

## EnOcean Equipment Profiles

### REVISION HISTORY

Ver.	Editor	Change	Date
2.6.8	NM	Last xml edition of the EEP-Specification	Dec 31, 2017

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## System Specification



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## D2-06: Multisensor Window / Door Handle and Sensors

**TYPE 01** Submitter: SODA GmbH

**TYPE 50** Submitter: SIEGENIA-AUBI KG

EEP Family Table **TYPE 01 ff**

Message Type (ID)	Commands ... of TYPE	0x01
0x00	Sensor Values	X
0x10	Configuration Report	X
0x20	Log Data 01	X
0x21	Log Data 02	X
0x22	Log Data 03	X
0x23	Log Data 04	X
0x80	Control and Settings	X

EEP Family Tables **TYPE 50 ff**

Message Type (ID)	Commands ... of TYPE	0x50
0x01	Window Status	X
0x02	Device Alarm Status	X
0x11	Calibrate	X

Parameters ... of TYPE	0x50
Burglary Alarm	X
Device Error/Alarm Status	X
Window State	X
Window State Counter	X
Change Battery	X
Battery State (5% Steps)	X
Calibration Step	X
Motion Sensor Error	-
Acceleration Sensor Error	X
Magnetic Sensor Error	X
System Error	-

Each TYPE has to support all telegrams and parameters marked in its column.  
The list of parameters could be structured following the features that always include a certain group of parameters.

The Message 0x01 (Window Status) is sent event triggered and it will be sent cyclic as an ALIVE message.  
The Message 0x02 (Device Alarm Status) is sent 10 times within 5 seconds in case of alarm.

# System Specification

<b>RORG</b>	D2	<b>VLD Telegram</b>
<b>FUNC</b>	06	Multisensor Window / Door Handle and Sensors
<b>TYPE</b>	01	Alarm, Position Sensor, Vacation Mode, Optional Sensors

Submitter: SODA GmbH

## Data exchange

Direction: bidirectional

Addressing: broadcast

Communication trigger: event- & time-triggered

Communication interval: Time-Triggered: Default is 20 Minutes; Event-Triggered

Trigger event: Alarm, Handle Movement, Window Movement, Button Presses

Tx delay: 500 ms

Rx timeout: 100 ms

## Teach-in

Teach-in method: Universal teach-in (UTE)

## Security

Encryption supported: no

Security level format: -

## Product Description

The device represented by this EEP is a "Multi-Sensor Window Handle with Alarm Functionality". It is powered by two 1.5V AA batteries.

It can be equipped with the following set of features:

- Alarm Sensor
- Handle Position Sensor
- Window Position Sensor
- Two General Purpose Buttons
- Temperature Sensor
- Humidity Sensor
- Illumination Sensor
- Motion Sensor
- Vacation Mode
- Battery Level Measurement
- Buzzer
- Two LEDs

Details to all features are listed below.

For pairing the bidirectional UTE method is used.

The device transmits the actual sensor values periodically (dDefault: 20 minutes) or on an event like "Handle Movement" or "Alarm".

After each transmission of a packet the radio part of the handle is in receive mode for a certain amount of time (default: 500 ms) and accepts then messages from a paired Controller/Gateway/... . For normal operation it is not necessary to send data to the handle. It is just needed to make some configurations, get log data or control some parts of the handle.

Because it is possible to have all possible permutations of the handle features out in the market, the EEP approach presented in this document is used. The variety of handle-products with different equipped features does not fit well to the EEP family approach preferred in the EnOcean world.

# System Specification



## Feature Description

The handle may have all or a subset of the features described here. If a feature is not available (e.g. the sensor is not equipped), then this will be marked in the radio telegram (see detailed tables below).

### **Burglary Alarm Sensor**

The handle can detect if someone tries to commit burglary on the window the handle is mounted on. The Burglary Alarm Sensor is automatically enabled/disabled each time the window is closed/opened. If an alarm is detected, a radio packet is sent with "Burglary Alarm Triggered" flag set and (if handle is equipped with a buzzer) a local alarm sound is generated by the internal buzzer for a certain amount of time (180 s). During the alarm time a repeated "Burglary Alarm On" is sent every 15 seconds + Random Offset (0...7 seconds).

