# KNX IP BAOS 770(REG)

Operating and installation manual



# Purpose

The KNX IP BAOS 770 is used as Interface for connecting to KNX/EIB both on telegram level (KNXnet/IP Tunneling) and on data point level (KNX Application Layer). BAOS stands for "Bus Access and Object Server".

It is possible to connect to KNX/EIB-Bus everywhere over LAN. Bus connection over the Internet with KNX IP BAOS 770 is also possible.

There are two ways to assign an IP-address to the KNX IP BAOS 770: get the IP-address from a DHCP-server or configure it with the ETS (as ETS parameter). It requires an external 12 V to 24 V power supply (AC or DC) or can alternatively be powered via Power-over-Ethernet (IEEE 802.3af).

# **ETS** Database

With the ETS, following parameters can be set:

## General:

General			General	
Data points 1 - 5				
Data points 6 - 10		Device and	KNY ID DADE 770	
Data points 11 - 15		Device name	NASTE BAUS 770	
Data points 16 - 20		10 11 1 1	(pucp	
Data points 21 - 25		IP address assignment	UHUP	•
Data points 26 - 30	-		(a) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b	
Data points 31 - 35	- <b>-</b>	Download of data point descriptions	Deactivated	
Data points 36 - 40				
Data points 41 - 45				
Data points 46 - 50				
Data points 51 - 55				
Data points 56 - 60				
Data points 61 - 65				
Data points 66 - 70				
Data points 71 - 75				
Data points 76 - 80				
Data points 81 - 85				
Data points 86 - 90				
Data points 91 - 95				
Data points 96 - 100				
Data points 101 - 105				
Data points 106 - 110				
Data points 111 - 115				
Data points 116 - 120				
Data points 121 - 125				
Data exists 126 . 130	-			

## Device name:

It's possible to assign any name for the KNX IP BAOS 770. The device name should be significant (e.g. Data points 1<sup>st</sup> floor), because the name is used when searching for devices.

#### IP-Address assignment:

*DHCP:* The device can get its IP-address from a DHCP-server automatically. There must be a

DHCP-server in the LAN in order to use this functionality (e.g. this can be a DSL-router with a DHCP-server integrated). *Manually:* In this case, the IP-address, the subnetwork and the IP-address of the gateway have to be entered.

Download of the data point-descriptions:

If this parameter is activated, then descriptions will be written into the device during download.

### Attention:

When changing this parameter, all datapoint-descriptions will be exchanged in the ETS.

**IP-Configuration:** 

General	~		IP configuration 1	
			5742	
IP configuration 2		10 11		
Data points 1 - 5		IP address		
Data points 6 - 10				
Data points 11 - 15		Byte 1	Ű.	
Data points 16 - 20				1.0
Data points 21 - 25		Byte 2	U	
Data points 26 - 30			172	100
Data points 31 - 35		Byte 3	0	
Data points 36 - 40				
Data points 41 - 45		Byte 4	0	
Data points 46 - 50				
Data points 51 - 55				
Data points 56 - 60				
Data points 61 - 65				
Data points 66 - 70				
Data points 71 - 75				
Data points 76 - 80				
Data points 81 - 85				
Data points 86 - 90				
Data points 91 - 95				
Data points 96 - 100				
Data points 101 - 105				
Data points 106 - 110				
Data points 111 - 115				
Data points 116 - 120	-			

#### IP-Address: Enter the IP-Address of the KNX IP BAOS 770 here.

General	*	IP configuration 2	
IP configuration 1			
IP configuration 2	IP subnatuurk mark		
Data points 1 - 5	II JUDIESTICK IIIGER		
Data points 6 - 10	Bite 1	0	
Data points 11 - 15	byter		
Data points 16 - 20	E Piec 2	0	
Data points 21 - 25	byte z		
Data points 26 - 30	Post 2	0	12
Data points 31 - 35	byte 5	0	
Data points 36 - 40			10
Data points 41 - 45	Byte 4	0	
Data points 46 - 50			
Data points 51 - 55	IP gateway address		
Data points 56 - 60			
Data points 61 - 65	Byte 1	0	
Data points 66 - 70			
Data points 71 - 75	Byte 2	0	
Data points 76 - 80			
Data points 81 - 85	Byte 3	0	
Data points 86 - 90			
Data points 91 - 95	Byte 4	0	
Data points 96 - 100			
Data points 101 - 105			
Data points 106 - 110			
Data points 111 - 115	-		
Data minte 116 - 120	12.11		

## IP-Subnetwork:

Enter the subnetwork mask here. The mask helps the device to discover, whether the communication partner is the local network. If the partner is not in the local network, then the device sends the IP telegrams not directly to the partner but to the gateway, which forwards the telegrams to the device.

## IP-Gateway-Address:

Enter the IP-Address of the gateway here. Hint: Leave 0.0.0.0 there, if the KNX IP BAOS 770 ought to be used only in the local LAN.

### Example for IP-Address assignment:

Over a PC the KNX IP BAOS 770 shall be accessed.

