# KNX Serial BAOS 870 (RS-232, rail mounted)

Serial Interface and ObjectServer for KNX/EIB Bus

Operating and installation manual



# Application

The KNX Serial Interface BAOS 870 serves as a simple integration solution for non-KNX devices. Designed as a RS-232 interface, the KNX Serial BAOS 870 uses the proven FT1.2 protocol (PEI 10) as message format and can thus be used as a programming interface for the ETS. Moreover, the device supports the BAOS protocol for accessing data points. This allows non-KNX devices to be fully integrated into a KNX network via a RS-232 link. For a quick start, free SDKs, a demonstration tool as well as an ETS entry with 250 group objects are available.

Furthermore, individual ETS representations for OEM versions can be created.

# **ETS-Database**

Via ETS the following parameters can be set:

#### Data points:

It's possible to parameterize up to 250 data points. Every data point can be allocated with a group address to send to bus. For receiving, more group addresses can be allocated per object.

Datapoint 1 to 10	*		DPT 01 - Binary - 1 bit	
Datapoint 11 to 20		Type of datapoint 1	DPT 01 - binary - 1 bit	
Datapoint 21 to 30		Description of datapoint 1		
Datapoint 31 to 40				
Datapoint 41 to 50		Type of datapoint 2	DPT 02 - Binary controlled - 2 bits	
Datapoint 51 to 60				
Datapoint 61 to 70		Description of datapoint 2		
Datapoint 71 to 80		Type of datapoint 3	DPT 03 - Dim up/down - 4 bits	
Datapoint 81 to 90		And a second second	L	
Datapoint 91 to 100		Description of datapoint 3		
Datapoint 101 to 110				
Datapoint 111 to 120		Type of datapoint 4	DPT 04 - Character - 1 byte	
Datapoint 121 to 130		Description of datapoint 4		
Datapoint 131 to 140		bescription of datapoint 4		
Datapoint 141 to 150		Type of datapoint 5	DPT 05 - Scaling - 1 byte	
Datapoint 151 to 160				
Datapoint 161 to 170		Description of datapoint 5		
Datapoint 171 to 180		Type of datapoint 6	DPT 06 - Signed value - 1 byte	3
Datapoint 181 to 190		Type of datapoint o	birtes signed table 1 byte	
Datapoint 191 to 200		Description of datapoint 6		
Datapoint 201 to 210				
Datapoint 211 to 220		Type of datapoint 7	DPT 07 - Unsigned value - 2 bytes	
Datapoint 221 to 230	E	Description of datapoint 7		
Datapoint 231 to 240		bescription of datapoint?		
Datapoint 241 to 250		Type of datapoint 8	DPT 08 - Signed value - 2 bytes	
Parameter 1 to 10				
Parameter 11 to 20		Description of datapoint 8		
Parameter 21 to 30		Type of datapoint 9	DPT 09 - Float value - 2 bytes	
Parameter 31 to 40		Type of datapoint 9	DFT 09 - Float value - 2 bytes	
Parameter 41 to 50		Description of datapoint 9		
Parameter 51 to 60				
Parameter 61 to 70		Type of datapoint 10	DPT 10 - Time - 3 bytes	
Parameter 71 to 80		D		
Parameter 81 to 90		Description of datapoint 10		
Parameter 91 to 100				
Parameter 101 to 110				
Parameter 111 to 120				

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Type of data points:

For every data point the type can be set. The following data point types are selectable:

DPT 01 - Binary - 1 bit DPT 02 - Binary controlled - 2 bits DPT 03 - Dim up/down - 4 bits DPT 04 - Character - 1 byte DPT 05 - Scaling - 1 byte DPT 06 - Signed value - 1 byte DPT 07 - Unsigned value - 2 bytes DPT 08 - Signed value - 2 bytes DPT 09 - Float value - 2 bytes DPT 10 - Time - 3 bytes DPT 11 – Date – 3 bytes DPT 12 - Unsigned value - 4 bytes DPT 13 - Signed value - 4 bytes DPT 14 - Float value - 4 bytes DPT 15 - Access data - 4 bytes DPT 17 - Scene - 1 byte DPT 18 - Scene controlled - 1 byte DPT – Unknown – 1 bit DPT - Unknown - 2 bits DPT – Unknown – 4 bits DPT – Unknown – 6 bits DPT - Unknown - 1 byte DPT - Unknown - 2 bytes DPT – Unknown – 3 bytes DPT – Unknown – 4 bytes Additional types for data points 1 to 32: DPT 16 - Character string - 14 bytes DPT - Unknown - 6 bytes DPT - Unknown - 8 bytes DPT - Unknown - 10 bytes DPT - Unknown - 14 bytes

