theben

Manual
Wall presence detector theMura P180 KNX theMura P180 2.20 KNX

theMura P180 KNX 2069655

theMura P180 2.20 KNX 2069658

2023-01-17

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1 Function description

1.1 Presence detector

Presence detector **theMura P180 KNX/heMura P180 2.20 KNX**
The detector switches or controls a maximum of two lighting groups dependent on the presence of persons and the current brightness. The light outputs can be dynamically faded up and down by the integrator. The brightness switching value or setpoint value can be set via parameters, object, the app remote control or installation remote control.
The lighting switches on with presence and insufficient brightness, and off with absence or sufficient brightness. Manual switching or dimming can be performed with a push button (internal or external).
When constant lighting control is active, the brightness is held constant at the brightness setpoint value. The control is started fully automatically or manually via push button or remote control. Manual switching off, dimming and scenes stop control for as long as the presence continues.
Up to 2 additional channels transmit the presence information in the room to further devices such as heating, ventilation, air-conditioning or blind controls. Each channel has a switch-on delay and a time delay.
A further channel is used for room monitoring.
The detector also has an integrated scene component and provides the option of processing scene numbers for the lighting groups. In combination with the remote control, the detector is not only capable of switching and dimming its own lighting groups, but also controlling other external consumers such as lights, blinds, etc.
Additional functions such as the integrated orientation light, the integrated temperature measurement, but also the acoustic function allow a variety of additional applications.

1.1.1 Style

Element	Example
Parameters, objects	*Configuration type, C1 Light*
Standard parameter value	***Switching light***
Parameter page	**Scenes**

1.1.2 Terminology

Operating mode	Master Slave
Configuration type	Fully automatic device Semi-automatic device
Light function	Switching Constant lighting control Constant lighting control without influence of presence

1.1.3 Features

- **General:**
- Passive infrared KNX presence detector for wall mounting in flush-mounted box
- Cover in Theben design
- KNX Data Secure
- Rectangular detection area: 2069655 170°, max. 14 m x 17 m
  2069658 170°, max. 16 m x 10 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
- Integrated orientation light (white)
- Red LED controllable via object
- Integrated temperature sensor
- Acoustic function
- 6 logic channels (AND/OR/XOR)
- 2 binary inputs
- 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)
- "theSenda B/theSenda Plug" app control "(option)
- Installation remote control "theSenda P" (option)
- User remote control "theSenda S" (option)

- **2 channels Light, C1 + C2:**
- Switching or constant lighting control with standby function (orientation light)
- Switching mode with dimmable lighting
- Fully or semi-automatic, automatic changeover to semi-automatic at night possible
- Brightness switching value or setpoint can be set in lux by using potentiometer (only day), parameter, object or remote control
- Teach-in of the brightness switching value or setpoint
- Adjustable dimming value in standby
- Lighting time delay configurable using potentiometer (only day), parameter, object or remote control
- Reduction of time delay when present briefly (short-term presence)
- Day/night changeover via telegram
- Manual override via integrated push button, telegram or remote control
- Separate block telegram
- Scene controls with two scenes
- Scene functionality with scene numbers

- **2 channels HVAC, C4 + C5:**
- Configurable switch-on delay and time delay
- Sending of operating mode
- Separate block telegram

- **1 room monitoring channel, C6:**
- Transmitting information of presence
- Cyclical sabotage object

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.

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 particularly slim and attractive design. Moreover, they can be used with all common switch ranges of leading manufacturers by means of adapter frames.

2 Installation

For installation in device housing, concealed housing size 1.

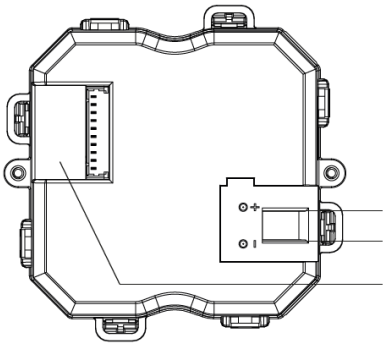
Theben accessories can be used with bezel frames from other switch ranges.

Observe the recommended installation height of 0.8 m – 1.2 m!

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

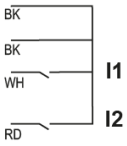
The detector is not suitable for intruder alarm systems!

2.1 Connection



KNX bus

Connection cable for binary inputs

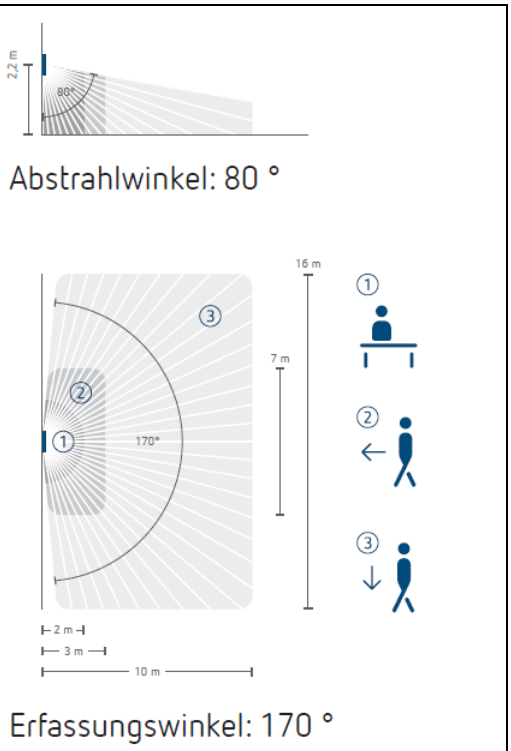


Important: Do not connect mains voltage (230 V) or other external voltages to the binary inputs!

2.2 Detection area

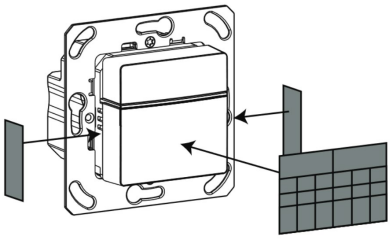
Detection area
The rectangular detection area of detector covers a large area and permits a good room coverage with many applications. Note that frontally (radially) and transversally (tangentially) walking persons are detected in differently-sized areas.

The recommended mounting height of theMura P180 KNX (2069655) is 0.8-1.2 m. The recommended mounting height of theMura P180 2.20 KNX (2069658) is 2.2 m. The sensitivity can be adjusted in 3 increments via parameter or remote control. The detection area can also be limited with the enclosed stickers.

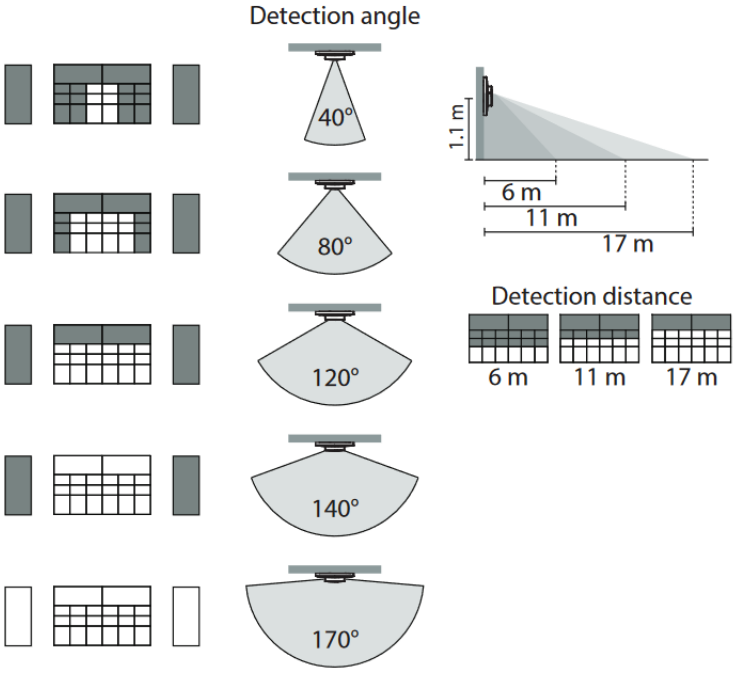
	
Detection area theMura P180 KNX (2069655)	Detection area theMura P180 2.20 KNX (2069658)

2.2.1 Limiting the detection area

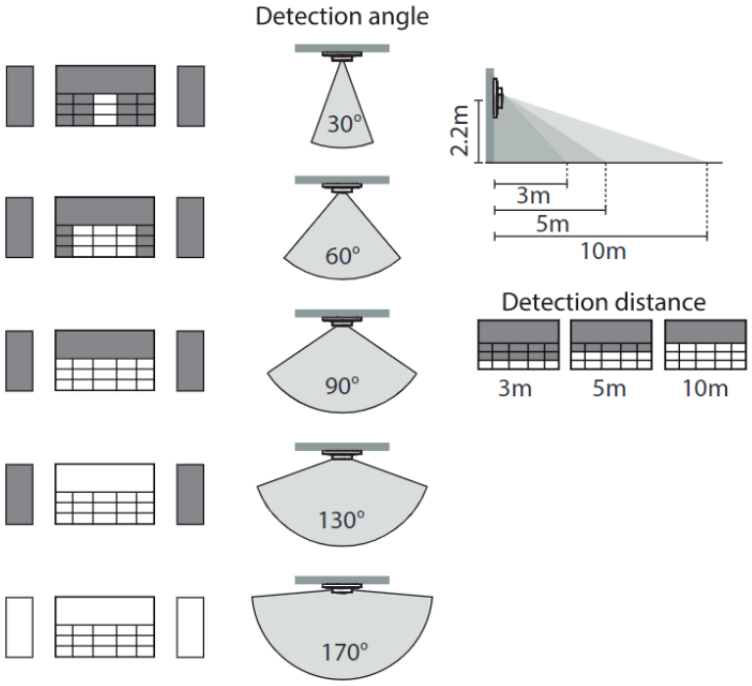
- Use the enclosed sticker to adjust the detector to the desired detection area.
- Remove the required section of the sticker using scissors.
- Then stick it to the lens.



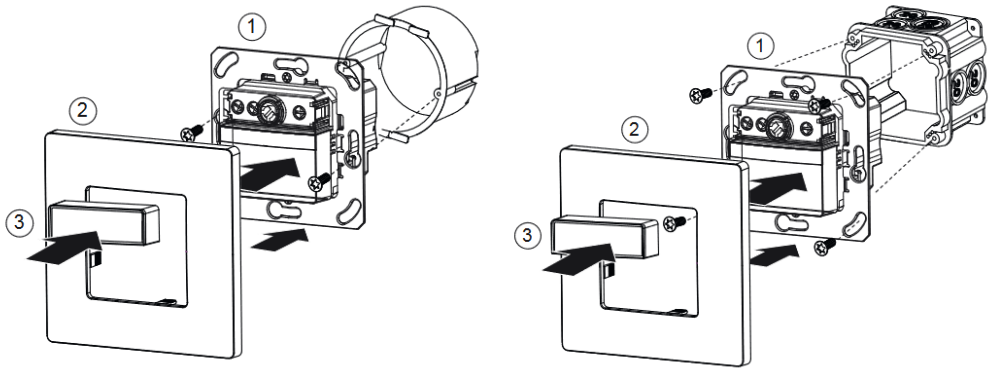
theMura P180 KNX (2069655)



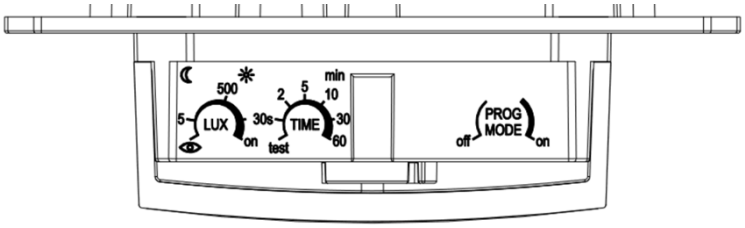
theMura P180 2.20 KNX (2069658)



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.

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

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

- 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.

ⓘ It is always the switching value/setpoint that is active when the teach-in is carried out that is changed:
Brightness switching value C1/Brightness setpoint C1

Brightness switching value C1 Night / Brightness setpoint 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.**

ⓘ The potentiometer only refers to the normal time delay.

