USB-Connector

User manual

Products	Item numbers
USB-Connector (incl. standalone software)	PNX21-10001
KNX-WAGO 243-211-Adapter (unsealed)	PNX21-10002
KNX-WAGO-243-211-adapter (sealed)	PNX21-10003
USB-Connector incl. KNX-WAGO 243-211-Adapter (unsealed)	PNX21-10004
USB-Connector incl. KNX-WAGO-243-211-adapter (sealed)	PNX21-10005
YOUVI Basic incl. USB-Connector and KNX-WAGO Adapter	PNX21-10006
D-Sub DIN rail adapter	PNX21-10007
D-Sub DIN rail adapter set	PNX21-10008

Table of Contents

1 Product description

The USB-Connector allows to easily connect a computer to a KNX-network. The included software is installed on a Windows device that accesses the connected KNX bus via the USB connector.
The included Bus Monitor and IP Router software enable the user to read or send telegrams on the KNX bus. The included software also allows the parameterization of actuators via the Engineering Tool Software (ETS).
The USB-Connector has a compact and robust plastic housing which enables mobile use. The available connection adapters allow the flexible use of the device.

1.1 Product properties
▪ Connections: USB 2.0, type A and D-Sub-9-Pin, male
▪ Adapter to KNX (optionally available)
▪ Cable length: 65 cm
▪ Power supply via USB
▪ Included Software: Bus-Monitor, IP-Router and ETS-Integration
▪ Extended operating temperature range from -40 ° C to 85 ° C
▪ Protection class: IP20 (inhouse use)

1.2 System requirements
▪ A USB port on a Windows device
▪ Operating system Windows 10, 8.1, 7 (32/64-bit)
▪ KNX Bus connection defined in KNX specification
▪ Ethernet connection (For the use of the IP Router)

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❶ *Note: The USB-Connector only supports Windows as the operating system.PEAKnx does not guarantee that the software and hardware will function without problems in conjunction with other operating systems or software.*

1.3 Delivery
▪ USB-Connector
▪ D-Sub-to-KNX-Adapter
  – KNX-WAGO-243-211-Adapter (optional) (PNX21-10002)
  – KNX-WAGO-243-211-Adapter, encapsulated (optional) (PNX21-10003)
  – DIN rail (top hat) adapter set* (optional) (PNX21-10008)
  – DIN rail (top hat) adapter (optional, as additional purchase option) (PNX21-10007)
▪ Included software (available on USB flash drive)
  – Bus Monitor
  – IP Router
  – ETS Integration
▪ User manual (this document)
▪ YOUVI Quick Start Guide (available on USB flash drive)

*Includes an adapter cable (length: 2 m) to connect the DIN rail adapter to the USB-Connector and a DIN rail adapter

2 Included software

The scope of delivery includes a USB flash drive containing all the software needed to operate the USB-Connector.

The USB-Connector is available in two bundles with different software:
▪ USB-Connector and YOUVI: Bus Monitor, IP Router, visualization
▪ USB-Connector and standalone software: Bus Monitor and IP Router

2.1 YOUVI software package (Bus Monitor, IP Router, visualization)
The YOUVI Basic visualization software included in the scope of delivery is used to control KNX devices such as sockets, switches, lights, dimmers, RGB lights, heaters, blinds or shutters. Thanks to the IP Router included in the software package, YOUVIs visualization can be connected to the KNX infrastructure of the house with the USB-Connector and a Windows computer or server without additional components. Only an Ethernet connection is necessary for the software to function. In addition to visualization and IP Router, a Bus Monitor is also included in the scope of delivery, which can record and filter the KNX traffic.
In addition to the basic functions for controlling KNX devices, YOUVI can be extended via modules for IP camera connection, creation of logics, control via app on the road or voice control.

❶ *Note: For the YOUVI installation, please pay special attention to the YOUVI quick reference guide and the information on KNX project preparation to enable the automatic reading of the project. This quick reference guide is included in the delivery.*

❶ *Note: When working with the YOUVI software, the Google Chrome Browser or the Microsoft Edge Browser is recommended.*

Further information about YOUVI can be found in the YOUVI Help, which can be opened in the program *YOUVI Dashboard > ? > Help*. Here you will also find the current **range of functions** of the software under: *YOUVI Visu > Scope of functions*.