### **Protection Plus Alarm Sensor**

Protection Plus is a feature, which generates an alarm every time the handle is moved. Due to security reasons, the detailed documentation about this feature is available from SODA GmbH only under NDA.

### **Handle Position**

The position of the handle is detected and transmitted on every change.

### **Window Position**

It is possible to detect if the window is tilted or not tilted. A packet is sent on every change.

### **General Purpose Buttons**

There are two buttons on the handle which can be used as general purpose buttons to control blinds/shutters, lights, etc.

A packet is sent when a button is pressed and again when it is released.

### **Temperature Sensor, Humidity Sensor, Brightness Sensor**

The environmental sensors are updated periodically (adjustable, default: 20 minutes) and after this a packet with the updated values is sent.

### **Motion Sensor**

The handle can be equipped with a PIR Motion sensor which triggers a packet every time a motion change is detected.

### **Vacation Mode**

If the Vacation Mode is enabled, the red LEDs on the sides of the handle light up every few seconds. This signals that the alarm monitoring is active and should be daunting for potential burglars.

The Vacation Mode can be enabled/disabled by a radio command or by a button press locally on the handle. If it is activated locally, a radio packet is sent out to signalize the change to a paired gateway.

### **Battery Monitor**

The handle monitors its battery level and transmits the state of the battery.

### **Battery Low Click**

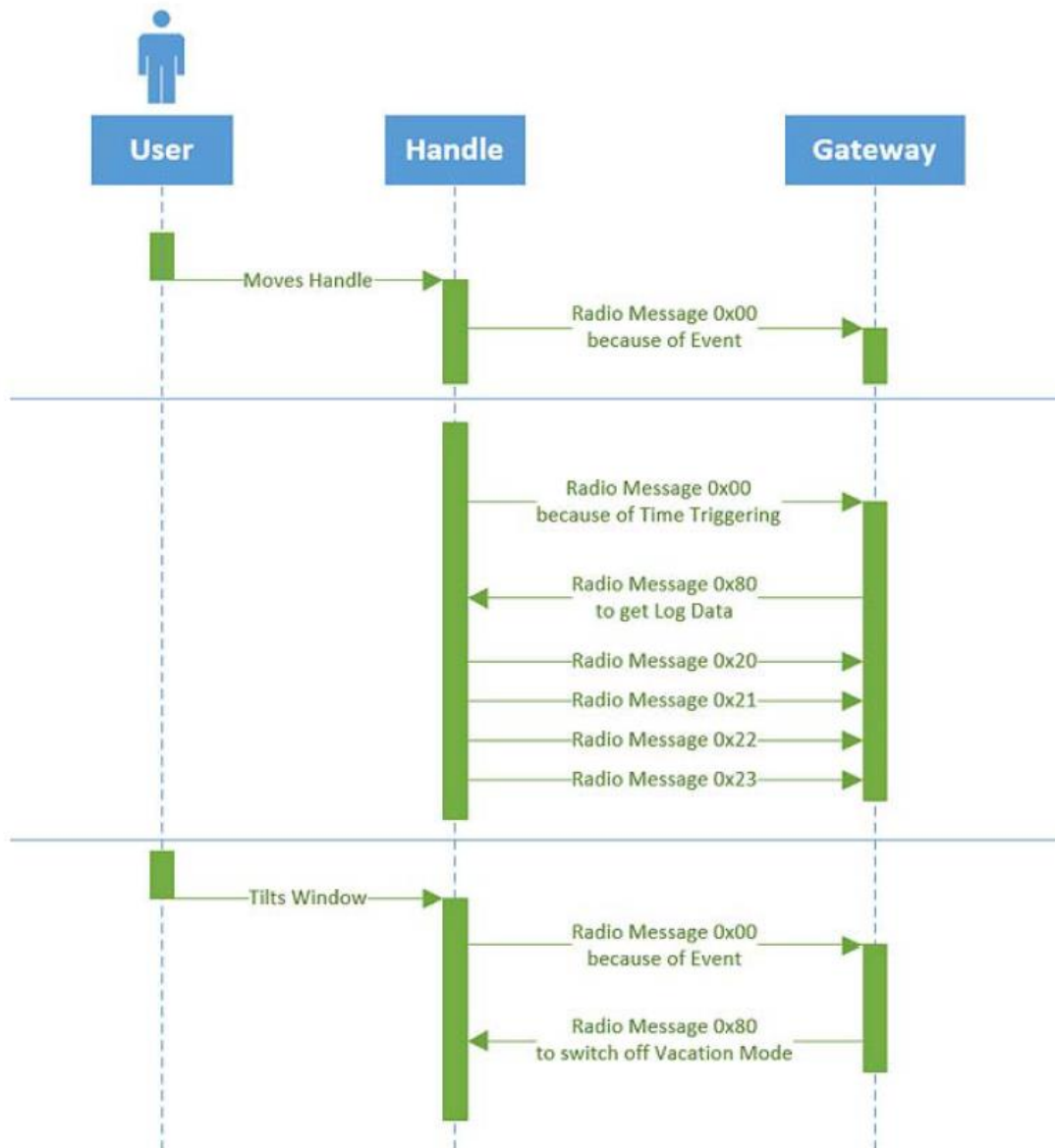
If enabled, the handle also makes some click noises when the battery level is critical.

