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EKI-1221/CI/I

EKI-1222/CI/I

EKI-1224/CI/I

1-port Modbus Gateway

2-port Modbus Gateway

4-port Modbus Gateway



Features

- Provides 2 x 10/100 Mbps Ethernet ports for LAN redundancy
- Integration of Modbus TCP and Modbus RTU/ASCII networks
- Supports up to 921.6 kbps, and any baud rate setting
- support up to 16 connections on each serial port under Modbus Master mode and 32 sessions under Modbus Slave mode.
- Software selectable RS-232/422/485 communication
- Mounts on DIN-rail and Wall mount
- Built-in 15 KV ESD protection for all serial signals
- Automatic RS-485 data flow control
- Supports surge protection for D.C. power ports with line to line 2 KV, and line to earth 4 KV; for signal ports with 4 KV.
- 'I' models support a wide operating temperature
- 'CI' models support isolation and wide operating temperature

Introduction

The EKI-1200 series Modbus gateways are bi-directional gateways for integrating new and existing Modbus/RTU and Modbus/ASCII serial devices to newer TCP/IP networked-based devices. The EKI-1221/1222/1224 feature two independent Ethernet ports and MAC addresses to provide redundancy and reliability. They provide a simple and cost-effective way to bring remote management and data accessibility to thousands of devices that cannot connect to a network. EKI-1221/1222/1224 provide a feature that can allow users to select master or slave operation mode for each serial port. They not only allow an Ethernet master to control serial slaves, but also allow serial masters to control Ethernet slaves.

Specifications

Ethernet Communications

- **Compatibility** IEEE 802.3, IEEE 802.3u
- **Speed** 10/100 Mbps
- **No. of Ports** 2
- **Port Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485, software selectable ("CI" model supports RS-422/485)
- **No. of Ports** EKI-1221: 1
EKI-1222: 2
EKI-1224: 4
- **Port Connector** DB9 male
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 2
- **Parity** None, Odd, Even, Space, Mark
- **Flow Control** XON/XOFF, RTS/CTS
- **Baud Rate** 50 bps ~ 921.6 kbps, any baud rate setting
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DCD, RI, GND
RS-422: TxD+, TxD-, RxD+, RxD-, GND
RS-485: Data+, Data-, GND
- **Protection** 15 KV ESD for all signals
'CI' models: 2KV Isolation for RS-422/485 signals

Software

- **OS Support** 32-bit/64-bit Windows XP/Vista/7/8/8.1/10, Windows Server 2003/2008/2008 R2/2012/2012 R2
- **Utility Software** Advantech EKI Device Configuration Utility
- **Operation Modes** Modbus RTU Master/Slave mode
Modbus ASCII Master/Slave mode
- **Configuration** Windows Utility, Web Browser
- **Protocols** Modbus RTU, Modbus TCP, Modbus ASCII

General

- **LED Indicators** System: Power, System Status
LAN: Speed, Link/Active
Serial: Tx, Rx
- **Reboot Trigger** Built-in WDT (watchdog timer)

Mechanics

- **Dimensions (W x H x D)** EKI-1221/1222: 37 x 140 x 95 mm (1.46" x 5.51" x 3.74")
EKI-1224: 55 x 140 x 95 mm (2.17" x 5.51" x 3.74")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN-rail, Wall
- **Weight** EKI-1221: 0.472 Kg
EKI-1222: 0.48 Kg
EKI-1224: 0.555 Kg

Power Requirements

- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** EKI-1221: 3.2 W
EKI-1222: 3.2 W
EKI-1224: 4.1 W

Environment

- **Operating Temperature** EKI-1221/EKI-1222/EKI-1224: -10 ~ 60 °C (14 ~ 140 °F)
'CI' & 'I' models: -40 ~ 70 °C (-40 ~ 158 °F)
- **Storage Temperature** -20 ~ 80 °C (-4 ~ 176 °F)
- **Operating Humidity** 5 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)

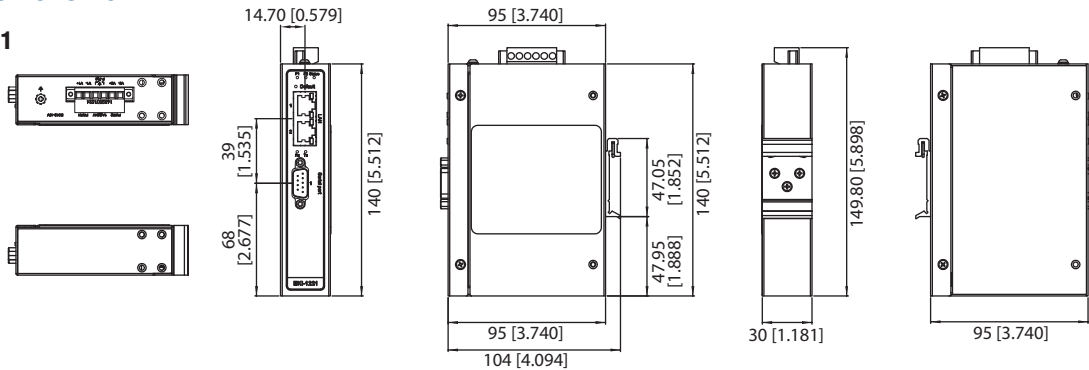
Port to Port Isolation ('CI' models)