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

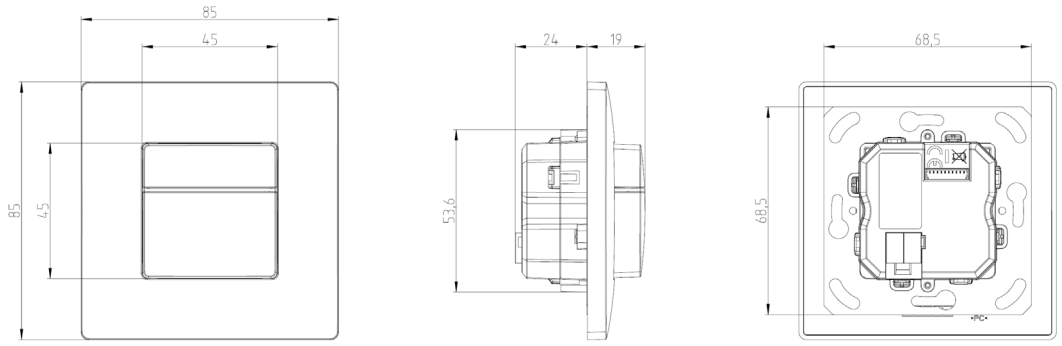
2.4.3 Activating the programming mode (PROG MODE)

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.

ⓘ Programming mode can also be activated via remote control, see chapter **Parameters and control commands via remote control**.

2.4.4 Dimensions



3 Technical data

Recommended installation height	0,8 – 1,2 m	2,2m
Max. detection area	14 x 17 m I 238 m² walking transversally (tangentially) 12 x 10 m I 120 m² walking frontally (radially)	10 x 16 m I 160 m² walking transversally (tangentially) 3 x 7 m I 21 m² walking frontally (radially)
Detection angle	170°	
KNX operating voltage	21 – 32 V DC	
KNX medium	TP1-256	
KNX bus power input	< 12 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	
Standby dimming value	1 – 100% of the lamp output	
Light standby time	30 s – 60 min/permanently on/inactive	
HVAC switch-on delay	10 s – 30 min/inactive	
HVAC time delay	10 s – 120 min	
Measurement range of temperature sensor	-5 ... +45° C	
Connection type	KNX bus terminal	
Protection rating	IP 20 in accordance with EN 60529	
Ambient temperature	-15 °C ... +45 °C	
Protection class	III	
Pollution degree	2	
Rated impulse 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 Parameters and control commands via remote control

The following parameters can be viewed or changed via the remote control for support during start-up as well as servicing:

Parameters	View theSenda B/app	Changeable theSenda B/app	Changeable theSenda P
Brightness setpoint value C1	X	X	X
Brightness setpoint night C1	X	X	
Brightness actual value C1	X		
Room correction factor C1	X	X	
Brightness measurement value C1		X	
Detection sensitivity	X	X	X
Detection sensitivity night	X	X	
Lighting time delay		X	X
Lighting time delay night		X	
Orientation light brightness		X	
Acoustic sensor sensitivity	X	X	
Acoustic sensor sensitivity night	X	X	
Temperature measurement value		X	
Temperature actual value	X		

ⓘ The parameters are sent to the detector by infrared. Changed parameters are applied and used.

To check the parameters

- ➢ press the button [?] and follow the instructions in the app.

The following control commands can be triggered with the remote control:

Parameters	Can be triggered via theSenda B/app	Can be triggered via theSenda P	Can be triggered via theSenda S
Programming mode	X	X	
Teach-in C1	X	X	
Master/Slave?	X		
Switching light	X	X	X
Presence test	X	X	
Light test	X		
Restart	X	X	

5.1 Connecting a mobile device to the theSenda B/app remote control

- Open “theSenda Plug” app.
- Press the Bluetooth icon in the app on upper left.
- Briefly press the Bluetooth button on theSenda B.
  ➔ LED flashes red, devices are searched.
- Confirm with OK.
  ➔ LED lights up red.

5.2 Feedback about sent parameters

After sending the parameters with the remote control, the following feedback is given via the LED integrated in the detector:

Flickering for 2 s
After sending the new parameter with remote control or app, the detector indicates the correct reception by flickering for 2 s.

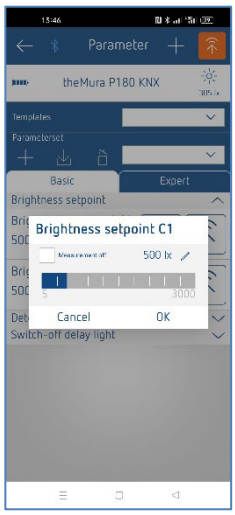
Lighting up briefly
The parameter/command sent from the remote control was rejected by the detector. The command is not valid.
Check the selected detector type and sent parameters with remote control or app remote control (app).

Adjustment of parameters does not change the settings in ETS.

6 Parameters and control commands via app/remote control

6.1 Parameters

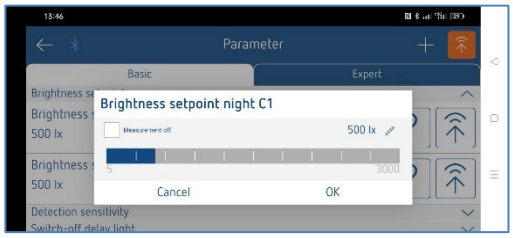
Brightness setpoint value C1



theSenda B/app

theSenda P

Brightness setpoint night C1



theSenda B/app

Brightness actual value C1

Query of the currently measured actual brightness value (room correction factor C1 taken into account).

➢ Follow the instructions in the app.

Room correction factor C1

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.
With the room correction factor, the brightness measurement value of lighting channel C1 is adjusted to the conditions in the room. The standard value is 0.3 and is suitable for most

applications.
Changes only make sense in highly deviating situations.

For more information, see chapter **Brightness switching/setpoint value.**

Brightness measurement value C1

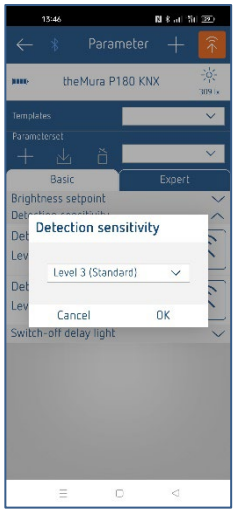
When the actual brightness measurement is sent to the detector, the room correction factor is recalculated.

- After selecting the parameter **Brightness measurement C1** either press **Input** and enter brightness measurement value C1 manually.
- or follow the instructions in the app and confirm with OK.
  - ➔ The current brightness measurement value is displayed.
- Confirm with OK.
- Send the current brightness measurement value to the detector.

Detection sensitivity

The detector has 3 sensitivity levels for motion detection:

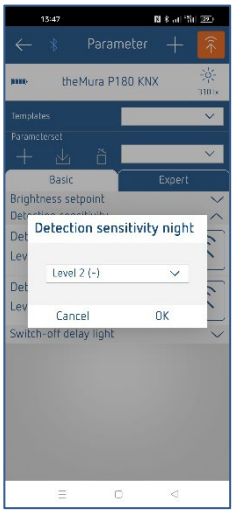
Level	Sensitivity
1 (--)	Very insensitive
2 (-)	Insensitive
3 (Standard)	Standard



theSenda B/app

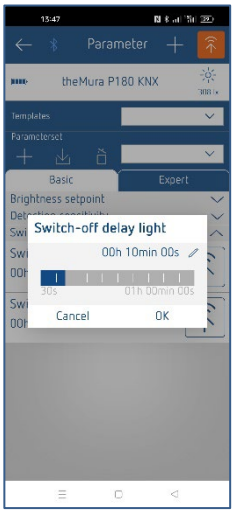
theSenda P

Detection sensitivity night



theSenda B/app

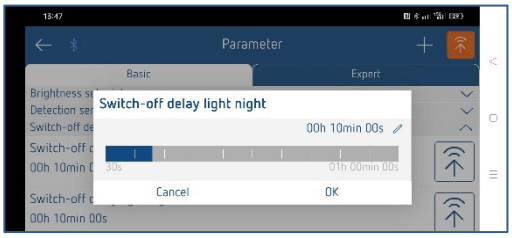
Switch off delay light



theSenda B/app

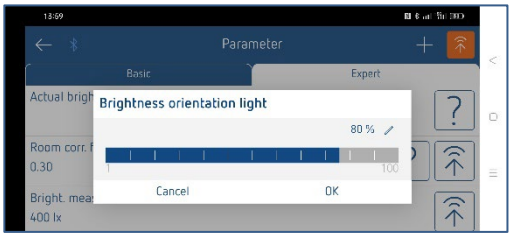
theSenda P

Switch off delay night



theSenda B/app

Brightness orientation light



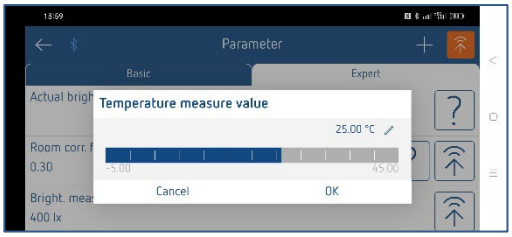
theSenda B/app

Acoustic sensor sensitivity/Acoustic sensor sensitivity night

The detector has 4 levels for acoustic detection:

Level	Sensitivity
Off (default)	The acoustic sensor is switched off.
1 (--)	Very insensitive
2 (-)	Insensitive
3	Sensitive

Temperature measurement value



theSenda B/app

It is recommended to calibrate the temperature measurement due to self-heating at the earliest 30 min after start-up.

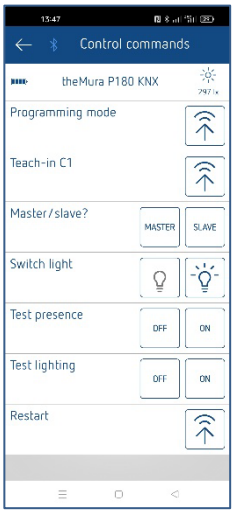
If the temperature measurement value to be sent is more than +/- 5 K apart from the temperature that the detector is actually measuring, the command will be rejected by the detector.

Temperature actual value
Query of the currently measured actual temperature value (temperature offset taken into account).

- Follow the instructions in the app.

6.2 Control commands

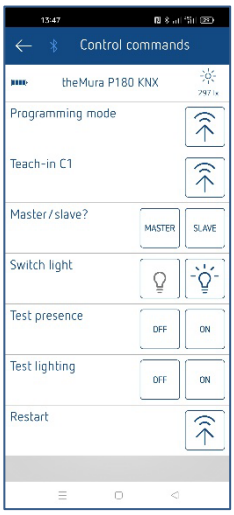
Programming mode



theSenda B/app

theSenda P

Teach-in C1

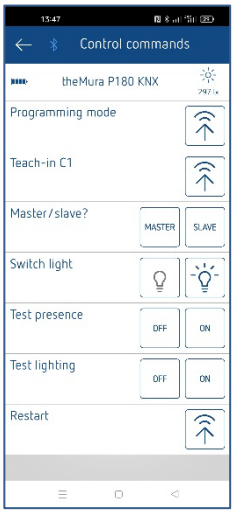


theSenda B/app

theSenda P

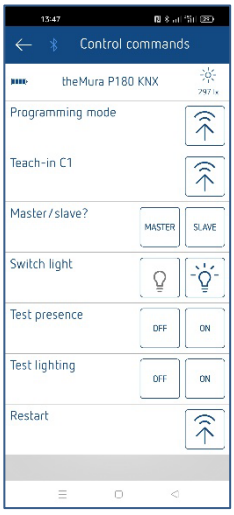
Always that setpoint is changed which is active when the teach-in is carried out:
Brightness setpoint value C1
Brightness setpoint C1 night

Master / Slave?



theSenda B / app

Switch light



theSenda B / app

theSenda B

theSenda P

theSenda S

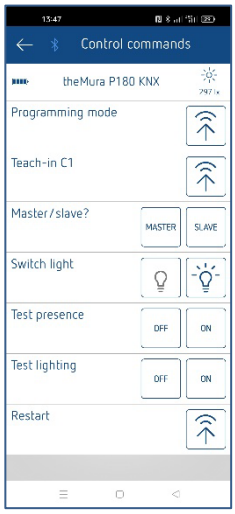
Test presence

See chapter **Presence test mode.**

Test lighting

See chapter **Presence test mode.**

Restart



theSenda B/app

theSenda P

7 The application programme theMura

7.1 Selection in the product database

Manufacturer	Theben AG	Theben AG
Product family	Physical sensors	Physical sensors
Product type	Presence detector	Presence detector
Programme name	theMura P180 KNX	theMura P180 2.20 KNX

Number of communication objects	129
Number of group addresses	255
Number of associations	255

