ED3101 Industrial 10/100BASE-TX Ethernet Extender

Ethernet beyond 100 metres over a copper pair

Overview

The ED3101 is a point-to-point Ethernet Extender that efficiently extends 10/100 Ethernet circuits to over 300meters (984feet) at 50Mbits using existing straight pair copper wire. The ED3101 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 ED3101 is used in pairs to extend Ethernet connectivity over existing voice grade copper wire.

Features

➢ 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) Port: Symmetrical on the VDSL, High-speed Full-duplex 50Mbps communications link over existing copper Telephone cables
➢ Support DIP switch to select Local or Remote side

➢ Ten speeds with speed indicator LEDs on top of unit, Up to 50Mbps at about 300meters (984ft.), Down to 1Mbps at about 1,900meters (6,232ft.)
➢ -20°C to 60°C (-4°F to 140°F) operating temperature range
➢ Hardened aluminium case
➢ Supports DIN-Rail, Wall Mounting installation or expansion use with EMC1600 media converter chassis system
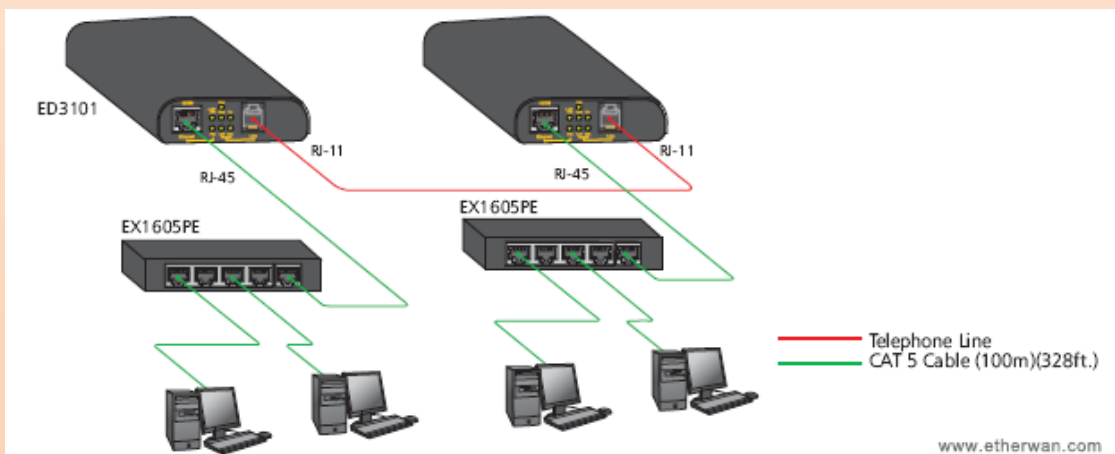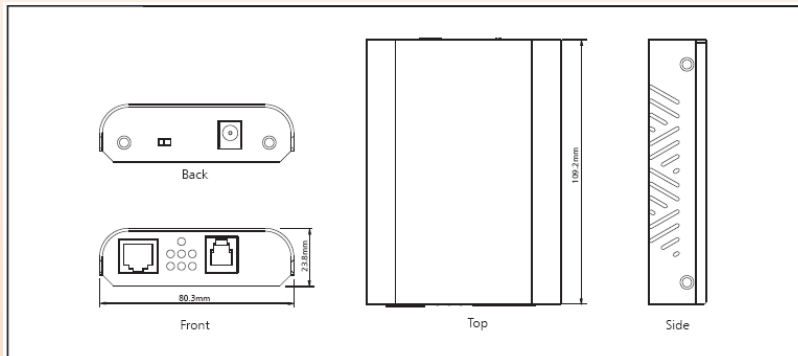
Ordering Information

ED3101-X   Industrial 10/100BASE-TX Ethernet Extender
ED3101-D-X   Industrial 10/100BASE-TX Ethernet Extender with DIN Rail mounting kits

External Power Adapter Options:
(X) =   K: With external power adapter for UK
           E: With external power adapter for EU
           J: With external power adapter for JP
           A: With external power adapter for AU
           U: With external power adapter for UK

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: 12VDC

Power Consumption:
- 2.4W Max. 0.2A@12VDC

Mechanical

Casing:
- Aluminium case

Dimensions:
- 80.3mm (W) x 109.2mm (D) x 23.8mm (H)
- (3.16" (W) x 4.30" (D) x 0.94" (H))

Weight:
- 150g (0.33lb.)

Installation:
- DIN-Rail (Top hat type 35mm), Wall Mounting
- EMC1600 Chassis

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 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

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	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 (2,624 ft.)
	Amber	30 Mbps	700m (2,296 ft.)
4&2	Amber	40 Mbps	600m (1,968 ft.)
4&3	Amber	50 Mbps	300m (984 ft.)

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

Environment

Operating Temperature:
- -20°C to 60°C (-4°F to 140°F)
- Tested @ -20°C to 70°C (-4°F to 158°F)

Storage Temperature:
- -20°C to 70°C (-4°F to 158°F)

Ambient Relative Humidity:
- 5% to 95% (non-condensing)

Regulatory Approvals

ISO:
- Manufactured in an ISO9001 facility

Safety:
- UL60950-1

EMI:
- FCC Part 15, Class A
- VCCI, Class A
- EN61000-6-3
- 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 1000MHz; 80% AM Criteria A
- EN61000-4-4 (Burst Standards)
  Signal Ports: + / 2KV; Criteria B
  D.C. Power Ports: + / 2KV; 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)