

**Interface Description
for
SRC65 BACnet MS/TP RS485**

Version E, 25.01.2013

1 Amendmet Index

Version	Date	Description
A	09.09.2009	1. Release
B	26.02.2010	Added example for learn-in procedure
C	27.04.2010	Added EnOcean profile/type code for SR65 LI and SR65 DI
D	21.07.2010	SR04T Profile corrected
E	25.01.2013	Profile EEP 07-09-04 (SR04 CO2) implemented (SRC65 BACnet Firmware 1.4 or higher)

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2 Introduction

The present document describes the functions of the wireless receiver SRC65 BACnet MS/TP-RS485. The device supports the representation of up to 32 EasySens sensors in the BACnet network.

Further information and definitions on the topic BACnet can be obtained under www.bac-eu.org.

3 Description of the Device

3.1 Device Description

Devices can be connected by a twisted-pair cable (120 Ω line resistance). The maximum number of bus users (without use of a bus repeater) is defined by the RS485 transceiver. The protocol used is the international standard BACnet MS/TP. This enables connection to appropriate remote terminals such as an automation station or a building services management system supporting the BACnet MS/TP protocol.

3.2 RS485 Transceiver

The maximum number of bus users (without use of a repeater) is defined by the RS485 transceiver. The transceiver used allows 128 devices per bus segment at maximum.

3.3 Protocol

The standard defines the transmission parameters as 8N1, i.e. 8 data bits, no parity, 1 stop bit. The baud rate is freely selectable (9600, 19200, 38400, 57600, 76800, 115200), and is set by DIP switches. It is also possible to set the BACnet MAC address (bus address) of the device. A different bus address is needed for each device.

3.4 Configuration Tools

BACnet MS/TP wireless receivers are always operated together with other BACnet automation stations or building services management systems such as BACnet operating workstations. All parameter settings are possible through the BACnet network. Tools from the particular manufacturer of an automation station or building services management system are used to start up a BACnet network.

3.5 Configuration Options

By means of a 8-pole DIP switch an address between 1 and 127 can be set (DIP switch 1-7).

A turned-over switch 8 has no influence on the addresses, but leads to a blinking of the Rx-LED. The 4-pole DIP switch is designed for the setting of the baud rate. The binary-coded numbers correspond to the following baud rates:

1	9600
2	19200
3	38400
4	57600
5	76800
6	115200

After the adjustment of one of both DIP switches, a reset of the gateway is made. First, the LEDs RADIO and RX/TX are lighting up for 3 seconds. Thens, the device is initialized again.

Furthermore, the bus terminating resistor of 120 ohm can be connected via a jumper.

For a detailed description of the position and meaning of the jumper, please refer to the data sheet „,produktblatt_src65_bacnet.pdf“.

!! The bus address must be differently adjusted for each device!!

3.6 LEDs

Four LEDs are used for displaying the status information:

ERROR:	The red Error-LED shows the status of the BUS communication. A constant lighting shows, that no valid communication is recognized at the BUS. A blinking LED shows, that a valid communication is recognized but that the device is not integrated in the token circulation. If the communication is valid and the participation in the token circulation is active, the LED is off.
RADIO:	The yellow RADIO-LED is blinking upon every receipt of a valid radio telegram.
RX/TX:	The yellow RX/TX-LED is blinking for 500ms, if the device is addressed directly.
UV:	The UV-LED is designed for the display of operation. In the standard operation, the LED is blinking in a 1s-cyclus.

BACnet Device Profile and BIBBs

The device is operating with the device profile BACnet Application Specific Controller (B-ASC).

The following BIBBs are implemented:

DS-RP-B	Read property
DS-WP-B	Write property
DS-COVU-B	Send data on change of value
DS-WPM-B	Write multiple properties
DM-DDB-B	Device properties
DM-DOB-B	Address information about objects
DM-DCC-B	Communication control

3.7 BACnet Objects

The gateway has various BACnet objects. Four of these objects serve for the basic settings of the device. The others describe the channels, each interpreting a wireless receiver. A channel is described by 12 objects (six analogue inputs, four binary inputs, one binary value, one multistate input).

