

# Library Description



## **Enocean\_06.lib** **WAGO EnOcean Profile Library**

Version 1.0.2

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## Number Notation

Table 1: Number Notation

Number Code	Example	Comment
Decimal	100	Normal notation
Hexadecimal	0x64	C notation
Binary	'100' '0110.0100'	In quotation marks, nibble separated by a period

## Font Conventions

Table 2: Font Conventions

Font Type	Explanation
<i>italic</i>	Names of paths and files are displayed in italics, e.g.: <i>C:\Programs\WAGO-I/O-CHECK</i>
<b>Menu</b>	Menu options are displayed in bold, e.g.,: <b>Save</b>
>	A “greater than” symbol between two names denotes the selection of a menu option, e.g.: <b>File &gt; New</b>
<b>Input</b>	Descriptions of input or optional fields are displayed in bold, e.g.: <b>Start of measurement range</b>
“Value”	Input or selection values are displayed in quotation marks, e.g.: Enter the value “4mA” under <b>Start of measurement range</b> .
<b>[Button]</b>	Button labels within the dialogs are bold and enclosed in square brackets, e.g.: <b>[Input]</b>
<b>[Key]</b>	Key labels on the keyboard are displayed in bold and enclosed in square brackets, e.g.: <b>[F5]</b>

## Symbols

### DANGER



#### Warning against personal injury!

Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

### DANGER



#### Do not work on components while energized!

Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

### WARNING



#### Warning against personal injury!

Indicates a moderate-risk, potentially hazardous situation which, if not avoided, could result in death or serious injury.

### CAUTION



#### Warning against personal injury!

Indicates a low-risk, potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

### NOTICE



#### Warning: Damage to property!

Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

### ESD



#### Warning: Damage to property caused by electrostatic discharge (ESD)!

Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

### Note



#### Important note!

Indicates a potential malfunction but one which will not result in damage to property if not avoided.

### Information



#### Additional information

Refers to additional information which is not an integral part of this documentation (e.g., the Internet).

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The use of the product described in this document is exclusively geared to specialists having qualifications in PLC programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the appropriate current standards.

Moreover, the persons cited here must also be familiar with all of the products cited in this document, along with the operating instructions. They must also be capable of correctly predicting any hazards which may not arise until the products are combined.

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This documentation describes the use of various hardware and software components in specific example applications. The components may represent products or parts of products from different manufacturers. The respective operating instructions from the manufacturers apply exclusively with regard to intended and safe use of the products. The manufacturers of the respective products are solely responsible for the contents of these instructions.

The sample applications described in this documentation represent concepts, that is, technically feasible applications. Whether these concepts can actually be implemented depends on various guidelines. For example, different versions of the hardware or software components can require different handling than that described here. Therefore, the descriptions contained in this documentation do not form the basis for assertion of a certain product characteristic.

Responsibility for safe use of a specific software or hardware configuration lies with the party that produces or operates the configuration. This also applies when one of the concepts described in this document was used for implementation of the configuration.

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# 1 Communication Block

## 1.1 Ext. EnOcean Modul, 750-940

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbEnOcean_750_940_RS485		
Type:	Function	Function block	X    Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bCOM_PORT_NR	BYTE	Number of the serial interface used Default setting= 2 1 -> Internal service interface 2 -> 1st connected serial I/O module 3 -> 2nd connected serial I/O module	
xReset	BOOL	Rising edge: Master module is reset.	
Output Parameter:	Data Type:	Comment:	
bFeedback	BYTE	Response byte (see appendix)	
dwStationAddress	DWORD	Gateway station address	
Graphical Illustration:			
<div><div>FbEnOcean_750_940_RS485</div><div><div>bPortEnocean</div><div>bCOM_PORT_NR</div><div>xReset</div><div>bFeedback</div><div>dwStationAddress</div></div></div>			
Function Description:			
<p>The function block sets up a link to the Thermokon STC65-RS485 EVC Gateway. This function block may be used only once per installed serial I/O module.</p> <p>The “<b>bPortEnocean</b>” input serves to synchronize this module with the other EnOcean EEP function blocks.</p> <p>To address the function block to the proper RS-485 I/O module, the corresponding number (e.g., “2” for COM2) must be entered as a constant at the “<b>bCOM_PORT_NR</b>” input.</p> <p>The fieldbus controller detects and assigns the port numbers of the connected serial I/O modules independently from the left beginning with COM2. The service interface on the controller is always COM1.</p> <p>The master module can be reinitialized by operating the “<b>xReset</b>” input. The module must be initialized if the Gateway is changed or the station address has to be</p>			



determined anew.

Any errors will be displayed at the “**bFeedback**” output.

The master module queries the “**dwStationAddress**” station address at program start. The query is repeated until a station address is determined.

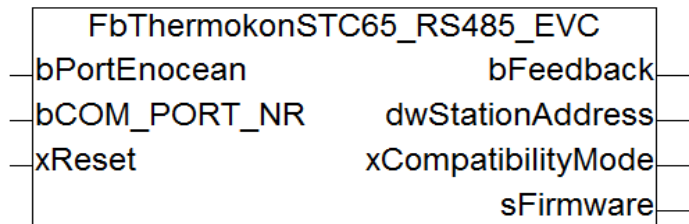
**Note:**

The RS-485 I/O module (750-652) should be used as the interface. The function block configures the I/O module with the following parameters:

Baud rate:	115200
Data bits:	8
Stop bits:	1
Parity:	Even
Duplex mode:	Half duplex

## 1.2 Thermokon STC65-RS-485 EVC via 75x-652 Serial I/O Module

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbThermokonSTC65_RS485_EVC		
Type:	Function	Function block	X   Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bCOM_PORT_NR	BYTE	Number of the serial interface used Default setting= 2 1 -> Internal service interface 2 -> 1st connected serial I/O module 3 -> 2nd connected serial I/O module	
xReset	BOOL	Rising edge: Master module is reset.	
Output Parameter:	Data Type:	Comment:	
bFeedback	BYTE	Response byte (see appendix)	
dwStationAddress	DWORD	Gateway station address	
xCompatibilityMode	BOOL	TRUE: Compatibility mode activated	
sFirmware	STRING(10)	Software version of the Gateway	
Graphical Illustration:			

**Function Description:**

The function block sets up a link to the Thermokon STC65-RS485 EVC Gateway. This function block may be used only once per installed serial I/O module.

The **“bPortEnocean”** input serves to synchronize this module with the other EnOcean EEP function blocks.

To address the function block to the proper RS-485 I/O module, the corresponding number (e.g., “2” for COM2) must be entered as a constant at the **“bCOM\_PORT\_NR”** input.

The fieldbus controller detects and assigns the port numbers of the connected serial I/O modules independently from the left beginning with COM2. The service interface on the controller is always COM1.

The master module can be reinitialized by operating the **“xReset”** input. The module must be initialized if the Gateway is changed or the station address has to be determined anew.

Any errors will be displayed at the **“bFeedback”** output.

The master module queries the **“dwStationAddress”** station address at program start. The query is repeated until a station address is determined.

The **“xCompatibilityMode”** output indicates the Gateway mode setting. With Gateway firmware 3.0.2 and above the compatibility mode can be activated by switching the DIP switch.

In compatibility mode the bus communication is adapted to the earlier firmware version 2.x.x. In this operating mode, no VLD/MSR or SMART ACK telegrams can be received or sent. The reception strength (iRSSI Signal) cannot be evaluated in this operating mode either.

The software status of the Thermokon Gateway is indicated at the **“sFirmware”** output.

**Note:**

The RS-485 I/O module (750-652) should be used as the interface. The function block configures the I/O module with the following parameters:

Baud rate:	9600
Data bits:	8
Stop bits:	1
Parity:	Even
Duplex mode:	Half duplex

## 1.3 Advanced Configuration for Thermokon STC65-RS-485 EVC

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbThermokonSTC65_RS485_EVC_Config	
Type:		Function	Function block <b>X</b>   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
typConfig_STC65		typConfig_STC65	
.xFilterMode		BOOL	Activates/deactivates the filter mode
.xRepeatMode		BOOL	Activates/deactivates the telegram repeating mode
.xOptionalData		BOOL	Activates/deactivates the optional data mode (e.g. RSSI)
Graphical Illustration:			
<div><div>FbThermokonSTC65_RS485_EVC_Config</div><div><div>bPortEnocean</div><div>typConfig_STC65</div></div></div>			
Function Description:			
<p>The function block writes advanced configuration parameters to the Thermokon STC65-RS485 EVC Gateway.</p> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>The input <b>“typConfig_STC65”</b> contains the parameters for the gateway. For further information about the parameters, please see the gateway documentation.</p> <p>The filter mode can be set active by the parameter <b>“xFilterMode”</b>.</p> <p>The telegram repeating mode can be set active by the parameter <b>“xRepeatMode”</b>.</p> <p>The optinal data mode, e.g. for RSSI, can be set active by the parameter <b>“xOptionalData”</b>.</p>			
<b>Note:</b>			
<p>The advanced configuration is supported completely from firmware 3.0.2 of the Thermokon-gateway. The software status is indicated at the output of the communication function block.</p>			

## 1.4 EnOcean Radio Receiver, 750-642

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbEnocean_642		
Type:	Function	Function block	X Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bModule_750_642	BYTE	Number of the EnOcean I/O module used Default setting = 1	
Output Parameter:	Data Type:	Comment:	
bFeedback	BYTE	Response byte (see appendix)	
Graphical Illustration:			
<div><div>FbEnocean_642</div><div><div>bPortEnocean</div><div>bModule_750_642</div><div>bFeedback</div></div></div>			
Function Description:			
<p>The function block can be used for communication with the EnOcean radio receiver module (750-642). The “<b>bPortEnocean</b>” input serves to synchronize this module with the other EnOcean EEP function blocks. This module may be used only once per installed I/O module.</p> <p>To address the function block to the desired EnOcean I/O module, the corresponding number must be entered as a constant at the “<b>bModule_750_642</b>” input.</p> <p>Any errors will be displayed at the “<b>bFeedback</b>” output.</p>			

## 1.5 EnOcean Radio Receiver, 750-642, IPC

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbEnocean_642_IPC	
Type:		Function	Function block X Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
In_Data		ARRAY [0..3] OF BYTE	Input data array of the EnOcean radio receiver (750-642)
Input/Output Parameter:		Data Type:	Comment:
Out_Data		ARRAY [0..3] OF BYTE	Output data array of the EnOcean radio receiver (750-642)
Output Parameter:		Data Type:	Comment:
bFeedback		BYTE	Response byte (see appendix)
Graphical Illustration:			
<div><div>FbEnocean_642_IPC</div><div><div>bPortEnocean</div><div>bFeedback</div><div>In_Data</div><div>Out_Data ▸</div></div></div>			
Function Description:			
<p>The function block can be used for communication with the EnOcean radio receiver module (750-642) on all programmable fieldbus controllers.</p> <p>The “<b>bPortEnocean</b>” input serves to synchronize this module with the other EnOcean EEP function blocks. This module may be used only once per installed I/O module. The inputs “<b>In_Data</b>” and “<b>Out_Data</b>” contain the input and output data arrays for the data of the Enocean radio receiver module. The variables at these inputs must be linked to the corresponding hardware address. The address depends on the position at which the I/O module is installed.</p> <p><b>Example:</b></p> <p>In_Data = Input <b>AT %IB0</b> : ARRAY [0..3] OF BYTE;</p> <p>Out_Data = Output <b>AT %QB0</b> : ARRAY [0..3] OF BYTE;</p> <p>Any errors will be displayed at the “<b>bFeedback</b>” output</p>			

## 2 4BS Telegram

### 2.1 A5-02-xx: Temperature sensor

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA502xx_TemperatureSensor		
Type:	Function	Function block	X Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rTemperature	REAL	Measured temperature [°C]	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA502xx_TemperatureSensor</div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>rTemperature</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
The function block outputs the measured value of a device with the following application profiles (EEP): <ul style="list-style-type: none"><li>A5-02 “bTYPE”</li><li>07-02 “bTYPE”</li></ul>			
The function block is synchronized with the communication module via the “bPortEnocean” input (see section 1).			



The “**bTYPE**” input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the “**dwID**” input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The “**tTimeOut**” input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value ( $t = 0$  sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “**iRSSI**” output.

The “**xValid**” output specifies whether the values indicated at the output are valid.

The measured temperature is output in °C at the “**rTemperature**” output.

## 2.2 A5-04-xx: Temperature and Humidity Sensor

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA504xx_TemperatureHumiditySensor	
Type:	Function	Function block	X    Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rTemperature	REAL	Measured temperature [°C]	
rRelativeHumidity	REAL	Measured humidity [%]	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA504xx_TemperatureHumiditySensor</div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>rTemperature</div><div>rRelativeHumidity</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured value of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>A5-04 “bTYPE”</li><li>07-04 “bTYPE”</li></ul> <p>The function block is synchronized with the communication module via the “bPortEnocean” input (see section 1).</p> <p>The “bTYPE” input corresponds to the device type (TYPE) and must be input</p>			

according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output.

The **“xValid”** output specifies whether the values indicated at the output are valid.

The measured temperature is output in °C at the **“rTemperature”** output.

The measured humidity is output in % at the **“rRelativeHumidity”** output.

## 2.3 A5-06-xx: Light Intensity Sensor

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA506xx_LightSensor	
Type:	Function	Function block	X    Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rIllumination	REAL	Brightness value [lx]	
rSupplyVoltage	REAL	Voltage supply [V] Value range = 0 V ... 5.1 V	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA506xx_LightSensor</div><div><div>bPortEnocean</div><div>rIllumination</div><div>bTYPE</div><div>rSupplyVoltage</div><div>dwID</div><div>xValid</div><div>tTimeOut</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured value of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>A5-06 “bTYPE”</li><li>07-06 “bTYPE”</li></ul> <p>The function block is synchronized with the communication module via the “bPortEnocean” input (see section 1).</p>			

The **“bTYPE”** input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value ( $t = 0$  sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The **“rIllumination”** output displays the measured light intensity for the selected measurement range. Jumper plugs can be used, for example, to set the sensor measurement range.

The charging or supply voltage of the energy storage in V is output at the **“rSupplyVoltage”** output.

## 2.4 A5-07-xx: Presence Detector

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA507xx_OccupancySensor	
Type:	Function	Function block	X    Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
xPIR	BOOL	Indicates the presence of a person within the measurement range of the sensor	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA507xx_OccupancySensor</div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>xPIR</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
The function block outputs the measured value of a device with the following application profiles (EEP): <ul style="list-style-type: none"><li>A5-07 “bTYPE”</li><li>07-07 “bTYPE”</li></ul> The function block is synchronized with the communication module via the “bPortEnocean” input (see section 1).			



The **“bTYPE”** input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value ( $t = 0$  sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The **“xPIR”** output indicates whether a person is within the detection range of the sensor.

## 2.5 A5-08-xx: Light Intensity Sensors, Temperature Sensors and Presence Detectors

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA508xx_LightTemperatureOccupancySensor		
Type:	Function	Function block <b>X</b>	Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rIllumination	REAL	Brightness value [lx] Value range depends on TYPE	
rTemperature	REAL	Measured temperature [°C]	
xPIR	BOOL	Indicates the presence of a person within the measurement range of the sensor	
xOccupancyButton	BOOL	Presence button	
rSupplyVoltage	REAL	Supply or charging voltage [V] Value range: 0 V ... 5.1 V	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA508xx_LightTemperatureOccupancySensor</div><div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>rIllumination</div><div>rTemperature</div><div>xPIR</div><div>xOccupancyButton</div><div>rSupplyVoltage</div><div>xValid</div><div>iRSSI</div></div></div></div>			

--

**Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-08 “*bTYPE*”
- 07-08 “*bTYPE*”

The function block is synchronized with the communication module via the “*bPortEnOcean*” input (see section 1).

The “*bTYPE*” input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the “*dwID*” input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The “*tTimeout*” input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value ( $t = 0$  sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “*iRSSI*” output. The “*xValid*” output specifies whether the values indicated at the output are valid.

The “*rLuxValue*” output indicates the measured brightness value in lx.

The measured temperature is output in °C at the “*rTemperature*” output.

The “*xPIR*” output indicates whether motion has been detected within the detection range of the sensor.

The “*xOccupancyButton*” output indicates the state of the presence button.

The charging or supply voltage of the energy storage in volts is output at the “*rSupplyVoltage*” output.

