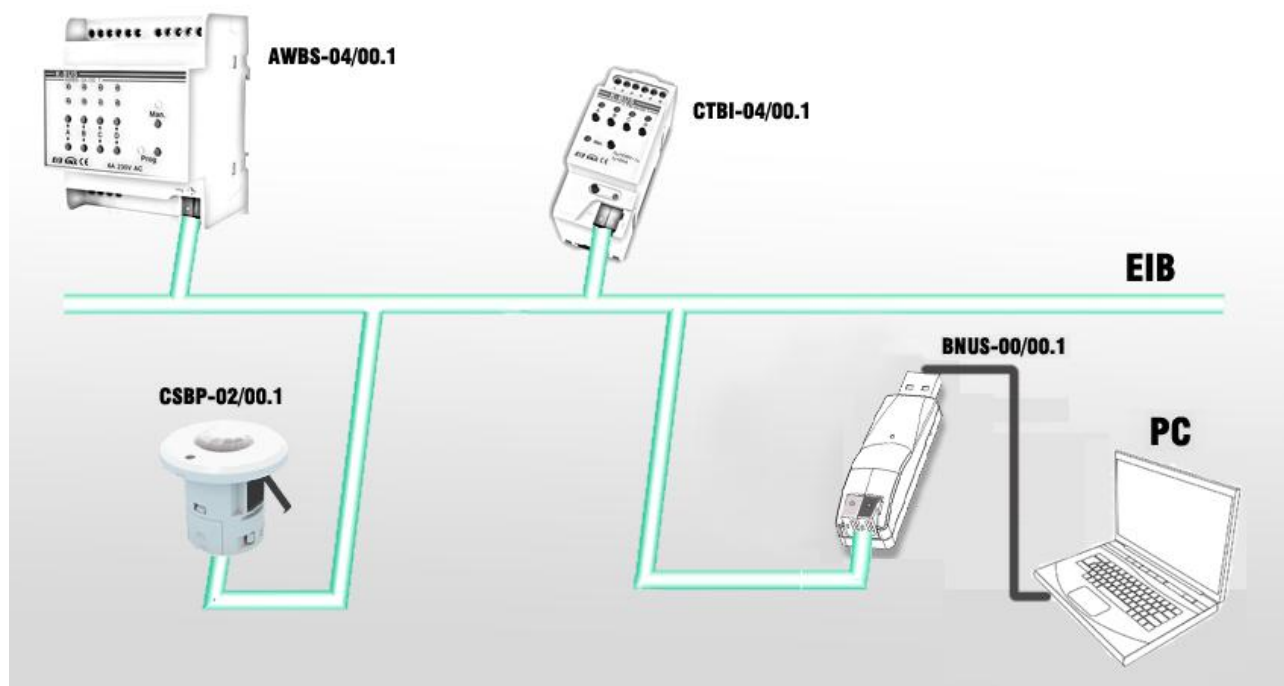# K·BUS® KNX USB Interface_V1.2
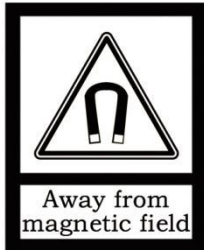
BNUS-00/00.1

BNRF-00/01.1

BNRF-00/02.1

KNX/EIB Home and Building Control System

Attentions

1. **Please keep devices away from strong magnetic field, high temperature, wet environment;**

Away from magnetic field	Away from high-temp	Prevent moisture

2. **Do not fall the device to the ground or make them get hard impact;**

Handle with care

3. **Do not use wet cloth or volatile reagent to wipe the device;**

Wipe with care

4. **Do not disassemble the devices.**

Contents

Chapter 1 Summary

The KNX USB Interface is designed for an intelligent building control system, which is used for facilitating communication between the PC and the KNX system. The communication way of the KNX USB Interface have wired and wireless communications, and the wireless communication can be realized via the RF KNX transceiver and the RF USB transceiver. Described as follows:

1.1. BNUS-00/00.1（the KNX USB Interface）

The KNX USB interface realizes the wired USB interface communication. The device can connect the USB communication interface to the computer through a standard type A USB2.0 interface extension line, and the other end of the device can be connected to the KNX bus.Through the ETS software (version ETS3 and above) in the computer of this device, the physical address, configuration parameters, debugging and bus monitoring of the KNX device can be assigned.

