# EtherNet/IP™

Modbus

# R-KEY-LT-E
# Z-KEY-E | Z-KEY-2ETH-E

## MODBUS RTU / ASCII / TCP-IP -> ETHERNET/IP GATEWAY & PROTOCOL CONVERTERS

## Highlights

- **Ethernet/IP Gateway Adapter / Master Modbus**
- **Isolation up to 1500 Vac**
- **Operating Temperature -25..+65°C**
- **Nr.1/2 Ethernet ports**
- **Nr.1/2 RS232/RS485 serial ports**
- **R/W memory areas 512 bytes**
- **Configuration via web server and PLC software third parties**
- **CE, UKCA, UL(*) certifications**

(*) R-KEY-LT-E e Z-KEY-E models

SENECA offers three Ethernet/IP gateway options, namely Z-KEY-E, R-KEY-LT-E, and Z-KEY-2ETH-E, catering to various form factors and Ethernet port configurations. These gateways serve as versatile communication bridges, supporting Modbus RTU/ASCII/TCP and EtherNet/IP protocols. Their primary function is to seamlessly integrate existing Modbus devices into an EtherNet/IP network by acting as Modbus masters for data acquisition and exchange with EtherNet/IP devices. In essence, these gateways convert Modbus data into EtherNet/IP packets, enabling EtherNet/IP scanners to control or monitor Modbus devices.
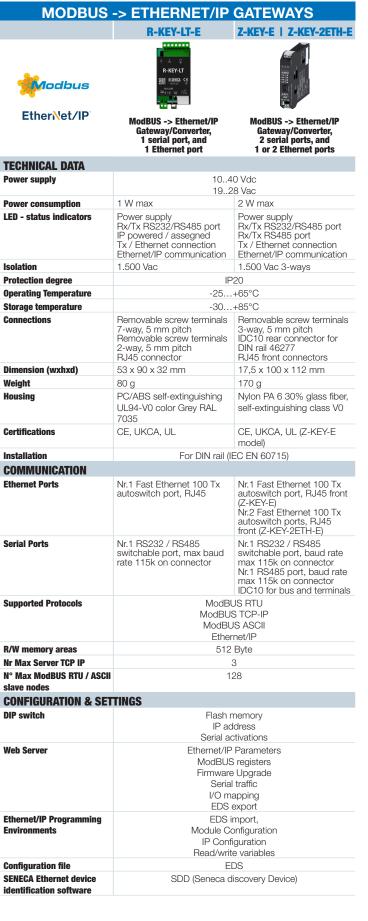
SENECA's Ethernet/IP gateways are highly configurable via a web server and operate in adapter/ModBUS Master mode. This allows for the connection of an Ethernet/IP PLC scanner to ModBUS RTU/ASCII Slave I/O devices.

Specifically, the gateways function by acting as ModBUS Master devices on the serial side while behaving as Ethernet/IP adapters on the Ethernet side. Modbus requests, such as read or write commands, are configured directly on the devices, and an EDS file is automatically generated. Once this file is imported into PLC development software, such as Rockwell STUDIO 5000, all configured I/O becomes accessible without further setup. Additionally, you can connect up to 3 Modbus TCP-IP servers in addition to serial devices.
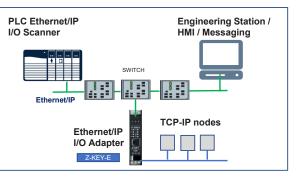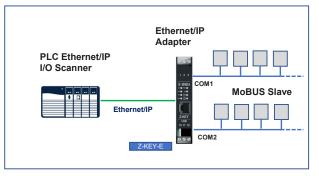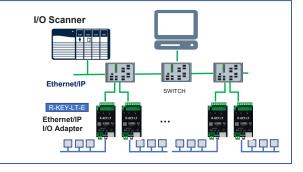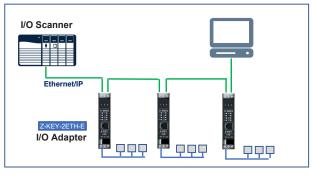
# R-KEY-LT-E | Z-KEY-E | Z-KEY-2ETH-E

## MODBUS -> ETHERNET/IP GATEWAYS

| | R-KEY-LT-E | Z-KEY-E | Z-KEY-2ETH-E |
|---|---|---|
| **Modbus** **EtherNet/IP** | ModBUS -> Ethernet/IP Gateway/Converter, 1 serial port, and 1 Ethernet port | ModBUS -> Ethernet/IP Gateway/Converter, 2 serial ports, and 1 or 2 Ethernet ports |