3.7.1 Description of Objects for Basic Device Settings

Objekt_Name	Objekt Type / Instance	Meaning
Thermokon_SRC_BACnet	Device / 100 (default) + MAC address of address switches	Basic settings of the device, e.g. MAX master.
Offset device ID	Analogue value 1	This value plus the set MAC (0-127) corresponds to the device ID (writeable 0-4194200) after write, reset and new initialize.
EnOcean teach-in	Analogue value 2	The set value selects the next channel to be taught-in, after which it is automatically reset to 0.
COV mode	Multistate value 1	This setting is for COV mode. The following modes are supported: <ul style="list-style-type: none"> - Off - Local broadcast - Global broadcast

Table 3.7.1 Description of Objects for basic device setting

3.7.2 Description of the pro Channel including Objects in non taught-in status

The instance numbers of a channel are always starting at even hundred numbers, e.g. Channel 1 at 100, Channel 2 at 200 up to Channel 32 at 3200

Object_Name	Object Type / Instance	Meaning
Sensor01_DataByte_0	Analogue input 100	Interpreted data of EnOcean data byte 0 with analogue information.
Sensor01_DataByte_1	Analogue input 101	Interpreted data of EnOcean data byte 1 with analogue information.
Sensor01_DataByte_2	Analogue input 102	Interpreted data of EnOcean data byte 2 with analogue information.
Sensor01_DataByte_3	Analogue input 103	Interpreted data of EnOcean data byte 3 with analogue information.
Sensor01_Org_Byte	Analogue input 110	Mapping of EnOcean ORG byte.
Sensor01_Receive_Time	Analogue input 111	Time since last received wireless telegram, COV time for "Sensor Overdue".
Sensor01_Bi1	Binary input 100	Interpreted data of EnOcean data byte with digital information.
Sensor01_Bi2	Binary input 101	Interpreted data of EnOcean data byte with digital information.
Sensor01_Bi3	Binary input 102	Interpreted data of EnOcean data byte with digital information.
Sensor01_Bi4	Binary input 103	Interpreted data of EnOcean data byte with digital information.
Sensor01_ClearSlot	Binary value 100	The present value must be set to 1 to clear the sensor taught into the channel.
Sensor01_Mi0	Multistate input 100	Interpreted data of EnOcean data byte with multiple states/information.

Table 3.7.2 Descriptions of the objects per channel

3.7.3 Description of further BACnet-Features

3.7.3.1 Device object -> MAX-Master property

This property can be written between 0 and 127 and defines up to which address further users are polled on the bus. It is an MS/TP-specific property.

3.7.3.2 Device object-> Object identifier

Each device in a BACnet network requires a unique device ID. The device offers two ways of altering the ID. The device ID is composed of the MAC address, produced by the address DIP switch, and a device ID offset, written by a BACnet object. The default as supplied for this object is 100. Device identifiers from 0 through 4194299 can be set by altering the device address or offset, after which the device is newly started and initialized.

3.7.3.3 Device object-> Device name, description

These two properties are writeable, with a maximum text length of 128 characters. The object name property must also be unique within a BACnet network.

3.7.3.4 SensorXX_ORG_Byte object

Additionally to the ORG byte of the teach-in sensor (in the present value), it shows its EnOcean ID and the EnOcean profile as well as the transmitter type. The ID, profile and type are contained in the appropriate property description.

EnOcean-ID - Profile – Type

Example: Sensor 01 teach-in as SR65Li

Object „Sensor01_Org_Byte->Description“:ORG_Byte_0013D18E-06-01

EnOcean-ID : 0x0013D18E

Profile + Type: 06-01 corresponds to FUNC 06 with Type 01 according to the profile description *EnOcean Equipment Profiles (EEP) V2.0* of July 2009

3.8 Function Description

3.8.1 Learning-in of a Wireless Sensor

To teach-in a wireless sensor, the number of the required channel must be entered in the present value property of the EnOcean teach-in object. The next transmitter to send a teach-in telegram is teached-in. After the teaching-in the present value is reset to 0. The teaching-in is only possible to an unassigned channel.

3.8.2 Delete a Channel

Each channel is allocated to a ClearSlot object. If the present value is set to 1, the previously stored information is rejected and a new wireless sensor can be teached into the channel.

3.8.3 Receiving Time

Each channel is allocated to a Sensorxx_Receive_Time object that detects the time since the last received radio telegram of the teached-in transmitter. The time shown in the present value is incremented by the second and reset to 0 when a telegram is received.

The value in the COV increment property writes the transmit cycle of a COV message for this object. A telegram is generated if the time has elapsed and the sensor is overdue. As supplied the COV increment is 65535, which prevents sending COV messages. Times from 30 to 65535 seconds can be set.

