

Manual
Wall motion detector
theMura S180 KNX



theMura S180

2069650

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1 Function description

1.1 Motion detector

Motion detector **theMura S180 KNX**

The detector switches a lighting group dependent on the presence of persons and the current brightness. The light output can be dynamically faded in and out by the integrator. The brightness switching value is set via parameter or object.

The lighting is switched on during presence and insufficient brightness, and off during absence. Manual switching or dimming can be performed with a push button (internal or external).

1 additional channel transmits the presence information in the room to further devices such as heating, ventilation, air conditioning or blinds controls. The channel has a switch-on delay and a time delay.

1.1.1 Style

Element	Example
Parameters, objects	<i>Configuration type, C1 Light</i>
Standard parameter value	<i>Switching light</i>
Parameter page	General

1.1.2 Terminology

Operating mode	Master Slave
Configuration type	Fully automatic device Semi-automatic device
Light function	Switching

1.1.3 Features

- **General:**
- Passive infrared KNX motion detector for wall mounting in flush-mounted box
- Cover in Theben design
- KNX Data Secure
- Rectangular detection area, 170°, max. 14 m x 17 m
- Area restriction in scope of delivery
- Automatic presence and brightness-dependent control for lighting and HVAC
- Mixed light measurement suitable for fluorescent lamps (FL/PL/ESL), halogen/incandescent lamps and LEDs
- Setting the room correction factor for brightness measurement calibration
- Detection and sending of current brightness
- Integrated, freely configurable push button (can be deactivated)
- Adjustable detection sensitivity
- Master/Slave parallel switching for gap-free coverage of large areas
- Master/Master parallel switching for several lighting groups with separate light measurement, but joint presence detection
- Test mode for checking function and detection area
- Red LED controllable via object
- 3 logic channels (AND/OR/XOR)
- Wall installation in flush-mounted box (2-point fixing)
- Wall mounting possible with surface frame from switch manufacturer, additional adapter frame required (Theben accessories)
- KNX firmware update possible (ETS app)

- **1 channel Light, C1:**
- Switching mode with dimmable lighting
- Fully or semi-automatic, automatic changeover to semi-automatic at night possible
- Brightness switching value can be set in lux by using potentiometer (only day), parameter, or object
- Teach-in of the brightness switching value
- Lighting time delay configurable using potentiometer (only day), parameter, or object
- Day/night changeover via telegram
- Manual override via integrated push button or telegram
- Separate block telegram

- **1 channel HVAC, C4:**
- Configurable switch-on delay and time delay
- Sending of operating mode
- Separate block telegram

1.1.4 Proper Use

The KNX presence and motion detectors theMura are perfect for energy-efficient lighting control in corridors, staircases, individual offices, basements and lavatories. They are simply mounted on the wall. The theMura P180 KNX presence detector comes with a freely configurable push button, six logic channels, two lighting and two presence channels, an integrated temperature and acoustic sensor, as well as a push button interface. Further convenient functions are the orientation light for increased safety in the dark and day/night switching for greater flexibility. The **motion detector theMura S180 KNX** convinces with an integrated push button, three logic channels as well as one light and one HVAC channel.

All theMura devices for KNX building automation support KNX Data Secure and are thus optimally protected against data theft and tampering.

As all devices in the theMura product range, the KNX wall detectors also feature a large detection area of 14 x 17 m as well as a particularly slim and attractive design. Moreover, they can be used with all common switch ranges of leading manufacturers by means of adapter frames.



Note: The white orientation light is only included in the theMura P180 KNX.

2 Installation

- **i** For installation in device housing, concealed housing size 1.

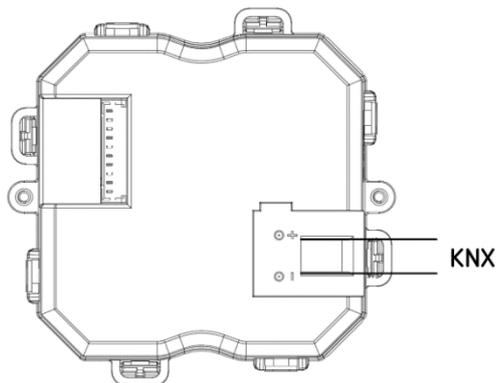
- **i** Theben accessories can be used with bezel frames from other switch ranges.

- **i** Observe the recommended installation height of 0.8 m – 1.2 m!

- **i** Ensure that there are no obstructions, as infrared rays cannot pass through solid objects.

- **i** The detector is not suitable for intruder alarm systems!

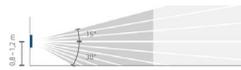
2.1 Connection



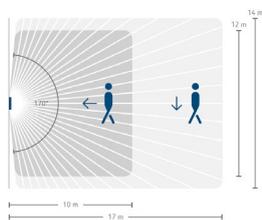
2.2 Detection area

Detection area of theMura S180 KNX

The rectangular detection area of detector covers a large area and permits a good room coverage with many applications. Note that frontally (radially) and transversally (tangentially) walking persons are detected in differently-sized areas. The recommended installation height is 0.8-1.2 m. The detection range decreases with increasing temperature. The sensitivity can be adjusted in 3 increments via parameter. The detection area can also be limited with the enclosed stickers.



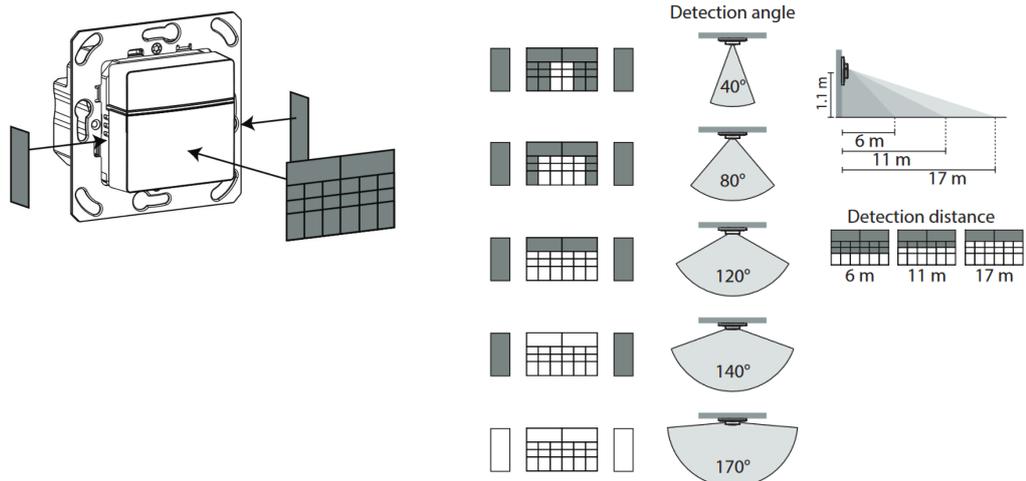
Abstrahlwinkel: +15 ° ... -30 °



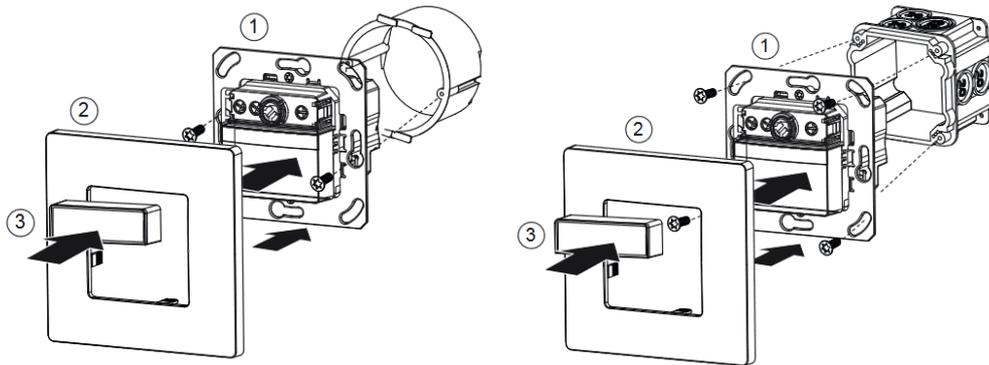
Erfassungswinkel: 170 °

2.2.1 Limiting the detection area

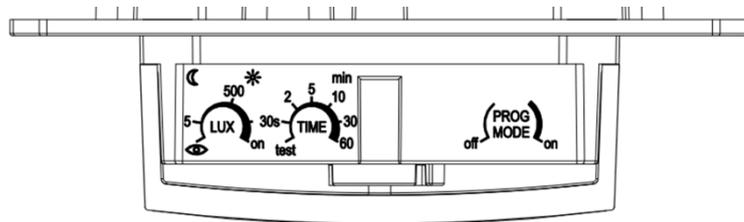
- Use the enclosed sticker to adjust the detector to the desired detection area.
- Remove the required section of the sticker using scissors.
- Then stick it to the lens.



2.3 Flush mounting



2.4 Setting options via potentiometer



2.4.1 Setting the brightness (LUX)

You can set different brightness values with the brightness potentiometer.

- Set the potentiometer to desired switch-on brightness (5 – 1000 lux/on).
On the ON setting, the detector always responds to motion, regardless of the brightness.

i The potentiometer only refers to the normal brightness switching value.

i A separate brightness value for the night (for day/night changeover) can be set or changed in the ETS application.

- Turn the potentiometer to Teach-in; after 20 s (red LED flashes) the detector saves the current surrounding brightness as the new switch-on brightness.

i It is always the switching value that is active when the teach-in is carried out that is changed:

Brightness switching value C1

Brightness switching value C1 night

2.4.2 Setting the time delay (TIME)

If the detector detects no further motion, it switches off after the set time delay.

- Set the potentiometer to the desired time (30 s – 60 min.).
- **Test** function see test behaviour in the chapter **Presence test mode**.

i The potentiometer only refers to the normal time delay.

i A separate time delay for the night (for day/night changeover) can be set or changed in the ETS application.

2.4.3 Activating the programming mode (PROG MODE)

PROG MODE off

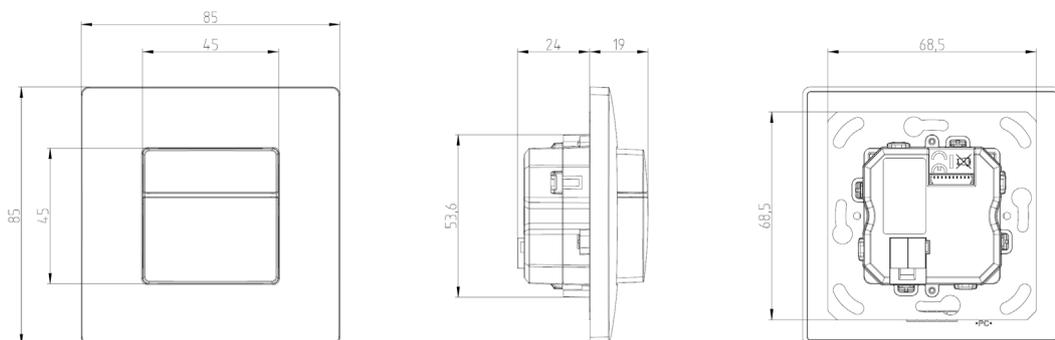
Programming mode is not activated.

PROG MODE on

Programming mode is activated.

After the download has been completed, programming mode is automatically deactivated.

2.4.4 Dimensions



3 Technical data

Recommended installation height	0.8 – 1.2 m
Max. detection area	14 x 17 m 238 m ² walking transversally (tangentially) 12 x 10 m 120 m ² walking frontally (radially)
Detection angle	170°
KNX operating voltage	21 – 32 V DC
KNX medium	TP1-256
KNX bus power input	< 10 mA (typical)
Type of installation	Wall mounting: - flush-mounting - Surface mounting possible with surface frame from switch manufacturer, additional adapter frame is required (Theben accessories)
Setting range brightness switching value/setpoint value	5 – 3000 lx
Lighting time delay	30 s – 60 min
HVAC switch-on delay	10 s – 30 min/inactive
HVAC time delay	10 s – 120 min
Connection type	KNX bus terminal
Protection rating	IP 20 in accordance with EN 60529
Ambient temperature	-15 ... +45° C
Protection class	III
Pollution degree	2
Rated impulse withstand voltage	0.8 kV
Software	Class A

4 General information about KNX Secure

ETS5 Version 5.5 and higher support secure communication in KNX systems. A distinction is made between secure communication via the IP medium using KNX IP Secure and secure communication via the TP and RF media using KNX Data Secure. The following information refers to KNX Data Secure.

In the ETS catalogue, KNX products supporting “KNX Secure” are clearly marked. 

As soon as a “KNX-Secure” device is included in the project, the ETS requests a project password. If no password is entered, the device is included with Secure Mode deactivated. However, the password can also be entered or changed later in the project overview.

4.1 Start-up with “KNX Data Secure”

For secure communication, the FDSK (Factory Device Setup Key) is required. If a KNX product supporting “KNX Data Secure” is included in a line, the ETS requires the input of the FDSK. This device-specific key is printed on the device label and can either be entered by keyboard or read by using a code scanner or notebook camera.

Example of FDSK on device label:



After entering the FDSK, the ETS generates a device-specific tool key. The ETS sends the tool key to the device to be configured via the bus. The transmission is encrypted and authenticated with the original and previously entered FDSK key. Neither the tool key nor the FDSK key are sent in plain text via the bus.

After the previous action, the device only accepts the tool key for further communication with the ETS.

The FDSK key is no longer used for further communication, unless the device is reset to the factory setting: In this case, all set safety-related data will be deleted.

The ETS generates as many runtime keys as needed for the group communication you want to protect. The ETS sends the runtime keys to the device to be configured via the bus.

Transmission takes place by encrypting and authenticating them via the tool key. The runtime keys are never sent in plain text via the bus.

The FDSK is saved in the project and can be viewed in the project overview.

All keys for this project can also be exported (backup).

During project planning, it can be defined subsequently which functions/objects are to communicate securely. All objects with encrypted communication are identified by the “Secure” icon in the ETS. 

4.2 Start-up without "KNX Data Secure"

Alternatively, the device can also be put into operation without KNX Data Secure. In this case, the device is unsecured and behaves like any other KNX device without KNX Data Secure function.

To start up the device without KNX Data Secure, select the device in the 'Topology' or 'Devices' section and set the 'Secure start-up' option in the 'Properties' area of the 'Settings' tab to 'Disabled'.