## 2.6 A5-09-04: CO2 Gas Sensor

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA50904_CO2_GasSensor		
Type:	Function	Function block	X Program
Name of library:	EnOcean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnOcean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rRelativeHumidity	REAL	Measured humidity [%]	
rConcentration	REAL	Gas concentration [ppm]	
rTemperature	REAL	Measured temperature [°C]	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA50904_CO2_GasSensor</div><div><div>bPortEnOcean</div><div>dwID</div><div>tTimeOut</div></div><div><div>rRelativeHumidity</div><div>rConcentration</div><div>rTemperature</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>• A5-09-04</li><li>• 07-09-04</li></ul> <p>The function block is synchronized with the communication module via the “<b>bPortEnOcean</b>” input (see section 1).</p>			

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value ( $t = 0$  sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The measured humidity is output in % at the **“rRelativeHumidity”** output.

The measured gas concentration is output in ppm at the **“rConcentration”** output.

The measured temperature is output in °C at the **“rTemperature”** output.



## 2.7 A5-09-05: VOC Gas Sensor

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA50905_VOC_GasSensor	
Type:		Function	Function block <b>X</b> Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
dwID		DWORD	ID number of the device
tTimeout		TIME	Maximum interval between two telegrams Default setting = t#60 m
Output Parameter:		Data Type:	Comment:
rVOC_Concentration		REAL	VOC concentration [ppb] Value range=0 ppb ... 65535 ppb
bVOC_ID		BYTE	VOC ID number
xValid		BOOL	Indication of whether the telegram is valid
iRSSI		INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)
Graphical Illustration:			
<div><div>FbA50905_VOC_GasSensor</div><div><div>bPortEnocean</div><div>rVOC_Concentration</div><div>dwID</div><div>bVOC_ID</div><div>tTimeOut</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured value of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>• A5-09-05</li><li>• 07-09-05</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>The received data is processed by the function block provided that the number entered at the <b>“dwID”</b> input is identical to the sensor ID number included in the</p>			

telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The measured VOC concentration is output in ppb at the **“rVOC\_Concentration”** output.

The VOC type is determined by the VOC ID number **“bVOC\_ID”**.

## 2.8 A5-09-06: Radon Gas Sensor

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA50906_RadonGasSensor	
Type:	Function	Function block	X    Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
wRadonActivity	WORD	Radon activity [Bq/m3] Value range=0 Bq/m³ ... 1023 Bq/m³	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA50906_RadonGasSensor</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>wRadonActivity</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>• A5-09-06</li><li>• 07-09-06</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>The received data is processed by the function block provided that the number entered at the <b>“dwID”</b> input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.</p>			

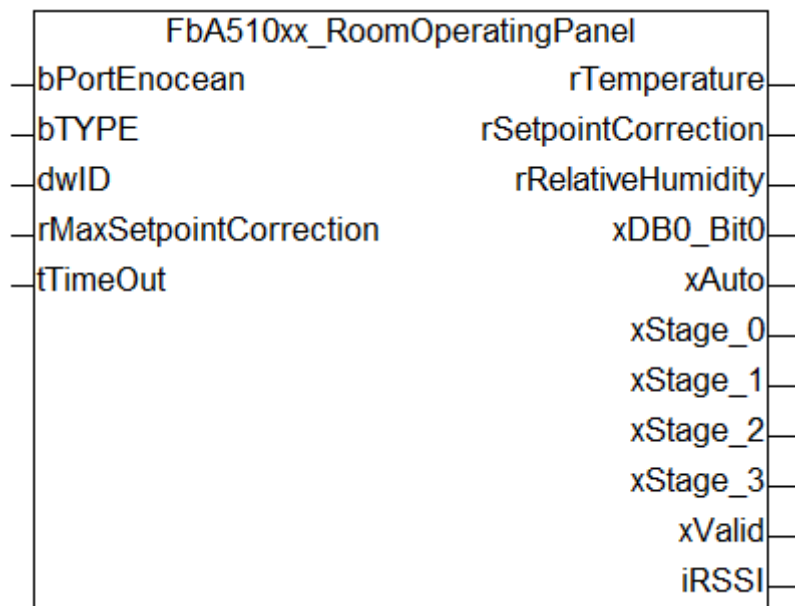
The “**tTimeOut**” input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value ( $t = 0$  sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “**iRSSI**” output. The “**xValid**” output specifies whether the values indicated at the output are valid.

The measured radon activity is output in  $\text{Bq/m}^3$  at the “**wRadonActivity**” output.

## 2.9 A5-10-xx: Room Operating Panel

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA510xx_RoomOperatingPanel		
Type:	Function	Function block	X Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rTemperature	REAL	Indication of room temperature [°C]	
rSetpointCorrection	REAL	Current setpoint correction of the room operating panel [°C]	
rRelativeHumidity	REAL	Relative humidity [%]	
xDB0_Bit0	BOOL	Presence / slider / contact state	
xAuto	BOOL	Rotary switch position Default value = TRUE	
xStage_0	BOOL	Rotary switch / fan stage 0	
xStage_1	BOOL	Rotary switch / fan stage 1	
xStage_2	BOOL	Rotary switch / fan stage 2	
xStage_3	BOOL	Rotary switch / fan stage 3	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-10 “bTYPE”
- 07-10 “bTYPE”

The function block is synchronized with the communication module via the “bPortEnOcean” input (see section 1).

The “bTYPE” input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the “dwID” input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The maximum setpoint correction is specified at the “rMaxSetpointCorrection” output.

The “tTimeOut” input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “iRSSI” output. The “xValid” output specifies whether the values indicated at the output are valid.

The measured temperature is output in °C at the “rTemperature” output.

The setpoint correction setting ( $\pm x$  °C) is indicated at the “rSetpointCorrection” output.

The measured humidity is output in % at the “rRelativeHumidity” output.

Depending on the device type used, the “xDB0\_Bit0” output responds as follows:

- The “xDB0\_Bit0” is set to FALSE if the presence button of the room operating panel is activated.



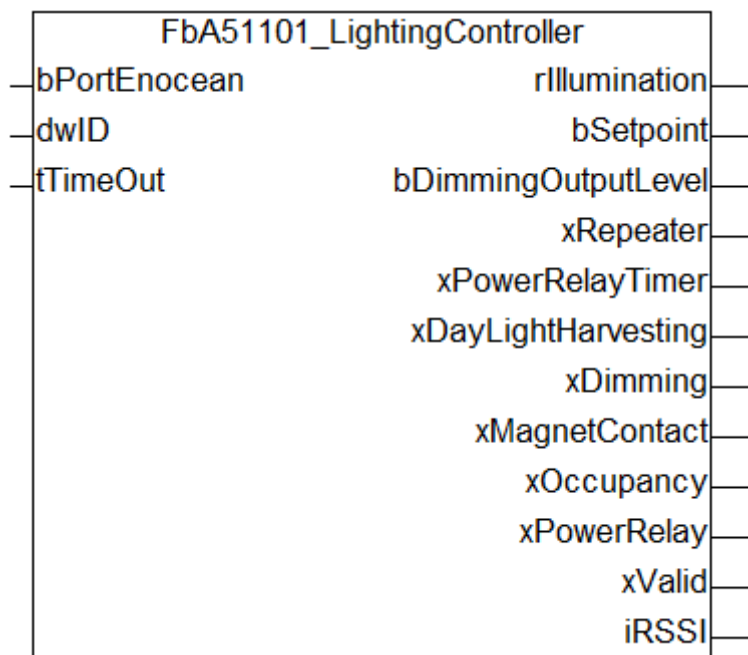
- If the slider is set to “Position O”, “Day” or “On”, the **“xDB0\_Bit0”** output is set to TRUE.
- If the contact is open, TRUE is output at the **“xDB0\_Bit0”** output.

The **“xAuto”** and **“xStage\_0”** outputs up to **“xStage\_3”** indicate the set ventilation level of the room operating panel.

Depending on the device type selected, not all outputs of the block are used.

## 2.10 A5-11-01: Lighting Controller

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA51101_LightingController		
Type:	Function	Function block	X   Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rIllumination	REAL	Brightness value in lux [lx] Value range: 0 lx ... 510 lx	
bSetPoint	BYTE	Setpoint (brightness value) Value range: 0 ... 255	
bDimmingOutputLevel	BYTE	Dimming level Value range: 0 ... 255	
xRepeater	BOOL	TRUE -> The repeater enabled	
xPowerRelayTimer	BOOL	TRUE -> Power relay time enabled	
xDayLightHarvesting	BOOL	TRUE -> Daylight harvesting enabled	
xDimming	BOOL	TRUE -> Dimmer load enabled	
xMagnetContact	BOOL	TRUE -> Magnet contact is closed.	
xOccupancy	BOOL	TRUE -> Room is occupied.	
xPowerRelay	BOOL	TRUE -> Power relay enabled	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-11-01
- 07-11-01

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The measured luminance is output in lx at the **“rIllumination”** output.

The luminance setpoint set is indicated at the **“bSetPoint”** output.

The dimming value is indicated at the **“bDimmingOutputLevel”** output.

The **“xRepeater”** output is TRUE when a repeater is enabled.

If a power relay timer is ON, the **“xPowerRelayTimer”** output is set to TRUE. If daylight harvesting is activated, the **“xDayLightHarvesting”** output is set to TRUE.

The **“xDimming”** output is TRUE when there is a dimmer load. If the magnet contact is closed, TRUE is output at the **“xMagnetContact”** output.

The **“xOccupancy”** output indicates if the room is occupied.

The “**xPowerRelay**” output indicates that the power relay is enabled.

## 2.11 A5-12-xx: Automated Meter Reading (AMR)

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA512xx_AutomatedMeterReading	
Type:	Function	Function block	X Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rValue	REAL	Current measured value Value range and unit depend on the device type.	
xDataType	BOOL	FALSE -> “rValue” is a cumulative value TRUE -> “rValue” is the current value	
bInfo	BYTE	Tariff / metering channel number	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (–90 dBm ... –45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA512xx_AutomatedMeterReading</div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>rValue</div><div>xDataType</div><div>bInfo</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
The function block outputs the measured values of a device with the following application profiles (EEP):			

- A5-12 “**bTYPE**”
- 07-11 “**bTYPE**”

The function block is synchronized with the communication module via the “**bPortEnOcean**” input (see section 1).

The “**bTYPE**” input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the “**dwID**” input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The “**tTimeout**” input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “**iRSSI**” output.

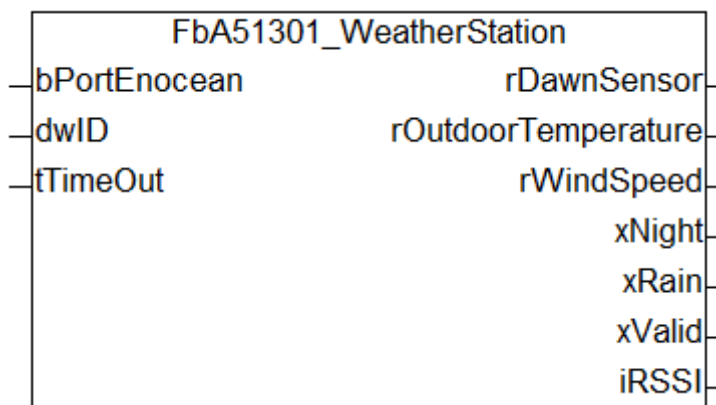
The “**xValid**” output specifies whether the values indicated at the output are valid.

The current measured value is indicated at the “**rValue**” output. If the “**rValue**” is a cumulative value, FALSE is indicated at the “**xDataType**” output. Otherwise, the “**xDataType**” output is TRUE if the “**rValue**” output is the current value.

If “**bTYPE**” = 16#00, then the “**blnfos**” output corresponds to the metering channel number. Otherwise, the “**blnfos**” output indicates the current tariff.

## 2.12 A5-13-01: Weather Station

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA51301_WeatherStation		
Type:	Function	Function block	X   Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rDawnSensor	REAL	Twilight sensor Value range: 0 lx ... 999 lx	
rOutdoorTemperature	REAL	Measured outdoor temperature of the temperature sensor [°C] Value range: -40 °C ... +80 °C	
rWindSpeed	REAL	Measured wind speed [m/s] Value range: 0 m/s ... 70 m/s	
xNight	BOOL	TRUE -> Night FALSE -> Day	
xRain	BOOL	TRUE -> Rain FALSE -> No rain	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-13-01
- 07-13-01

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The brightness value of the twilight sensor is output at the **“rDawnSensor”** output.

The measured outdoor temperature is indicated in °C at the **“rOutdoorTemperature”** output.

The **“rWindSpeed”** shows the wind speed in m/s.

At night the **“xNight”** output is set to TRUE.

If the precipitation sensor detects rain, the **“xRain”** signal is set to TRUE.



## 2.13 A5-13-02: Sun Intensity in the Northern Hemisphere

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA51302_SunIntensityNorthernHemisphere	
Type:		Function	Function block <b>X</b>   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
dwID		DWORD	ID number of the device
tTimeout		TIME	Maximum interval between two telegrams Default setting = t#60 m
Output Parameter:		Data Type:	Comment:
rSunWest		REAL	Brightness value (West) Value range: 0 klx ... 150 klx
rSunSouth		REAL	Brightness value (South) Value range: 0 klx ... 150 klx
rSunEast		REAL	Brightness value (East) Value range: 0 klx ... 150 klx
xValid		BOOL	Indication of whether the telegram is valid
iRSSI		INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)
Graphical Illustration:			
<div><div>FbA51302_SunIntensityNorthernHemisphere</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>rSunWest</div><div>rSunSouth</div><div>rSunEast</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
The function block outputs the measured values of a device with the following application profiles (EEP):			
<ul style="list-style-type: none"><li>A5-13-02</li></ul>			

- 07-13-02

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The directional brightness values are indicated at the **“rSunWest”**, **“rSunSouth”** and **“rSunEast”** outputs.

## 2.14 A5-13-03: Calendar Time Switch

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA51303_DateExchange	
Type:		Function	Function block <b>X</b>   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:		Data Type:	Comment:
bDay	BYTE	Day Value range = 1 – 31%	
bMonth	BYTE	Month Value range = 1 – 12%	
wYear	WORD	Year Value range: 2000 ... 2099	
xSource	BOOL	Signal source TRUE = GPS / DCF77 FALSE = Real Time Clock	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (–90 dBm ... –45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA51303_DateExchange</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>bDay</div><div>bMonth</div><div>wYear</div><div>xSource</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-13-03
- 07-13-03

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

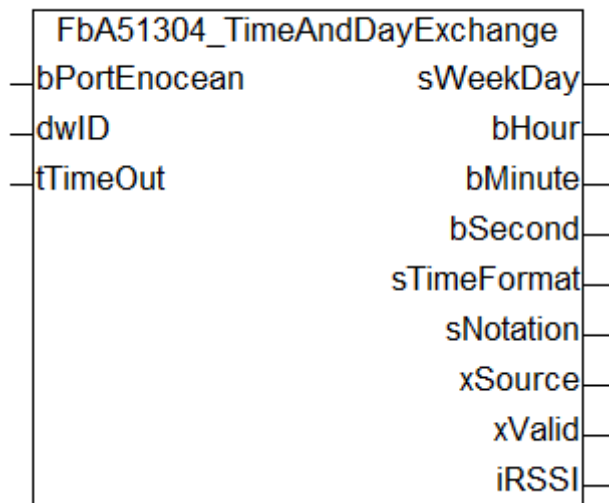
The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The **“xSource”** output indicates from which signal source the data was received.

The date received is output at the **“bDay”**, **“bMonth”** and **“wYear”** outputs.

## 2.15 A5-13-04: Week Time Switch

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA51304_TimeAndDayExchange		
Type:	Function	Function block	X   Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
sWeekDay	STRING	Day of week Value range: "Monday"... "Sunday"	
bHour	BYTE	Hour Value range: 0 ... 23	
bMinute	BYTE	Minute Value range: 0 ... 59	
bSecond	BYTE	Seconds Value range: 0 ... 59	
sTimeFormat	STRING	Time format (12-HRS / 24-HRS)	
sNotation	STRING	Time notation (AM / PM)	
xSource	BOOL	Signal source TRUE   = GPS/DCF77 FALSE = Real Time Clock	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-13-04
- 07-13-04

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeout”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The time is output at the **“sWeekDay”, “bHour”, “bMinute”** and **“bSecond”** outputs.

The time format use is indicated at the **“sTimeFormat”** output. The **“sNotation”** output indicates the current time notation.

The **“xSource”** output indicates from which signal source the date was received.

## 2.16 A5-13-05: Position of the Sun

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA51305_DirectionExchange	
Type:		Function	Function block <b>X</b> Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:		Data Type:	Comment:
rElevation	REAL	Elevation (0° = Horizon) Value range: -90° ... +90°	
rAzimut	REAL	Azimuth (0° = North) Value range: 0° ... +359°	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA51305_DirectionExchange</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>rElevation</div><div>rAzimut</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
The function block outputs the measured values of a device with the following application profiles (EEP):			
<ul style="list-style-type: none"><li>• A5-13-05</li><li>• 07-13-05</li></ul>			
The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).			

