



Multi Sensor

OPT-MSx-21y



Multi Sensor

OPT-MSx-21y

optimus
solutions



Flat Design



GRMS Presence/
Absence



Multi Sensor



Wide Detection
Range



Multi Sensor

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General Specifications

- **Dimensions:** 78mm diameter circle
- **Depth: Visible:** 16mm + Under Wall: 29mm = 45mm
- **Mounting:** 55–68mm circular hole or with an adapter to a standard enclosure
- The programming button is located on the back of the device.
- KNX Programming LED is on the front (inside the dome).
- Flush mounting box can be supplied separately.



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Technical Specifications

- Device is connected to KNX Bus via WAGO KNX Connector.
- Halogen Free material is used while producing.
- IP20 Protection Class
- Mounting height between 2m and 12m.
- Device Capabilities;
 - Motion Sensing
 - Brightness Sensing
 - Temperature Sensing
 - Humidity Sensing
 - Air Quality Sensing



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- Common ETS application for all models
- In the ETS application:
 - 2 independent motion applications
 - 2 independent constant light level controls
 - Motion-based HVAC control application
 - Input-output module control application
 - 5 independent logic applications
- Addressing with flasher
- Ability to attach an accessory card or box
- In the advanced version:
 - RTC application
 - Temperature, humidity and air quality sensors