3.8.4 COV-Treating

The functionality can be selected with the multistate value object. Writing the present value property (1-3) selects the COV mode. When COV is active, the data byte objects of a channel that are used (four) are transmitted after a wireless telegram is received. When the time in the Receive_Time object has elapsed, this object is also transmitted as a COV.

4 Transmitters

The following chapter provides an overview of the profiles realized in the receiver as well as its representation in the BACnet network.

Notice: xx shows the corresponding channel in which the transmitter is teached-in.

4.1 RPS-Telegram (Profile Light Switch)

4.1.1 Easyfit-,Easysens-2-channel button, EEP: 05-02-01

Instance	Object Type	Object Name	Function	Present-Value	Default-Value
xx10	ANALOG_INPUT	Sensorxx_ORG_Byte	Display of EnOcean-ID + Profile + Type in the feature <i>Description</i>	ORG-Byte	0
xx02	BINARY_INPUT	Sensorxx_Bi2-I-button-B	I-Button B	Inactive – Not pushed Active - pushed	Inactive
xx03	BINARY_INPUT	Sensorxx_Bi2-O-button-B	O-Button B	Inactive – Not pushed Active - Pushed	Inactive

Table 4.1.1: Object description 2-channel button

4.1.2 Easyfit-, Easysens-4-channel button, EEP: 05-03-01

Instance	Object Type	Object Name	Function	Present-Value	Default-Value
xx10	ANALOG_INPUT	Sensorxx_ORG_Byte	Display of EnOcean-ID + Profile + Type in the feature <i>Description</i>	0	0
xx00	BINARY_INPUT	Sensorxx_Bi0-I-button-A	I-Button A	Inactive - Not pushed Active - Pushed	Inactive
xx01	BINARY_INPUT	Sensorxx_Bi1-O-button-A	O-Button A	Inactive – Not pushed Active - Pushed	Inactive
xx02	BINARY_INPUT	Sensorxx_Bi2-I-button-B	I-Button B	Inactive - Not pushed Active -pushed	Inactive
xx03	BINARY_INPUT	Sensorxx_Bi3-O-button-B	O-Button B	Inactive – Not pushed Active - pushed	Inactive

Tabelle 1.1.2: Object description 4-channel button

4.1.3 Window Handle SRG01, EEP: 05-10-00

Instance	Object Type	Object Name	Function	Present-Value	Default-Value
xx10	ANALOG_INPUT	Sensorxx_ORG_Byte	Description of EnOcean-ID + Profile + Type in the feature <i>Description</i>	0	-
xx02	BINARY_INPUT	Sensorxx_Bi1-O-button-A	Handle up	Inactive - Handle NOT up Active - Handle up	Inactive
xx03	BINARY_INPUT	Sensorxx_Bi2-I-button-B	Handle down	Inactive - Handle NOT up Active - Handle up	Inactive

Tabelle 4.1.3: Object description window handle SRG01

4.2 1BS Telegram

4.2.1 Window Contact SRW01, EEP: 06-00-01

Instance	Object Type	Object Name	Function	Present-Value	Default-Value
xx10	ANALOG_INPUT	Sensorxx_OR G_Byte	Display of EnOcean-ID + Profile + Type in the feature <i>Description</i>	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0- I-button-A	Monitoring of window contact	Inactive – Contact opened (window opened) Active – Contact closed (window closed)	Inactive
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0

Table 4.2.1: Object description window contact SRW01

4.3 4BS Telegram

4.3.1 SR04, EEP: 07-02-05

Instance	Object Type	Object Name	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display Enocean-ID + Profile + Type in the feature <i>Description</i>	-	0	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	Enocean monitoring	Time since last received Enocean- telegram	0	Seconds

Table 4.3.1: Object description SR04

4.3.2 SR65, EEP:07-02-12,-14,-17

The table is valid for the following devices:

SR65 -40°C...+40°C **EEP: 07-02-12**

SR65/SR65 TF -20°C...+60°C **EEP: 07-02-14**

SR65 AKF +10°C...+90°C **EEP: 07-02-17**

SR65 VFG +10°C...+90°C **EEP: 07-02-17**

The Present Value is represented in the measuring range of the corresponding profile:

Instance	Object Type	Object Name	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of Enocean- ID + Profil e+ Type in the feature <i>Description</i>	-	0	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	Enocean monitoring	Time since last received Enocean telegram	0	Seconds