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The position of the sun is indicated by the **“rElevation”** and **“rAzimut”** outputs.



## 2.17 A5-13-06: Positional Data

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA51306_GeographicPositionExchange	
Type:		Function	Function block <b>X</b>   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:		Data Type:	Comment:
rLatitude	REAL	Latitude Value range: -90° ... +90°	
rLongitude	REAL	Longitude Value range: -180° ... +180°	
xValid	BOOL	Indication of whether the telegram is valid.	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA51306_GeographicPositionExchange</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>rLatitude</div><div>rLongitude</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
The function block outputs the measured values of a device with the following application profiles (EEP):			
<ul style="list-style-type: none"><li>A5-13-06</li><li>07-13-06</li></ul>			
The function block is synchronized with the communication module via the			

**“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

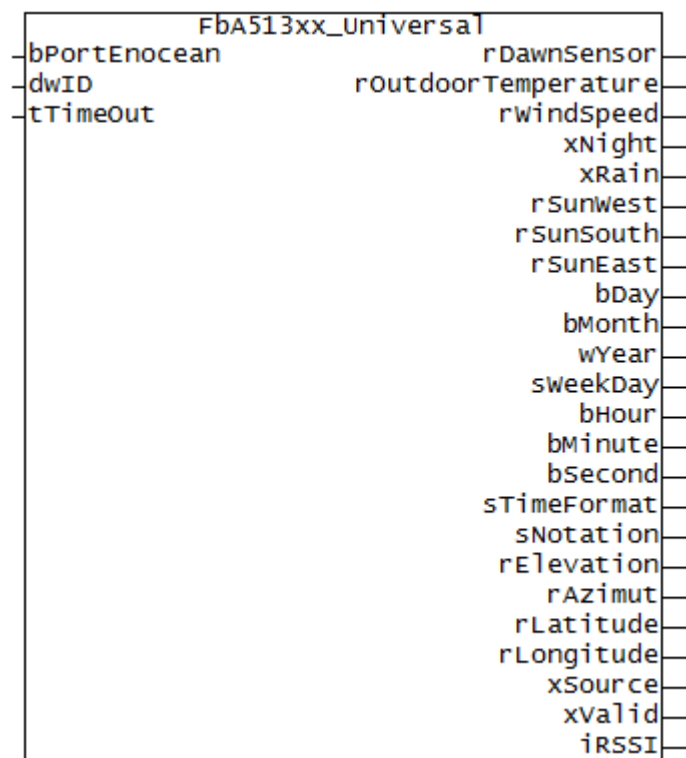
The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The position is output at the **“rLatitude”** and **“rLongitude”** outputs.

## 2.18 A5-13-xx: A5-13-Universal

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA51306_GeographicPositionExchange		
Type:	Function	Function block	X    Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rDawnSensor	REAL	Twilight sensor Value range: 0 lx ... 999 lx	
rOutdoorTemperature	REAL	Measured outdoor temperature of the temperature sensor [°C] Value range: -40 °C ... +80 °C	
rWindSpeed	REAL	Measured wind speed [m/s] Value range: 0 m/s ... 70 m/s	
xNight	BOOL	TRUE -> Night FALSE -> Day	
xRain	BOOL	TRUE -> Rain FALSE -> No rain	
rSunWest	REAL	Brightness value (West) Value range: 0 klx ... 150 klx	
rSunSouth	REAL	Brightness value (South) Value range: 0 klx ... 150 klx	
rSunEast	REAL	Brightness value (East) Value range: 0 klx ... 150 klx	
bDay	BYTE	Day Value range = 1 – 31%	
bMonth	BYTE	Month Value range = 1 – 12%	
wYear	WORD	Year Value range: 2000 ... 2099	
sWeekDay	STRING	Day of week Value range: “Monday”... “Sunday”	
bHour	BYTE	Hour Value range: 0 ... 23	

bMinute	BYTE	Minute Value range: 0 ... 59
bSecond	BYTE	Seconds Value range: 0 ... 59
sTimeFormat	STRING	Time format (12-HRS / 24-HRS)
sNotation	STRING	Time notation (AM / PM)
rElevation	REAL	Elevation (0° = Horizon) Value range: -90° ... +90°
rAzimut	REAL	Azimuth (0° = North) Value range: 0° ... +359°
rLatitude	REAL	Latitude Value range: -90° ... +90°
rLongitude	REAL	Longitude Value range: -180° ... +180°
xSource	BOOL	Signal source TRUE = GPS / DCF77 FALSE = Real Time Clock
xValid	BOOL	Indication of whether the telegram is valid
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)

**Graphical Illustration:**

#### Function Description:

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-13-01 – A5-13-06
- 07-13-01 – 07-13-06

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The brightness value of the twilight sensor is output at the **“rDawnSensor”** output.

The measured outdoor temperature is indicated in °C at the **“rOutdoorTemperature”** output.

The **“rWindSpeed”** shows the wind speed in m/s.

At night the **“xNight”** output is set to TRUE.

If the precipitation sensor detects rain, the **“xRain”** signal is set to TRUE.

The directional brightness values are indicated at the **“rSunWest”**, **“rSunSouth”** and **“rSunEast”** outputs.

The date received is output at the **“bDay”**, **“bMonth”** and **“wYear”** outputs.

The time is output at the **“sWeekDay”**, **“bHour”**, **“bMinute”** and **“bSecond”** outputs.

The time format use is indicated at the **“sTimeFormat”** output. The **“sNotation”** output indicates the current time notation.

The position of the sun is indicated by the **“rElevation”** and **“rAzimut”** outputs.

The position is output at the **“rLatitude”** and **“rLongitude”** outputs.

The **“xSource”** output indicates from which signal source the date was received.

The **“xValid”** output specifies whether the values indicated at the output are valid. The reception strength is indicated at the **“iRSSI”** output.

## 2.19 A5-14-01 - A5-14-04: Window/Door Single Input

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA514xx_WindowDoor_SingleInputContact	
Type:		Function	Function block <b>X</b>   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
bTYPE		BYTE	Device type (TYPE) = 01 - 04
dwID		DWORD	ID number of the device
tTimeout		TIME	Maximum interval between two telegrams Default setting = t#60 m
Output Parameter:		Data Type:	Comment:
xClosed		BOOL	Window/door closed
xOpen		BOOL	Window/door open
rSupplyVoltage		REAL	Voltage supply [V] Value range = 0 V ... 5 V
xVibration		BOOL	The sensor picks up a vibration
rIllumination		REAL	The measured illuminance on the sensor
xValid		BOOL	Indication of whether the telegram is valid.
iRSSI		INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)
Graphical Illustration:			
<div><div>FBA514XX_WINDOWDOOR_SINGLEINPUTCONTACT</div><div><div><div>bPortEnocean : BYTE</div><div>bTYPE : BYTE</div><div>dwID : DWORD</div><div>tTimeOut : TIME</div></div><div><div>xClosed : BOOL</div><div>xOpen : BOOL</div><div>rSupplyVoltage : REAL</div><div>xVibration : BOOL</div><div>rIllumination : REAL</div><div>xValid : BOOL</div><div>iRSSI : INT</div></div></div></div>			

#### Function Description:

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-14-„bTYPE“
- 07-14-„bTYPE“

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The position is output at the **“xClosed”** and **“xOpen”** outputs.

The charging or supply voltage of the energy storage in volts is output at the **“rSupplyVoltage”** output.

If it is supported by the sensor, then the illuminance is output at the **“rIllumination”** output and a vibration of the sensor is output at the **“xVibration”** output.

## 2.20 A5-14-09: Window/door sensor

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA51409_Window_DoorSensor	
Type:	Function	Function block	X   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
xClosed	BOOL	Window/door closed	
xTilt	BOOL	Window/door tilted	
xOpen	BOOL	Window/door open	
rSupplyVoltage	REAL	Voltage supply [V] Value range = 0 V ... 5 V	
xValid	BOOL	Indication of whether the telegram is valid.	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA51409_Window_DoorSensor</div><div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeout</div></div><div><div>xClosed</div><div>xTilt</div><div>xOpen</div><div>rSupplyVoltage</div><div>xValid</div><div>iRSSI</div></div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>A5-14-09</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p>			



The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

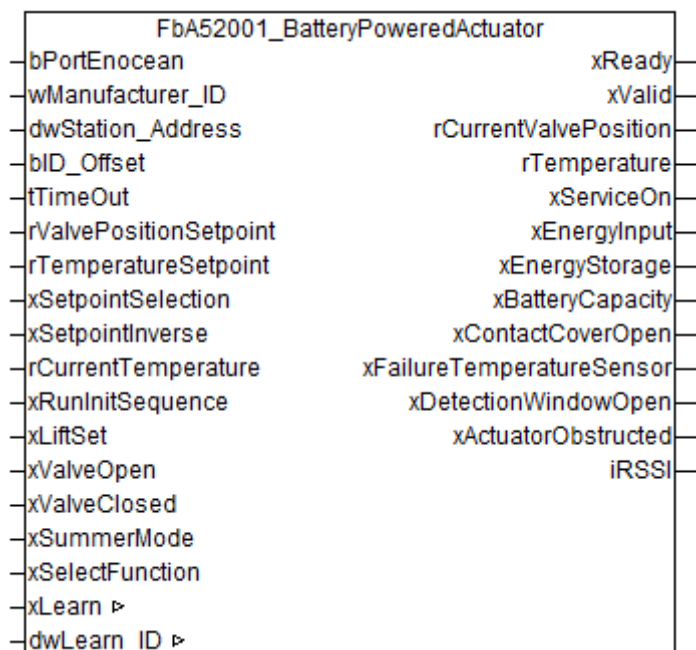
The position is output at the **“xClosed”**, **“xTilt”** and **“xOpen”** outputs.

The charging or supply voltage of the energy storage in volts is output at the **“rSupplyVoltage”** output.

## 2.21 A5-20-01: Battery-powered Actuator

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA52001_BatteryPoweredActuator		
Type:	Function	Function block	X   Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
wManufacturer_ID	WORD	Manufacturer ID number Default setting = 16#00A	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range: 1 ... 127 Default setting = 1	
tTimeout	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
rValvePositionSetpoint	REAL	Valve position setpoint. Value range: 0 % ... 100 %	
rTemperatureSetpoint	REAL	Temperature setpoint. Value range: 0 °C ... +40 °C	
xSetpointSelection	BOOL	FALSE -> Valve position is sent. TRUE -> Temperature setpoint is sent.	
xSetpointInverse	BOOL	TRUE -> Valve position is sent as an inverse value, or Selection of heating / cooling mode.	
rCurrentTemperature	REAL	Actual temperature. Value range: 0 °C ... +40 °C Default setting = 20 °C	
xRunIntSequence	BOOL	Adjustment to the nearest endpoint	
xLiftSet	BOOL	Execute adjustment.	
xValveOpen	BOOL	TRUE -> Open valve.	
xValveClosed	BOOL	TRUE -> Close valve.	
xSummerMode	BOOL	TRUE -> Set summer mode to increase the service life of the battery.	
xSelectFunction	BOOL	TRUE -> "Service on" enabled FALSE -> "RCU" enabled	
Input/Output Parameter:	Data Type:	Comment:	
xLearn	BOOL	Activate Learn mode.	
dwLearn_ID	DWORD	Actuator transmitter ID	

Output Parameter:	Data Type:	Comment:
xReady	BOOL	Communication status
rCurrentValvePosition	REAL	Current valve position Value range: 0 % ... 100 %
rTemperature	REAL	Temperature measured by the actuator Value range: 0 °C ... +40 °C
xServiceOn	BOOL	TRUE -> "Service on" enabled
xEnergyInput	BOOL	Enable energy input.
xEnergyStorage	BOOL	Energy storage sufficient
xBatteryCapacity	BOOL	TRUE -> Battery condition OK FALSE -> Switch battery condition.
xContactCoverOpen	BOOL	TRUE -> Cover of the actuator open
xFailureTemperatureSensor	BOOL	TRUE -> Temperature sensor defective or the measured value falls outside the measurement range.
xDetectionWindowOpen	BOOL	TRUE -> Window open FALSE -> Window closed
xActuatorObstructed	BOOL	Error message. Possible errors: Actuator not installed correctly, travel distance too small, no end position detected, waiting for button press after initial installation, the actuator is blocked.
xValid	BOOL	Indication of whether the telegram is valid
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP) and sends commands:

- A5-20-01
- 07-20-01

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

**Setting the Sender ID**

The manufacturer ID number is set at the **“wManufacturer\_ID”** input.

For bidirectional communication, the function block and actuator must be “introduced” to one another as radio communication partner devices. Therefore, the actuator and function block must have their own unique ID numbers. The ID number of an actuator is assigned by the manufacturer. However, the unique ID number of the function block is defined as the so-called sender ID.

The sender ID for the function block is calculated by adding the **“bID\_Offset”** and **“dwStation\_Address”** inputs. The Gateway station address must be entered as a constant at the **“dwStation\_Address”** input. The **“bID\_Offset”** input determines the offset to be applied to this station address. The sender ID must be unique for each instance of the function block.

The **“tTimeOut”** input can optionally be used to monitor whether the actuator sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

**Commissioning**

The function block and the actuator must be “introduced” to one another as radio

communication partner devices at the beginning of commissioning. The function block must be set to the learning mode by setting the **“xLearn”** input.

After this, press the button on the actuator. The actuator then transmits a radio telegram that is received by the function block. The actuator ID that is received is indicated at the **“dwLearn\_ID”** input and stored. The **“xLearn”** variable is reset when the function block ID has been successfully received.

**Note:**

- The variable at the **“dwIDRead”** input should be declared as RETAIN PERSISTENT.
- The send/receive interval for the radio communication partner devices is set to approx. 10 minutes. As a result, any changes in values are displayed with a delay.

To communicate with the STC65-RS-485 EVC Gateway, the device address must be set to 0 (default value) via the DIP switch.

**Description of the Inputs**

If the **“xSetpointSelection”** is set to TRUE, then the **“rTemperatureSetpoint”** temperature setpoint value is transmitted to the actuator. Otherwise, the **“rValvePositionSetpoint”** setpoint position of the actuator is transmitted.

By setting the signal at the **“xSetpointInverse”** input, the setpoint inverse of the valve position or the “Cooling” operating mode is activated.

The room temperature can be prepared for transmission to the actuator via the **“rCurrentTemperature”** input.

To make an adjustment, the **“xLiftSet”** input signal must be set. Adjustment to the nearest endpoint can be triggered by the **“xRunInitSequence”** input.

The valve is opened when the **“xValveOpen”** input is set to TRUE. The valve is closed when the **“xValveClosed”** input is set to TRUE.

The power save mode can be activated when the actuator is not needed, prolonging the life of the battery. To accomplish this, set the **“xSummerMode”** input to TRUE.

The **“xSelectFunction”** output serves to enable the “Service on” function.

**Description of the Outputs**

The **“rCurrentValvePosition”** output indicates the current position of the actuator. This value is updated only within the send/receive interval. The **“rTemperature”** output indicates the value for the internal temperature sensor.

Each communication process between the radio communication partner devices is indicated by a falling edge at the **“xReady”** output. This output can be linked with a counter, for example, to determine the number of telegrams that are exchanged. The following status information is provided by the actuator:

**“xService on”:**

“Service on” mode is enabled.

**“xEnergyInput”:**

Energy input is enabled.

**“xEnergyStorage”:**

The energy storage is sufficient.

**“xBatteryCapacity”:**

If the output is set to “Signal FALSE”, the batteries must be replaced.

**“xContactCoverOpen”:**

The output signals when the actuator cover is open.

This function is not available for all types of devices, however.

**“xFailureTemperatureSensor”:**

If the value for the internal temperature sensor is outside the measurement

range, a sensor error is indicated.

This function is not available for all types of devices, however.

**“xDetectionWindowOpen”:**

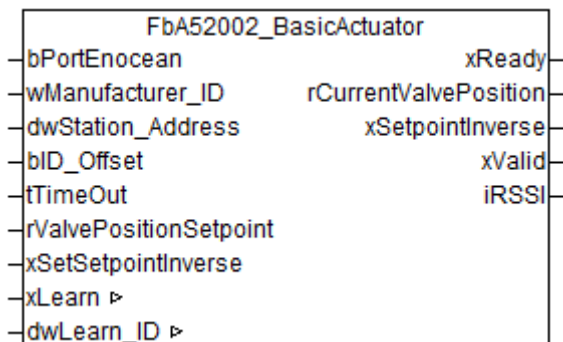
When the internal temperature sensor detects a sharp and sudden drop in temperature, this is a significant indication of an open window and is then signaled.

