WAGO I/O SYSTEM 750

Libraries for Building Automation

Function Block Descriptions for the WAGO EnOcean Library Enocean_05.lib

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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

We wish to point out that the software and hardware names, as well as the trademarks of companies used and/or mentioned in the present manual, are generally protected by trademark or patent.

WAGO-I/O-PRO V2.3 Library for Receiving and Sending EnOcean Radio Telegrams.

Contents

Important Notes

To ensure fast installation and start-up of the units, we strongly recommend that the following information and explanations are carefully read and adhered to.

Copyright

Personnel Qualification

The use of the product described in this document is exclusively geared to specialists having qualifications in SPS programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the appropriate current standards. WAGO Kontakttechnik GmbH & Co. KG assumes no liability resulting from improper action and damage to WAGO products and third-party products due to non-observance of the information contained in this document.

Intended Use

For each individual application, the components are supplied from the factory with a dedicated hardware and software configuration. Modifications are only admitted within the framework of the possibilities documented in this document. All other changes to the hardware and/or software and the non-conforming use of the components entail the exclusion of liability on part of WAGO Kontakttechnik GmbH & Co. KG.
Please direct any requirements pertaining to a modified and/or new hardware or software configuration directly to WAGO Kontakttechnik GmbH & Co. KG.

Scope of Validity

This application note is based on the stated hardware and software from the specific manufacturer, as well as the associated documentation. This application note is therefore only valid for the described installation. New hardware and software versions may need to be handled differently.

Please note the detailed description in the specific manuals.

EnOcean Equipment Profile (EEP)

By standardizing the communication profiles (EnOcean Equipment Profile, EEP), the interoperability of the devices 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/.

Structure of an EEP

Figure 1: Structure of an EEP

An EEP consists of three fields:

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

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

Determining a suitable Function Block

The WAGO function blocks used for communication with the terminals based on EnOcean technology are described starting from page 24. The names of the function blocks represent the EEP used. The EEP2.0 and EEP2.1 has the same data coding. However, all WAGO function blocks used in this library will be named after the EEP2.1. The value at input *"bTYPE"* refers to the TYPE number (see Figure 2).

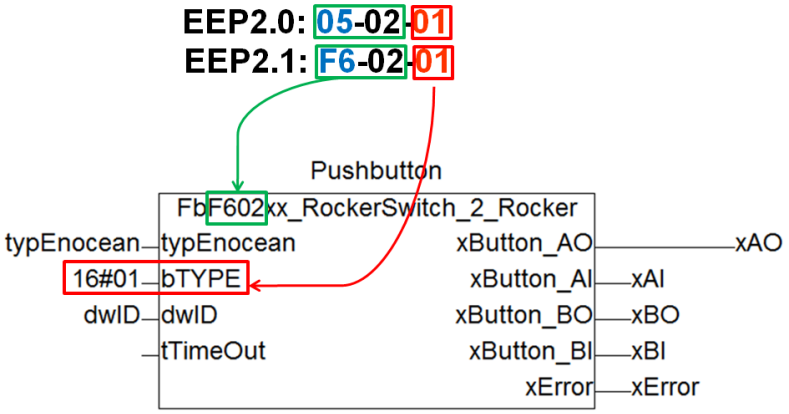


Figure 2: Instance of a switch with EEP F6-02-01

For the new EEP2.1, the telegram type RORG number is relabeled instead of the ORG number.

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	C 6 %	=RORG	Smart Ack Learn Request
SM_LRN_ANS	C 7 %	=RORG	Smart Ack Learn Answer
SM_REC	A7	=RORG	Smart Ack Reclaim
SYS_EX	C 5 %	=RORG	Remote Management

EnOcean Transmitters

Table 2: EnOcean transmitters

Manufacturer / Product	Description	Corresponding function block	bRF_TYPE	bTYPE
Dux Selector Switch IP67	Selector / keyswitch	FbF610xx_MechanicalHandle	16#F6	16#00
Dux Taster IP67	Button	FbF610xx_MechanicalHandle	16#F6	16#00
EchoFlex ER1C-DFC	Relay	FbF602xx_RockerSwitch_2_Rocker	16#F6	16#00
		FbA506xx_LightSensor	16#A5	16#02
		FbA507xx_OccupancySensor	16#A5	16#01
EchoFlex MC-17	Contact sensor	FbA530xx_DigitalInput	16#A5	16#02
EchoFlex MT-17	Temperature sensor	FbA502xx_TemperatureSensor	16#A5	16#05
EchoFlex PTM265KCA	Key card switch	FbF604xx_PositionSwitchHomeOfficeApp	16#F6	16#01
Eltako FAFT60	Wireless Outdoor Humidity temperature sensor	FbA504xx_TemperatureHumiditySensor plus Data byte 3	16#A5	16#02
Eltako FIFT63AP	Wireless Indoor Humidity temperature sensor	FbA504xx_TemperatureHumiditySensor plus Data byte 3	16#A5	16#02
Eltako FSS12	Wireless Energy Meter transmitter Module	FbA512xx_AutomatedMeterReading	16#A5	16#01
Eltako FAH60	Wireless Outdoor Brightness Sensor	FbA506xx_LightSensor plus Data byte 3	16#A5	16#01
Eltako FAH63	Wireless Outdoor Brightness Sensor	FbA506xx_LightSensor plus Data byte 3	16#A5	16#01
Hoppe Secusignal Fenstergriff	Window handle	FbF610xx_MechanicalHandle	16#F6	16#00
ILLUMRA E3T-MDCCP	Contact sensor	FbD500xx_ContactsAndSwitched	16#D5	16#01

Manufacturer / Product	Description	Corresponding function block	bRF_TYPE	bTYPE
Regulvar RW-TP01	Room operating panel	FbA510xx_RoomOperatingPanel	16#A5	16#05
Regulvar RW-TP01-PC	Temperature sensor	FbA502xx_TemperatureSensor	16#A5	16#05
Steute EF 41	End stop	FbA530xx_DigitalInput	16#A5	16#02
Steute EF95	End stop	FbEnocean_1BYTE_Receive, Evaluate DB3.4	16#F6	-
Stuhl SF11	Room operating panel	FbA510xx_RoomOperatingPanel	16#A5	16#01
Thermokon S04 CO2	Combined radio sensor	FbA50904_CO2_GasSensor	16#A5	16#04
Thermokon SR04P	Room sensor/operating panel	FbA510xx_RoomOperatingPanel	16#A5	16#03
Thermokon SR04P MS	Room sensor/operating panel	FbA510xx_RoomOperatingPanel	16#A5	16#05
Thermokon SR65	External temperature sensor	FbA502xx_TemperatureSensor	16#A5	16#14
Thermokon SR65 AKF	Duct temperature sensor	FbA502xx_TemperatureSensor	16#A5	16#17
Thermokon SR65 Di	Digital input	FbA530xx_DigitalInput	16#A5	16#01
Thermokon SR65 Li	Light intensity sensor	FbA506xx_LightSensor	16#A5	16#01
Thermokon SR65 TF	Cable temperature sensor	FbA502xx_TemperatureSensor	16#A5	16#14
Thermokon SR65 VFG	Contact temperature sensor	FbA502xx_TemperatureSensor	16#A5	16#17
Thermokon SRG01	Window / door handle	FbF610xx_MechanicalHandle	16#F6	16#00
Thermokon SR-MDS	Ceiling multi-sensor	FbA508xx_LightTemperatureOccupancySensor	16#A5	16#01
Thermokon SR-PIR 360°	Presence detectors	FbA507xx_OccupancySensor	16#A5	16#01
Thermokon SRW01	Window / door contact	FbD500xx_ContactsAndSwitched	16#D5	16#01

Manufacturer / Product	Description	Corresponding function block	bRF_TYPE	bTYPE
Thermokon Thanos SRxx	Room operating panel	FbA510xx_RoomOperatingPanel	16#A5	16#02
		FbA510xx_RoomOperatingPanel	16#A5	16#11
		FbD500xx_ContactsAndSwitched	16#D5	16#01
		FbF602xx_RockerSwitch_2_Rocker	16#F6	16#01

EnOcean Touch Sensors / Rocker Switches

Table 3: Touch sensors and rocker switches

Manufacturer / Product	Description	Corresponding function block	bRF_TYPE	bTYPE
EnOcean PTM200 1-way rocker switch	2-channel touch sensor	FbF602xx_RockerSwitch_2_Rocker	16#F6	16#01
EnOcean PTM200 2-way rocker switch	2-channel touch sensor	FbF602xx_RockerSwitch_2_Rocker	16#F6	16#01
EnOcean PTM100 1-way rocker switch	4-channel touch sensor	FbF603xx_RockerSwitch_4_Rocker	16#F6	16#01

EnOcean Receivers / Transmitters (bidirectional)

Table 4: Bidirectional receivers / transmitters

Manufacturer / Product	Description	Corresponding function block	bRF_TYPE	bTYPE
IntesisBox DK-RC-ENO-1i / 1iC	HVAC components	FbA52010_GenericHVAC_Interface	16#A5	16#10
		FbA52011_HVAC_InterfaceErrorControl	16#A5	16#11
Kieback & Peter MD15-FtL-HE	Battery-operated heating control valve	FbA52001_BatteryPoweredActuator	16#A5	16#01
Spartan ME83xx	Wireless valve actuator	FbA52002_BasicActuator	16#A5	16#02
Thermokon SAB01 /SAB02	Battery-operated heating control valve	FbA52001_BatteryPoweredActuator	16#A5	16#01
Thermokon STC-MSG Server	Server for communication with actuator	FbA52012_TemperatureControllerInput	16#A5	16#12
IntesisBox DK-RC-ENO-1i / 1iC	HVAC components	FbA52010_GenericHVAC_Interface	16#A5	16#10
Thermokon STC-MSG Server	Server for communication with actuator	FbA52011_HVAC_InterfaceErrorControl	16#A5	16#11

EnOcean Manufacturer IDs

The listed manufacturer IDs are assigned at the ***"wManufacture_ID"*** input. This number may different for some devices. First, read the instructions of the respective device completely.

Table 5: Manufacturer ID

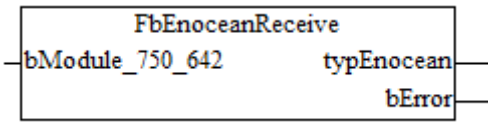
Manufacturer	ID Number (hex)
Peha	16#001
Thermokon	16#002
Servodan	16#003
EchoFlex Solutions	16#004
Omnio AG	16#005
Hardmeier electronics	16#006
Regulvar Inc.	16#007
Ad Hoc Electronics	16#008
Distech Control	16#009
Kieback & Peter	16#00A
EnOcean GmbH	16#00B
Probare	16#00C
Eltako	16#00D
Leviton	16#00E
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...01 A
Lutuo Technology	16#01B
CAN2GO	16#01C
Multi-user Manufacturer ID	16#7FF

Communication Block

EnOcean Radio Receiver 750-642 (FbEnoceanReceive)

WAGO-I/O-PRO V2.3 Library Elements			
Category:	Building Automation		
Name:	FbEnoceanReceive		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Library used:	mod_com.lib		
Input parameters:	**Data type:**	**Comment:**	
bModule_750_642	BYTE	EnOcean-module 750-642 index Default setting = 1	
Return value:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Output data of the received radio telegram.	
bError	BYTE	Error code 0x00: No error 0x02 = Module was not detected 0x81 = Faulty telegram (CRC error)	

Graphical illustration:



Functional description

The **FbEnoceanReceive** function block can be used for communication with the radio receiver I/O module 750-642.

