

# Product Manual

Multi Sensor

OPT-MS-111-WH

OPT-MS-111-BL



# Table of Contents

<b>1 Product Description</b> .....	<b>5</b>
1.1 Product Models .....	5
1.2 Accessories .....	5
1.3 Usage Areas and Functions .....	5
1.4 Technical Information.....	6
<b>2 Device Parameters</b> .....	<b>7</b>
2.1 General Settings.....	8
2.1.1 Start Up Delay .....	8
2.1.2 Movement Sensor Sensitivity .....	8
2.1.3 Movement Control.....	8
2.1.4 Constant Brightness Control .....	8
2.1.5 Temperature Detection.....	9
2.1.6 Humidity Detection .....	9
2.1.7 Logic Operations .....	9
<b>3 Brightness</b> .....	<b>10</b>
3.1 Calibration .....	10
3.2 Send Actual Value Period .....	10
3.3 Sending Style .....	10
<b>4 Movement</b> .....	<b>11</b>
4.1 Parameters .....	11
4.1.1 Device Mode.....	11
4.1.2 Detection Timeout .....	12
4.1.3 Detection Time Object .....	12
4.1.4 Brightness Source.....	12
4.1.4.1 Light Level Threshold .....	12
4.1.5 Number Of Output.....	12
4.1.6 Enable Object.....	13
4.1.6.1 Enable With.....	13
4.1.6.2 Initial Postition.....	13
4.1.6.3 Reaction When Enabled.....	13
4.1.6.4 Reaction When Disabled .....	13
4.2 Movement Outputs.....	14
4.2.1 Output Data Type .....	15
4.2.2 Action at Detection .....	15
4.2.2.1 Send Value.....	15
4.2.3 Action at End of Detection .....	15
4.2.3.1 Send Value.....	15
<b>5 Constant Brightness</b> .....	<b>16</b>
5.1 Set Brightness.....	17

5.2 Tolerance .....	17
5.3 Upper Limit .....	17
5.4 Lower Limit .....	17
5.5 Starting Control Value .....	17
5.6 Increment Step .....	18
5.7 Decrement Step .....	18
5.8 Control Speed .....	18
5.9 Movement Dependency .....	18
5.9.1 Movement Timeout .....	18
5.9.2 Output Value at the end of Movement .....	18
5.9.3 Movement Timeout Object .....	18
5.10 Use Second Output .....	18
5.11 Use Third Output .....	19
5.12 Enable Object .....	19
5.12.1 Enable With .....	19
5.12.2 Initial Position .....	19
<b>6 Temperature .....</b>	<b>20</b>
6.1 Measurement Offset .....	21
6.2 Sending Period .....	21
6.3 Sending Style .....	21
6.3.1 Change Amount .....	21
6.4 Enable Threshold .....	21
6.4.1 Temperature Threshold .....	21
6.4.2 External Threshold Object .....	21
6.4.3 Hysteresis .....	21
6.4.4 Output Type .....	21
6.4.5 Above Threshold .....	22
6.4.6 Below Threshold .....	22
<b>7 Humidity .....</b>	<b>23</b>
7.1 Measurement Offset .....	23
7.2 Sending Period .....	23
7.3 Sending Style .....	23
7.3.1 Change Amount .....	23
<b>8 Logic Operations .....</b>	<b>24</b>
8.1 Inactivity Logic .....	24
8.1.2 Monitoring Time .....	25
8.1.3 Output Type .....	25
8.1.4 Start Delay .....	25
8.1.5 Action at Detection .....	25
8.1.5.1 Send Value .....	25
8.1.6 Action at End of Monitoring Time .....	25
8.1.6.1 Send Value .....	25

## About this document

This manual provides detailed technical information on the function, installation and programming of the OPT-MS-111-xx device.

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# 1 Product Description

OPT-MS-111-xx is a ceiling type multi-functional sensor. It measures and transfers movement, illumination, temperature and humidity values to the data line. The device also has constant light level control and inactivity tracking functions. It is supplied by the KNX data line. ETS version 5 and above software must be used with the device. The current database file can be found on the product's website ([www.optimusdoruk.com](http://www.optimusdoruk.com)).