Table 4.3.9: Object description SR65

4.3.3 SR04rH, EEP: 07-04-01

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Rel_ Humidity	Relative Humidity	Current measuring value in the range 0- 100%	50%	%
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Availability_of_ Temperature_ Sensor	Message „Temperature-sensor available “ ¹	-	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ ReceiveTime	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

Table 4.3.10: Object description SR04 rH

¹not implemented at the moment

4.3.4 SR65 Li, EEP: 07-06-01

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Illumination	Illumination range 600-60000Lux	Current measuring value	600Lux	Lux
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_ Illumination	Illumination range 300-30000Lux	Current measuring value	300Lux	Lux
xx03	ANALOG_INPUT	Sensorxx_Data Byte_3_Supply _Voltage	Voltage	Current measuring value	0V	Volt
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Tyep in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Range_ Selection	Display of measuring range selected at the device ¹	-	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Second

Table 4.3.17: Object description SR65-LI

¹ not implemented at the moment

4.3.5 SR-MDS, EEP: 07-08-01

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_ Illumination	Illumination	Current measuring value 0-512Lux	200Lux	Lux
xx03	ANALOG_INPUT	Sensorxx_Data Byte_3_Supply - Voltage	Voltage	Current measuring value	0V	Volt
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature <i>Description</i>	-	-	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Occupancy button	Presence mode	Inactive – unoccupied Active - occupied	Inactive	-
xx01	BINARY_INPUT	Sensorxx_Bi1_ PIR_Signal	Motion sensor	Inactive – no motion Active - motion	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Second

Table 4.3.16: Object description SR-MDS

4.3.6 SR04 PSMS, EEP: 07-10-02

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Set_ Point	Set point	Current measuring value in the range 0- 100%	50%	Percent
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Slide_Switch	Slide switch	Inactive – Position left Active - Position right	Inactive	-
xx00	MULTISTATE_ INPUT	Sensorxx_Mi0_ Turn- Switch_For_Fan _speed	Fan Stages	1 – AUTO 2 – OFF(STAGE0) 3 – STAGE 1 4 – STAGE 2 5 – STAGE 3	OFF	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

Table 4.3.8: Object description SR04 PSMS

4.3.7 SR04 P, EEP: 07-10-03

Instance	Object Type	Object Name	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Set_ Point	Set point	Current measuring value in the range 0- 100%	50%	Percent
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature <i>Description</i>	-	0	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

Table 4.3.2: Object description SR04 P

4.3.8 SR04 PS, EEP: 07-10-04

Instance	Object type	Object	Function	Present-Value	Default-value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Set_ Point	Sollwert	Current measuring value in the range Messwert im Bereich 0-100%	50%	Percent
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile+ Type in the feature <i>Description</i>	-	0	-
xx00	MULTISTATE_ INPUT	Sensorxx_Mi0_ Turn- Switch_For_Fan _speed	Fan stages	1 – AUTO 2 – OFF (STAGE0) 3 – STAGE 1 4 – STAGE 2 5 – STAGE 3	OFF	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last receive EnOcean- telegram	0	Seconds

Table 4.3.5: Object description SR04 PS

4.3.9 SR04 PT, EEP:07-10-05

Instance	Object Type	Object Name	Function	Present-Value	Default-value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Set_ Point	Set point	Current measuring value in the range 0- 100%	50%	Percent
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Push_Button	Button	Inactive – Not pushed Active - Pushed	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean- telegram	0	Seconds

Table 4.3.4: Object description SR04 PT

4.3.10 SR04 PMS, EEP: 07-10-06

Instance	Object type	Object	Function	Present-Value	Default-Value	Default
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Set_ Point	Set point	Aktueller Messwert im Bereich 0-100%	50%	Prozent
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature of <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Slide_Switch	Slide switch	Inactive – Stellung links Active - Stellung rechts	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

Table 4.3.7: Object description SR04 PMS**4.3.11 EnOcean profile: Temperature Sensor and Single Input Contact, EEP: 07-10-0B,**

Instance	Object Type	Object Name	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1	Temperature	Current measuring value	20°C	Degree Celsius
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Push_Button	Button	Inactive – Not pushed Active - Pushed	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