5 The application programme theMura

5.1 Selection in the product database

Manufacturer	Theben AG
Product family	Physical sensors
Product type	Presence detector
Programme name	theMura S180 KNX

Number of communication objects	57
Number of group addresses	255
Number of associations	255



The ETS database can be found on our website: www.theben.de/downloads

5.2 Overview of communication objects

5.2.1 Lighting channel C1

No.	Object name	Function	Length	R	W	C	T	U	DPT
1	<i>C1 Light output</i>	<i>Switching</i>	1 bit	R	W	C	T	-	1.001
2	<i>C1 Light input</i>	<i>Switching external push button</i>	1 bit	-	W	C	-	-	1.001
3	<i>C1 Light output</i>	<i>Brighter/darker</i>	4 bit	R	-	C	T	-	3.007
4	<i>C1 Light input</i>	<i>External button brighter/darker</i>	4 bit	-	W	C	-	-	3.007
5	<i>C1 Light output</i>	<i>Send value</i>	1 byte	R	-	C	T	-	5.001
6	<i>C1 Light input</i>	<i>Send value external push button</i>	1 byte	-	W	C	-	-	5.001
11	<i>C1 brightness switching value</i>	<i>Receive value</i>	2 bytes	-	W	C	-	-	9.004
12	<i>C1 brightness switching value</i>	<i>Send value</i>	2 bytes	R	-	C	T	-	9.004
13	<i>C1 brightness switching value night</i>	<i>Receive value</i>	2 bytes	-	W	C	-	-	9.004
14	<i>C1 brightness switching value night</i>	<i>Send value</i>	2 bytes	R	-	C	T	-	9.004
15	<i>C1 brightness switching value (teach-in)</i>	<i>§01= call up/ §81 = save</i>	1 byte	-	W	C	-	-	18.001
18	<i>Measurement value on lux meter</i>	<i>Receive value</i>	2 bytes	-	W	C	-	-	9.004
19	<i>Room correction factor</i>	<i>Call up value</i>	2 bytes	R	-	C	T	-	9.xxx
20	<i>Brightness value</i>	<i>Send lux value</i>	2 bytes	R	-	C	T	-	9.004
21	<i>External brightness value</i>	<i>Receive lux value</i>	2 bytes	-	W	C	-	-	9.004
38	<i>C1 Light</i>	<i>Day-night changeover</i>	1 bit	-	W	C	-	-	1.003
41	<i>C1 lighting time delay</i>	<i>Receive value</i>	2 bytes	-	W	C	-	-	7.005
42	<i>C1 lighting time delay</i>	<i>Send value</i>	2 bytes	R	-	C	T	-	7.005
43	<i>C1 lighting time delay night</i>	<i>Receive value</i>	2 bytes	-	W	C	-	-	7.005
44	<i>C1 lighting time delay night</i>	<i>Send value</i>	2 bytes	R	-	C	T	-	7.005
45	<i>C1 Light</i>	<i>Block/unblock</i>	1 bit	-	W	C	-	-	1.003
46	<i>Central command</i>	<i>Receive</i>	1 bit	-	W	C	-	-	1.001
48	<i>Red LED</i>	<i>Receive</i>	1 bit	-	W	C	-	-	1.001

5.2.2 HVAC channel C4

No.	Object name	Function	Length	R	W	C	T	U	DPT
50	C4.1 HVAC	Switching	1 bit	R	-	C	T	-	1.001
		Priority	2 bit	R	-	C	T	-	2.001
		Send value	1 byte	R	-	C	T	-	5.010
		Send percentage value	1 byte	R	-	C	T	-	5.001
		Send HVAC operating mode	1 byte	R	-	C	T	-	20.102
		Send scene	1 byte	R	-	C	T	-	17.001
51	C4.2 HVAC	Switching	1 bit	R	-	C	T	-	1.001
		Priority	2 bit	R	-	C	T	-	2.001
		Send value	1 byte	R	-	C	T	-	5.010
		Send percentage value	1 byte	R	-	C	T	-	5.001
		Send HVAC operating mode	1 byte	R	-	C	T	-	20.102
		Send scene	1 byte	R	-	C	T	-	17.001
52	C4 HVAC	Block/unblock	1 bit	-	W	C	-	-	1.003

5.2.3 General objects

No.	Object name	Function	Length	R	W	C	T	U	DPT
60	Parallel switching output	Trigger output	1 bit	-	-	C	T	-	1.017
61	Parallel switching input	Trigger input	1 bit	-	W	C	-	-	1.017
75	Test mode presence	On/Off	1 bit	-	W	C	-	-	1.001
76	Test mode light	On/Off	1 bit	-	W	C	-	-	1.001
77	Software version	Send	2 bytes	R	-	C	T	-	217.001

5.2.4 Logic channels C18-C23

No.	Object name	Function	Length	R	W	C	T	U	DPT
80	<i>C18 Logic module</i>	<i>Logic input 1 in AND gate</i>	1 bit	-	W	C	-	U	1.002
	<i>C18 Logic module</i>	<i>Logic input 1 in OR gate</i>	1 bit	-	W	C	-	U	1.002
	<i>C18 Logic module</i>	<i>Logic input 1 in XOR gate</i>	1 bit	-	W	C	-	U	1.002
81	<i>C18 Logic module</i>	<i>Logic input 2 in UND gate</i>	1 bit	-	W	C	-	U	1.002
	<i>C18 Logic module</i>	<i>Logic input 2 in ODER gate</i>	1 bit	-	W	C	-	U	1.002
	<i>C18 Logic module</i>	<i>Logic input 2 in XOR gate</i>	1 bit	-	W	C	-	U	1.002
82	<i>C18 Logic module</i>	<i>Logic input 3 in AND gate</i>	1 bit	-	W	C	-	U	1.002
	<i>C18 Logic module</i>	<i>Logic input 3 in OR gate</i>	1 bit	-	W	C	-	U	1.002
83	<i>C18 Logic module</i>	<i>Logic input 4 in AND gate</i>	1 bit	-	W	C	-	U	1.002
	<i>C18 Logic module</i>	<i>Logic input 4 in OR gate</i>	1 bit	-	W	C	-	U	1.002
84	<i>C18 Logic module</i>	<i>Block/unblock</i>	1 bit	-	W	C	-	-	1.003
85	<i>C18.1 Logic module</i>	<i>Switching</i>	1 bit	R	-	C	T	-	1.001
	<i>C18.1 Logic module</i>	<i>Priority</i>	2 bit	R	-	C	T	-	2.001
	<i>C18.1 Logic module</i>	<i>Valuator</i>	1 byte	R	-	C	T	-	5.010
	<i>C18.1 Logic module</i>	<i>Percentage value</i>	1 byte	R	-	C	T	-	5.001
	<i>C18.1 Logic module</i>	<i>HVAC operating mode</i>	1 byte	R	-	C	T	-	20.102
	<i>C18.1 Logic module</i>	<i>Scenes</i>	1 byte	R	-	C	T	-	17.001
86	<i>C18.2 Logic module</i>	<i>Switching</i>	1 bit	R	-	C	T	-	1.001
	<i>C18.2 Logic module</i>	<i>Priority</i>	2 bit	R	-	C	T	-	2.001
	<i>C18.2 Logic module</i>	<i>Valuator</i>	1 byte	R	-	C	T	-	5.010
	<i>C18.2 Logic module</i>	<i>Percentage value</i>	1 byte	R	-	C	T	-	5.001
	<i>C18.2 Logic module</i>	<i>HVAC operating mode</i>	1 byte	R	-	C	T	-	20.102
	<i>C18.2 Logic module</i>	<i>Scenes</i>	1 byte	R	-	C	T	-	17.001
90-106	Channels C19 + C20 (details: see channel C18)								

5.2.5 Integrated push button I1: Push button function

No.	Object name	Function	Length	R	W	C	T	U	DPT
201	<i>Integrated push button I1.1</i>	<i>Switching</i>	1 bit	R	W	C	T	-	1.001
		<i>Priority</i>	2 bit	R	-	C	T	-	2.001
		<i>Send value</i>	1 byte	R	-	C	T	-	5.010
		<i>Send percentage value</i>	1 byte	R	-	C	T	-	5.001
202	<i>Integrated push button I1.2</i>	<i>Switching</i>	1 bit	R	W	C	T	-	1.001
		<i>Priority</i>	2 bit	R	-	C	T	-	2.001
		<i>Send value</i>	1 byte	R	-	C	T	-	5.010
		<i>Send percentage value</i>	1 byte	R	-	C	T	-	5.001
205	<i>Integrated push button I1</i>	<i>Block = 1</i>	1 bit	-	W	C	-	-	1.001
		<i>Block = 0</i>	1 bit	-	W	C	-	-	1.003

5.2.6 Integrated push button I1: Dimming function

No.	Object name	Function	Length	R	W	C	T	U	DPT
201	<i>Integrated push button I1</i>	<i>Switching</i>	1 bit	R	W	C	T	-	1.001
202	<i>Integrated push button I1</i>	<i>Brighter/darker</i>	4 bit	R	-	C	T	-	3.007
		<i>Brighter</i>	4 bit	R	-	C	T	-	3.007
		<i>Darker</i>	4 bit	R	-	C	T	-	3.007
Double-click									
203	<i>Integrated push button I1.1</i>	<i>Switching</i>	1 bit	R	W	C	T	-	1.001
		<i>Priority</i>	2 bit	R	-	C	T	-	2.001
		<i>Send value</i>	1 byte	R	-	C	T	-	5.010
		<i>Send percentage value</i>	1 byte	R	-	C	T	-	5.001
205	<i>Integrated push button I1</i>	<i>Block = 1</i>	1 bit	-	W	C	-	-	1.001
		<i>Block = 0</i>	1 bit	-	W	C	-	-	1.003

5.2.7 Integrated push button I1: Blinds function

No.	Object name	Function	Length	R	W	C	T	U	DPT
201	<i>Integrated push button I1</i>	<i>Step/stop</i>	1 bit	R	-	C	T	-	1010
202	<i>Integrated push button I1</i>	<i>UP/DOWN</i>	1 bit	R	W	C	T	-	1.008
		<i>DOWN</i>	1 bit	R	-	C	T	-	1.008
		<i>UP</i>	1 bit	R	-	C	T	-	1.008
Double-click									
203	<i>Integrated push button I1.1</i>	<i>Switching</i>	1 bit	R	W	C	T	-	1.001
		<i>Priority</i>	2 bit	R	-	C	T	-	2.001
		<i>Send value</i>	1 byte	R	-	C	T	-	5.010
		<i>Send percentage value</i>	1 byte	R	-	C	T	-	5.001
		<i>Height %¹</i>	1 byte	R	-	C	T	-	5.001
204	<i>Integrated push button I1.2</i>	<i>Slat %²</i>	1 byte	R	-	C	T	-	5.001
205	<i>Integrated push button I1</i>	<i>Block = 1</i>	1 bit	-	W	C	-	-	1.001
		<i>Block = 0</i>	1 bit	-	W	C	-	-	1.003

5.2.8 Integrated push button I1: Direct switching, direct dimming

No.	Object name	Function	Length	R	W	C	T	U	DPT
205	<i>Integrated push button I1</i>	<i>Block = 1</i>	1 bit	-	W	C	-	-	1.001
		<i>Block = 0</i>	1 bit	-	W	C	-	-	1.003

¹ Upon double-click with object type = *Height % + slat %*

² Upon double-click with object type = *Height % + slat %*

5.2.9 Flags

Flag	Name	Meaning
R	Read	Object answers read telegrams
W	Write	Object can receive
C	Communication	Bus communication is permitted
T	Send	Object can send
U	Update	Object is updated

5.3 Description of communication objects

5.3.1 Lighting control

Obj.	Name	Function	Description
1	<i>C1 Light output</i>	<i>Switching</i>	Light switch output C1 sends an ON telegram upon detection of motion and insufficient brightness, and an OFF telegram upon the expiration of the time delay or with sufficient brightness: 0 = absence or sufficient brightness (OFF) 1 = presence and insufficient brightness (ON)
1 3 5	<i>C1 Light output</i> <i>C1 Light output</i> <i>C1 Light output</i>	<i>Switching</i> <i>Brighter/darker</i> <i>Send value</i>	Objects 3+5 are available if <i>Lighting dimmable in switching mode = yes</i> is set.
2	<i>C1 Light input</i>	<i>Switching</i> <i>external push button</i>	1-bit input object for manual override of the detector using an external push button. Function: Switching Behaviour of lighting see chapter Operation .
4	<i>C1 Light input</i>	<i>External button</i> <i>brighter/darker</i>	4-bit input object for manual override of the detector using an external push button. Function: Dimming Behaviour of lighting see chapter Operation .
6	<i>C1 Light input</i>	<i>Send value</i> <i>external push button</i>	Object is available if <i>Lighting dimmable in switching mode = yes</i> is set. 1-byte input object for manual override of the detector using an external push button. Behaviour of lighting see chapter Operation .
11	<i>C1 brightness switching value</i>	<i>Receive value</i>	Object is available if <i>Set brightness switching value via bus = yes</i> is set. This allows the brightness switching value to be changed during operation. If the received value is outside the value range (5..3000 lux) or if the brightness switching value does not match the currently set room correction factor (see setting limit), the received brightness value will be automatically set to the corresponding limit value.
12	<i>C1 brightness switching value</i>	<i>Send value</i>	The object returns the stored value of the brightness switching value. In switching mode, value "0" means "Measurement OFF".

Obj.	Name	Function	Description
13	<i>C1 brightness switching value night</i>	<i>Receive value</i>	<p>Object is available if <i>Set brightness switching value night via bus = yes</i> is set.</p> <p>This allows the brightness switching value for the night to be reset during operation. If the received value is outside the value range (5..3000 lux) or if the brightness switching value does not match the currently set room correction factor (see setting limit), the received brightness value will be automatically set to the corresponding limit value.</p>
14	<i>C1 brightness switching value night</i>	<i>Send value</i>	<p>The object returns the stored value of the brightness switching value night. In switching mode, value "0" means "Measurement OFF".</p>
15	<i>C1 brightness switching value (teach-in)</i>	<i>\$01=call up, \$81=save</i>	<p>Object is available if <i>Set brightness switching value via bus = yes</i> is set.</p> <p>With a value telegram \$81 (129), the detector adopts the currently measured brightness value [lux] as the new brightness switching value or night brightness switching value (depending on which is currently active). If the night brightness switching value has been switched to, the currently measured brightness value [lux] is adopted into the night brightness switching value by the value telegram \$81 (129). Object 12 sends the saved value of the currently active brightness switching value, or object 14 sends the night brightness switching value (depending on which is currently active). With a value telegram \$01 (1), object 15 sends the current brightness switching value, or object 14 if the night brightness switching value is active. Transfer is made to the currently active brightness switching value.</p>
18	<i>Measurement value on lux meter</i>	<i>Receive value</i>	<p>Object is available if <i>Set brightness measurement value via bus = yes</i> is set.</p> <p>The measured lux meter value is needed to calculate the room correction factor. The lux meter is placed below, in front of the sensor, and the measured lux value is sent via object 18. The room correction factor is calculated automatically immediately after entry.</p>

Obj.	Name	Function	Description
			Object 19 sends the stored value.
19	<i>Room correction factor</i>	<i>Call up value</i>	<p>Object is available if <i>Set brightness measurement value via bus = yes</i> is set.</p> <p>The room correction factor is calculated automatically following the entry of the lux meter value, or it is entered via ETS. Permissible values lie between 0.05 and 2.0. Calculated or entered values outside the permitted range will automatically be set to the appropriate limit value. For monitoring purposes the room correction factor can be queried via the object.</p>
20	<i>Brightness value</i>	<i>Send lux value</i>	<p>Object is available if <i>Send brightness measurement value on bus = yes</i> is set.</p> <p>The detector sends the currently measured brightness value as a 2-byte telegram via the object.</p> <p>The frequency of telegrams depends on the cycle time and the minimum change in brightness.</p> <p>The 2-byte telegrams to the object are used to visualise a brightness value. The brightness value will be adjusted to the conditions inside the room with the room correction factor. See parameter <i>Room correction factor brightness</i>.</p>
21	<i>External brightness value</i>	<i>Receive lux value</i>	<p>Object is available if <i>Brightness measurement source = external</i> is set.</p> <p>As an alternative to light measurement, an external brightness value can be used via the object.</p>
38	<i>C1 Light</i>	<i>Day-night changeover</i>	<p>Object available if for a night parameter = <i>yes</i> is set, e.g. <i>Other detection sensitivity at night = yes</i></p> <p>For channel C1 Light, different values can be stored for the night depending on the parameter.</p> <p>ON telegram to the object activates the day mode (standard).</p> <p>OFF telegram to the object activates the night mode.</p>
41	<i>C1 lighting time delay</i>	<i>Receive value</i>	<p>Object is available if <i>Set lighting time delay via bus = yes</i> is set.</p> <p>The time delay can be set for lighting channel C1 in a range from 30 s to 60 min via the object. The value must be sent in seconds.</p>
42	<i>C1 lighting time delay</i>	<i>Send value</i>	<p>Object is available if <i>Set lighting time delay via bus = yes</i> is set.</p>

Obj.	Name	Function	Description
			The object returns the stored value of the Lighting time delay.
43	<i>C1 lighting time delay night</i>	<i>Receive value</i>	<p>Object is available if <i>Set lighting time delay night via bus = yes</i> is set.</p> <p>The time delay can be set for lighting channel C1 for the night in a range from 30 s to 60 min via the object. The value must be sent in seconds.</p>
44	<i>C1 lighting time delay night</i>	<i>Send value</i>	<p>Object is available if <i>Set lighting time delay night via bus = yes</i> is set.</p> <p>The object returns the stored value of the lighting time delay night.</p>
45	<i>C1 Light</i>	<i>Block/unblock</i>	<p>Object is available if <i>Activate block function = yes</i> is set.</p> <p>The channel Light is blocked via an ON or OFF telegram. At the start of the blocking, the light output optionally sends one of the following previous telegrams: OFF, ON, no telegram, value X%. During the blocking, the channel does not send any telegrams, neither on the basis of presence/absence nor on the basis of brightness. The channel Light is unblocked via an ON or OFF telegram, complementing the telegram when blocking. When unblocking, the detector always sends the current status and thereby continues the brightness-dependent switching.</p>
46	<i>Central command</i>	<i>Receive</i>	<p>An ON telegram switches the channel C1 Light on. The response of the detector is as if the user switches it on via a push button. See chapter Operation.</p> <p>An OFF telegram switches the channel C1 Light according to the following conditions:</p> <ul style="list-style-type: none"> - no movement within the past 5 seconds: The light switches off immediately. <p>The running time delay for channel C1 Light is set to 0. Afterwards, the detector is in normal operation.</p> <p>Motion when receiving the OFF telegram: The light remains switched on. Fully automatic device: If further movement is detected subsequently, the light is switched on again if there is insufficient brightness.</p> <p>Detector is blocked: The central command is not executed.</p>
48	<i>Red LED</i>	<i>Receive</i>	Object is available if <i>Control red LED via object = yes</i> is set.