**“xActuatorObstructed”:** The actuator is obstructed.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

## 2.22 A5-20-02: Basic Actuator

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA52002_BasicActuator		
Type:	Function	Function block	X    Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
wManufacturer_ID	WORD	Manufacturer ID number Default setting = 16#00A	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range: 1 ... 127 Default setting = 1	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
rValvePositionSetpoint	REAL	Valve position setpoint. Value range: 0 % ... 100 %	
xSetSetpointInverse	BOOL	Manufacturer specific Default setting = FALSE	
Input/Output Parameter:	Data Type:	Comment:	
xLearn	BOOL	Activate Learn mode.	
dwLearn_ID	DWORD	Actuator transmitter ID	
Output Parameter:	Data Type:	Comment:	
xReady	BOOL	Communication status	
rCurrentValvePosition	REAL	Current valve position Value range: 0 % ... 100 %	
xSetpointInverse	BOOL	Manufacturer specific Default setting = FALSE	
xValid	BOOL	Indication of whether the telegram is valid.	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP) and sends commands:

- A5-20-02
- 07-20-02

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

**Setting the Sender ID**

The manufacturer ID number is set at the **“wManufacturer\_ID”** input.

For bidirectional communication, the function block and actuator must be “introduced” to one another as radio communication partner devices. Therefore, the actuator and function block must have their own unique ID numbers. The ID number of an actuator is assigned by the manufacturer. However, the unique ID number of the function block is defined as the so-called sender ID.

The sender ID for the function block is calculated by adding the **“bID\_Offset”** and **“dwStation\_Address”** inputs. The Gateway station address must be entered as a constant at the **“dwStation\_Address”** input. The **“bID\_Offset”** input determines the offset to be applied to this station address. The sender ID must be unique for each instance of the function block.

The **“tTimeout”** input can optionally be used to monitor whether the actuator sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

**Commissioning**

The function block and the actuator must be “introduced” to one another as radio communication partner devices at the beginning of commissioning. The function block must be set to the learning mode by setting the **“xLearn”** input.

After this, press the button on the actuator. The actuator then transmits a radio telegram that is received by the function block. The actuator ID that is received is indicated at the **“dwLearn\_ID”** input and stored. The **“xLearn”** variable is reset when the function block ID has been successfully received.

**Note:**

- The variable at the **“dwIDRead”** input should be declared as RETAIN



PERSISTENT.

- The send/receive interval for the radio communication partner devices is set to approx. 10 minutes. As a result, any changes in values are displayed with a delay.

To communicate with the STC65-RS-485 EVC Gateway, the device address must be set to 0 (default value) via the DIP switch.

#### **Description of the Inputs**

The valve position is specified by the ***“rValvePositionSetpoint”*** input.

#### **Description of the Outputs**

The ***“rCurrentValvePosition”*** output indicates the current position of the actuator. This value is updated only within the send/receive interval.

Each communication process between the radio communication partner devices is indicated by a falling edge at the ***“xReady”*** output. This output can be linked with a counter, for example, to determine the number of telegrams that are exchanged.

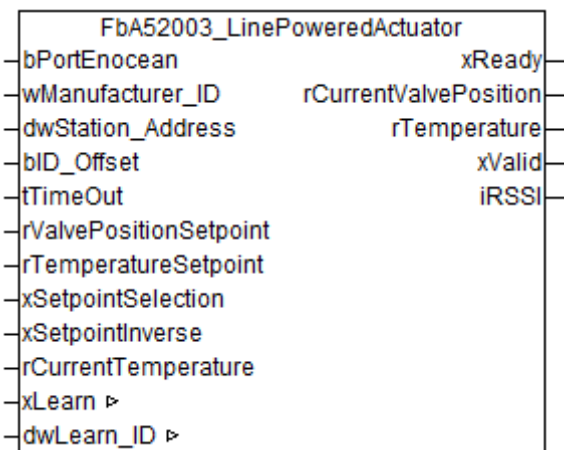
The reception strength is indicated at the ***“iRSSI”*** output. The ***“xValid”*** output specifies whether the values indicated at the output are valid.

#### **Note**

The definition of the ***“xSetSetPointInverse”*** or ***“xSetPointInverse”*** input depends on the manufacturer. The exact description of these inputs is available in the documentation from the manufacturer of the valve actuator.

## 2.23 A5-20-03: Line-powered Actuator

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA52003_LinePoweredActuator		
Type:	Function	Function block	X    Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
wManufacturer_ID	WORD	Manufacturer ID number Default setting = 16#00A	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range: 1 ... 127 Default setting = 1	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
rValvePositionSetpoint	REAL	Valve position setpoint Value range: 0 % ... 100 %	
rTemperatureSetpoint	REAL	Temperature setpoint Value range: 0 °C ... +40 °C	
xSetpointSelection	BOOL	FALSE -> Valve position is sent. TRUE -> Temperature setpoint is sent.	
xSetpointInverse	BOOL	TRUE -> Valve position is sent as an inverse value, or Selection of heating / cooling mode.	
rCurrentTemperature	REAL	Actual temperature. Value range: 0 °C ... +40 °C Default setting = 20 °C	
Input/Output Parameter:	Data Type:	Comment:	
xLearn	BOOL	Activate Learn mode.	
dwLearn_ID	DWORD	Actuator transmitter ID	
Output Parameter:	Data Type:	Comment:	
xReady	BOOL	Communication status	
rCurrentValvePosition	REAL	Current valve position Value range: 0 % ... 100 %	
rTemperature	REAL	Temperature measured by the actuator Value range: 0 °C ... +40 °C	
xValid	BOOL	Indication of whether the telegram is	

		valid
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)
<b>Graphical Illustration:</b>		
		
<b>Function Description:</b>		
<p>The function block outputs the measured values of a device with the following application profiles (EEP) and sends commands:</p> <ul style="list-style-type: none"><li>• A5-20-03</li><li>• 07-20-03</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnOcean”</b> input (see section 1).</p> <p><b>Setting the Sender ID</b></p> <p>The manufacturer ID number is set at the <b>“wManufacturer_ID”</b> input.</p> <p>For bidirectional communication, the function block and actuator must be “introduced” to one another as radio communication partner devices. Therefore, the actuator and function block must have their own unique ID numbers. The ID number of an actuator is assigned by the manufacturer. However, the unique ID number of the function block is defined as the so-called sender ID.</p> <p>The sender ID for the function block is calculated by adding the <b>“bID_Offset”</b> and <b>“dwStation_Address”</b> inputs. The Gateway station address must be entered as a constant at the <b>“dwStation_Address”</b> input. The <b>“bID_Offset”</b> input determines the offset to be applied to this station address. The sender ID must be unique for each instance of the function block.</p> <p>The <b>“tTimeout”</b> input can optionally be used to monitor whether the actuator sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.</p> <p><b>Commissioning</b></p> <p>The function block and the actuator must be “introduced” to one another as radio communication partner devices at the beginning of commissioning. The function block must be set to the learning mode by setting the <b>“xLearn”</b> input.</p> <p>After this, press the button on the actuator. The actuator then transmits a radio telegram that is received by the function block. The actuator ID that is received is</p>		

indicated at the **“dwLearn\_ID”** input and stored. The **“xLearn”** variable is reset when the function block ID has been successfully received.

**Note:**

- The variable at the **“dwIDRead”** input should be declared as RETAIN PERSISTENT.
- The send/receive interval for the radio communication partner devices is set to approx. 10 minutes. As a result, any changes in values are displayed with a delay.

To communicate with the STC65-RS-485 EVC Gateway, the device address must be set to 0 (default value) via the DIP switch.

**Description of the Inputs**

If the **“xSetpointSelection”** is set to TRUE, then the **“rTemperatureSetpoint”** temperature setpoint value is transmitted to the actuator. Otherwise, the **“rValvePositionSetpoint”** setpoint position of the actuator is transmitted.

By setting the signal at the **“xSetpointInverse”** input, the setpoint inverse of the valve position or the “Cooling” operating mode is activated.

The room temperature can be prepared for transmission to the actuator via the **“rCurrentTemperature”** input.

**Description of the Outputs**

The **“rCurrentValvePosition”** output indicates the current position of the actuator. This value is updated only within the send/receive interval. The **“rTemperature”** output indicates the value for the internal temperature sensor.

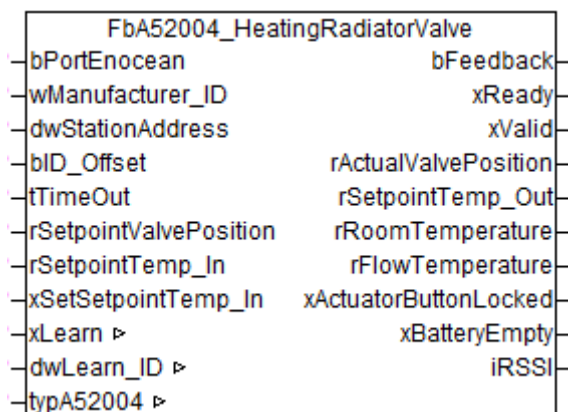
Each communication process between the radio communication partner devices is indicated by a falling edge at the **“xReady”** output. This output can be linked with a counter, for example, to determine the number of telegrams that are exchanged.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

## 2.24 A5-20-04: Heating Valve

WAGO-I/O-PRO-32 Library Elements			
Category:	Building technology		
Name:	FbA52004_HeatingRadiatorValve		
Type:	Function	Function block	X   Program
Name of Library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
wManufacturer_ID	WORD	Manufacturer ID number Default setting = 16# 045	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range: 1 ... 127 Default setting = 1	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
rSetpointValvePosition	REAL	Valve position setpoint Value range: 0 ... 100 %	
rSetpointTemp_In	REAL	Temperature setpoint Value range: +10 ... +30 °C	
xSetSetpointTemp_In	BOOL	TRUE-> Temperature setpoint overwritten locally.	
Input/Output Parameters:	Data Type:	Comment:	
xLearn	BOOL	Activate Learn mode.	
dwLearn_ID	DWORD	Actuator transmitter ID	
typA52004	typA52004	Configuration Parameter	
xButtonLocked	BOOL	Local controller inhibited	
bWakeUpCycle	BYTE	Wake-up time (telegram exchange) 0= 10s 1=60s 19=600s 50= 3h	
bDisplayOrientation	BYTE	Display orientation 0= 0° 1= 90° 2= 180° 3= 270°	
bServiceCommand	BYTE	Service Functions 1= Open valve. 2= Reference run 3= Close valve.	

Output Parameters:	Data Type:	Comment:
bFeedback	BYTE	Valve status: 0: OK 1: Measuring error 2: Battery empty 3: Antifreeze protection 4: Valve blocked 5: End position detection error 6: No valve 7: Not taught 8: No response from controller 9 Teach-in error 100: Unknown error
xReady	BOOL	Communication status
xValid	BOOL	Indication of whether the telegram is valid
rActualValvePosition	REAL	Current valve position Value range: 0 ... 100 %
rSetpointTemp_Out	REAL	Set setpoint correction at valve Value range: +10 ... +30 °C
rRoomTemperature	REAL	Room temperature measured at valve  Value range: +10 ... +30 °C
rFlowTemperature	REAL	Supply temperature measured at valve Value range: +20 ... +80 °C
xActuatorButtonLocked	BOOL	Local controller inhibited
xBatteryEmpty	BOOL	Battery empty
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 ... -45 dBm = poor ... good)

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP) and sends commands:

- A5-20-04
- 07-20-04

The function block is synchronized with the communication module via the

**“bPortEnOcean”** input (see Section 1).

### **Setting the Sender ID**

The manufacturer ID number is set at the **“wManufacturer\_ID”** input.

For bidirectional communication, the function block and the valve must be “introduced” to one another as radio communication partner devices. Therefore, the valve and function block must have their own unique ID numbers. The ID numbers are assigned by the manufacturer. However, the unique ID number of the function block is defined as the so-called sender ID.

The sender ID for the function block is calculated by adding the **“bID\_Offset”** and **“dwStation\_Address”** inputs. The Gateway station address must be entered as a constant at the **“dwStation\_Address”** input. The **“bID\_Offset”** input determines the offset to be applied to this station address. The sender ID must be unique for each instance of the function block.

The **“tTimeOut”** input can optionally be used to monitor whether the valve sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

### **Commissioning**

The function block must be set to the learning mode by setting the **“xLearn”** input.

The valve is then put into the Learn mode. The valve then transmits a radio telegram that is received by the function block. The valve ID that is received is indicated at the **“dwLearn\_ID”** input and stored. The **“xLearn”** variable is reset when the function block ID has been successfully received.

#### **Note:**

- The variable at the **“dwIDRead”** input should be declared as RETAIN PERSISTENT.
- The send/receive interval for the radio communication partner devices is set to approx. 10 minutes. As a result, any changes in values are displayed with a delay.

To communicate with the STC65-RS-485 EVC Gateway, the device address must be set to 0 (default value) via the DIP switch.

### **Description of the Inputs**

The required valve position is indicated at the **“rSetpointValvePosition”** input.

If the **“xSetSetpointTemp\_In”** is set as TRUE, the temperature setpoint **“rSetpointTemp\_In”** is transferred to the actuator, overwriting the locally set setpoint correction.

### **Description of the Outputs**

The **“rActualValvePosition”** output indicates the actual position of the actuator. This value is updated only within the send/receive interval. The locally set setpoint correction is output at the **“rSetpointTemp\_Out”** output. The locally measured temperatures for the room and for inlet flow are output at **“rRoomTemperature”** and **“rFlowTemperature”**.

If **“xActuatorButtonLocked”** is TRUE, setpoint correction cannot be changed locally. This variable is a function of **“typA52004.xButtonLocked”**.

If the valve battery is empty, this is indicated at the **“xBatteryEmpty”** output.

Each communication process between the radio communication partner devices is indicated by a falling edge at the **“xReady”** output. This output can be linked with a counter, for example, to determine the number of telegrams that are exchanged.

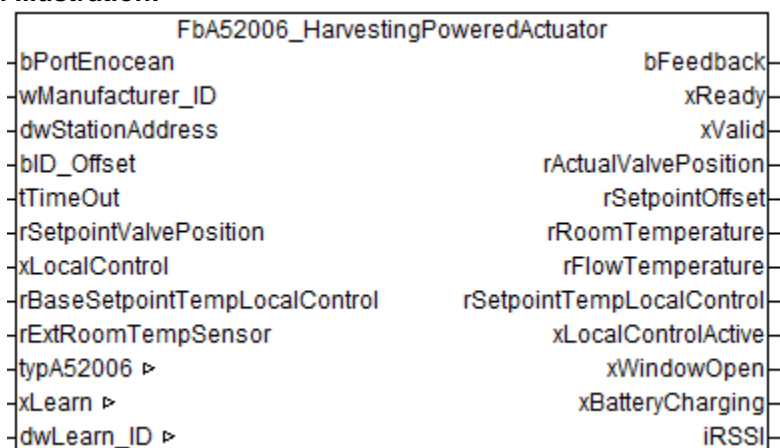
The reception strength is indicated at the “**iRSSI**” output. The “**xValid**” output specifies whether the values indicated at the output are valid. The current status of the valve is output via the “**bFeedback**” output.



## 2.25 A5-20-06: Self-charging Actuator

WAGO-I/O-PRO-32 Library Elements			
Category:	Building technology		
Name:	FbA52006_HarvestingPoweredActuator		
Type:	Function	Function block	X   Program
Name of Library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
wManufacturer_ID	WORD	Manufacturer ID number Default setting = 16# 049	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range: 1 ... 127 Default setting = 1	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
rSetpointValvePosition	REAL	Valve position setpoint Value range: 0 ... 100 %	
xLocalControl	BOOL	Actuator regulates itself.	
rBaseSetpointTempLocalControl	REAL	Temperature setpoint Value range: 0 ... +40 °C	
rExtRoomTempSensor	BOOL	Use external room temperature sensor Value range: 0 ... +40 °C	
Input/Output Parameters:	Data Type:	Comment:	
typA52006	typA52006	Configuration Parameter	
bWakeUpCycle	BYTE	Wake-up time (telegram exchange) 0= Automatic wake-up 1= 2 min 2= 5 min 3= 10 min 4= 20 min 5= 30 min 6= 60 min 7= 120 min	
xSummerMode	BOOL	Reduced transmission interval (8h)	
xReferenceRun	BOOL	Initiate reference run.	
xStandbyMode	BOOL	Values are only updated when local control is active.	
xLearn	BOOL	Activate Learn mode.	
dwLearn_ID	DWORD	Actuator transmitter ID	

Output Parameter:	Data Type:	Comment:
bFeedback	BYTE	0: OK 1: Battery empty 2: Communication error 3: Weak reception 4: Actuator blocked
xReady	BOOL	Communication status
xValid	BOOL	Indication of whether the telegram is valid
rActualValvePosition	REAL	Current valve position Value range: 0 ... 100 %
rSetpointOffset	REAL	Set setpoint correction at valve
rRoomTemperature	REAL	Room temperature measured at valve Value range: 0 ... +40 °C
rFlowTemperature	REAL	Supply temperature measured at valve Value range: +20 ... +80 °C
rSetpointTempLocalControl	REAL	Set temperature setpoint Value range: 0 ... +40 °C
xLocalControlActive	BOOL	Local control active
xWindowOpen	BOOL	Temperature drop detected
xBatteryCharging	BOOL	Actuator being charged.
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 ... -45 dBm = poor ... good)

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP) and sends commands:

- A5-20-06
- 07-20-06

The function block is synchronized with the communication module via the **"bPortEnocean"** input (see Section 1).