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

7.2 Overview of communication objects

7.2.1 Lighting channels C1, C2

No.	Object name	Function	Length	R	W	C	T	U	DPT
1	*C1 Light output*	*Switching*	1 bit	R	W	C	T	-	1.001
2	*C1 Light input*	*Switching external push button*	1 bit	-	W	C	-	-	1.001
3	*C1 Light output*	*Brighter/darker*	4 bit	R	-	C	T	-	3.007
4	*C1 Light input*	*External button brighter/darker*	4 bit	-	W	C	-	-	3.007
5	*C1 Light output*	*Send value*	1 byte	R	-	C	T	-	5.001
6	*C1 Light input*	*Send value external push button*	1 byte	-	W	C	-	-	5.001
7	*C1 Light input*	*Feedback value*	1 byte	-	W	C	T	U	5.001
11	*C1 brightness switching value*	*Receive value*	2 bytes	-	W	C	-	-	9.004
	C1 brightness setpoint value	*Receive value*	2 bytes	-	W	C	-	-	9.004
12	*C1 brightness switching value*	*Send value*	2 bytes	R	-	C	T	-	9.004
	C1 brightness setpoint value	*Send value*	2 bytes	R	-	C	T	-	9.004
13	*C1 brightness switching value night*	*Receive value*	2 bytes	-	W	C	-	-	9.004
	C1 brightness setpoint value night	*Receive value*	2 bytes	-	W	C	-	-	9.004
14	*C1 brightness switching value night*	*Send value*	2 bytes	R	-	C	T	-	9.004
	C1 brightness setpoint value night	*Send value*	2 bytes	R	-	C	T	-	9.004
15	*C1 brightness switching value (teach-in)*	*$01= call up/ $81 = save*	1 byte	-	W	C	-	-	18.001
	C1 brightness setpoint value (teach-in)	*$01= call up/ $81 = save*	1 byte	-	W	C	-	-	18.001
18	*Measurement value on lux meter*	*Receive value*	2 bytes	-	W	C	-	-	9.004
19	*Room correction factor*	*Call up value*	2 bytes	R	-	C	T	-	9.xxx
20	*Brightness value*	*Send lux value*	2 bytes	R	-	C	T	-	9.004
21	*External brightness value*	*Receive lux value*	2 bytes	-	W	C	-	-	9.004
22	*Measurement value temperature*	*Receive value*	2 bytes	-	W	C	-	-	9.001
23	*Temperature offset*	*Call up value*	2 bytes	R	-	C	T	-	9.002
24	*Temperature value*	*Send value*	2 bytes	R	-	C	T	-	9.001
28	*C2 Light output*	*Switching*	1 bit	R	-	C	T	-	1.001
29	*C2 Light input*	*Switching external push*	1 bit	-	W	C	-	-	1.001

No.	Object name	Function	Length	R	W	C	T	U	DPT
		button							
30	*C2 Light output*	*Brighter/darker*	4 bit	R	-	C	T	-	3.007
31	*C2 Light input*	*External button brighter/darker*	4 bit	-	W	C	-	-	3.007
32	*C2 Light output*	*Send value*	1 byte	R	-	C	T	-	5.001
33	*C2 Light input*	*Send value external push button*	1 byte	-	W	C	-	-	5.001
34	*C2 Light input*	*Feedback value*	1 byte	-	W	C	T	U	5.001
38	*C1, C2 light*	*Day-night changeover*	1 bit	-	W	C	-	-	1.003
39	*C1, C2 light*	*Selection of constant lighting control*	1 bit	-	W	C	-	-	1.003
	C1, C2 light constant lighting control	*Activate/deactivate*	1 bit	-	W	C	-	-	1.003
40	*C1, C2 light*	*Standby function*	1 bit	-	W	C	-	-	1.003
41	*C1, C2 lighting time delay*	*Receive value*	2 bytes	-	W	C	-	-	7.005
42	*C1, C2 lighting time delay*	*Send value*	2 bytes	R	-	C	T	-	7.005
43	*C1, C2 lighting time delay night*	*Receive value*	2 bytes	-	W	C	-	-	7.005
44	*C1, C2 lighting time delay night*	*Send value*	2 bytes	R	-	C	T	-	7.005
45	*C1, C2 light*	*Block/unblock*	1 bit	-	W	C	-	-	1.003
46	*Central command*	*Receive*	1 bit	-	W	C	-	-	1.001
47	*External scene*	*Receive*	1 byte	-	W	C	-	-	18.001
48	*Red LED*	*Receive*	1 bit	-	W	C	-	-	1.001
49	*Orientation light*	*Receive*	1 bit	-	W	C	-	-	1.003

7.2.2 HVAC channels C4, C5

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
53. .55		Channel C5 (details: see channel C4)							

7.2.3 Room monitoring C6

No.	Object name	Function	Length	R	W	C	T	U	DPT
56	*C6 room monitoring*	*Message*	1 bit	-	-	C	T	-	1.005
57	*C6 room monitoring*	*Confirmation*	1 bit	-	W	C	-	-	1.016
58	*C6 room monitoring*	*Sabotage cyclically*	1 bit	-	-	C	T	-	1.005
59	*C6 room monitoring*	*Release*	1 bit	-	W	C	-	-	1.003

7.2.4 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
62	*Aura effect output*	*Send motion status*	2 bytes	-	-	C	T	-	7.005
63	*Aura effect input*	*Receive motion status*	2 bytes	-	W	C	-	-	7.005
64	*Aura effect*	*Enable*	1 bit	-	W	C	-	-	1.003
65	*Scene input*	*Scene 1/2*	1 bit	-	W	C	-	-	1.022
66	*Scene output*	*Scene number*	1 byte	-	-	C	T	-	18.001
67	*IR switching external 1*	*Switching*	1 bit	-	-	C	T	-	1.001
68	*IR dimming external 1*	*Brighter/darker*	4 bit	-	-	C	T	-	3.007
69	*IR switching external 2*	*Switching*	1 bit	-	-	C	T	-	1.001
70	*IR dimming external 2*	*Brighter/darker*	4 bit	-	-	C	T	-	3.007
71	*IR external blinds 1*	*Blinds Up/Down*	1 bit	-	-	C	T	-	1.001
72	*IR external blinds 1*	*Open/close slats*	1 bit	-	-	C	T	-	1.009
73	*IR external blinds 2*	*Blinds Up/Down*	1 bit	-	-	C	T	-	1.001
74	*IR external blinds 2*	*Open/close slats*	1 bit	-	-	C	T	-	1.009
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

7.2.5 Logic channels C18-C23

No.	Object name	Function	Length	R	W	C	T	U	DPT
80	*C18 Logic module*	*Logic input 1 in AND gate*	1 bit	-	W	C	-	U	1.002
	C18 Logic module	*Logic input 1 in OR gate*	1 bit	-	W	C	-	U	1.002
	C18 Logic module	*Logic input 1 in XOR gate*	1 bit	-	W	C	-	U	1.002
81	*C18 Logic module*	*Logic input 2 in AND gate*	1 bit	-	W	C	-	U	1.002
	C18 Logic module	*Logic input 2 in OR gate*	1 bit	-	W	C	-	U	1.002
	C18 Logic module	*Logic input 2 in XOR gate*	1 bit	-	W	C	-	U	1.002
82	*C18 Logic module*	*Logic input 3 in AND gate*	1 bit	-	W	C	-	U	1.002
	C18 Logic module	*Logic input 3 in OR gate*	1 bit	-	W	C	-	U	1.002
83	*C18 Logic module*	*Logic input 4 in AND gate*	1 bit	-	W	C	-	U	1.002
	C18 Logic module	*Logic input 4 in OR gate*	1 bit	-	W	C	-	U	1.002
84	*C18 Logic module*	*Block/unblock*	1 bit	-	W	C	-	-	1.003
85	*C18.1 Logic module*	*Switching*	1 bit	R	-	C	T	-	1.001
	C18.1 Logic module	*Priority*	2 bit	R	-	C	T	-	2.001
	C18.1 Logic module	*Valuator*	1 byte	R	-	C	T	-	5.010
	C18.1 Logic module	*Percentage value*	1 byte	R	-	C	T	-	5.001
	C18.1 Logic module	*HVAC operating mode*	1 byte	R	-	C	T	-	20.102
	C18.1 Logic module	*Scenes*	1 byte	R	-	C	T	-	17.001
86	*C18.2 Logic module*	*Switching*	1 bit	R	-	C	T	-	1.001
	C18.2 Logic module	*Priority*	2 bit	R	-	C	T	-	2.001
	C18.2 Logic module	*Valuator*	1 byte	R	-	C	T	-	5.010
	C18.2 Logic module	*Percentage value*	1 byte	R	-	C	T	-	5.001
	C18.2 Logic module	*HVAC operating mode*	1 byte	R	-	C	T	-	20.102
	C18.2 Logic module	*Scenes*	1 byte	R	-	C	T	-	17.001
90-136	Channels C19-C23 (details: see channel C18)								

7.2.6 Integrated push button I1: Push button function

No.	Object name	Function	Length	R	W	C	T	U	DPT
201	*Integrated push button I1.1*	*Switching*	1 bit	R	W	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
202	*Integrated push button I1.2*	*Switching*	1 bit	R	W	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
205	*Integrated push button I1*	*Block = 1*	1 bit	-	W	C	-	-	1.001
		Block = 0	1 bit	-	W	C	-	-	1.003

7.2.7 Integrated push button I1: Dimming function

No.	Object name	Function	Length	R	W	C	T	U	DPT
201	*Integrated push button I1*	*Switching*	1 bit	R	W	C	T	-	1.001
202	*Integrated push button I1*	*Brighter/darker*	4 bit	R	-	C	T	-	3.007
		Brighter	4 bit	R	-	C	T	-	3.007
		Darker	4 bit	R	-	C	T	-	3.007
Double-click									
203	*Integrated push button I1.1*	*Switching*	1 bit	R	W	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
205	*Integrated push button I1*	*Block = 1*	1 bit	-	W	C	-	-	1.001
		Block = 0	1 bit	-	W	C	-	-	1.003

7.2.8 Integrated push button I1: Blinds function

No.	Object name	Function	Length	R	W	C	T	U	DPT
201	*Integrated push button I1*	*Step/stop*	1 bit	R	-	C	T	-	1.010
202	*Integrated push button I1*	*UP/DOWN*	1 bit	R	W	C	T	-	1.008
		DOWN	1 bit	R	-	C	T	-	1.008
		UP	1 bit	R	-	C	T	-	1.008
Double-click									
203	*Integrated push button I1.1*	*Switching*	1 bit	R	W	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
		Height % [1]	1 byte	R	-	C	T	-	5.001
204	*Integrated push button I1.2*	*Slat %* [2]	1 byte	R	-	C	T	-	5.001
205	*Integrated push button I1*	*Block = 1*	1 bit	-	W	C	-	-	1.001
		Block = 0	1 bit	-	W	C	-	-	1.003

7.2.9 Integrated push button I1: Direct switching, direct dimming

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

7.2.10 External inputs I2, I3: Switch function

No.	Object name	Function	Length	R	W	C	T	U	DPT
211	*Input I2.1*	*Switching*	1 bit	R	W	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
212	*Input I2.2*	*Switching*	1 bit	R	W	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
215	*Input I2*	*Block = 1*	1 bit	-	W	C	-	-	1.001
		Block = 0	1 bit	-	W	C	-	-	1.003

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

No.	Object name	Function	Length	R	W	C	T	U	DPT
221-225	Input I3 (details: see input I2)								

7.2.11 External inputs I2, I3: Push button function

No.	Object name	Function	Length	R	W	C	T	U	DPT
211	*Input I2.1*	*Switching*	1 bit	-	W	C	T	-	1.001
		Priority	2 bit	-	-	C	T	-	2.001
		Send value	1 byte	-	-	C	T	-	5.010
		Send percentage value	1 byte	-	-	C	T	-	5.001
212	*Input I2.2*	*Switching*	1 bit	-	W	C	T	-	1.001
		Priority	2 bit	-	-	C	T	-	2.001
		Send value	1 byte	-	-	C	T	-	5.010
		Send percentage value	1 byte	-	-	C	T	-	5.001
215	*Input I2*	*Block = 1*	1 bit	-	W	C	-	-	1.001
		Block = 0	1 bit	-	W	C	-	-	1.003
221-225	Input I3 (details: see input I2)								

7.2.12 External inputs I2, I3: Dimming function

No.	Object name	Function	Length	R	W	C	T	U	DPT
211	*Input I2*	*Switching*	1 bit	R	W	C	T	-	1.001
212	*Input I2*	*Brighter/darker*	4 bit	R	-	C	T	-	3.007
		Brighter	4 bit	R	-	C	T	-	3.007
		Darker	4 bit	R	-	C	T	-	3.007
Double-click									
213	*Input I2.1*	*Switching*	1 bit	R	W	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
215	*Input I2*	*Block = 1*	1 bit	-	W	C	-	-	1.001
		Block = 0	1 bit	-	W	C	-	-	1.003
221-225	Input I3 (details: see input I2)								