#### Parameter:

KNX Serial BAOS 870 has 250 free programmable bytes, which can be read via UART-Interface. The interpretation is performed by the client.

vice: 1.1.1 KNX BAOS Serial			
Datapoint 1 to 10	Parameter byte 1	1	-
Datapoint 11 to 20	Parameter byte 1	1	
Datapoint 21 to 30	Description of parameter byte 1		
Datapoint 31 to 40			
Datapoint 41 to 50	Parameter byte 2	2	-
Datapoint 51 to 60			
Datapoint 61 to 70	Description of parameter byte 2		
Datapoint 71 to 80			(m)
Datapoint 81 to 90	Parameter byte 3	3	(*) (*)
Datapoint 91 to 100	Description of parameter byte 3		
Datapoint 101 to 110	Description of parameter byte 5		
Datapoint 111 to 120	Parameter byte 4	4	(A)
Datapoint 121 to 130			
Datapoint 131 to 140	Description of parameter byte 4		
Datapoint 141 to 150			
Datapoint 151 to 160	Parameter byte 5	5	
Datapoint 161 to 170			
Datapoint 171 to 180	Description of parameter byte 5		
Datapoint 181 to 190	Parameter byte 6	6	
Datapoint 191 to 200	raioneter byte o	Ŭ	
Datapoint 201 to 210	Description of parameter byte 6		
Datapoint 211 to 220			
Datapoint 221 to 230	Parameter byte 7	7	-
Datapoint 231 to 240			
Datapoint 241 to 250	Description of parameter byte 7		
Parameter 1 to 10	Parameter byte 8	8	(m.
Parameter 11 to 20	Parameter byte o	•	
Parameter 21 to 30	Description of parameter byte 8		
Parameter 31 to 40			
Parameter 41 to 50	Parameter byte 9	9	
Parameter 51 to 60			
Parameter 61 to 70	Description of parameter byte 9		
Parameter 71 to 80		10	(*
Parameter 81 to 90	Parameter byte 10	10	
Parameter 91 to 100	Description of parameter byte 1	1	
Parameter 101 to 110	beschpson of parameter byte b	1	
Parameter 111 to 120			

#### Parameter byte:

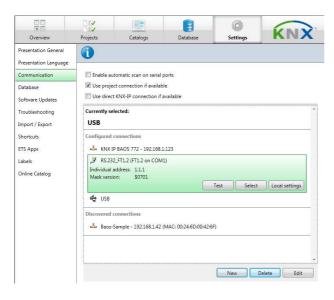
For each one of the 250 bytes a value between 0 and 255 is possible.

#### Description of parameter byte:

For each parameter byte there is a label, which is not downloaded in the device.

## **ETS Connection Manager**

KNX Serial BAOS 870 can also be used as an interface for KNX/EIB. To use this function select "Settings" -> "Communication" in the ETS.



After clicking the button "New", a new connection can be created. The type has to be RS.232 FT1.2.

New .	connection	×
Propert	ties	
Name:	RS.232_FT1.2	
Type:	RS.232 FT1.2	•
	unication parameters Port COM1	
	OK	Cancel

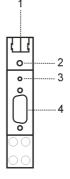
To access the KNX/EIB, the module requires a valid physical address. For this purpose the button "Local settings" at the configured connection has to be clicked. The following window is opened:

ocal interface setting		
Mask version:	\$0701	
Individual Address:	1.1.1	Address free?

Here a free individual address within the connected bus line has to be selected.

## Installation and Connection

The KNX Serial BAOS 870 is designed for installation on DIN rail with a width of 1 unit (18mm). It has the following display and control elements:



- 1: Connector for KNX/EIB with a bus terminal
- 2: Learn key and learn LED (red)
- 3: Signal-LED (green) for KNX-Connection
- 4: Connector for RS-232

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