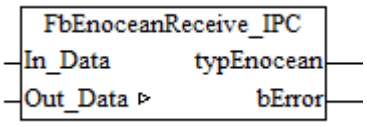
The controller recognizes the connected radio receiver I/O modules on its own and counts them one after the other, starting from the left. To address the function block to the proper EnOcean module, the corresponding module index must be entered as a constant at the ***"bModule_750_642"*** input.

This function block may be used only once per installed radio receiver I/O module. All other EnOcean function blocks must be linked with this function block via the output variable ***"typEnocean"***.

Possible errors will be displayed at the ***"bError"*** output.

EnOcean Radio Receiver IPC (FbEnoceanReceive_IPC)

WAGO-I/O-*PRO* V2.3 Library Elements			
Category:	Building Automation		
Name:	FbEnoceanReceive_IPC		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Input parameters:	**Data type:**	**Comment:**	
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	
Return value:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Output data of the received radio telegram.	
bError	BYTE	Error code 0x00: No error 0x81 = Faulty telegram (CRC error)	
Graphical illustration:			



Functional description

The **FbEnoceanReceive_IPC** function block can be used for communication with the radio receiver I/O module 750-642 on all programmable fieldbus controllers.

The inputs ***"In_Data"*** and ***"Out_Data"*** contain the input or output data array 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 module is installed.

Example: navigation of level 3.

In_Data = Input **AT %IB0** : ARRAY [0..3] OF BYTE;

Out_Data = Output **AT %QB0** : ARRAY [0..3] OF BYTE;

This function block may be used only once per installed radio receiver I/O module.

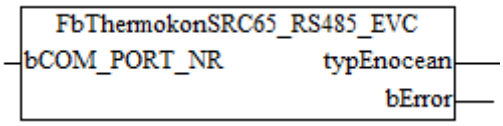
The output variable ***"typEnocean"*** contains all relevant data of the received radio telegrams. It can then be further processed by other function blocks.

Possible errors will be displayed at the ***"bError"*** output.

Communication via the RS-485 Interface, WAGO 750-65x

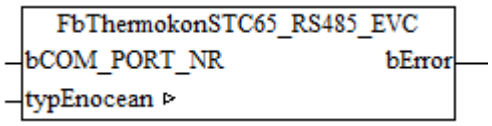
Thermokon SRC65-RS485 EVC (Unidirectional)

WAGO-I/O-*PRO* V2.3 Library Elements			
Category:	Building Automation		
Name:	FbThermokonSRC65_RS485_EVC		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Libraries used:	SerComm.lib Serial_Interface_01.lib.		
Input parameters:	**Data type:**	**Comment:**	
bCOM_PORT_NR	BYTE	No. of the serial interface used 1 -> Internal service interface 2 -> 1. connected serial module 3 -> 2. connected serial module	
Return value:	**Data type:**	**Comment:**	
typEnocean	typEnocean	Output data of the received radio telegram.	
bError	BYTE	Error code 0x00: No error 0x01 = Illegal COM port 0x0C = Error during initialization 0x0D = problem with hardware handshake 0x81 = faulty telegram (CRC-error)	
Graphical illustration:			



Functional description
The function block receives EnOcean telegrams via the Thermokon gateway SRC65-RS485 EVC. 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. To address the function block to the proper RS-485 module, the corresponding number (e.g., "2" for COM2") must be entered as a constant at the ***"bCOM_PORT_NR" input.*** The output variable ***"typEnocean"*** contains all relevant data of the received radio telegrams. This output variable can then be used by other function blocks for further processing. Possible errors will be displayed at the ***"bError"*** output. **Note:** The 750-652 RS-485 Module is used as the interface. The function block configures the module with the following parameters: Baud rate: 9600 Data bits: 8 Stop bits: 1 Parity: Even Duplex mode: Half duplex

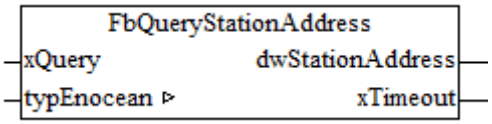
Thermokon STC65-RS485 EVC (Bidirectional)

WAGO-I/O-*PRO V2.3* Library Elements		
Category:	Building Automation	
Name:	FbThermokonSTC_RS-485_EVC	
Type:	Function ☐	Function block X ☐ Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	See Release Note	
Libraries used:	SerComm.lib Serial_Interface_01.lib.	
Input parameters:	**Data type:**	**Comment:**
bCOM_PORT_NR	BYTE	No. of the serial interface used Default setting = 2 1 -> Internal service port 2 -> 1. connected serial module 3 -> 2. connected serial module
Input/output parameter:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input/output data of the radio telegram.
Return value:	**Data type:**	**Comment:**
bError	BYTE	Error code 0x00: No error 0x01 = Illegal COM port 0x0C = initialization error 0x0D = problem with hardware handshake 0x81 = faulty telegram (CRC-error) 0x82 = Timeout
Graphical illustration:		
		

Functional description
The function block sets up a link to the Thermokon STC65-RS485 EVC Gateway to provide bidirectional communication employing the EnOcean radio protocol. 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. To address the function block to the proper RS-485 module, the corresponding number (e.g., "2" for COM2") must be entered as a constant at the ***"bCOM_PORT_NR" input.*** The input variable ***"typEnocean"*** contains all relevant data of the received radio telegrams and of the radio telegrams to be transmitted. This output variable can then be used by other function blocks for further processing. Possible errors will be displayed at the ***"bError"*** output. **Note:** The 750-652 RS-485 Module is used as the interface. The function block configures the module with the following parameters: Baud rate: 9600 Data bits: 8 Stop bits: 1 Parity: Even Duplex mode: Half duplex

Read station address (FbQueryStationAddress)

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbQueryStation_Addr		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Input parameters:	**Data type:**	**Comment:**	
xQuery	BOOL	Station address query	
Input/output parameter:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input/output data of the radio telegram.	
Return value:	**Data type:**	**Comment:**	
dwStation_Address	DWORD	Gateway station address	
xTimeout	BOOL	Timeout	
Graphical illustration:			



Functional description

Each Thermokon STC65-RS485-EVC Gateway has a 4-byte-long station address. The **FbQueryStationAddress** function block queries this address.

A rising edge at the ***"xQuery"*** input causes the gateway station address to be read out and displayed at the ***"dwStationAddress"*** output. If the function block does not receive a reply within two seconds, the ***"xTimeout"*** output is set to TRUE.

The variable ***"typEnocean"*** contains all the relevant data of the received radio telegrams. All other EnOcean function blocks that are used in the program must be linked with one another via this variable.

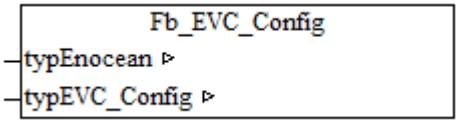
Note:

To communicate with the gateway, the device address must be set to 0 (default value) via the DIP switch.

Visual Display Elements

Gateway Configurator (FbEVC_Config)

WAGO-I/O-*PRO V2.3* Library Elements		
Category:	Building Automation	
Name:	Fb_EVC_Config	
Type:	Function ☐	Function block X ☐ Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	See Release Note	
Input/output parameter:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input/output data of the radio telegram.
typEVC_Config	typEVC_Config	Gateway configuration data
Graphical illustration:		



Functional Description

Use the **Fb_EVC_Config** function block to configure the Thermokon STC65-RS485-EVC Gateway. Furthermore, status queries can also be executed with this block.

Display and operator control of the configuration data is performed using the visual display element **Config_Thermokon_STC_VISU_PH**, which is contained in this library. The place holder for the visual display element must be linked with the variable at the ***"typEVC_Config"*** input.

The variable ***"typEnocean"*** contains all the relevant data of the received radio telegrams. All other EnOcean function blocks that are used in the program must be linked with one another via this variable.

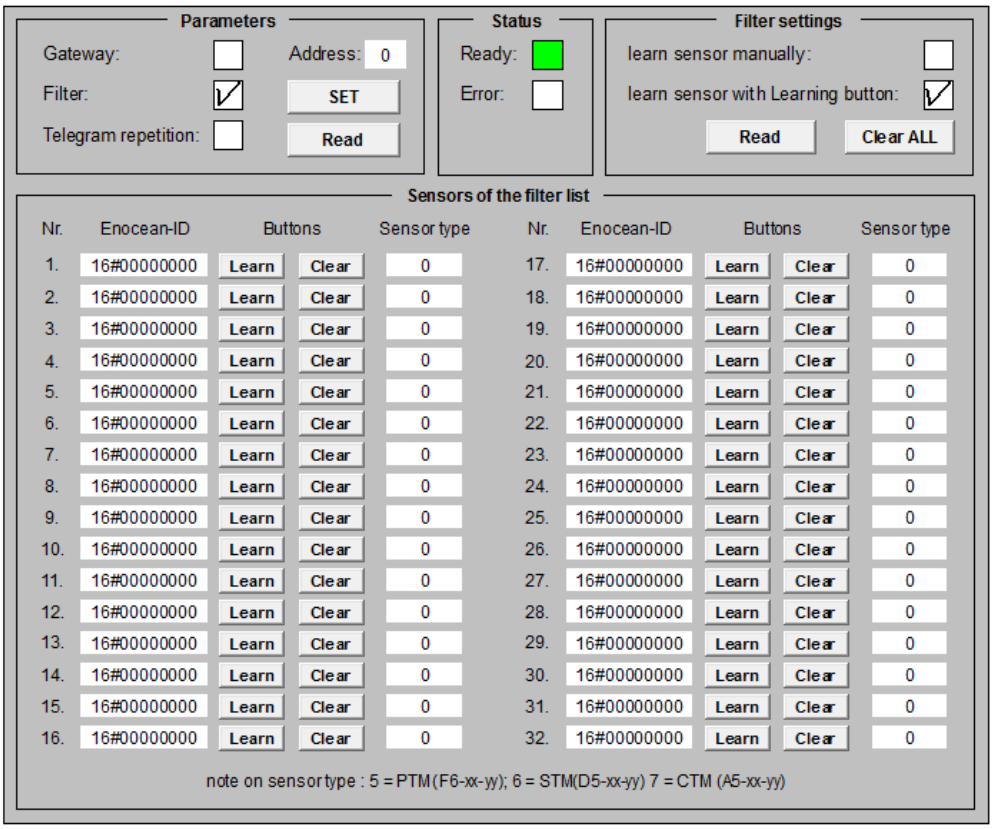
Note:

The visual display element **Config_Thermokon_STC_VISU_PH** exists for this module (see page 23).

Visualization (Config_Thermokon_STC_VISU_PH)

WAGO-I/O-PRO V2.3 Library Elements		
Category:	Building Automation	
Name:	Config_Thermokon_STC_VISU_PH	
Name of library:	Enocean_05.lib	
Applicable to:	See Release Note	
Place holder:	**Data type:**	**Comment:**
typEVC_Config	typEVC_Config	Input and display of the configuration data

Graphical illustration:



Functional Description

Note:

The **[Learn]** button is not enabled until a valid "Sensor type" has been entered.

- „Sensor type“=5 -> Device with EEP F6-xx-yy / 05-xx-yy
- „Sensor type“=6 -> Device with EEP D5-xx-yy / 06-xx-yy
- „Sensor type“=7 -> Device with EEP EEP A5-xx-yy / 07-xx-yy

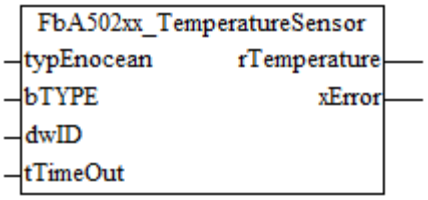
Most of the configuration fields are hidden in the "Gateway" mode.

The filter technology does not require configuration for standard applications.