IP-Adress of the PC: 192.168.1.30

Subnetwork of the PC: 255.255.0 The KNX IP BAOS 770 is located in the same local LAN therefore it use the same subnetwork mask. Because of the used subnetwork the IP-address assignment is limited, only addresses with format 192.168.1.xx can be assigned the device, xx stands for the range 1-255 (without 30, because already assigned to PC). Be careful not to use one IP-

IP-adress KNX IP BAOS 770:	192.168.1.31
Subnetwork KNX IP BAOS 770:	255.255.255.0

#### Data points:

address more then once.

Up to 250 data points can be parameterized. Each data point gets a group address, in order to send to the bus. More then one group address can be set for one object for receiving.



#### Type of the data point:

For each data point the type can be set. Following data points are available:

1 Bit 2 Bit 3 Bit 4 Bit 5 Bit 6 Bit 7 Bit 1 Byte 2 Byte 3 Byte 4 Byte 6 Byte 8 Byte 10 Byte

#### 14 Byte

#### Description of data point:

For each data point a short description (max. 30 characters) can be entered, in order to check the usage of the data point later, when device is running.

#### Attention:

Only if the parameter "Download of data point description" is activated, the description will be written into the device. If you change the parameter "Download of data point description", all data point descriptions will be exchanged in the ETS.

KNX IP BAOS 770 has 16 bytes of free parameters, which can be readout over Ethernet. The client has to evaluate the bytes.

Data points 131 - 135	~		Parameter 1	
Data points 136 - 140				
Data points 141 - 145		Paramatar hula 1	0	
Data points 146 - 150		· analisis of a l		[*
Data points 151 - 155		Parameter bute 2	0	
Data points 156 - 160		r diditicier byte z		
Data points 161 - 165		Parameter hate 2	0	
Data points 166 - 170		r aranieter byte 5	0	
Data points 171 - 175		December has a	0	
Data points 176 - 180		Parameter byte 4	0	
Data points 181 - 185			0	
Data points 186 - 190		Parameter byte 5	U	
Data points 191 - 195			12	1.0
Data points 196 - 200		Parameter byte 6	U	
Data points 201 - 205				100
Data points 206 - 210		Parameter byte 7	0	
Data points 211 - 215				
Data points 216 - 220		Parameter byte 8	0	
Data points 221 - 225				
Data points 226 - 230	1			
Data points 231 - 235				
Data points 236 - 240				
Data points 241 - 245				
Data points 246 - 250	_			
Parameter 1				
December 2				

#### Parameter Byte:

For each of the 16 bytes a value between 0 and 255 can be entered.

# **ETS Connection Manager**

If the IP-configuration of the KNX IP BAOS 770 is valid, then this device can act as an interface to KNX/EIB. In order to use this function, go to the ETS (version 3.0c or higher), take Extras/Options then the tab communication:

Database	Presentation	Strategy	Communication	Troubleshooting
Select Co	mmunication Ir	iterface:	Configu	ire Interfaces
IP				•
I	est			
Setti	ngs	Prompt wit	nen connectina	
Prot	olem Analysis		8. /	

Click on Configure Interfaces... to open the ETS connection manager.

Create a new connection of type EIBnet/IP. The ETS automatically starts searching for KNXnet/IP devices. All detected devices should be shown. The preferred device has to be selected.

# KNX IP BAOS 770

ETS Connection Manager	X
Configured Connections IP Neue Verbindung Neue_Verbindung Serial PE116 - COM3 USB	Properties       Name:     IP       Lype:     Eibnet/IP       VStandard connection
	Communication parameters Eibnet/IP device: Eescan '(P)' indicates programming mode active Knx8A0S-IP (192.168.1.200) MAC addr.: Name: Knx8A0S-IP
<u>N</u> ew <u>D</u> elete	IP address: 192.168.1.200 Port: 3671 KNXnet/IP Diagnostic Wizard OK Cancel

In order to access the KNX/EIB, the KNX IP BAOS 770 needs a second physical address. The second physical address is only used for bus access and can be adjusted separately: In ETS menu go to Extras/Options and choose Communication. Then choose the already created connection. After a click on Settings... the following dialog is opened:

Jse the following se he local interface. t is important that th correct.	ttings to con ese settings	figure are	OK Cancel
Mask version: ndividual Address:	1.1.120	Is this	address free?

Enter here an unused physical address. The address shall be valid in the line where the interface is installed. A dummy device may be created in the ETS-project to reserve this address.

## Installation and Connection

The KNX IP BAOS 770 is designed for installation on DIN rail with a width of 2 units (36 mm). It has the following display and control elements:



- 1: Connector for external power supply (12 V to 24 V AC or 12 V to 30V DC)
- 2: Connector for KNX/EIB with a bus terminal
- 3: Learn key
- 4: Learn LED (red) 5: LED (green):
  - LED (green):
     Lights up to indicate bus voltage on KNX/EIB
     Flashes to indicate telegram traffic
- 6: LED (green): - Lights up to indicate Ethernet connection
  - Flashes to indicate telegram traffic
- 7: RJ 45 socket for connecting an Ethernet patch cable

An external power supply only needs to be connected if the switch in use does not support Power-over-Ethernet.



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