## 1.1 Product Models

OPT-MS-111-WH: Ceiling type KNX movement sensor, white

OPT-MS-111-BL: Ceiling type KNX movement sensor, black

## 1.2 Accessories

OPT-MB-WH: Assembly box for surface mount, white

OPT-MB-BL: Assembly box for surface mount, black

Accessories are ordered separately.

## 1.3 Usage Areas and Functions

OPT-MS-111-xx movement sensors can be used at any indoor area such as office rooms, open offices, meeting rooms, hallways, stairs and restrooms. It can be used as a master-slave to expand the coverage. The device can decide to activate according to the brightness level of the environment. The function of the movement sensor can be increased up to 3 output and each output can be transmitted as different data types. The transmission of these data can be postponed if required (for example, activating the heating or cooling systems).

- The device can control constant brightness level, can perform this task either related with movement or independent from movement, can externally change and track the light level or the movement duration. It can suspend and reactivate the activity with external inputs (such as keys or central control) during these tasks.
- It can determine the indoor temperature and transmit the value to the data line. The data will be calibrated before transmitted. Transmission can be done according to period and/or amount of change. It can be used to comment according to a predefined threshold for temperature, allowing it to act as a thermostat.
- The device can determine the humidity level of the environment and share the value via the data line. The data will be calibrated before transmitted. Transmission can be done according to period and/or amount of change.
- The device can scan indoor areas and collect movement data (inactivity logic). This function can be used to determine the current status in indoor areas such as hotel rooms or for observation for security purposes.

## 1.4 Technical Information

Model	OPT-MS-111-WH: White OPT-MS-111-BL: Black
Dimensions mm (H x W x D)	Device: 75x75x35 (Buried depth: 20 mm) Assembly box: 75x75x35
Weight (g)	Device: 75 g Assembly box: 75 g
Material	Body: ABS Lens: Poly FIR 200 Spring: 0,7 mm diameter stainless steel
Electrical Data	Operating voltage: KNX 30 VDC Supply: KNX power source Current < 10 mA Connection: With standard KNX terminal (connector included)
Storage Information	Temperature: -20...70°C Humidity < 90%
Protection Class	IP 20
Mounting	Indoor Ceiling type Mounting height: 2,5-4 m
Operation Range	Detection area at 2,5 m height Walking: 10 m diameter Seated: 4 m diameter Brightness data: 10...1000 lux Temperature detection: -10...+50°C Humidity detection < 80%
Programming	ETS version 5 or above Communication object number: 24 Group address assignment capacity: 200

## 2 Device Parameters

All the transmission object details are shown in the below table.

Number	Name	Object Function	Length	Flags	Data Type
1	General	Brightness Value Output	2 bytes	CRT	lux (Lux)
2	General	Temperature Value Output	2 bytes	CRT	Temperature (°C)
3	General	Humidity Value Output	2 bytes	CRT	Humidity (%)
10	Movement	Slave Output	1 bit	CT	Switch
11	Movement	Slave Input	1 bit	CW	Switch
12	Movement	Enable Input	1 bit	CRW	Enable Input
13	Movement	Detection Time	2 bytes	CRWT	Time (s)
14	Movement	Output 1	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	HVAC Mode
15	Movement	Output 2	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	Scene Number
16	Movement	Output 3	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	HVAC Mode
21	Constant Brightness Control	Start/Stop	1 bit	CRWT	Start/Stop
22	Constant Brightness Control	Enable Input	1 bit	CRWT	Enable Input
23	Constant Brightness Control	Brightness Set Value	2 bytes	CRWT	lux (Lux)
24	Constant Brightness Control	Detection Time	2 bytes	CRWT	Time (s)
25	Constant Brightness Control	Stop 1 bit	1 bit	CW	Switch
26	Constant Brightness Control	Stop 4 bit	4 bit	CW	Dimming Control
27	Constant Brightness Control	Stop 1 byte	1 byte	CW	Counter Pulses (0...255)
28	Constant Brightness Control	Output 1	1 byte	CT	Counter Pulses (0...255)
29	Constant Brightness Control	Output 2	1 byte	CT	Counter Pulses (0...255)
30	Constant Brightness Control	Output 3	1 byte	CT	Counter Pulses (0...255)
36	Temperature	Threshold Value Input	2 bytes	CRWT	Temperature (°C)
37	Temperature	Threshold Status	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	HVAC Mode
41	Inactivity Logic	Start Monitoring	1 bit	CRWT	Switch
42	Inactivity Logic	Inactivity Output	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	HVAC Mode

The explanations for each object according to its parameters is as below.