2.2 Standalone software (Bus Monitor, IP Router)
For the software installation procedure, please refer to the enclosed Quick Start Guide or Section *5.1 Installing the Bus Monitor and IP Router software*

❶ *Note: To be able to use the USB-Connector with the ETS without having the IP Router software installed, it is necessary to execute the ETS Integration, see section 5.2 Using the USB-Connector exclusively with the ETS*

2.2.1 Bus Monitor

The Bus Monitor in combination with the USB-Connector provides an overview of the KNX bus. Its tabular structure provides a clear overview of all telegrams sent via the KNX bus. It can be used to log short telegram sequences or long-term recordings over several days. Additionally any group addresses or KNX commands can be sent. Further functions are the filter options as well as the data export of CSV files. In the advanced filter settings different filters are defined and saved, so that several filters can be applied in parallel. The Bus Monitor enables the import and storage of ETS group addresses from several projects at the same time. He supports 3-level, 2-level and free group address styles. That way collected information of the bus communication between the applications and the KNX network can be stored as log files.

❶ *Note:* *The Bus Monitor is only compatible with the USB-Connector from PEAKnx.*

2.2.2 IP Router

The IP Router software sets up a connection between the KNX bus and the IP network using the USB-Connector. Therefore, any KNXnet/IP client can use the IP Router to communicate with the KNX network (for example the ETS). This means that multiple software distributions can access the USB-Connector at the same time so that the Bus Monitor can be used simultaneously with the ETS. Also actuator programming via the ETS is possible that way. From the KNX specification the IP Router is represented as KNXnet/IP Router, a class B KNXnet/IP device. It therefore supports the following service types:

▪ Core function of a KNXnet/IP Router
▪ Device Management
▪ Tunneling
▪ Routing

3 Power supply

The device is powered by the USB port and requires no external power supply. In general, the device is operated internally with a supply voltage of 5 V DC.
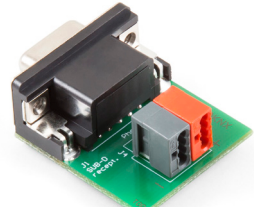
4 KNX bus connection

4.1 KNX connection adapter

The adapter with which the USB-Connector is connected to the KNX bus via the D-Sub 9P plug, exists in an encapsulated version, without a plastic housing or as DIN rail adapter.

4.1.1 KNX WAGO 243 211 adapter

The connection adapter forms a transition from the D-Sub-9-Pin-connector to a WAGO 243 211 connector terminal. These have prevailed in most KNX installations. The adapter is supplied as a simple circuit board construction without housing and is suitable for installation in non-visible locations.

4.1.2 KNX WAGO 243 211 adapter, encapsulated

The KNX connection adapter from the D-Sub-9-Pin to the WAGO-243-211 connector terminal with housing also connects the USB-Connector to the KNX bus. The encapsulated model is especially suitable for the mobile use.

4.1.3 DIN rail adapter set

The KNX DIN rail adapter is connected to the KNX bus before use and installed in the switch cabinet. Afterwards the USB-Connector is connected to the KNX bus by means of the 2 m extension cable (part of the set). While the inexpensive DIN-rail adapter can be permanently installed at different locations, only one interface (the USB-Connector) is needed for the KNX access, which can be connected to the KNX bus on site without the need for additional tools.

❶ *Note:* *The USB-Connector can only be connected to the DIN rail adapter via the adapter cable.*

5 Start-up

❶ *Note:* *If you want to operate more than one KNX-IP Router in the same KNX network, the multicast addresses must be different. If they both communicate over the same multicast address, this will result in a circulating message.*

❶ *Note:* *Keep the USB-Connector away from water and moisture!*

The software required to use the USB-Connector is located on the USB flash drive supplied. The software package includes an IP Router, a Bus Monitor and an ETS integration tool that allows the use of the USB-Connector if the IP Router software is not installed.