Table 4.3.3: Object description Temperature Sensor and Single Input Contact

4.3.12 SR04 T, EEP: 07-10-0C

Instance	Object Type	Object Name	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1	Temperature	Current measuring value	20°C	Degree Celsius
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Push_Button	Button	Inactive – Not pushed Active - Pushed	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

Table 4.3.3: Object description SR04 T**4.3.13 SR04 PT rH, EEP: 07-10-10**

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Rel_ Humidity	Relative humidity	Current measuring value in the range 0- 100%	50%	%
xx03	ANALOG_INPUT	Sensorxx_Data Byte_3_Set_ Point	Set point	Current measuring value in the range 0- 100%	50%	Percent
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profil e+ Type in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Push_Button	Button	Inactive – Not pushed Active - Pushed	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

Table 2: Object description SR04 PT rH

4.3.14 SR04 PMS rH, EEP: 07-10-11

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Rel_ Humidity	Relative humidity	Current measuring value in the range 0- 100%	50%	%
xx03	ANALOG_INPUT	Sensorxx_Data Byte_3_Set_ Point	Set point	Current measuring value in the range 0- 100%	50%	Percent
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profil + Type in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Slide_Switch	Slide switch	Inactive – position left Active - position right	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Second

Table 4.3.14: Object description SR04 PMS rH**4.3.15 SR04 P rH, EEP: 07-10-12**

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Rel_ Humidity	Relative humidity	Current measuring value in the range 0- 100%	50%	%
xx03	ANALOG_INPUT	Sensorxx_Data Byte_3_Set_ Point	Set point	Current measuring range in the range 0- 100%	50%	Percent
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Typ e in the feature <i>Description</i>	-	-	-
xx11	ANALOG_INPUT	Sensorxx_ ReceiveTime	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

Table 4.3.11: Object description SR04 P rH

4.3.16 SR04 T rH, EEP: 07-10-13

Instance	Object type	Object	Function	Present-Value	Default-value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Rel_ Humidity	Relative Feuchte	Current measuring value in the range 0- 100%	50%	%
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature <i>Description</i>	-	-	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Push_Button	Button	Inactive - Not pushed Active - pushed	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ ReceiveTime	EnOcean monitoring	Time since last received EnOcean telegram	0	Second

Table 4.3.12: Object description SR04 T rH

4.3.17 SR04 MS rH, EEP: 07-10-14

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data Byte_1_ Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data Byte_2_Rel_ Humidity	Relative humidity	Current measuring value in the range 0- 100%	50%	%
xx10	ANALOG_INPUT	Sensorxx_ORG _Byte	Display of EnOcean- ID + Profile + Type in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_ Slide_Switch	Slide switch	Inactive – position left Active - position right	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_ Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Second

Table 4.3.15: Object description SR04 MS rH

4.3.18 SR65 DI, EEP: 07-30-01

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx10	ANALOG_INPUT	Sensorxx_ORG_Byte	Display of EnOcean-ID + Profil + Type in the feature <i>Description</i>	-	0	-
xx00	BINARY_INPUT	Sensorxx_Bi0_Contact	Digital input	Inactive – contact opened Active - contact closed	Inactive	-
xx01	BINARY_INPUT	Sensorxx_Bi1_Battery_voltage	Battery voltages	Inactive – Batterie Low Active - Batterie ok	Inactive	-
xx11	ANALOG_INPUT	Sensorxx_Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

Table 4.3.18: Object description SR65 Di

4.3.19 SR04 CO2, EEP: 07-09-04

Instance	Object type	Object	Function	Present-Value	Default-Value	Unit
xx01	ANALOG_INPUT	Sensorxx_Data_Byte_1_Temperature	Temperature	Current measuring value	20°C	Degree Celsius
xx02	ANALOG_INPUT	Sensorxx_Data_Byte_2_CO2	CO2	Current measuring value	500 ppm CO2	ppm
xx03	ANALOG_INPUT	Sensorxx_Data_Byte_3_Rel_Humidity *	Relative humidity *	Current measuring value in the range 0-100% *	50% *	% *
xx10	ANALOG_INPUT	Sensorxx_ORG_Byte	Display of EnOcean-ID + Profil + Type in the feature <i>Description</i>	-	0	-
xx11	ANALOG_INPUT	Sensorxx_Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Seconds

*) Only available on devices with an integrated rel. humidity sensor.

Table 3: Object description SR04 PT rH

4.4 Non-interpreted Transmitter

The representation is only made in the analogue input objects. The values are transmitted as raw data without units, as received on the EnOcean side.

