

# IEX-402-VDSL2 Series

## Managed VDSL2 Ethernet extender



- > High-speed connections; up to 100 Mbps over twisted-pair copper wires
- > Automatic CO/CPE negotiation reduces configuration time
- > Link Fault Pass-through (LFP) support
- > Link quality indicators for simple troubleshooting
- > Easy network management by web browser, Telnet/serial console, Windows utility, ABC-01, and Mxview



### Introduction

The IEX-402-VDSL2 is an industrial managed Ethernet extender for extending up to 3 km of LAN segments over twisted-pair copper wires at data rates of up to 100 Mbps using the VDSL2 standard. The Ethernet extender is designed with one 10/100BaseT(X) and one DSL port. It is the perfect solution to extend copper cable networks beyond conventional Ethernet limitations by using existing twisted-pair copper wires to reduce new network cable installation costs.

The IEX-402-VDSL2 series is designed for use in harsh operating environments. The DIN-rail mount, wide operating temperature range

(-40 to 75°C), and dual power inputs make it ideal for installation in industrial applications.

To simplify configuration, the IEX-402-VDSL2 uses CO/CPE automatic negotiation (factory default setting). The device will automatically assign CPE status to one of each pair of IEX devices. In addition, advanced management and monitoring functionalities through NMS, including a virtual panel, improve the user experience for quick troubleshooting.

### Features and Benefits

- Automatic CO/CPE negotiation reduces configuration time
- Standard VDSL2 data rate up to 100 Mbps, with up to 3 km transmission distance (performance varies with line conditions)
- Supports Link Fault Pass-Through(LFP)
- Supports SNMP v1/v2c/v3 for different levels of network management
- Interoperable with Turbo Ring/Turbo Chain network redundancy
- Support Modbus/TCP protocol for device management and monitoring
- Compatible with EtherNet/IP and PROFINET protocols for transparent transmission
- Easy network management through web browser, Telnet/Serial console, Windows utility, MXview, and ABC-01
- IPv6 Ready

### Specifications

#### Technology

##### Standards:

IEEE 802.3 for 10BaseT  
 IEEE 802.3u for 100BaseT(X)  
 IEEE 802.3x for Flow Control  
 IEEE 802.1p for Class of Service  
 ITU G.993.2 for very high speed digital subscriber line transceivers 2

**Protocols:** SNMPv1/v2c/v3, DHCP Client, TFTP, SNMP, HTTP, Telnet, Syslog, LLDP, Modbus/TCP

**MIB:** MIB-II

**Flow Control:** IEEE 802.3x flow control, back pressure flow control

#### Interface

**DSL Port:** RJ-11 (RJ45 connector) or detachable 2-contact terminal block

**RJ45 Ports:** 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection

**Console Port:** RS-232 (RJ45 connector)

**LED Indicators:** PWR1, PWR2, FAULT, STATE, LINK/ACT, CO/CPE, 10/100 (TP port)

**DIP Switches:** CO/CPE, SNR/SPEED, STD/INP

**Button:** Reset button

#### Switch Properties

**MAC Table Size:** 1K

**Packet Buffer Size:** 512K

#### Physical Characteristics

**Housing:** Metal, IP30 protection

##### Dimensions:

35 x 130 x 105 mm (1.38 x 5.12 x 4.13 in)

**Weight:** 275 g (0.61 lb)

**Installation:** DIN-rail mounting, wall mounting (with optional kit)

**Altitude:** Up to 2000 m

**Note:** Contact Moxa for products guaranteed to function at higher altitudes.

#### Environmental Limits

##### Operating Temperature:

Standard Models: -10 to 60°C (14 to 140°F)

Wide Temp. Models: -40 to 75°C (-40 to 167°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

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

**Power Requirements**

**Rated Voltage:** 12/24/48 VDC (9.6 to 60 VDC), redundant dual inputs  
**Input Current:** 0.34 A @ 24 V  
**Connection:** 2 removable 2-contact terminal block  
**Overload Current Protection:** Present  
**Reverse Polarity Protection:** Present