Temperature Sensors

A5-02-xx: Temperature sensor

WAGO-I/O-*PRO V2.3* Library Elements		
Category:	Building Automation	
Name:	FbA502xx_TemperatureSensor	
Type:	Function ☐	Function block ☒ Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	All programmable fieldbus controllers	
Input parameters:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input of the received radio telegram
bTYPE	BYTE	Device type (TYPE).. Default setting = 16#05
dwID	DWORD	Transmitter ID of the sensor
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m
Return value:	**Data type:**	**Comment:**
rTemperature	REAL	Temperature measured by the temperature sensor [°C]
xError	BOOL	No new telegram within timeout period.
Graphical illustration:		

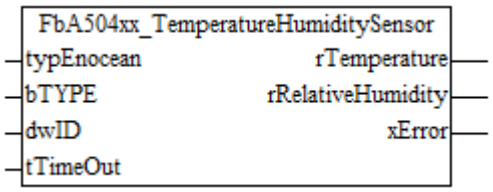


Functional description
The function block outputs the measured value of a temperature sensor with EnOcean Equipment Profiles (EEP) A5-02-xx or 07-02-xx (xxh stands for the device type). The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The measured temperature is output in °C at the ***"rTemperature"*** output. **Note:** Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

Temperature & Humidity Sensor

A5-04-xx: Temperature & Humidity Sensor

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA504xx_TemperatureHumiditySensor		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
bTYPE	BYTE	Device type (TYPE).. Default setting = 16#01	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
rTemperature	REAL	Temperature measured by the temperature sensor [°C]	
rRelativeHumidity	REAL	Measured humidity of the humidity sensor [%]	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description

The function block outputs the measured value of a multi-sensor with EnOcean Equipment Profiles (EEP) A5-04-xx or 07-04-xx (xxh stands for the device type).

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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 certain types of sensors.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

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

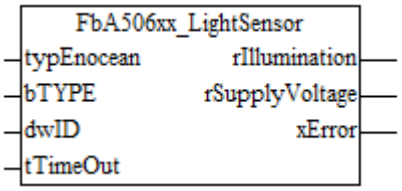
The measured humidity is output in % at the ***"rRelativeHumidity"*** output.

Note:
Additional information about the device type number (TYPE) is available at:
http://www.enocean-alliance.org/de/enocean_standard/

Light Intensity Sensor

A5-06-xx: Light Intensity Sensor

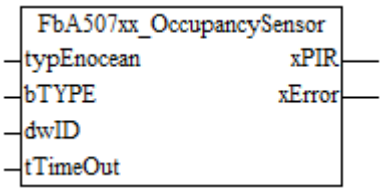
WAGO-I/O-PRO V2.3 Library Elements			
Category:	Building Automation		
Name:	FbA506xx_LightSensor		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
.bType	BYTE	Device type (TYPE).. Default setting = 16#01	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
rIllumination	REAL	Brightness value [lx]	
rSupplyVoltage	REAL	Voltage supply [V] Value range = 0V – 5.1V	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description
This function block outputs the measured value of a light intensity sensor with EnOcean Equipment Profiles (EEP) A5-06-xx or 07-06-xx (xxh stands for the device type). The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 17 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The ***"rIllumination"*** output displays the measured light intensity for the selected measurement range. Jumper plugs can be used, for example, to set the measurement range. The ***"rSupplyVoltage"*** output is the charging or supply voltage of the energy storage in V. **Note:** Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

Presence detectors

A5-07-xx: Presence detector

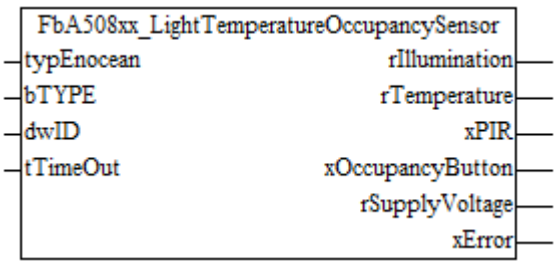
WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA507xx_OccupancySensor		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
.bType	BYTE	Device type (TYPE).. Default setting = 16#01	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
xPIR	BOOL	Indicates the presence of a person within the measurement range of the sensor. FALSE -> Presence detected. Default setting = TRUE	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			
			

Functional description
The function block displays the signal of a presence detector of device type A5-07-xx or 07-07-xx (xxh stands for the device type). The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 100 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the "xError" output is set to TRUE. The ***"xPIR"*** output indicates whether a person is within the detection range of the sensor. **Note:** Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

Light Intensity Sensors, Temperature Sensors & Presence Detectors

A5-08-xx: Light Intensity Sensors, Temperature Sensors & Presence Detectors

WAGO-I/O-PRO V2.3 Library Elements			
Category:	Building Automation		
Name:	FbA508xx_LightTemperatureOccupancySensor		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
bTYPE	BYTE	Device type (TYPE).. Default setting = 16#01	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
rIllumination	REAL	Brightness value [lx] Value range depends on TYPE	
rTemperature	REAL	Temperature measured by the temperature sensor [°C]	
xPIR	BOOL	Indicates the presence of a person within the measurement range of the sensor. FALSE -> Presence detected Default setting = TRUE	
xOccupancyButton	BOOL	FALSE -> Presence button is pushed Default setting = TRUE	
rSupplyVoltage	REAL	Supply or charging voltage [V] Value range = 0 V – 5.1 V	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			

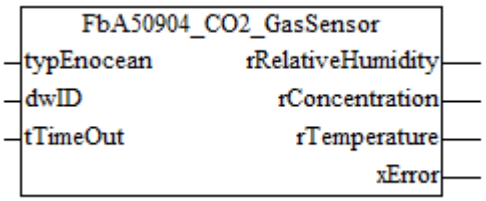


Functional description
The function block indicates the measured values of a multi-sensor with EEPA5-08-xx or 07-08-xx (xxh stands for the device type). The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 the sensor. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 100 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. 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. If the presence button is pressed, the ***"xOccupancyButton"*** output is set to FALSE. The ***"rSupplyVoltage"*** output is the charging or supply voltage of the energy storage in V. **Note:** Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

Gas Sensors

A5-09-04: CO_2 Gas Sensor

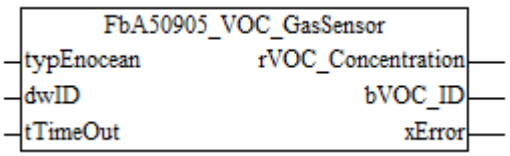
WAGO-I/O-PRO V2.3 Library Elements		
Category:	Building Automation	
Name:	FbA50904_CO2_GasSensor	
Type:	Function ☐	Function block ☒ Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	All programmable fieldbus controllers	
Input parameters:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input of the received radio telegram
dwID	DWORD	Transmitter ID of the sensor
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m
Return value:	**Data type:**	**Comment:**
rRelativeHumidity	REAL	Measured humidity of the humidity sensor [%]
rConcentration	REAL	Gas concentration [ppm]
rTemperature	REAL	Temperature measured by the temperature sensor [°C]
xError	BOOL	No new telegram within timeout period.
Graphical illustration:		



Functional description
The function block outputs the measured values of a CO_2 gas sensor with EnOcean Equipment Profiles (EEP) A5-09-04 or 07-09-04. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. 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. **Note:** Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

A5-09-05: VOC Gas Sensor

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA50905_VOC_GasSensor		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
rVOC_Concentration	REAL	VOC concentration [ppb] Value range = 0 ppb – 65535 ppb	
bVOC_ID	BYTE	VOC ID number	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description
The function block outputs the measured values of a Voc gas sensor with EnOcean Equipment Profiles (EEP) A5-09-05 or 07-09-05. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. 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"*** (see Table 6 on page 38).

Table 6: VOC ID numbers

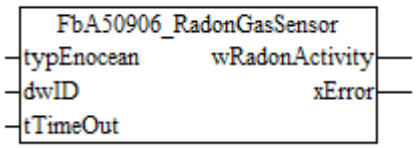
bVOC_ID	**VOC Type**
0	VOCT (total)
1	Formaldehyde
2	Benzene
3	Styrene
4	Toluene
5	Tetrachloroethylene
6	Xylene
7	n-Hexane
8	n-Octane
9	Cyclopentane
10	Methanol
11	Ethanol
12	1-Pentanol
13	Acetone
14	Ethylene Oxide
15	Acetaldehyde ue
16	Acetic acid
17	Propionice acid
18	Valeric acid
19	Butyric acid
20	Ammoniac
22	Hydrogen Sulfide
23	Dimethylsulfide
24	2-Butanol (butyl alcohol)
25	2-Methylpropanol
26	Dietyhl ether
255	Ozone

Note:

Additional information about the device type number (TYPE) is available at:
http://www.enocean-alliance.org/de/enocean_standard/

A5-09-06: Radon Gas Sensor

WAGO-I/O-*PRO V2.3* Library Elements		
Category:	Building Automation	
Name:	FbA50906_RadonGasSensor	
Type:	Function ☐	Function block ☒ Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	All programmable fieldbus controllers	
Input parameters:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input of the received radio telegram
dwID	DWORD	Transmitter ID of the sensor
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m
Return value:	**Data type:**	**Comment:**
wRadonActivity	WORD	Radon activity [Bq/m^3] Valeu range = 0 Bq/m^3 – 1023 Bq/m^3
xError	BOOL	No new telegram within timeout period.
Graphical illustration:		



Functional description

The function block outputs the measured values of a radon gas sensor with EnOcean Equipment Profiles (EEP) A5-09-06 or 07-09-06.

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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 certain types of sensors.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

The measured radon activity is output in Bq/m^3 at the ***"wRadonActivity"*** output.

Note:

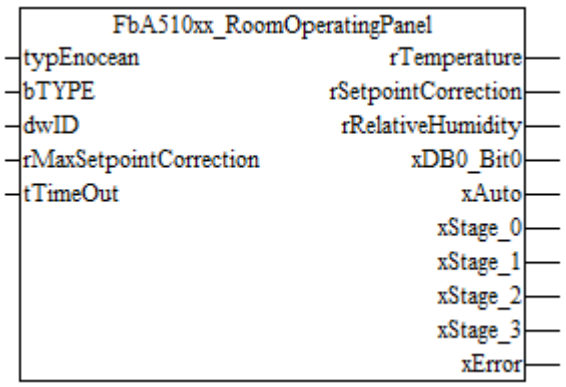
Additional information about the device type number (TYPE) is available at:
http://www.enocean-alliance.org/de/enocean_standard/

Room Operating Panel

A5-10-xx: Room Operating Panel

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA510xx_RoomOperatingPanel		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
.bType	BYTE	Device type (TYPE) Default setting = 16#01	
dwID	DWORD	Transmitter ID of the sensor	
rMaxSetpointCorrection	REAL	Selection of the maximum temperature setpoint value correction [°C]	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**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 / fan automation 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	
xError	BOOL	No new telegram within timeout period.	

Graphical illustration:



Functional description

The function block evaluates the data from the room operating panel with EEP A5-10-xx or 07-10-xx (xxh stands for the device type).

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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 certain types of sensors.

The maximum setpoint correction is specified at the ***"rMaxSetpointCorrection"*** output.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

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

The setpoint correction set (± 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"*** 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.

Note:

Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

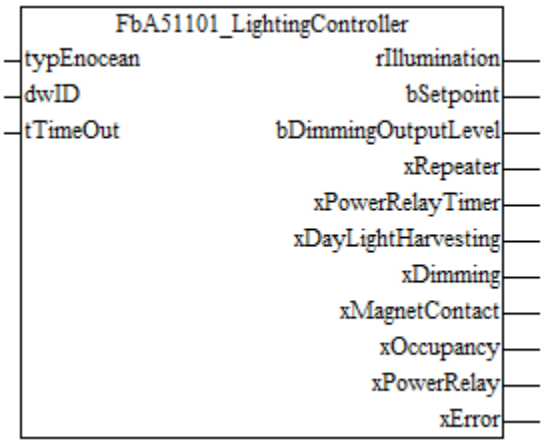
Depending on the device type selected, not all outputs of the block are used.