Obj.	Name	Function	Description
			When an ON telegram is received on the object, the red LED starts flashing (2 s on/ 2 s off). The red LED is switched off by means of an OFF telegram, or automatically when the detector is restarted.

5.3.2 HVAC channel C4

Obj.	Name	Function	Description
50	<i>C4.1 HVAC</i>	<i>Switching</i>	Object is available if <i>Activate channel C4 HVAC = yes</i> is set. Channel C4 HVAC sends the configured telegram (independently of brightness after a potential delay due to the configured switch-on delay) or no telegram if there is a presence. After the time delay has elapsed, either the configured telegram or no telegram at all will be sent. The telegram type is freely selectable.
51	<i>C4.2 HVAC</i>	<i>Priority</i>	
53	<i>C5.1 HVAC</i>	<i>Send value</i>	
54	<i>C5.2 HVAC</i>	<i>Send percentage value</i> <i>Send HVAC operating mode</i> <i>Send scene</i>	
52 55	<i>C4 HVAC</i> <i>C5 HVAC</i>	<i>Block/unblock</i>	Object is available if <i>Activate block function = yes</i> is set. The HVAC channel is disabled via an ON or OFF telegram. The response at the start of blocking can be defined as follows: - no response - as if presence detected - as at the end of the time delay The HVAC channel is unblocked via an ON or OFF telegram, complementing the telegram when blocking. After unblocking, the current state is sent.

5.3.3 Characteristics of the general objects

Obj.	Name	Function	Description
60	<i>Parallel switching output</i>	<i>Trigger output</i>	<p>Object is available if <i>Master operating mode = Parallel switching</i> or <i>Operating mode = Slave</i> is set.</p> <p>The trigger output is required for parallel switching of several detectors. The object sends a trigger to a trigger input or trigger input/output as motion information.</p> <p>There are two possible types of switching: Master/Slave parallel switching: A Master receives the motion information from several Slaves in the room and switches the lighting as required on the basis of the brightness measured by the Master. The advantage is uniform switching with a defined brightness value. For applications in corridors for example, the Master is installed in the darkest position. Master/Master parallel switching: Several Masters exchange motion information with each other. The advantage is a zone with uniform presence detection but several light measurements. The interval (cycle time) between two telegrams can be set up to 5 minutes.</p> <p>Important: Please keep in mind to always select the interval between two trigger telegrams to be shorter than the time delay. Please observe the information in chapter Parallel switching.</p>
61	<i>Parallel switching input</i>	<i>Trigger input</i>	<p>Object is available if <i>Master operating mode = Parallel switching</i> is set.</p> <p>The trigger input is required for parallel switching of several detectors. The object receives the motion information of a trigger output or trigger input/output. Description of types of switching, see object 60 <i>Trigger output</i>.</p>
75	<i>Test mode presence</i>	<i>On/Off</i>	<p>An ON telegram activates test mode presence for the duration of the configured time.</p> <p>An OFF telegram ends test mode presence early and the detector restarts.</p> <p>For the description of test mode presence, see Test mode presence.</p>

Obj.	Name	Function	Description																								
76	<i>Test mode light</i>	<i>On/Off</i>	<p>An ON telegram activates test mode light for the duration of the configured time. An OFF telegram ends test mode light early and the detector restarts. For the description of test mode light, see Test mode light.</p>																								
77	<i>Software version</i>	<i>Send</i>	<p>The software version of the detector can be queried via this object. The format of the queried software version corresponds to data type 217.001.</p> <table border="1"> <thead> <tr> <th>Info</th> <th>Version</th> </tr> </thead> <tbody> <tr><td>08 00</td><td>1.00</td></tr> <tr><td>08 40</td><td>1.01</td></tr> <tr><td>08 80</td><td>1.02</td></tr> <tr><td>08 C0</td><td>1.03</td></tr> <tr><td>09 00</td><td>1.04</td></tr> <tr><td>09 40</td><td>1.05</td></tr> <tr><td>09 80</td><td>1.06</td></tr> <tr><td>09 C0</td><td>1.07</td></tr> <tr><td>0A 00</td><td>1.08</td></tr> <tr><td>0A 40</td><td>1.09</td></tr> <tr><td>0A 80</td><td>1.10</td></tr> </tbody> </table>	Info	Version	08 00	1.00	08 40	1.01	08 80	1.02	08 C0	1.03	09 00	1.04	09 40	1.05	09 80	1.06	09 C0	1.07	0A 00	1.08	0A 40	1.09	0A 80	1.10
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5.3.4 Logic channels C18-C20

Object 80: C18 Logic module – logic input 1 in AND, OR, XOR gate

First input object of the logic module.

Object 81: C18 Logic module – logic input 2 in AND, OR, XOR gate

Second input object of logic module.

Object 82 C18 Logic module – logic input 3 in AND, OR gate

Third input object of logic module.

Object 83 C18 Logic module – logic input 4 in AND, OR gate

Fourth input object of logic module.

Object 84 C18 Logic module – block/unblock

Block object of the channel.

Only visible if the block function is activated.

The acting direction (block with 0 or 1) can be set via parameter.

Object 85: C18.1 Logic module – switching, priority, value, percentage value, HVAC operating mode, scenes

First output object of the logic module.

The function of the object depends on the selected telegram type (see **Objects** parameter page, *Telegram type parameter*).

Telegram type	Format	Sent telegrams	
Switching	DPT 1.001 (On/Off)	On/Off	
Priority	DPT 2.001 (priority control)	2 bit telegram:	
		Function	Value
		no priority (no control)	0
		Priority OFF (control: disable, off)	2
		Priority ON (control: enable, on)	3
Value	DPT 5.010	Value 0-255	
Percentage value	DPT 5.001	Value as a percentage 0-100%	
HVAC operating mode	DPT 20.102	1 = Comfort 2 = Standby 3 = Temperature reduction at night 4 = Frost protection	
Scenes	DPT 17.001	Scene numbers 1-64	

Object 86: C18.2 Logic module – switching, priority, value, HVAC operating mode, scenes

Second output object of the logic module.

The function of the object depends on the selected telegram type (see **Objects** parameter page, *Telegram type parameter*).

Telegram type	Format	Sent telegrams	
Switching	DPT 1.001 (On/Off)	On/Off	
Priority	DPT 2.001 (priority control)	2 bit telegram:	
		Function	Value
		no priority (no control)	0
		Priority OFF (control: disable, off)	2
		Priority ON (control: enable, on)	3
Value	DPT 5.010	Value 0-255	
Percentage value	DPT 5.001	Value as a percentage 0-100%	
HVAC operating mode	DPT 20.102	1 = Comfort 2 = Standby 3 = Temperature reduction at night 4 = Frost protection	
Scenes	DPT 17.001	Scene numbers 1-64	

Object 90-106

Objects for C19+C20, function: see C18.

5.3.5 Integrated push button I1

5.3.5.1 Push button function

Object 201: Integrated push button I1.1 – switching, priority, send value, send percentage value

First output object of the integrated push button (first telegram).

4 telegram formats can be set:

Switching On/Off, priority, send value, send percentage value.

Object 202: Integrated push button I1.2 – switching, priority, send value, send percentage value

Second output object of the integrated push button (second telegram).

4 telegram formats can be set:

Switching On/Off, priority, send value, send percentage value.

Object 205: Integrated push button I1 – block = 1 or block = 0

This object is used to block the control via the integrated push button.

The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

5.3.5.2 Dimming function

Object 201: Integrated push button I1 – switching

Switches the dimmer on and off.

Object 202: Integrated push button I1 – brighter/darker, brighter, darker

4-bit dimming commands.

Object 203: Integrated push button I1.1 – switching, priority, send value, send percentage value

Output object for the additional function with double-click.

4 telegram formats can be set:

Switching On/Off, priority, send value, send percentage value.

Object 205: Integrated push button I1 – block = 1 or block = 0

This object is used to block the control via the integrated push button.

The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

5.3.5.3 Blinds function

Object 201: Integrated push button I1 – step/stop

Sends step/stop commands to the blind actuator.

Object 202: Integrated push button I1 – UP/DOWN, UP, DOWN

Sends operating commands to the blind actuator.

Object 203: Integrated push button I1.1 – switching, priority, send value, send percentage value, height %

Output object for the additional function with double-click.

5 telegram formats can be set:

Switching On/Off, priority, send value, send percentage value, height %.

Object 204: Integrated push button I1.2 – slat %

Slat telegram for positioning the blinds upon double-click (together with object height %, with *object type = height + slat*).

Object 205: Integrated push button I1 – block = 1 or block = 0

This object is used to block the control via the integrated push button.

The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

5.3.5.4 Function – Control lighting channel C1 directly

 If the function Control lighting channel C1 directly is selected, only the block object is used.

Object 205: Integrated push button I1 – block = 1 or block = 0

This object is used to block the control via the integrated push button.

The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

5.4 Parameter pages overview

5.4.1 General

Parameter page	Description
General	Basic configuration of the device: Channels used and operating mode.
Setting	Detection sensitivity, brightness measurement and LED.
<i>Lighting channel</i>	
Channel C1 Light	Basic settings for the lighting channel, e.g. configuration type, brightness switching value, time delay, etc.
Detail settings	Detailed settings for the lighting channel, e.g. dimming function, override etc.
Block function	Blocking behaviour.
<i>HVAC channel</i>	
Channel C4 HVAC	Switch-on delay, time delay
Objects	Telegram type, behaviour when presence is detected, etc.
Block function	Blocking behaviour.
<i>Logic channels</i>	
Logic channel C18..C20	Number of inputs, links etc.
Objects	Telegram type, switch and blocking behaviour, etc.
<i>Integrated push button I1</i>	
Configuration options	Function of the input (incl. control lighting channel directly), debounce time, number of telegrams, block function, etc.
Push button object 1	Object type, transmission behaviour, etc. can be set for each object individually.
Push button object 2	

5.5 General parameters

5.5.1 General

Parameter name	Values	Meaning
<i>Operating mode</i>	Master <i>Slave</i>	A Master is capable of lighting control (switching) and forwarding the presence information. Slaves are used to extend the detection area. They supply presence information to the Master. The <i>Cycle time parallel switching</i> parameter is displayed. Please observe the information on parallel switching in chapter Parallel switching .
<i>Master operating mode</i>	Individual switching <i>Parallel switching</i>	Detector works as an independent device. Depending on requirements, additional detectors are connected to a "Master" as "Slaves" to extend the detection area, or several "Masters" are connected with each other. The <i>Cycle time parallel switching</i> parameter is displayed. Please observe the information on parallel switching in chapter Parallel switching .
<i>Cycle time Parallel switching</i>	<i>5 s...30 s...5 min</i>	The interval between two telegrams can be set at up to 5 minutes to reduce the number of telegrams. Please keep in mind to always select the interval between two trigger telegrams to be shorter than the time delay.
<i>Activate channel C1 light</i>	no <i>yes</i>	The detector is not used for lighting control. The Channel C1 Light for lighting control is displayed.
<i>Activate channel C4 HVAC</i>	no <i>yes</i>	The detector is not used for controlling HVAC applications. The <i>Channel C4 HVAC</i> parameter page is displayed. Channel C4 HVAC switches other devices, such as HVAC systems depending on the presence of persons, or it delivers the presence information to higher-level systems (independently of brightness).
<i>Number – logic channels</i>	0...3	Number of required logic channels. When used, the <i>Logic channel Cxx</i> parameter page is displayed. Logic channels allow up to four individual 1-bit telegrams to be linked and thus reduced to a single piece of information.

Parameter name	Values	Meaning
		Possible links are AND, OR or XOR
<i>Activate integrated push button</i>	<i>no</i> <i>yes</i>	The integrated push button is not used. The channel Integrated push button I1 is displayed. When the push button is pressed, this channel can either send bus telegrams (push button/dimming/blinds) or be used for direct control of the lighting channel.
<i>Activation of test mode</i>	<i>via object, max. 30 min</i> <i>2 min...60 min</i>	An activated test mode will automatically be ended after the set time has elapsed, and the detector will be restarted. Description, see chapter Test modes .

5.5.2 Settings

Parameter name	Values	Meaning
<i>General</i>		
<i>Overwrite parameter setting on download</i>		The setting affects the following parameters: <ul style="list-style-type: none"> - <i>Brightness switching value</i> - <i>Brightness switching value night</i> - <i>Lighting time delay</i> - <i>Lighting time delay night</i> - <i>Room correction factor brightness</i> - <i>Detection sensitivity</i> - <i>Detection sensitivity night</i>
	<i>Do not overwrite parameter</i>	The relevant parameter values (see above) in the detector remain unchanged. Changed settings via object are retained. Note: With the first download (factory setting) or after discharging the detector, valid parameter values have to be downloaded first, otherwise error flashing will be displayed.
	<i>Overwrite parameter</i>	The relevant parameter values (see above) in the detector will be overwritten. Changed settings via object are lost. The parameters set in the ETS are accepted.
<i>Activate potentiometer operation</i>	<i>no</i>	Only the KNX programming mode can be activated / deactivated by means of a potentiometer.
	<i>yes</i>	The potentiometers on the detector can be used to change the brightness switching value and the lighting time delay, and also to activate / deactivate the KNX programming mode. Important: The changeable parameters do not concern the night parameters.
<i>Detection</i>		
<i>Detection sensitivity</i>	<i>Increment 1(--)</i> <i>Increment 2 (-)</i> <i>Increment 3 (standard)</i>	The detector has 3 sensitivity increments. By selecting the presence test mode, the set sensitivity increment is not changed.
<i>Other detection sensitivity at night</i>	<i>no</i>	There is no other detection sensitivity for the night.
	<i>yes</i>	To prevent potential false detections, the detection sensitivity for the night can be reduced in increments.