7.2.13 External inputs I2, I3: Blinds function

No.	Object name	Function	Length	R	W	C	T	U	DPT
211	*Input I2*	*Step/stop*	1 bit	-	-	C	T	-	1.010
212	*Input I2*	*UP/DOWN*	1 bit	R	W	C	T	-	1.008
		DOWN	1 bit	R	-	C	T	-	1.008
		UP	1 bit	R	-	C	T	-	1.008
Double-click									
213	*Input I2.1*	*Switching*	1 bit	R	W	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
		Height % [3]	1 byte	R	-	C	T	-	5.001
214	*Input I2.2*	*Slat %* [4]	1 byte	R	-	C	T	-	5.001
215	*Input I2*	*Block = 1*	1 bit	-	W	C	-	-	1.001
		Block = 0	1 bit	-	W	C	-	-	1.003
221-225	Input I3 (details: see input I2)								

7.2.14 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

[3] Upon double-click with object type = *Height % + slat %*
[4] Upon double-click with object type = *Height % + slat %*

7.3 Description of communication objects

7.3.1 Lighting control

Obj.	Name	Function	Description
1	*C1 Light output*	*Switching*	In the *Light function = Switching light*, the light switch output C1 sends an ON telegram upon detecting a movement and insufficient brightness, and an OFF telegram after the time delay has elapsed or when the brightness is sufficient: 0 = absence or sufficient brightness (OFF) 1 = presence and insufficient brightness (ON)
1 3 5 7	*C1 Light output* *C1 Light output* *C1 Light output* *C1 Light input*	*Switching* *Brighter/darker* *Send value* *Feedback value*	Objects 3,5,7 are available if *Light function = Constant lighting control* or *Switching light* with *Lighting dimmable in switching mode = yes* is set. In the *Light function = Constant lighting control*, objects 1,3,5,7 are used for constant lighting control, unless an additional external push-button is used. Configuration for use with an external push button, see chapter **Application examples**. All four objects must be linked for a functioning constant lighting control. A different response is produced depending on configuration. The constant lighting control can be started with a value or an ON telegram. For further details, see chapter **Channel C1 Light Constant lighting control - Detail settings.** In the *Light function = Constant lighting control* or *Constant lighting control without influence of presence*, the constant lighting control can also be used without presence. The use independently of presence can be activated and deactivated via object 39. The response under manual control can be selected as either "school" or "office". Please observe the information on push button operation.
2	*C1 Light input*	*Switching external push button*	1-bit input object for manual override of the detector using an external push button. Function: Switching Behaviour of lighting see chapter **Operation**.
4	*C1 Light input*	*External button brighter/darker*	Object is available if *Light function = Constant lighting control* or *Switching light* with *Lighting dimmable in switching mode = yes* is set.

Obj.	Name	Function	Description
			4-bit input object for manual override of the detector using an external push button. Function: Dimming Behaviour of lighting see chapter **Operation**.
6	*C1 Light input*	*Send value external push button*	Object is available if *Light function = Constant lighting control* or *Switching light* with *Lighting dimmable in switching mode = yes* is set. 1-byte input object for manual override of the detector using an external push button. Behaviour of lighting see chapter **Operation**.
11	*C1 brightness switching value* *C1 brightness setpoint value*	*Receive value*	Object is available if *Set brightness switching/setpoint value via bus = yes* is set. This allows the brightness switching/setpoint value to be changed during operation. If the received value is outside the value range (5..3000 lux) or if the brightness switching/setpoint 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	*C1 brightness switching value* *C1 brightness setpoint value*	*Send value*	The object returns the stored value of the brightness switching/setpoint value. When changing the brightness switching/setpoint value via remote control, the new value will be sent. In switching mode, value "0" means "Measurement OFF".
13	*C1 brightness switching value night* *C1 brightness setpoint value night*	*Receive value*	Object is available if *Set brightness switching/setpoint value night via bus = yes* is set. This allows the brightness switching/setpoint 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/setpoint 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.
14	*C1 brightness switching value night*	*Send value*	The object returns the stored value of the brightness switching/setpoint value night.

Obj.	Name	Function	Description
	C1 brightness setpoint value night		When changing the brightness switching/setpoint value via remote control, the new value will be sent. In switching mode, value "0" means "Measurement OFF".
15	*C1 brightness switching value (teach-in)* *C1 brightness setpoint value (teach-in)*	*$01=call up, $81=save*	Object is available if *Set brightness switching/setpoint value via bus = yes* is set. With a value telegram $81 (129), the detector adopts the currently measured brightness value [lux] as the new brightness switching/setpoint value or night brightness switching/setpoint value (depending on which is currently active). If the night brightness switching/setpoint value has been switched to, the currently measured brightness value [lux] is adopted into the night brightness switching/setpoint value by the value telegram $81 (129). Object 12 sends the saved value of the currently active brightness switching/setpoint value, or object 14 sends the night brightness switching/setpoint value (depending on which is currently active). With a value telegram $01 (1), object 15 sends the current brightness switching/setpoint value, or object 14 if the night brightness switching/setpoint value is active. The transfer is made to the currently active brightness switching/setpoint value.
18	*Measurement value on lux meter*	*Receive value*	Object is available if *Set brightness measurement value via bus = yes* is set. 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 or app remote control "theSenda B" (with "theSenda Plug" app). The room correction factor is calculated automatically immediately after entry. Object 19 sends the stored value.
19	*Room correction factor*	*Call up value*	Object is available if *Set brightness measurement value via bus = yes* is set. 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

Obj.	Name	Function	Description
			set to the appropriate limit value. For monitoring purposes the room correction factor can be queried via the object.
20	*Brightness value*	*Send lux value*	Object is available if *Send brightness measurement value on bus = yes* is set. The detector sends the currently measured brightness value as a 2-byte telegram via the object. The frequency of telegrams depends on the cycle time and the minimum change in brightness. The 2-byte telegrams to the object are used to visualise a brightness value. Using the detector's internal constant lighting control function is recommended for a control. The brightness value will be adapted to the conditions inside the room with the room correction factor. See parameter *Room correction factor brightness.*
21	*External brightness value*	*Receive lux value*	Object is available if *Brightness measurement source = external* is set. As an alternative to light measurement, an external brightness value can be used via the object.
22	*Measurement value temperature*	*Receive value*	Object is available if *Set temperature measurement value via bus = yes* is set. The measured ambient temperature is required to calculate the temperature offset. The measured temperature value is sent via object 22 or app remote control "theSenda B"-(with "theSenda Plug" app). The temperature offset is calculated automatically immediately after entry. Object 23 sends the stored value. If the value of the calculated temperature offset is outside -5 K to +5 K, no new temperature offset will be set. It is recommended to calibrate the temperature measurement due to self-heating at the earliest 30 min after start-up.
23	*Temperature offset*	*Call up value*	Object is available if *Set temperature measurement value via bus = yes* is set. The temperature offset is calculated automatically following the entry of the temperature value, or it is entered via ETS. Permissible values lie between -5.0 and 5.0. Calculated or entered values outside the

Obj.	Name	Function	Description
			permitted range will be rejected and not adopted. For monitoring purposes the temperature offset can be queried via the object.
24	*Temperature value*	*Send temperature value*	Object is available if *Send temperature value on bus = yes* is set. The detector sends the currently measured temperature value as a 2-byte telegram via the object. The frequency of telegrams depends on the cycle time and the minimum change in temperature. The temperature value is adapted to the conditions in the room using the temperature offset. See parameter *Temperature offset*.
28	*C2 Light output*	*Switching*	If two switch outputs are used, the object is used for brightness-dependent switching of Channel C2 Light. Function, see object 1: *C1 Light output*.
28 30 32 34	*C2 Light output* *C2 Light output* *C2 Light output* *C2 Light input*	*Switching* *Brighter/darker* *Send value* *Feedback value*	Objects 30,32,34 are available if *Light function = Constant lighting control or Switching light* with *Lighting dimmable in switching mode = yes* is set. If two channels are used, all 4 objects are used for control or constant lighting control of Channel C2 Light. Function, see objects 1,3,5,7: *Channel C1 Light*.
29	*C2 Light input*	*Switching external push button*	1-bit input object for manual override of the detector using an external push button. Function: Switching Behaviour of lighting with 2 channels, see chapter **Operation**.
31	*C2 Light input*	*External button brighter/darker*	4-bit input object for manual override of the detector using an external push button. Function: Dimming Behaviour of lighting with 2 channels, see chapter **Operation**.
33	*C2 Light input*	*Send value external push button*	Object is available if *Light function = Constant lighting control* or *Switching light* with *Lighting dimmable in switching mode = yes* is set. 1-byte input object for manual override of the detector using an external push button. Behaviour of lighting with 2 channels, see chapter **Operation**.

Obj.	Name	Function	Description
38	*C1, C2 light*	*Day-night changeover*	Object available if for a night parameter = *yes* is set, e.g. *Other detection sensitivity at night = yes* For channels C1, C2 Light, different values can be stored for the night depending on the parameter. ON telegram to the object activates the day mode (standard). OFF telegram to the object activates the night mode.
39	*C1 Light* *C1, C2 light*	*Selection constant lighting control*	Object is available if *Light function*= *Constant lighting control* is set. Response when using *Constant lighting control*: ON telegram to the object starts the control without influence of presence. The *Configuration type* of the lighting channel is automatically switched to *Fully automatic device*. OFF telegram to object deactivates the presence-independent control and the presence-dependent constant lighting control is resumed. The set *Configuration type* will be restored.
39	*C1 Light constant lighting control* *C1, C2 light constant lighting control*	*Activate/deactivate*	Object is available if *Light function = Constant lighting control without influence of presence* is set. Response when using *Constant lighting control without influence of presence*: ON telegram to the object starts the control. OFF telegram to object deactivates the control and switches the lighting off. The 2 lighting channels C1/C2 can be switched and dimmed separately.
40	*C1 Light* *C1, C2 light*	*Standby function*	The standby function is available if *Light standby time = active* is set. The standby function can be deactivated and reactivated via the object. The standby function is activated by default.
41	*C1 lighting time delay* *C1, C2 lighting time delay*	*Receive value*	Object is available if *Set lighting time delay via bus = yes* is set. The time delay can be set jointly for lighting channels C1, C2 in a range from 30 s to 60 min via the object. The value must be sent in seconds. Over the course of 2 to 30 minutes, the lighting time delay is adjusted adaptively.
42	*C1 lighting time delay* *C1, C2 lighting time*	*Send value*	Object is available if *Set lighting time delay via bus = yes* is set.

Obj.	Name	Function	Description
	delay		The object returns the stored value of the Lighting time delay. When changing the lighting time delay via remote control, the new value is sent.
43	*C1 lighting time delay night* *C1, C2 lighting time delay night*	*Receive value*	Object is available if *Set lighting time delay night via bus = yes* is set. The time delay can be set jointly for lighting channels C1, C2 for the night in a range from 30 s to 60 min via the object. The value must be sent in seconds. Over the course of 2 to 30 minutes, the lighting time delay is adjusted adaptively.
44	*C1 lighting time delay night* *C1, C2 lighting time delay night*	*Send value*	Object is available if *Set lighting time delay night via bus = yes* is set. The object returns the stored value of the lighting time delay night. When changing the lighting time delay night via remote control, the new value is sent.
45	*C1 Light* *C1, C2 light*	*Block/unblock*	Object is available if *Activate block function = yes* is set. The channels light are blocked jointly with an ON or OFF telegram. At the start of the blocking process, the light outputs optionally send one of the following previous telegrams: ON, OFF, no telegram, value X%. During the blocking, the channels do not send any telegrams, neither on the basis of presence/absence nor on the basis of brightness. The channels light are 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 or constant lighting control.
46	*Central command*	*Receive*	An ON telegram switches the channels C1, C2 light on. The response of the detector is as if the user switches it on via a push button. The response depends on the selected control type. See chapter **Operation**. An OFF telegram switches the channels C1, C2 light according to the following conditions: - no movement within the past 5 seconds: The light switches off immediately. The running time delays for channels C1, C2 light and standby time are set to 0. Afterwards, the detector is in normal

Obj.	Name	Function	Description
			operation. If *Duration of light standby time* is set to *always ON*, channels C1, C2 are not switched off, but instead go into to the set standby operation. 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. Detector is blocked: The central command is not executed.
47	*External scene*	*Receive*	Object is available if *Activate channel C1 light = yes* is set. Scene numbers sent directly to the actuator can be directed to the detector to block / unblock the lighting channels of the detector, to deactivate / activate control, or to use internal scene 1 / 2. See chapter **Scene functions**.
48	*Red LED*	*Receive*	Object is available if *Control red LED via object = yes* is set. 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.
49	*Orientation light*	*Receive*	Object is available if *Control orientation light via object = yes* is set. When an ON telegram is received on the object, the white LED is switched on. The white LED is switched off by means of an OFF telegram, or automatically when changing over from night to day, or when the detector is restarted.