5.1 Installing the Bus Monitor and IP Router software

To install one or both components, proceed as follows:

▪ Run the "PEAKnx USB Connector" application stored on the USB flash drive to start the installation wizard.

▪ Open the tab "Install".

▪ Run the "Setup Wizard".

▪ Follow the installation instructions.

During installation, you will be asked whether you want to install the Bus Monitor software and/or the IP Router software, so you can also install only one of the two components.

5.2 Using the USB-Connector exclusively with the ETS

The *ETS Integration* is a small tool for a one-time run on a computer, which configures the local ETS-Installation, so that it can be used together with the KNX-USB-Connector. To do this, the ETS must already be installed on the computer. It is automatically installed by the installation wizard when the IP Router and Bus Monitor are installed. If you want to use the USB-Connector exclusively with the ETS, you can also run the ETS integration tool on its own.

For the installation proceed as follows:

▪ Close ETS.

▪ Run the "PEAKnx USB Connector" application stored on the USB flash drive to start the installation wizard.

▪ Open the tab "Install".

▪ Click on "ETS Integration" > "Execute Now".

This starts the automatic configuration.

After the completion, a summary of the configuration is shown.

5.3 Connecting and disconnecting the hardware

Connecting the hardware

▪ Connect the D-Sub-9P connector* of the USB-Connector to the KNX bus using a suitable adapt*er, see chapter 4 KNX bus connection.*

▪ Connect the USB port of the USB-Connector to a Windows device.

*More information on the Pin-assignment of the D-Sub connector is located in the appendix under *D-Sub-Pin-Assignment.*
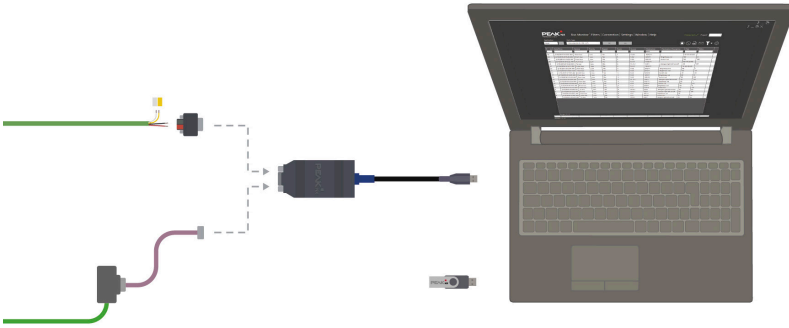
Disconnecting the hardware
You can unplug the adapter from the computer's USB port without preparation.

6 Operation

6.1 Status LED
The USB-Connector has an LED, which shows different colors and blinking patterns, depending on the Connector's status.

LED	Blink pattern	Status
On	One-time blink	USB-Connector is plugged in, LED-Test
Green	Slow blinking	USB-Connector is connected and drivers are loaded
Green	Fast blinking	USB-Connector is receiving data
Off	-	USB-Connector is not plugged in or out of order

7 Technical support

If you experience problems with your USB-Connector, please contact our PEAKnx Support Team:
  − Mail: support@peaknx.com
  − Create a Support Ticket: support.peaknx.com
  − Tel.: +49-6151-279 1825

8 Technical data

Supply	
USB-side	+ 5 V DC
KNX-side	+ 24 V DC
Max. Power usage USB	100 mA

| Ports	
USB	1 x USB-connector, type-A
Fieldbus	1 x D-Sub-9-Pin, male

Software requirements	
ETS compatible	ETS 5 - 6
Operating system	Windows 10, 8.1, 7 (32/64-Bit)
CPU	1 GHz
Memory (RAM)	1 GB (32 Bit)/2GB (64 Bit)
Hard disc space	1 GB
Grafics	DirectX 9 or newer
.NET Version	ID 4.5.1 (included in Windows 8.1/10)

| Measures	
Size of the interface	86 x 42.5 x 20.5 mm
Weight of the interface with USB cable	86 g

