

KNX Gateway RS232/485-IP K.RS232/485GW.01

Art. No. : 135 16 101

Operating instructions

1 Safety instructions

Electrical equipment may only be installed and fitted by electrically skilled persons.

Serious injuries, fire or property damage possible. Please read and follow manual fully.

Danger of electric shock. During installation and cable routing, comply with the regulations and standards which apply for SELV circuits.

These instructions are an integral part of the product, and must remain with the end customer.

2 Device components

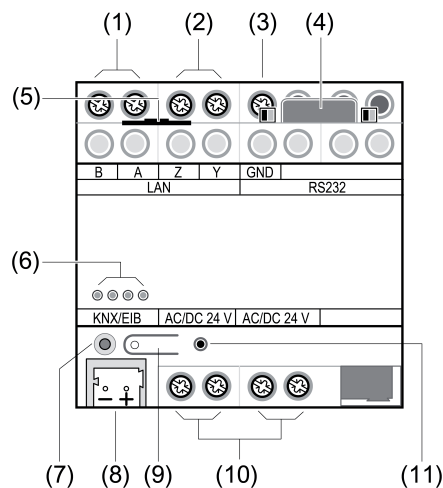


Figure 1: Front view

- (1) RS485 input (for 4-wire systems; not used in 2-wire systems)
- (2) RS485 output (for 4-wire systems); or input/output (for 2-wire systems)
- (3) RS485 dimensions (GND)
- (4) RS232 connection
- (5) Ethernet connection
- (6) Status LED
- (7) Programming LED
- (8) KNX connection
- (9) Programming button
- (10) Connection for external supply
- (11) Reset key

3 Function

System information

This device is a product of the KNX system and complies with the KNX directives. Detailed technical knowledge obtained in KNX training courses is a prerequisite to proper understanding.

Intended use

- Data exchange between KNX and an external system with RS232, RS485 or Ethernet interface
- Mounting on DIN rail according to EN 60715

Product characteristics

- Unidirectional or bidirectional data traffic
- RS485: Optional operation for 2-wire or 4-wire systems
- Translation of KNX data into ASCII telegrams or freely defined character strings
- Project planning and commissioning with software **KNX-Gate2**

2-wire systems:

- Shared transmission/reception line

4-wire systems:

- Separate transmission/reception lines

i The assignment between KNX group addresses and data for the external system takes place by means of a table stored in the gateway. Assignment between KNX group addresses and configuration of the operating mode takes place by means of Windows software **KNX-Gate2**. The current software as well as a detailed description of the commissioning can always be found in the Internet at www.elka.de.

Status LED function

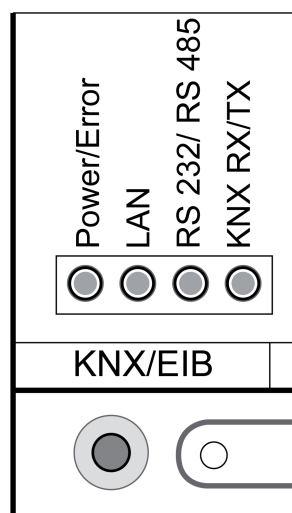


Figure 2: Status LED

| | |
|----------------------|--|
| Power/Error | Green: Normal operation. Orange flashing: Invalid project or no project. Red flashing: Invalid firmware. |
| LAN | Yellow: Reception via the IP interface. |
| RS 232/RS 485 | Green flashing: Receiving/transmitting via the RS232 interface. Red flashing: Receiving/transmitting via the RS485 interface. |
| KNX RX/TX | Red flashing: Reception from the KNX bus. Green flashing: Transmission to the KNX. Red-green flashing: No KNX detected. |

Reset key

The gateway is restarted by pressing the reset button (11). All stored configurations remain unchanged.

4 Information for electrically skilled persons

4.1 Fitting and electrical connection

**DANGER!**

Electrical shock on contact with live parts in the installation environment.

Electrical shocks can be fatal.

Before working on the device, disconnect the power supply and cover up live parts in the working environment.

General notes

Use data cables with a characteristic impedance of 120 Ohm (e. g. network cable CAT 5, 6, 7) for RS485 connections.

Do not wire RS485 connections star-shaped or loop-shaped.

Only use power supply units that supply secure extra low voltage SELV for power supply .

Use load resistance if the gateway is at the beginning or end of the data cable. Otherwise, reflexions at the end of the cable can lead to signal distortions. Only use the load resistance supplied for the cable termination.