Parameter name	Values	Meaning
		<p>with the <i>Room correction factor</i> parameter. The parameters <i>Send brightness value cyclically</i> and <i>Send brightness value upon change</i> are displayed.</p> <p>Note: If the brightness value is used for external control, please note that <i>Send brightness value cyclically</i> is set to 5 s and <i>Send brightness value upon change</i> is set to > 5%.</p>
<i>LEDs</i>		
<i>Adjust red LEDs</i>	<p><i>no</i></p> <p><i>yes</i></p>	<p>The integrated red LED has no additional function.</p> <p>The two parameters <i>Motion indicated by the LED</i> and <i>Control red LED via object</i> are displayed.</p>
<i>Motion indicated by the LED</i>	<p><i>no</i></p> <p><i>yes</i></p>	<p>An optically detected movement is not indicated. Red LED is switched off.</p> <p>As soon as motion is detected, the red LED illuminates. The LED remains on as long as motion is detected.</p>
<i>Control red LED via object</i>	<p><i>no</i></p> <p><i>yes</i></p>	<p>Object 48 <i>Red LED – receive</i> is hidden.</p> <p>Object 48 <i>Red LED – receive</i> is displayed.</p> <p>When an ON telegram is received on object 48, the red LED starts flashing (2 s on/ 2 s off). The red LED is switched off by means of an OFF telegram, or automatically when the detector is restarted.</p>

5.6 Lighting channel

5.6.1 Channel C1 Light

Parameter name	Values	Meaning
<i>Light function</i>	Switching light	Channel C1 Light switches a lighting group depending on the presence of persons and the current brightness level. This setting cannot be changed.
<i>Configuration type</i>	<i>Semi-automatic device</i>	In <i>Configuration type = Semi-automatic device</i> switching on must always be performed manually via push button. Exception: If motion is detected within 10 seconds after the time delay has expired, the light comes on automatically. It is switched off automatically.
	Fully automatic device	In <i>Configuration type Fully automatic device</i> , the lighting channel automatically switches the lighting depending on presence and surrounding brightness. It is switched off automatically. See also chapter Operation .
<i>Change over to semi-automatic at night</i>	no	The parameter is visible if <i>Configuration type = fully automatic device</i> . No changeover to <i>Configuration type</i> semi-automatic device in night mode.
	yes	Object 38 <i>C1 Light – day-night changeover</i> is displayed. Automatic changeover to semi-automatic mode when the object 38 is used to change to night (ON telegram), and back to fully automatic as soon as the object receives an OFF telegram (day).
<i>Brightness switching value</i>		The brightness switching value defines the minimum desired brightness. The currently prevailing brightness is measured underneath the detector. If the prevailing brightness is below the switching value, the light is switched on as soon as a presence is detected.
	5 lx...500 lx... 3000 lx	The brightness switching value is adjustable in increments between 5–3000 lx. Note: If the brightness switching value does not match the currently set <i>room</i>

Parameter name	Values	Meaning
		<i>correction factor</i> (see setting limit), the brightness switching value is set to the corresponding limit automatically.
	<i>Measurement off (depending on presence only)</i>	The brightness switching value can be deactivated by means of the setting <i>Measurement off (depending on presence only)</i> .
<i>Set brightness switching value via bus</i>	<i>no</i>	Object 11 <i>C1 Brightness switching value – receive value</i> , object 12 <i>C1 Brightness switching value – send value</i> and object 15 <i>C1 Brightness switching value (teach-in)</i> are not available.
	<i>yes</i>	Object 11 <i>C1 Brightness switching value – receive value</i> , object 12 <i>C1 Brightness switching value – send value</i> and object 15 <i>C1 Brightness switching value (teach-in)</i> are visible and can be used.
<i>Lighting time delay</i>	<i>30 s... 10 min... 60 min</i>	The time delay can be set between 30 seconds and 60 minutes. Each detected motion restarts the time delay.
<i>Set lighting time delay via bus</i>	<i>no</i>	Object 41 <i>C1 Lighting time delay – receive value</i> and Object 42 <i>C1 Lighting time delay – send value</i> are not available.
	<i>yes</i>	Object 41 <i>C1 Lighting time delay – receive value</i> and Object 42 <i>C1 Lighting time delay – send value</i> are displayed. The time delay can be set and called up via the bus.
<i>Other brightness switching value at night</i>	<i>no</i>	There is only one brightness switching / setpoint value available.
	<i>yes</i>	A brightness switching value for the night can be configured. During operation, it can be switched between both of these brightness switching values. The object 38 <i>C1 Light – Day-night changeover</i> is visible and can be used. - An ON telegram to the object switches to the brightness switching value night. - An OFF telegram switches back to the original value. Example: Implementation of day and night operation with two different brightness levels.
<i>Brightness switching value night</i>		The parameter is visible if <i>Other brightness switching value at night = yes</i> is set.

Parameter name	Values	Meaning
	<p>5 lx...500 lx... 3000 lx</p> <p>Measurement off (depending on presence only)</p>	<p>Object 38 <i>C1 Light – Day-night changeover</i> can be used to switch between the brightness switching values during operation.</p> <p>The brightness switching value night is adjustable in increments between 5–3000 lx.</p> <p>Note: If the brightness switching value night does not match the currently set <i>room correction factor</i> (see setting limit), the brightness switching value night is set to the corresponding limit automatically.</p> <p>The brightness switching value can be deactivated by means of the setting <i>Measurement off (depending on presence only)</i>.</p>
<i>Set brightness switching value night via bus</i>	<p>no</p> <p>yes</p>	<p>The parameter is visible if <i>Other brightness switching value at night = yes</i> is set.</p> <p>Object 13 <i>C1 Brightness switching value night – receive value</i>, object 14 <i>C1 Brightness switching value night – send value</i> and object 15 <i>C1 Brightness switching value (teach-in)</i> are not available.</p> <p>Object 13 <i>C1 Brightness switching value night – receive value</i>, object 14 <i>C1 Brightness switching value night – send value</i> and object 15 <i>C1 Brightness switching value (teach-in)</i> are visible and can be used.</p>
<i>Other time delay at night</i>	<p>no</p> <p>yes</p>	<p>There is only one time delay available.</p> <p>A time delay for the night can be configured. During operation, it can be switched between two time delays.</p> <p>The object 38 <i>C1 Light – Day-night changeover</i> is visible and can be used.</p> <ul style="list-style-type: none"> - An ON telegram to the object switches to the lighting time delay night. - An OFF telegram switches back to the original value. <p>Example: Implementation of day and night operation with two different time delays.</p>

Parameter name	Values	Meaning
<i>Lighting time delay night</i>	<i>30 s... 10 min... 60 min</i>	<p>The parameter is visible if <i>Other time delay at night = yes</i> is set.</p> <p>Object 38 <i>C1 Light – Day-night changeover</i> can be used to switch between the time delays during operation.</p> <p>The time delay can be set between 30 seconds and 60 minutes. Each detected motion restarts the time delay.</p>
<i>Set lighting time delay night via bus</i>	<i>no</i> <i>yes</i>	<p>The parameter is visible if <i>Other time delay at night = yes</i> is set.</p> <p>Object 43 <i>C1 lighting time delay night – receive value</i> and Object 44 <i>C1 lighting time delay night – send value</i> are not available.</p> <p>Object 43 <i>C1 lighting time delay night – receive value</i> and Object 44 <i>C1 lighting time delay night – send value</i> are visible and can be used.</p>

5.6.2 Channel C1 Light switching - detail settings

Parameter name	Values	Meaning
<i>Lighting dimmable in switching mode</i>	<i>no</i> <i>yes</i>	The lighting cannot be dimmed. The lighting can be dimmed manually. The parameter <i>Duration of manual override</i> is displayed. Objects 3-6 are visible and can be used.
<i>Duration of manual override</i>	<i>until lighting time delay has expired</i> <i>15 min... 120 min</i>	The parameter is visible if parameter <i>Lighting dimmable in switching mode = yes</i> is set. The set dimming value applies until the time delay has elapsed. Afterwards, automatic operation will start. The set dimming value applies until the set time or the time delay has elapsed. Afterwards, automatic operation will start.
<i>Send channel C1 Light output value cyclically</i>	<i>no</i> <i>every 1 min ... 60 min</i>	Current output value of channel C1 Light is not sent cyclically. Current channel C1 Light output value is sent cyclically with the selected time. Note: If the lighting is dimmed brighter / darker (dimmable lighting) by using a push button, or if switching off is overridden manually, the output value will NOT be sent cyclically anymore!
<i>Activate block function</i>	<i>no</i> <i>yes</i>	Block function of channel C1 Light is inactive. Blocking channel C1 Light means that the detector does not send or processes telegrams via objects 1 to 6, although the evaluation of motion and brightness continues.

5.6.3 Channel C1 Light– block function

Designation	Values	Description
<i>Block telegram</i>		<p>Blocking Channel C1 Light means that the detector does not send telegrams via objects 1, 3 and 5, although the evaluation of motion and brightness continues.</p> <p>General unblocking: If no person is present and in the last 30 seconds no trigger telegram has been received via object 61 <i>Parallel switching input – Trigger input</i>, the lighting time delay will be set to 0 upon unblocking. This causes the lighting to be switched off immediately. If no person is present and in the last 30 seconds a trigger telegram has been received via object 61 <i>Parallel switching input – Trigger input</i>, the lighting time delay will be set to 30 seconds upon unblocking. If no more movement is detected, the lighting will be switched off after the time delay has expired. The lighting will not be switched off if motion is detected with insufficient brightness.</p>
	<i>Block with ON telegram</i>	Channel C1 Light is blocked with an ON telegram to the block object. All telegrams are suppressed for the duration of the blocking. Channel C1 Light is unblocked with an OFF telegram. The detector sends its current status after the enable process is completed.
	<i>Block with OFF telegram</i>	The output of channel C1 Light is blocked with an OFF telegram and unblocked with an ON telegram.
<i>Response when setting the block</i>	<i>Send OFF telegram</i>	An OFF telegram is sent at the start of blocking.
	<i>Send ON telegram</i>	An ON telegram is sent at the start of blocking.
	<i>do not send any telegram</i>	No telegram is sent at the start of blocking.
	<i>send value X%</i>	<p>A percentage value between 10% and 100% can be sent.</p> <p>The current status is always sent after unblocking, for instance, an ON telegram with absence and insufficient brightness.</p>

Designation	Values	Description
<i>Also block integrated push button I1</i>	<i>no</i>	Commands from the integrated push button I1 continue to be processed while channel C1 Light is blocked.
	<i>yes</i>	Commands from the integrated push button I1 are not processed during the blocking of channel C1 Light.

 The current status is sent at the end of the blocking.

5.7 HVAC channel

5.7.1 Channel C4 HVAC

 The parameters are visible if for parameter *Activate channel C4 HVAC* = *yes* is set. See **General** parameter page.

 Channel C4 HVAC is switched only by presence, without the influence of brightness.

Designation	Values	Description
<i>HVAC switch-on delay</i>	<i>inactive</i> <i>10 s...30 min</i>	An inactive switch-on delay means that channel HVAC switches immediately when detecting motion. A switch-on delay of between 10 seconds and 30 minutes can be set for the channel HVAC. The channel HVAC does not switch immediately upon detection of motion, but only after the switch-on delay has expired. Example: A switch-on delay of 2 minutes can be set if the channel HVAC is used for controlling a fan in a toilet. The fan does not switch on if the toilet is briefly occupied, a longer presence of over 2 minutes switches the fan on.
<i>HVAC time delay</i>	<i>10 s... 15 min... 120 min</i>	The time delay HVAC can be set between 10 seconds and 120 minutes. It is restarted with every new motion.

5.7.2 Objects - Channel C4 HVAC

i The parameters are visible if for parameter *Activate channel C4 HVAC* = *yes* is set. See **General** parameter page.

Designation	Values	Description	
<i>Telegram type</i>	Switch command <i>Priority</i> <i>Value</i> <i>Percentage value</i> <i>HVAC operating mode</i> <i>Scene</i>	6 telegram types are available for selection.	
<i>When presence detected</i>	<i>Do not send telegram</i>	No telegrams are sent on detection of movement.	
	send following telegram once	When a motion is detected, a one-time telegram will be sent.	
	<i>send cyclically</i>	After a motion is detected, a telegram is sent cyclically.	
<i>Telegram</i>	<i>With Telegram type = Switch command</i>		
	ON	Send switch-on command	
	OFF	Send switch-off command	
	<i>For Telegram type = Priority</i>		
	<i>no priority</i>	Function	Value
		Priority inactive (no control)	0 (00 _{bin})
		Priority ON (control: enable, on)	3 (11 _{bin})
	<i>Priority OFF</i> (control: disable, off)	2 (10 _{bin})	
	<i>For Telegram type = Value</i>		
	<i>0...255</i>	Any value between 0 and 255 can be sent.	
	<i>For Telegram type = Percentage value</i>		
	<i>0...100%</i>	Any percentage value between 0 and 100% can be sent.	
	<i>For Telegram type = HVAC operating mode</i>		
<i>Auto</i>	HVAC operating modes: Auto: 1		
Comfort	Comfort: 2		
<i>Standby</i>	Standby: 3		
<i>Temperature reduction at night</i>	Temperature reduction at night: 4		
<i>Frost protection</i>	Frost protection: 5		

Designation	Values	Description	
	<i>For Telegram type = Scene</i>		
	<i>Scene 1...64</i>	Any scene number can be sent.	
<i>At the end of the time delay</i>	<i>Do not send telegram</i>	No telegram is sent on completion of the time delay.	
	<i>send following telegram once</i>	At the end of the time delay, a single telegram is sent.	
	<i>send cyclically</i>	No telegram is sent cyclically at the end of the time delay.	
<i>Telegram</i>	<i>With Telegram type = Switch command</i>		
	<i>ON</i>	Send switch-on command	
	<i>OFF</i>	Send switch-off command	
	<i>For Telegram type = Priority</i>		
	<i>no priority</i>	Function	Value
		Priority inactive (no control)	0 (00 _{bin})
		Priority ON (control: enable, on)	3 (11 _{bin})
	<i>Priority OFF</i>	Priority OFF (control: disable, off)	2 (10 _{bin})
	<i>For Telegram type = Value</i>		
	<i>0...255</i>	Any value between 0 and 255 can be sent.	
	<i>For Telegram type = Percentage value</i>		
	<i>0...100%</i>	Any percentage value between 0 and 100% can be sent.	
	<i>For Telegram type = HVAC operating mode</i>		
<i>Auto</i>	HVAC operating modes:		
<i>Comfort</i>	Auto: 1		
<i>Standby</i>	Comfort: 2		
<i>Temperature reduction at night</i>	Standby: 3		
<i>Frost protection</i>	Temperature reduction at night: 4		
	Frost protection: 5		
<i>For Telegram type = Scene</i>			
	<i>Scene 1...2...64</i>	Any scene number can be sent.	
<i>Should a second telegram be sent?</i>	<i>no</i>	No second telegram is sent.	
	<i>yes</i>	In addition to telegram C4.1, a second telegram C4.2 is sent. The same telegrams or parameters as for C4.1 are available for selection.	
<i>Activate block function</i>	<i>no</i>	Block function of channel C4 HVAC is inactive.	
	<i>yes</i>	Blocking of channel C4 HVAC means that the detector does not send any telegrams via objects 50 to 52.	

5.7.3 Channel C4 HVAC – block function

 The parameter page is visible if for parameter *Activate block function* = *yes* is set. See parameter page **Objects**.