7.3.2 HVAC channels C4, C5

Obj.	Name	Function	Description
50 51 53 54	*C4.1 HVAC* *C4.2 HVAC* *C5.1 HVAC* *C5.2 HVAC*	*Switching* *Priority* *Send value* *Send percentage value* *Send HVAC operating mode* *Send scene*	Object is available if *Activate channel C4 HVAC* or *Activate channel C5 HVAC = yes* is set. Channel C4, C5 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.
52 55	*C4 HVAC* *C5 HVAC*	*Block/unblock*	Object is available if *Activate block function = yes* 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.

7.3.3 Room monitoring C6

Obj.	Name	Function	Description
56	*C6 room monitoring*	*Message*	Objects 59 - 59 are available if *Activate channel C6 room monitoring = yes* is set. Depending on the configuration, the detector sends the motion information via object with increased security against faulty activation. *Type of report = Cyclical with acknowledgement:* The monitoring channel sends an ON telegram on detection of movement. The detector sends again an ON telegram if the telegram is not confirmed within the configured waiting time on object 57. This process is repeated until a confirmation is received. The dead time after acknowledgement can be set. *Type of report = Switching On/Off:*

Obj.	Name	Function	Description
			On detection of a movement, the monitoring channel sends an ON telegram, and an OFF telegram after expiration of the monitoring time delay.
57	*C6 room monitoring*	*Confirmation*	If the monitoring channel is configured to *Cyclical with acknowledgement*, the detector expects a 0 or 1 telegram to the object. It repeats the ON telegram at cyclical intervals, as long as there is no confirmation. The dead time after acknowledgement can be set.
58	*C6 room monitoring*	*Sabotage cyclically*	In order to identify the dismounting of the detector, object 58 continuously sends OFF telegrams, as long as the detector is operating.
59	*C6 room monitoring*	*Release*	During operation, channel C6 room monitoring can be enabled with an ON telegram to object 59, or disabled with an OFF telegram. During the blocking, no telegrams are transmitted via object 56.

7.3.4 Characteristics of the general objects

Obj.	Name	Function	Description
60	*Parallel switching output*	*Trigger output*	Object is available if *Master operating mode* = *Parallel switching* or *Operating mode* = *Slave* is set. 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. 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 or controls 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. 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**.
61	*Parallel switching input*	*Trigger input*	Object is available if *Master operating mode* = *Parallel switching* is set. 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 *Trigger output*.
62	*Aura effect output*	*Send motion status*	Object is available if *Master operating mode* = *Aura effect* is set. With presence and lighting switched on, the detector sends a time value telegram with the set *Cycle time aura effect* via the object to the adjacent detection zones. See also **Application examples of aura effect**.
63	*Aura effect input*	*Receive motion status*	Object is available if *Master operating mode* = *Aura effect* is set. If in this detection zone, a time value

Obj.	Name	Function	Description
			telegram is received and at the same time no one is present in this detection zone, then the aura effect is started, i.e. the lighting will be switched on to the set *Aura dimming value*. If the lighting is switched off, the aura effect is only started if there is insufficient brightness. If standby operation is active, it will be overridden by the aura effect. After the aura effect has ended, standby operation will be resumed. See also **Application examples of aura effect**.
64	*Aura effect*	*Enable*	Object is available if *Master operating mode = Aura effect* is set. The aura effect function can be deactivated or activated via a 0 or 1 telegram. If the function is deactivated, no telegrams from object 63 are considered.
65	*Scene input*	*Scene 1/2*	Object is available if *Scene controls = use internal scene* is set. An OFF telegram to the object calls up scene 1, an ON telegram to the object calls up scene 2.
66	*Scene output*	*Scene number*	Object is available if *Scene controls = Send scene number on bus* is set. When the scene buttons on the user remote control "theSenda S" are pressed, the scene output object sends the set scene number.
67 68	*IR switching external 1* *IR switching external 1*	*Switching* *Brighter/darker*	If during configuration an IR group address is allocated to parameter *External switching/dimming 1*, objects 67 and 68 assume the following function, as soon as a command with the selected IR group address is received: Briefly pressing the push buttons / causes an ON telegram (1) or an OFF telegram (0) to be sent via the object Switching. Holding down the button on the remote control causes "dim brighter" to be sent via the object, and "stop" when released. Holding down the button on the remote control causes "dim darker" to be sent via the object, and "stop" when released.
69 70	*IR switching external 2* *IR switching external 2*	*Switching* *Brighter/darker*	If an IR group address is allocated to the parameter *External switching/dimming 2*, objects 69 and 70 assume the same function as described for objects 67 and 68, as soon as a command with the selected IR group address is received.
71	*IR external blinds 1*	*Blinds Up/Down*	If during configuration an IR group address is

Obj.	Name	Function	Description
72	*IR external blinds 1*	*Open/close slats*	allocated to the parameter *External blinds 1*, objects 71 and 72 assume the following function, as soon as a command with the selected IR group address is received: Briefly pressing the buttons 💡/ 💡 causes a 0 or 1 telegram to be sent via the object "Open/close slats". Holding down the buttons 💡/ 💡 causes a 0 or 1 telegram to be sent via the object "Blinds up/down".
73 74	*IR external blinds 2* *IR external blinds 2*	*Blinds Up/Down* *Open/close slats*	If during configuration an IR group address is allocated to the parameter *External blinds 2*, objects 73 and 74 assume the same function as described for objects 71 and 72, as soon as a command with the selected IR group address is received.
75	*Test mode presence*	*On/Off*	An ON telegram activates test mode presence for the duration of the configured time. An OFF telegram ends test mode presence early and the detector restarts. For the description of test mode presence, see **Test mode presence**.
76	*Test mode light*	*On/Off*	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**.
77	*Software version*	*Send*	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. 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

7.3.5 Logic channels C18-C23

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*).

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

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*).

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

Object 90-136

Objects for C19-C23, function: see C18.

7.3.6 Integrated push button I1

7.3.6.1 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.

7.3.6.2 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.

7.3.6.3 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.

7.3.6.4 Function Control lighting channel C1, C2 directly

If the function Control lighting channel (C1,C2) 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.

7.3.7 External inputs I2, I3:

7.3.7.1 Switch function

Object 211: Input I2.1 – switching, priority, send value, send percentage value
First output object of the external input (first telegram).
4 telegram formats can be set:
Switching On/Off, priority, send value, send percentage value.

Object 212: Input I2.2 – switching, priority, send value, send percentage value
Second output object of the external input (second telegram).
4 telegram formats can be set:
Switching On/Off, priority, send value, send percentage value.

Object 215: Input I2 – block = 1 or block = 0
This object is used to block the control via the external input.
The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

Objects 221-225
Objects for input I3 (details: see input I2).

7.3.7.2 Push button function

Object 211: Input I2.1 – switching, priority, send value, send percentage value
First output object of the external input (first telegram).
4 telegram formats can be set:
Switching On/Off, priority, send value, send percentage value.

Object 212: Input I2.2 – switching, priority, send value, send percentage value
Second output object of the external input (second telegram).
4 telegram formats can be set:
Switching On/Off, priority, send value, send percentage value

Object 215: Input I2 – block = 1 or block = 0
This object is used to block the control via the external input.
The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

Objects 221-225
Objects for input I3 (details: see input I2).

7.3.7.3 Dimming function

Object 211: Input I2.1 – switching
Switches the dimmer on and off.

Object 212: Input I2.1 – brighter/darker, brighter, darker
4-bit dimming commands.

Object 213: Input I2.1 – 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 215: Input I2 – block = 1 or block = 0
This object is used to block the control via the external input.
The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

Objects 221-225
Objects for input I3 (details: see input I2).

7.3.7.4 Blinds function

Object 211: Input I2 – step/stop
Sends step/stop commands to the blind actuator.

Object 212: Input I2 – UP/DOWN, UP, DOWN
Sends operating commands to the blind actuator.

Object 213: Input I2.1 – 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 214: Input I2.2 – slat %
Slat telegram for positioning the blinds upon double-click (together with object height %, with *object type = height + slat*).

Object 215: Input I2 – block = 1 or block = 0
This object is used to block the control via the external input.
The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

Objects 221-225
Objects for input I3 (details: see input I2).

7.4 Parameter pages overview

7.4.1 General

Parameter page	Description
General	Basic configuration of the device: Channels used and operating mode.
Setting	Detection sensitivity, brightness/temperature measurement, acoustic sensor and LEDs.
Lighting channels	
Channel C1 Light	Basic settings for the lighting channel, e.g. function, configuration type, brightness setpoint value, time delay, etc.
Detail settings	Detailed settings for the lighting channel, e.g. dimming function, override, standby, etc.
Block function	Blocking behaviour.
Channel C2 Light	Brightness difference compared to C1.
HVAC channels	
Channel C4 HVAC	Switch-on delay, time delay
Objects	Telegram type, behaviour when presence is detected, etc.
Block function	Blocking behaviour.
Channel C5 HVAC	See channel C4.
Room monitoring	
Room monitoring channel C6	Type of report, acknowledgement, etc.
Remote control	
Remote control	Definition of IR-group addresses.
Scenes	
Scenes	Scene controls.
Scene functions	Behaviour when receiving a scene number.
Logic channels	
Logic channel C18..C23	Number of inputs, links etc.
Objects	Telegram type, switch and blocking behaviour, etc.
Integrated push button I1	
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	
Input I2, I3	
Configuration options	Function of the input, 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	

7.5 General parameters

7.5.1 General

Parameter name	Values	Meaning
Operating mode	***Master***	A Master is capable of lighting control (switching or constant lighting control) and forwarding the presence information.
	Slave	Slaves are used to extend the detection area. They supply presence information to the Master. The *Cycle time parallel switching* parameter is displayed. Please observe the information on parallel switching in chapter **Parallel switching**.
Master operating mode	***Individual switching***	Detector works as an independent device.
	Parallel switching	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 *Cycle time parallel switching* parameter is displayed. Please observe the information on parallel switching in chapter **Parallel switching**.
	Aura effect	The light follows users in the area where they currently are. The lighting in the adjacent detection areas is switched or dimmed to the *Aura dimming value*. The *Cycle time aura effect* parameter is displayed. The aura effect function is not possible in combination with constant lighting control without influence of presence. Please observe the information on the aura effect in the chapter **Aura effect**.
Cycle time Parallel switching	*5 s…**30 s**…5 min*	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.
Activate channel C1 light	***no***	The detector is not used for lighting control.
	yes	The **Channel C1 Light** for lighting control is displayed.
Activate channel C2 light	***no***	No second lighting channel is used.
	yes	C2 uses the same settings as C1, but can work with a setpoint different from C1. Prerequisite: C1 must be activated.

Parameter name	Values	Meaning
Activate channel C4 HVAC	***no***	The detector is not used for controlling HVAC applications.
	yes	The *Channel C4 HVAC* 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).
Activate channel C5 HVAC	***no***	The detector is not used for controlling HVAC applications.
	yes	The **Channel C5 HVAC** parameter page is displayed. Channel C5 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).
Activate channel C6 room monitoring	***no***	The detector is not used for room monitoring.
	yes	The detector provides a presence signal for room monitoring with increased security against false triggering.
Number – logic channels	*0...6*	Number of required logic channels. When used, the *Logic channel Cxx* 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. Possible links are AND, OR or XOR
Activate integrated push button	***no***	The integrated push button is not used.
	yes	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 channels.
Activate binary inputs	***no***	The binary inputs are not used.
	yes	The **Inputs I2, I3** are displayed. Upon application of voltage the input is activated and the configured telegram is sent. Conventional push buttons, switches or any kind of sensor (thermostat, time switch, etc.) can be connected.
Activation of test mode	***via object or remote control, max. 30 min***	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**.

Parameter name	Values	Meaning
	2 min...60 min	

7.5.2 Settings

Parameter name	Values	Meaning
General		
Overwrite parameter setting on download		The setting affects the following parameters: - *Brightness switching/setpoint value* - *Brightness switching/setpoint value night* - *Lighting time delay* - *Lighting time delay night* - *Room correction factor brightness* - *Detection sensitivity* - *Detection sensitivity night* - *Temperature offset*
	Do not overwrite parameter	The relevant parameter values (see above) in the detector remain unchanged. Settings modified with app remote control "theSenda B" ("theSenda Plug" app), installation remote control "theSenda P", or 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.
	Overwrite parameter	The relevant parameter values (see above) in the detector will be overwritten. Settings modified with app remote control "theSenda B" ("theSenda Plug" app), installation remote control "theSenda P", or via object will be lost. The parameters set in the ETS are accepted.
Activate potentiometer operation	*no*	Only the KNX programming mode can be activated/deactivated by means of a potentiometer.
	yes	The potentiometers on the detector can be used to change the brightness switching/setpoint value and the lighting time delay, and also to activate/deactivate the KNX programming mode.