Instance	Object type	Object	Function	Present-Value	Default-Wert	Unit
xx00	ANALOG_INPUT	Sensorxx_DataByte_0	Raw data Data byte0	-	-	-
xx01	ANALOG_INPUT	Sensorxx_DataByte_1	Raw data Data byte1	-	-	-
xx02	ANALOG_INPUT	Sensorxx_DataByte_2	Raw data Data byte2	-	-	-
xx03	ANALOG_INPUT	Sensorxx_DataByte_3	Raw data Data byte3	-	-	-
xx10	ANALOG_INPUT	Sensorxx_ORG_Byte	Display of EnOcean-ID + Profil + Type in the feature <i>Description</i>	-	-	-
xx11	ANALOG_INPUT	Sensorxx_Receive_Time	EnOcean monitoring	Time since last received EnOcean telegram	0	Second

Table 4.4.1: Object description: Non-interpreted transmitter

Mantissas are not considered.

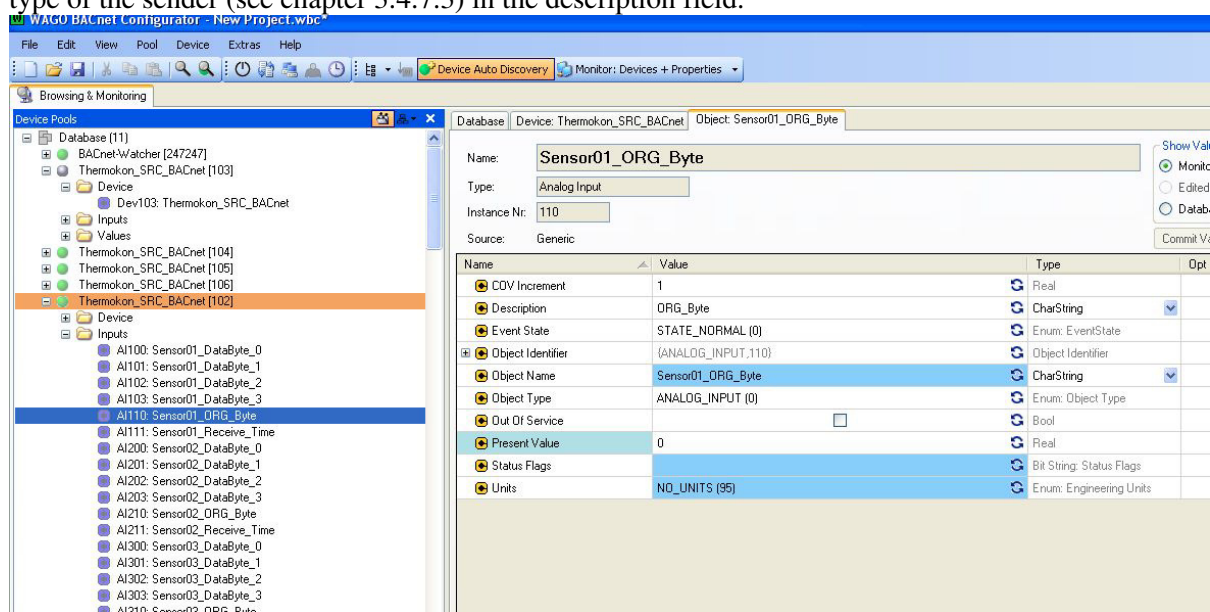
4.5 Annex

4.5.1 Learn-in sequence

The example refers to channel 1 of the SRC65_BACnet receiver. An EnOcean push button is learned in! The WAGO-BACnet configurator is used as configuration tool, which is available for free download at the WAGO homepage.

Only for information:

Check if the slot is clear. You can see it in the description field. Only the string “ORG_BYTE” should appear. If a sender is already learned-in, you will see additional information like EnOcean-ID, profile and type of the sender (see chapter 3.4.7.3) in the description field.



The screenshot shows the WAGO BACnet Configurator software interface. The left pane displays a tree structure of the project database, with the 'Sensor01_ORG_Byte' object selected. The right pane shows the configuration details for this object, including its name, type, instance number, and source. Below these details is a table of properties and their values.