### **Handle Closed Click**

The handle generates a click sound every time the handle is closed (put in downward position). This signals the activation of the alarm monitoring and gives an acoustic feedback to the user. This click sound can be enabled or disabled by a radio command.

# System Specification

## Communication Example



## Telegram Definition

The device uses different types of messages for bidirectional communication. The MSB of the VLD payload defines the type of message as shown below in the first table. The different message types are listed in the second table. A detailed description of each message type is then followed in separate tables.

# System Specification

RORG	Payload	Sender ID	Status	CRC8
D2	<b>Message Type (MT)</b> 1 Byte Content of Message as described below 0 ... 13 Bytes	4 Bytes	1 Byte	1 Byte

Message Type	Message Type Description	Encoding	Receive/Transmit
Sensor Values	Standard package which contains the actual values of the integrated sensors.	0x00	Transmit
Configuration Report	There are some settings which can be influenced by the user. This package is send on request and contains the actual settings.	0x10	Transmit
Log Data 01	Some Log Data which can be read from the handle upon request.	0x20	Transmit
Log Data 02	Log Data Packet 02	0x21	Transmit
Log Data 03	Log Data Packet 03	0x22	Transmit
Log Data 04	Log Data Packet 04	0x23	Transmit
Control and Settings	This package can be send to handle to trigger some actions.	0x80	Receive

## Message Type 0x00: Sensor Values

		DB_9								DB_8								DB_7								DB_6								DB_5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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# System Specification

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message Type	MT	Descriptor of this message	Enum: 0x00: Message Type Sensor Values		
8	4	Burglary Alarm	BAL	Burglary Alarm Trigger Signal	Enum: 0x0: Burglary Alarm Not Triggered 0x1: Burglary Alarm Triggered 0x2...0xD: Reserved 0xE: Supported + Invalid 0xF: Not Supported		
12	4	Protection Plus Alarm	PPAL	Protection Plus Alarm Trigger Signal	Enum: 0x0: Protection Plus Alarm Not Triggered 0x1: Protection Plus Alarm Triggered Reserved 0x2...0xD: 0xE: Supported + Invalid 0xF: Not Supported		
16	4	Handle Position	HP	Position of Handle	Enum: 0x0: Handle Position Undefined 0x1: Handle Up 0x2: Handle Down 0x3: Handle Left		
					0x4: Handle Right 0x5...0xD: Reserved 0xE: Supported + Invalid 0xF: Not Supported		
20	4	Window State	WS	State of Window	Enum: 0x0: Window State Undefined 0x1: Window Not Tilted 0x2: Window Tilted 0x3...0xD: Reserved 0xE: Supported + Invalid 0xF: Not Supported		
24	4	Button Right	BR	Button Right Activities	Enum: 0x0: No Change 0x1: Button Pressed 0x2: Button Released 0x3...0xD: Reserved 0xE: Supported + Invalid 0xF: Not Supported		
28	4	Button Left	BL	Button Left Activities	Enum: 0x0: No Change 0x1: Button Pressed 0x2: Button Released 0x3...0xD: Reserved 0xE: Supported + Invalid 0xF: Not Supported		