## 2.1 General Settings

OPT-MS-111-xx sensor comes with only the brightness measurement object by default. All the other parameters are configured by ETS 5.x.

General	
Brightness	
Start Up Delay	3 sec
Movement Sensor Sensitivity	Medium
Movement Control	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Constant Brightness Control	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Temperature Detection	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Humidity Detection	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Logic Operations	<input type="checkbox"/>

### 2.1.1 Start Up Delay

After energizing the device, the device does not receive or transmit any data until end of start up delay. It can be entered between 2 - 60 seconds. The default value is 3 seconds.

### 2.1.2 Movement Sensor Sensitivity

Movement is the device's main function and can be one of the three sensitivity options: Low, Medium, High. By lowering the accuracy any unwanted movements can be eliminated or by increasing the accuracy more sensitive detections can be done. This parameter determines the accuracy for both the movement sensor control and constant light level control.

### 2.1.3 Movement Control

Default value is "Disabled". When "Enabled", a new headline "Movement" will be added to the left column. All settings related to the movement control will be done from here.

### 2.1.4 Constant Brightness Control

Default value is "Disabled". When "Enabled", a new headline "Constant Brightness Control" will be added to the left column.



## 2.1.5 Temperature Detection

Default value is "Disabled". When "Enabled", a new headline "Temperature Detection" will be added to the left column.

## 2.1.6 Humidity Detection

Default value is "Disabled". When "Enabled", a new headline "Humidity" will be added to the left column.

## 2.1.7 Logic Operations

Default value is "Disabled". When "Enabled", a new headline "Inactivity Logic" will be added to the left column.

Some or all of these parameters can be selected as "Enabled". When All "Enabled" is selected, the following screen is displayed:

General		Start Up Delay	3	sec
Brightness		Movement Sensor Sensitivity	Medium	
+ Movement		Movement Control	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled
Constant Brightness		Constant Brightness Control	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled
<b>Temperature</b>		Temperature Detection	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled
Humidity		Humidity Detection	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled
- Logic Operations		Logic Operations	<input checked="" type="checkbox"/>	
Inactivity Logic		Inactivity Logic	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled

## 3 Brightness

All settings for the device's illumination sensor is done from here. "1 - Brightness Value Output" is the object issued for the parameters below:

General	Calibration (x 0.01)	100
Brightness	Send Actual Value Period	60 sec
	Sending Style	<input checked="" type="radio"/> Cyclic <input type="radio"/> Cyclic & Change

### 3.1 Calibration

The light level data coming from the sensor can be calibrated. The factor value can change from 10% to 200%. The default value is 100%.

### 3.2 Send Actual Value Period

Defines the frequency of sending light level measurements. It can be set between 2 and 255 seconds. The default value is 60 seconds.

### 3.3 Sending Style

The default value is "Cyclic". If the "Cyclic&Change" is selected, a new parameter field will appear to choose at which change amount a measurement should be sent.

## 4 Movement

### 4.1 Parameters

This section is used to define the device's movement sensor settings. The screen below shows the parameters tab.

General	Device Mode	<input checked="" type="radio"/> Master <input type="radio"/> Slave
Brightness	Detection Timeout	300 <input type="text"/> sec
– Movement	Detection Time Object	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Parameters	Brightness Source	<input checked="" type="radio"/> Internal Sensor <input type="radio"/> Brightness Independent
Output 1	Light Level Threshold	400 lux <input type="text"/>
Output 2	Number of Output	3 <input type="text"/>
Output 3	Enable Object	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
	Enable With	<input type="radio"/> OFF Telegram <input checked="" type="radio"/> ON Telegram
	Initial Position	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
	Reaction when Enabled	<input checked="" type="radio"/> Send Current Status <input type="radio"/> Start With a New Movement
	Reaction when Disabled	<input checked="" type="radio"/> Do Not Send Telegram <input type="radio"/> Finish Current Action

#### 4.1.1 Device Mode

The device's operating mode can be selected as "Master" or "Slave". In circumstances where one sensor cannot cover the whole coverage area, a group of sensors can be operate as a single device. In such a case, one of the sensors will act as a master, while the others will be slaves. Slave sensors will send a signal to indicate the start of movement to master. The Master sensor also performs its operation according to other parameters.