**Standards and Certifications**

**Safety:** UL 508  
**Hazardous Location:** UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2 Ex nA IIC T4 Gc  
**EMC:** EN 55032/24  
**EMI:** CISPR 32, FCC Part 15B Class A  
**EMS:**  
 EN 61000-4-2 (ESD): Contact: 6 kV; Air: 8 kV  
 EN 61000-4-3 (RS): 80 MHz to 1 GHz: 10 V/m  
 EN 61000-4-4 (EFT): Power: 2 kV  
 EN 61000-4-5 (Surge): Power: 2 kV  
 EN 61000-4-6 (CS) 150 kHz to 80 MHz: 10 V/m  
 EN 61000-4-8 (PFMF)

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Traffic Control:** NEMA TS2

**Rail Traffic:** EN 50121-4

**Vibration:** IEC 60068-2-6

*Note: Please check Moxa's website for the most up-to-date certification status.*

**MTBF** (mean time between failures)

**Time:** 1,490,000 hrs

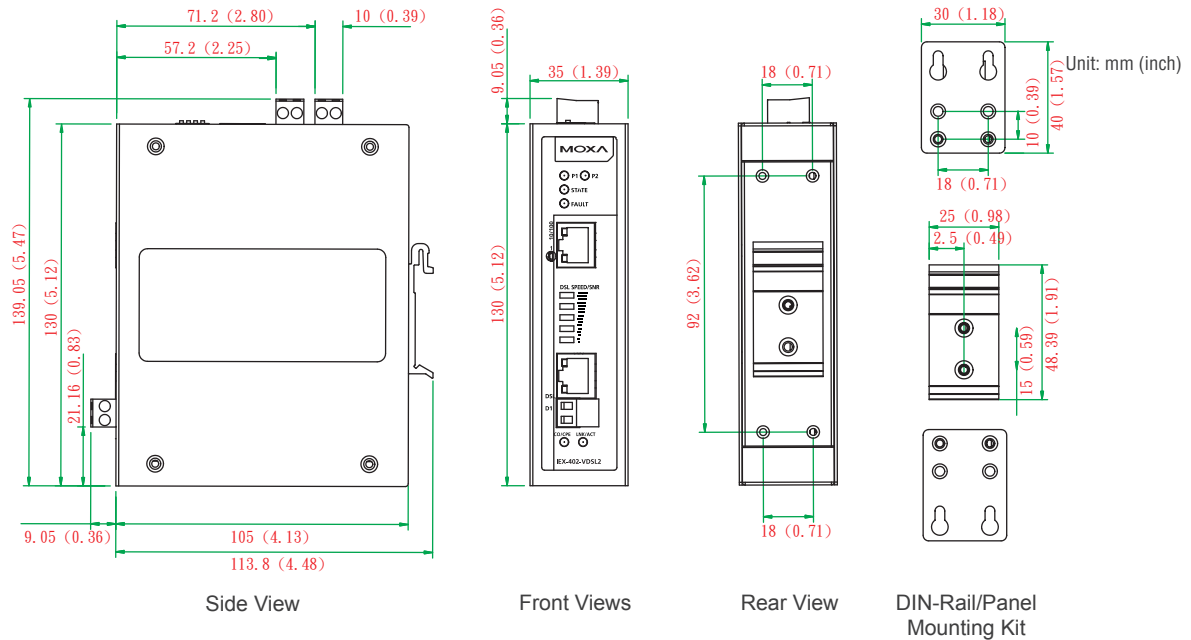
**Standard:** Telcordia (Bellcore), GB

**Warranty**

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

**Dimensions**



**Ordering Information**

Available Models		Port Interface	
Standard Temperature (-10 to 60°C)	Wide Temperature (-40 to 75°C)	10/100BaseT(X)	DSL
IEX-402-VDSL2	IEX-402-VDSL2-T	1	1

**Optional Accessories** (can be purchased separately)

**WK-46:** Wall mounting kit

**RK-4U:** 4U-high 19" rack mounting kit

**MXview:** Moxa industrial network management software with 50, 100, 250, 500, 1000, or 2000 nodes

**EDS-SNMP OPC Server Pro:** OPC server software that works with all SNMP devices

**ABC-01:** Configuration backup and restoration tool for managed Ethernet switches, 0 to 60°C operating temperature

**DR-4524/75-24/120-24:** 45/75/120 W DIN-Rail 24 VDC power supplies

**MDR-40-24/60-24:** 40/60 W DIN-rail 24 VDC power supplies, -20 to 70°C operating temperature

**Package Checklist**

- IEX-402-VDSL2 Ethernet Extender
- RJ45 to DB9 console port cable
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card