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OPT-MSS-21y Standard



OPT-MSW-212 Wide Range



OPT-MSC-21y Corridor

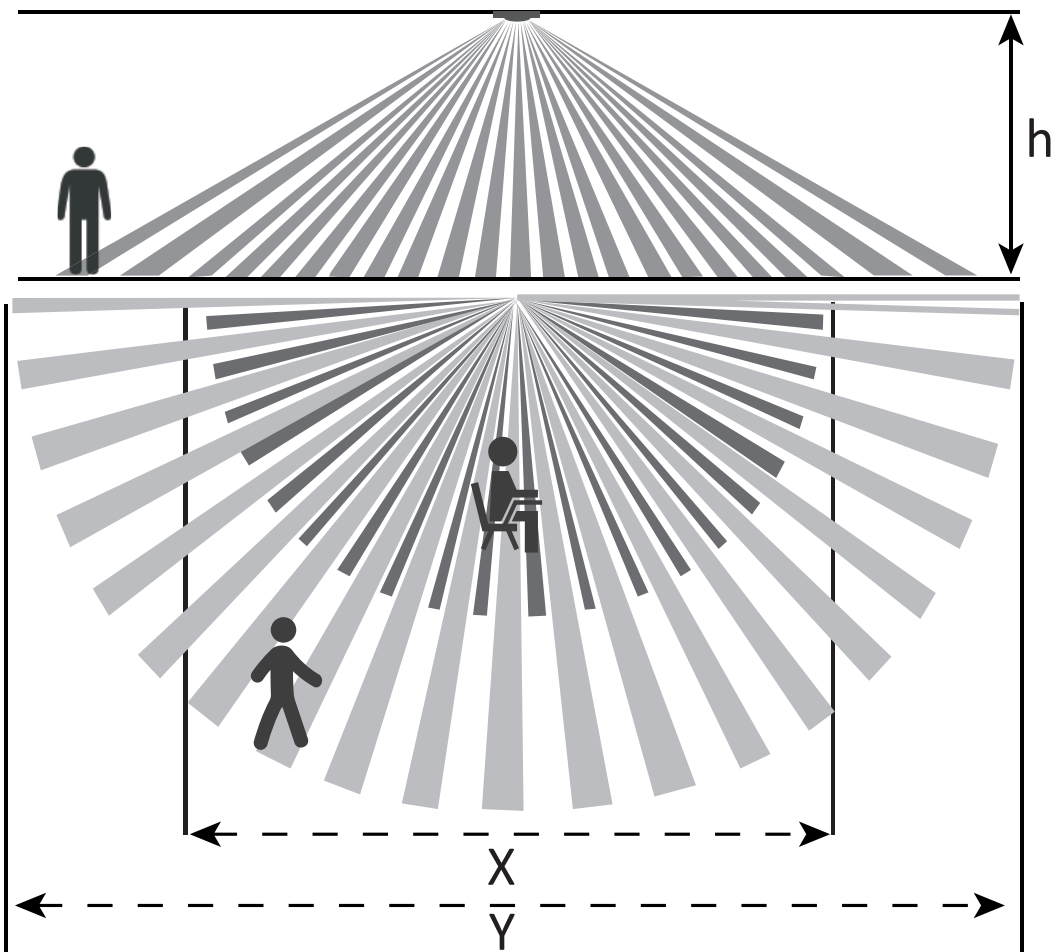
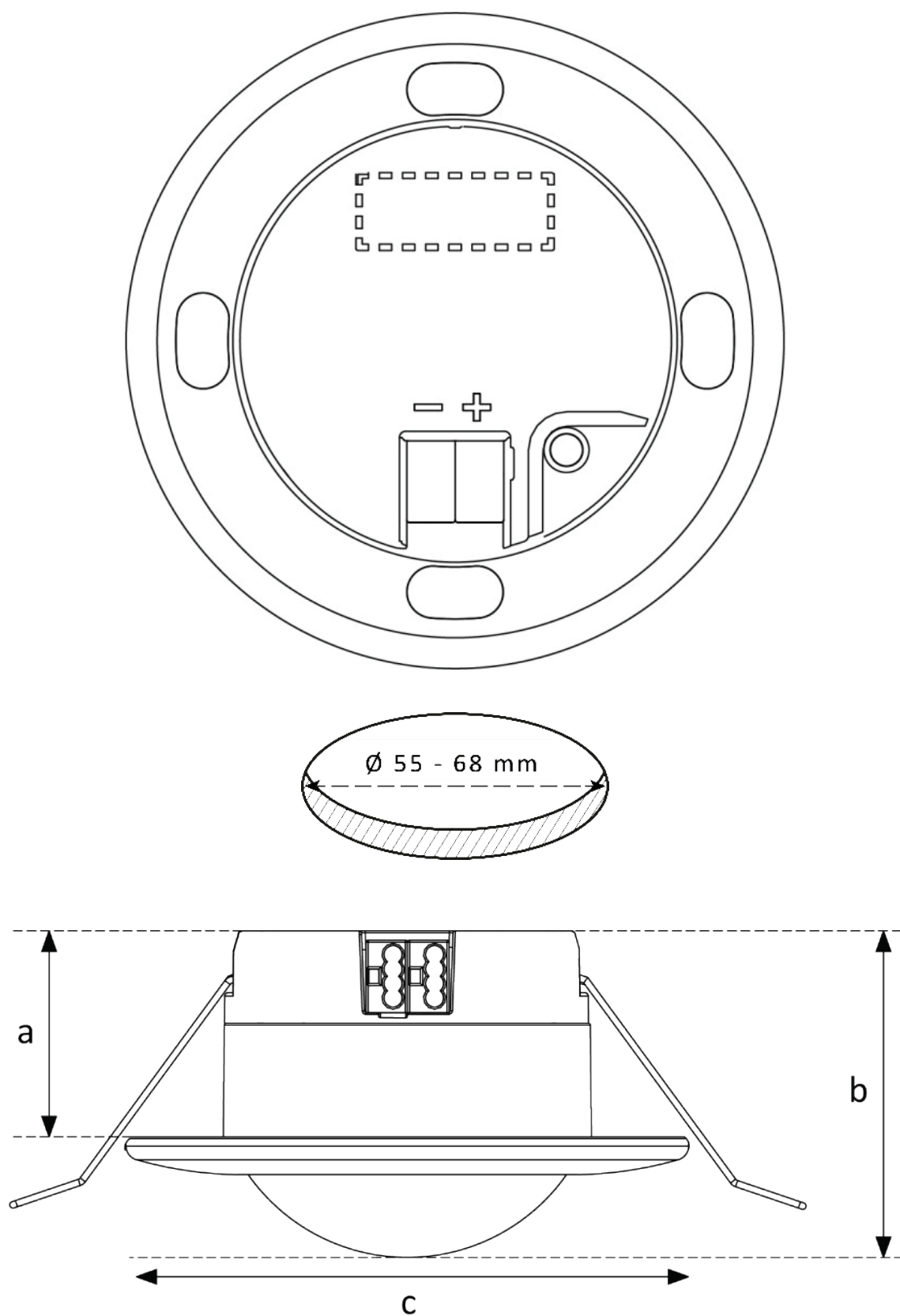


