Interface converter KI E/RC-v5.2

USER MANUAL

Content

1. Introduction

This manual contains information on the purpose, technical characteristics, installation procedure and operation of the interface converter "KI E/RC- v5.2" (hereinafter referred to as the controller) and is intended for service personnel.

2. Purpose

The controller is designed for use in dispatching, control, and monitoring systems. It is designed for continuous operation.

The controller is designed to connect equipment with RS-232, RS-485, 1-wire interfaces with other network nodes via the Ethernet interface and TCP/IP and UDP protocols.

The controller contains RS-232, RS-485, 1-wire ports for connecting equipment and a 10/100 Base T port for connecting to Ethernet network channel-forming equipment.

3. Technical specifications

The technical characteristics of the controller are given in Table 1.

Table 1 – Technical characteristics

Name of the characteristic	Meaning of the characteristic
Power supply of the device	12..60 VDC
Power consumption	no more than 10W
Voltage for powering external devices	- 12VDC (50mA), or - 8VDC (75mA), or - 5VDC (100mA)
operating system	Linux
User interface for customization	Web interface
Ethernet interface	2 ports
Data transfer rate via 10\100 Base T interface	up to 100 Mbit/s
Number of RS485 interfaces with galvanic isolation	1 piece
Number of RS232 interfaces with galvanic isolation	1 piece
Galvanic isolation voltage for RS485, RS232 interfaces	1000 VDC
Data transfer rate via interfaces (RS485, RS232)	1200-115200 bps
Support for temperature sensor with 1-wire digital interface	Up to 3 sensors
Indication (LEDs)	nutrition, statuses
Operating temperature range	-40 to + 55 °C
Built-in hardware watchdog circuit	+
Type of power supply connectors, interfaces, sensors	Terminal screw connectors
Ethernet connector types	RJ45
Frame	Plastic
Installation	on a 35 mm DIN rail
Overall dimensions	105x51x65
Weight of the device, no more than	0.8 kg
Mean time between failures	at least 150,000 hours
Service life	20 years

4. Working with the device

4.1 Appearance of the device

The appearance of the KI E/RC-v5.2 device is shown in Figure 1.

Figure 1 – Controller appearance

4.2 Connection

CAUTION! If hazardous voltage conductors are connected to the device, all installation work must be performed with the device disconnected from the power supply and all sources of hazardous voltage.

Figure 2 shows a diagram of the device with connectors marked.

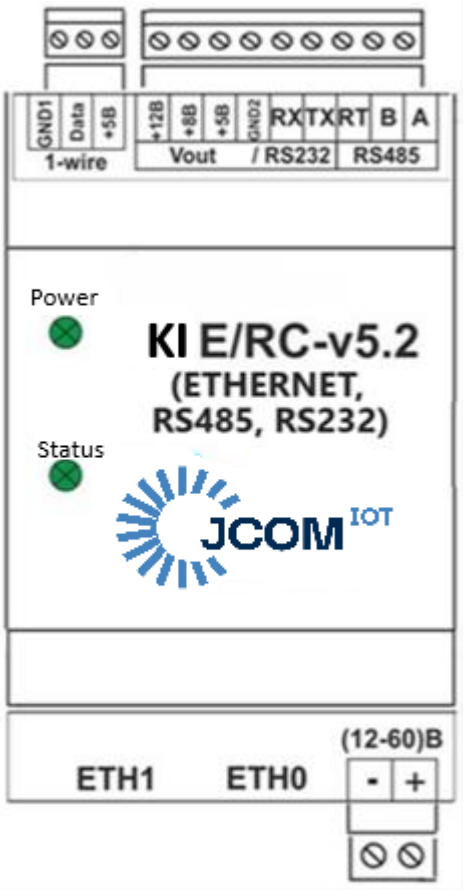

Figure 2 – Device view with connectors marked

4.3 Indication

The device body contains the following indicator lights that display the status and operating modes:

- "Pit" – constantly on after power is applied. Indicates that the device is powered.
- "Stat" – turns on (red) after data transfer via one of the interfaces. The indicator turns off after receiving a response from the device. If there is no response from the device, the LED turns off 5 seconds after data transfer.

5. Main functions

The device performs the following functions:

1. **Converter functions**RS-232, RS-485/UDP, TCP/IP.

2. **MQTT gateway functions for monitoring and controlling equipment**, connected via RS232 and RS485 interfaces. Master-slave protocols, such as Modbus, are supported. Interaction with the upper-level platform is accomplished via the MQTT protocol.

Using it as an SNMP gateway allows you to:

- parameter polling (SNMP request/response support);
- control via SMNP;
- SNMP TRAP support;

3. **SNMP gateway functions for monitoring and managing equipment**, connected via RS232 and RS485 interfaces. Master-slave protocols, such as Modbus, are supported. Interaction with the upper-level system is accomplished via the SNMP protocol.

Using it as an SNMP gateway allows you to:

- parameter polling (SNMP request/response support);
- control via SMNP;
- SNMP TRAP support (configuration and sending of TRAP to multiple IP addresses.)

6. Maintenance

During operation of the controller during its service life, no maintenance work is required.

7. Completeness

The delivery set includes the following:

➢ Device "CI E/RC-v5.2"	1 pc.
➢ User manual	1 pcs/lot
➢ Label	1 piece/lot
➢ Package	1 piece/lot

Note: The batch size is determined by the manufacturer.

8. Storage and transportation rules

Climatic conditions for transportation must meet the following conditions:

- ambient air temperature from minus 50 °C to plus 50 °C;
- relative air humidity up to 98% at 25 °C;
- atmospheric pressure from 84.0 to 107.0 kPa (from 630 to 800 mmHg).

The devices can be transported by all modes of transport (in covered wagons, closed trucks, containers). The devices must be stored only in the manufacturer's packaging in heated rooms at an air temperature of +5°C to +40°C and a relative humidity of no more than 80%. Storage areas must be free of aggressive impurities (acid vapors, alkalis) that cause corrosion.

9. Warranty obligations

The warranty period is 12 months from the date the product is delivered to the buyer. During the warranty period, the manufacturer will provide free repairs. The warranty does not cover defects resulting from improper handling, maintenance, storage, or transportation.