The maximum communication distance is 5m between the PC and the communication interface.

The communication interface of the KNX USB Interface is a USB standard 2.0 type A, and uses a standard USB connection way with a PC. And the bus connection is done via a bus connection terminal at the front, and the device is provided power supply from the USB and bus.

The KNX USB Interface has not an application program, but it is able to use the Engineering Tool Software ETS (ETS3 or later) to allocate the physical address. The factory default physical addresses are 15.15.255.

Note : For ETS 3 or ETS 4 a KNX drive program need to be installed in the PC, or else the interface cannot connect to the PC. For specific installation details, please see the relevant documentation.

The extremely compact design enables the USB interface appearance as USB flash disk as small, delicate, and portable.

The green LED lights up as soon as the USB interface and PC are connected and ready for operation. It flashes mean that there is communication between the USB interface and PC. The red LED lights up as soon as the USB interface and KNX bus are connected and ready for operation. It flashes mean that there is telegram traffic on the bus.

1.2. BNRF-00/01.1 and BNRF-00/02.1

Wireless KNX transceiver (BNRF-00/02.1) and wireless USB transceiver (BNRF-00/01.1) are used to realize wireless USB interface communication. Wireless KNX transceivers connect to KNX bus, wireless USB transceivers connect PC, to wireless communication between KNX system and PC through RF technology. Through these two devices, KNX devices can be assigned physical addresses, configuration parameters, debugging and bus monitoring by using ETS software in the computer (version ETS3 and above). Because it is wireless communication, so It brings us great convenience in the process of engineering debugging.

The wireless KNX transceiver has not an application program, but it is able to use the ETS to allocate the physical address. The factory default physical addresses are 15.15.255.

Note: a KNX drive program (GVS USB driver for KNX.exe) need to be installed in the PC, or else the RF USB transceiver cannot connect to the PC.

The extremely compact design enables the RF KNX transceiver   to be inserted in a conventional 80 mm or 86mm wiring box and the RF USB transceiver to be installed in many positions according to user requirements. When install, please note the Antenna of the RF KNX transmitter must be installed in the areas that the RF USB transmitter can receive the signals normally, to avoid communication connection problems .

The red LED on the USB transceiver lights up when the USB and PC are connected normally. When the RF connection between the USB transceiver and the KNX transceiver is normal, their LED will flash.

Chapter 2 Technical data

2.1. BNUS-00/00.1 (the KNX USB Interface)

Power supply	Operating voltage	21-30V DC，via the KNX bus
	Current consumption, bus	<12mA
	Power consumption, bus	<360mW
	USB voltage	5V DC
	Current consumption, USB	<100mA
	Power consumption , USB	<500mW
	Total power consumption, KNX and USB	<860 mW
Interface	USB Standard 2.0	
Connections	KNX	Bus connecting terminal (red/black)
		Single-core 0.2—6.0mm^2
		Multi-core 0.2—4mm^2
	PC-connection	Via USB socket type A
		Max. cable length 5m (standardized)
Operating and display	Programming LED and button	For assignment of the physical address
	LED PC/link ON	A PC is linked to the device
	LED PC/link flashing	Data transfer between USB interface and PC
	LED EIB/link ON	The device is linked to the KNX bus
	LED EIB/link flashing	Telegram traffic on the bus
Temperature	Operation	−5 °C ... + 45 °C
	Storage	−25 °C ... + 55 °C
	Transport	− 25 °C ... + 70 °C
Ambient	Humidity	<93%, except dewing
Mounting	As required	
Dimensions	18mm×20mm×77mm	
Weight	0.1kg	