OPT-MSH-212 High-Bay

Multi Sensor

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Coverage Area Diagram



Model	Standard	Wide Range	High Bay	High Bay	Corridor
Height (H)	2.5-4 m	2.5-4 m	9-12 m	9-12 m	2.5-4 m
Seated Person (X)	4-6 m Ø	8-10 m Ø	14-20 m Ø	14-20 m Ø	
Walking Person (Y)	10-12 m Ø	12-16 m Ø	23-30 m Ø	23-30 m Ø	22-35 m (4-6 m Short Edge)

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Product Code

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MSS: Standard
MSC: Corridor
MSH: High Bay
MSW: Wide

- 212: *with environmental sensors and thermostat*
- 211: *without environmental sensors and thermostat*



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General Parameters

OPT-MSx-212 Multi Sensor > General

General	Start Up Delay	00:10	mm:ss
+ Room Temperature Controller	Model	OPT-MSS-212 Standart	
+ Sensors	Movement Application 1	☐	
	Movement Application 2	☐	
+ Logic Applications	Constant Brightness Control 1	☐	
	Constant Brightness Control 2	☐	
	HVAC Application	☐	
	Accessory	None	

Product Accessory

- OPT-MSA-211: Surface mount box
- OPT-MSA-212: Input accessory module
- OPT-MSA-213: Input-Output accessory module

Product accessories are ordered separately.

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Movement Application

Movement Sensor Sensitivity	Medium
Device Mode	☒ Master ☐ Slave
Detection Timeout	00:05:00 hh:mm:ss
Detection Timeout Com Object	☐
Detection Night Mode	☒
Detection Night Timeout	00:01:00 hh:mm:ss
Detection Night Timeout Com Object	☐
Brighness Source	Brightness Independent
Operating Mode	Auto
Slave Input	☒ No ☐ Yes
Test Mode Object	☒ No ☐ Yes
Actuator Status Object	☐ No ☒ Yes
External Push Button Object	☐
Pause Time	01.000 ss.fff

Sensitivity Low/Med/High

Night mode: A different timeout can be set upon switching to night mode from the bus line.

Auto, Auto ON, Auto OFF

When the test is activated, the sensor lights up its indicator when it detects motion.

Ability to operate with an external key

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Movement Application

Data Type	1 Bit
Action at Detection	☐ No Reaction ☒ Send Value
Send Value	☐ OFF Telegram ☒ ON Telegram
Repeat Telegram	☐
Action End Of Detection	☐ No Reaction ☒ Send Value
Send Value	☒ OFF Telegram ☐ ON Telegram
Repeat Telegram	☐
Use Second Output	☒
Data Type	1 Bit
Action at Detection	☐ No Reaction ☒ Send Value
Send Value	☐ OFF Telegram ☒ ON Telegram
Repeat Telegram	☐
Action End Of Detection	☐ No Reaction ☒ Send Value
Send Value	☒ OFF Telegram ☐ ON Telegram
Repeat Telegram	☐

