K-BUS® KNX IP Interface

User manual-Ver.1

BNIP-00/00.1

KNX/EIB Intelligent Installation Systems

Contents

1. Summary

The KNX IP Interface is designed for an intelligent building control system, which is used for facilitating communication between the Ethernet network and the KNX system.

The KNX IP Interface connects the EIB/KNX system with the Ethernet network via an Ethernet RJ45 interface in the front，It serves as an interface between KNX installations and IP networks and can configure, parameterize and commission the EIB/KNX installation as well as bus monitor via the LAN using the ETS (ETS3 or later) software.

For operation an additional 30V DC supply is necessary. The bus connection and auxiliary power supply connection are carried out via using EIB bus connection terminals.

The device adopts an Ethernet RJ45 interface to connect with LAN network. The network interface can be operated with a transmission speed of 10/100Mbit/s Auto Sensing.

The IP address of the device can be fixed or can be received from a DHCP server. If you need to remain the IP address static or here no DHCP server on the network, you can assign a fixed IP address to the device via ETS. The application program is preloaded in the factory, *the IP address is fixed, and the port number is set to 3671*. (*Note: the device cannot program itself, but need via other communication interface device to program it.*)

The KNX IP Interface is able to use the Engineering Tool Software ETS (ETS3 or later) with a VD4 file to allocate the physical address and set the parameter. The factory default physical addresses are 15.15.255, and the address can be modified directly via local interface settings of ETS.

The KNX IP Interface is a modular installation device. It can be installed in the distribution board on 35mm mounting rails according to EN 60 715.

This manual provides the technical information about the KNX IP Interface as well as assembly and programming in detail for users, and explains how to use the interface device by the application examples.

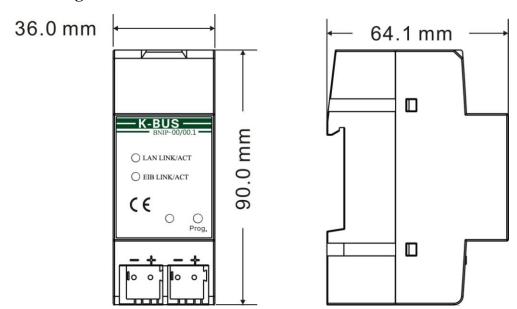# 2. Technical Properties & Dimension and Circuit Diagram

2.1 Technical data

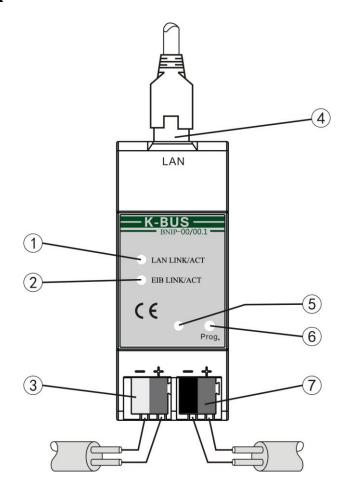| Power supply	Operation voltage	21-30V DC, via the EIB bus
	Current consumption, EIB	<12mA
	Power consumption, EIB	<360mW
	Auxiliary power supply	20-30V DC
	Auxiliary power consumption	<2.5W
Connections	EIB / KNX	Via bus connection terminal (black/red)
	External power supply	Via bus connection terminal (grey/yellow)
	LAN	RJ45 socket for10/100Base-T, IEEE 802.3 network, Auto Sensing
Operating and display	Programming LED and button	For assignment of the physical address
	LED Green flashing	The device running indicator
	LAN LINK LED ON	Network connection indicator
	LAN LINK LED flashing	Telegram traffic between the device and network
	EIB LINK LED ON	KNX bus connection indicator
	EIB LINK LED flashing	Telegram traffic between the device and KNX bus
Temperature	Operation	–5 ℃ ... + 45 ℃
	Storage	–25 ℃ ... + 55 ℃
	Transport	– 25 ℃ ... + 70 ℃
Ambient	Humidity	<93%, except condensation
Design	Modular installation device, on 35mm mounting rail	
Dimensions	90 mm×36 mm×64mm	
Weight	0.1KG	
Housing, colour	Plastic housing, grey	

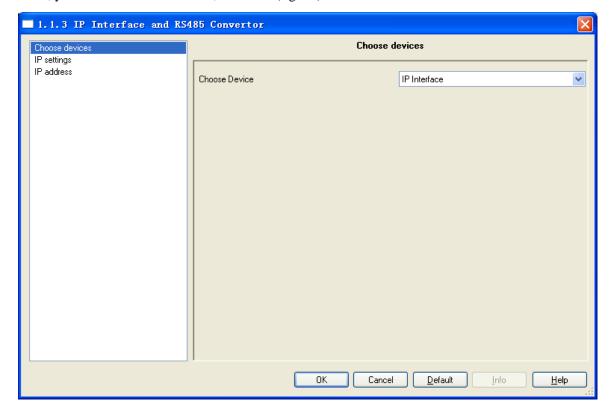| Application program	Max. number of communication objects	Max. number of group address	Max. number of associations
The KNX IP Interface	0	0	0

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2.2 Dimension diagram

2.3 Circuit diagram

① LAN LINK ON, indicate that network connect normally.

  LAN LINK flashing, indicate that telegram traffic is ongoing. Network activity is indicate by the LED

② EIB LINK ON, indicate that KNX bus connect normally.