### Setting the Sender ID

The manufacturer ID number is set at the **“wManufacturer\_ID”** input.

For bidirectional communication, the function block and actuator must be “introduced” to one another as radio communication partner devices. Therefore, the actuator and function block must have their own unique ID numbers. The ID number for an actuator is assigned by the manufacturer. However, the unique ID number of the function block is defined as the so-called sender ID.

The sender ID for the function block is calculated by adding the **“bID\_Offset”** and **“dwStation\_Address”** inputs. The Gateway station address must be entered as a constant at the **“dwStation\_Address”** input. The **“bID\_Offset”** input determines the offset to be applied to this station address. The sender ID must be unique for each instance of the function block.

The **“tTimeOut”** input can optionally be used to monitor whether the actuator sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

### Commissioning

The function block and the actuator must be “introduced” to one another as radio communication partner devices at the beginning of commissioning. The function block must be set to the learning mode by setting the **“xLearn”** input.

After this, press the Learn button on the actuator. The actuator then transmits a radio telegram that is received by the function block. The actuator ID that is received is indicated at the **“dwLearn\_ID”** input and stored. The **“xLearn”** variable is reset when the function block ID has been successfully received.

#### Note:

- The variable at the **“dwIDRead”** input should be declared as RETAIN PERSISTENT.
- The send/receive interval for the radio communication partner devices is set to approx. 10 minutes. As a result, any changes in values are displayed with a delay.

To communicate with the STC65-RS-485 EVC Gateway, the device address must be set to 0 (default value) via the DIP switch.

### Description of the Inputs

The required valve position is indicated at the **“rSetpointValvePosition”** input.

If **“xLocalControl”** is set, the actuator calculates the valve position automatically. It can be provided with a base setpoint for this at **“rBaseSetpointTempLocalControl”**. If an externally mounted room sensor is to be used instead of the local room sensor, it must be set at **“rExtRoomTempSensor”**.

### Description of the Outputs

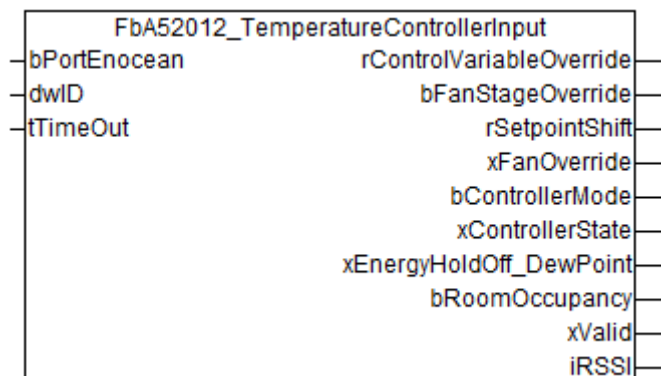
The **“rActualValvePosition”** output indicates the actual position of the actuator. This value is updated only within the send/receive interval. The locally set setpoint correction is output at the **“rSetpointOffset”** output. The locally measured temperatures for the room and for inlet flow are output at **“rRoomTemperature”** and **“rFlowTemperature”**. When local control is to be used, **“xLocalControlActive”** must be set to TRUE and the setpoint temperature is output via **“rSetpointTempLocalControl”**. Any window which may be open will be detected by means of a temperature drop and this indicated at the **“xWindowOpen”** output. Charging of the actuator is indicated at the **“xBatteryCharging”** output.

Each communication process between the radio communication partner devices is indicated by a falling edge at the **“xReady”** output. This output can be linked with a counter, for example, to determine the number of telegrams that are exchanged.

The reception strength is indicated at the “**iRSSI**” output. The “**xValid**” output specifies whether the values indicated at the output are valid.  
The current status of the actuator is output via the “**bFeedback**” output.

## 2.26 A5-20-12: Temperature Controller

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA52012_TemperatureControllerInput		
Type:	Function	Function block	X Program
Name of library:	EnOcean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnOcean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
rControlVariableOverride	REAL	Current control value. Value range: 0 % ... 100 %	
bFanStageOverride	BYTE	Fan stage.	
rSetpointShift	REAL	Actual temperature [°C] Value range: -10 °C ... +10 °C	
xFanOverride	BOOL	TRUE -> Override fan DB2 ("bFanStageOverride") FALSE -> Automatic	
bControllerMode	BYTE	0: Auto mode 1: Heating 2: Cooling 3 (OFF)	
xControllerState	BOOL	TRUE -> Override control variable DB3 ("rControlVariableOverride") FALSE -> Automatic	
xEnergyHoldOff_DewPoint	BOOL	TRUE -> Energy hold off/dew point FALSE -> Normal	
bRoomOccupancy	BYTE	Room occupancy	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-20-12
- 07-20-12

The function block is synchronized with the communication module via the **“bPortEnocean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

## 2.27 A5-30-xx: Digital Input

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbA530xx_DigitalInput	
Type:	Function	Function block	X    Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
xInputState	BOOL	FALSE -> Electrical contact closed TRUE -> Electrical contact open Default setting = TRUE	
xSupplyVoltageLow	BOOL	TRUE -> Battery empty	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbA530xx_DigitalInput</div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>xInputState</div><div>xSupplyVoltageLow</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>• A5-30 “bTYPE”</li><li>• 07-30 “bTYPE”</li></ul> <p>The function block is synchronized with the communication module via the “bPortEnocean” input (see section 1).</p> <p>The “bTYPE” input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.</p>			

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

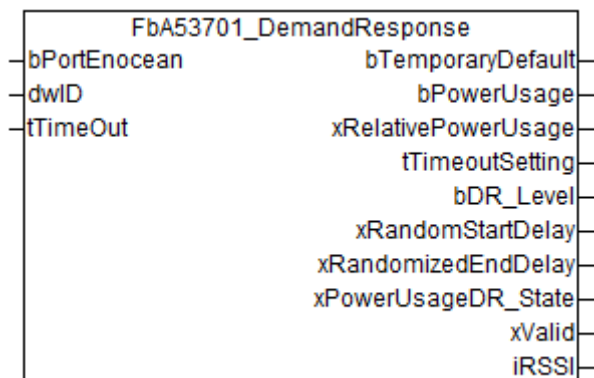
The **“xInputState”** output is FALSE if the contact is closed.

The condition of the battery is indicated at that **“xSupplyVoltageLow”** output.



## 2.28 A5-37-01: Demand Response (DR)

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbA53701_DemandResponse		
Type:	Function	Function block	X Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
bTemporaryDefault	BYTE	Default value Value range: 0 ... 255	
bPowerUsage	BYTE	Power usage [%] Value range: 0 % ... 100 %	
xRealtivePowerUsage	BOOL	TRUE -> “bPowerUsage” as a percentage of the current power usage FALSE -> “bPowerUsage” as a percentage of the maximum power usage	
tTimeoutSetting	TIME	Timeout for demand response event [s] Value range: 0 s ... 3825 s	
bDR_Level	BYTE	Demand response level	
xRandomStartDelay	BOOL	Random start delay activated	
xRandomizedEndDelay	BOOL	Random end delay activated	
xPowerUsageDR_State	BOOL	FALSE -> Minimized power usage TRUE -> Maximized power usage	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP):

- A5-37-01
- 07-37-01

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

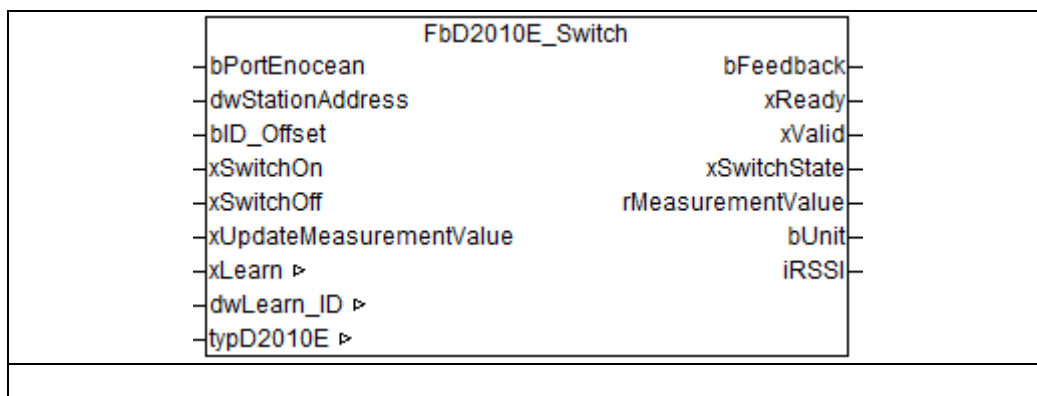
The **“xInputState”** output is FALSE if the contact is closed.

## 3 VLD Telegramm

### 3.1 D2-01-0E: Electronic Switch with Dimmer and Local Control

WAGO-I/O-PRO-32 Library Elements			
Category:	Building technology		
Name:	FbD2010E_Switch		
Type:	Function	Function block	X   Program
Name of Library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range: 1 ... 127 Default setting = 1	
xSwitchOn	BOOL	Activate switch.	
xSwitchOff	BOOL	Deactivate switch.	
xUpdateMeasurement	BOOL	Request update for output "rMeasurementValue".	
Input/Output Parameters:	Data Type:	Comment:	
xLearn	BOOL	Activate Learn mode.	
dwLearn_ID	DWORD	Actuator transmitter ID	
typD2010E	typD2010E	Configuration parameters	
.xLocalControl	BOOL	Enable local control. Default setting = TRUE	
.xDayNightMode	BOOL	Switch lighting on. Default setting = TRUE	
.bDefaultState	BYTE	Default switch setting 0 = OFF 1 = ON 2 = Last status Default setting = 2	
.bMeasurementMode	BYTE	0 = Energy measurement 1 = Power measurement Default setting = 1	
.bUnit	BYTE	0 = Ws (energy measurement) 1 = Eh (energy measurement) 2 = kWh (energy measurement) 3 = W (power measurement) 4 = kW (power measurement) Default setting = 3	
.bReportMeasurement	BYTE	Measured value updating	

		0 = On request (xUpdateMeasurement) 1 = Automatically Default setting = 1
.wMeasurementDelta	WORD	Update based on measured value difference Value range = 0 ... 4095 Default setting = 0
.xMeasurementReset	BOOL	Cancel energy measurement
.bMaxTimeBetweenActuator Messages	BYTE	Maximum transmission difference 1 = 255s 10 = 2550s Value range: 0 ... 255 Default setting = 0 (Automatic)
.bMinTimeBetweenActuator Messages	BYTE	Minimal transmission difference 1 = 255s 10 = 2550s Value range: 0 ... 255 Default setting = 0 (Automatic)
.tAutomaticMeasurementResponse	TIME	Transmission interval for measured values Default setting = 0s (Automatic)
.tAutomaticStatusUpdate	TIME	Transmission interval for switch setting Default setting = 0s (Automatic)
<b>Output Parameters:</b>	<b>Data Type:</b>	<b>Comment:</b>
bFeedback	BYTE	0: OK 1 .. 239: <b>(Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.)</b> 240: Teach-in error, or no device detected
xReady	BOOL	Communication status
xValid	BOOL	Indication of whether the telegram is valid
xSwitchState	BOOL	Current switch position
rMeasurementValue	REAL	Current measured value
bUnit	BYTE	Unit of the measured measurement value
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 ... -45 dBm = poor ... good)
<b>Graphical Illustration:</b>		



**Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP) and sends commands:

- D2-01-0E

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see Section 1).

**Setting the Sender ID**

For bidirectional communication, the function block and switch must be “introduced” to one another as radio communication partner devices. Therefore, the switch and function block must have their own unique ID numbers. The ID number of a switch is assigned by the manufacturer. However, the unique ID number of the function block is defined as the so-called sender ID.

The sender ID for the function block is calculated by adding the **“bID\_Offset”** and **“dwStation\_Address”** inputs. The Gateway station address must be entered as a constant at the **“dwStation\_Address”** input. The **“bID\_Offset”** input determines the offset to be applied to this station address. The sender ID must be unique for each instance of the function block.

**Commissioning**

The function block and the switch must be “introduced” to one another as radio communication partner devices at the beginning of commissioning. The function block must be set to the learning mode by setting the **“xLearn”** input.

After this, press the Learn button on the switch. The switch then transmits a radio telegram that is received by the function block. The switch ID that is received is indicated at the **“dwLearn\_ID”** input and stored. The **“xLearn”** variable is reset when the function block ID has been successfully received.

**Note:**

- The variable at the **“dwIDRead”** input should be declared as RETAIN PERSISTENT.
- The send/receive interval for the radio communication partner devices is set to approx. 10 minutes. As a result, any changes in values are displayed with a delay.

To communicate with the STC65-RS-485 EVC Gateway, the device address must be set to 0 (default value) via the DIP switch.

**Description of the Inputs**

The switch can be activated/deactivated at the **“xSwitchOn”** and **“xSwitchOff”** input. The measured value outputs can be updated using **“xUpdateMeasurement”**. The switch can be configured using the In-Out variable.

**Description of the Outputs**

The current switch setting is output at the **“xSwitchState”** output. The value currently being measured and its unit are output at the **“rMeasurementValue”** and **“bUnit”** outputs.

Each communication process between the radio communication partner devices is indicated by a falling edge at the **“xReady”** output. This output can be linked with a counter, for example, to determine the number of telegrams that are exchanged.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The current status of the switch is output via the **“bFeedback”** output.

## 3.2 D2-15-00: People activity counter

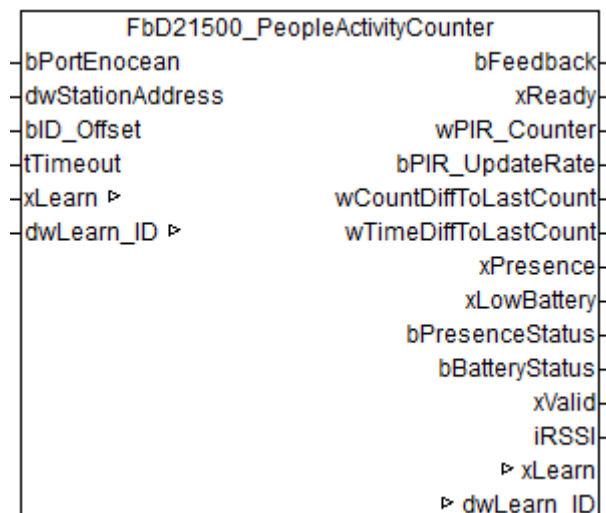
WAGO-I/O-PRO-32 Library Elements			
Category:	Building technology		
Name:	FbD21500_PeopleActivityCounter		
Type:	Function	Function block	X   Program
Name of Library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range: 1 ... 127 Default setting = 1	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Input/Output Parameters:	Data Type:	Comment:	
xLearn	BOOL	Activate Learn mode.	
dwLearn_ID	DWORD	Actuator transmitter ID	
Output Parameters:	Data Type:	Comment:	
bFeedback	BYTE	0: OK 1 .. 239: (Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.)	
xReady	BOOL	Communication status	
wPIR_Counter	WORD	Activity counter [0-65535]. Overflow at 65535.	
bPIR_UpdateRate	BYTE	Interval in which the activity is considered. [1-16 seconds]	
wCountDiffToLastCount	WORD	Amount of Activities to last telegram.	
wTimeDiffToLastCount	WORD	Time between the last two telegrams in seconds.	
xPresence	BOOL	Presence detected	
xLowBattery	BOOL	Battery is low.	
bPresenceStatus	BYTE	Presence detector status: 0= Present, 1= Not present, 2= Not detectable, 3= Presence detector error	
bBatteryStatus	BYTE	Energy storage status: 0= High, 1= Medium,	

---

		2= Low, 3= Critical
--	--	------------------------



xValid	BOOL	Indication of whether the telegram is valid
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 ... -45 dBm = poor ... good)

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP) and sends commands:

- D2-15-00

The function block is synchronized with the communication module via the “**bPortEnOcean**” input (see Section 1).