Designation	Values	Description
<i>Block telegram</i>	<i>Block with ON Telegram</i>	Channel C4 HVAC is blocked with an ON telegram to the block object. All telegrams are suppressed for the duration of the blocking. Channel C4 HVAC is unblocked with an OFF telegram.
	<i>Block with OFF Telegram</i>	The output of channel C4 HVAC is blocked with an OFF telegram and unblocked with an ON telegram.
<i>Response when setting the block</i>	<i>do not send any telegram as if presence detected</i>	No telegram is sent at the start of blocking. At the start of the block, the detector responds as if presence is detected.
	<i>as at the end of the time delay</i>	At the start of the block, the detector responds as at the end of the time delay.

5.8 Logic channels

5.8.1 Logic channel C18..C20

 The parameter page is visible if for parameter *Number – logic channels* at least 1 channel is set. See **General** parameter page.

Designation	Values	Description
<i>Type of link</i>	<i>AND</i> <i>OR</i> <i>XOR</i>	Selection of logical link between the 1 bit input values (see below) 2 to 4 inputs 2 to 4 inputs 2 inputs
<i>Use input 1</i>	<i>yes</i> <i>yes, inverted</i>	Input is used. Input acts inverted.
<i>Use input 2</i>	<i>yes</i> <i>yes, inverted</i>	Input is used. Input acts inverted.
<i>Use input 3</i>	<i>no</i> <i>yes</i> <i>yes, inverted</i>	Input is not used. See above.
<i>Use input 4</i>	<i>no</i> <i>yes</i> <i>yes, inverted</i>	Input is not used. See above.

5.8.2 Objects logic channel C18...C20

Designation	Values	Description	
<i>Telegram type</i>	Switch command <i>Priority</i> <i>Value</i> <i>Percentage value</i> <i>HVAC operating mode</i> <i>Scene</i>	6 telegram types are available for selection.	
<i>If the condition is met</i>	<i>Do not send telegram</i> send following telegram once <i>send cyclically</i>	Transmission behaviour if the channel condition is fulfilled.	
<i>Telegram</i>	<i>With Telegram type = Switch command</i>		
	ON	Send switch-on command	
	OFF	Send switch-off command	
	<i>For Telegram type = Priority</i>		
	<i>no priority</i> Priority ON <i>Priority OFF</i>	Function	Value
		Priority inactive (no control)	0 (00 _{bin})
		Priority ON (control: enable, on)	3 (11 _{bin})
	Priority OFF (control: disable, off)	2 (10 _{bin})	
	<i>For Telegram type = Value</i>		
	0...255	Any value between 0 and 255 can be sent.	
	<i>For Telegram type = Percentage value</i>		
	0...100%	Any percentage value between 0 and 100% can be sent.	
	<i>For Telegram type = HVAC operating mode</i>		
	<i>Auto</i> Comfort <i>Standby</i> <i>Temperature reduction at night</i> <i>Frost protection</i>	HVAC operating modes: Auto: 1 Comfort: 2 Standby: 3 Temperature reduction at night: 4 Frost protection: 5	
<i>For Telegram type = Scene</i>			
Scene 1... 64	Any scene number can be sent.		
<i>If the condition is not met</i>	<i>Do not send telegram</i> send following telegram once <i>send cyclically</i>	Transmission behaviour if the channel condition is not fulfilled.	
<i>Telegram</i>	<i>With Telegram type = Switch command</i>		
	ON	Send switch-on command	
	OFF	Send switch-off command	

Designation	Values	Description								
	<i>For Telegram type = Priority</i>									
		<table border="1"> <thead> <tr> <th>Function</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td><i>no priority</i></td> <td>Priority inactive (no control)</td> </tr> <tr> <td><i>Priority ON</i></td> <td>Priority ON (control: enable, on)</td> </tr> <tr> <td><i>Priority OFF</i></td> <td>Priority OFF (control: disable, off)</td> </tr> </tbody> </table>	Function	Value	<i>no priority</i>	Priority inactive (no control)	<i>Priority ON</i>	Priority ON (control: enable, on)	<i>Priority OFF</i>	Priority OFF (control: disable, off)
Function	Value									
<i>no priority</i>	Priority inactive (no control)									
<i>Priority ON</i>	Priority ON (control: enable, on)									
<i>Priority OFF</i>	Priority OFF (control: disable, off)									
	<i>For Telegram type = Value</i>									
	<i>0...255</i>	Any value between 0 and 255 can be sent.								
	<i>For Telegram type = Percentage value</i>									
	<i>0...100%</i>	Any percentage value between 0 and 100% can be sent.								
	<i>For Telegram type = HVAC operating mode</i>									
	<i>Auto</i>	HVAC operating modes:								
	<i>Comfort</i>	Auto: 1								
	<i>Standby</i>	Comfort: 2								
	<i>Temperature reduction at night</i>	Standby: 3								
	<i>Frost protection</i>	Temperature reduction at night: 4								
		Frost protection: 5								
	<i>For Telegram type = Scene</i>									
	<i>Scene 1...2...64</i>	Any scene number can be sent.								
<i>Should a second telegram be sent?</i>	<i>no</i>	No second telegram is sent.								
	<i>yes</i>	In addition to telegram C18.1, a second telegram C18.2 is sent. The same telegrams or parameters as for the first telegram (e.g. C18.1) are available for selection.								
<i>Activate block function</i>	<i>no</i>	Block function is inactive.								
	<i>yes</i>	Block function means that the detector does not send telegrams via logic module objects.								
<i>Telegram after reset or download</i>	<i>as with unfulfilled condition</i> <i>as with fulfilled condition</i> <i>Status unknown: do not send</i>	Reaction of channel upon a restart.								

5.8.3 Logic channel C18...C20 - block function

 The parameter page is visible if for parameter *Activate block function = yes* is set. See parameter page **Objects**.

Designation	Values	Description
<i>Block telegram</i>	<i>Block with ON telegram</i>	The logic channel is blocked with an ON telegram to the block object. All telegrams are suppressed for the duration of the blocking. The logic channel is unblocked with an OFF telegram.
	<i>Block with OFF telegram</i>	The output of the logic channel is blocked with an OFF telegram and unblocked with an ON telegram.
<i>Response when setting the block</i>	<i>do not send any telegram</i> <i>as with fulfilled condition</i>	No telegram is sent at the start of blocking. Same response as in parameter <i>If the condition is met</i> (see above).
	<i>as with unfulfilled condition</i>	Same reaction as in parameter <i>If the condition is not met</i> (see above).
<i>Response when the block is cancelled</i>	<i>do not send</i>	Not automatically resent when the block is cancelled.
	<i>Update channel</i>	The current channel status is sent immediately as soon as the block is cancelled.

5.9 Integrated push button I1

i The parameters are visible if for parameter *Activate integrated push button = yes* is set.

5.9.1 Configuration options parameter page, *Push button function*

Designation	Values	Description
<i>Function</i>	<i>Push button</i> <i>Dimming</i> <i>Blinds</i> <i>Control lighting</i> <i>channel C1 directly</i>	Desired use.
<i>Debounce time</i>	<i>30 ms, 50 ms, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s</i>	In order to avoid disruptive switching due to bouncing of the contact connected to the input, the new status of the input is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay.
<i>Long button push starting at</i>	<i>300 ms, 400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s</i>	Serves to clearly differentiate between long and short button push. If the button is pressed for at least as long as the set time, then a long button push will be registered.
<i>Time for double-click</i>	<i>300 ms, 400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s</i>	Serves to differentiate between a double-click and 2 single clicks. Time period in which the second click must begin, in order to recognise a double-click.
<i>Cycle time for sending cyclically</i>	<i>every min</i> <i>every 2 min</i> <i>every 3 min</i> ... <i>every 30 min</i> <i>every 45 min</i> <i>every 60 min</i>	Common cycle time for all 2 output objects of the channel.
<i>How many telegrams are to be sent</i>	<i>one telegram</i> <i>two telegrams</i>	Each channel has 2 output objects and can thus send up to 2 different telegrams.
<i>Activate block function</i>	<i>no</i> <i>yes</i>	No block function. Show parameters for the block function.
<i>Block telegram</i>	<i>Block with ON telegram</i> <i>Block with OFF telegram</i>	0 = Cancel block 1 = block 0 = block 1 = cancel block

5.9.1.1 Push button object 1,2, parameter page *Push button function*

Designation	Values	Description								
<i>Object type</i>	Switching (1 bit) <i>Priority (2 bit)</i> <i>Value 0-255</i> <i>Percentage value (1 byte)</i>	Telegram type for this object.								
<i>Send after short operation</i>	<i>do not send</i> Send telegram	Respond to short button push?								
<i>Telegram</i>	<i>With object type = switching</i> 1 bit									
	<i>On</i> <i>Off</i> Change over	Send switch-on command Send switch-off command Invert current state (ON-OFF-ON etc.)								
	<i>With object type = priority 2 bit</i>									
	<i>no priority</i> Priority ON <i>Priority OFF</i>	<table border="1"> <thead> <tr> <th>Function</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Priority inactive (no control)</td> <td>0 (00_{bin})</td> </tr> <tr> <td>Priority ON (control: enable, on)</td> <td>3 (11_{bin})</td> </tr> <tr> <td>Priority OFF (control: disable, off)</td> <td>2 (10_{bin})</td> </tr> </tbody> </table>	Function	Value	Priority inactive (no control)	0 (00 _{bin})	Priority ON (control: enable, on)	3 (11 _{bin})	Priority OFF (control: disable, off)	2 (10 _{bin})
Function	Value									
Priority inactive (no control)	0 (00 _{bin})									
Priority ON (control: enable, on)	3 (11 _{bin})									
Priority OFF (control: disable, off)	2 (10 _{bin})									
	<i>With object type = value 0-255</i>									
	0-255	Any value between 0 and 255 can be sent.								
	<i>With object type = percentage value 1 byte</i>									
	0-100%	Any percentage value between 0 and 100% can be sent.								
<i>Send after long operation</i>	<i>do not send</i> Send telegram	Respond to long button push?								
<i>Telegram</i>	See above: Same object type as with short operation.									
<i>Send after double-click</i>	<i>do not send</i> Send telegram	Respond to double-click?								
<i>Telegram</i>	See above: Same object type as with short operation.									
<i>Send cyclically</i>	no <i>yes</i>	The cycle time is set on the main parameter page of the channel.								
<i>Response after restoration of the bus supply</i>	none <i>as after short (immediately)</i> <i>as after short (after 5 s)</i> <i>as after short (after 10 s)</i> <i>as after short (after 15 s)</i> <i>as after long (immediately)</i> <i>as after long (after 5 s)</i> <i>as after long (after 10 s)</i> <i>as after long (after 15 s)</i> <i>as with double-click (immediately)</i> <i>as with double-click (after 5 s)</i> <i>as with double-click (after 10 s)</i>	Do not send. Send update telegram immediately or with delay. The value to be sent depends on the value configured for long button push, short button push or double-click.								

Designation	Values	Description
	<i>as with double-click (after 15 s)</i>	
<i>Response when setting the block</i>	Ignore block	The block function is ineffective with this telegram.
	<i>no response</i>	Do not respond when the block is set.
	<i>as with short</i>	Respond as with a short button push.
	<i>as with long</i>	Respond as with a long button push.
	<i>as with double-click</i>	Respond as with a double-click.
<i>Response when the block is cancelled</i>	no response	Do not respond when the block is cancelled.
	<i>as with short</i>	Respond as with a short button push.
	<i>as with long</i>	Respond as with a long button push.
	<i>as with double-click</i>	Respond as with a double-click.

5.9.2 Configuration options parameter page, *Dimming function*

Designation	Values	Description
<i>Function</i>	<i>Push button</i> Dimming <i>Blinds</i> <i>Control lighting channel C1 directly</i>	The push button controls a dimming actuator.
<i>Debounce time</i>	<i>30 ms, 50 ms, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s</i>	In order to avoid a disruptive switching due to debouncing of the push button, the new status is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay
<i>Activate block function</i>	no <i>yes</i>	No block function. Show Block function parameter page.
<i>Block telegram</i>	Block with ON telegram <i>Block with OFF telegram</i>	0 = Cancel block 1 = block 0 = block 1 = cancel block
<i>Long button push starting at</i>	300 ms, 400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s	Serves to clearly differentiate between long and short button push. If the button is pressed for at least as long as the set time, then a long button push will be registered.
<i>Double-click additional function</i>	no <i>yes</i>	No double-click function The Double-click parameter page is displayed.

Designation	Values	Description
<i>Time for double-click</i>	300 ms, 400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s	Serves to differentiate between a double-click and 2 single clicks. Time period in which the second click must begin, in order to recognise a double-click.

5.9.2.1 Dimming parameter page, *Dimming function*

Designation	Values	Description
<i>Response to long/short</i>	<i>One button operation</i>	The input distinguishes between a long and a short button push, and can thus carry out 2 functions. The dimmer is operated with a single push button. Short button push = ON/OFF Long button push = brighter/darker release = stop With the other variants, the dimmer is operated using 2 buttons (rocker).
	<i>brighter/On</i>	Short button push = ON Long button push = brighter Release = stop
	<i>brighter/change over</i>	Short button push = ON/OFF Long button push = brighter Release = stop
	<i>darker/Off</i>	Short button push = OFF Long button push = darker Release = stop
	<i>darker/change over</i>	Short button push = ON/OFF Long button push = darker Release = stop
<i>Increment for dimming³</i>		With a long button push, the dimming value is: Increased (or decreased) until the button is released.

³ Not available with one button operation.

Designation	Values	Description
	100% 50% 25% 12.5% 6% 3% 1.5%	Increased by the selected value (or reduced)
<i>Response after restoration of the bus supply</i>	none On Off after 5 s On after 10 s On after 15 s On after 5 s Off after 10 s Off after 15 s Off	Do not respond. Switch on dimmer Switch off dimmer Switch on dimmer with delay Switch off dimmer with delay
<i>Response when setting the block</i>	Ignore block no response On Off	The block function is ineffective with this telegram. Do not respond when the block is set. Switch on dimmer Switch off dimmer
<i>Response when the block is cancelled</i>	no response On Off	Do not respond when the block is cancelled. Switch on dimmer Switch off dimmer

5.9.2.2 Double-click parameter page, *Dimming function*

Designation	Values	Description	
<i>Object type</i>	Switching (1 bit) <i>Priority (2 bit)</i> <i>Value 0-255</i> <i>Percentage value (1 byte)</i>	Telegram type for this object.	
<i>Telegram</i>	<i>With object type = switching</i> 1 bit		
	On	Send switch-on command	
	Off	Send switch-off command	
	Change over	Invert current state (ON-OFF-ON etc.)	
	<i>With object type = priority 2 bit</i>		
	<i>no priority</i>	Function	Value
		Priority inactive (no control)	0 (00 _{bin})
		Priority ON (control: enable, on)	3 (11 _{bin})
	<i>Priority OFF</i>	Priority OFF (control: disable, off)	2 (10 _{bin})
	<i>With object type = value 0-255</i>		
0-255	Any value between 0 and 255 can be sent.		
<i>With object type = percentage value 1 byte</i>			
0-100%	Any percentage value between 0 and 100% can be sent.		
<i>Send cyclically</i>	do not send cyclically <i>every 1 min</i> <i>every 2 min</i> <i>every 3 min</i> ... <i>every 45 min</i> <i>every 60 min</i>	How often should it be resent?	
<i>Response after restoration of the bus supply</i>	none <i>as with double-click (immediately)</i> <i>as with double-click (after 5 s)</i> <i>as with double-click (after 10 s)</i> <i>as with double-click (after 15 s)</i>	Do not send. Send update telegram immediately or with delay. The value to be sent depends on the value configured for double-click.	
<i>Response when setting the block</i>	Ignore block	The block function is ineffective with this telegram.	
	<i>no response</i>	Do not respond when the block is set.	
	<i>as with double-click</i>	Respond as with a double-click.	
<i>Response when the block is cancelled</i>	no response	Do not respond when the block is cancelled.	
	<i>as with double-click</i>	Respond as with a double-click.	

