KNX RF radio converter
Art. no.: MK100RF

Operating instructions

1 Safety instructions

Electrical devices may only be mounted and connected by electrically skilled persons.

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

The radio communication takes place via a non-exclusively available transmission path, and is therefore not suitable for safety-related applications, such as emergency stop and emergency call.

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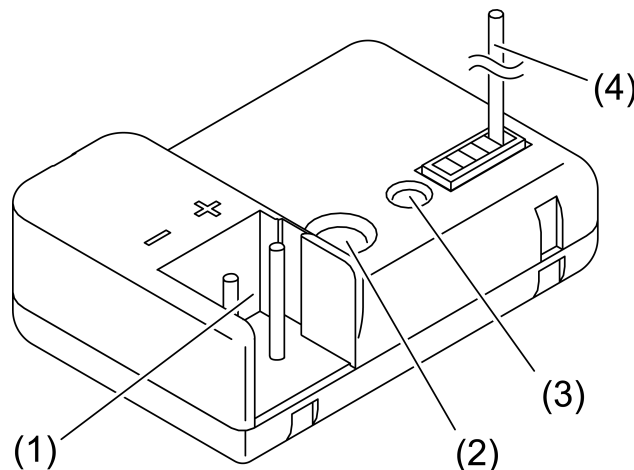
2 Device components

Figure 1: Device components

(1) KNX connection (TP)
(2) Programming button
(3) Status LED
Red flashing quickly: Filter function deactivated
Red flashing slowly: Safe-state mode active
Yellow flashing: Telegram traffic
(4) Antenna (RF)

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.

The range of a radio system depends on various external circumstances. The range can be optimised by the choice of installation location. The product documentation for this device contains application basics for the KNX radio system.

Planning, installation and commissioning are carried out using ETS version 5 or higher. You can find the up-to-date product database, technical descriptions and Declaration of Conformity on our Internet site.

The device is KNX Data Secure compatible from version "V01". KNX Data Secure offers protection against manipulation in building automation and can be configured in the ETS project. Detailed specialist knowledge is required.

Overview of device versions

Devices with marking "V00": no KNX Data Secure compatibility. Secure commissioning of other devices via media coupler is not possible with this device version.

Devices with marking "V01" or higher: KNX Data Secure compatibility from ETS5.7.3. Secure commissioning of other devices via media coupler is possible without restrictions from this device version.

The devices are update-capable. Firmware updates (e.g. V00 -> V01) can be carried out conveniently using a special ETS application program. See the technical documentation for details.

Simplified Declaration of Conformity

Hereby Albrecht Jung GmbH & Co. KG declares that the radio system type
Art. no. MK100RF
corresponds to the directive 2014/53/EU. You can find the full article number on the device. The complete text of the EU Declaration of Conformity is available under the Internet address: www.jung.de/ce

Intended use

– Connection of KNX radio networks with grid-bound KNX lines
– Increasing radio range in KNX radio networks (repeater operation)
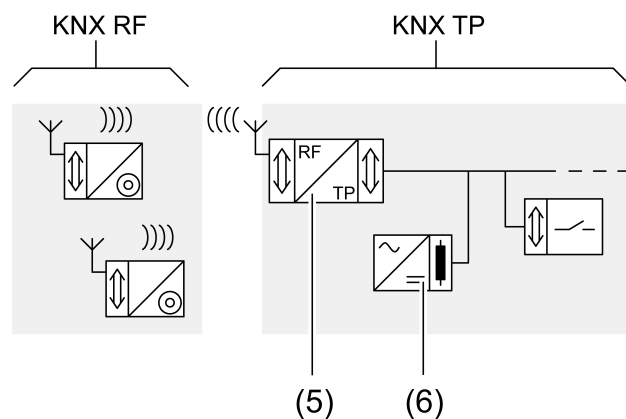– Mounting in appliance box according to DIN 49073

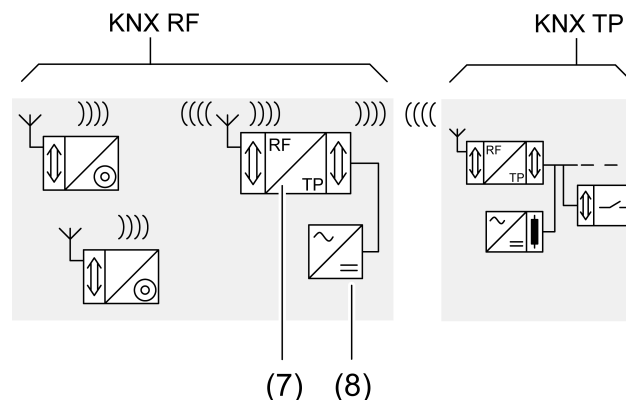Figure 2: Media coupler and RF participant

Figure 3: Media coupler and RF participant, supplemented by repeater

(5)   Media coupler
(6)   KNX power supply with throttle

(7)   Repeater

(8)   Power supply

4   Operation as media coupler

The physical address of the media coupler is the address of a line or a backbone coupler **x.y.0** and must match the logical topology of the KNX system. Observe the instructions in the technical documentation regarding the address.