Name	Value	Type	Opt
COV Increment	1	Real	
Description	ORG_Byte	CharString	
Event State	STATE_NORMAL (0)	Enum: EventState	
Object Identifier	(ANALOG_INPUT,110)	Object Identifier	
Object Name	Sensor01_ORG_Byte	CharString	
Object Type	ANALOG_INPUT (0)	Enum: Object Type	
Out Of Service	<input type="checkbox"/>	Bool	
Present Value	0	Real	
Status Flags		Bit String: Status Flags	
Units	NO_UNITS (95)	Enum: Engineering Units	

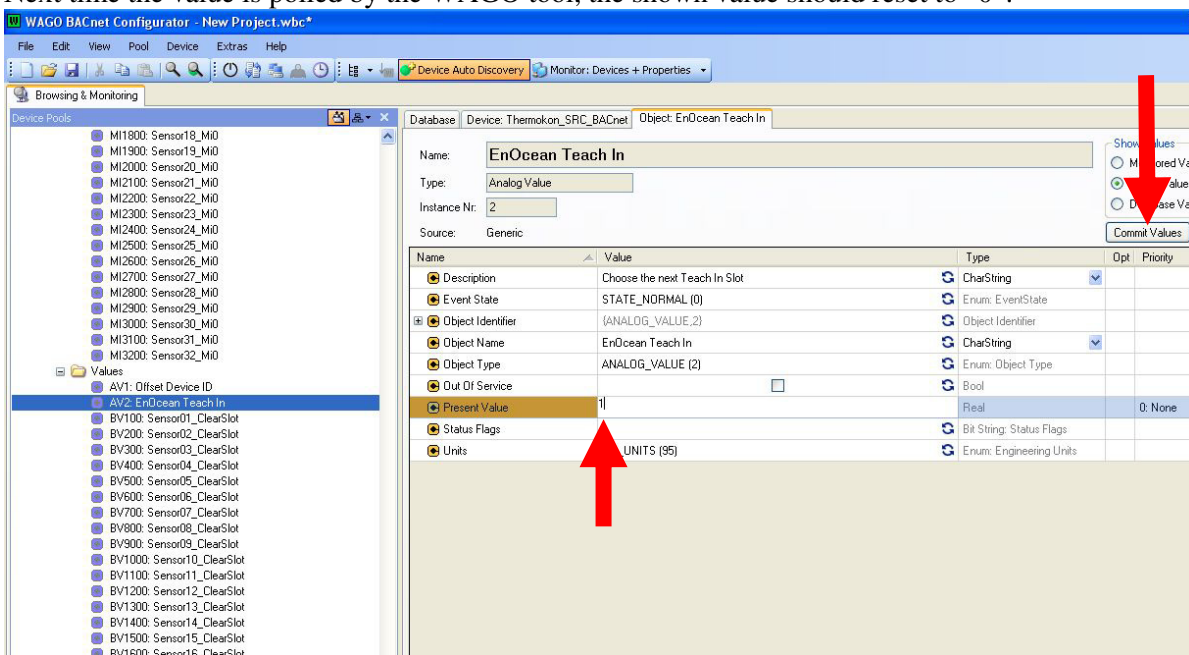
Example1

Learn-in procedure for a Easysens-wireless switch on channel 1

Goto AV2: Enocean Teach-In

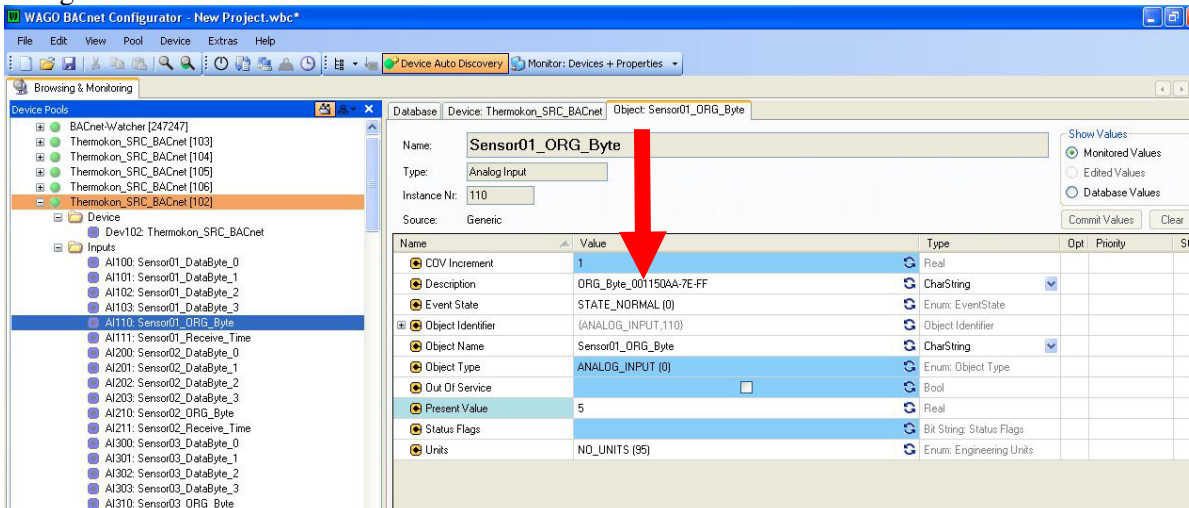
Enter value „1“ in field “Present Value”. Press button “Commit Values”. Now, the receiver on channel 1 is set in the learning mode and is waiting for a teach-in telegram of a transmitter. Now, push the EnOcean button. An EasySense wireless switch is transmitting a learning telegram with every button actuation. As for other transmitters such as the room operating panels an extra learning-in button is existing to activate a teach-in telegram. Please learn more in the corresponding data sheets of our products which shall be read, accordingly.