Second output: It may be in a different data type

Constant Brightness Application

Brightness Source	☒ Internal ☐ External
Operating Mode	Movement Independent
Output Type	☒ 1 Byte Counter Pulses ☐ 1 Byte Percentage
Set Brightness	200 lux
Tolerance	10 %
Upper Limit	255
Lower Limit	0
Starting Control from	127
Increment Step	5
Decrement Step	5
Control Speed	00:10 mm:ss
Brightness Set Value Object	☒ No ☐ Yes
Save Brightness Setpoint Object	☒ No ☐ Yes
AutoStart After Boot (w/o Movement)	☒ No ☐ Yes
Second Output	☐ No ☒ Yes
Gain	100 %
Upper Limit	255
Bottom Limit	0
Third Output	☒ No ☐ Yes

Second and third outputs:
Can generate different values with a multiplier

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HVAC Application

Movement Sensor Sensitivity	Medium
Slave Input	☐
Validation Delay	30 sec
Minimum number of motion detections during delay for Switch On	☒ First ☐ 2
Detection Timeout	00:05:00 hh:mm:ss
Detection Time Object	☐
Output Data Type	HVAC
Action at Detection	☐ No Reaction ☒ Send Value
Send Value	Comfort
Action End Of Detection	☐ No Reaction ☒ Send Value
Send Value	Standby

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Room Temperature Control Master General

General	Control Function	Heating
Room Temperature Controller	Operating Mode After Reset	Heating ✓ Cooling Heating and Cooling
General		
Master General		
Temperature Reading		
Heating Control		
Setpoint Changes		

This is the section where the regions in which the RTC function can operate are selected.

Multi Sensor

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Room Temperature Control Master General

General	Control Function	Heating and Cooling
Room Temperature Controller	Operating Mode After Reset	Previous
General	Heating/Cooling Common Parameters	
Master General	Switchover Heating/Cooling	Only from Bus
Temperature Reading	Control Function After Reset	Previous
Heating Control	Control Value(s)	☒ 1 Common Object ☐ 2 Seperate Objects
Cooling Control		
Setpoint Changes		

The RTC remembers the control function it was in before the restart and starts in that mode.

If this option is selected, the control value is sent via a common object.

If this option is selected, the control value is sent via two different objects.

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Brightness Sensor

--- OPT-MSx-212 Multi Sensor > Sensors > Brightness Sensor

General	Reading Data
+ Room Temperature Controller	Calibration 100 x 0.01
- Sensors	Offset (+/-) 0
General	Sending Value
Brightness Sensor	Periodically ☐
	On Change ☐
+ Logic Applications	Threshold Control ☐

It ensures that the value read by the sensor is equal to the actual ambient brightness level.

After the calibration value, if necessary, it shifts the lux value by the entered value between -128 and +127. Thus, the lux value detected by the sensor approaches the lux value in the environment. The default value is 0.

There are two methods that can be used to send the brightness level to the KNX line. These are "Periodic" and "Change Amount".

The measured brightness level is transmitted to the data bus by repeating it for a period of time parametrically determined by the user (between 2 and 255 seconds). The default value is 60 seconds.

Temperature Reading

OPT-MSx-212 Multi Sensor > Sensors > Temperature Sensor

General	Reading Data
+ Room Temperature Controller	Offset 0 x0.1°C
- Sensors	Sending Value
General	Periodically ☐
Temperature Sensor	On Change ☐
	Threshold Control ☐
+ Logic Applications	

The adjustment range is between -12.8 °C and +12.7 °C, with steps from -128 to +128 (x0.1). The default value is 0 °C.

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Humidity Detection

--- OPT-MSx-212 Multi Sensor > Sensors > Humidity Sensor

General	Reading Data
+ Room Temperature Controller	Offset 0 % rH
- Sensors	Sending Value
General	Periodically ☐
Humidity Sensor	On Change ☐
	Threshold Control ☐
+ Logic Applications	

The value measured by the internal humidity sensor may differ from the perceived humidity due to its location.

It determines the sending frequency of the measured humidity value to the data line via the "Humidity Value" object.

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Air Quality Detection

--- OPT-MSx-212 Multi Sensor > Sensors > Air Quality Sensor

General	Sending Value
+ Room Temperature Controller	Periodically ☒
- Sensors	On Change ☐
	Threshold Control ☐
General	
Air Quality Sensor	
+ Logic Applications	

There are two methods that can be used to send air quality information to the KNX line.