Power is supplied via the KNX bus cable.

| i | With operation as a media coupler, the repeater function can also be activated.

5   Operation as repeater

The physical address of the radio repeater is the address of a normal KNX participant **x.y.z** (z≠0) within the address range of the KNX radio system. Observe the instructions in the technical documentation regarding the address.

Power is supplied via a separate power supply (accessory) or via the connection to a KNX line.

| i | Do not use the 30 V output of a KNX power supply. The media coupler may heat up to an impermissible temperature.

| i | Repeater mode is active after the physical address is assigned. Once this happens, programming via bus line is blocked. Then the device can only be reached by radio. To address the device via the bus line, reset the device to default settings.

6   Information for electrically skilled persons

⚠ **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.

6.1 Fitting and electrical connection

Mounting and connecting the device

Mount in flush-mounted or surface appliance boxes.

| i | In outdoor installations: Use appliance box IP55.

Do not lead any wire cables from other power circuits through the appliance box.

Do not lead any other sheathed cables through the appliance box.

Operation as media coupler:

- Connect device to KNX bus cable via a bus terminal.

Operation as repeater:

- Connect the device to a separate power supply via a bus terminal.
- Place the device in the appliance box.
- When laying the antenna, extend the antenna extended as much as possible. If this is not possible, position the antenna behind the device in a circular arrangement.

| i | When using blank covers, make sure the antenna does not lie directly behind the metal supporting frame.

Selecting installation location

– To ensure good transmission quality, keep a sufficient distance from any possible sources of interference, e.g. metallic surfaces, microwave ovens, hi-fi and TV systems, ballasts or transformers.
– Do not mount the media coupler near the earth or ground.
– Do not place KNX RF devices in metallic small distribution boards or boxes.
– If several adjacent media couplers are used, place them so their radio ranges either do not overlap at all, or so they can receive each other. Check within a system to see if a media coupler can be configured as a repeater.

[i] Media couplers must be accessible even after installation.

6.2 Commissioning

Load physical address and application program

Precondition: Device has been connected and the power is switched off.

■ Press the programming button.
  The status LED lights up red.

■ Download the physical address and domain address.
  The status LED goes out.

■ Download the filter table and parameters.

Reset the media coupler to default settings

■ Disconnect device from bus or power supply.
■ Press and hold programming button (2).
■ Connect device to bus and/or switch on power.
  The status LED (3) flashes red slowly.

  The device is in safe-state mode.

■ Release the programming button.
■ Press programming button (2) again and hold about 20 seconds until status LED goes out.
■ Release the programming button.
  The status LED (3) flashes red -> yellow once.

  The device is reset to default setting.

7 Technical data

KNX RF

KNX medium	RF1.R
Commissioning mode	S-mode
Radio frequency	868.0 ... 868.6 MHz
Transmission capacity	max. 20 mW
Transmitting range in free field	typ. 100 m
Receiver category (Data according to EN 300220)	2

KNX TP (media coupler operation)

KNX medium	TP256
Commissioning mode	S-mode

Rated voltage KNX	DC 21 ... 32 V SELV
Current consumption KNX	max. 5 mA

Repeater operation

Rated voltage	DC 24 V SELV

Degree of protection	IP20
Protection class	III
Ambient temperature	-20 ... +55 °C
Storage temperature	-25 ... +45 °C
Transport temperature	-25 ... +70 °C
Relative humidity	10 ... 100 % (no moisture condensation)
Dimensions L×W×H	44x29x16 mm

8   Accessories

Power supply 24 V, for rail mounting	Art. no. NT 2415 REG VDC

ALBRECHT JUNG GMBH & CO. KG

Volmestraße 1

58579 Schalksmühle

GERMANY

Telefon: +49 2355 806-0

Telefax: +49 2355 806-204

kundencenter@jung.de

www.jung.de