Note: Master mode can be used for sensors working individually.

### 4.1.2 Detection Timeout

The duration between the time of the sensor, detects movement, and the time of the activity stops. It can take a value between 10 and 65535 (18 hours 12 minutes 15 seconds) seconds. The default value is 300 seconds.

### 4.1.3 Detection Time Object

"13 - Detection Timeout" Communication object can be activated by this parameter. Then "Detection Timeout" value can be adjusted by this communication object.

### 4.1.4 Brightness Source

Is used to decide whether the movement function will be activated according to the light level or not. One of the two options can be selected: "Internal Sensor" or "Brightness Independent". If there is enough natural light, unnecessary light is eliminated by selecting "Internal Sensor".

#### 4.1.4.1 Light Level Threshold

When the above brightness source data is set to "Internal Sensor", this field appear and used to determine the threshold value. When the movement starts, if the light level is below this value, movement data is sent. If there is enough brightness, movement data is not sent.

### 4.1.5 Number of Output

When the sensor determines the movement action, it can generate data from 1 to 3 different types of outputs. The default output value is 1. According to the selected number of outputs, there will be the fields "Output 1", "Output 2", "Output 3" on the left-hand side of the screen. All settings can be done through these fields.

## 4.1.6 Enable Object

Sets the movement function of the sensor to “Enabled” or “Disabled”. Default value is “Disabled”. If “Enabled” is selected, the below new fields will appear:

### 4.1.6.1 Enable With

Shows with which data the movement function will be activated. The options are either “OFF Telegram” or “ON Telegram.”

### 4.1.6.2 Initial Postition

Shows the status of the device at start. If “Disabled” is selected, the movement function will not operate at start and the device will wait for data to come from the related object. When “Enabled” is selected, the movement function will start to operate immediately after restart.

### 4.1.6.3 Reaction When Enabled

Works in the background, independent from the movement function. When the movement function is activated, if it is necessary to send the current status (similar to putting in process a current movement) then the “Send Current Status” option is to be selected. If the sensor is to start activating with a new movement, then “Start With a New Movement” should be selected.

### 4.1.6.4 Reaction When Disabled

Shows how the device will act if the movement detection is disabled while the movement function is operating. If it is required for the device to stop sending commands, “Do not Send Command” should be selected. If the device should complete its current task and then become passive, “Finish Current Action” is should be selected.

## 4.2 Movement Outputs

The device's movement function can be up to 3 outputs. The parameters for these outputs are as below as an example:

General	Output Data Type	1 Bit
Brightness	Action at Detection	<input type="radio"/> No Reaction <input checked="" type="radio"/> Send Value
— Movement	Send Value	<input type="radio"/> OFF Telegram <input checked="" type="radio"/> ON Telegram
Parameters	Action at End of Detection	<input type="radio"/> No Reaction <input checked="" type="radio"/> Send Value
Output 1	Send Value	<input checked="" type="radio"/> OFF Telegram <input type="radio"/> ON Telegram
Output 2		
Output 3		

General	Output Data Type	1 Byte
Brightness	Action at Detection	<input type="radio"/> No Reaction <input checked="" type="radio"/> Send Value
— Movement	Send Value	0
Parameters	Action at End of Detection	<input type="radio"/> No Reaction <input checked="" type="radio"/> Send Value
Output 1	Send Value	0
Output 2		
Output 3		

General	Output Data Type	HVAC Mode
Brightness	Action at Detection	<input type="radio"/> No Reaction <input checked="" type="radio"/> Send Value
— Movement	Send Value	Comfort
Parameters	Action at End of Detection	<input type="radio"/> No Reaction <input checked="" type="radio"/> Send Value
Output 1	Send Value	Stand By
Output 2		
Output 3		

## 4.2.1 Output Data Type

Determines the data type of the movement detection action. "1-bit", "1-byte", "Scene" or "HVAC mode" can be selected.

