

# IEX-402 Series

## Industrial managed VDSL2/SHDSL Ethernet extenders



### Features and Benefits

- Automatic CO/CPE negotiation reduces configuration time
- Link Fault Pass-Through (LFPT) support and interoperable with Turbo Ring and Turbo Chain
- LED indicators to simplify troubleshooting
- Easy network management by web browser, Telnet/serial console, Windows utility, ABC-01, and MXview

### Certifications



EN 50121-4



## Introduction

The IEX-402 is an entry-level industrial managed Ethernet extender designed with one 10/100BaseT(X) and one DSL port. The Ethernet extender provides a point-to-point extension over twisted copper wires based on the G.SHDSL or VDSL2 standard. The device supports data rates of up to 15.3 Mbps and a long transmission distance of up to 8 km for G.SHDSL connection; for VDSL2 connections, the data rate supports up to 100 Mbps and a long transmission distance of up to 3 km.

The IEX-402 Series is designed for use in harsh 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 uses CO/CPE auto-negotiation. By factory default, the device will automatically assign CPE status to one of each pair of IEX devices. In addition, Link Fault Pass-through (LFP) and network redundancy interoperability enhance the reliability and accessibility of communication networks. In addition, advanced managed and monitored functionality through MXview, including a virtual panel, improve the user experience for quick troubleshooting.

### Additional Features and Benefits

- Standard G.SHDSL data rate up to 5.7 Mbps, with up to 8 km transmission distance (performance varies by cable quality)
- Moxa proprietary Turbo Speed connections up to 15.3 Mbps
- Supports Link Fault Pass-Through (LFP) and Line-swap fast recovery
- Supports SNMP v1/v2c/v3 for different levels of network management
- Interoperable with Turbo Ring and Turbo Chain network redundancy
- Support Modbus TCP protocol for device management and monitoring
- Compatible with EtherNet/IP and PROFINET protocols for transparent transmission
- IPv6 Ready

## Specifications

### Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	1 Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection
Combo Port, RJ-11 (RJ45 connector) or Detachable 2-Contact Terminal Block	1
Standards	IEEE 802.1p for Class of Service IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3x for flow control IEX-402-VDSL2 Series: ITU G.993.2 IEX-402-SHDSL Series: ITU-T G.991.2

## Ethernet Software Features

Management	SNMPv1/v2c/v3, Modbus TCP, Back Pressure Flow Control, DHCP Client, HTTP, LLDP, Syslog, Telnet, TFTP
MIB	MIB-II
Time Management	SNTP

## Switch Properties

MAC Table Size	1 K
Packet Buffer Size	512 kbits

## LED Interface

LED Indicators	PWR1, PWR2, FAULT, STATE, LINK/ACT, CO/CPE, 10/100 (TP port)
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## Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 10-pin RJ45 (115200, n, 8, 1)
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## DIP Switch Configuration

Ethernet Interface	All models: CO/CPE, SNR/SPEED IEX-402-VDSL2 Series: STD/INP IEX-402-SHDSL Series: ANNEX B/ANNEX A, STD/TURBO
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## Power Parameters

Power Connector	2 removable 2-contact terminal block(s)
Input Voltage	12/24/48 VDC, 9.6 to 60 VDC
Input Current	IEX-402-SHDSL Series: 0.388 A @ 12 VDC, 0.196 A @ 24 VDC, 0.097 A @ 48 VDC IEX-402-VDSL2 Series: 0.34 A @ 24 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported

## Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	35 x 130 x 105 mm (1.38 x 5.12 x 4.13 in)
Weight	IEX-402-SHDSL Series: 290 g (0.64 lb) IEX-402-VDSL2 Series: 275 g (0.61 lb)
Installation	DIN-rail mounting, Rack mounting (with optional kit)

## Environmental Limits

Altitude	2000 m <sup>1</sup>
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 (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