Next time the value is polled by the WAGO tool, the shown value should reset to “0”.



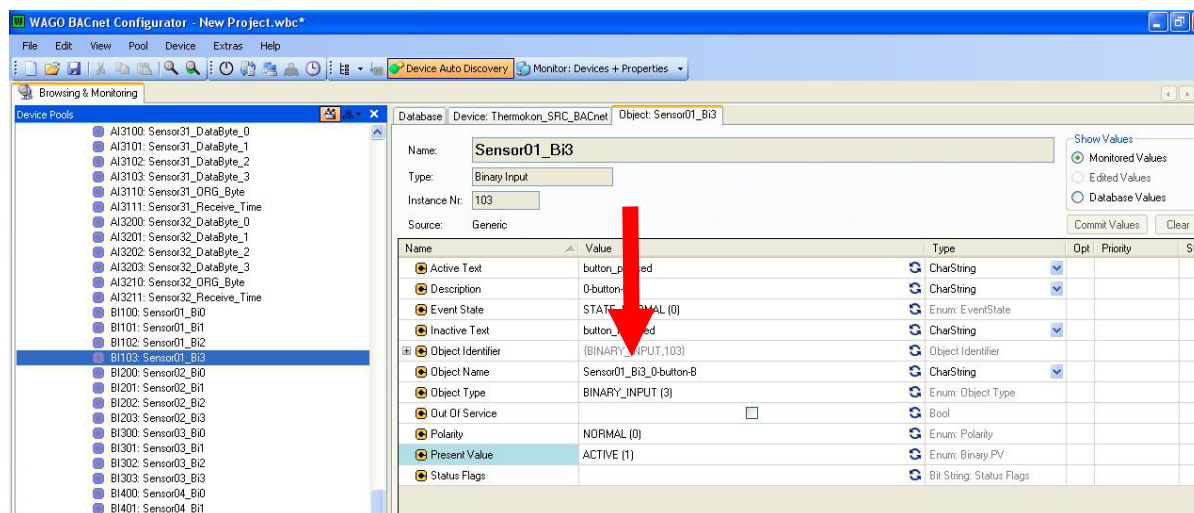
Only for information:

Go to the Sensor01_ORG_Byte property (AI110 for channel 1) and check if the description field has changed



Depending on the sensor teached-in, the object names of the objects used in the BACnet network are adapted according to the profile of the transmitters. As for the wireless EasySens switch, these are the object names of the binary inputs 0-3 (e.g. object name “Sensor01_Bi3” has changed to “Sensor01_Bi3-buttonB”). The object names of the corresponding EnOcean senders can be obtained in the corresponding tables (see section 4).

If you press a button, you can see that the corresponding Present Value will be set to ACTIVE. Remember: The WAGO BACnet configurator only polls the values. Thus, keep the button pressed until the value is polled.



Example 2

Clear channel 1

Step1

Every channel has a Binary Value Object to reset the channel (BV100, BV200,... BV3200).

Go to the corresponding object "Sensorxx_ClearSlot". Enter "ACTIVE" to Present Value and push the Commit Values button. After the next poll cycle, the value should be reset to "INACTIVE".

