EKI-1221/CI/I
EKI-1222/CI/I
EKI-1224/CI/I

1-Port Modbus Gateway

2-Port Modbus Gateway

4-Port Modbus Gateway

EKI-1221 | EKI-1221CI-DE | EKI-1222 | EKI-1222CI-DE | EKI-1224

Features

- 2 x 10/100 Mbps Ethernet ports for LAN redundancy
- Integrates Modbus TCP and Modbus RTU/ASCII networks
- Supports up to 921.6 kbps and any baud rate setting
- Supports up to 16 connections per serial port under Modbus master mode and 32 sessions under Modbus slave mode
- Software-selectable RS-232/422/485-2w/485-4w communication
- Mountable via 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 DC power ports with line-to-line (1 kV) and line-to-earth (2 kV) for signal ports with 2 kV
- "I" models support a wide operating temperature
- "CI" models support isolation and a 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 otherwise connect to a network. The EKI-1221/1222/1224 allow users to select master or slave operation mode for each serial port. In addition to allowing an Ethernet master to control serial slaves, they 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 2.25 k V_{DC} magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485-2w/485-4w, software selectable (EKI-1224CI-CE supports RS-422/485 only)
- **No. of Ports** EKI-1221: 1
EKI-1222: 2
EKI-1224: 4
- **Port Connector** DB9 male
EKI-1221CI-DE; EKI-1222CI-DE also provide Terminal Block
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 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** **[CE Version]**
RS-232: TxD, RxD, CTS, RTS, DCD, RI, GND, DTR, DSR
RS-422: TxD+, TxD-, RxD+, RxD-, GND
RS-485 2-wire: Data+, Data-, GND
[DE Version]
DB9:
RS-232 isolation: TxD, RxD, CTS, RTS, GND
RS-232: TxD, RxD, CTS, RTS, DCD, RI, GND, DTR, DSR
Terminal Block (From top to bottom):
RS-422: GND, RxD-, RxD+, TxD+, TxDRS-
485 2-wire: GND, NC, NC, TxD+, TxDRS-
485 4-wire: GND, RxD-, RxD+, TxD+, TxD-
- **Protection** 15 KV ESD for all signals

Software

- **OS Support** Windows XP/7/8.1/10, Windows Server 2003/2008/2012/2016/2019, and Linux
- **Utility Software** Advantech EKI Device Configuration Utility
- **Operation Modes** Modbus RTU Master/Slave mode
Modbus ASCII Master/Slave mode
- **Configuration** Windows Utility, Telnet Console, Web Browser
- **Protocols** ICMP, IP, TCP, UDP, BOOTP, DHCP, Auto IP, SNMP, HTTP, DNS, SMTP, ARP, NTP

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/I-CE; EKI-1221CI-DE; EKI-1222/I-CE;
EKI-1222CI-DE: 30 x 140 x 95 mm (1.18" x 5.51" x 3.74")
EKI-1224/CI/I-CE: 42 x 140 x 95 mm (1.65" 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
- **IP Rating** IP30

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 ~ 80 °C (-40 ~ 176 °F)
- **Storage Temperature** -40 ~ 85 °C (-40 ~ 185 °F)
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)
- **Hazardous location** UL/cUL (Class I, Division 2, Groups A, B, C and D), ATEX (Zone 2 Ex nA nC IIC T4 Gc)

Port to Port Isolation ('CI' models)