Controller

A5-11-01: Lighting Controller

WAGO-I/O-*PRO V2.3* Library Elements		
Category:	Building Automation	
Name:	FbA51101_LightingController	
Type:	Function ☐	Function block ☒ Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	All programmable fieldbus controllers	
Input parameters:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input of the received radio telegram
dwID	DWORD	Transmitter ID of the sensor
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m
Return value:	**Data type:**	**Comment:**
rIllumination	REAL	Brightness value in Lux (lx) Value range = 0 – 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 timer enabled
xDayLightHarvesting	BOOL	TRUE -> Daylight harvesting enabled
xDimming	BOOL	TRUE -> Dimmer load enabled
xMagnetContact	BOOL	TRUE -> Magnet contact closed
xOccupancy	BOOL	TRUE -> Room is occupied
xPowerRelay	BOOL	TRUE -> Power relay enabled
xError	BOOL	No new telegram within timeout period.

Graphical illustration:



Functional description

The function block evaluates the data from a lighting controller with EEP A5-11-01 or 07-11-01.

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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 certain types of sensors.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

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.

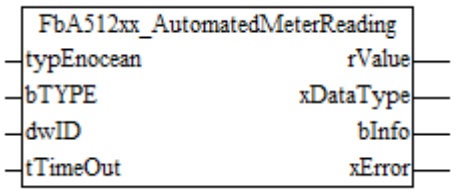
The ***"xPowerRelay"*** output indicates that the power relay is enabled.

Note:
Additional information about the device type number (TYPE) is available at:
http://www.enocean-alliance.org/de/enocean_standard/

Automated Meter Reading (AMR)

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

WAGO-I/O-*PRO V2.3* Library Elements		
Category:	Building Automation	
Name:	FbA512xx_AutomatedMeterReading	
Type:	Function ☐	Function block ☒ / Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	All programmable fieldbus controllers	
Input parameters:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input of the received radio telegram
bTYPE	BYTE	Device type (TYPE).. Default setting = 16#00
dwID	DWORD	Transmitter ID of the sensor
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m
Return value:	**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
xError	BOOL	No new telegram within timeout period.
Graphical illustration:		



Functional description

The function block outputs the measured value of a meter with EnOcean Equipment Profiles (EEP) A5-12-xx or 07-12-xx (xxh stands for the device type).

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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

"bTYPE" = 16#00 -> meter

"bTYPE" = 16#01 -> electricity meter

"bTYPE" = 16#02 -> gas meter

"bTYPE" = 16#03 -> water meter

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 certain types of sensors.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

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 ***"bInfos"*** corresponds to the metering channel number. Otherwise, the ***"bInfos"*** output indicates the current tariff.

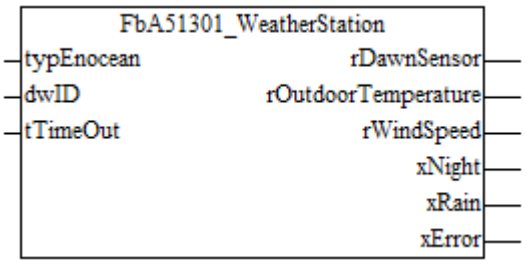
Note:

Additional information about the device type number (TYPE) is available at:
http://www.enocean-alliance.org/de/enocean_standard/

Environmental Applications

A5-13-01: Weather Station

WAGO-I/O-*PRO V2.3* Library Elements		
Category:	Building Automation	
Name:	FbA51301_WeatherStation	
Type:	Function ☐	Function block ☒ Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	All programmable fieldbus controllers	
Input parameters:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input of the received radio telegram
dwID	DWORD	Transmitter ID of the sensor
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m
Return value:	**Data type:**	**Comment:**
rDawnSensor	REAL	Twighlight sensor Value range = 0 – 999 lx
rOutdoorTemperature	REAL	Measured outdoor temperature by the temperature sensor [°C] Value range = -40 °C – +80 °C
rWindSpeed	REAL	Measured wind speed [m/s] Value range = 0 – 70 m/s
xNight	BOOL	TRUE -> Night FALSE -> Day
xRain	BOOL	TRUE -> Rain FALSE -> No rain
xError	BOOL	No new telegram within timeout period.
Graphical illustration:		



Functional description

The function block outputs the measured values of a weather station with EnOcean Equipment Profiles (EEP) A5-13-01 or 07-13-01.

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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 certain types of sensors.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

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 the night, the ***"xNight"*** output is set to TRUE.

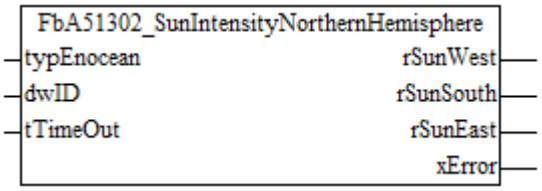
If the precipitation sensor detect rain, the ***"xRain"*** signal is set to TRUE.

Note:

Additional information about the device type number (TYPE) is available at:
http://www.enocean-alliance.org/de/enocean_standard/

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

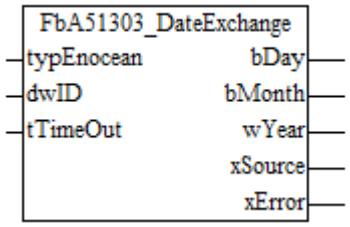
WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA51302_SunIntensityNorthernHemisphere		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
rSunWest	REAL	Brightness value (West) Value range = 0 – 150 klx	
rSunSouth	REAL	Brightness value (South) Value range = 0 – 150 klx	
rSunEast	REAL	Brightness value (East) Value range = 0 – 150 klx	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description
The function block outputs the measured value of a light intensity sensor with EnOcean Equipment Profiles (EEP) A5-13-02 or 07-13-02. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The directional brightness values are indicated at the ***"rSunWest", "rSunSouth"*** and ***"rSunEast"*** outputs. **Note:** Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

A5-13-03: Calendar Time Switch

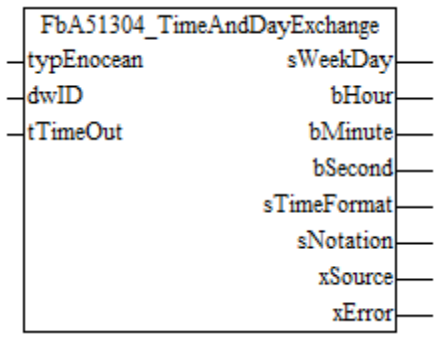
WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA51303_DateExchange		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**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	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description
The function block outputs the date information of a calendar time switch with EnOcean Equipment Profiles (EEP) A5-13-03 or 07-13-03. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The ***"xSource"*** output indicates from which signal source the date was received. The date received is output at the ***"bDay", "bMonth"*** and ***"wYear"*** outputs. **Note:** Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

A5-13-04: Week Time Switch

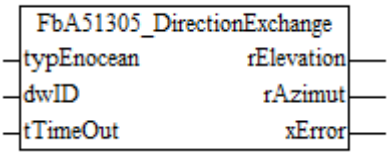
WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA51304_TimeAndDayExchange		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**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	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description
The function block outputs the time stamp of a week time switch with EnOcean Equipment Profiles (EEP) A5-13-04 or 07-13-04. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The time is output at the ***"sWeekDay", "bHour" , "bMinute"*** and ***"bSecond"*** outputs. The time format use is indicate at the ***"sTimeFormat"*** output. The ***"sNotation"*** output indicates the current time notation. The ***"xSource"*** output indicates from which signal source the date was received. **Note:** Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

A5-13-05: Position of the Sun

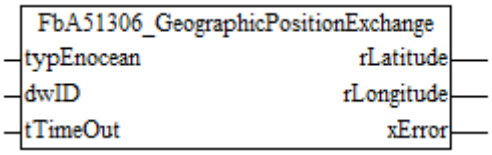
WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA51305_DirectionExchange		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
rElevation	REAL	Elevation (0° = Horizon) Value range = -90° – +90°	
rAzimut	REAL	Azimuth (0° = North) Value range = 0° – +359°	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description
The function block outputs the measured value of a device with EnOcean Equipment Profiles (EEP) A5-13-05 or 07-13-05. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The position of the sun is indicated by the ***"rElevation"*** and ***"rAzimut"*** outputs. **Note:** • Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

A5-13-06: Positional Data

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA51306_GeographicPositionExchange		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
rLatitude	REAL	Latitude Value range = -90° – +90°	
rLongitude	REAL	Longitude Value range = -180 – +180°	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description

The function block outputs the positional data of a device with EnOcean Equipment Profiles (EEP) A5-13-06 or 07-13-06.

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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 certain types of sensors.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

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

Note:

- Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

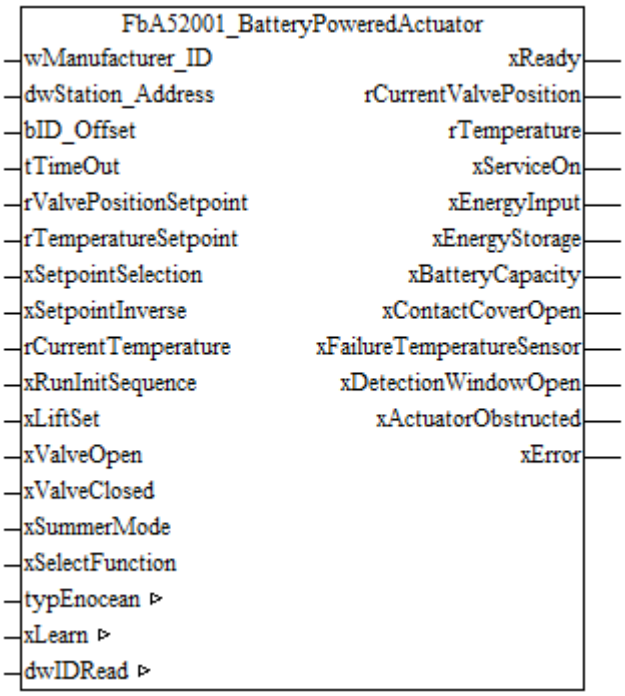
HVAC Components

A5-20-01: Battery-powered Actuator

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA52001_BatteryPoweredActuator		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Input parameters:	**Data type:**	**Comment:**	
wManufacturer_ID	WORD	Manufacturer ID (see Table 5 14). 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	Timeout 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 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 live of the battery	
xSelectFunction	BOOL	TRUE -> "Service on" enabled FALSE -> "RCU" enabled	

Input/output parameter:	Data type:	Comment:
typEnocean	type Enocean	Input/output data of the radio telegram.
xLearn	BOOL	Activate Learn mode
dwIDRead	DWORD	Actuator transmitter ID
Return value:	**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 batter 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 error: Actuator not installed correctly, travel path too small, no end position detected, wait for keypress upon initial installation, the actuator is obstructed.
xError	BOOL	No new telegram within timeout period.

Graphical illustration:



Functional Description

The function block controls and evaluates a battery-powered actuator with EnOcean Equipment Profiles (EEP) A5-20-01 or 07-20-01.

The function block requires a bidirectional radio link. For this reason, the Thermokon gateway STC65-RS485 EVC must be used. Data is exchanged with the **FbThermokonSTC_RS485_EVC** function block via the ***"typEnocean"*** variable structure. All received radio telegrams are made available via this connection and transmits the data to be sent to the gateway.

Setting the transmitting ID

The manufacturer ID is set at the ***"wManufacturer_ID"*** input (see Table 5 page 14).

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 a unique own ID number. 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 transmitting ID.

The transmitting 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 transmitting ID must be unique for each instance of the function block.

This function block monitors cyclic communication with the actuator. If communication does not take place within the time period defined for ***"tTimeout"***, the ***"xError"*** output is set to TRUE.