## 4.2.2 Action at Detection

One of the two options can be selected: "No Reaction" or "Send Value"

### 4.2.2.1 Send Value

The value according to Output Data Type will be selected from drop-down menu or entered manually.

## 4.2.3 Action at End of Detection

The value according to Output Data Type will be selected from drop-down menu or entered manually.

### 4.2.3.1 Send Value

The value according to Output Data Type will be selected from drop-down menu or entered manually.

Movement Communication objects:

Number	Name	Object Function	Length	Flags	Data Type
10	Movement	Slave Output	1 bit	CT	Switch
11	Movement	Slave Input	1 bit	CW	Switch
12	Movement	Enable Input	1 bit	CRW	Switch
13	Movement	Detection Time	2 bytes	CRWT	Time (s)
14	Movement	Output 1	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	HVAC Mode
15	Movement	Output 2	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	Scene Number
16	Movement	Output 3	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	HVAC Mode

## 5 Constant Brightness

OPT-MS-111-xx can be programmed to control the light level in an indoor area that receives natural light. For this purpose, the below parameters need to be set:

General	Set Brightness	400	lux
Brightness	Tolerance (%)	10	
<b>Constant Brightness</b>			
	Output Control Values		
	Upper Limit	255	
	Lower Limit	0	
	Starting Control Value	128	
	NOTE: Lower Limit < Start Value < Upper Limit		
	Increment Step	5	
	Decrement Step	5	
	Control Speed	10	sec
	Movement Dependency	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled	
	Movement Timeout	300	sec
	Output Value at the end of Movement	0	
	Movement Timeout Object	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled	
	Use Second Output	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled	
	Main Output Value Gain (%)	100	
	Use Third Output	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled	
	Main Output Value Gain (%)	100	
	Enable Object	<input type="radio"/> No <input checked="" type="radio"/> Yes	
	Enable With	<input type="radio"/> OFF Telegram <input checked="" type="radio"/> ON Telegram	
	Initial Position	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled	



Constant Brightness Control Objects are as below:

Number	Name	Object Function	Length	Flags	Data Type
21	Constant Brightness Control	Start/Stop	1 bit	CRWT	Start/Stop
22	Constant Brightness Control	Enable Input	1 bit	CRWT	Enable Input
23	Constant Brightness Control	Brightness Set Value	2 bytes	CRWT	lux (Lux)
24	Constant Brightness Control	Detection Time	2 bytes	CRWT	Time (s)
25	Constant Brightness Control	Stop 1 bit	1 bit	CW	Switch
26	Constant Brightness Control	Stop 4 bit	4 bit	CW	Dimming Control
27	Constant Brightness Control	Stop 1 byte	1 byte	CW	Counter Pulses (0...255)
28	Constant Brightness Control	Output 1	1 byte	CT	Counter Pulses (0...255)
29	Constant Brightness Control	Output 2	1 byte	CT	Counter Pulses (0...255)
30	Constant Brightness Control	Output 3	1 byte	CT	Counter Pulses (0...255)

## 5.1 Set Brightness

It is the parameter in which the desired light intensity in the environment is entered. Value between 10 and 1000 lux can be entered. The default value is 400. Since the device is ceiling type and reads the light intensity reflected on the ceiling, you should compare the desired light intensity in the environment with the light level at the point where the sensor is located.

## 5.2 Tolerance

This parameter defines -/+ tolerance range for constant brightness. It can be set between 10 % and 100 %. Default value is 10%.

## 5.3 Upper Limit

This parameter defines max. value that can be sent to the illumination device. Default value is 255 (100%).

## 5.4 Lower Limit

This parameter where we set the minimum value to be sent to the lighting device. Default value is 0.

## 5.5 Starting Control Value

This parameter defines initial value of constant brightness control. It can be set between 0 and 255. Default value is 128 (50%). The device checks whether the lighting is sufficient and the light level starting from the value defined here.

## 5.6 Increment Step

The value that the device will increase on the Initial Value or the last value sent to the Control is determined. A value between 1 and 15 can be specified. The default value is 5.

## 5.7 Decrement Step

The value to be reduced by the device is determined over the Initial Value or the last value sent to the Control. A value between 1 and 15 can be specified. The default value is 5.