Parameter name	Values	Meaning
		Important: The changeable parameters do not concern the night parameters.
Detection		
Detection sensitivity	*Increment 1(--)* *Increment 2 (-)* ***Increment 3 (standard)***	The detector has 3 sensitivity increments. By selecting the presence test mode, the set sensitivity increment is not changed.
Other detection sensitivity at night	***no*** *yes*	There is no other detection sensitivity for the night. To prevent potential false detections, the detection sensitivity for the night can be reduced in increments.
Detection sensitivity night	*Increment 1(--)* ***Increment 2 (-)*** *Increment 3 (standard)*	Separate sensitivity for the night.
Brightness measurement		
Brightness measurement source	***internal*** *external*	The detector measures the artificial light and daylight by means of an internal light measurement. The brightness value must be supplied via object 21 *External brightness value – Receive lux value*. The optimum cycle time is about 1 s, or at changes greater than 5%.
Light measurement selection	***Use light measurement centre***	This setting cannot be changed.
Room correction factor brightness	*0.05..**0.3**...2.0*	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. The standard value of 0.3 is suitable for most applications. For automatic calculation of the room correction factor see chapter **Calibration of brightness measurement**.
Set brightness measurement value via bus	***no***	Object 18 *Measurement value on lux meter – receive value* and object 19 *Room correction factor – call up value* are hidden.

Parameter name	Values	Meaning
	yes	Object 18 *Measurement value on lux meter – receive value* and object 19 *Room correction factor – call up value* are displayed.
Send brightness value on bus	***no***	The measured brightness value is not transmitted.
	yes	The measured brightness value is sent as a 2-byte telegram via object 20 *Brightness value – Send lux value*. The measured brightness value can be adjusted to the conditions in the room with the *Room correction factor* parameter. The parameters *Send brightness value cyclically* and *Send brightness value upon change* are displayed. Note: If the brightness value is used for external control, please note that *Send brightness value cyclically* is set to *5 s* and *Send brightness value upon change* is set to *> 5%*.
Temperature measurement		
Send temperature value on bus	***no***	The measured temperature value is not transmitted.
	yes	The measured brightness value is sent via object 24 *Temperature value – send temperature value*. The *Temperature offset* parameter can be used to correct the measured temperature value. Any configured temperature offset is taken into account when the temperature value is output.
Temperature offset	*5 K...**0 K**...-5 K*	Correction value for temperature measurement if sent temperature deviates from the actual ambient temperature.
Set temperature measurement value via bus	***no***	Object 22 *Measurement value temperature – receive value* and object 23 *Temperature offset – call up value* are hidden.
	yes	Object 22 *Measurement value temperature – receive value* and object 23 *Temperature offset – call up value* are displayed.
Send temperature value cyclically	***no***	Temperature value is not sent cyclically.
	1 min...30 min	Temperature value is sent cyclically with selected time.
Send temperature value upon	***no***	Temperature value is not sent upon

Parameter name	Values	Meaning
change	*0.2* *0.5* *1* *1.5* *2* *2.5* *3* *3.5* *4* *4.5* *5*	change. Send if the value has changed by the selected value (in K) since the last transmission.
Acoustic sensor		
Acoustic sensor sensitivity	***Off (default)*** *Increment 1(--)* *Increment 2 (-)* *Increment 3*	The acoustic sensor is switched off. The acoustic sensor has 3 sensitivity increments. Selecting the presence test operating mode temporarily deactivates an activated acoustic sensor.
Acoustic sensor operating modes	***Microphone active after detected motion (default)*** *Microphone always active*	The function is activated as soon as the channel Light is switched on. Each time an acoustic signal is detected the time delay of channel Light is restarted. If the light goes out, the microphone is only activated briefly. The microphone is always active, except in semi-automatic configuration type.
Other acoustic sensor sensitivity at night	***no*** *yes*	There is no other acoustic sensor sensitivity for the night. To prevent potential false detections, the acoustic sensor sensitivity for the night can be reduced in increments.
Acoustic sensor sensitivity night	*Off (default)* *Increment 1(--)* ***Increment 2 (-)*** *Increment 3*	Separate sensitivity for the night.
LEDs		
Adjust red LEDs	***no*** *yes*	The integrated red LED has no additional function. The two parameters *Motion indicated by the LED* and *Control red LED via object* are displayed.
Motion indicated by the LED	***no*** *yes*	An optically detected movement is not indicated. Red LED is switched off. As soon as motion is detected, the red LED illuminates. The LED remains on as long as motion is detected.
Control red LED via object	***no***	Object 48 *Red LED – receive* is hidden.

Parameter name	Values	Meaning
	yes	Object 48 *Red LED – receive* is displayed. 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. The red LED always has a higher priority than the white orientation light. If both LEDs are activated, the white orientation light will be automatically switched off.
Use white LED (orientation light)	***no***	The integrated white LED is deactivated.
	yes	The parameters *Orientation light dimming value, Switch on orientation light at, Duration of orientation light* and *Control orientation light via object* are displayed.
Orientation light dimming value	*1%...**5%**... 100%*	Dimming value for switched-on orientation light (integrated white LED).
Switch on orientation light at	***Motion***	As soon as the set brightness switching / setpoint value is fallen below and motion is detected, the orientation light switches on. If no brightness switching / setpoint value is active, the orientation light switches on with every motion, independently of brightness. The parameter *Duration of orientation light* is displayed. Important: The parallel signal as well as the trigger at the acoustic sensor are not taken into account.
	Night	When night mode is activated, the orientation light is switched on. Object 38 *C1, C2 Light – day-night changeover* is displayed. The red LED always has a higher priority than the white orientation light. If both LEDs are activated, the white orientation light will be automatically switched off. The orientation light is also always switched off during test mode presence and test mode light.
Duration of orientation light	***always ON***	The orientation light is always switched on if the ambient brightness is below an active brightness switching / setpoint value.
	30 s...60 min	Time delay after detected motion. Afterwards, the orientation light switches off again.

Parameter name	Values	Meaning
Control orientation light via object	***no***	The integrated orientation light cannot be controlled via an object.
	yes	Object 49 *Orientation light – receive* is displayed. When an ON telegram is received on object 49, the white orientation light is switched on. The orientation light is switched off by means of an OFF telegram, automatically when the detector is restarted, or when night mode is exited.

7.6 Lighting channels

7.6.1 Channel C1 Light

Parameter name	Values	Meaning
Light function	***Switching light***	Channel C1 Light switches a lighting group depending on the presence of persons and the current brightness level.
	Constant lighting control	Channel C1 Light controls a lighting group depending on the presence of persons and the current brightness level.
	Constant lighting control without influence of presence	Channel C1 Light controls a lighting group depending on the current brightness level.
Configuration type	*Semi-automatic device*	In *Configuration type = semi-automatic device*, switching on must always be initiated manually via push button or remote control. Exception: If motion is detected within 10 seconds after the time delay has expired, the light comes on automatically. It is switched off automatically. The behaviour during activated light standby time can be changed, see parameter *Switching the light back on in semi-automatic mode during standby*.
	Fully automatic device	In *Configuration type fully automatic device*, the lighting channel automatically switches or controls the lighting depending on presence and surrounding brightness. It is switched off automatically. See also chapter **Operation**.
Change over to semi-automatic at night		The parameter is visible if *Configuration type = fully automatic device*.
	no	No changeover to *Configuration type* semi-automatic device in night mode.
	yes	Object 38 *C1, C2 Light – day-night changeover* 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).

Parameter name	Values	Meaning
Brightness switching value/brightness setpoint value		*Switching light:* 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. *Constant lighting control:* The defined brightness setpoint value is achieved by controlling/dimming the lamps (objects 3, 5, 7 as well as objects 30, 32, 34).
	*5 lx...**500 lx**... 3000 lx*	The brightness switching/setpoint value is adjustable in increments between 5 – 3000 lx. **Note:** If the brightness switching/setpoint value does not match the currently set *room correction factor* (see setting limit), the brightness switching/setpoint value is set to the corresponding limit automatically.
	Measurement off (depending on presence only)	*Switching light:* The brightness switching value can be deactivated by means of the setting *Measurement off (depending on presence only)*. The app remote control "theSenda B" (with app "theSenda Plug") or installation remote control "theSenda P" is used to assist in setting the brightness switching/setpoint value.
Set brightness switching/setpoint value via bus	***no***	Object 11 *C1 Brightness switching/setpoint value – receive value*, object 12 *C1 Brightness switching/setpoint value – send value* and object 15 *C1 Brightness switching/setpoint value (teach-in)* are not available. **Note:** The brightness switching/setpoint value can always be set with the remote control.
	yes	Object 11 *C1 Brightness switching/setpoint value – receive value*, object 12 *C1 Brightness switching/setpoint value – send value* and object 15 *C1 Brightness switching/setpoint value (teach-in)* are visible and can be used.
Lighting time delay	*30 s...**10 min**... 60 min*	The time delay can be set between 30 seconds and 60 minutes. Each detected motion restarts the time delay.

Parameter name	Values	Meaning
		The time delay adjusts to the user behaviour by self-learning. It can increase automatically to max. 30 minutes or decrease back to the set *Lighting time delay*. The time delay does not change by self-learning with a setting ≤ *2 minutes* or ≥ *30 minutes*. The time delay applies jointly to all channels C1, C2 Light.
Set lighting time delay via bus	***no***	Object 41 *C1, C2 Lighting time delay – receive value* and Object 42 *C1, C2 Lighting time delay – send value* are not available. **Note:** The time delay can always be set with the remote control.
	yes	Object 41 *C1, C2 Lighting time delay – receive value* and Object 42 *C1, C2 Lighting time delay – send value* are displayed. The time delay can be set and called up via the bus.
Short-term presence		The lighting channel time delay can be switched off sooner if a room is occupied for only a short time. (With *Configuration type = fully automatic device* and *semi-automatic device*)
	no	The time delay is used according to the set parameter.
	yes	If someone enters an unoccupied room and it is only occupied for up to 30 seconds, the light is switched off earlier, after 2 minutes. Short-term presence is also applied when a push button is used to switch on or a trigger is received. This parameter is not available in *Master operating mode = Aura effect*.
Other brightness switching/setpoint value at night	***no***	There is only one brightness switching/setpoint value available.
	yes	A brightness switching/setpoint value for the night can be configured. During operation, it can be switched between both of these brightness setpoint values. The object 38 *C1, C2 Light – Day-night changeover* is visible and can be used. An ON telegram to the object switches

Parameter name	Values	Meaning
		to the brightness switching/setpoint value night. - An OFF telegram switches back to the original value. This applies to both switching and constant lighting control. **Example:** Implementation of day and night operation with two different brightness levels.
Brightness switching/setpoint value night		The parameter is visible if *Other brightness switching/setpoint value at night = yes* is set. Object 38 *C1, C2 Light – Day-night changeover* can be used to switch between the brightness switching/setpoint values during operation.
	*5 lx...**500 lx**... 3000 lx*	The brightness switching/setpoint value night is adjustable in increments between 5 – 3000 lx. **Note:** If the brightness switching/setpoint value does not match the currently set *Room correction factor* (see setting limit), the brightness switching/setpoint value night is set to the corresponding limit automatically.
	Measurement off ((depending on presence only)	*Switching light:* The brightness switching value can be deactivated by means of the setting *Measurement off (depending on presence only*).
Set brightness switching/setpoint value night via bus		The parameter is visible if *Other brightness switching/setpoint value at night = yes* is set.
	no	Object 13 *C1 Brightness switching/setpoint value night – receive value*, object 14 *C1 Brightness switching/setpoint value night – send value* and object 15 *C1 Brightness switching/setpoint value (teach-in)* are not available. **Note:** The brightness switching/setpoint value night can always be set with the app remote control "theSenda B" (with "theSenda Plug" app).
	yes	Object 13 *C1 Brightness switching/setpoint value night – receive value*, object 14 *C1 Brightness switching/setpoint value night – send value* and object 15 *C1 Brightness*

Parameter name	Values	Meaning
		switching/setpoint value (teach-in) are visible and can be used.
Other time delay at night	***no***	There is only one time delay available.
	yes	A time delay for the night can be configured. During operation, it can be switched between two time delays. The object 38 *C1, C2 Light – Day-night changeover* is visible and can be used. - An ON telegram to the object switches to the lighting time delay night. - An OFF telegram switches back to the original value. **Example:** Implementation of day and night operation with two different time delays.
Lighting time delay night		The parameter is visible if *Other time delay at night = yes* is set. Object 38 *C1, C2 Light – Day-night changeover* can be used to switch between the time delays during operation.
	*30 s…**10 min**… 60 min*	The time delay can be set between 30 seconds and 60 minutes. Each detected motion restarts the time delay. The time delay adjusts to the user behaviour by self-learning. It can increase automatically to max. 30 minutes or decrease back to the set *Lighting time delay*. The time delay does not change by self-learning with a setting ≤ *2 minutes* or ≥ *30 minutes*. The time delay applies jointly to all channels C1, C2 Light.
Set lighting time delay night via bus		The parameter is visible if *Other time delay at night = yes* is set.
	no	Object 43 *C1, C2 Lighting time delay night – receive value* and Object 44 *C1, C2 Lighting time delay night – send value* are not available. **Note:** The lighting time delay night can always be set with the app remote control “theSenda B” (with “theSenda Plug” app).
	yes	Object 43 *C1, C2 Lighting time delay night – receive value* and Object 44 *C1, C2 Lighting time delay night – send value* are

Parameter name	Values	Meaning
		visible and can be used.