Environment	
Operating temperature	-40 °C to 85 °C
Temperature for transport and storage	-40 °C to 100 °C
Relative humidity	15 to 90 %, no condensation

Environment	
Protection class (DIN EN 60529)	IP20
Guidelines fulfilled	Directive 2014/30/EU (EMC): DIN EN 55024:2016-05 DIN EN 55032:2016-02; Directive: 2011/65/EU (RoHS2): DIN EN IEC 63000:2019-05

Dimension drawing of the USB-Connector
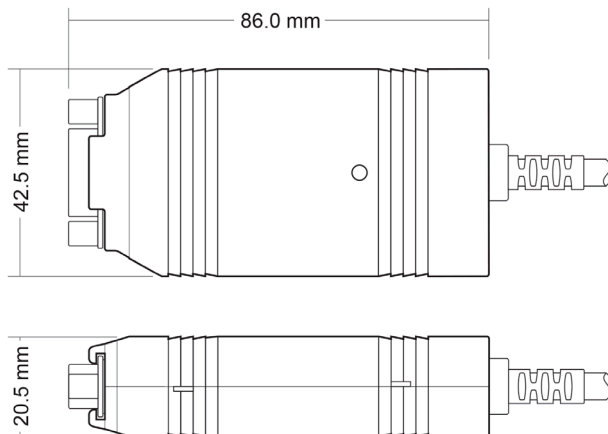
D-Sub-Pin-Assignment
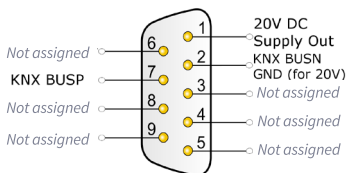
Subject to change without notice

Content changes in this documentation, which serve the technical progress, are made without prior notice. This documentation has been prepared with great care and will be revised at regular intervals. Nevertheless, we cannot guarantee complete accuracy. All known errors are eliminated in new editions. For any indication of errors in this documentation, we are always grateful.

Conformity

Conformity is confirmed by the attached CE label. The considered standards can be found in *Chapter 8 Technical data.*
The complete declaration of conformity can be found on the following page.

Disposal notes

Do not dispose the old device in the household waste!
Observe the EU Directive 2012/19/EU on environmentally friendly disposal of used electrical/electronic equipment.

Waste of electrical and electronic equipment can
▪ contain hazardous substances that are harmful to health and the environment.
▪ contain valuable substances that are to be reused.

Therefore, do not dispose of with household waste.

Waste of electrical and electronic equipment can be returned to public collection points.

EU Declaration of Conformity

PEAKNX

This declaration applies to the following product:

Product name: **USB-Connector**

Item number(s): **PNX-005-A17-00001**

Manufacturer: DOGAWIST Investment GmbH
Otto-Roehm-Strasse 69
64293 Darmstadt
Germany

CE We declare under our sole responsibility that the mentioned product is in conformity with the following directives and the affiliated harmonized standards:

EU Directive 2011/65/EU (RoHS 2) + 2015/863/EU (amended list of restricted substances)
DIN EN IEC 63000:2019-05; VDE 0042-12:2019-05
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances (IEC 63000:2016); German version EN IEC 63000:2018

Electromagnetic Compatibility
• DIN EN 55024:2016-05; VDE0878-24:2016-05
• DIN EN 55032:2016-02; VDE 0878-32:2016-02

Darmstadt, 29. September 2020

Uwe Wilhelm, Managing Director

About PEAKnx

As a manufacturer of innovative hardware and software components, PEAKnx develops products for future-proof building automation. For example, individual front-end panels including visualization, which make all information of an intelligent building available at a central point. Great importance is attached to the longevity of the products and the qualitative interaction of design and functionality.

As the newest division of the PEAK group headquartered in Darmstadt, Germany, PEAKnx can draw from more than 30 years of experience in hardware and software development. Through a broad network of certified partners, PEAKnx also offers the associated services - from consulting to the installation and implementation of automation projects. The goal is to make home and building automation comfortable, cost-saving and future-proof through innovative solutions.

www.peaknx.com