## 5.8 Control Speed

It is the delay time to wait the environment to reach the new light level before the device sends a new value. It can be set between 2 and 255 seconds. Default value is 10 seconds. Please note that when low duration is defined, there will be more interference to the light level.

## 5.9 Movement Dependency

This field will be set as "Disabled" if the movement sensor is to trigger the stable light level control process. Otherwise, should be left as "Enabled". When activated, the below extra fields show:

### 5.9.1 Movement Timeout

Movement detection duration can be chosen between 10 and 65535 seconds. The default value is 300 seconds (5 minutes).

### 5.9.2 Output Value at the end of Movement

Specifies the brightness level when the movement action is complete. It can take a value between 0 and 255. The default value is 0.

### 5.9.3 Movement Timeout Object

Allows the movement duration to be determined externally. When "Enabled" is selected, 24 - Detection Timeout object appears. Default value is "Disabled".

## 5.10 Use Second Output

The default value is "Enabled". If an extra output is going to be used parallel to the main output, this field should be selected as "Disabled". When the second outlet is activated, it takes a value of 2% - 255% of the main output. The default value here is 100%. This is generally used to reach a more homogenous brightness level when the main sensor is located at a brighter (for example, near the window) or dimmer spot of the area.

## 5.11 Use Third Output

The default value is "Enabled". If a third output is going to be used parallel to the main outlet, this field should be selected as "Disabled". When the third outlet is activated, it takes a value of 2% - 255% of the main output. The default value here is 100%. This is generally used to reach a more homogenous brightness level when the main sensor is located at a brighter (for example, near the window) or dimmer spot of the area.

## 5.12 Enable Object

Used to fully activate or fully pacify the Stable Light Level Control. Default value is "Enabled". When "Disabled" is selected, the below fields and 22 - Enable Input.

### 5.12.1 Enable With

"OFF Telegram" will be activated with 1-bit 0 (zero) telegram; "ON Telegram" indicates that it will be active with 1-bit 1 (one) telegram. The default value is "ON Telegram".

### 5.12.2 Initial Position

Shows the status, the device will take, when it turned on. With "Enabled" the device will be active initially, otherwise stable light level control will not work immediately after start.

## 6 Temperature

Is used to transmit the temperature value taken with the integrated temperature sensor of the device to the data line.

General	Offset (x 0.1°C)	0
Brightness	Sending Period	60 min
<b>Temperature</b>	Sending Style	<input checked="" type="radio"/> Cyclic <input type="radio"/> Cyclic & Change
	Enable Threshold	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
	Temperature Threshold	23 °C
	Hysteresis	1.0°C
	External Threshold Object	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
	Output Type	1 Bit
	Above Threshold	<input checked="" type="radio"/> No Reaction <input type="radio"/> Send Value
	Below Threshold	<input checked="" type="radio"/> No Reaction <input type="radio"/> Send Value

Temperature Communication Objects are as below ;

Number	Name	Object Function	Length	Flags	Data Type
2	General	Temperature Value Output	2 bytes	CRT	Temperature (°C)
36	Temperature	Threshold Value Input	2 bytes	CRWT	Temperature (°C)
37	Temperature	Threshold Status	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	HVAC Mode

## 6.1 Measurement Offset

Measured value may be different from the sensible temperature due to its location. Any thermometer can be used to offset measured value. Offset can be set between -12.8 and +12.7 °C. The default value is 0 °C.

## 6.2 Sending Period

Defines the frequency of the temperature measurement transmission via "2 – Temperature Value Output" object to the data line. It can be set between 2 and 255 minutes. The default value is 60 minutes.

## 6.3 Sending Style

Can be either "Cyclic" or "Cyclic and Change". If a data transmission needs to be sent when a temperature change is detected additional to "Cyclic" feature, "Cyclic and Change" should be selected.

### 6.3.1 Change Amount

This parameter is change amount of "Cyclic and Change" feature. It can be set between 1 °C and 100 °C.

## 6.4 Enable Threshold

This parameter is used if a threshold value is to be determined for the temperature measurements and specifies the action when the measured value is either below or above the threshold. It can be set "Enabled" or "Disabled". When enabled, the below parameters appear:

### 6.4.1 Temperature Threshold

The threshold value is defined here. Default value is 23 °C.