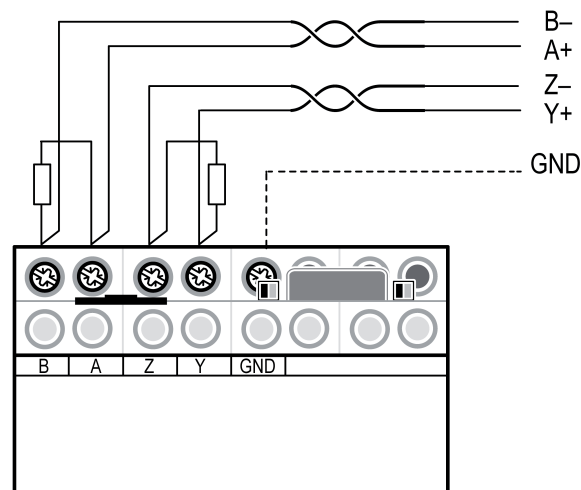
Connecting device – RS485 4-wire systems

Figure 3: Connection to RS485 4-wire system with load resistance

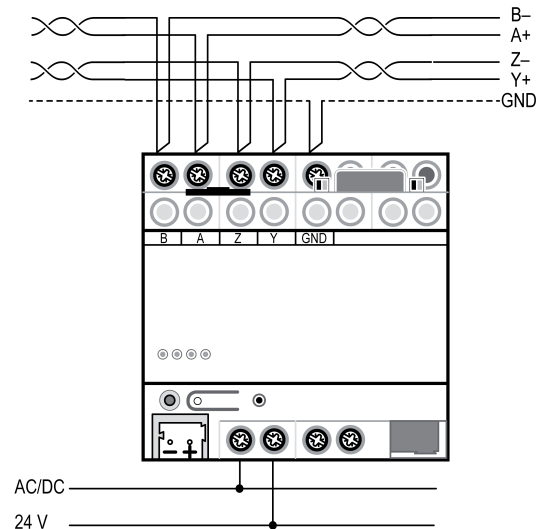


Figure 4: Connection to RS485 4-wire system

RS485 4-wire systems use separate data cables for transmitting and receiving.

- Connect RS485 reception cable to the terminals **B, A** (1) and **GND** (3).
- Connect RS485 transmission cable to the terminals **Z, Y** (2) and **GND** (3).
- Connect KNX bus to the KNX terminals (8).
- Connect external power supply to one of the terminal pairs **AC/DC 24 V** (10).

Connecting device – RS485 2-wire systems

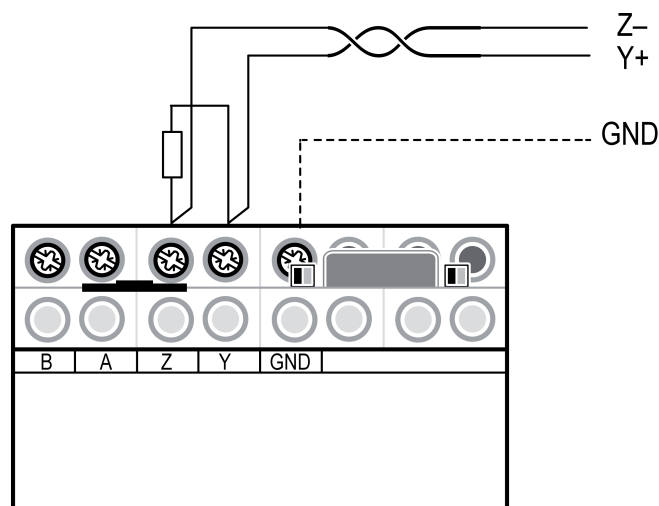


Figure 5: Connection to RS485 2-wire system with load resistance

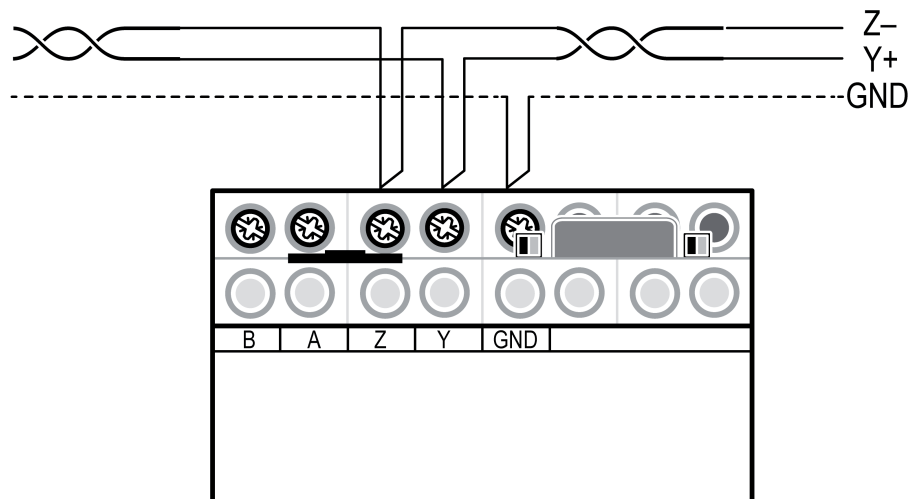


Figure 6: Connection to RS485 2-wire system

RS485 2-wire systems use one data cable for the data traffic.