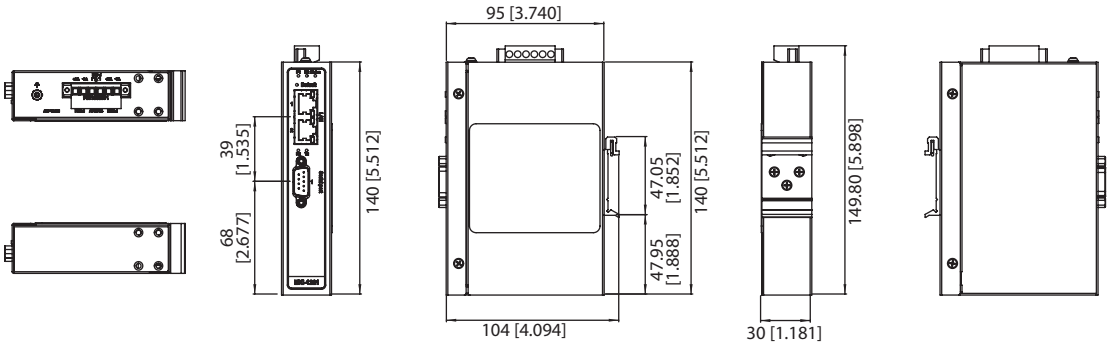
- **Serial to Ethernet** 2.25 k V_{DC}
- **Serial to Power** 2 k V_{DC}
- **Ethernet to Power** 2.25 k V_{DC}

昊生 研伟科技 15928776600

Dimensions

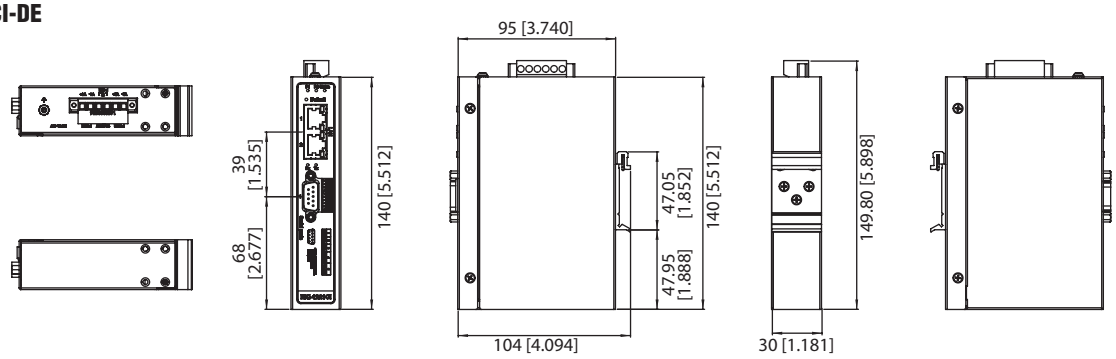
Unit: mm

EKI-1221



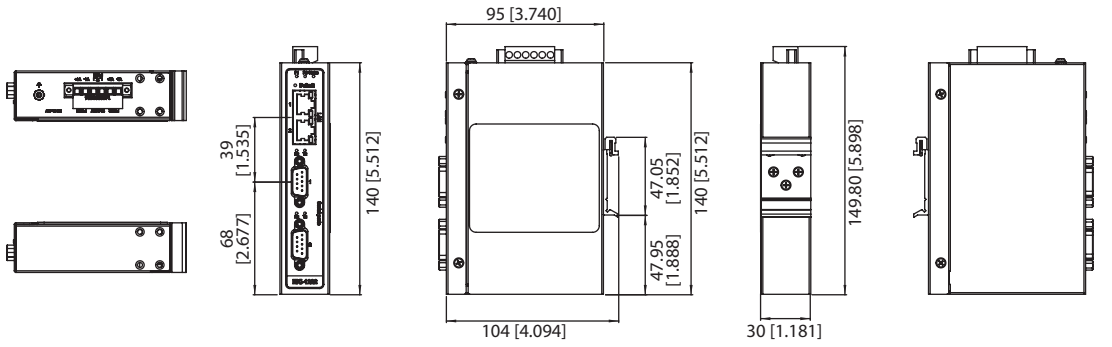
Panel Cut-out Dimensions: 95 x 140 x 30 mm (3.74" x 5.512" x 1.181")