**Setting the Sender ID**

For bidirectional communication, the function block and switch must be “introduced” to one another as radio communication partner devices. Therefore, the switch and function block must have their own unique ID numbers. The ID number of a switch is assigned by the manufacturer. However, the unique ID number of the function block is defined as the so-called sender ID.

The sender ID for the function block is calculated by adding the “**bID\_Offset**” and “**dwStation\_Address**” inputs. The Gateway station address must be entered as a constant at the “**dwStation\_Address**” input. The “**bID\_Offset**” input determines the offset to be applied to this station address. The sender ID must be unique for each instance of the function block.

**Commissioning**

The function block and the switch must be “introduced” to one another as radio communication partner devices at the beginning of commissioning. The function block must be set to the learning mode by setting the “**xLearn**” input.

After this, press the Learn button on the sensor. The sensor then transmits a radio telegram that is received by the function block. The switch ID that is received is indicated at the “**dwLearn\_ID**” input and stored. The “**xLearn**” variable is reset when the function block ID has been successfully received.

**Note:**

- The variable at the “dwIDRead” input should be declared as RETAIN PERSISTENT.

To communicate with the STC65-RS-485 EVC Gateway, the device address must be set to 0 (default value) via the DIP switch and deactivate the compatibility mode (DIP2.3) on the gateway.

**Description of the Outputs**

“wPIR\_Count” is incremented by each detected activity, the value overflows at 65535. “wCountDiffToLastCount” outputs the amount of activities to the last received telegram. “wTimeDiffToLastCount” displays the time between the last to telegrams in seconds. “bPIR\_UpdateRate” indicates in which time the activity is considered. “xPresence” is TRUE if presence has been detected. “xLowBattery” is TRUE if battery level is low. “bPresenceStatus” and “bBatteryStatus” displays the actual status of the sensors. “xValid” will be false if no telegram have been received within the timeout time “tTimeout”.

The reception strength is indicated at the “iRSSI” output. The “xValid” output specifies whether the values indicated at the output are valid.

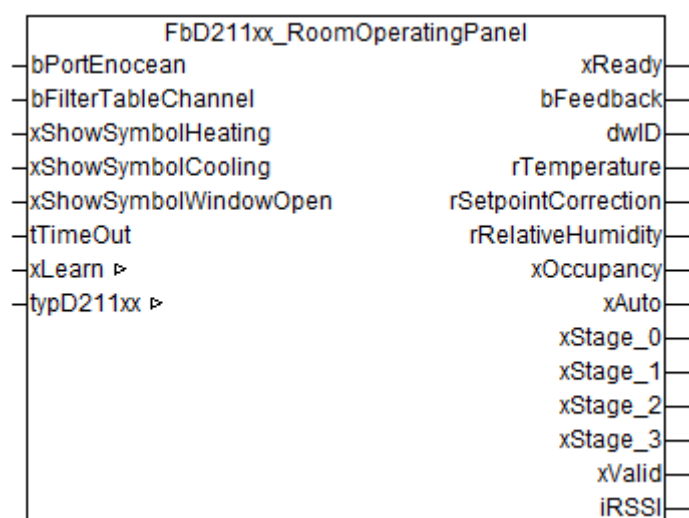
The current status of the switch is output via the “bFeedback” output.

## 4 SMART ACK

### 4.1 D2-11-xx: Room Operating Panel

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbD211xx_RoomOperatingPanel		
Type:	Function	Function block <b>X</b>	Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bFilterTableChannel	BYTE	Filter channel Default setting = 0 Range: 0–15	
xShowSymbolHeating	BOOL	Shows symbol: heating	
xShowSymbolCooling	BOOL	Shows symbol: cooling	
xShowSymbolWindowOpen	BOOL	Shows symbol: window	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Input/Output Parameter:	Data Type:	Comment:	
xLearn	BOOL	Activate Learn mode.	
dwLearn_ID	DWORD	Actuator transmitter ID	
typD211xx	typD211xx	Data for device synchronization	
rSetpointOffset	REAL	Setpoint (°C) Range: 0 °C ... 40 °C	
.bBaseSetpoint	BYTE	Internal basic setpoint (°C) Range: 10 ... 30	
.bValidOffsetAdjustment	BYTE	Setpoint value correction selection (K) Range: 1 ... 15	
.xSetpointSelection	BOOL	TRUE -> Temperature setpoint is sent.	
.xAuto	BOOL	Fan stage automatic	
.xStage_0	BOOL	Fan stage 0	
.xStage_1	BOOL	Fan stage 1	
.xStage_2	BOOL	Fan stage 2	
.xStage_3	BOOL	Fan stage 3	
.xOccupancy	BOOL	Presence	

Output Parameter:	Data Type:	Comment:
xReady	BOOL	Communication status Default: TRUE
bFeedback	BYTE	Response byte (see appendix)
dwID	DWORD	The ID saved in the filter table.
rTemperature	REAL	Measured temperature [°C]
rHumidity	REAL	Measured humidity [%]
xValid	BOOL	Indication of whether the telegram is valid
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP) and sends commands:

- D2-11-xx

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The **“tTimeout”** input can optionally be used to monitor whether the actuator sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

**Setting the Gateway**

The Gateway must have firmware version 3.0.2 or higher and be switched to “incompatibility mode”.

**Commissioning**

The function block and the room operating panel must “learn” one another as radio communication partner devices in a filter channel **“bFilterTableChannel”** at the beginning of commissioning. 16 filter channels are available for SMART ACK devices. A device can be only be “learned” in one filter channel.

The function block must be set to the learning mode by setting the “**xLearn**” input. Operating the “**xLearn**” input deletes the existing address that has already been learned in the filter channel.

The “Learn” button must then be pressed on the room operating panel. The room operating panel then transmits a radio telegram that is received by the function block. The received ID of the room operating panel is indicated at the “**dwID**” output.

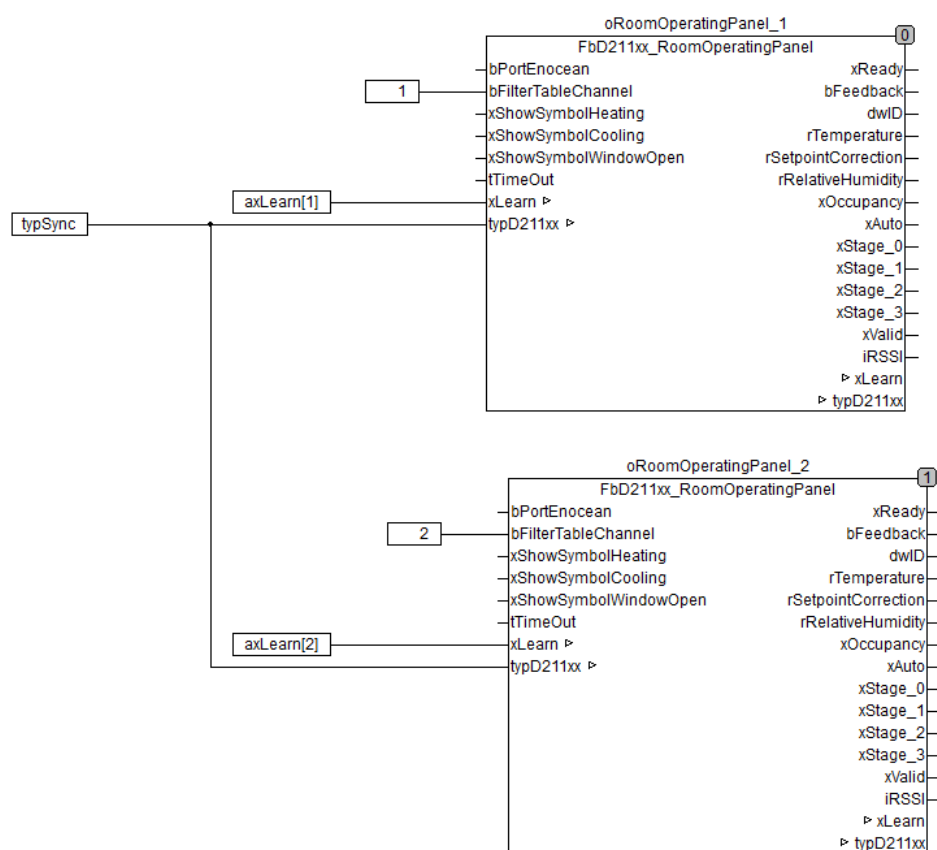
The “**xLearn**” variable is reset when the function block ID has been successfully received.

**Note:**

- The received ID of the room operating panel “**dwID**” is saved in the filter channel of the Gateway. Therefore, if the Gateway is changed, the learning process must be performed again.
- To communicate with the STC65-RS-485 EVC Gateway, the device address must be set to 0 (default value) via the DIP switch.

**Synchronization**

Multiple SMART ACK devices can be synchronized with “**typD211xx**”.



The reception strength is indicated at the “**iRSSI**” output. The “**xValid**” output specifies whether the values indicated at the output are valid.

The “**xReady**” output indicates whether the function block is ready. Any errors will be displayed at the “**bFeedback**” output.

## 5 1BS Telegram

### 5.1 D5-00-xx: Switching Function

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbD500xx_ContactsAndSwitches		
Type:	Function	Function block	X    Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
xContact	BOOL	TRUE -> Contact closed	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbD500xx_ContactsAndSwitches</div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>xContact</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>D5-00 “bTYPE”</li><li>06-00 “bTYPE”</li></ul> <p>The function block is synchronized with the communication module via the “<b>bPortEnocean</b>” input (see section 1).</p> <p>The “<b>bTYPE</b>” input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.</p>			

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The **“xContact”** indicates the contact state.

## 6 RPS Telegram

### 6.1 F6-02-xx: 2-Channel Touch Sensor

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbF602xx_RockerSwitch_2_Rocker	
Type:		Function	Function block <b>X</b> Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
bTYPE		BYTE	Device type (TYPE)
dwID		DWORD	ID number of the device
tTimeout		TIME	Maximum interval between two telegrams Default setting = t#60 m
Output Parameter:		Data Type:	Comment:
xButton_AO		BOOL	Output signal switched status AO
xButton_AI		BOOL	Output signal switched status AI
xButton_BO		BOOL	Output signal switched status BO
xButton_BI		BOOL	Output signal switched status BI
xValid		BOOL	Indication of whether the telegram is valid
iRSSI		INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)
Graphical Illustration:			
<div><div>FbF602xx_RockerSwitch_2_Rocker</div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>xButton_AO</div><div>xButton_AI</div><div>xButton_BO</div><div>xButton_BI</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
The function block outputs the measured values of a device with the following application profiles (EEP): <ul style="list-style-type: none"><li>F6-02 “bTYPE”</li><li>05-02 “bTYPE”</li></ul>			



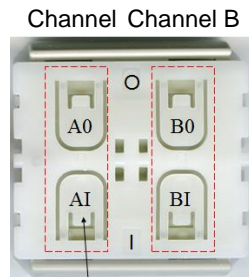
The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The **“bTYPE”** input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.



The output signals (**“xButton\_AO”**... **“xButton\_BI”**) correspond to the four contact grommets and are set to TRUE depending on the button pressed.

**Note:**

- Additional information about the device type number (TYPE) is available at: [http://www.enocean-alliance.org/de/enOcean\\_standard/](http://www.enocean-alliance.org/de/enOcean_standard/)
- Pressing two buttons simultaneously allows two output signals at the same time with 2-way PTM 200 rocker switches. If a 1-way rocker switch is used, only either the AO/AI button or the BO/BI button is evaluated.

## 6.2 F6-03-xx: 4-Channel Touch Sensor

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbF603xx_RockerSwitch_4_Rocker	
Type:	Function	Function block	X   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
xButton_AO	BOOL	Output signal switched status AO	
xButton_AI	BOOL	Output signal switched status AI	
xButton_BO	BOOL	Output signal switched status BO	
xButton_BI	BOOL	Output signal switched status BI	
xButton_CO	BOOL	Output signal switched status CO	
xButton_CI	BOOL	Output signal switched status CI	
xButton_DO	BOOL	Output signal switched status DO	
xButton_DI	BOOL	Output signal switched status DI	
xValid	BOOL	Indication of whether the telegram is valid.	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbF603xx_RockerSwitch_4_Rocker</div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>xButton_AO</div><div>xButton_AI</div><div>xButton_BO</div><div>xButton_BI</div><div>xButton_CO</div><div>xButton_CI</div><div>xButton_DO</div><div>xButton_DI</div><div>xValid</div><div>iRSSI</div></div></div>			

### Function Description:

The function block outputs the measured values of a device with the following application profiles (EEP):

- F6-03 “bTYPE”
- 05-03 “bTYPE”

The function block is synchronized with the communication module via the “bPortEnOcean” input (see section 1).

The “bTYPE” input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the “dwID” input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The “tTimeOut” input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “iRSSI” output. The “xValid” output specifies whether the values indicated at the output are valid.

The output signals (“xButton\_AO”... “xButton\_BI”) correspond to the eight contact grommets and are set to TRUE depending on the button pressed.

Bracket on both  
module sides



Soft rubber contact  
grommet for operating  
status detection of the

Axis of rotation for  
pushbutton or rocker  
switch

### Note:

- Additional information about the device type number (TYPE) is available at:  
[http://www.enocean-alliance.org/de/enOcean\\_standard/](http://www.enocean-alliance.org/de/enOcean_standard/)

## 6.3 F6-04-01: Position Switches, Home and Office Applications

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbF60401_PositionSwitchHomeOfficeApp	
Type:		Function	Function block <b>X</b>   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
dwID		DWORD	ID number of the device
tTimeout		TIME	Maximum interval between two telegrams. Default setting = t#60 m
Output Parameter:		Data Type:	Comment:
bDataByte0		BYTE	Data byte from DB_0
xValid		BOOL	Indication of whether the telegram is valid
iRSSI		INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)
Graphical Illustration:			
<div><div>FbF60401_PositionSwitchHomeOfficeApp</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>bDataByte0</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>F6-04-01</li><li>05-04-01</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>The received data is processed by the function block provided that the number entered at the <b>“dwID”</b> input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.</p> <p>The <b>“tTimeOut”</b> input can optionally be used to monitor whether the sensor sends a</p>			

telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “**iRSSI**” output. The “**xValid**” output specifies whether the values indicated at the output are valid.

The “**bDataByte0**” has the following meaning:

16#01 (F6-04-01: key card activated switch).

- “**bDataByte0**” = 112 – Key card is inserted.
- “**bDataByte0**” = 0 – Key card is pulled out

**Note:**

- Additional information about the device type number (TYPE) is available at:  
[http://www.enocean-alliance.org/de/enOcean\\_standard/](http://www.enocean-alliance.org/de/enOcean_standard/)

## 6.4 F6-10-xx: Mechanical Handle

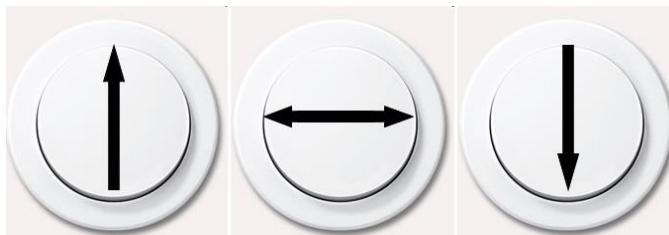
WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbF610xx_MechanicalHandle		
Type:	Function	Function block	X Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
bTYPE	BYTE	Device type (TYPE)	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
xHandleHorizontal	BOOL	Handle/rotary switch is in the middle position.	
xHandleVerticalUp	BOOL	Handle/rotary switch is in the top position.	
xHandleVerticalDown	BOOL	Handle/rotary switch is in the bottom position.	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbF610xx_MechanicalHandle</div><div><div>bPortEnocean</div><div>bTYPE</div><div>dwID</div><div>tTimeOut</div></div><div><div>xHandleHorizontal</div><div>xHandleVerticalUp</div><div>xHandleVerticalDown</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>F6-10 “bTYPE”</li><li>05-10 “bTYPE”</li></ul> <p>The function block is synchronized with the communication module via the “bPortEnocean” input (see section 1).</p>			

The **“bTYPE”** input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP) used by the sensor.

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.