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 ***"dwIDRead"*** 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 gateway STC65-RS485 EVC, 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. Adjutment to the nearest endpoint can be trigged 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.

Output Description

The ***"rCurrentValvePosition"*** output indicates the actual 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":
The "Service on" mode is enabled.

"xEnergyInput":
The energy input is enabled.

"xEnergyStorage":
The energy storage is sufficient.

"xBatteryCapacity":
If the output is set to Signal TRUE, 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 measuring 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.

A5-20-02: Basic Actuator

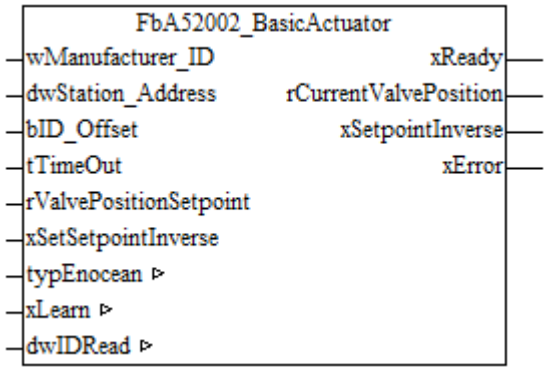
WAGO-I/O-*PROV2.3* Elements of the Library			
Category:	Building Automation		
Name:	FbA52002_BasicActuator		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		

Input parameters:	**Data type:**	**Comment:**
wManufacturer_ID	WORD	Manufacturer ID (see Table 5 14). Default setting = 16#010
dwStationAddress	DWORD	Gateway station address
bID_Offset	BYTE	Offset applied to station address Value range = 1 – 127 Default setting = 1
tTimeout	TIME	Timeout 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:**
typEnocean	type Enocean	Input/output data of the radio telegram.
xLearn	BOOL	Activate Learn mode
dwIDRead	DWORD	Actuator transmitter ID

Return value:	**Data type:**	**Comment:**
xReady	BOOL	Communication status
rCurrentValvePosition	REAL	Current valve position Value range = 0 – 100%
xSetpointInverse	BOOL	Manufacturer specific Default setting = FALSE
xError	BOOL	No new telegram within timeout period.

Graphical illustration:



Functional Description

The function block controls and evaluates a battery-powered actuator with EnOcean Equipment Profiles (EEP) A5-20-02 or 07-20-02.

The function block requires a bidirectional radio link. For this reason, the Thermokon gateway STC65-RS485 EVC must be used. Data is exchanged with the **FbThermokonSTC_RS485_EVC** function block via the ***"typEnocean"*** variable structure. All received radio telegrams are made available via this connection and transmits the data to be sent to the gateway.

Setting the transmitting ID

The manufacturer ID is set at the ***"wManufacturer_ID"*** input (see Table 5 page 14).

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 a unique own ID number. 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 transmitting ID. The transmitting 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 transmitting ID must be unique for each instance of the function block.

This function block monitors cyclic communication with the actuator. If communication does not take place within the time period defined for ***"tTimeout"***, the ***"xError"*** output is set to TRUE.

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 ***"dwIDRead"*** 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 gateway STC65-RS485 EVC, 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.

Output Description

The ***"rCurrentValvePosition"*** output indicates the actual 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.

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.

A5-20-03: Line-powered Actuator

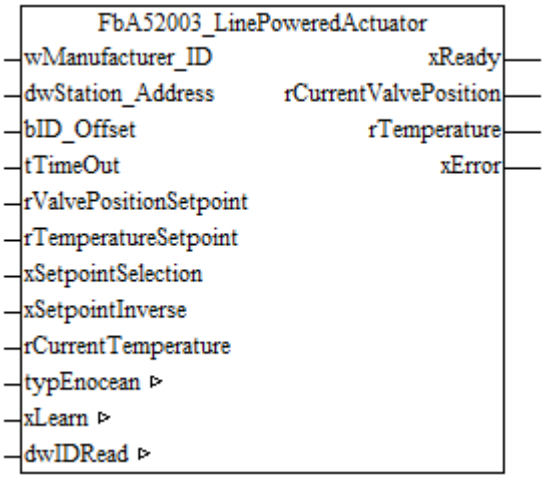
WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA52003_LinePoweredActuator		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		

Input parameters:	**Data type:**	**Comment:**
wManufacturer_ID	WORD	Manufacturer ID (see Table 5 14). Default setting = 16#010
dwStationAddress	DWORD	Gateway station address
bID_Offset	BYTE	Offset applied to station address Value range = 1 – 127 Default setting = 1
tTimeout	TIME	Timeout 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 heating / cooling mode.
rCurrentTemperature	REAL	Actual temperature Value range = 0 °C – +40 °C Default setting = 20°C

Input/output parameter:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input/output data of the radio telegram.
xLearn	BOOL	Activate Learn mode
dwIDRead	DWORD	Actuator transmitter ID

Return value:	**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
xError	BOOL	No new telegram within timeout period.

Graphical illustration:



Functional Description

The function block controls and evaluates a line-powered actuator with EnOcean Equipment Profiles (EEP) A5-20-03 or 07-20-03.

The function block requires a bidirectional radio link. For this reason, the Thermokon gateway STC65-RS485 EVC must be used. Data is exchanged with the **FbThermokonSTC_RS485_EVC** function block via the ***"typEnocean"*** variable structure. All received radio telegrams are made available via this connection and transmits the data to be sent to the gateway.

Setting the transmitting ID

The manufacturer ID is set at the ***"wManufacturer_ID"*** input (see Table 5 page 14).

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 a unique own ID number. 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 transmitting ID. The transmitting 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 transmitting ID must be unique for each instance of the function block.

This function block monitors cyclic communication with the actuator. If communication does not take place within the time period defined for ***"tTimeout"***, the ***"xError"*** output is set to TRUE.

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 ***"dwIDRead"*** 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 gateway STC65-RS485 EVC, 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.

Output Description

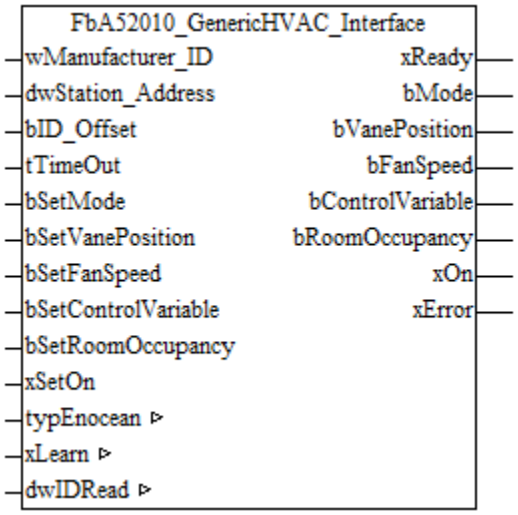
The ***"rCurrentValvePosition"*** output indicates the actual position of the actuator. This value is updated only within the send/receive interval. The ***"rTemperature"*** output indicates the value for the internal temperature sensor.

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.

A5-20-10: Generic HVAC Interface

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA52010_GenericHVAC_Interface		
Type:	Function ☐	Function block X ☐	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Input parameters	**Data type:**	**Comment:**	
wManufacturer_ID	WORD	Manufacturer ID (see Table 5 14). Default setting = 16#019	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range = 1 – 127 Default setting = 1	
tTimeout	TIME	Timeout Default setting = t#60 m	
bSetMode	BYTE	Set operating mode Value range = 0 – 254	
bSetVanePosition	BYTE	Set position of the weather vane Value range = 0 – 14	
bSetFanSpeed	BYTE	Set the speed of the fan Value range = 0 – 14	
bSetControlVariable	BYTE	Set control variable [%]. (255=Auto) Value range = 0 – 100%	
bSetRoomOccupancy	BYTE	Set room occupancy Value range = 0 – 3	
xSetOn	BOOL	Set switch on signal	
Input/output parameter:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input/output data of the radio telegram.	
xLearn	BOOL	Activate Learn mode	
dwIDRead	DWORD	Actuator transmitter ID	
Return value:	**Data type:**	**Comment:**	
xReady	BOOL	Communication status	
bMode	BYTE	Current operating mode Value range = 0 – 254	
bVanePosition	BYTE	Current position of the weather vane Value range = 0 – 14	
bFanSpeed	BYTE	Current speed of the fan Value range = 0 – 14	

WAGO-I/O-*PRO V2.3* Library Elements		
bControlVariable	BYTE	Current control variable [%]. (255=Auto) Value range = 0 – 100%
bRoomOccupancy	BYTE	Current room occupancy Value range = 0 – 3
xError	BOOL	No new telegram within timeout period.
Graphical illustration:		



Functional Description

The function block controls and evaluates a generic HVAC interface with EnOcean Equipment Profiles (EEP) A5-20-10 or 07-20-10.

The function block requires a bidirectional radio link. For this reason, the Thermokon gateway STC65-RS485 EVC must be used. Data is exchanged with the **FbThermokonSTC_RS485_EVC** function block via the ***"typEnocean"*** variable structure. All received radio telegrams are made available via this connection and transmits the data to be sent to the gateway.

Setting the transmitting ID

The manufacturer ID is set at the ***"wManufacturer_ID"*** input (see Table 5 page 14).

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 a unique own ID number. 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 transmitting ID. The transmitting ID for the function block is calculated by adding the ***"bID_Offset"*** and ***"dwStation_Address"*** inputs. The transmitting ID must be unique for each instance of the function block.

This function block monitors cyclic communication with the actuator. If communication does not take place within the time period defined for ***"tTimeout"***, the ***"xError"*** output is set to TRUE.

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 ***"dwIDRead"*** 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 gateway STC65-RS485 EVC, the device address must be set to 0 (default value) via the DIP switch.

Input/Output Description

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 inputs and outputs are bit-coded:

Table 7: Mode

"bSetMode" / "bMode"	**Description**
0	Auto
1	Heat
2	Morning Warmup
3	Cool
4	Night Purge
5	Precool
6	Off
7	Test
8	Emergency Heat
9	Fan only
10	Free cool
11	Ice
12	Max heat
13	Economic heat / cool
14	Dehumidification (dry)
15	Calibration
16	Emergency cool
17	Emergency steam
18	Max cool
19	HVC load
20	No load
21…30	Reserved
31	Auto Heat
32	Auto Cool
33…254	Reserved
255	N/A

Table 8: Vane position

"bSetVanePosition" / "bVanePosition"	**Description**
0	Auto
1	Horizontal
2	Position 2
3	Position 3
4	Position 4
5	Vertical
6	Swing
7…10	Reserved
11	Vertical swing
12	Horizontal swing
13	Horizontal and vertical swing
14	Stop swing
15	N/A

Table 9: Fan speed

"bSetFanSpeed" / "bFanSpeed"	**Description**
0	Auto
1..14	Up to 14 fan speeds. 1 being the lowest speed.
15	N/A

Table 10: Room cccupancy

"bSetRoomOccupancy" / "bRoomOccupancy"	**Description**
0	Occupied
1	Standby (waiting to perform action)
2	Unoccupied (action perfomed)
3	Off (no occupancy and no action)

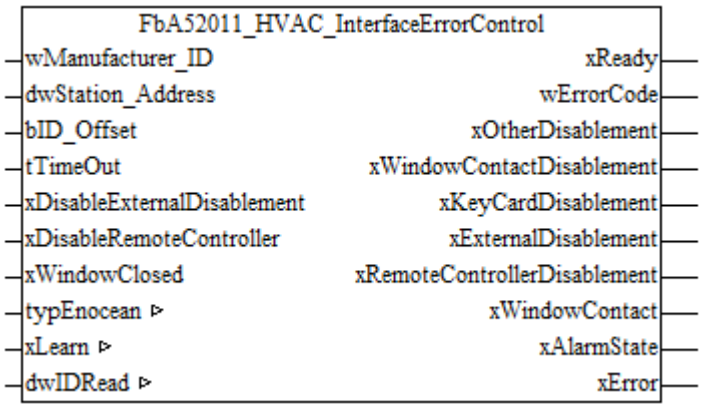
Additional information is available at: http://www.enocean-alliance.org/de/enocean_standard/