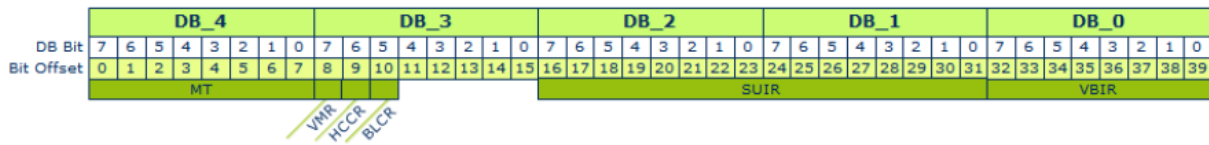


## System Specification

32	4	Motion	M	Motion sensing like typical PIR sensors	Enum: 0x0: Motion Not Triggered 0x1: Motion Triggered 0x2...0xD: Reserved 0xE: Supported + Invalid 0xF: Not Supported
36	4	Vacation Mode	V	If Vacation Mode is active, the LEDs of the handle light up every few seconds.  Vacation Mode can be activated remotely by a radio command or locally by a button press at the handle	Enum: 0x0: No Change 0x1: Vacation Mode Locally Switched On 0x2: Vacation Mode Locally Switched Off Reserved 0x3...0xD: 0xE: Supported + Invalid 0xF: Not Supported
40	8	Temperature	T	Measurement of Temperature in linear 0.32 °C steps	Enum: 0...250: -20...+60 °C Reserved 251...253: 254: Supported + Invalid 255: Not Supported
48	8	Humidity	H	Measurement of Relative Humidity in linear 0.5 % steps	Enum: 0...200: % 0...100 201...253: Reserved 254: Supported + Invalid 255: Not Supported
56	16	Illumination	I	Illumination linear in 1 lx steps	Enum: 0...60000: 0...60000 lx 60001: Over Range Reserved 60002...65533: 65534: Supported + Invalid 65535: Not Supported
72	5	Battery State	BS	State of the battery charge in 5 % steps	Enum: 0...20: % 0...100 21...31: Reserved
77	3	Not Used (= 0)			

# System Specification

## Message Type 0x10: Configuration Report



Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message Type	MT	Descriptor of this message	Enum: Message Type Configuration 0x10: Report		
8	1	Vacation Mode	VMR	Status of Vacation Mode	Enum: 0x0: Vacation Mode is Off 0x1: Vacation Mode is On		
9	1	Handle Closed Click	HCCR	Status of Handle Closed Click Feature	Enum: Handle Closed Click Feature is 0x0: Disabled Handle Closed Click Feature is 0x1: Enabled		
10	1	Battery Low Click	BLCR	Status of Battery Low Click Feature	Enum: Battery Low Click Feature is 0x0: Disabled Battery Low Click Feature is 0x1: Enabled		
11	5	Not Used (= 0)					
16	16	Sensor Update Interval	SUIR	Interval in seconds between the update of the environmental sensors.  After each update period a Sensor Value packet (Message Type 0x00, see above) is transmitted	Enum: 0x0000...0x0004: Reserved 0x0005...0xFFFF: s 5...65535		
32	8	Vacation Blink Interval	VBIR	Interval in seconds between the LED blinks when Vacation Mode is activated	Enum: 0x00...0x02: Reserved 0x03...0xFF: s 3...255		