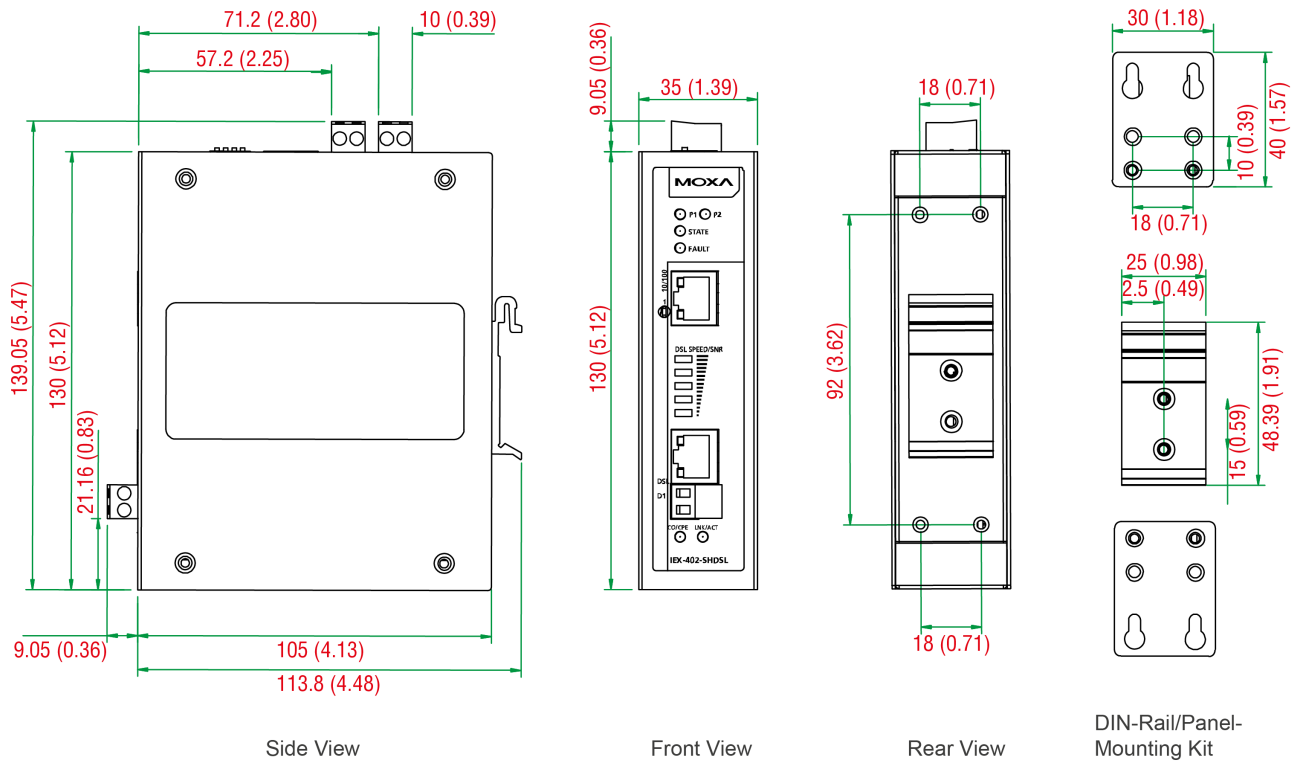
1. Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

## Standards and Certifications

Safety	UL 508
Hazardous Locations	IEX-402-VDSL2 Series: ATEX, Class I Division 2
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF
Traffic Control	IEX-402-VDSL2 Series: NEMA TS2
Railway	EN 50121-4
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
<b>MTBF</b>	
Time	IEX-402-SHDSL Series: 1,311,455 hrs IEX-402-VDSL2 Series: 1,498,312 hrs
Standards	Telcordia (Bellcore), GB
<b>Warranty</b>	
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>
<b>Package Contents</b>	
Device	1 x IEX-402 Series switch
Cable	1 x RJ45-to-DB9 console cable
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card 1 x product certificates of quality inspection, Simplified Chinese 1 x product notice, Simplified Chinese

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	ITU G.993.2 for very high speed digital subscriber line transceivers	ITU-T G.991.2 for single-pair high-speed digital subscriber line (G.SHDSL) transceivers	10/100BaseT(X) Ports RJ45 Connector	Combo Port, RJ-11 (RJ45 connector) or detachable 2-contact terminal	Operating Temp.
IEX-402-VDSL2	✓	-	1	1	-10 to 60°C
IEX-402-VDSL2-T	✓	-	1	1	-40 to 75°C
IEX-402-SHDSL	-	✓	1	1	-10 to 60°C
IEX-402-SHDSL-T	-	✓	1	1	-40 to 75°C

## Accessories (sold separately)

### Storage Kits

ABC-01	Configuration backup and restoration tool for managed Ethernet switches and AWK Series wireless APs/bridges/clients, 0 to 60°C operating temperature
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### Power Supplies

DR-120-24	120W/2.5A DIN-rail 24 VDC power supply with universal 88 to 132 VAC or 176 to 264 VAC input by switch, or 248 to 370 VDC input, -10 to 60°C operating temperature
DR-4524	45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 50°C operating temperature
DR-75-24	75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 60°C operating temperature
MDR-40-24	DIN-rail 24 VDC power supply with 40W/1.7A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature
MDR-60-24	DIN-rail 24 VDC power supply with 60W/2.5A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature

## Wall-Mounting Kits

WK-30	Wall-mounting kit, 2 plates, 4 screws, 40 x 30 x 1 mm
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## Rack-Mounting Kits

RK-4U	19-inch rack-mounting kit
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## Software

MXview-50	Industrial network management software with a license for 50 nodes (by IP address)
MXview-100	Industrial network management software with a license for 100 nodes (by IP address)
MXview-250	Industrial network management software with a license for 250 nodes (by IP address)
MXview-500	Industrial network management software with a license for 500 nodes (by IP address)
MXview-1000	Industrial network management software with a license for 1000 nodes (by IP address)
MXview-2000	Industrial network management software with a license for 2000 nodes (by IP address)
MXview Upgrade-50	License expansion of MXview industrial network management software by 50 nodes (by IP address)

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