EKI-1221CI-DE



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

EKI-1222

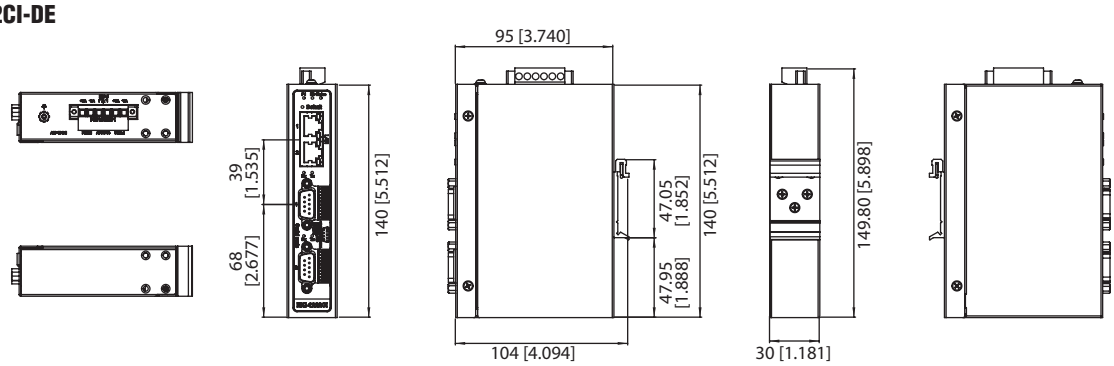


Panel Cut-out Dimensions: 95 x 140 x 30 mm (3.74" x 5.512" x 1.181")

Dimensions

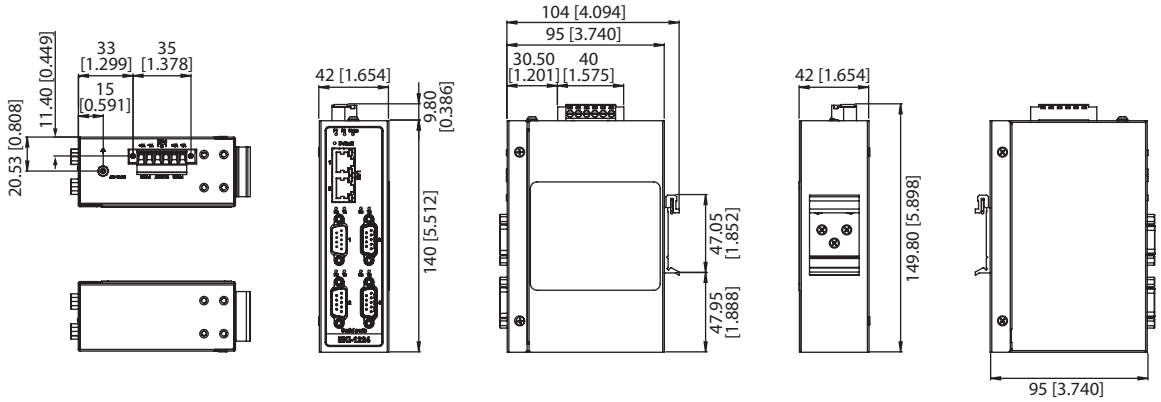
Unit: mm

EKI-1222CI-DE



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

- **EKI-1221-CE** 1-port RS-232/422/485 Modbus Gateway
- **EKI-1222-CE** 2-port RS-232/422/485 Modbus Gateway
- **EKI-1224-CE** 4-port RS-232/422/485 Modbus Gateway
- **EKI-1221I-CE** 1-port RS-232/422/485 Modbus Gateway with Wide Operating Temperature
- **EKI-1222I-CE** 2-port RS-232/422/485 Modbus Gateway with Wide Operating Temperature
- **EKI-1224I-CE** 4-port RS-232/422/485 Modbus Gateway with Wide Operating Temperature
- **EKI-1221CI-DE** 1-port RS-232/422/485-2w/485-4w Modbus Gateway with Wide operation temperature and isolation
- **EKI-1222CI-DE** 2-port RS-232/422/485-2w/485-4w Modbus Gateway with Wide operation temperature and isolation
- **EKI-1224CI-CE** 4-port RS-422/485 Modbus Gateway with Wide Operation Temperature and Isolation
- **OPT1-DB9** D-Sub9 to Terminal Converter