It determines the sending frequency of the measured air quality value to the data line via the "Air Quality" object.

Logic Application: Inactivity Monitor

--- OPT-MSx-212 Multi Sensor > Logic Applications > 1 - Inactivity Monitor

General	Monitoring Time	00:05:00	hh:mm:ss
+ Room Temperature Controller	Start Delay	00:05	mm:ss
+ Sensors	Auto Repeat	Never	
- Logic Applications	Action at Detection	☒ No Reaction ☐ Send Value	
Selection	Action End of Monitoring Time	☒ No Reaction ☐ Send Value	

1 - Inactivity Monitor

Defines the duration for monitoring movement. If no movement information is received from the movement information object during this period, the system will consider it as inactivity.

Used to set an initial delay before the device begins detection. It can be set between 0 and 255 seconds, with a default value of 5 seconds.

The observation function operates as a single observation in the normal scenario; it waits for movement information during the delay period and sends a "Stop" telegram at the end of the observation period.

Determines whether any action will be taken upon movement detection.

Determines what action will be taken if no movement is detected at the end of the monitoring period.

Logic Applications: Filter/Delay

--- OPT-MSx-212 Multi Sensor > Logic Applications > 1 - Filter/Delay

General	Input/Output Data Type	1 Bit
+ Room Temperature Controller	Filter Function	No Filter
+ Sensors	Delay Time Step	☒ 1 Second Step ☐ 0.1 Second Step
- Logic Applications	Delay Time	00:00:00 ss:dd:ss
Selection	Delay Time Write Object	No
1 - Filter/Delay		

Data type to be filtered.

Filter selections:

- Delay accepted, send others
- Delay accepted, don't send others
- Send accepted, delay others
- Don't send accepted, delay others

Delay time step interval and delay time.
HH:MM:SS or x100 ms

Dynamic object to change the delay time.
HH:MM:SS or x100 ms

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Logic Applications: Preset

--- OPT-MSx-212 Multi Sensor > Logic Applications > 1 - Preset

General	Output Count	1
Room Temperature Controller	Output 1 Data Type	1 Byte
General	ON TELEGRAM PRESET "B"	
Sensors	Output 1	☐ No Reaction ☒ Send Value
General	Send Value	255
Logic Applications	OFF TELEGRAM PRESET "A"	
Selection	Output 1	☐ No Reaction ☒ Send Value
	Send Value	0
	Delay Between Telegrams	250 ms

1 - Preset

Output count up to 4 and types:

- 1-bit
- 1-byte
- 2-byte unsigned
- 2-byte signed
- 2-byte float

Reaction on input telegram.

Delay between telegrams:

- None
- 250 milliseconds
- 500 milliseconds
- 1000 milliseconds

Logic Applications: Logic Gates

--- OPT-MSx-212 Multi Sensor > Logic Applications > 1 - Logic Gates

General	Number of Input	2
Room Temperature Controller	Logic Operator	XNOR
General	Input 1 Parameter	
	Initial Value	☒ Value=0 ☐ Value=1
Sensors	Logic Input	☒ Normal ☐ Inverse
General	Input 2 Parameter	
	Initial Value	☒ Value=0 ☐ Value=1
Logic Applications	Logic Input	☒ Normal ☐ Inverse
Selection	Output Parameter	
1 - Logic Gates	Data Type	☒ 1 Bit ☐ 1 Byte
	Send Output Value	☒ in Every Calculation ☐ on Change
	Output value when logic is True	☐ 0 ☒ 1
	Output value when logic is False	☒ 0 ☐ 1

Number of inputs up to 8.

Logic Operations:

- Not (For single input only)
- AND
- OR
- XOR
- XNOR
- NAND
- NOR

Initial value and selection of inverted inputs.

Output data type, when to send and value depending on logic output.

