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 kVDC 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, Dd, 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, RTS, CTS, 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
- **Utility Software**: Advantech EKI Device Configuration Utility
- **Operation Modes**: Modbus RTU 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-1221/1222: 30 x 140 x 95 mm (1.18” x 5.51” x 3.74”)
  - EKI-1224: 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 VDC, 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 VDC
- **Serial to Power**: 2 k VDC
- **Ethernet to Power**: 2.25 k VDC
**Dimensions**

**Unit:** mm

### EKI-1221

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

### 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 30 mm (3.74" x 5.512" x 1.181")

**Ordering Information**

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