7.6.2 Channel C1 Light switching - detail settings

Parameter name	Values	Meaning
Lighting dimmable in switching mode	***no***	The lighting cannot be dimmed.
	yes	The lighting can be dimmed manually. The parameter *Duration of manual override* is displayed. Objects 3-7 are visible and can be used.
Duration of manual override		The parameter is visible if parameter *Lighting dimmable in switching mode = yes* is set.
	until lighting time delay has expired	The set dimming value applies until the time delay has elapsed. Afterwards, automatic operation will start.
	15 min...120 min	The set dimming value applies until the set time or the time delay has elapsed. Afterwards, automatic operation will start.
Light standby time		The parameter is visible if parameter *Lighting dimmable in switching mode = yes* is set.
	inactive	The standby function is not available.
	active	The standby function is available and the parameters *Duration of light standby time* and *Standby dimming value* are displayed.
Duration of light standby time		The parameter is visible if parameter *Light standby time = active* is set.
	always ON	The lighting remains permanently on standby. The lighting switches off after 10 minutes if the brightness level in the rooms exceeds the brightness switching value. Without presence, the lighting automatically returns to the standby value if the room brightness falls below the brightness switching value. This guarantees a minimum level of lighting in darkness.

Parameter name	Values	Meaning
	*30 s...**30 min**... 60 min*	The standby time causes both lighting groups to dim to the set *Standby dimming value* instead of switching off, when the time delay has elapsed.
Standby dimming value		The parameter is visible if parameter *Light standby time = active* is set.
	*1%...**10%**...100%*	The dimming values for standby can be selected in increments from 1% to 100%.
Switching the light back on in semi-automatic mode during standby		The parameter is visible if parameter *Configuration type = semi-automatic device* and parameter *Light standby time = active* is set.
	no	In semi-automatic mode, the lighting does not switch on again automatically when motion is detected during active stand-by operation.
	yes	In semi-automatic mode, the lighting automatically switches on again during active stand-by operation when motion is detected, provided the brightness has fallen below the brightness switching value.
Send channel C1 Light output value cyclically	***no***	Current output value of channel C1 Light is not sent cyclically.
	every 1 min ...60 min	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 remote control, or if switching off is overridden manually, the output value will NOT be sent cyclically anymore!
Activate block function	***no***	Block function of channel C1 Light is inactive.
	yes	Blocking channel C1 Light means that the detector does not send or processes telegrams via objects 1 to 7, although the evaluation of motion and brightness continues.

7.6.3 Channel C1 Light Constant lighting control - detail settings

Parameter name	*Values*	Meaning
Start of control with	***Value telegram***	Control is started with a value telegram. The actuator dims up at the set dimming time.
	ON telegram	Control is started with an ON telegram. The actuator switches on and turns up the lights abruptly or gradually to the value configured on the actuator.
Start behaviour of control	*without 4 bit stop Telegram*	If parameter *Start of control with = value telegram* is set, control starts with the set parameter value *Switch-on dimming value*. If parameter *Start of control with = ON telegram* is set, control starts with the switch-on value set on the actuator. Example: If a switch-on value of 70% is configured on the actuator, control starts with this switch-on value, regardless of whether this value is above or below the setpoint value.
	with 4 bit stop Telegram	If parameter *Start of control with = value telegram* is set, a value telegram with the maximum value of the parameter "control range" will be sent. The actuator dims up the lights at its set dimming time. If for *Start of control with ON telegram* has been selected, an ON telegram will be sent. The actuator dims up the lights to its switch-on value, at its set dimming time. The detector measures the rising brightness and stops the dimming process once the *brightness setpoint value* has been reached. Control starts at this point.
Switch-on dimming value	*30%...**70%**... 100%*	The parameter is visible if parameter *Start of control with = value telegram* and parameter *Start behaviour of control = without 4 bit stop telegram* is set. When the controller starts, the lighting is switched on to the set *switch-on dimming value*, and control starts from this value.
Other switch-on dimming value at night[5]		The parameter is visible if parameter *Start of control with = value telegram* and parameter *Start behaviour of control =*

[5] Not available with constant lighting control without influence of presence

Parameter name	*Values*	Meaning
		without 4 bit stop telegram is set.
	no	There is only one switch-on dimming value available.
	yes	A switch-on dimming value for the night can be configured. During operation, it can be switched between two switch-on dimming values. The object 38 *C1, C2 Light – Day-night changeover* is visible and can be used. - An ON telegram to the object switches to the switch-on dimming value night. - An OFF telegram switches back to the original value.
Switch-on dimming value night		The parameter is visible if *Switch-on dimming value at night = yes* is set. Object 38 *C1, C2 Light – Day-night changeover* can be used to switch between the switch-on dimming values during operation.
	*30%...**70%**... 100%*	The switch-on dimming value night can be set in increments.
Control speed		This parameter is used to change the increment of the sent dimming value.
	Standard	Behaviour is set to its optimum level. The change happens gradually and is almost imperceptible.
	average	The change happens with a somewhat larger increment.
	fast	The change happens with a large increment. The increment size depends on the brightness actual value and brightness setpoint value. The maximum increment size is 2% for standard, 3% for average and 8% for fast.
Lower control limit	*1%...**10%**...25%*	Minimum permitted output value.
Upper control limit	*70%, 80%, 90%, **100%***	Maximum permitted output value.
Switching off when there is enough brightness	*never switch off after 5 min... **10 min**...9 h*	If the lighting is turned down to the lower limit of the control, the lighting is switched off after the set time. With the selection *never switch off*, the lighting will never be switched off. This behaviour is valid, as long as persons are present.
Behaviour at manual dimming	***school***	Constant lighting control is temporarily interrupted by manual dimming. The

Parameter name	*Values*	Meaning
		setpoint value remains unchanged.
	office	Constant lighting control remains active temporarily after manual dimming to the current brightness value as the new setpoint value. After the time delay has expired, the originally configured set point value will be restored.
Light standby time	*inactive*	The standby function is not available.
	active	The standby function is available and the parameters *Duration of light standby time* and *Standby dimming value* are displayed.
Duration of light standby time		The parameter is visible if parameter *Light standby time = active* is set.
	always ON	The lighting remains permanently on standby. The lighting switches off after 10 minutes if the brightness level in the rooms exceeds the brightness setpoint value. Without presence, the lighting automatically returns to the standby value if the room brightness falls below the brightness setpoint value. This guarantees a minimum level of lighting in darkness.
	*30 s…**30 min**… 60 min*	The standby time causes both lighting groups to dim to the set *Standby dimming value* instead of switching off, when the time delay has elapsed.
Standby dimming value		The parameter is visible if parameter *Light standby time = active* is set.
	*1%…**10%**…25%*	The dimming values for standby can be selected in increments from 1% to 25%.
Switching the light back on in semi-automatic mode during standby		The parameter is visible if parameter *Configuration type = semi-automatic device* and parameter *Light standby time = active* is set.
	no	In semi-automatic mode, the lighting does not switch on again automatically when motion is detected during active stand-by operation.
	yes	In semi-automatic mode, the lighting automatically switches on again during active standby operation when motion is detected, provided the brightness has fallen below the brightness setpoint value.
Send channel C1 Light output value cyclically	***no***	Current output value of channel C1 Light is not sent cyclically.

Parameter name	*Values*	Meaning
	every 1 min ... 60 min	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 remote control, or if switching off is overridden manually, the output value will NOT be sent cyclically anymore!
Activate block function	***no***	Block function of channel C1 Light is inactive.
	yes	Blocking channel C1 Light means that the detector does not send or processes telegrams via objects 1 to 7, although the evaluation of motion and brightness continues.

7.6.4 Channel C1 Light - constant lighting control without influence of presence - detail settings

Parameter name	*Values*	Meaning
Start of control with	***Value telegram***	Control is started with a value telegram. The actuator dims up at the set dimming time.
	ON telegram	Control is started with an ON telegram. The actuator switches on and turns up the lights abruptly or gradually to the value configured on the actuator.
Start behaviour of control	*without 4 bit stop Telegram*	If parameter *Start of control with = value telegram* is set, control starts with the set parameter value *Switch-on dimming value*. If parameter *Start of control with = ON telegram* is set, control starts with the switch-on value set on the actuator. Example: If a switch-on value of 70% is configured on the actuator, control starts with this switch-on value, regardless of whether this value is above or below the setpoint value.
	with 4 bit stop Telegram	If parameter *Start of control with = value telegram* is set, a value telegram with the maximum value of the parameter "control range" will be sent. The actuator dims up the lights at its set dimming time. If for *Start of control with ON telegram* has been selected, an ON telegram will be sent. The actuator dims up the lights to its switch-on value, at its set dimming time. The detector measures the rising brightness and stops the dimming process once the *brightness setpoint value* has been reached. Control starts at this point.
Switch-on dimming value	*30%...**70%**... 100%*	The parameter is visible if parameter *Start of control with = value telegram* and parameter *Start behaviour of control = without 4 bit stop telegram* is set. When the controller starts, the lighting is switched on to the set *switch-on dimming value*, and control starts from this value.
Other switch-on dimming value at night[6]	***no***	There is only one switch-on dimming value available.
	yes	A switch-on dimming value for the night

[6] Not available with constant lighting control without influence of presence

Parameter name	*Values*	Meaning
		can be configured. During operation, it can be switched between two switch-on dimming values. The object 38 *C1, C2 Light – Day-night changeover* is visible and can be used. - An ON telegram to the object switches to the switch-on dimming value night. - An OFF telegram switches back to the original value.
Switch-on dimming value night		The parameter is visible if *Switch-on dimming value at night = yes* is set. Object 38 *C1, C2 Light – Day-night changeover* can be used to switch between the switch-on dimming values during operation.
Control speed		This parameter is used to change the increment of the sent dimming value.
	Standard	Behaviour is set to its optimum level. The change happens gradually and is almost imperceptible.
	average	The change happens with a somewhat larger increment.
	fast	The change happens with a large increment. The increment size depends on the brightness actual value and brightness setpoint value. The maximum increment size is 2% for standard, 3% for average and 8% for fast.
Lower control limit	*1%...**10%**... 25%*	Minimum permitted output value.
Upper control limit	*70%, 80%, 90%, **100%***	Maximum permitted output value.
Switching off when there is enough brightness	*never switch off after 5 min ... **10 min**...9 h*	If the lighting is turned down to the lower control limit, the lighting will be switched off after the set time. With the selection *never switch off*, the lighting will never be switched off.
Behaviour at manual dimming	***school***	Constant light control is interrupted by manual dimming until the controller is activated again via object 39. The setpoint value remains unchanged.
	office	Constant lighting control remains active temporarily after manual dimming to the current brightness value as the new setpoint value. After the controller has been deactivated via object 39, the set setpoint value is restored.
Send channel C1 Light output value cyclically	***no***	Current output value of channel C1 Light is not sent cyclically.

Parameter name	*Values*	Meaning
	every 1 min ... 60 min	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 remote control, or if switching off is overridden manually, the output value will NOT be sent cyclically anymore!
Activate block function	***no*** *yes*	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 7, although the evaluation of motion and brightness continues.

7.6.5 Channel C1 Light– block function

Designation	Values	Description
Block telegram		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. General unblocking: If no person is present and in the last 30 seconds no trigger telegram has been received via object 61 *Parallel switching input – Trigger input*, the lighting time delay will be set to 0 upon unblocking. This causes the lighting to be switched off immediately or to be dimmed to the standby–dimming value (standby time active). If no person is present and in the last 30 seconds a trigger telegram has been received via object 61 *Parallel switching input – Trigger input*, the lighting time delay will be set to 30 seconds upon unblocking. If no more movements are detected, the lighting will be switched off once the time delay expires or is set to the standby dimming value (standby time active). The lighting will not be switched off if motion is detected with insufficient brightness.
	Block with ON Telegram	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. After unblocking, the detector sends the current status or continues the constant lighting control.
	Block with OFF Telegram	The output of channel C1 Light is blocked with an OFF telegram and unblocked with an ON telegram.
Response when setting the block	*Send OFF telegram*	An OFF telegram is sent at the start of blocking.
	Send ON telegram	An ON telegram is sent at the start of blocking.
	do not send any telegram	No telegram is sent at the start of blocking.