  EIB LINK flashing, indicate that telegram traffic is ongoing, which is indicate by the LED

③ Auxiliary power supply connection

④ LAN connection,

⑤ Programming LED, LED red light up for assignment of physical address, LED green flashes for indicator of the device running normally.

⑥ Programming button

⑦ EIB /KNX bus connection

3. Parameter setting description in the ETS

3.1 Parameter window "IP settings"

Parameter window "IP setting" is shown in fig. 3.2.

Because IP Interface and RS485 converter use the same product database, so before setting IP Interface parameters, you must select devices first, as follow (fig.3.1):
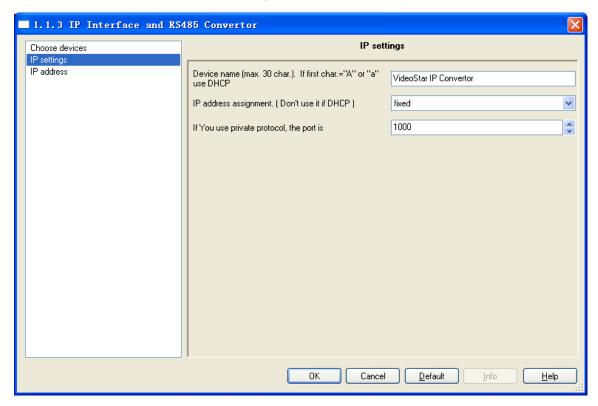
Fig 3.1 Choose device

Fig.3.2 parameter window "IP settings"

Parameter "Device name (Max. 30 Char.), If first char. = 'A' or 'a' use DHCP"

The parameter defines the name of the IP Interface to identify the device on the LAN. Here can entry a maximum of 30 characters in length.

The follow points apply for setting:

If the first character is A or a, the device will work in DHCP mode, and can get an IP address automatically from network. And the character will not disappear in the device's name.

If the first character is F or f, the IP address of the device need set by manual. And the character will not disappear in the device's name.

For example:

If your device name is "Family", and you want to use DHCP mode, Input string "AFamily". If you want to use Fix mode, Input string "FFamily.

If your device name is "Audio", and you want to use DHCP mode, Input string is "AAudio". If you want to use Fix mode, Input string is "FAudio". If you input "Audio", then the device name is "udio", and use DHCP mode.

If your device name is start with another character, you can input the device name directly, with Fix IP address mode, without with the "F" or "f" start. If you want to use DHCP mode, you only add "A" or "a" at ahead of your device name.

Parameter "IP address assignment (Don't use it if DHCP)"

The parameter indicates that the IP address assignment of the Interface is fixed if the DHCP mode is not used.

If the DHCP mode is used, the parameter is invalid.

The fixed IP address can be assigned in the follow parameter window "IP address", see fig. 3.3.

Parameter "If you use private protocol, the port is"

The parameter is invalid for the IP interface. The port number of IP interface is set to 3671.

If you use private protocol, the port number can be set via the parameter, but the device will be used as a convertor, instead of KNX IP Interface. See also the product BTIC-01/00.1. When the device is used as a convertor, its function is same with the BTIC-01/00.1. The parameter defines the port number of the convertor, the port number of client devices must be same with the convertor, or else their communications will fail.

3.2 Parameter window "IP address"

Parameter window "IP address" is shown in fig. 3.3. Here set network connection information, such as IP address, Subnet mask and Default gateway.

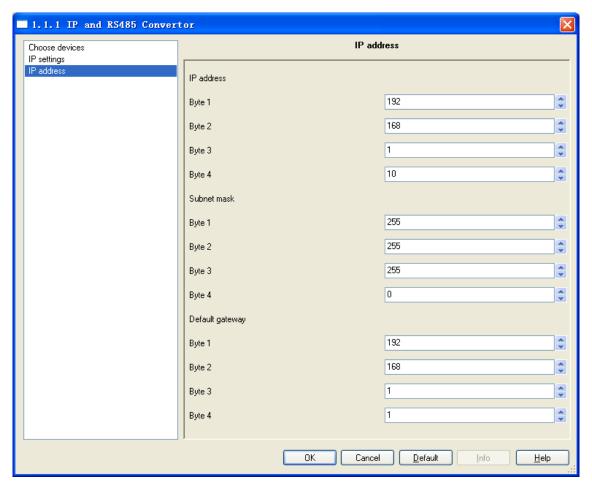If the IP Interface use DHCP mode, the parameters are invalid in the window.

Fig 3.3 parameter window "IP address"

Parameter "IP address"

The parameter defines the IP address of the IP Interface, the IP address is unique on the LAN, to avoid collide. Option:

Byte x: 0...255

The IP address should be entered in a byte-by-byte manner, e.g. as follows for address 192.168.1.10:

Byte1:   192

Byte2:   168

Byte3:   1

Byte4:   10

Parameter "Subnet mask"

The parameter defines the subnet mask of the IP Interface. The subnet mask must be set to reflect the number and structure of the subnet. Option:

Byte x: 0...255

In a small network the subnet mask 255.255.255.0 should be set as follows:

Byte1:   255

Byte2:   255

Byte3:   255

Byte4:   0

Parameter "default gateway"

The parameter defines the default gateway. The default gateway must be the same network segment with the IP address. Option:

Byte x: 0...255

The default gateway 192.168.1.1 should be set as follows:

Byte1:   192

Byte2:   168

Byte3:   1

Byte4:   1