### TECHNICAL DATA

| | | |
|---|---|---|
| **Power supply** | 10..40 Vdc 19..28 Vac | |
| **Power consumption** | 1 W max | 2 W max |
| **LED - status indicators** | Power supply Rx/Tx RS232/RS485 port IP powered / assegned Tx / Ethernet connection Ethernet/IP communication | Power supply Rx/Tx RS232/RS485 port Rx/Tx RS485 port Tx / Ethernet connection Ethernet/IP communication |
| **Isolation** | 1.500 Vac | 1.500 Vac 3-ways |
| **Protection degree** | IP20 | |
| **Operating Temperature** | -25…+65°C | |
| **Storage temperature** | -30…+85°C | |
| **Connections** | Removable screw terminals 7-way, 5 mm pitch Removable screw terminals 2-way, 5 mm pitch RJ45 connector | Removable screw terminals 3-way, 5 mm pitch IDC10 rear connector for DIN rail 46277 RJ45 front connectors |
| **Dimension (wxhxd)** | 53 x 90 x 32 mm | 17,5 x 100 x 112 mm |
| **Weight** | 80 g | 170 g |
| **Housing** | PC/ABS self-extinguishing UL94-V0 color Grey RAL 7035 | Nylon PA 6 30% glass fiber, self-extinguishing class V0 |
| **Certifications** | CE, UKCA, UL | CE, UKCA, UL (Z-KEY-E model) |
| **Installation** | For DIN rail (IEC EN 60715) | |

### COMMUNICATION

| | | |
|---|---|---|
| **Ethernet Ports** | Nr.1 Fast Ethernet 100 Tx autoswitch port, RJ45 | Nr.1 Fast Ethernet 100 Tx autoswitch port, RJ45 front (Z-KEY-E) Nr.2 Fast Ethernet 100 Tx autoswitch ports, RJ45 front (Z-KEY-2ETH-E) |
| **Serial Ports** | Nr.1 RS232 / RS485 switchable port, max baud rate 115k on connector | Nr.1 RS232 / RS485 switchable port, baud rate max 115k on connector Nr.1 RS485 port, baud rate max 115k on connector IDC10 for bus and terminals |
| **Supported Protocols** | ModBUS RTU ModBUS TCP-IP ModBUS ASCII Ethernet/IP | |
| **R/W memory areas** | 512 Byte | |
| **Nr Max Server TCP IP** | 3 | |
| **N° Max ModBUS RTU / ASCII slave nodes** | 128 | |

### CONFIGURATION & SETTINGS

| | | |
|---|---|---|
| **DIP switch** | Flash memory IP address Serial activations | |
| **Web Server** | Ethernet/IP Parameters ModBUS registers Firmware Upgrade Serial traffic I/O mapping EDS export | |
| **Ethernet/IP Programming Environments** | EDS import, Module Configuration IP Configuration Read/write variables | |
| **Configuration file** | EDS | |
| **SENECA Ethernet device identification software** | SDD (Seneca discovery Device) | |

## CONNECTION SCHEMES



PLC Ethernet/IP I/O Scanner — Engineering Station / HMI / Messaging — SWITCH — Ethernet/IP — Ethernet/IP I/O Adapter — Z-KEY-E — TCP-IP nodes



PLC Ethernet/IP I/O Scanner — Ethernet/IP — Ethernet/IP Adapter — COM1 — MoBUS Slave — COM2 — Z-KEY-E



I/O Scanner — Ethernet/IP — SWITCH — R-KEY-LT-E — Ethernet/IP I/O Adapter



I/O Scanner — Ethernet/IP — Z-KEY-2ETH-E — I/O Adapter

### ORDER CODES

| Codes | Description |
|---|---|
| **GATEWAYS** | |
| **R-KEY-LT-E** | ModBUS -> Ethernet/IP gateway (1 serial port, 1 Ethernet port) |
| **Z-KEY-E** | ModBUS -> Ethernet/IP gateway (2 serial ports, 1 Ethernet ports) |
| **Z-KEY-2ETH-E** | ModBUS -> Ethernet/IP gateway (2 serial ports, 2 Ethernet ports) |
| **SOFTWARE** | |
| **SDD** | SENECA Ethernet device identification software |
| **ACCESSORIES** | |
| **CS-DB9M-MEF-1012** | Z-KEY serial communication cable (DB9M / MEF 10-12) |
| **CE-RJ45-RJ45-R** | Ethernet cable (RJ45 / RJ45) |
| **Z-PC-DINAL2-17.5** | DIN rail mounting bracket - HEAD +2 SLOT P=17.5mm |
| **Z-PC-DIN2-17.5** | DIN rail mounting bracket - 2 SLOT P=17.5mm |
| **Z-PC-DIN8-17.5** | DIN rail mounting bracket - 8 SLOT P=17.5mm |
| **Z-SUPPLY** | Single-phase switching power supply 24V @ 1.5 A |