### 6.4.2 Hysteresis

This parameter defines +/- tolerance range for temperature threshold value. It can be set between 0.5 °C and 10 °C. For example, if the threshold is set to 23 °C and the hysteresis is set to 2 °C, the threshold actions are applied when the temperature is either below 22°C or above 24°C.

### 6.4.3 External Threshold Object

If "Enabled" is selected, "Temperature Threshold" value can be changed via "36 – Temperature Value Input" object. If "Disabled" is selected, object number 36 will not appear on the communication object table.

### 6.4.4 Output Type

This parameter defines data type of the threshold activity. "1-bit", "1-byte", "Scenario" or "HVAC" mode can be selected.

### 6.4.5 Above Threshold

This parameter defines the action when the room temperature exceeds threshold + tolerance. If "No reaction" is selected, no any data is transmitted. If "Send Value" is selected, "Output Data Type" is transmitted.

### 6.4.6 Below Threshold

This parameter defines the action when the room temperature drops below threshold - tolerance. If "No reaction" is selected, no any data is transmitted. If "Send Value" is selected, "Output Data Type" is transmitted.

## 7 Humidity

Is used to transmit the relative humidity value measured with the integrated humidity sensor of the device to the data line.

General	Offset (% rH)	0
Brightness	Sending Period	2 min
<b>Humidity</b>	Sending Style	<input checked="" type="radio"/> Cyclic <input type="radio"/> Cyclic & Change

Humidity Communication objects are as below:

Number	Name	Object Function	Length	Flags	Data Type
3	General	Humidity Value Output	2 bytes	CRT	Humidity (%)

### 7.1 Measurement Offset

The value of the integrated humidity sensor measures may differ from the sensible humidity due to its location. An external humidity measure device can be used to offset this. The translation can be between -50 and +50. The default value is 0%.

### 7.2 Sending Period

Defines the frequency of the humidity measurement transmission from the 3 - Humidity Value Output to the data line. It can take a value between 2 and 255 minutes. The default value is 2 minutes.

### 7.3 Sending Style

Can be either "Cyclic" or "Cyclic and Change". If a data transmission needs to be sent when a change is detected additional to "Cyclic" feature, "Cyclic and Change" should be selected.

#### 7.3.1 Change Amount

This parameter is change amount of "Cyclic and Change" feature. It can be set between 1% and 100%. Default value is 1.

## 8 Logic Operations

### 8.1 Inactivity Logic

This function is used to observe the movements in a specified area for a certain period of time. If a movement is detected within the determined period, movement data is sent. If there is no any movement within the specified period, no movement (inactivity) data is sent. It is useful at hotel/meeting rooms or for a specific area's observation purposes.

Observation Logic communication objects are as below:

Number	Name	Object Function	Length	Flags	Data Type
41	Inactivity Logic	Start Monitoring	1 bit	CRWT	Switch
42	Inactivity Logic	Inactivity Output	1 bit	CT	Switch
			1 byte	CT	Counter Pulses (0...255)
			1 byte	CT	Scene Number
			1 byte	CT	HVAC Mode



## 8.1.2 Monitoring Time

Determines the duration of the observation via the "41 - Start Monitoring" object. It can be set between 10 and 65536 seconds. Default value is 300 seconds.

## 8.1.3 Output Type

Determines the data type of the observation activity to be performed. "1-bit", "1-byte", "Scenario" or "HVAC" mode can be selected.

## 8.1.4 Start Delay

Is used to determine a delay time before observation function starts. Can be set between 0 and 255 seconds. Default value is 5.

## 8.1.5 Action at Detection

Defines action type when a movement is detected. "No Reaction" and "Send Value" options are available. If "No Reaction" is selected, no any data is transmitted. If "Send Value" is selected, below parameter is displayed.

### 8.1.5.1 Send Value

Defines the value to be sent when "Send Value" option is selected. The value should be entered according to selected "Output Type".

## 8.1.6 Action at End of Monitoring Time

Defines the action type at the end of observation time when no movement is detected. If "No Reaction" is selected, no any data is transmitted. If a value needs to be transmitted, "Send Value" should be selected to transmit observation result. If "Send Value" is selected, below parameter is displayed.

### 8.1.6.1 Send Value

Defines the value to be sent when "Send Value" option is selected. The value should be entered according to selected "Output Type".



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