2.2. BNRF-00/01.1 (the RF USB transceiver)

Power supply	USB voltage	5V DC
	Current consumption, USB	<100mA
	Power consumption, USB	<500mW
Interface	USB Standard 2.0	
Connections	Via USB socket type A	
Display	LED ON	The USB and PC connect normally
	LED Flashing	The RF connection between the USB transceiver and the KNX transceiver is normal
Temperature	Operation	− 5 °C ... + 45 °C
	Storage	−25 °C ... + 55 °C
	Transport	− 25 °C ... + 70 °C
Ambient	Humidity	<93%, except dewing
Mounting	As required	
RF transmission	<30m, influenced by antenna and obstruction	

2.3. BNRF-00/02.1 (the RF KNX transceiver)

Power supply	Operation voltage	21-30V DC, via the KNX bus
	Current consumption, bus	<12mA
	Power consumption, bus	<360mW
Connections	KNX	Bus connecting terminal (red/black)
Display	LED flashing	The RF connection between the KNX transceiver and the USB transceiver is normal
Temperature	Operation	− 5 °C ... + 45 °C
	Storage	−25 °C ... + 55 °C
	Transport	− 25 °C ... + 70 °C
Ambient	Humidity	<93%, except dewing
Mounting	As required	
RF transmission	<30m, influenced by antenna and obstruction	

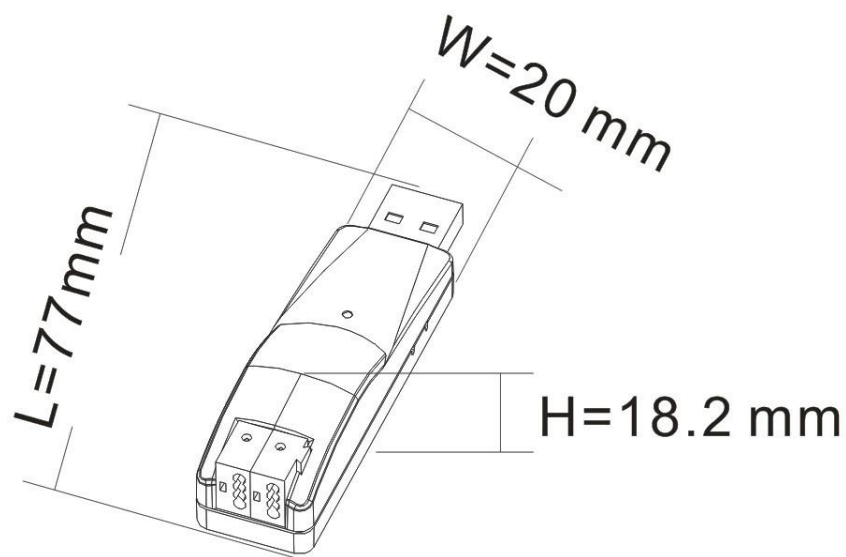# Chapter 3 Dimension and Connection Diagram