A5-20-11: HVAC Interface with Error Control

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA52011_HVAC_InterfaceErrorControl		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Input parameters:	**Data type:**	**Comment:**	
wManufacturer_ID	WORD	Manufacturer ID (see Table 5 14). Default setting = 16#019	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range = 1 – 127 Default setting = 1	
tTimeout	TIME	Timeout Default setting = t#60 m	
xDisableExternalDisablement	BOOL	TRUE -> Deactivate "External Disablement" FALSE -> Activate "External Disablement"	
xDisableRemoteController	BOOL	TRUE -> Lock remote control	
xWindowClosed	BOOL	TRUE -> Window closed	
Input/output parameter:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input/output data of the radio telegram.	
xLearn	BOOL	Activate Learn mode	
dwIDRead	DWORD	Actuator transmitter ID	
Return value:	**Data type:**	**Comment:**	
xReady	BOOL	Communication status	
wErrorCode	WORD	Error code from HVAC systems Value range = 16#0000 – 16#FFFF	
xOtherDisablement	BOOL	TRUE -> Deactivate disablement	
xWindowContactDisablement	BOOL	TRUE -> Window contact disabled	
xKeyCardDisablement	BOOL	TRUE -> Use of key card disabled	
xExternalDisablement	BOOL	TRUE -> External disablement deactivated	
xRemoteControllerDisablement	BOOL	TRUE -> Remote control disabled	
xWindowContact	BOOL	TRUE -> Window closed FALSE -> Window open	
xAlarmState	BOOL	Alarm state	
xError	BOOL	No new telegram within timeout period.	

WAGO-I/O-*PRO V2.3* Library Elements

Graphical illustration:



Functional Description

The function block controls and evaluates an HVAC interface (add-on: error control function) with EnOcean Equipment Profiles (EEP) A5-20-11 or 07-20-11.

The function block requires a bidirectional radio link. For this reason, the Thermokon gateway STC65-RS485 EVC must be used. Data is exchanged with the **FbThermokonSTC_RS485_EVC** function block via the ***"typEnocean"*** variable structure. All received radio telegrams are made available via this connection and transmits the data to be sent to the gateway.

Setting the transmitting ID

The manufacturer ID is set at the ***"wManufacturer_ID"*** input (see Table 5 page 14).

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 a unique own ID number. 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 transmitting ID. The transmitting 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 transmitting ID must be unique for each instance of the function block.

This function block monitors cyclic communication with the actuator. If communication does not take place within the time period defined for ***"tTimeout"***, the ***"xError"*** output is set to TRUE.

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 ***"dwIDRead"*** 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 gateway STC65-RS485 EVC, the device address must be set to 0 (default value) via the DIP switch.
- Additional information is available at: http://www.enocean-alliance.org/de/enocean_standard/

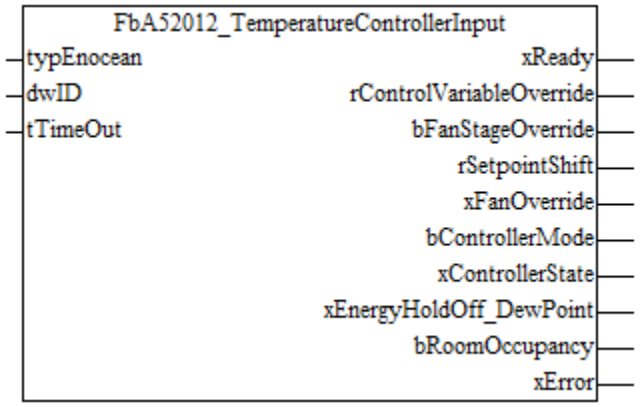
A5-20-12: Temperature Controller

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA52012_TemperatureControllerInput		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		

Input parameters:	**Data type:**	**Comment:**
typEnocean	type Enocean	Input of the received radio telegram
dwID	DWORD	Transmitter ID of the sensor
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m

Return value:	**Data type:**	**Comment:**
xReady	BOOL	Communication status
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
xError	BOOL	No new telegram within timeout period.

Graphical illustration:



Functional Description

The function block outputs the values of a device with EnOcean Equipment Profiles (EEP) A5-20-12 or 07-20-12.

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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 certain types of sensors.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

The following status information is provided:

Table 11: Fan stage override

"bFanStageOverride"	**Description**
0	Stage 0
1	Stage 1
2	Stage 2
3	Stage 3
31	Auto
255	N/A

Table 12: Actual room occupancy

"bSetRoomOccupancy" / "bRoomOccupancy"	**Description**
0	Internal room occupancy
1	Unoccupied
2	Stand-by
3	Frost

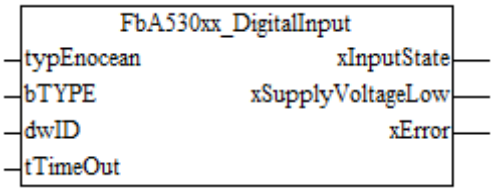
Notes:

Additional information is available at: http://www.enocean-alliance.org/de/enocean_standard/

Digital Input

A5-30-xx: Digital Input

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA530xx_DigitalInput		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
.bType	BYTE	Device type (TYPE) Default setting = 16#01	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
xInputState	BOOL	FALSE -> Electrical contact closed TRUE -> Electrical contact open Default setting = TRUE	
xSupplyVoltageLow	BOOL	TRUE -> Battery empty	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



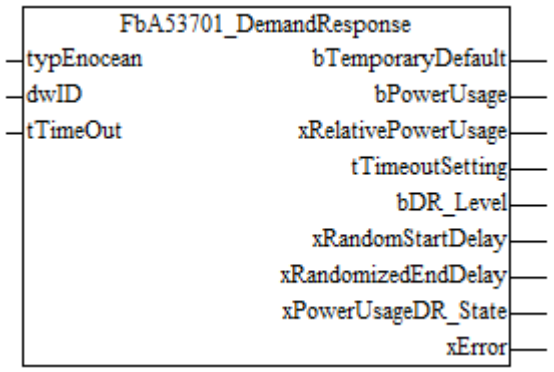
Functional description
The function block evaluates a digital switching contact according to EnOcean Equipment Profiles (EEP) A5-30-xx or 07-30-xx. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. The ***"bTYPE"*** input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP). 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The ***"xInputState"*** output is FALSE if the contact is closed. The condition of the battery is indicated at that ***"xSupplyVoltageLow"*** output. **Note:** • Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

Energy Management

A5-37-01: Demand Response (DR)

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbA53701_DemandResponse		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**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 – 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	
xError	BOOL	No new telegram within timeout period.	

Graphical illustration:



Functional description

The function block evaluates the device with EnOcean Equipment Profiles (EEP) A5-37-01 or 07-37-01.

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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 certain types of sensors.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

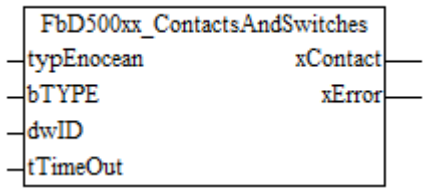
Note:

- Additional information about this profile is available at: http://www.enocean-alliance.org/de/enocean_standard/

1 BS Telegramm

D5-00-xx Switching Function

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbD500xx_ContactsAndSwitches		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
.bType	BYTE	Device type (TYPE) Default setting = 16#01	
dwID	DWORD	Transmitter ID of the sensor	
tTimeOut	TIME	Maximum interval between two telegrams. Default setting = t#60 m	
Return value:	**Data type:**	**Comment:**	
xContact	BOOL	TRUE -> Contact closed	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			

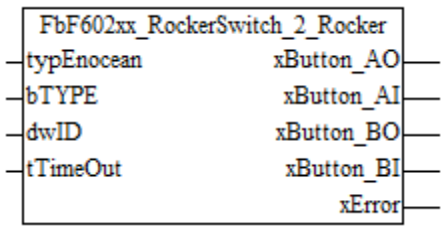


Functional description
The function block evaluates the switching contact with EnOcean Equipment Profiles (EEP) D5-00-xx or 06-00-xx. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. The ***"bTYPE"*** input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP). 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The ***"xContact"*** indicates the contact state. **Note:** • Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

RPS Telegram

F6-02-xx Rocker Switch 2-Channel

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbF602xx_RockerSwitch_2_Rocker		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
.bType	BYTE	Device type (TYPE) Default setting = 16#01	
dwID	DWORD	Transmitter ID of the touch sensor	
tTimeOut	TIME	Maximum on-time Default setting t#0s ⇒ unlimited on-time	
Return value:	**Data type:**	**Comment:**	
xButton_AO	BOOL	Output signal switching state AO	
xButton_AI	BOOL	Output signal switching state AI	
xButton_BO	BOOL	Output signal switching state BO	
xButton_BI	BOOL	Output signal switching state BI	
xError	BOOL	No OUT telegram within the timeout period	
Graphical illustration:			



Functional description

The function block converts the radio telegrams of 2-channel touch sensors into digital output signals using Enocean radio technology EnOcean Equipment Profile (EEP) F6-02-xx or 05-02-xx).

The function block supports multiple button code combinations (switching modules type 2, T21=TRUE, e.g. 2-way rocker switch PTM200 or 1-way rocker switch PTM200).

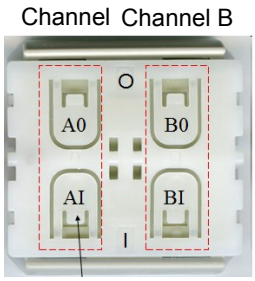
The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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

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 certain types of sensors.

The ***"tTimeOut"*** input can be optionally used to limit the maximum on-time of the"*xContact*" output. If no time value (t= 0 second) has been selected, the on-time of the outputs is unlimited, i.e. the output signal is TRUE as long as the push-button is pressed.

If the outputs are reset by monitoring the maximum on-time, it is indicated by an edge at the ***"xError"*** output.



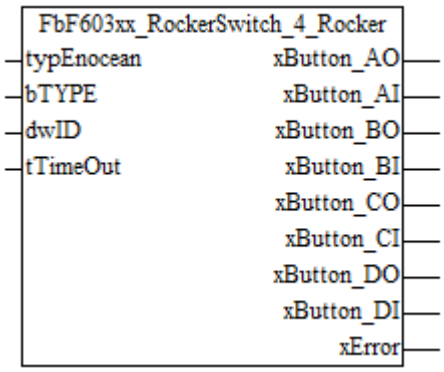
The output signals (***"xButton_AO"... "xButton_BI"***) correspond to the four contact grommets and are set to TRUE depending on the button pressed.

Note:

- Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/
- 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, either the AO/AI button or the BO/BI button is evaluated.

F6-03-xx 4-Channel Touch Sensor

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbF603xx_RockerSwitch_4_Rocker		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
.bType	BYTE	Device type (TYPE) Default setting = 16#01	
dwID	DWORD	Transmitter ID of the touch sensor	
tTimeOut	TIME	Maximum on-time Default setting t#0s ⇒ unlimited on-time	
Return value:	**Data type:**	**Comment:**	
xButton_AO	BOOL	Output signal switching state AO	
xButton_AI	BOOL	Output signal switching state AI	
xButton_BO	BOOL	Output signal switching state BO	
xButton_BI	BOOL	Output signal switching state BI	
xButton_CO	BOOL	Output signal switching state CO	
xButton_CI	BOOL	Output signal switching state CI	
xButton_DO	BOOL	Output signal switching state DO	
xButton_DI	BOOL	Output signal switching state DI	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description

The function block converts the radio telegrams of individual touch sensors using Enocean radio technology into a boolean output signal (EnOcean Equipment Profile (EEP) F6-03-xx or 05-03-xx).