- Connect RS485 cable to the terminals **Z**, **Y** (2) and **GND** (3).
- Use load resistance if the gateway is at the beginning or end of the data cable.
- Connect KNX bus to the KNX terminals (8).
- Connect external power supply to one of the two terminal pairs **AC/DC 24 V** (10).

Looping through external power supply

Both terminal pairs (10) can be used for looping through the external power supply (Figure 7). The total power consumption of all looped-through loads must not exceed 1.5 A.

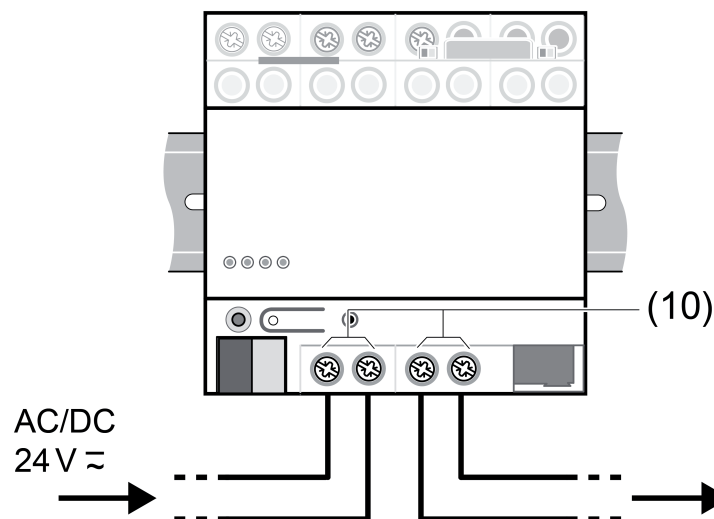


Figure 7: Looping through power supply

4.2 Commissioning

Commissioning

The gateway is commissioned via a Windows PC and the **KNX-Gate2** software. The current software including the related documentation can always be found in the Internet at www.insta.de.

The IP or RS232 interface can optionally be used for connecting the PC to the gateway.

- i** A crosslink-network cable might have to be used for the direct connection of a PC to the IP connection.
- i** An RS232 cable (plug > socket) with 1:1 assignment (no null-modem cable) must be used for the direct connection of a PC to the RS232 interface. Observe the transmission rate (see technical data).
- Connect PC to the gateway via IP or RS232 connection.
- Switch on PC.
- Switch on external power supply.
- Wait until the status LED **Power/Error** is illuminated green.
- Start **KNX-Gate2** software and follow the instructions on the screen.

Load physical address

The physical address is loaded with ETS or with **KNX-Gate2**.

When assigning the physical address with ETS, proceed as follows:

- Switch on the KNX bus voltage.
- Press the programming button (9)(Figure 1).
- Download physical address to the device with the ETS.
- i** No ETS database exists for the gateway. The KNX group addresses are assigned by means of the software **KNX-Gate2**. Use a dummy application for assigning the group addresses in the corresponding ETS project and for creating the filter tables correctly.
- i** The assignment of the physical address with **KNX-Gate2** is described in the software documentation.

5 Appendix

5.1 Technical data

| | |
|--|---------------------------------------|
| External supply | |
| Rated voltage | AC/DC 24 V SELV (± 10%) |
| Mains frequency | 50 / 60 Hz |
| Power consumption | max. 2.0 VA |
| Ambient conditions | |
| Ambient temperature | -5 ... +45 °C |
| Storage/transport temperature | -25 ... +70 °C |
| Protection class | III |
| Fitting width | 72 mm / 4 modules |
| Weight | approx. 175 g |
| Network communication | |
| IP communication | Ethernet 10/100 |
| IP transmission rate | 10 / 100 Mbit/s |
| IP connection mode | RJ45 socket |
| RS232/RS485 | |
| Transmission rate | 1.2 ... 115.2 kbit/s |
| RS232 connection | 9-pin D-sub socket |
| KNX | |
| KNX medium | TP |
| Commissioning mode | S-mode |
| Rated voltage KNX | DC 21 ... 32 V SELV |
| Connection mode KNX | Standard KNX/EIB connection terminals |
| Power consumption KNX | typ. 150 mW |
| Connection of power supply and RS485 | |
| Connection mode | Screw terminal |
| single stranded | 0.5 ... 4 mm ² |
| Finely stranded without conductor sleeve | 0.34 ... 4 mm ² |

Finely stranded with conductor sleeve

0.14 ... 2.5 mm²

5.2 Accessories

Power supply 24 V DC/0,4 A

Art. No. 140 01 913

5.3 Warranty

We reserve the right to make technical and formal changes to the product in the interest of technical progress.

We provide a warranty as provided for by law.

Please send the unit postage-free with a description of the defect to our central customer service office:

Insta Elektro GmbH

Service Center
Hohe Steinert 10
58509 Lüdenscheid
Germany

Insta Elektro GmbH

Postfach 1830
58468 Lüdenscheid

Telefon +49 2351 936-0

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