3.1. Dimension diagram
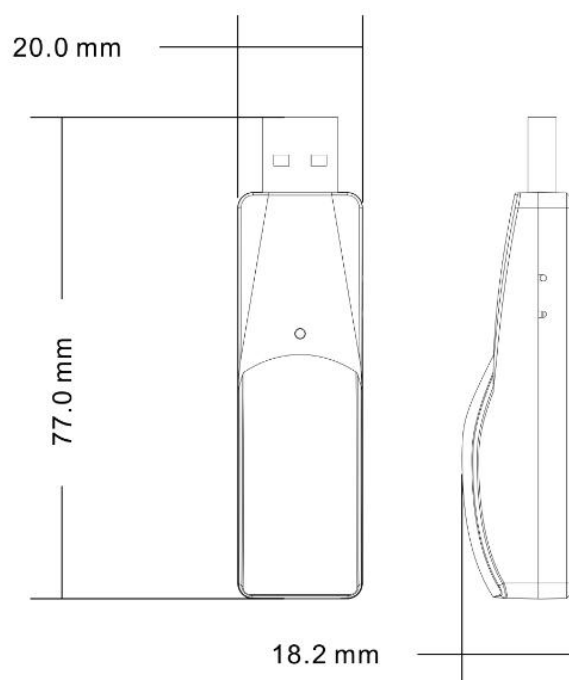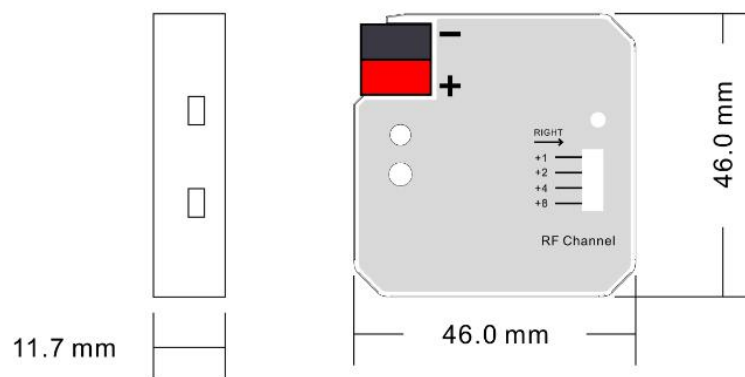

Fig.1. BNUS-00/00.1

Fig.2. BNRF-00/01.1
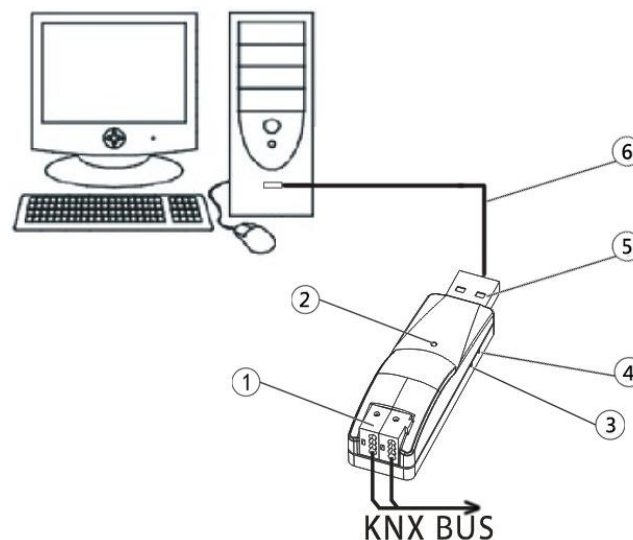
Fig.3. BNRF-00/02.1

3.2. Connection diagram

Fig.1. BNUS-00/00.1

① KNX bus connection terminal

② The green LED lights up as soon as the USB interface and PC are connected and ready for operation. It flashes mean that there is communication between the USB interface and PC. The red LED lights up as soon as the USB interface and KNX bus are connected and ready for operation. It flashes mean that there is telegram traffic on the bus.

③ Red LED for assigning the physical address, green LED flashing for the application layer running normally.

④ Programming button

⑤ USB serial ports connection terminal

⑥ USB extension cable
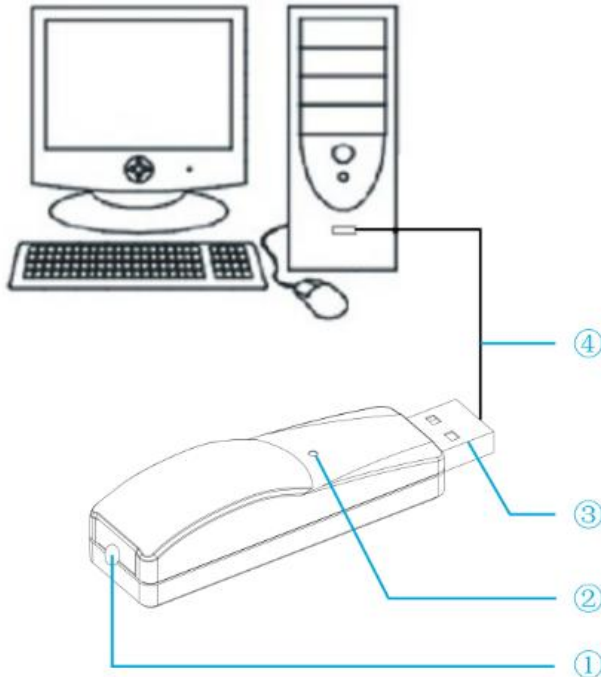
① Antenna

② Status indicator, when the RF connection between USB transceiver and KNX transceiver is normal, LED flashes. The red LED lights up when the USB and PC are connected normally.