The function block does not support multiple button code combinations (switching modules type 1, T21=TRUE, e.g. PTM100).

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

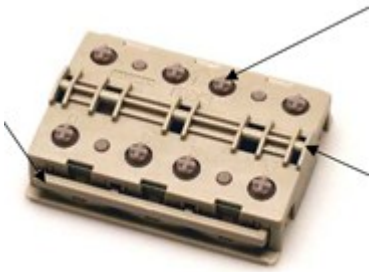
The ***"bTYPE"*** input corresponds to the device type (TYPE) and must be input according to the EnOcean Equipment Profile (EEP).

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 certain types of sensors.

The ***"tTimeOut"*** input can be optionally used to limit the maximum on-time of the"*xContact*" output. If no time value (t= 0 second) has been selected, the on-time of the outputs is unlimited, i.e. the output signal is TRUE as long as the push-button is pressed.

If the outputs are reset by monitoring the maximum on-time, it is indicated by an edge at the ***"xError"*** output.

The output signals (***"xButton_AO"... "xButton_BI"***) correspond to the eight contact grommets and are set to TRUE depending on the button pressed.



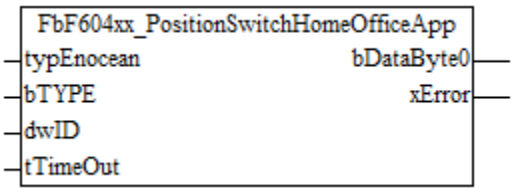
Note:

- Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

Position Switches, Home and Office Applications

F6-04-xx Position Switches, Home and Office Applications

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbF604xx_PositionSwitchHomeOfficeApp		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
.bType	BYTE	Device type (TYPE) Default setting = 16#01	
dwID	DWORD	Transmitter ID of the touch sensor	
tTimeOut	TIME	Maximum on-time Default setting t#0s ⇒ unlimited on-time	
Return value:	**Data type:**	**Comment:**	
bDataByte0	BYTE	Data byte from DB_0	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description

The function block evaluates a device with EnOcean Equipment Profiles (EEP) F6-04-xx or 05-04-xx.

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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

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 certain types of sensors.

The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated.

If the "TimeOut" time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE.

The ***"bDataByte0"*** has the following meaning according to *"bTYPE"*:

"bTYPE" = 16#01 (F6-04-01: Key Card Activated Switch)

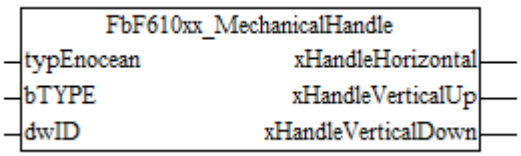
- *"bDataByte0"* = 112 – Key card is inserted
- *"bDataByte0"* = 0 – Key card is pulled out

Note:

- Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

Mechanical Handle

F6-10-xx: Mechanical Handle

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbF610xx_MechanicalHandle		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
.bType	BYTE	Device type (TYPE) Default setting = 16#01	
dwID	DWORD	Transmitter ID of the sensor	
Return value:	**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	
Graphical illustration:			
			

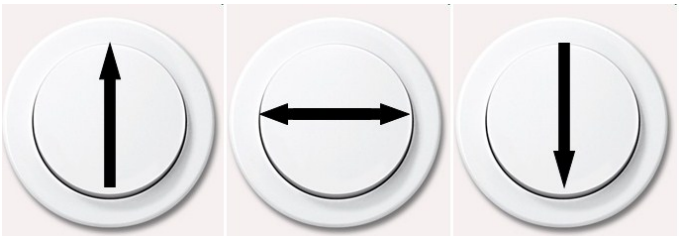
Functional description

The function block outputs the position of a handle or rotary switch with EnOcean Equipment Profiles (EEP) F6-10-xx or 05-10-xx.

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

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

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 certain types of sensors.



Top position Middle position Bottom position

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.

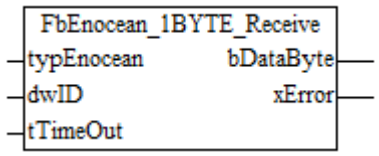
Note:

Additional information about the device type number (TYPE) is available at: http://www.enocean-alliance.org/de/enocean_standard/

Raw Data

Receive 1 Byte Raw Data

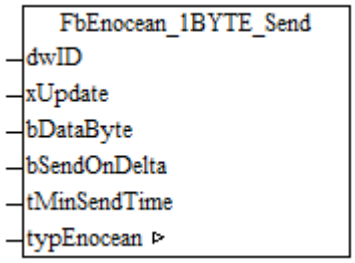
WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbEnocean_1BYTE_Receive		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
dwID	DWORD	Transmitter ID of the sensor	
Return value:	**Data type:**	**Comment:**	
bDataByte	BYTE	Data byte	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description
The function block evaluates an RPS and 1BS telegram. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the "TimeOut" time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The value of the data byte received is output at that ***"bDataByte"*** output. **Note:** Additional information about evaluating the data byte is available at: http://www.enocean-alliance.org/de/enocean_standard/

Send 1 Byte Raw Data

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbEnocean_1BYTE_Send		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Input parameters:	**Data type:**	**Comment:**	
dwID	DWORD	Block transmitter ID	
xUpdate	BOOL	Initiate telegram update	
bDataByte	BYTE	Input value	
bSendOnDelta	BYTE	Hysteresis for sending conditions Default setting = 1	
tMinSendTime	TIME	Parameter value for MinSendTime Default setting: t#1s	
Input/output parameter:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input/output data of the radio telegram.	
Graphical illustration:			



Functional Description

The function block transforms a data byte into an EnOcean radio telegram (RPS/1BS), which is transmitted via the Thermokon 65-RS485 EVC Gateway.

The input parameter **"dwID"** determines the transmitter ID of the radio telegram. Each Enocean transmission block must have a unique ID. The value range of the transmitter ID is specified by the so-called station address of the gateway. The gateway station address can be determined using the **FbQueryStationAddress** function block.

Relative to the set station address of the gateway, 127 radio commands can be sent out by the master. From these, there arises based on the station address the value range for the ***"dwID"*** input

(example for station address 16#FFFFFF80 ➔ 16#FFFFFF81 to 16#FFFFFFFF).

Value changes on the ***"bDataByte"*** input have the effect that a radio telegram (1BS/RPS) is sent. Sending can also be forced by a rising edge being present on the ***"xUpdate"*** input.

The parameter ***"bSendOnDelta"*** specifies by which amount the input value ***"bDataByte"*** must change so that a radio telegram is sent. The sending frequency can be limited in this manner.

The minimum time interval for sending of telegrams can be defined for the function block using the parameter ***"tMinSendTime"***, allowing the volume of telegram traffic to be reduced with frequently changing signals. For frequently-changing signals, the telegram load can thus be reduced.

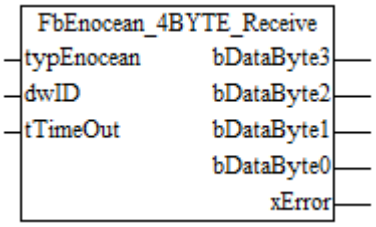
The variable ***"typEnocean"*** contains all the relevant data of the received radio telegrams. All other EnOcean function blocks that are used in the program must be linked with one another via this variable.

Note:

- Additional information about scaling and the structure of the BYTE radio telegram (1BS) is available at: http://www.enocean-alliance.org/de/enocean_standard/

Receive 4 Byte Raw Data

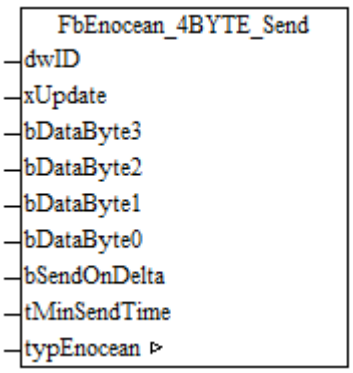
WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbEnocean_4BYTE_Receive		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	All programmable fieldbus controllers		
Input parameters:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input of the received radio telegram	
dwID	DWORD	Transmitter ID of the sensor	
Return value:	**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	
xError	BOOL	No new telegram within timeout period.	
Graphical illustration:			



Functional description
The function block evaluates a 4BS telegram. The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. 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 certain types of sensors. The ***"tTimeOut"*** input can optionally be used to monitor if the sensor sends a telegram at regular intervals (e.g. every 16 min). If the time value (t = 0 sec) is specified, timeout monitoring is deactivated. If the *"tTimeOut"* time has expired without the function block has not received a new telegram, the ***"xError"*** output is set to TRUE. The value of the data byte received (DB_3) is output at that ***"bDataByte3"*** output. The value of the data byte received (DB_2) is output at that ***"bDataByte2"*** output. The value of the data byte received (DB_1) is output at that ***"bDataByte1"*** output. The value of the data byte received (DB_0) is output at that ***"bDataByte0"*** output. **Note:** Additional information about evaluating the data bytes is available at: http://www.enocean-alliance.org/de/enocean_standard/

Send 4 Byte Raw Data

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbEnocean_4BYTE_Send		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Input parameters:	**Data type:**	**Comment:**	
dwID	DWORD	Block transmitter ID	
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	
bSendOnDelta	BYTE	Hysteresis for sending conditions Default setting = 1	
tMinSendTime	TIME	Parameter value for MinSendTime Default setting: t#1s	
Input/output parameter:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input/output data of the radio telegram.	
Graphical illustration:			



Functional Description

The function block transforms data bytes into an EnOcean radio telegram, which is transmitted via the Thermokon 65-RS485 EVC Gateway.

The input parameter **"dwID"** determines the transmitter ID of the radio telegram. Each EnOcean transmission block must have a unique ID. The value range of the transmitter ID is specified by the so-called station address of the Thermokon gateway.

The gateway station address can be determined using the **FbQueryStationAddress** function block. Relative to the set station address of the gateway, 127 radio commands can be sent out by the master. From these, there arises based on the station address the value range for the *"dwID"* input

(example for station address 16#FFFFFF80 ➔ 16#FFFFFF81 to 16#FFFFFFFF).

The ***"bAddress_EVC"*** input determines the gateway address to which communication is to be set up. A DIP switch can be used to set the STC65-RS485-EVC gateway address (default = 0).

Value changes on the ***"bDataByte0"***, ***"bDataByte1"***, ***"bDataByte2", "bDataByte3"*** input have the effect that a radio telegram (4BS) is sent. Sending can also be forced by a rising edge being present on the ***"xUpdate"*** input.

The ***"bSendOnDelta"*** parameter specifies by which amount the input values ***"bDataByte0"*** to ***"bDataByte3"*** must change so that a radio telegram is sent. The sending frequency can be limited in this manner.

The minimum time interval for sending of telegrams can be defined for the function block using the parameter ***"tMinSendTime"***, allowing the volume of telegram traffic to be reduced with frequently changing signals. For frequently-changing signals, the telegram load can thus be reduced.

