elsner elektronik **KNX-RF USB Stick** N° 70704 (EN)

www.elsner-elektronik.de • Technical Service: +49 (0) 7033 30945-250   Version: 10.08.2017 • Technical changes and errors excepted.   Elsner Elektronik GmbH • Sohlengrund 16 • 75395 Ostelsheim • Germany

1. Description

KNX RF USB-Stick is a PC interface with access to KNX via KNX RF radio. It allows addressing, programming and diagnostics of KNX devices with a windows-based PC. The stick is operated via a PC USB port (USB type A).

KNX RF USB-Stick uses the KNX RF S standard. If communication with wired KNX devices (KNX TP) is necessary, a media coupler that connects KNX RF and KNX TP is needed.

⚠️ **WARNING!**
The radio transmission takes place over a non-exclusively available transmission channel!
The device is not suited for applications outside the field of safety equipment, such as emergency stop and alarm equipment.

Functions:
- Connection between PC and KNX via KNX RF radio
- Addressing, programming and diagnostics of KNX devices via ETS (version 5 and later)
- Device power supplied via the PC USB interface
- Update-capable firmware for adapting to future standards

- The standard Windows drivers necessary for the operation of the device are installed and activated on the PC automatically when the device is plugged into it.

1.0.1. Scope of delivery
- USB stick

1.1. Technical data

Housing	Plastic
Protection category	IP X0
Dimensions	approx. 21 x 59 x 7.5 (W x H x D, mm)
Weight	approx. 10 g
Ambient temperature	-10…+55 °C
Ambient humidity	max. 95% RH, avoid condensation
Rated voltage	5 V DC
USB version	2.0
USB connection	Type A
KNX medium	RF1.R
Wireless frequency	868.3 MHz
Transmission power	max. 25 mW
Transmission range in free field	100 m (typical)

The product is compliant with the provisions of EU Directives.

2. Installation & commissioning

2.1. Installation notes

🔧 Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.
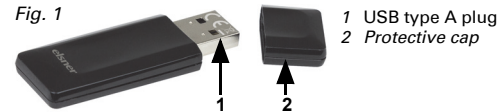
2.2. Notes on wireless equipment

When planning facilities with devices that communicate via radio, adequate radio reception must be guaranteed. The range will be limited by legal regulation and structural circumstances. Avoid sources of interference and obstacles between receiver and transmitter, that could disturb the wireless communication. Those would be for example:

- Walls and ceilings (especially concrete and solar protection glazing).
- Metal surfaces next to the wireless participants (e. g. aluminium construction of a conservatory).
- Other wireless devices and powerful local transmitters (e.g. wireless headphones), which transmit on the same frequency (868,2 MHz). Please maintain a minimum distance of 30 cm between wireless transmitters for that reason.

2.3. Commissioning

2.3.1. Device structure

Fig. 1

1 USB type A plug
2 *Protective cap*

When **KNX RF USB-Stick** is not used, the protective cap should always be on.

2.3.2. Connection with the PC

KNX RF USB-Stick is designed as a generic USB stick according to the USB 2.0 A standard, and is operated via a USB port.

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1. Remove the protective cap and insert **KNX RF USB-Stick** in a free USB port of a switched-on PC.
   The electronics of the device are supplied with power via the USB interface of the PC it is connected to. For this reason, **KNX RF USB-Stick** is only ready for use if it is plugged into a USB port and the PC is switched on.
2. The standard Windows HID (Human Interface Device) drivers necessary for its function are, as a rule, automatically installed and activated when plugging **KNX RF USB-Stick** into the PC.
   An internet connection is sometimes necessary to install the drivers. In some systems, the installation of the drivers must be controlled by the user. The initialisation by the operating system and its search for an appropriate driver can take several minutes.

After the successful installation of the drivers, the ETS can access the device.

2.3.3. Setting up and addressing the device

The physical address of **KNX RF USB-Stick** is defined locally via the connected PC within the ETS KNX software (version 5 and later).

3. Click on the **Connections** functions in the **Bus** tab of the ETS.
4. Choose the **Interfaces** subsection.
   Under **Found interfaces**, **KNX RF USB-Stick** (Elsner Elektronik GmbH) is shown.

Defining KNX RF USB-Stick as the current interface:

1. Click on the interface so that the entry is marked in the list.
   With the **Test** button, you can check the readiness of **KNX RF USB-Stick** for operation. If this test fails, check if the stick is correctly plugged in and detected by the PC, and if the driver installation has been completed correctly.
2. Click on **Select** to define the marked interface as the currently used interface.
   KNX RF USB-Stick is now shown as the **Current interface**.

Assigning physical addresses:

These physical addresses of KNX devices must match the line address of the corresponding media coupler, as media couplers act as area line couplers and (depending on the configuration) can filter physical addresses.

3. Click on **KNX RF USB-Stick** so that the entry is marked in the list **Current interface**.
4. Enter the physical address.
   Make sure that the physical address is not used by any other device, and that the topology corresponds with the KNX system. Using the **Address free?** button, you can check if the entered physical address is already in use or not.
5. As soon as this field is left, the physical address is programmed into **KNX RF USB-Stick**. The newly

defined physical address is shown under **Current interface**.

Assigning domain address:

In order for the RF device to be programmed via the ETS, the domain address of the RF line must match the domain address of the RF communication interface (e.g. **KNX RF USB-Stick**).

Configure the domain address of **KNX RF USB-Stick** in the general connection settings of the ETS.

6. Enter the domain address in the appropriate field under **Current interfaces**.
   A domain address is 6 bytes long and is entered in the ETS as a hexadecimal number, or it is generated automatically. The entry notation requires that a colon is placed after the first 2 bytes (read from left to right). Examples: '0011:22334455', '00FA:4F5B3122'.
7. As soon as this field is left, the domain address is written in **KNX RF USB-Stick**.

After assigning the physical and domain addresses, **KNX RF USB-Stick** is ready for operation.

Configure the domain addresses of the RF line in the ETS project via the line properties. This must be done separately for each line. The RF lines of a shared KNX system or of immediately adjacent KNX systems in the radio range must never have identical domain addresses!

2.3.4. Information for use in the ETS

ETS search path:
• Communication / Radio / **KNX RF USB-Stick**
• Communication / USB / **KNX RF USB-Stick**
• Radio / Data interfaces / **KNX RF USB-Stick**

Configuration:
S-mode standard

ETS design and commissioning

The design and commissioning require ETS version 5 or later.

Physical and domain addresses are assigned via the general interface settings in the ETS (see *Setting up and addressing the device*, Seite 3).

No applications are necessary for **KNX RF USB-Stick**! The application provided is only for system documentation.