5.9.3 Configuration options parameter page, *Blinds function*

Designation	Values	Description
<i>Function</i>	<i>Push button</i> <i>Dimming</i> <i>Blinds</i> <i>Control lighting channel C1 directly</i>	The push button controls a blinds actuator.
<i>Debounce time</i>	<i>30 ms, 50 ms, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s</i>	In order to avoid a disruptive switching due to debouncing of the push button, the new status of the input is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay.
<i>Long button push starting at</i>	<i>300 ms</i> , <i>400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s</i>	Serves to clearly differentiate between long and short button push. If the button is pressed for at least as long as the set time, then a long button push will be registered.
<i>Double-click additional function</i>	<i>no</i> <i>yes</i>	No double-click function The Double-click parameter page is displayed.
<i>Time for double-click</i>	<i>300 ms</i> , <i>400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s</i>	Serves to differentiate between a double-click and 2 single clicks. Time period in which the second click must begin, in order to recognise a double-click.
<i>Activate block function</i>	<i>no</i> <i>yes</i>	No block function. Display parameter page Block function .
<i>Block telegram</i>	<i>Block with ON telegram</i> <i>Block with OFF telegram</i>	0 = Cancel block 1 = block 0 = block 1 = cancel block

5.9.3.1 Blinds parameter page, *Blinds function*

Designation	Values	Description
<i>Operation</i>	<p><i>One button operation</i></p> <p><i>Down</i></p> <p><i>Up</i></p>	<p>The input distinguishes between a long and a short button push, and can thus carry out 2 functions.</p> <p>The blinds are operated with a single button. Short button push = step. Long button push = move.</p> <p>Short button push = step. Long button push = lower.</p> <p>Short button push = step. Long button push = raise.</p>
<i>Movement is stopped by</i>	<i>Releasing the button short operation</i>	How is the stop command to be triggered?
<i>Response after restoration of the bus supply</i>	<p><i>none</i></p> <p><i>Up</i></p> <p><i>Down</i></p> <p><i>after 5 s Up</i> <i>after 10 s Up</i> <i>after 15 s Up</i></p> <p><i>after 5 s Down</i> <i>after 10 s Down</i> <i>after 15 s Down</i></p>	<p>Do not respond.</p> <p>Raise blinds</p> <p>Lower blinds</p> <p>Raise blinds with delay</p> <p>Lower blinds with delay</p>
<i>Response when setting the block</i>	<p><i>Ignore block</i></p> <p><i>no response</i></p> <p><i>Up</i></p> <p><i>Down</i></p>	<p>The block function is ineffective with this telegram.</p> <p>Do not respond when the block is set.</p> <p>Raise blinds</p> <p>Lower blinds</p>
<i>Response when the block is cancelled</i>	<p><i>no response</i></p> <p><i>Up</i></p> <p><i>Down</i></p>	<p>Do not respond when the block is cancelled.</p> <p>Raise blinds</p> <p>Lower blinds</p>

5.9.3.2 Double-click parameter page, *Blinds function*

Designation	Values	Description	
<i>Object type</i>	Switching (1 bit) <i>Priority (2 bit)</i> <i>Value 0-255</i> <i>Percentage value (1 byte)</i> <i>Height % + slat %</i>	Telegram type for this object.	
<i>Telegram</i>	<i>With object type = switching</i> 1 bit		
	On	Send switch-on command	
	<i>Off</i>	Send switch-off command	
	<i>Change over</i>	Invert current state (ON-OFF-ON etc.)	
	<i>With object type = priority 2 bit</i>		
	<i>no priority</i>	Function	Value
		Priority inactive (no control)	0 (00 _{bin})
		Priority ON (control: enable, on)	3 (11 _{bin})
	<i>Priority OFF</i> (control: disable, off)	2 (10 _{bin})	
	<i>With object type = value 0-255</i>		
	0-255	Any value between 0 and 255 can be sent.	
	<i>With object type = percentage value</i> 1 byte		
0-100%	Any percentage value between 0 and 100% can be sent.		
<i>With object type = height % + slat %</i>			
	Upon double-click 2 telegrams are sent simultaneously:		
<i>Height 0-100%</i>	Desired height of blinds		
<i>Slat 0-100%</i>	Desired slat position.		
<i>Send cyclically</i>	do not send cyclically <i>every min</i> <i>every 2 min</i> <i>every 3 min</i> ... <i>every 45 min</i> <i>every 60 min</i>	How often should it be resent?	
<i>Response after restoration of the bus supply</i>	none <i>as with double-click (immediately)</i> <i>as with double-click (after 5 s)</i> <i>as with double-click (after 10 s)</i> <i>as with double-click (after 15 s)</i>	Do not send. Send update telegram immediately or with delay. The value to be sent depends on the value configured for double-click.	

Designation	Values	Description
<i>Response when setting the block</i>	Ignore block	The block function is ineffective with this telegram.
	<i>no response</i>	Do not respond when the block is set.
	<i>as with double-click</i>	Respond as with a double-click.
<i>Response when the block is cancelled</i>	no response	Do not respond when the block is cancelled.
	<i>as with double-click</i>	Respond as with a double-click.

5.9.4 Function – Control lighting channel C1 directly: Switching.

i The integrated push button controls the lighting channel directly and no longer needs to be connected via the bus.
In this configuration, the integrated push button has no send objects. The block object remains available.

i This function is available if the lighting channel is activated on the **General** parameter page and C1 only supports the switch function.⁴

Designation	Values	Description
<i>Function</i>	<i>Push button</i> Dimming <i>Blinds</i> <i>Control lighting channel C1 directly</i>	Control only C1, C2 or both together.
<i>Debounce time</i>	<i>30 ms, 50 ms, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s</i>	In order to avoid a disruptive switching due to debouncing of the push button, the new status is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay
<i>Activate block function</i>	<i>no</i> <i>yes</i>	No block function. Show Block function parameter page.
<i>Block telegram</i>	Block with ON telegram <i>Block with OFF telegram</i>	0 = Cancel block 1 = block 0 = block 1 = cancel block

⁴ With *Light function = Switching light* and *Lighting dimmable in switching mode = no*.

5.9.4.1 Direct switching parameter page

Designation	Values	Description
<i>Send after short operation</i>	<i>no response</i> <i>switching</i>	Push button remains without effect Switching light
<i>Switching status</i>	<i>On</i> <i>Off</i> <i>Change over</i>	Switch on Switch off Invert current state (ON-OFF-ON etc.)
<i>Response when setting the block</i>	<i>Ignore block</i> <i>no response</i> <i>as with short</i>	The block function is ineffective with this telegram. Do not respond when the block is set. Respond as with a short button push.
<i>Response when the block is cancelled</i>	<i>no response</i> <i>as with short</i>	Do not respond when the block is cancelled. Respond as with a short button push.

5.9.5 Function – Control lighting channel C1 directly: Dimming.

i The integrated push button controls the selected lighting channel(s) directly and no longer needs to be connected via the bus.
In this configuration, the integrated push button has no send objects. The block object remains available.

i This function is available if the lighting channel is activated on the **General** parameter page and C1 only supports the dimming function.⁵

Designation	Values	Description
<i>Function</i>	<i>Push button</i> Dimming <i>Blinds</i> <i>Control lighting channel C1 directly</i>	Control only C1, C2 or both together.
<i>Debounce time</i>	<i>30 ms, 50 ms, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s</i>	In order to avoid a disruptive switching due to debouncing of the push button, the new status is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay
<i>Activate block function</i>	<i>no</i> <i>yes</i>	No block function. Show Block function parameter page.
<i>Block telegram</i>	Block with ON telegram <i>Block with OFF telegram</i>	0 = Cancel block 1 = block 0 = block 1 = cancel block
<i>Long button push starting at</i>	300 ms, 400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s	Serves to clearly differentiate between long and short button push. If the button is pressed for at least as long as the set time, then a long button push will be registered.
<i>Double-click additional function</i>	<i>no</i> <i>yes</i>	No double-click function The Double-click parameter page is displayed.
<i>Time for double-click</i>	300 ms, 400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s	Serves to differentiate between a double-click and 2 single clicks. Time period in which the second click must begin, in order to recognise a double-click.

⁵ For *Switching light*, if *Lighting dimmable in switching mode* = *yes*.

5.9.5.1 Dimming directly parameter page

Designation	Values	Description
<i>Response to long/short</i>	<p><i>One button operation</i></p> <p><i>brighter/On</i></p> <p><i>brighter/change over</i></p> <p><i>darker/Off</i></p> <p><i>darker/change over</i></p>	<p>The input distinguishes between a long and a short button push, and can thus carry out 2 functions.</p> <p>The dimmer is operated with a single push button. Short button push = ON/OFF Long button push = brighter/darker release = stop</p> <p>With the other variants, the dimmer is operated using 2 buttons (rocker).</p> <p>Short button push = ON Long button push = brighter Release = stop</p> <p>Short button push = ON/OFF Long button push = brighter Release = stop</p> <p>Short button push = OFF Long button push = darker Release = stop</p> <p>Short button push = ON/OFF Long button push = darker Release = stop</p>
<i>Increment for dimming⁶</i>	<p><i>100%</i></p> <p><i>50%</i></p> <p><i>25%</i></p> <p><i>12.5%</i></p> <p><i>6%</i></p> <p><i>3%</i></p> <p><i>1.5%</i></p>	<p>With a long button push, the dimming value is:</p> <p>Increased (or decreased) until the button is released.</p> <p>Increased by the selected value (or reduced)</p>
<i>Response when setting the block</i>	<p><i>Ignore block</i></p> <p><i>no response</i></p>	<p>The block function is ineffective with this telegram.</p> <p>Do not respond when the block is set.</p>

⁶ Not used with one button operation.

Designation	Values	Description
	<i>On</i>	Switch on dimmer
	<i>Off</i>	Switch off dimmer
<i>Response when the block is cancelled</i>	<i>no response</i>	Do not respond when the block is cancelled.
	<i>On</i>	Switch on dimmer
	<i>Off</i>	Switch off dimmer

5.9.5.2 Double-click parameter page

Designation	Values	Description
<i>Dimming value</i>	<i>0-100%</i>	Desired dimming value on double-click.
<i>Response when setting the block</i>	<i>Ignore block</i>	The block function is ineffective with this telegram.
	<i>no response</i>	Do not respond when the block is set.
	<i>as with double-click</i>	Respond as with a double-click.
<i>Response when the block is cancelled</i>	<i>no response</i>	Do not respond when the block is cancelled.
	<i>as with double-click</i>	Respond as with a double-click.

6 Operation

6.1 Manual operation with push buttons

The detector can be overridden by using push buttons or other higher-level commands. As push buttons, either external push buttons or the integrated push button can be used for lighting control. It is important to know that if the integrated push button is used for lighting control, no separate push button input objects are needed. If external push buttons are included, separate push button input objects are available.

The manual operation only affects the light outputs. The HVAC, room monitoring and brightness outputs remain unaffected by manual operation.

The following examples in chapter **Operation** refer to the use with external push buttons. If the integrated push button is used, the input objects are not required. However, the function is always the same.

6.2 Manual operation (external push button) via switching function without dimmable lighting

If the lighting is operated manually with *Light function = Switching light* (external push button), the detector shows the following behaviour:

Push button operation	Response of lighting/detector
ON telegram	The lighting is switched on with an ON telegram on object <i>C1 Light input – Switching external push button</i> (obj. 2). The lighting remains switched on for 30 minutes if the room is occupied. Light measurement is deactivated. The light measurement is reactivated after the 30 minutes. An OFF telegram is sent in case of sufficient brightness. If the room is vacated before the 30 minutes have expired, the light will be switched off normally after the completion of the set time delay.
OFF telegram	The lighting is switched off with an OFF telegram on object <i>C1 Light input – Switching external push button</i> (obj. 2). The lighting remains switched off while the room is occupied. The detector returns to the normal switching mode after the room is vacated and the time delay has expired.

6.3 Manual operation (external push button) via switching function with dimmable lighting

If the lighting is operated manually via the *Light function = Switching light* and *Lighting dimmable in switching mode = yes*, the detector will show the following behaviour:

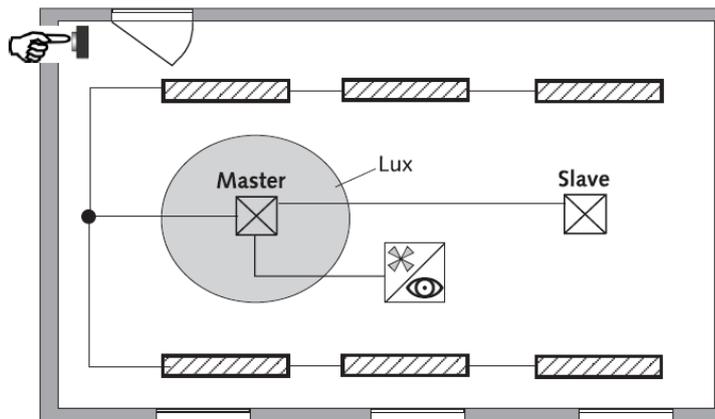
Push button operation	Response of lighting/detector
ON telegram	The lighting is switched on with an ON telegram on object <i>C1 Light input – Switching external push button</i> (obj. 2). The lighting remains switched on for 30 minutes if the room is occupied. Light measurement is deactivated. The light measurement is reactivated after the 30 minutes. An OFF telegram is sent in case of sufficient brightness. If the room is vacated before the 30 minutes have expired, the light will be switched off normally after the completion of the set time delay.
Dimming telegram (4 bit)	The lighting is dimmed with a dimming telegram on object <i>C1 Light input – External button brighter/darker</i> (obj. 4). The lighting remains at the set dimming value for the configured time <i>Duration of manual override</i> .
Value telegram (1 byte)	The lighting is dimmed with a value telegram on object <i>C1 Light input – Send value external push button</i> (obj. 6). The lighting remains at the transmitted value while the room is occupied. The detector returns to the normal switching mode after the room is vacated and the time delay has expired.
OFF telegram	The lighting is switched off with an OFF telegram on object <i>C1 Light input – Switching external push button</i> (obj. 2). The lighting remains switched off while the room is occupied. The detector returns to the normal switching mode after the room is vacated and the time delay has expired.

7 Parallel switching

In larger rooms, several detectors can be connected in parallel. This extends the overall presence detection area.

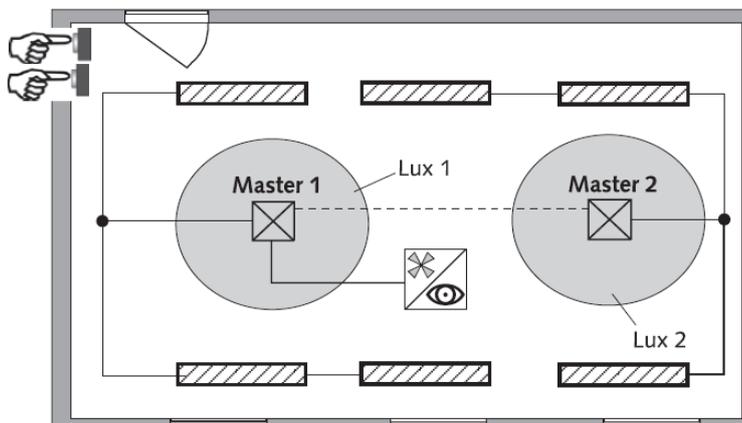
7.1 Master/Slave parallel switching

A "Master in parallel switching" can be connected to several "Slaves". For this purpose, the trigger outputs of the Slaves are linked with the trigger input of the Master. The Slaves only provide the presence information from their detection area. The Master performs the brightness measurement and the administration of all parameter settings.