## Message Type 0x20: Log Data 01

DB_8	DB_7	DB_6	DB_5	DB_4	DB_3	DB_2	DB_1	DB_0
MT	PON					ALL		

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message Type	MT	Descriptor of this message	Enum: 0x20: Message Type Log Data 01		
8	32	Power Ons	PON	Number of Power Ons	Enum: 0x00000000...0xFFFFFFFF:		
40	32	Alarms	ALL	Number of Alarms	Enum: 0x00000000...0xFFFFFFFF:		

## System Specification

### Message Type 0x21: Log Data 02

DB_12	DB_11	DB_10	DB_9	DB_8	DB_7	DB_6	DB_5	DB_4	DB_3	DB_2	DB_1	DB_0
MT	HMC				HMO				HMT			

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message Type	MT	Descriptor of this message	Enum: Message Type Log Data 0x21: 02		
8	32	Handle Movements Closed	HMC	Number of Handle Movements Closed	Enum: 0x00000000...0xFFFFFFFF:		
40	32	Handle Movements Opened	HMO	Number of Handle Movements Opened	Enum: 0x00000000...0xFFFFFFFF:		
72	32	Handle Movements Tilted	HMT	Number of Handle Movements Tilted	Enum: 0x00000000...0xFFFFFFFF:		

### Message Type 0x22: Log Data 03

DB_4	DB_3	DB_2	DB_1	DB_0
MT	WT			

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message Type	MT	Descriptor of this message	Enum: 0x22: Message Type Log Data 03		
8	32	Window Tilts	WT	Number of Window Tilts	Enum: 0x00000000...0xFFFFFFFF:		

### Message Type 0x23: Log Data 04

DB_8	DB_7	DB_6	DB_5	DB_4	DB_3	DB_2	DB_1	DB_0
MT	BRP				BLP			

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message Type	MT	Descriptor of this message	Enum: 0x23: Message Type Log Data 04		
8	32	Button Right Presses	BRP	Number of Button Right Presses	Enum: 0x00000000...0xFFFFFFFF:		
40	32	Button Left Presses	BLP	Number of Button Left Presses	Enum: 0x00000000...0xFFFFFFFF:		

# System Specification

## Message Type 0x80: Control and Settings

DB Bit Bit Offset	DB_4								DB_3								DB_2								DB_1								DB_0							
	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
	MT								HCCS								SUIS								VBIS															

### Notes:

The following settings are stored non volatile inside the handle and only need to be send on a change request:

- Handle Closed Click Feature
- Battery Low Click Feature
- Sensor Update Interval
- Vacation Blink Interval

It is possible to trigger several of the actions in one message; e.g. if DB3.7 and DB3.6 both are set, the handle will transmit the messages with the message types: 0x10, 0x20, 0x21, 0x22 and 0x23

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message Type	MT	Descriptor of this message	Enum: Message Type Control and 0x80: Settings		
8	1	Get Configuration Settings	GCS	Start Transmission of the Configuration Settings (Message Type 0x10, see above)	Enum: 0x0: No Change 0x1: Start Transmission		
9	1	Get Log Data	GLD	Start Transmission of the Log Data Packets (Message Type 0x2x, see above)	Enum: 0x0: No Change 0x1: Start Transmission		
10	1	Vacation Mode	VMS	Set Vacation Mode	Enum: 0x0: Switch Vacation Mode Off 0x1: Switch Vacation Mode On		
11	2	Handle Closed Click	HCCS	Set Handle Closed Click Feature	Enum: No Change 0x0: Disable Handle Closed Click 0x1: Feature Enable Handle Closed Click 0x2: Feature Reserved 0x3:		
13	2	Battery Low Click	BLCS	Set Battery Low Click Feature	Enum: 0x0: No Change 0x1: Disable Battery Low Click Feature 0x2: Enable Battery Low Click Feature 0x3: Reserved		
15	1	Not Used (= 0)					
16	16	Sensor Update Interval	SUIS	Set Sensor Update Interval	Enum: 0x0000: No Change Reserved 0x0001...0x0004: 0x0005...0xFFFF: 5...65535 s		
32	8	Vacation Blink Interval	VBIS	Set Vacation Blink Interval	Enum: 0x00: No Change 0x01...0x02: Reserved 0x03...0xFF: s 3...255		