③ USB serial ports connection terminal

④ USB extension cable

Note: the channel of the RF USB transceiver is set via the K-BUS Snail software Tool, and in an area up to 15 pairs of RF KNX/USB transceivers can be set. In order to operate the K-BUS Snail software Tool, make sure that your PC has installed Falcon, ETS3 or ETS4 software.

Fig.2. BNRF-00/01.1
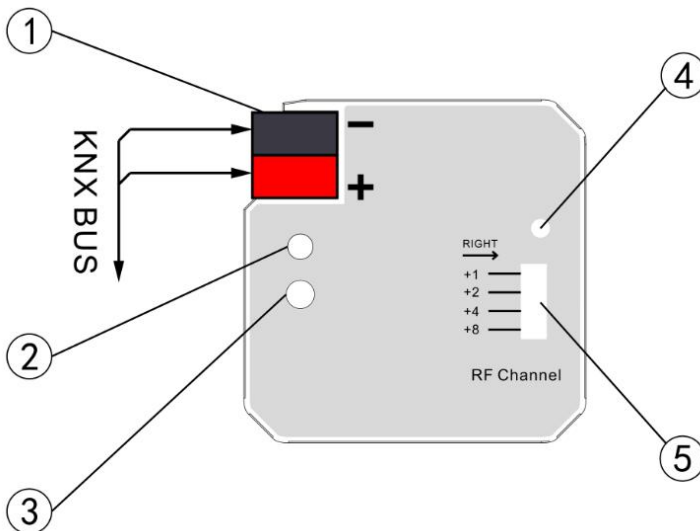
① KNX bus connection terminal

② Status indicator, when the RF connection between KNX transceiver and USB transceiver is normal, LED flashes.

③ No used, reserve button

④ Antenna

⑤ Channel switches, can be used to select channels. The selected channel must be matched with the channel setting of the RF USB transceiver, and in an area up to 15 pairs of RF KNX/USB transceivers can be set.

Fig.3. BNRF-00/02.1

Chapter 4 Software Tool

The software tool is only applied to the RF USB/KNX transceiver, and is used to set channel for the RF USB transceiver. Start window as follows:
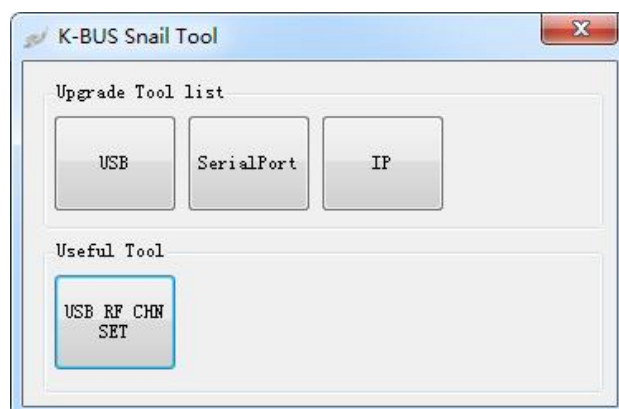

Fig.4.1 Start window

Here the used function is the USB RF CHN SET，other functions are no used. Click the button "USB RF CHN SET"，enter the follow window:

Fig.4.2 Channel set window

☑ RIGHT
☑ RIGHT
☑ RIGHT
☐ LEFT

1.　　　　The check box is used to select the channel, if select, the channel is for right, if not select, for left. The channel select need be matched with the channel setting of the RF KNX transceiver.

2. After finish channel select, click button [Change Channel] to take effect, then the channel setting has finished for the RF USB transceiver.

3. Via click button [Get Channel] can get the current channel setting of the RF USB transceiver. And you can change the current channel setting via above step 1 and 2. If you do not want do it, you can set manually the channel switch on the RF KNX transceiver to match the current setting of the RF USB transceiver.

4. After finish matching channel between the RF KNX transceiver and the RF USB transceiver, the status indicator will flash on the devices, then show that they can communication normally. Attention to their antennas must be placed in the area where they can receive signals from each other.