7.2 Master/Master parallel switching

Several "Masters in parallel switching" can be linked with each other. Presence detection is completed jointly, while light measurement, parameter settings and lighting control are individually processed by each Master. This results in several light outputs with their own light measurement but with joint presence detection.



7.3 Telegram load when using parallel switching

In parallel switching, each Master in parallel switching and each Slave sends a telegram up to every 5 seconds, as long as a person is in the detection area. The interval between two telegrams can be increased to 5 minutes, to reduce the telegram load. By default, the cycle time is 30 s.

Please note that the time delay can never be shorter than the interval between two telegrams, in order to prevent unintentional switch off.

Parallel switching is compatible with all Theben KNX detectors. This means that detectors with a common trigger object (trigger input/output) can also be linked to each other with the trigger input object or with the trigger output object.

8 Brightness switching value

8.1 Setting the brightness switching/setpoint value

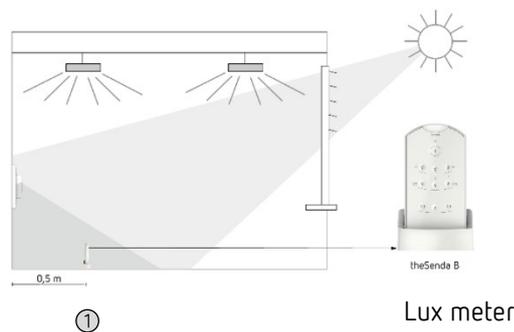
The brightness switching value defines the minimum desired brightness. The currently prevailing brightness is measured underneath the detector. If the prevailing brightness is below the switching value, the light is switched on as soon as a presence is detected.

The room correction factor is a measurement for the difference of the brightness measurement at the wall and on the floor.

The brightness measurement value at the wall is influenced by the installation location, incidence of light, position of the sun, weather conditions, the reflection properties of the room, and the furniture.

The room correction factor allows the brightness measurement taken by the detector to be adapted to the conditions in the room. In this way, the brightness value is scaled to the lux meter value ① measured on the surface below the detector.

See parameter *Room correction factor*.



$$\text{Room correction factor} = \frac{\text{Brightness value at the wall}}{\text{Brightness value on the floor}}$$

8.2 Calibration of brightness measurement

The calibration of brightness measurement can be carried out via the ETS. Prerequisite is that parameter *Set brightness measurement value via bus* has been set to *yes*. The measured lux value is transmitted to the detector via object 18 (brightness measurement value C1).

The room correction factor is calculated from this automatically. Values between 0.05 and 2.0 are permitted. Calculated values outside the permitted range will automatically be set to the appropriate limit value.

The calculated room correction factor will be applied immediately. For monitoring purposes, the room correction factor can be queried via the object 19.

 The standard value of the room correction factor is 0.3 and is suitable for most applications.
The sensitivity of the light sensor to changes in brightness is influenced by the change of the room correction factor.

9 Test modes

The theMura S180 KNX has two test modes:

- Test mode presence
- Test mode light

9.1 Test mode presence

Test mode presence serves to test presence detection and parallel switching.

Activate	- ON telegram via bus object 75. Test mode presence can be activated any time.
End	With subsequent restart: <ul style="list-style-type: none"> - OFF telegram via bus object 75. - Mains failure and thus power up. - Automatically according to the time set in the ETS, parameter <i>Activation of test mode</i>

Display LED Status of channels	Description
On	In the event of movement, the LED is on, and channel C1 switches on.
Off	After the motion stops, the LED is off and channels C1, C2 switch off after approx. 10 s.

Test response

- Deactivated brightness measurement, light output does not respond to brightness.
- The detector responds as in configuration type fully automatic device, even if semi-automatic is set.
- Light "On" with motion; light "Off" with absence of motion.
- Light channel C1 has a fixed time delay of 10 s.
- Channel C4 HVAC responds unchanged as in normal operation.

The selected detection sensitivity (level 1 ... 3) is not changed when activating test mode presence. The detector performs a restart after the end of the test mode.

9.2 Test mode light

Test mode light is used to check the brightness switching value (brightness threshold).

Activate	<ul style="list-style-type: none"> - ON telegram via bus object 76. <p>The light test mode can be activated anytime.</p>
End	<p>With subsequent restart:</p> <ul style="list-style-type: none"> - OFF telegram via bus object 76. - Mains failure and thus power up. - Automatically according to the time set in the ETS, parameter <i>Activation of test mode</i>

Display LED Status of channels	Description
Flashing, 5 s On/0.3 s Off	The LED flashes as long as test mode light is active.

Test response

The detector responds 100% as in normal operating mode, only the response to bright/dark is faster. This allows the brightness threshold and also the adaptive behaviour to be tested.

All selected functions and parameters remain unchanged.

The detector performs a restart after the end of test mode light.

i Do not use a torch to switch the detector. The detector will teach in this and thereby distort the adaptive light thresholds and hysteresis values. To simulate the behaviour, ideally the area below in front of the detector is illuminated or the blinds are operated. For a new attempt, activate test mode light again.

10 Setting the device to factory setting

The detector is supplied with a factory setting. This basic setting can be restored.

- Set the potentiometer **MODE** to the right stop (**on**).
- Push the integrated push button. The button cover does not necessarily have to be fitted for this. At the same time, switch on the bus voltage.
- Release the push button after a few seconds.
- The basic settings are adopted again.
- Set the potentiometer **MODE** to **off**.

11 Update tool

An ETS app is available for the KNX firmware update, which can be downloaded free of charge. For more detailed information on the procedure, please refer to the following document:

<https://www.theben.de/knx-update>

12 Troubleshooting

Fault/error	Cause
Light does not switch on or switches off during presence and darkness	Lux value is set too low; detector set in semi-automatic; light was switched off manually via push button; person not within detection area; obstruction(s) interrupt detection; time delay set too short
Light stays on with detection of presence despite sufficient brightness	Lux value set too high; the light was recently switched on manually via push button (wait 30 minutes); detector in test mode
Light does not switch off, or light switches on spontaneously when no one is present	Wait for time delay; thermal sources of interference in the detection area: fan heaters, incandescent lamps/halogen spotlights, moving objects (e.g. curtains hanging in an open window); the start-up phase was not problem-free.
Error flashing (3x per second)	<ul style="list-style-type: none"> - Error during start-up phase or during operation. - Device not functional.

13 Typical applications

i These application examples are designed to aid planning and are not to be considered an exhaustive list. They can be supplemented and extended as desired. Standard or customer-defined parameter settings apply for the parameters not listed here.

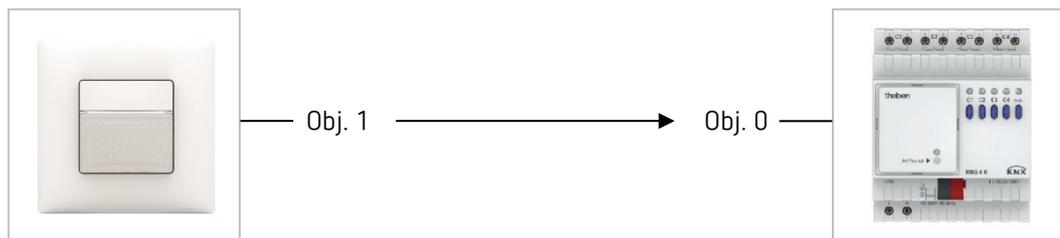
13.1 Presence and brightness-dependent switching of light

The classic function of a motion detector is that the lighting is only switched on when people are present in the room and natural daylight is not sufficient. If the room is vacated or the amount of daylight increases, the lighting will automatically be switched off.

13.1.1 Devices

- theMura S180 KNX (2069650)
- RMG 4 U (4930223)

13.1.2 Overview



13.1.3 Objects and links

Links

No.	theMura S180 KNX Object name/function	No.	RMG 4 U Object name/function	Comment
1	<i>C1 Light output/switching</i>	0	<i>RMG 4 U channel C1/switch object</i>	Switching lighting on and off

13.1.4 Important parameter settings

theMura S180 KNX

Parameter page	Parameters	Setting
General	<i>Operating mode</i>	<i>Master</i>
	<i>Master operating mode</i>	<i>Individual switching</i>
	<i>Activate channel C1 light</i>	<i>yes</i>
Channel C1 Light	<i>Light function</i>	<i>Switching light</i>
	<i>Configuration type</i>	<i>Fully automatic device</i>
	<i>Brightness switching value</i>	<i>500 lx (according to customer request)</i>
	<i>Lighting time delay</i>	<i>10 min (according to customer request)</i>

RMG 4 U

Parameter page	Parameters	Setting
RMG 4 U channel C1: configuration options	<i>Type of basic module</i>	<i>RMG 4 U..</i>
	<i>Function</i>	<i>Switching On/Off</i>
	<i>Activation of function via</i>	<i>Switch object</i>

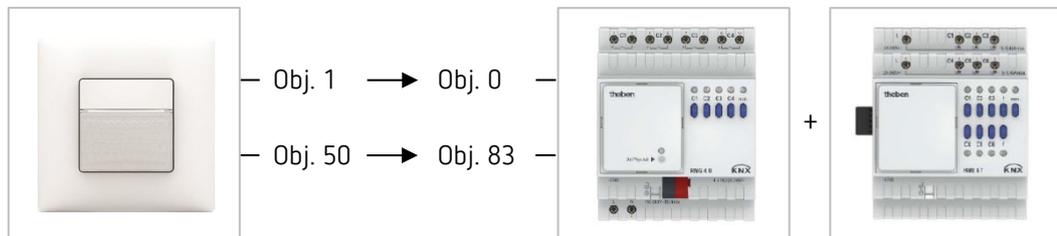
13.2 Presence and brightness-dependent switching of lighting, additional control of heating

In addition to presence and daylight-dependent switching of a lighting group, the motion detector also controls the heating control. When motion is detected, the corresponding HVAC operating mode is sent. The output is configured with a switch-on delay.

13.2.1 Devices

- theMura S180 KNX (2069650)
- RMG 4 U (4930223)
- HME 6 T (4930245) } MIX combination

13.2.2 Overview



13.2.3 Objects and links

Links

No.	theMura S180 KNX Object name/function	No.	MIX combination Object name/function	Comment
1	<i>C1 Light output/switching</i>	0	<i>RMG 4 U channel C1/switch object</i>	Switching lighting on and off
50	<i>C4.1 HVAC/ Send HVAC operating mode</i>	83	<i>EM1 HME 6 T channel H1/ Operating mode preselection</i>	Adjustment of the operating mode

13.2.4 Important parameter settings

theMura S180 KNX

Parameter page	Parameters	Setting
General	<i>Operating mode</i>	<i>Master</i>
	<i>Master operating mode</i>	<i>Individual switching</i>
	<i>Activate channel C1 light</i>	<i>yes</i>
	<i>Activate channel C4 HVAC</i>	<i>yes</i>
Channel C1 Light	<i>Light function</i>	<i>Switching light</i>
	<i>Configuration type</i>	<i>Fully automatic device</i>
	<i>Brightness switching value</i>	<i>500 lx (according to customer request)</i>
	<i>Lighting time delay</i>	<i>10 min (according to customer request)</i>
Channel C4 HVAC	<i>HVAC switch-on delay</i>	<i>according to customer request</i>
	<i>HVAC time delay</i>	<i>according to customer request</i>
Channel C4 – presence/objects	<i>Telegram type</i>	<i>HVAC operating mode</i>

MIX combination RMG 4 U and extension module HME 6 T

Parameter page	Parameters	Setting
General	<i>Type of basic module</i>	<i>RMG 4 U..</i>
	<i>Type of 1st Extension module</i>	<i>HME 6 T..</i>
RMG 4 U channel C1: configuration options	<i>Function</i>	<i>Switching On/Off</i>
	<i>Activation of function via</i>	<i>Switch object</i>
HME 6 T channel H1: configuration options	<i>Channel function</i>	<i>Heating controller</i>
	<i>div. parameters</i>	<i>according to customer request</i>

13.3 Presence and brightness-dependent switching of light, additional manual override via external push button

The motion detector switches the lighting. In addition, the lighting can be switched on and off manually with an external push button.

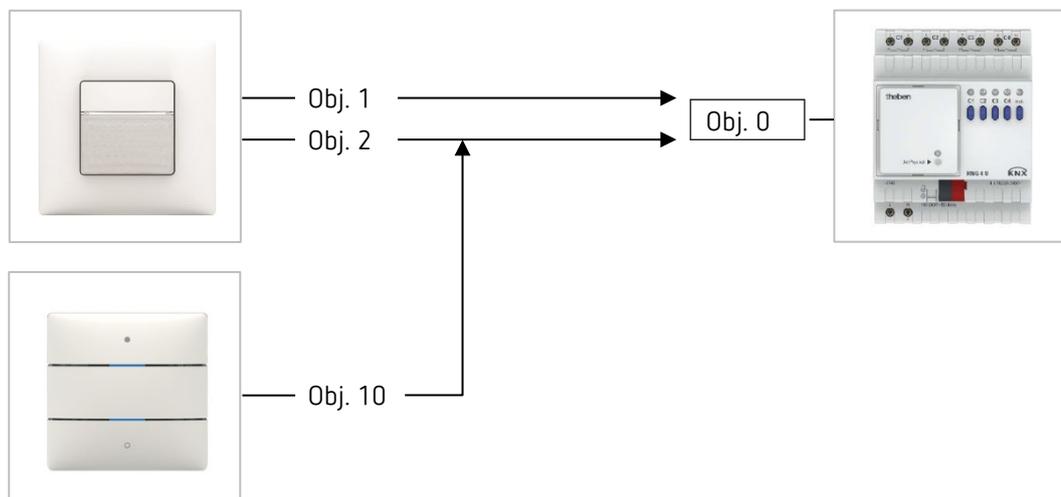
When the light is switched on via the external push button, the user has 30 minutes of light if the room is occupied before the motion detector takes control again. When the light is switched off via the external push button, the lighting remains switched off as long as the motion detector detects that people are present. The motion detector takes control only after the time delay has elapsed.

It is also possible to operate the motion detector in semi-automatic mode. In this case, the lighting must always be switched on by hand, the detector does not switch on the lighting automatically. The motion detector switches off the lighting as usual if there is sufficient daylight or if the room is unoccupied.

13.3.1 Devices

- theMura S180 KNX (2069650)
- iON 102 (4969232)
- RMG 4 U (4930223)

13.3.2 Overview



13.3.3 Objects and links

Links

No	theMura S180 KNX	No	RMG 4 U	No	iON 102
	Object name /function		Object name /function		Object name / Function
1	<i>C1 Light output/switching</i>	0	<i>RMG 4 U channel C1/switch object</i>		
2	<i>C1 Light input/switching external push button</i>	0	<i>RMG 4 U channel C1/switch object</i>	10	Button T1.1/switching

13.3.4 Important parameter settings

theMura S180 KNX

Parameter page	Parameters	Setting
General	<i>Operating mode</i>	<i>Master</i>
	<i>Master operating mode</i>	<i>Individual switching</i>
	<i>Activate channel C1 light</i>	<i>yes</i>
Channel C1 Light	<i>Light function</i>	<i>Switching light</i>
	<i>Configuration type</i>	<i>Fully automatic device</i>
	<i>Brightness switching value</i>	<i>500 lx (according to customer request)</i>
	<i>Lighting time delay</i>	<i>10 min (according to customer request)</i>

RMG 4 U

Parameter page	Parameters	Setting
RMG 4 U channel C1: configuration options	<i>Type of basic module</i>	<i>RMG 4 U..</i>
	<i>Function</i>	<i>Switching On/Off</i>
	<i>Activation of function via</i>	<i>Switch object</i>

iON 102

Parameter page	Parameters	Setting
Button T1/configuration options	<i>Function</i>	<i>Push button</i>
Push button object 1	<i>Object type</i>	<i>Switching</i>
	<i>Send after short operation</i>	<i>Send telegram</i>
	<i>Telegram</i>	<i>Change over</i>

 If the lighting is controlled directly by the integrated push button I1, object 2 is not required. Parameters of integrated push button I1, see chapter **Function – Control lighting channel C1 directly: Switching**.