Logic Applications: Gate

--- OPT-MSx-212 Multi Sensor > Logic Applications > 1 - Gate

General	Input/Output Data Type	1 Byte Signed
+ Room Temperature Controller	Control Input Behaviour	☒ Normal ☐ Inverted
+ Sensors	Initial Value of Control Input	☒ Enabled ☐ Blocked
- Logic Applications	Send Last Value When Gate Enable	☒
Selection		
1 - Gate		

Input and output data type.

Pass on 1 or 0.

Initial value of gate.

Action on enable.

Logic Applications: Threshold

--- OPT-MSx-212 Multi Sensor > Logic Applications > 1 - Threshold

General	Input Data Type	1 Byte 0 - 255
+ Room Temperature Controller	Output Data Type	1 Bit
+ Sensors	Send Output Value	☒ in Every Calculation ☐ on Change
- Logic Applications	Threshold Count	1
Selection	Threshold 1	0
1 - Threshold	Less Than Threshold	☒
	Send Value	☒ OFF Telegram ☐ ON Telegram
	Greater Than (or Equal) Threshold	☒
	Send Value	☐ OFF Telegram ☒ ON Telegram

Input and output data types.

When to send output.

Thresholds up to 3.

Threshold value.

Action when less then threshold. If there are more then 1 thresholds, send values can be set for input values between thresholds.

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Logic Applications: Scene Controller

--- OPT-MSx-212 Multi Sensor > Logic Applications > 1 - Scene (Scene)

General	Scene Name	Scene
+ Room Temperature Controller	Scene Count	1
+ Sensors	Number of Channel	2
- Logic Applications	Delay Between Telegrams	00:00.1 dd:ss.f
Selection	Data Type of Actuators	
- 1 - Scene (Scene)	Channel 1	1 Bit Switch
Scene - 1 Configuration	Channel 2	1 Bit Blind

Scene count up to 8.

Output channels up to 8.

Delay between channels.

Output data types:

- 1-Bit switch
- 1-Bit blind
- 1-Byte unsigned
- 1-Byte percent
- Temperature

--- OPT-MSx-212 Multi Sensor > Logic Applications > 1 - Scene (Scene) > Scene - 1 Configuration

General	Scene Number	Scene 1
+ Room Temperature Controller	Scene can be Saved	Not Allowed
+ Sensors	Overwrite Parameters at Download	☒
- Logic Applications	Channel 1	☐ Bypass ☒ Activated
Selection	Send Value	☐ OFF Telegram ☒ ON Telegram
- 1 - Scene (Scene)	Channel 2	☐ Bypass ☒ Activated
Scene - 1 Configuration	Send Value	☒ Up ☐ Down

Scene number up to 64.

Scene saving. Can be disabled, if enabled, saving methods are saving the last values after execution or sending a read telegram. User can keep the saved scenes by unchecking the overwrite parameter.

Output values depending on channel type.

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Accessory

OPT-MSx-212 Multi Sensor > General

General

+ Room Temperature Controller

+ Sensors

+ Logic Applications

- Input

- Input - 1

Value Sender - 1

Input - 2

Input - 3

Start Up Delay

00:10

dd:ss

Model

OPT-MSS-212 Standart

Movement Application 1

☐

Movement Application 2

☐

Constant Brightness Control 1

☐

Constant Brightness Control 2

☐

HVAC Application

☐

Accesory

3 Input

OPT-MSx-212 Multi Sensor > Input > Input - 1

General

+ Room Temperature Controller

+ Sensors

+ Logic Applications

- Input

- Input - 1

Value Sender - 1

Input - 2

Input - 3

Digital Input Function

Value Sender

Debounce Time

50

ms

Enable Object

☒ No ☐ Yes

Accessory type selection:

- 3 Input
- 3 Input and 2 Output

Input type selection:

- Value Sender
- Shutter Sensor

Debounce time:

- 20 milliseconds
- 30 milliseconds
- 50 milliseconds
- 150 milliseconds

Enable object to dynamically enable/disable the input channel.



THANK YOU