

ED3171 Hardened Managed 10/100BASE-TX Ethernet Extender

Ethernet beyond 100 metres over a copper pair



Overview



The ED3171 is a point-to-point Managed Ethernet Extender designed to operate in harsh environments that efficiently extends 10/100 Ethernet circuits to over 300meters (984feet) at 50Mbps using existing cross-over pair copper wire. The ED3171 functions at temperatures ranging from -40°C to 75°C (-40°F to 167°F) and is tested for functional operation @ -40°C to 85°C (-40°F to 185°F). The ED3171 will allow Ethernet connectivity in existing facilities without 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. Installation is easy with a single switch setting; one end is set for local and the other remote. The ED3171 is used in pairs to extend Ethernet connectivity over existing voice grade copper wire. The ED3171 provides LED display for Power, VDSL speed and Ethernet connection status. The ED3171 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.

Features

- Complies with NEMA TS1 & TS2 Environmental requirements for Traffic control equipment
- Complies with IEC61000-6-2 EMC Generic standard immunity for Industrial environment
- 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) Port: Symmetrical on the VDSL, High-speed Full-duplex 50Mbps communications link over existing copper Telephone lines
- Support DIP switch to select Local or Remote side
- Supports DIN-Rail Panel Rack Mounting installation
- Ten speeds with speed indicator LEDs on front panel of unit, Up to 50Mbps at about 300meters (984ft.), Down to 1Mbps at about 1,900meters (6,232ft.)
- Support external Hardware Watch Dog
- Support Web, CLI, SNMP management Interface
- Link Status (for VDSL, Ethernet), Get/Set IP, Get Rate, Set Rate (for CO site), Get Counter, Get SNR (Local, Remote), SNMP setting (Community), System setting, Reset to Default, F/W upgrade through the management Interface
- Redundant power inputs with Terminal Block and DC Jack
- -40°C to 75°C (-40°F to 167°F) operating temperature range
- Hardened aluminium case

Ordering Information

ED3171-00Z 10/100BASE-TX Hardened Managed Ethernet Extender

Power Input Interface:

(Z) = B: Terminal Block & DC Jack

Power Supply: (Optional)

*Option A - The Terminal Block type external power supply are not included. Please order the following part numbers, as required:
DR-30-24, DR-60-24, DR-75-24, DR-120-24 or 41-136046-X X=1, 2,3,4,5

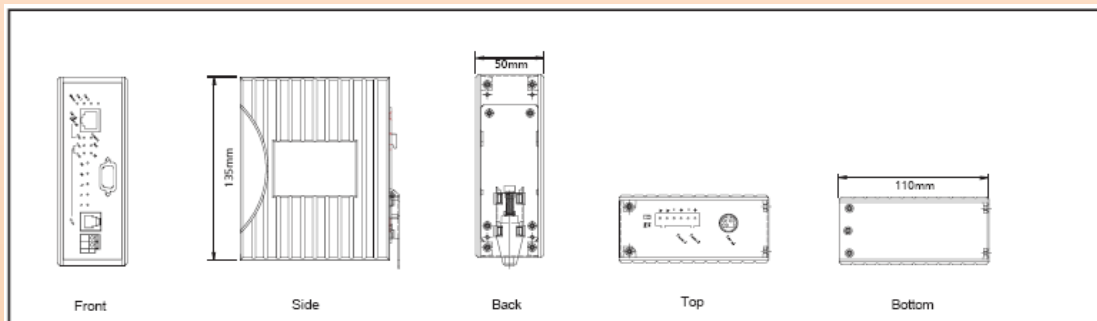
**Option B - The external power adapter and power cord are not included. Please order the following part numbers, as required:
41-136044-X X=1, 2,3,4,5

Installation Type:

Optional Panel mount kit, part number: KP-AA96-480



Diagrams



Specifications

Technology

Standards:

- IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX, IEEE802.3x,
- Ethernet over VDSL

Protocols:

- Transparent to higher layer protocols

Processing Type:

- Half-duplex back-pressure and IEEE802.3x Full-duplex flow control

Power

Input:

- Input Voltage: 12 to 32VDC (Terminal Block); 12VDC (DC Jack)

Power Consumption:

- 5.76W Max. 0.48A@12VDC, 0.24A@24VDC

Overload Current Protection:

- Present

Reverse Polarity Protection:

- Present

Mechanical

Casing:

- Aluminium case

IP30

Dimensions:

- 50mm (W) x 110mm (D) x 135mm (H)
(1.97" (W) x 4.33" (D) x 5.31" (H))

Weight:

- 0.8Kg (1.76lbs.)

Installation:

- DIN-Rail (Top hat type 35mm), Panel Rack Mounting

Interface

Ethernet Port:

- Port: One RJ-45 port, 10/100BASE-TX Full/Half-duplex
Auto-Negotiation, Auto-MDI/MDIX
Speed: 10/100Mbps
Distance: 100meters (328ft.)
Cable: 10BASE-T: UTP CAT. 3, 4, 5 (2-pair wire)
100BASE-TX: UTP CAT. 5 (2-pair wire)

Ethernet Extender Port:

- Port: One RJ-11 and Terminal Block port
Speed: 1/3/5/10/15/20/25/30/40/50Mbps
Distance: 1900meters (6,232ft.)
Cable: Telephone line 24 AWG (0.5mm diameter, 1-pair wire) or larger

Console Port:

- Port: One DB9 RS-232 port

DIP switch:

- One DIP switch: Local (CO) or Remote (CPE)

LED Indicators:

- Per Unit: Power Status (Power)
- Per Port: 10/100TX: Link/Activity, Full-duplex
Line: Error, Link, Local, Remote

LED	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	10Mbps 1,400m(4,593 ft.)
3	Green	15Mbps 1,200m(3,936 ft.)
	Amber	20Mbps 1,000m(3,280 ft.)
4	Green	25Mbps 800m(2,624 ft.)
	Amber	30Mbps 700m(2,296 ft.)
5	Green	40Mbps 600m(1,968 ft.)
	Amber	50Mbps 300m (984 ft.)

NOTE:

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

Environment

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)

Ambient Relative Humidity:

- 5% to 95% (non-condensing)

Regulatory Approvals:

ISO:

- Manufactured in an ISO9001 facility

Safety:

- UL508, EN60950-1, IEC60950-1

EMI:

- FCC Part 15, Class A
- VCCI, Class A
- EN61000-6-4
- EN55022
- EN61000-3-2
- EN61000-3-3

EMS:

- EN61000-6-2
- EN61000-4-2 (ESD Standards)
Contact: + / - 4KV; Criteria B
Air: + / - 8KV; Criteria B
- EN61000-4-3 (Radiated RFI Standards)
10V/m, 80 to 3000MHz; 80% AM Criteria A
- EN61000-4-4 (Burst Standards)
Signal Ports: + / - 4KV; Criteria B
D.C. Power Ports: + / - 4KV; Criteria B
- EN61000-4-5 (Surge Standards)
Signal Ports: + / - 1KV; Line-to-Line; Criteria B
D.C. Power Ports: + / - 0.5KV; Line-to-earth; Criteria B
- EN61000-4-6 (Induced RFI Standards)
Signal Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A
D.C. Power Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A
- EN61000-4-8 (Magnetic Field Standards)
30A/m @ 50, 60Hz; Criteria A

Environmental Test Compliance:

- IEC60068-2-6 Fc (Vibration Resistance)
5g @ 10~150 KHz, Amplitude 0.35mm
(Operation/Storage/Transport)
- IEC60068-2-27 Ea (Shock)
25g @ 11ms (Half-Sine Shock Pulse; Operation)
50g @ 11ms (Half-Sine Shock Pulse; Storage/Transport)
- IEC60068-2-32 Ed (Free Fall)
- 1M (3.281ft.)

NEMA TS1/2 Environmental requirements for Traffic control equipment