The function block may only be used together with one of the communication blocks (see page 15, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

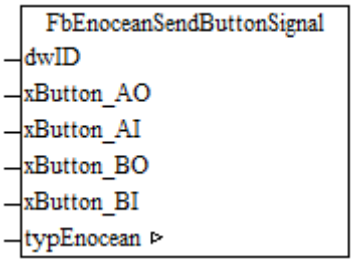
Note:

- Additional information about scaling and the structure of the radio telegram (4BS) is available at:

  http://www.enocean-alliance.org/de/enocean_standard/

Send Button Signal

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbEnoceanSendButtonSignal		
Type:	Function ☐	Function block X	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Input parameters:	**Data type:**	**Comment:**	
dwID	DWORD	Block transmitter ID	
xButton_AO	BOOL	Input signal switching state AO	
xButton_AI	BOOL	Input signal switching state AI	
xButton_BO	BOOL	Input signal switching state BO	
xButton_BI	BOOL	Input signal switching state BI	
Input/output parameter:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input/output data of the radio telegram.	
Graphical illustration:			

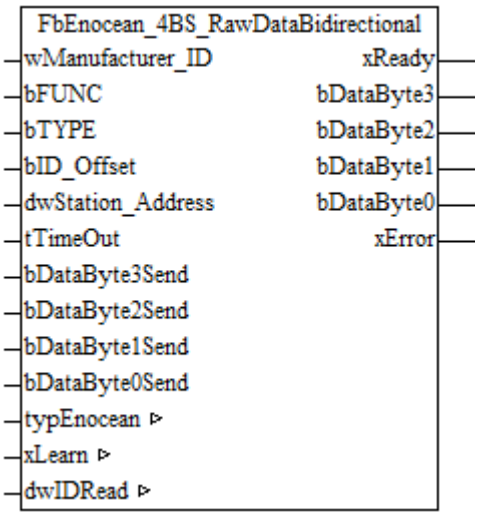


Functional Description
The function block transforms button signals into an EnOcean radio telegram (EEP F6-02-01/05-02-01 or F6-02-02/05-02-02), which is transmitted via the Thermokon STC65-RS485 EVC Gateway. The input parameter **"dwID"** determines the transmitter ID of the radio telegram. Each Enocean transmission block must have a unique ID. The value range of the transmitter ID is specified by the so-called station address of the gateway. The gateway station address can be determined using the **FbQueryStationAddress** function block. Relative to the set station address of the gateway, 127 radio commands can be sent out by the master. From these, there arises based on the station address the value range for the ***"dwID"*** input (example for station address 16#FFFFFF80 ➔ 16#FFFFFF81 to 16#FFFFFFFF). The function block may only be used together with one of the communication blocks (see page 15, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection. The button signals to send radio telegrams are specified via the ***"xButton_AO", "xButton_AI", "xButton_BO"*** and ***"xButton_BI"*** inputs. **Note:** • Pressing two buttons simultaneously makes it possible set two input signals at the same time.

4 Byte Raw Data (Bidirectional)

WAGO-I/O-*PRO V2.3* Library Elements			
Category:	Building Automation		
Name:	FbEnocean_4BS_RawDataBidirectional		
Type:	Function ☐	Function block ☒	Program ☐
Name of library:	Enocean_05.lib		
Applicable to:	See Release Note		
Input parameters:	**Data type:**	**Comment:**	
wManufacturer_ID	WORD	Manufacturer ID	
bAddress_EVC	BYTE	Gateway address Default setting = 16#00	
bFUNC	BYTE	FUNC number	
bTYPE	BYTE	TYPE number	
dwStationAddress	DWORD	Gateway station address	
bID_Offset	BYTE	Offset applied to station address Value range = 1 – 127 Default setting = 1	
tTimeout	TIME	Timeout 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	
Input/output parameter:	**Data type:**	**Comment:**	
typEnocean	type Enocean	Input/output data of the radio telegram.	
xLearn	BOOL	Activate Learn mode	
dwIDRead	DWORD	Actuator transmitter ID	
Return value:	**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	
xError	BOOL	No new telegram within timeout period.	

Graphical illustration:



Functional Description

The function block controls and evaluates a 4BS telegram and supports bidirectional communication.

This block may only be used together with a Thermokon STC65-RS485-EVC gateway (see page 19).

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

Setting the transmitting ID

The manufacturer ID is set at the ***"wManufacturer_ID"*** input. This number is manufacturer specific and is specified in the data sheet.

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 a unique own ID number. 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 transmitting ID.

The transmitting ID for the actuator is calculated by adding the ***"bID_Offset"*** and ***"dwStation_Address"*** inputs. The gateway station address must be entered as a constant at the "***dwStation_Adresss"*** input. The ***"bID_Offset"*** input determines the offset to be applied to this station address. The transmitting ID must be unique for each block entity.

This block monitors cyclic communication. If communication does not take place within the time period defined for ***"tTimeout"***, the ***"xError"*** output is set to TRUE.

Commissioning

The block and the device must be "introduced" to one another as radio communication partner devices at the beginning of commissioning. The 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 block. The device ID that is received is indicated at the ***"dwIDRead"*** input and stored. The "***xLearn"*** variable is reset when the 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.

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.

Output Description

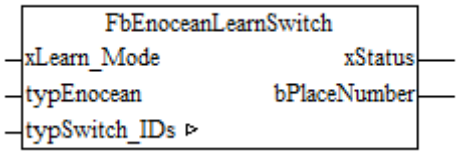
The received data bytes can be saved at the ***"bDataByte3", "bDataByte2", "bDataByte1"*** and ***"bDataByte0"*** outputs.

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.

Tools

Learn Touch Sensor IDs (FbEnoceanLearnSwitch)

WAGO-I/O-*PRO V2.3* Library Elements		
Category:	Building Automation	
Name:	FbEnoceanLearnSwitch	
Type:	Function ☐	Function block ☒ Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	All programmable fieldbus controllers	
Input parameters:	**Data type:**	**Comment:**
xLearn_Mode	BOOL	Learn mode activation
typEnocean	type Enocean	Input of the received radio telegram
Input/Output parameters:	**Data type:**	**Comment:**
typSwitch_IDs	typ Enocean_ Learned_ Switches	List of the learned transmitter IDs
Return value:	**Data type:**	**Comment:**
xStatus	BOOL	Status confirmation
bPlaceNumber	BYTE	Memory location number
Graphical illustration:		



Functional description

This function block can learn up to 16 PTM touch sensors in the PLC via their transmitter ID. As a result, the touch sensors can be logically assigned to the application functions even during the program runtime and the radio sensors used can be replaced.

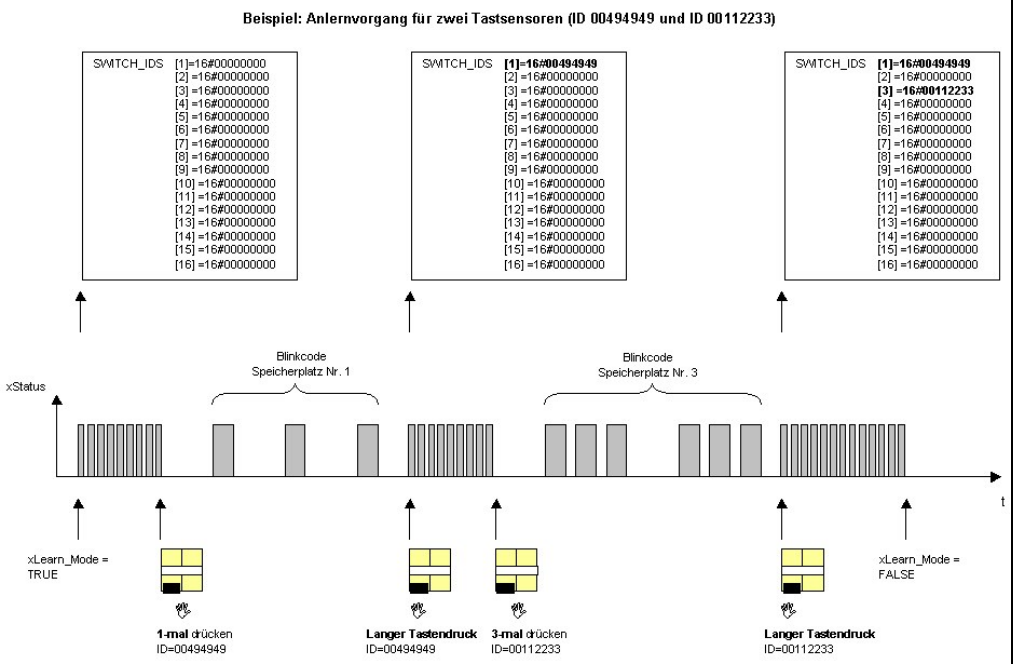
The ***"typEnocean"*** output variable of the **FbEnoceanReceive** function block must be connected to the ***"typEnocean"*** input variables of this function block. All the received radio telegrams are made available at the input via this connection.

The input/output variable ***"typSwitch_IDs"*** has 16 storage spaces in which the transmitter IDs can be stored.

The current storage space is displayed via that ***"bPlaceNumber"*** output.

The following procedure is required to learn a touch sensor:

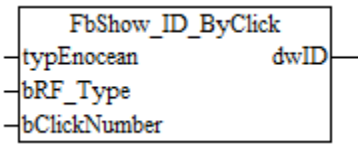
1. Set the value of the ***"xLearn_Mode"*** input variables on TRUE.
   ⇒ The ***"xStatus"*** output signal starts flashing quickly (approx. 30 Hz).
2. Press sensor pushbutton
   ⇒ The current storage space No. 1 is displayed via the flash code at the **"*xStatus*"** output.
3. The storage space No. is increased by pressing a sensor pushbutton again.
   ⇒ The current storage space No. is displayed at the ***"bPlaceNumber"*** output and displayed via the flash code at the ***"xStatus"*** output.
4. The transmitter ID is written to the currently selected storage space No. by pressing and holding down the sensor pushbutton (> 1 sec).
   ⇒ The ***"xStatus"*** output starts to flash and signals that other touch sensors can be learned.
5. The ***"xLearn_Mode"*** input signal must be set to FALSE signal to exit the learn mode.
   ⇒ ***"xStatus"*** = FALSE



Note

The input/output variable ***"typSwitch_IDs"*** should be declared as a **VAR RETAIN** variable, so that the assignments of the recorded IDs are saved even after resetting the controller.

Showing the Sensor ID (FbShow_ID_ByClick)

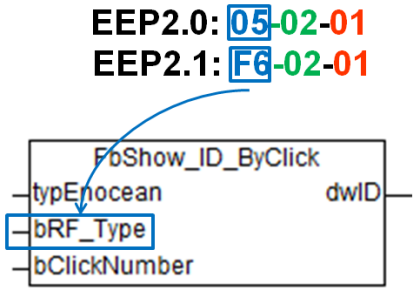
WAGO-I/O-*PRO V2.3* Library Elements		
Category:	Building Automation	
Name:	FbShow_ID_By_Click	
Type:	Function ☐	Function block ☒ / Program ☐
Name of library:	Enocean_05.lib	
Applicable to:	All programmable fieldbus controllers	
Input parameters:	**Data type:**	**Comment:**
typEnocean	type: EnOcean	Input of the received radio telegram
bRF_TYPE	BYTE	Selection of the type of sensor (ORG Number or RORG Number) Default value = 16#05 **Range of values:** 16#05 or 16#F6 = RPS telegram 16#06 or 16#D5 = 1BS telegram 16#07 or 16#A5 = 4BS telegram
bClick_Number	BYTE	Number of successively received telegrams having the same transmitter ID Default setting = 2
Return value:	**Data type:**	**Comment:**
dwID	DWORD	Display of the transmitter ID searched
Graphical illustration:		
		

Functional description

This function block helps identify the transmitter IDs of the radio sensors.

The function block may only be used together with one of the communication blocks (see page 15, 16, 17 and 19). The two function blocks are synchronized by means of the ***"typEnocean"*** variable structure. Therefore, the communication function block and function block must be linked to each other. All received radio telegrams are made available at the input via this connection.

A filter can be selected via the input of the ***"bRF_TYPE"*** input parameter so that only the telegrams of some particular types of sensors will be identified by the function block. The value to be assigned at input *"bRF_TYPE"* can be read from the EEP of the sensor.



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".***

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