Top position

Middle position

Bottom

The **“xHandleHorizontal”** output indicates if the window handle / rotary switch is in the middle position.

The **“xHandleVerticalUp”** output indicates if the window handle / rotary switch is in the top position.

The **“xHandleVerticalDown”** output indicates if the window handle / rotary switch is in the bottom position.

**Note:**

- Additional information about the device type number (TYPE) is available at:  
[http://www.enocean-alliance.org/de/enOcean\\_standard/](http://www.enocean-alliance.org/de/enOcean_standard/)

## 7 Raw data

### 7.1 Receive 1BS Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbEnocean_1BS_Receive		
Type:	Function	Function block	X Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
bDataByte	BYTE	Data byte	
dwDestination_ID	DWORD	Destination ID	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbEnocean_1BS_Receive</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>bDataByte</div><div>dwDestination_ID</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>D5-XX-YY</li><li>06-XX-YY</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>The received data is processed by the function block provided that the number entered at the <b>“dwID”</b> input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular</p>			



sensor.

The “**tTimeOut**” input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value ( $t = 0$  sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “**iRSSI**” output. The “**xValid**” output specifies whether the values indicated at the output are valid.

The value of the data byte received is output at the “**bDataByte**” output.

## 7.2 Receive 4BS Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbEnocean_4BS_Receive	
Type:		Function	Function block <b>X</b>   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
dwID		DWORD	ID number of the device
tTimeout		TIME	Maximum interval between two telegrams Default setting = t#60 m
Output Parameter:		Data Type:	Comment:
bDataByte3		BYTE	Data byte from DB_3
bDataByte2		BYTE	Data byte from DB_2
bDataByte1		BYTE	Data byte from DB_1
bDataByte0		BYTE	Data byte from DB_0
dwDestination_ID		DWORD	Destination ID
xValid		BOOL	Indication of whether the telegram is valid
iRSSI		INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)
Graphical Illustration:			
<div><div>FbEnocean_4BS_Receive</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>bDataByte3</div><div>bDataByte2</div><div>bDataByte1</div><div>bDataByte0</div><div>dwDestination_ID</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>• A5-XX-YY</li><li>• 07-XX-YY</li></ul> <p>The function block is synchronized with the communication module via the</p>			

**“bPortEnOcean”** input (see section 1).

The received data is processed by the function block provided that the number entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The value of the data byte received (DB\_3) is output at the **“bDataByte3”** output.

The value of the data byte received (DB\_2) is output at the **“bDataByte2”** output.

The value of the data byte received (DB\_1) is output at the **“bDataByte1”** output.

The value of the data byte received (DB\_0) is output at the **“bDataByte0”** output.

## 7.3 Receive MSC Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbEnocean_MSC_Receive	
Type:	Function	Function block	X   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
abDataByte	ARRAY [0..ENOCEAN_MAX_MSC_IN DEX_DB] OF BYTE	Data bytes	
dwDestination_ID	DWORD	Destination ID	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbEnocean_MSC_Receive</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>abDataByte</div><div>bNumberOfDataBytes</div><div>dwDestination_ID</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>D1-XX-YY</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>The received data is processed by the function block provided that the number entered at the <b>“dwID”</b> input is identical to the sensor ID number included in the</p>			

telegram. As a result, the function block can be logically assigned to a particular sensor.

The “**tTimeOut**” input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value ( $t = 0$  sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “**iRSSI**” output. The “**xValid**” output specifies whether the values indicated at the output are valid.

The value of the data byte received is output at the “**abDataByte**” output.

## 7.4 Receive RPS Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbEnocean_RPS_Receive	
Type:	Function	Function block	X    Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
Output Parameter:	Data Type:	Comment:	
bDataByte	BYTE	Data byte	
xT21	BOOL	T21 bit	
xNU	BOOL	NU bit	
dwDestination_ID	DWORD	Destination ID	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	
Graphical Illustration:			
<div><div>FbEnocean_RPS_Receive</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>bDataByte</div><div>xT21</div><div>xNU</div><div>dwDestination_ID</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>F6-XX-YY</li><li>05-XX-YY</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>The received data is processed by the function block provided that the number</p>			

entered at the **“dwID”** input is identical to the sensor ID number included in the telegram. As a result, the function block can be logically assigned to a particular sensor.

The **“tTimeOut”** input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

The value of the data byte received is output at the **“bDataByte”** output.

## 7.5 Receive VLD Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbEnocean_VLD_Receive	
Type:		Function	Function block <b>X</b>   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
dwID		DWORD	ID number of the device
tTimeout		TIME	Maximum interval between two telegrams Default setting = t#60 m
Output Parameter:		Data Type:	Comment:
abDataByte		ARRAY [0..ENOCEAN_MAX_VLD_IND EX_DB] OF BYTE	Data bytes
dwDestination_ID		DWORD	Destination ID
xValid		BOOL	Indication of whether the telegram is valid
iRSSI		INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)
Graphical Illustration:			
<div><div>FbEnocean_VLD_Receive</div><div><div>bPortEnocean</div><div>dwID</div><div>tTimeOut</div></div><div><div>abDataByte</div><div>bNumberOfDataBytes</div><div>dwDestination_ID</div><div>xValid</div><div>iRSSI</div></div></div>			
Function Description:			
<p>The function block outputs the measured values of a device with the following application profiles (EEP):</p> <ul style="list-style-type: none"><li>D2-XX-YY</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>The received data is processed by the function block provided that the number entered at the <b>“dwID”</b> input is identical to the sensor ID number included in the</p>			



telegram. As a result, the function block can be logically assigned to a particular sensor.

The “**tTimeOut**” input can optionally be used to monitor whether the sensor sends a telegram at regular intervals (e.g. every 16 min). If no time value ( $t = 0$  sec) is specified, timeout monitoring is deactivated.

The reception strength is indicated at the “**iRSSI**” output. The “**xValid**” output specifies whether the values indicated at the output are valid.

The value of the data byte received is output at the “**abDataByte**” output.

## 7.6 Send 1BS Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbEnocean_1BS_Send		
Type:	Function	Function block	X    Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
xUpdate	BOOL	Initiate telegram update.	
bDataByte0	BYTE	Input value DB_0	
bHysteresis	BYTE	Hysteresis for sending conditions Default setting = 1	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
dwDestination_ID	DWORD	Destination ID	
Output Parameter:	Data Type:	Comment:	
xReady	BOOL	Communication status Default: TRUE	
bFeedback	BYTE	Response byte (see appendix)	
Graphical Illustration:			
<div><div>FbEnocean_1BS_Send</div><div><div>bPortEnocean</div><div>dwID</div><div>xUpdate</div><div>bDataByte0</div><div>bHysteresis</div><div>tTimeout</div><div>dwDestination_ID</div></div><div><div>xReady</div><div>bFeedback</div></div></div>			
Function Description:			
<p>The function block transforms a data byte into an EnOcean radio telegram in the following EEP which is transmitted via the Gateway.</p> <ul style="list-style-type: none"><li>• D5-XX-YY</li><li>• 06-XX-YY</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p>			

The input parameter **“dwID”** determines the transmitter ID of the radio telegram. Each EnOcean transmission block must have a unique ID.

Value changes on the **“bDataByte”** input have the effect that a radio telegram is sent. The parameter **“bHysteresis”** specifies by what amount the input value **“bDataByte”** must change so that a radio telegram is sent. The sending frequency can be limited in this manner.

Sending can also be forced by a rising edge being present on the **“xUpdate”** input.

The minimum time interval for sending telegrams can be defined for the function block using the parameter **“tTimeout”**. For frequently-changing signals, the telegram load can thus be reduced.

The **“xReady”** output indicates whether the function block is ready.

Any errors will be displayed at the **“bFeedback”** output.

## 7.7 Send 4BS Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbEnocean_4BS_Send	
Type:		Function	Function block <b>X</b>   Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
dwID		DWORD	ID number of the device
xUpdate		BOOL	Initiate telegram update.
bDatabyte3		BYTE	Input value for DB_3
bDatabyte2		BYTE	Input value for DB_2
bDatabyte1		BYTE	Input value for DB_1
bDatabyte0		BOOL	Input value for DB_0
bHysteresis		BYTE	Hysteresis for sending conditions Default setting = 1
tTimeout		TIME	Maximum interval between two telegrams Default setting = t#60 m
dwDestination_ID		DWORD	Destination ID
Output Parameter:		Data Type:	Comment:
xReady		BOOL	Communication status Default: TRUE
bFeedback		BYTE	Response byte (see appendix)
Graphical Illustration:			
<div><div>FbEnocean_4BS_Send</div><div><div>bPortEnocean</div><div>dwID</div><div>xUpdate</div><div>bDataByte3</div><div>bDataByte2</div><div>bDataByte1</div><div>bDataByte0</div><div>bHysteresis</div><div>tTimeout</div><div>dwDestination_ID</div></div><div><div>xReady</div><div>bFeedback</div></div></div>			

#### Function Description:

The function block transforms a data byte into an EnOcean radio telegram in the following EEP which is transmitted via the Gateway.

- A5-XX-YY
- 07-XX-YY

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The input parameter **“dwID”** determines the transmitter ID of the radio telegram. Each EnOcean transmission block must have a unique ID.

Value changes on the **“bDataByte0”**, **“bDataByte1”**, **“bDataByte2”**, and **“bDataByte3”** inputs have the effect that a radio telegram is sent. The parameter **“bHysteresis”** specifies by what amount the input value **“bDataByte”** must change so that a radio telegram is sent. The sending frequency can be limited in this manner.

Sending can also be forced by a rising edge being present on the **“xUpdate”** input.

The minimum time interval for sending telegrams can be defined for the function block using the parameter **“tTimeout”**. For frequently-changing signals, the telegram load can thus be reduced.

The **“xReady”** output indicates whether the function block is ready.

Any errors will be displayed at the **“bFeedback”** output.

## 7.8 Send MSC Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbEnocean_MSC_Send		
Type:	Function	Function block <b>X</b>	Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
xUpdate	BOOL	Initiate telegram update.	
abDataByte	ARRAY [0..ENOCEAN_MAX_MSC_IN_DEX_DB] OF BYTE	Data bytes	
bNumberOfDataBytes	BYTE	Number of data bytes to be sent Default: 1	
bHysteresis	BYTE	Hysteresis for sending conditions Default setting = 1	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
dwDestination_ID	DWORD	Destination ID	
Output Parameter:	Data Type:	Comment:	
xReady	BOOL	Communication status Default: TRUE	
bFeedback	BYTE	Response byte (see appendix)	
Graphical Illustration:			
<div><div>FbEnocean_MSC_Send</div><div><div>bPortEnocean</div><div>dwID</div><div>xUpdate</div><div>abDataByte</div><div>bNumberOfDataBytes</div><div>bHysteresis</div><div>tTimeout</div><div>dwDestination_ID</div></div><div><div>xReady</div><div>bFeedback</div></div></div>			

#### Function Description:

The function block transforms a data byte into an EnOcean radio telegram in the following EEP which is transmitted via the Gateway.

- D1-XX-YY

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The input parameter **“dwID”** determines the transmitter ID of the radio telegram. Each EnOcean transmission block must have a unique ID.

Value changes on the **“abDataByte”** input have the effect that a radio telegram is sent. The parameter **“bHysteresis”** specifies by what amount the input value **“bDataByte”** must change so that a radio telegram is sent. The sending frequency can be limited in this manner.

Sending can also be forced by a rising edge being present on the **“xUpdate”** input.

The minimum time interval for sending telegrams can be defined for the function block using the parameter **“tTimeout”**. For frequently-changing signals, the telegram load can thus be reduced.

The **“xReady”** output indicates whether the function block is ready.

Any errors will be displayed at the **“bFeedback”** output.

## 7.9 Send RPS Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbEnocean_RPS_Send	
Type:	Function	Function block	X    Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
xUpdate	BOOL	Initiate telegram update.	
xButton_AO	BOOL	Input signal switched status AO	
xButton_AI	BOOL	Input signal switched status AI	
xButton_BO	BOOL	Input signal switched status BO	
xButton_BI	BOOL	Input signal switched status BI	
dwDestination_ID	DWORD	Destination ID	
Output Parameter:	Data Type:	Comment:	
xReady	BOOL	Communication status Default: TRUE	
bFeedback	BYTE	Response byte (see appendix)	
Graphical Illustration:			
<div><div>FbEnocean_RPS_Send</div><div><div>bPortEnocean</div><div>dwID</div><div>xButton_AO</div><div>xButton_AI</div><div>xButton_BO</div><div>xButton_BI</div><div>dwDestination_ID</div></div><div><div>xReady</div><div>bFeedback</div></div></div>			
Function Description:			
<p>The function block transforms a data byte into an EnOcean radio telegram in the following EEP which is transmitted via the Gateway.</p> <ul style="list-style-type: none"><li>D1-XX-YY</li></ul> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>The input parameter <b>“dwID”</b> determines the transmitter ID of the radio telegram. Each EnOcean transmission block must have a unique ID.</p>			



The button signals to send radio telegrams are specified via the “**xButton\_AO**”, “**xButton\_AI**”, “**xButton\_BO**” and “**xButton\_BI**” inputs.

The “**xReady**” output indicates whether the function block is ready.

Any errors will be displayed at the “**bFeedback**” output.

**Note:**

- Pressing two buttons simultaneously makes it possible set two input signals at the same time.

## 7.10 Send VLD Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbEnocean_VLD_Send		
Type:	Function	Function block	X Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
dwID	DWORD	ID number of the device	
xUpdate	BOOL	Initiate telegram update.	
abDataByte	ARRAY [0..ENOCEAN_MAX_VLD_IND EX_DB] OF BYTE	Data bytes	
bNumberOfDataBytes	BYTE	Number of data bytes to be sent Default: 1	
bHysteresis	BYTE	Hysteresis for sending conditions Default setting = 1	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
dwDestination_ID	DWORD	Destination ID	
Output Parameter:	Data Type:	Comment:	
xReady	BOOL	Communication status Default: TRUE	
bFeedback	BYTE	Response byte (see appendix)	
Graphical Illustration:			
<div><div>FbEnocean_VLD_Send</div><div><div><div>bPortEnocean</div><div>dwID</div><div>xUpdate</div><div>abDataByte</div><div>bNumberOfDataBytes</div><div>bHysteresis</div><div>tTimeout</div><div>dwDestination_ID</div></div><div><div>xReady</div><div>bFeedback</div></div></div></div>			

**Function Description:**

The function block transforms a data byte into an EnOcean radio telegram in the following EEP which is transmitted via the Gateway.

- D1-XX-YY

The function block is synchronized with the communication module via the **“bPortEnOcean”** input (see section 1).

The input parameter **“dwID”** determines the transmitter ID of the radio telegram. Each EnOcean transmission block must have a unique ID.

Value changes on the **“abDataByte”** input have the effect that a radio telegram is sent. The parameter **“bHysteresis”** specifies by what amount the input value **“bDataByte”** must change so that a radio telegram is sent. The sending frequency can be limited in this manner.

Sending can also be forced by a rising edge being present on the **“xUpdate”** input.

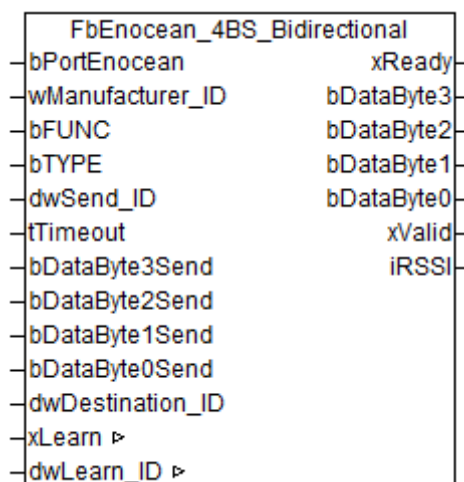
The minimum time interval for sending telegrams can be defined for the function block using the parameter **“tTimeout”**. For frequently-changing signals, the telegram load can thus be reduced.

The **“xReady”** output indicates whether the function block is ready.

Any errors will be displayed at the **“bFeedback”** output.