13.4 Presence and brightness-dependent switching of light, additional manual override (also dimming) via external push button

The motion detector switches the lighting. In addition, the lighting can be switched and dimmed manually with an external push button.

When the light is switched on via the external push button, the user has 30 minutes of light if the room is occupied before the motion detector takes control again. When the light is switched off via the external push button, the lighting remains switched off as long as the motion detector detects that people are present. The motion detector takes control only after the time delay has elapsed.

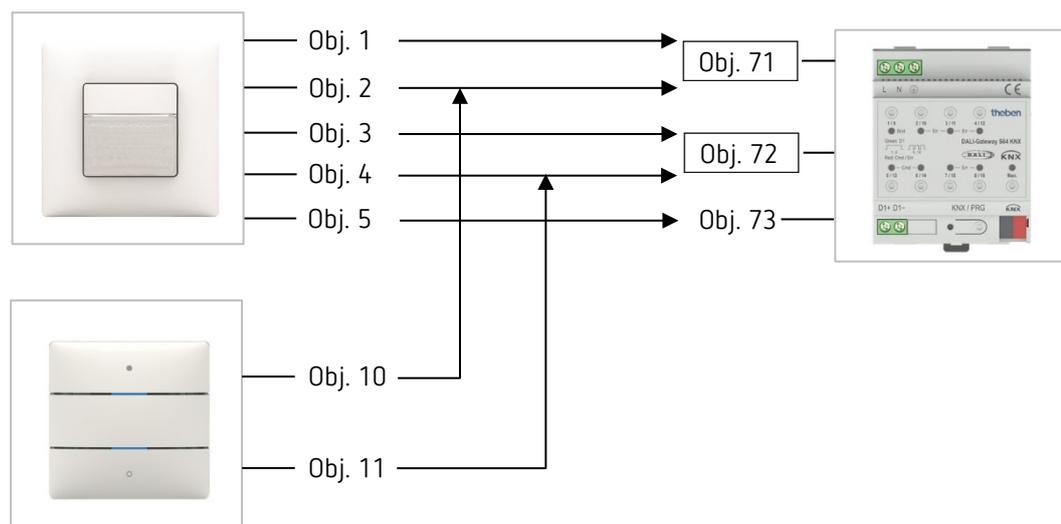
If the lighting is dimmed manually, the lighting remains at the set dimming value for the duration of the presence.

It is also possible to operate the presence detector in semi-automatic mode. In this case, the lighting must always be switched on by hand, the detector does not switch on the lighting automatically.

13.4.1 Devices

- theMura S180 KNX (2069650)
- iON 102 (4969232)
- DALI Gateway S64 KNX (4940301)

13.4.2 Overview



13.4.3 Objects and links

Links

No.	theMura S180 KNX	No.	DALI Gateway S64 KNX	No.	iON 2
	Object name/function		Object name/function		Object name Function
1	<i>C1 Light output/switching</i>	71	<i>G1 switching, / On/Off</i>		
2	<i>C1 Light input/switching external push button</i>	71	<i>G1 switching, / On/Off</i>	10	<i>Button T1/switching</i>
3	<i>C1 Light output / Brighter/Darker</i>	72	<i>G1 Dimming, / Brighter/darker</i>		
4	<i>C1 Light input/ External button brighter/darker</i>	72	<i>G1 Dimming, / Brighter/darker</i>	11	<i>Button T1 / Brighter/darker</i>
5	<i>C1 Light output/ Send value</i>	73	<i>G1 set value, / Value</i>		

13.4.4 Important parameter settings

theMura S180 KNX

Parameter page	Parameters	Setting
General	<i>Operating mode</i>	<i>Master</i>
	<i>Master operating mode</i>	<i>Individual switching</i>
	<i>Activate channel C1 light</i>	<i>yes</i>
Channel C1 Light	<i>Light function</i>	<i>Switching light</i>
	<i>Configuration type</i>	<i>Fully automatic device</i>
	<i>Brightness switching value</i>	<i>500 lx (according to customer request)</i>
	<i>Lighting time delay</i>	<i>10 min (according to customer request)</i>
Channel C1 Light/detail settings	<i>Lighting dimmable in switching mode</i>	<i>yes</i>

DALI Gateway S64 KNX

Parameter page	Parameters	Setting
G1,	<i>Operating mode</i>	<i>Normal operation</i>
	<i>Function of additional object</i>	<i>no object</i>
	<i>Enabled for panic mode</i>	<i>No</i>
G1, / behaviour	<i>Switch-on value</i>	<i>100%</i>
	<i>Switch-on behaviour</i>	<i>Dim to value in 10 seconds</i>
	<i>Switch-off value</i>	<i>0%</i>
	<i>Behaviour on value setting</i>	<i>Dim to value in 10 seconds</i>
	<i>Time for dimming</i>	<i>10 seconds</i>
	<i>Max. value for dimming</i>	<i>100%</i>
	<i>Min. value for dimming</i>	<i>0%</i>
	<i>Min/max values apply to</i>	<i>Dimming object</i>
<i>Switch-on via dimming</i>	<i>No</i>	

iON 102

Parameter page	Parameters	Setting
Button T1 /configuration options	<i>Function</i>	<i>Dimming</i>
Dimming	<i>Response to long/short</i>	<i>One button operation</i>

i If the lighting is controlled directly by the integrated push button I1, object 2 and 4 are not required. Parameters of integrated push button I1, see chapter **Function – Control lighting channel C1 directly: Dimming**.

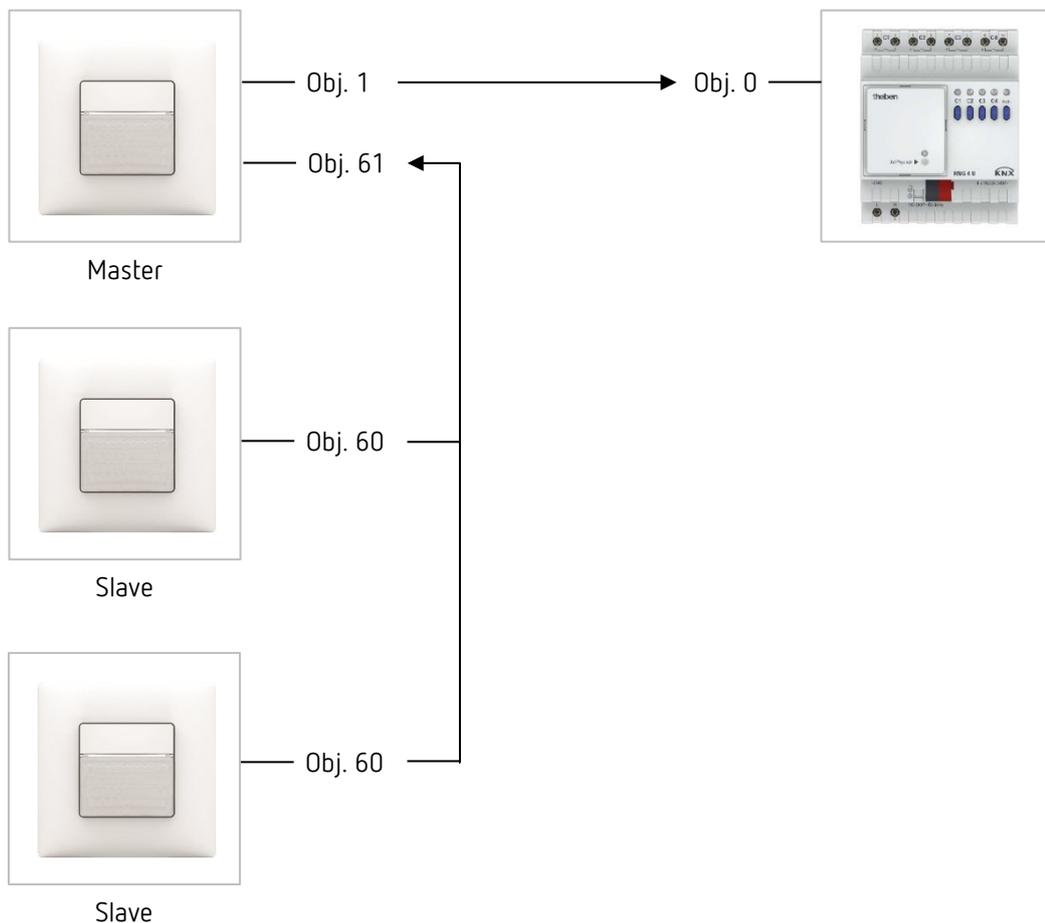
13.5 Master/Slave parallel switching

Several motion detectors can be linked together to provide coverage of large areas such as open-plan offices or corridors. One motion detector is used as a Master, the others as Slaves. The Slaves trigger the Master when motion is detected. All settings, such as delay times and brightness thresholds, are configured in the Master. The trigger signal acts on the lighting channel and on the HVAC channel of the Master.

13.5.1 Devices

- theMura S180 KNX (2069650)
- RMG 4 U (4930223)

13.5.2 Overview



Parallel switching is compatible with all Theben KNX detectors. This means that detectors with a common trigger object (trigger input/output) can also be linked to each other with the trigger input object or with the trigger output object.

13.5.3 Objects and links

Links

No.	theMura S180 KNX Object name/function	No.	RMG 4 U Object name/function	Comment
1	<i>C1 Light output/switching</i>	0	<i>RMG 4 U channel C1/switch object</i>	Switching lighting on and off

No.	theMura S180 KNX (Master) Object name/function	No.	theMura S180 KNX (Slaves) Object name/function	Comment
61	<i>Parallel switching input/ Trigger input</i>	60	<i>Parallel switching output/ Trigger output</i>	Connection between Master and Slaves

13.5.4 Important parameter settings

theMura S180 KNX (Master)

Parameter page	Parameters	Setting
General	<i>Operating mode</i>	<i>Master</i>
	<i>Master operating mode</i>	<i>Parallel switching</i>
	<i>Activate channel C1 light</i>	<i>yes</i>
Channel C1 Light	<i>Light function</i>	<i>Switching light</i>
	<i>Configuration type</i>	<i>Fully automatic device</i>
	<i>Brightness switching value</i>	<i>500 lx (according to customer request)</i>
	<i>Lighting time delay</i>	<i>10 min (according to customer request)</i>

theMura S180 KNX (Slaves)

Parameter page	Parameters	Setting
General	<i>Operating mode</i>	<i>Slave</i>

RMG 4 U

Parameter page	Parameters	Setting
RMG 4 U channel C1: configuration options	<i>Type of basic module</i>	<i>RMG 4 U..</i>
	<i>Function</i>	<i>Switching On/Off</i>
	<i>Activation of function via</i>	<i>Switch object</i>

13.6 Master/Master parallel switching

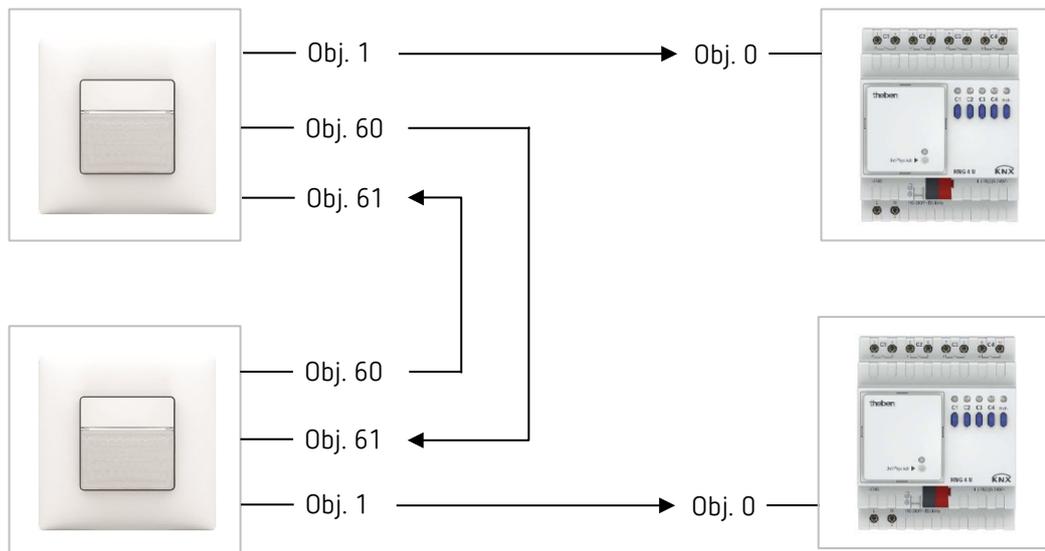
To cover larger areas with different lighting conditions, for example open-plan offices, several Master motion detectors are connected to each other.

Each Master operates its lighting group according to its light measurement and settings. They exchange presence among each other. This extends the detection area. It should be noted that each Master can only detect the light switched or controlled by itself.

13.6.1 Devices

- theMura S180 KNX (2069650)
- RMG 4 U (4930223)

13.6.2 Overview



i Parallel switching is compatible with all Theben KNX detectors. This means that detectors with a common trigger object (trigger input/output) can also be linked to each other with the trigger input object or with the trigger output object.

13.6.3 Objects and links

Links

No.	theMura S180 KNX Object name/function	No.	RMG 4 U Object name/function	Comment
1	<i>C1 Light output/switching</i>	0	<i>RMG 4 U channel C1/switch object</i>	Switching lighting on and off

No.	theMura S180 KNX Object name/function	No.	theMura S180 KNX Object name/function	Comment
61	<i>Parallel switching input/Trigger input</i>	60	<i>Parallel switching output/Trigger output</i>	Connection between Master and Master
60	<i>Parallel switching output/Trigger output</i>	61	<i>Parallel switching input/Trigger input</i>	Connection between Master and Master

13.6.4 Important parameter settings

theMura S180 KNX

Parameter page	Parameters	Setting
General	<i>Operating mode</i>	<i>Master</i>
	<i>Master operating mode</i>	<i>Parallel switching</i>
	<i>Activate channel C1 light</i>	<i>yes</i>
Channel C1 Light	<i>Light function</i>	<i>Switching light</i>
	<i>Configuration type</i>	<i>Fully automatic device</i>
	<i>Brightness switching value</i>	<i>500 lx (according to customer request)</i>
	<i>Lighting time delay</i>	<i>10 min (according to customer request)</i>

RMG 4 U

Parameter page	Parameters	Setting
RMG 4 U channel C1: configuration options	<i>Type of basic module</i>	<i>RMG 4 U..</i>
	<i>Function</i>	<i>Switching On/Off</i>
	<i>Activation of function via</i>	<i>Switch object</i>

14 Appendix

14.1 Conversion of percentages to hexadecimal and decimal values

Percentage value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Hexadecimal	00	1A	33	4D	66	80	99	B3	CC	E6	FF
Decimal	00	26	51	77	102	128	153	179	204	230	255

All values from 00 to FF hex. (0 to 255 dec.) are valid.

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