 feet) at 50Mbps using existing cross-over pair copper wire.

The EIRM-EXTEND allows Ethernet connectivity in existing facilities over existing voice grade copper wire – no pulling extra cable. This is the perfect solution to Ethernet on the factory floor where systems have been upgraded from slower serial communications to Ethernet networking.

The EIRM-EXTEND is used in pairs. Installation is easy with a single switch setting; one end is set for local and the other remote. The EIRM-EXTEND also provides several advanced functions such as System, SNMP, F/W upgrade, and Load Default setting through the Web based browser to enhance total networking performance.

## ORDERING INFORMATION

MODEL NUMBER	ETHERNET PORTS	MAX DISTANCE	MAX SPEED	VDSL PORTS
EIRM-EXTEND	1	1900m	50 Mbps	RJ-11 and Terminal Block

## ACCESSORIES

PS12VDC3P - Hardened AC Power Supply, 12VDC, 36W, 3A, 90-264VAC input, DC jack

MDR-20-24 - DIN rail mount power supply 24VDC, 1.0 A output power

C5UMB3FBG - 3 ft. (1 M) - Beige - Category 5e UTP Patch Cord

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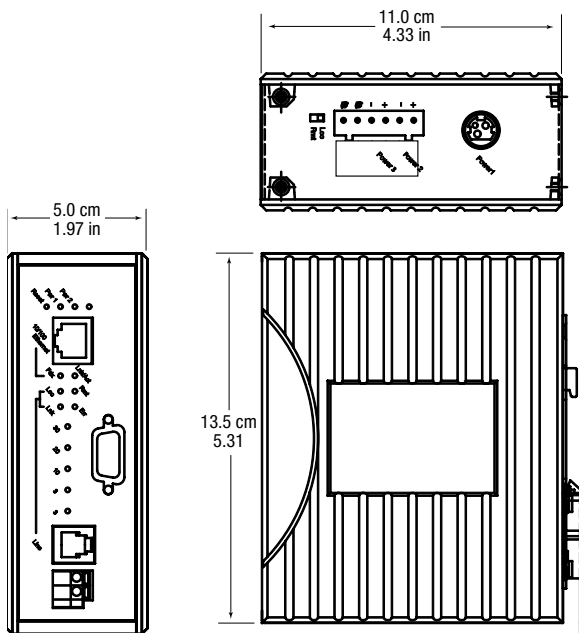
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## SPECIFICATIONS

TECHNOLOGY	
Standards	IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX, IEEE802.3x, Ethernet over VDSL
Protocols	Transparent to higher layer protocols
Flow Control	Half-duplex back-pressure and IEEE802.3x Full-duplex flow control
ETHERNET PORT	
RJ45 Ports	One Ethernet 10/100BASE-TX Full/Half-duplex Auto-Negotiation, Auto-MDI/MDIX
RJ45 Distance	100 meters (328 ft.)
LED Indicators	LNK/ACT, Duplex
ETHERNET VDSL EXTENDER PORT	
Port	One RJ-11 and Terminal Block Port
Speed	1/3/5/10/15/20/25/30/40/50Mbps
Distance	1900meters (6,232 ft.)
Cable	24 AWG (0.5mm diameter, pair wire) or larger 100 Ohm impedance
CONSOLE PORT	
Port One	DB9 RS232 port
POWER	
Input Voltage	12 to 32VDC
Power Use	5.76W Max. 0.48A@12VDC, 0.24A@24VDC
Input Connection	(Terminal Block); 12VDC (DC Jack)
Protection	Reverse Polarity Protection
ENVIRONMENTAL	
Operating Temperature:	-40°C to 75°C (-40°F to 167°F) Tested @ -40°C to 85°C (-40°F to 185°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Operating Humidity	5% to 95% (non-condensing)
MTBF	844,028.71

## MECHANICAL DIAGRAM



## LED CHART

LEDs	Status	Speed	Distance
1	Green	1 Mbps	1,900m (6,232 ft.)
	Amber	3 Mbps	1,800m (5,904 ft.)
2	Green	5 Mbps	1,600m (5,249 ft.)
	Amber	10 Mbps	1,400m (4,593 ft.)
3	Green	15 Mbps	1,200m (3,936 ft.)
	Amber	20 Mbps	1,000m (3,280 ft.)
4	Green	25 Mbps	800m (2,642 ft.)
	Amber	30 Mbps	700m (2,296 ft.)
5	Green	40 Mbps	600m (1,968 ft.)
	Amber	50 Mbps	300m (984 ft.)

Per Input: Power Status LED  
Per Port: 10/100TX: Link/Activity, Full-duplex  
Line: Error, Link, Local, Remote

*Note: All speed selections are Symmetrical on the DSL and Full-duplex on the Ethernet.*

## REGULATORY APPROVALS

ISO	Manufactured in an ISO9001 facility
Safety	UL508
EMI	<ul style="list-style-type: none"> <li>FCC Part 15, Class A</li> <li>VCCI, Class A</li> <li>EN61000-6-4                             <ul style="list-style-type: none"> <li>EN55022</li> <li>EN61000-3-2</li> <li>EN61000-3-3</li> </ul> </li> </ul>
	EN61000-6-2 <ul style="list-style-type: none"> <li>EN61000-4-2 (ESD Standards)                             <ul style="list-style-type: none"> <li>Contact: + / - 4KV; Criteria B</li> <li>Air: + / - 8KV; Criteria B</li> </ul> </li> <li>EN61000-4-3 (Radiated RFI Standards)                             <ul style="list-style-type: none"> <li>10V/m, 80 to 3000MHz; 80% AM Criteria A</li> </ul> </li> <li>EN61000-4-4 (Burst Standards)                             <ul style="list-style-type: none"> <li>Signal Ports: + / - 4KV; Criteria B</li> <li>D.C. Power Ports: + / - 4KV; Criteria B</li> </ul> </li> </ul>
	EMS <ul style="list-style-type: none"> <li>EN61000-4-5 (Surge Standards)                             <ul style="list-style-type: none"> <li>Signal Ports: + / - 1KV; Line-to-Line; Criteria B</li> <li>D.C. Power Ports: + / - 0.5KV; Line-to-earth; Criteria B</li> </ul> </li> <li>EN61000-4-6 (Induced RFI Standards)                             <ul style="list-style-type: none"> <li>Signal Ports: 10Vrms @ 0.15 - 80MHz; 80% AM Criteria A</li> <li>D.C. Power Ports: 10Vrms @ 0.15 - 80MHz; 80% AM Criteria A</li> </ul> </li> <li>EN61000-4-8 (Magnetic Field Standards)                             <ul style="list-style-type: none"> <li>30A/m @ 50, 60Hz; Criteria A</li> </ul> </li> </ul>
	Environmental Test Compliance <ul style="list-style-type: none"> <li>IEC60068-2-6 Fc (Vibration Resistance)                             <ul style="list-style-type: none"> <li>5g @ 10 - 150Hz, Amplitude 0.35mm (Operation/Storage/Transport)</li> </ul> </li> <li>IEC60068-2-27 Ea (Shock)                             <ul style="list-style-type: none"> <li>25g @ 11ms (Half-Sine Shock Pulse; Operation)</li> <li>50g @ 11ms (Half-Sine Shock Pulse; Storage/Transport)</li> </ul> </li> <li>IEC60068-2-32 Ed (Free Fall)                             <ul style="list-style-type: none"> <li>1M (3.281ft.)</li> </ul> </li> <li>NEMA TS1/2 Environmental requirements for Traffic control equipment</li> </ul>