- **Serial to Ethernet** 2 kV
- **Serial to Power** 2 kV
- **Ethernet to Power** 1.5 kV

Dimensions

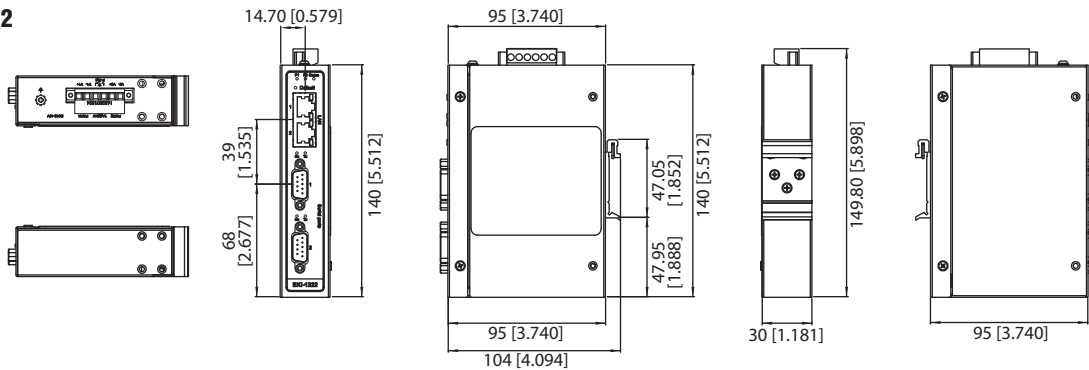
Unit: mm

EKI-1221



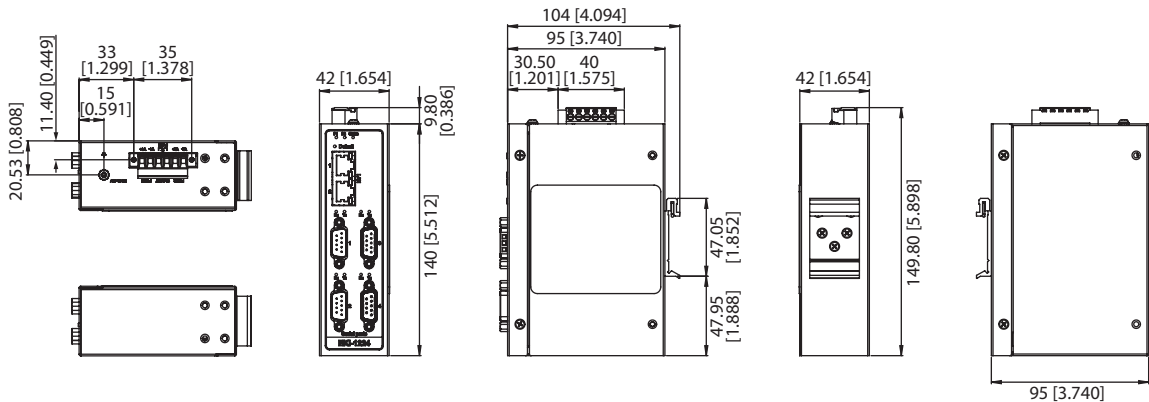
Panel Cut-out Dimensions: 95 x 140 x 30 mm (3.74" x 5.512" x 1.181")

EKI-1222



Panel Cut-out Dimensions: 95 x 140 x 30 mm (3.74" x 5.512" x 1.181")

EKI-1224



Panel Cut-out Dimensions: 95 x 140 x 42 mm (3.74" x 5.512" x 1.654")

Ordering Information

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|--------------------|--|---------------------|--|
| ▪ EKI-1221 | 1-port RS-232/422/485 Modbus Gateway | ▪ EKI-1221CI | 1-port RS-422/485 Modbus Gateway with Wide Operation Temperature and Isolation |
| ▪ EKI-1222 | 2-port RS-232/422/485 Modbus Gateway | ▪ EKI-1222CI | 2-port RS-422/485 Modbus Gateway with Wide Operation Temperature and Isolation |
| ▪ EKI-1224 | 4-port RS-232/422/485 Modbus Gateway | ▪ EKI-1224CI | 4-port RS-422/485 Modbus Gateway with Wide Operation Temperature and Isolation |
| ▪ EKI-1221I | 1-port RS-232/422/485 Modbus Gateway with Wide Operating Temperature | ▪ OPT1-DB9 | D-Sub9 to Terminal Converter |
| ▪ EKI-1222I | 2-port RS-232/422/485 Modbus Gateway with Wide Operating Temperature | | |
| ▪ EKI-1224I | 4-port RS-232/422/485 Modbus Gateway with Wide Operating Temperature | | |