## 7.11 4BS Bidirectional Raw Data

WAGO-I/O-PRO 32 Library Elements			
Category:	Building technology		
Name:	FbEnocean_4BS_Bidirectional		
Type:	Function	Function block	X   Program
Name of library:	Enocean_06.lib		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Applicable to:	See Release Note		
Input Parameter:	Data Type:	Comment:	
bPortEnocean	BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER	
wManufacturer_ID	WORD	Manufacturer ID number Default setting = 16#00A	
bFUNC	BYTE	FUNC number.	
bTYPE	BYTE	TYPE number	
dwSend_ID	DWORD	Sender ID of the function block	
tTimeout	TIME	Maximum interval between two telegrams Default setting = t#60 m	
bDataByte3Send	BYTE	Set data byte DB_3.	
bDataByte2Send	BYTE	Set data byte DB_2.	
bDataByte1Send	BYTE	Set data byte DB_1.	
bDataByte0Send	BYTE	Set data byte DB_0.	
dwDestination_ID	DWORD	Destination ID	
Input/Output Parameter:	Data Type:	Comment:	
xLearn	BOOL	Activate Learn mode.	
dwLearn_ID	DWORD	Actuator transmitter ID	
Output Parameter:	Data Type:	Comment:	
xReady	BOOL	Communication status	
bDataByte3	BYTE	Data byte DB_3	
bDataByte2	BYTE	Data byte DB_2	
bDataByte1	BYTE	Data byte DB_1	
bDataByte0	BYTE	Data byte DB_0	
xValid	BOOL	Indication of whether the telegram is valid	
iRSSI	INT	Reception strength <b>RSSI</b> [dBm] (-90 dBm ... -45 dBm = poor ... good)	

**Graphical Illustration:****Function Description:**

The function block outputs the measured values of a device with the following application profiles (EEP) and sends commands:

- A5-XX-YY
- 07-XX-YY

The function block is synchronized with the communication module via the “**bPortEnOcean**” input (see section 1).

**Setting the Sender ID**

The manufacturer ID number is set at the “**wManufacturer\_ID**” input.

For bidirectional communication, the function block and the device must be “introduced” to one another as radio communication partner devices. Therefore, the device and function block must have their own unique ID numbers. The ID number of a device is assigned by the manufacturer. However, the unique ID number of the function block is defined as the so-called sender ID. The sender ID (“**dwSend\_ID**”) must be unique for each instance of the function block.

The “**tTimeOut**” input can optionally be used to monitor whether the device sends a telegram at regular intervals (e.g. every 16 min). If no time value (t = 0 sec) is specified, timeout monitoring is deactivated.

**Commissioning**

The function block and the device must be “introduced” to one another as radio communication partner devices at the beginning of commissioning. The function block must be set to the learning mode by setting the “**xLearn**” input.

After this, press the button on the device. The device then transmits a radio telegram that is received by the function block. The device ID that is received is indicated at the “**dwLearn\_ID**” input and stored. The “**xLearn**” variable is reset when the function block ID has been successfully received.

**Note:**

- The variable at the “**dwIDRead**” input should be declared as RETAIN PERSISTENT.

- The send/receive interval for the radio communication partner devices is set to approx. 10 minutes. As a result, any changes in values are displayed with a delay.
- To communicate with the STC65-RS-485 EVC Gateway, the device address must be set to 0 (default value) via the DIP switch.

#### **Description of the Inputs**

The **“bFUNC”** input corresponds to the device function (FUNC) and is input according to the EnOcean Equipment-Profile (EEP).

The **“bTYPE”** input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP).

The value of the data byte (DB\_3) is assigned at the **“bDataByte3Send”** input.

The value of the data byte (DB\_2) is assigned at the **“bDataByte2Send”** input.

The value of the data byte (DB\_1) is assigned at the **“bDataByte1Send”** input.

The value of the data byte (DB\_0) is assigned at the **“bDataByte0Send”** input.

#### **Description of the Outputs**

The received data bytes can be queried at the **“bDataByte3”**, **“bDataByte2”**, **“bDataByte1”** and **“bDataByte0”** outputs.

Each communication process between the radio communication partner devices is indicated by a falling edge at the **“xReady”** output. This output can be linked with a counter, for example, to determine the number of telegrams that are exchanged.

The reception strength is indicated at the **“iRSSI”** output. The **“xValid”** output specifies whether the values indicated at the output are valid.

## 8 Tools

### 8.1 Determining the Radio Sensor ID

WAGO-I/O-PRO 32 Library Elements			
Category:		Building technology	
Name:		FbShow_ID_ByClick	
Type:	Function	Function block	X    Program
Name of library:		Enocean_06.lib	
Libraries used:		SerComm.lib Serial_Interface_01.lib.	
Applicable to:		See Release Note	
Input Parameter:		Data Type:	Comment:
bPortEnocean		BYTE	Gateway ID number Default setting = 1 Range: 1-ENOCEAN_MAX_MASTER
bRF_TYPE		BYTE	Selection of the type of sensor to be searched ( <a href="#">ORG</a> number or <a href="#">RORG</a> number) Default setting = 16#05 <b>Range of values:</b> 16#05 or 16#F6 = <a href="#">RPS</a> telegram 16#06 or 16#D5 = <a href="#">1 byte</a> telegram 16#07 or 16#A5 = <a href="#">4 byte</a> telegram
bClick_Number		BYTE	Number of successively received telegrams having the same transmitter ID Default setting = 2
Output Parameter:		Data Type:	Comment:
dwID		DWORD	Display of the transmitter ID searched
Graphical Illustration:			
<div><div>FbShow_ID_ByClick</div><div><div>bPortEnocean</div><div>bRF_Type</div><div>bNumberOfClicks</div></div><div>dwID</div></div>			
Function Description:			
<p>This function block helps identify the transmitter IDs of radio sensors.</p> <p>The function block is synchronized with the communication module via the <b>“bPortEnocean”</b> input (see section 1).</p> <p>A filter can be selected via input of the <b>bRF_TYPE</b> input parameter so that only the telegrams of this sensor type will be identified by the function block. The value of the <b>“bRF_TYPE”</b> input can be read off the RORG/ORG of the EEP of the radio sensor that is to be searched for.</p>			
Example:			

- EEP2.0: 05-02-01 => *bRF\_TYPE* = 16#05
- EEP2.1: F6-02-01 => *bRF\_TYPE* = 16#F6

The following requirements must be fulfilled so that the received transmitter ID can be displayed at the “*dwID*” output:

- The telegram must belong to the sensor type selected at the “*bRF\_TYPE*” input.
- The number of successively received telegrams having the same transmitter ID corresponds to the input value “*bClick\_Number*”.



## 9 Appendix

### 9.1 EnOcean Equipment Profile (EEP)

By standardizing the communication profiles (EnOcean Equipment Profile, EEP), the interoperability of the terminals based on EnOcean technology is ensured. In this way, for example, sensors from one device manufacturer can communicate with receiver Gateways from another manufacturer. The standard can be downloaded at [http://www.enocean-alliance.org/de/enOcean\\_standard/](http://www.enocean-alliance.org/de/enOcean_standard/).

**EEP2.0:   ORG   -FUNC-   TYPE**  
**EEP2.1:   RORG -FUNC-   TYPE**  
**Range (hex):   00..FF   - 00..3F -   00..7F**

Figure 1: Structure of an EEP

An EEP consists of three fields:

1. RORG or ORG number describes the telegram type.
2. **FUNC** number describes the functionality of the data bytes.
3. TYPE number describes the properties of the device/device type.

The field values are displayed as hexadecimal numbers. The range of values is limited by the bits available (see above).

Table 1: RORG Numbers

Telegram	RORG	ORG	Description
RPS	F6	05	Repeated Switch Communication
1BS	D5	06	1 Byte Communication
4BS	A5	07	4 Byte Communication
VLD	D2	=RORG	Variable Length Data
MSC	D1	=RORG	Manufacturer Specific Communication
ADT	A6	=RORG	Addressing Destination Telegram
SM_LRN_REQ	C6	=RORG	Smart Ack Learn Request
SM_LRN_ANS	C7	=RORG	Smart Ack Learn Answer
SM_REC	A7	=RORG	Smart Ack Reclaim
SYS_EX	C5	=RORG	Remote Management

## 9.2 EnOcean Transmitters

Table 2: EnOcean Transmitters

Manufacturer/ Product	Description	Corresponding function block	<a href="#">bRF_TYPE</a>	bTYPE
Dux Selector Switch IP67	Selector/keys witch	<a href="#">FbF610xx_MechanicalHandle</a>	16#F6	16#00
Dux pushbutton IP67	Button	<a href="#">FbF610xx_MechanicalHandle</a>	16#F6	16#00
EchoFlex ER1C-DFC	Relay	<a href="#">FbF602xx_RockerSwitch_2_Rocker</a>	16#F6	16#00
		<a href="#">FbA506xx_LightSensor</a>	16#A5	16#02
		<a href="#">FbA507xx_OccupancySensor</a>	16#A5	16#01
EchoFlex MC-17	Contact sensor	<a href="#">FbA530xx_DigitalInput</a>	16#A5	16#02
EchoFlex MT-17	Temperature sensor	<a href="#">FbA502xx_TemperatureSensor</a>	16#A5	16#05
EchoFlex PTM265KCA	Key card switch	<a href="#">FbF604xx_PositionSwitchHomeOfficeApp</a>	16#F6	16#01
<a href="#">Eltako</a> FAFT60	Exterior/humidity/temperature sensor	<a href="#">FbA504xx_TemperatureHumiditySensor</a> plus data byte 3	16#A5	16#02
<a href="#">Eltako</a> FIFT63AP	Interior/humidity/temperature sensor	<a href="#">FbA504xx_TemperatureHumiditySensor</a> plus data byte 3	16#A5	16#02
<a href="#">Eltako</a> FSS12	Radio electricity meter transmission module	<a href="#">FbA512xx_AutomatedMeterReading</a>	16#0A5	16#01
<a href="#">Eltako</a> FAH60	Radio exterior/light intensity sensor	<a href="#">FbA506xx_LightSensor</a> plus data byte 3	16#A5	16#01
<a href="#">Eltako</a> FAH63	Radio exterior/light intensity sensor	<a href="#">FbA506xx_LightSensor</a> plus data byte 3	16#A5	16#01
Hoppe SecuSignal window handle	Window handle	<a href="#">FbF610xx_MechanicalHandle</a>	16#F6	16#00
ILLUMRA E3T-MDCCP	Contact sensor	<a href="#">FbD500xx_ContactsAndSwitched</a>	16#D5	16#01

Manufacturer/ Product	Description	Corresponding function block	<a href="#">bRF_TYPE</a>	bTYPE
Regulvar RW-TP01	Room operating panel	<a href="#">FbA510xx_RoomOperatingPanel</a>	16#A5	16#05
Regulvar RW-TP01-PC	Temperature sensor	<a href="#">FbA502xx_TemperatureSensor</a>	16#A5	16#05
Steute EF 41	Limit switch	<a href="#">FbA530xx_DigitalInput</a>	16#A5	16#02
Steute EF95	Limit switch	<a href="#">FbEnOcean_1BYTE_Receive_evaluation on bit DB3.4</a>	16#F6	-
Stuhl SF11	Room operating panel	<a href="#">FbA510xx_RoomOperatingPanel</a>	16#A5	16#01
Thermokon S04 CO2	Combined radio sensor	<a href="#">FbA50904_CO2_GasSensor</a>	16#A5	16#04
Thermokon SR04P	Room sensor/operating panel	<a href="#">FbA510xx_RoomOperatingPanel</a>	16#A5	16#03
Thermokon SR04P MS	Room sensor/operating panel	<a href="#">FbA510xx_RoomOperatingPanel</a>	16#A5	16#05
Thermokon SR65	Outside Temperature Sensor	<a href="#">FbA502xx_TemperatureSensor</a>	16#A5	16#14
Thermokon SR65 AKF	Air channel temperature sensor	<a href="#">FbA502xx_TemperatureSensor</a>	16#A5	16#17
Thermokon SR65 Di	Digital input	<a href="#">FbA530xx_DigitalInput</a>	16#A5	16#01
Thermokon SR65 Li	Light intensity sensor	<a href="#">FbA506xx_LightSensor</a>	16#A5	16#01
Thermokon SR65 TF	Cable temperature sensor	<a href="#">FbA502xx_TemperatureSensor</a>	16#A5	16#14
Thermokon SR65 VFG	Contact temperature sensor	<a href="#">FbA502xx_TemperatureSensor</a>	16#A5	16#17
Thermokon SRG01	Window / door handle	<a href="#">FbF610xx_MechanicalHandle</a>	16#F6	16#00
Thermokon SR-MDS	Ceiling multi-sensor	<a href="#">FbA508xx_LightTemperatureOccupancySensor</a>	16#A5	16#01
Thermokon SR-PIR 360°	Presence detector	<a href="#">FbA507xx_OccupancySensor</a>	16#A5	16#01

Manufacturer/ Product	Description	Corresponding function block	<a href="#">bRF_TYPE</a>	bTYPE
Thermokon SRW01	Window / door contact	<a href="#">FbD500xx_ContactsAndSwit ched</a>	16#D5	16#01
Thermokon Thanos SRxx	Room operating panel	<a href="#">FbA510xx_RoomOperatingP anel</a>	16#A5	16#02
		<a href="#">FbA510xx_RoomOperatingP anel</a>	16#A5	16#11
		<a href="#">FbD500xx_ContactsAndSwit ched</a>	16#D5	16#01
		<a href="#">FbF602xx_RockerSwitch_2_ Rocker</a>	16#F6	16#01

## 9.3 EnOcean Touch Sensors / Rocker Switches

Table 3: Touch Sensors and Rocker Switches

Manufacturer/ Product	Description	Corresponding function block	<a href="#">RF_TYPE</a>	bTYPE
EnOcean PTM200 1-way rocker switch	2-channel touch sensor	<a href="#">FbF602xx_RockerSwitch_2_Rocker</a>	16#F6	16#01
EnOcean PTM200 2-way rocker switch	2-channel touch sensor	<a href="#">FbF602xx_RockerSwitch_2_Rocker</a>	16#F6	16#01
EnOcean PTM100 1-way rocker switch	4-channel touch sensor	<a href="#">FbF603xx_RockerSwitch_4_Rocker</a>	16#F6	16#01

## 9.4 EnOcean Receivers / Transmitters (Bidirectional)

Table 4: Bidirectional Receivers/Transmitters

Manufacturer/Product	Description	Corresponding function block	<a href="#">bRF_TYPE</a>	bTYPE
IntesisBox DK-RC-ENO-1i / 1iC	HVAC Components	<a href="#">FbA52010_GenericHVAC_Interface</a>	16#A5	16#10
		<a href="#">A5-2011_HVAC_InterfaceErrorControl</a>	16#A5	16#11
Kieback & Peter MD15-FtL-HE	Battery-operated heating control valve	<a href="#">FbA52001_BatteryPoweredActuator</a>	16#A5	16#01
Spartan ME83xx	Wireless valve actuator (basic)	<a href="#">FbA52002_BasicActuator</a>	16#A5	16#02
Thermokon SAB01	Battery-operated heating control valve	<a href="#">FbA52001_BatteryPoweredActuator</a>	16#A5	16#01
Thermokon STC-MSG Server	Server for communication with actuator	<a href="#">AFbA52012_TemperatureControllerInput</a>	16#A5	16#12

## 9.5 Manufacturer ID

The manufacturer identification numbers listed are assigned at the “**wManufacture\_ID**” input. This number may differ for some devices. First, read the instructions of the respective device completely.

Table 5: Manufacturer ID

Manufacturer	ID Number (hex)
Peha	16#001
Thermokon	16#002
Servodan	16#003
EchoFlex Solutions	16#004
Omnio AG	16#005
Hardmeier electronics	16#006
Regulvar Inc.	16#007
Ad hoc electronics	16#008
Distech Control	16#009
Kieback & Peter	16#00A
EnOcean GmbH	16#00B
Probare	16#00C
Eltako	16#00D
Leviton	16#00E
Honeywell	16#00F
Spartan Peripheral Devices	16#010
Siemens	16#011
T-Mac	16#012
Reliable Controls Corporation	16#013
Elsner Elektronik GmbH	16#014
Diehl Controls	16#015
BSC Computer	16#016
S+S Regeltechnik GmbH	16#017
Masco Corporation	16#018
Intesis Software SL	16#019
RES	16#01A
Lutuo Technology	16#01B
CAN2GO	16#01C

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Oventrop	16#035
Multi-user Manufacturer ID	16#7FF



## 9.6 Feedback(bFeedback)

Table 6: Feedback

Feedback	ID Number (hex)
ENOCAN_OK	16#00
ENOCAN_ERROR_TIMEOUT	16#E1
ENOCAN_ERROR_BUSY	16#E2
ENOCAN_ERROR_CRC	16#E3
ENOCAN_ERROR_NOREAD_ID	16#E4
ENOCAN_ERROR_ZERO_ID	16#E5
ENOCAN_ERROR_INVALID_MASTER	16#E6
ENOCAN_ERROR_INVALID_SIZE	16#E7
ENOCAN_ERROR_MODULE_NOT_DETECTED	16#E8

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