Designation	Values	Description
	send value X%	A value between 10% and 100% can be sent in switching mode with dimmable lighting or in constant lighting control mode. The current status is always sent after unblocking, for instance, an ON telegram with absence and insufficient brightness in switching mode.
Also block push button I1 and infrared operation	***no***	Commands from the integrated push button I1 as well as the infrared remote control continue to be processed while channel C1 Light is blocked.
	yes	Commands from the integrated push button I1 as well as the infrared remote control are not processed during the blocking of channel C1 Light.

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

ⓘ Blocking / unblocking is also possible with scenes.

7.6.6 Channel C2 Light

This channel is visible if the parameters *Operating mode* = *Master* and *Activate channel C2 – Light* = *yes* are set.

Parameter name	Values	Meaning
Brightness difference to channel C1		The brightness difference sets the varying light requirements of lighting group C2 in comparison to lighting group C1. **Application:** Two lighting groups are installed in a room with daylight. Lighting group C1 is near the window, lighting group C2 in the interior of the room.
	5% ... 120%	A positive value means that in the area of lighting group C2 more artificial light is required.
	0% synchronous	Synchronous means both lighting groups are switched or controlled together.
	-5%...-60%	A negative value means that in the area of lighting group C2 less artificial light is required than in the area of lighting group C1.
		Also see **Channel C1 Light**, parameter *Brightness switching/setpoint value*.

ⓘ All other settings for channel C2 Light are adopted from channel C1 Light.

7.7 HVAC channels

7.7.1 Channel C4, C5 HVAC

ⓘ The parameter page is visible if for parameter *Activate channel C4 HVAC* or *Activate channel C5 HVAC = yes* is set. See **General** parameter page.

ⓘ Channel C4, C5 HVAC is switched on only by presence, without the influence of brightness.

Designation	Values	Description
HVAC switch-on delay	***inactive***	An inactive switch-on delay means that channel HVAC switches immediately when detecting motion.
	10 s...30 min	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. The switch-on delay can be set separately for each channel C4, C5. 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.
HVAC time delay	*10 s...**15 min**...120 min*	The time delay HVAC can be set between 10 seconds and 120 minutes. It is restarted with every new motion. The time delay can be set separately for each channel C4, C5.

7.7.2 Objects - Channel C4, C5 HVAC

ⓘ The parameter page is visible of for parameter *Activate channel C4 HVAC* or *Activate channel C5 HVAC = yes* is set. See **General** parameter page.

Designation	Values	Description
Telegram type	***Switch command*** *Priority* *Value* *Percentage value* *HVAC operating mode* *Scene*	6 telegram types are available for selection.
When presence detected	*no telegram send* ***send following telegram once*** *send cyclically*	No telegrams are sent on detection of movement. When a motion is detected, a one-time telegram will be sent. After a motion is detected, a telegram is sent cyclically.
Telegram	With *Telegram type = Switch command*	
	ON	Send switch-on command
	OFF	Send switch-off command
	For *Telegram type = Priority*	
		Function: Priority inactive (no control) — Value: 0 (00_{bin}) Function: Priority ON (control: enable, on) — Value: 3 (11_{bin}) Function: Priority OFF (control: disable, off) — Value: 2 (10_{bin})
	For *Telegram type = Value*	
	*0…**255***	Any value between 0 and 255 can be sent.
	For *Telegram type = Percentage value*	
	*0…**100**%*	Any percentage value between 0 and 100% can be sent.
	For *Telegram type = HVAC operating mode*	
	Auto	HVAC operating modes: Auto: 1
	Comfort	Comfort: 2
	Standby	Standby: 3
	Temperature reduction at night	Temperature reduction at night: 4
	Frost protection	Frost protection: 5

Designation	Values	Description	
	For *Telegram type = Scene*		
	*Scene **1**...64*	Any scene number can be sent.	
At the end of the time delay	*no telegram send*	No telegram is sent on completion of the time delay.	
	send following telegram once	At the end of the time delay, a single telegram is sent.	
	send cyclically	No telegram is sent cyclically at the end of the time delay.	
Telegram	With *Telegram type = Switch command*		
	ON	Send switch-on command	
	OFF	Send switch-off command	
	For *Telegram type = Priority*		
		Function	Value
	no priority	Priority inactive (no control)	0 (00_{bin})
	Priority ON	Priority ON (control: enable, on)	3 (11_{bin})
	Priority OFF	Priority OFF (control: disable, off)	2 (10_{bin})
	For *Telegram type = Value*		
	***0**...255*	Any value between 0 and 255 can be sent.	
	For *Telegram type = Percentage value*		
	***0**...100%*	Any percentage value between 0 and 100% can be sent.	
	For *Telegram type = HVAC operating mode*		
	Auto	HVAC operating modes: Auto: 1	
	Comfort	Comfort: 2	
	Standby	Standby: 3	
	Temperature reduction at night	Temperature reduction at night: 4	
	Frost protection	Frost protection: 5	
	For *Telegram type = Scene*		
	*Scene 1...**2**...64*	Any scene number can be sent.	
Should a second telegram be sent?	***no***	No second telegram is sent.	
	yes	In addition to telegram C4.1 or C5.1, a second telegram C4.2 or C5.2 is sent. The same telegrams or parameters as for C4.1 or C5.1 are available for selection.	
Activate block function	***no***	Block function of channel C4 or C5 HVAC is inactive.	

Designation	Values	Description
	yes	Blocking of channel C4 or C5 HVAC means that the detector does not send any telegrams via objects 50 to 52, or 53 to 55.

7.7.3 Channel C4, C5 HVAC – block function

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

Designation	Values	Description
Block telegram	***Block with ON Telegram***	Channel C4 or C5 HVAC is blocked with an ON telegram to the block object. All telegrams are suppressed for the duration of the blocking. Channel C4 or C5 HVAC is unblocked with an OFF telegram.
	Block with OFF Telegram	The output of channel C4 or C5 HVAC is blocked with an OFF telegram and unblocked with an ON telegram.
Response when setting the block	***do not send any telegram***	No telegram is sent at the start of blocking.
	as if presence detected	At the start of the block, the detector responds as if presence is detected.
	as at the end of the time delay	At the start of the block, the detector responds as at the end of the time delay.

7.8 Room monitoring

7.8.1 Room monitoring channel C6

The parameters are visible if for parameter *Activate channel C6 room monitoring = yes* is set.

Designation	Values	Description
Type of report	***Cyclical with acknowledgement***	The channel sends an ON telegram on detection of a movement. It repeats the ON telegram in cyclical intervals, as long as there is no acknowledgement.
	Switching On/Off	The parameters *Room monitoring time delay* and *Response at start/end of presence* are displayed. On detection of motion, the channel sends an ON telegram, and an OFF telegram or no telegram after the room monitoring time delay has elapsed.
Dead time room monitoring		The parameter is visible if parameter *Type of report = cyclical with acknowledgement* is set.
	deactivated	After acknowledgement, an ON telegram is immediately sent again at the next motion.
	*30 s...**5 min**...30 min*	After acknowledgement, it takes the set time until an ON telegram is sent again at the next motion.
Room monitoring time delay		The parameter is visible if parameter *Type of report = switching On/Off* is set.
	*30 s...**5 min**...30 min*	With every motion, the set time delay will be restarted.
Response at start/end of presence		The parameter is visible if parameter *Type of report = switching On/Off* is set.
	only send ON telegram	The OFF telegram is not sent at the end of presence.
	Send ON and OFF telegram	Both the ON and the OFF telegram are sent.
Waiting time for confirmation		The parameter is visible if parameter *Type of report = cyclical with acknowledgement* is set.

Designation	Values	Description
	*30 s...**5 min**...30 min*	ON telegram cyclically repeats if no acknowledgement is received within the configured waiting time.
Response upon return of bus voltage	*Room monitoring blocked* ***Room monitoring enabled***	Room monitoring channel C6 is blocked at a restart after loss of the bus voltage. Room monitoring channel C6 is enabled at a restart after loss of the bus voltage.
Sabotage cyclically	*inactive* ***active***	Sabotage monitoring is not used. The sabotage object cyclically sends OFF telegrams to reveal unauthorised removal of the detector or a bus interruption.
Cycle time sabotage	 *30 s...**4 min**...30 min*	The parameter is visible if parameter *Sabotage cyclically = active* is set. If the sabotage object is activated, the OFF telegrams are sent at the set cycle time.

7.9 Remote control

Designation	*Values*	Description
Channel C1 Light *Channel C2 Light* *External switching/dimming 1* *External switching/dimming 2* *External blinds 1* *External blinds 2*	*inactive*	No IR group address was assigned to the relevant channel, and it cannot be influenced by the user remote controls theSenda B and theSenda S.
	I, II, III, IV, V, VI, VII, VIII	An IR group address is allocated to the respective channel. The channel reacts to the commands from the user remote controls theSenda B and theSenda S.
	all	All IR group addresses are allocated to the respective channel. The channel reacts to the commands from the user remote controls theSenda B and theSenda S.

7.10 Scenes

7.10.1 Scenes

Designation	Values	Description
Scene controls		The detector has a simple, internal scene component. A scene is used to store values (On, Off with switching operating mode, percentage values with constant lighting control) for the light outputs. **End:** - absent - switch on light by using a push button or user remote control theSenda B or theSenda S
	inactive	Scene controls are not supported.
	use internal scenes	The scenes can be called up by pressing the scene buttons on theSenda B or theSenda S user remote control, or via a telegram to scene object 47 or 65.
	Send scene number on bus	Scene numbers can be assigned to the Scene 1 ⧐ and Scene 2 ⧐ buttons on theSenda B or theSenda S user remote control.
Define scenes with		This parameter is visible if parameter *Scene controls = use internal scenes* is set.
	ETS	The following parameters are displayed: - *Output value user remote control scene 1, channel C1 Light* - *Output value user remote control scene 2, channel C1 Light* - *Output value user remote control scene 1, channel C2 Light* - *Output value user remote control scene 2, channel C2 Light* The output values are fixed by the values configured in the ETS.
	Remote control	The output values are stored with the user remote control. See theSenda B or theSenda S operating instructions.
Output value user remote control scene 1, channel C1	***Off*** *On* *0%...**30%**...100%*	Value of scene 1, channel C1 in switching mode without dimmable lighting. Value of scene 1, channel C1 in switching mode with dimmable lighting or constant lighting control.
Output value user remote	*Off*	Value of scene 2, channel C1 in switching

Designation	Values	Description
control scene 2, channel C1	***On*** *0%...**70%**...* *100%*	mode without dimmable lighting. Value of scene 2, channel C1 in switching mode with dimmable lighting or constant lighting control.
Output value user remote control scene 1, channel C2	***Off*** *On* *0%...**30%**...* *100%*	Value of scene 1, channel C1 in switching mode without dimmable lighting. Value of scene 1, channel C2 in switching mode with dimmable lighting or constant lighting control.
Output value user remote control scene 2, channel C2	*Off* ***On*** *0%...**70%**...* *100%*	Value of scene 2, channel C2 in switching mode without dimmable lighting. Value of scene 2, channel C2 in switching mode with dimmable lighting or constant lighting control.
Scene number user remote control button scene 1 (0 = inactive)	 ***0**...64*	The parameter is visible if parameter *Scene controls = Send scene number on bus* is set. The set scene number is sent on object 66.
Scene number user remote control button scene 2 (0 = inactive)	 ***0**...64*	The parameter is visible if parameter *Scene controls = Send scene number on bus* is set. The set scene number is sent on object 66.

7.10.2 Scene functions

Designation	Values	Description
Scene function 1 *Scene function 2* *Scene function 3* *Scene function 4* *Scene function 5* *Scene function 6* *Scene function 7* *Scene function 8*	***inactive***	The behaviour of the detector can be controlled with 8 different scene functions. No scene number that blocks the detector is defined.
	Use output values internal scene 1/2	Use additional selection with internal scenes.
	Deactivate control	Control is stopped, object 5 *C1* or object 32 *C2 light output - send value* no longer send any telegram. After the time delay has elapsed, object 1 *C1* or object 28 *C2 light output - switching* are used to send an OFF telegram.
	Activate control	The constant lighting control is activated. The detector controls the lighting depending on brightness.
	Block lighting channels	Blocking of channels C1, C2 Light.
	Unblock lighting channels	Unblocking of channels C1, C2 Light.
Scene number	***0**...64*	Scene number matching the respective scene function.
Validity of block	***until unblocking***	Manual unblocking of the lighting channels is possible any time: - Receiving the corresponding scene number on object 47 *External scene - receive*. - Unblocking command of the channels Light on object 45 *C1, C2 Light - Block/unblock*
	1 h...9 h	Lighting channels remain disabled during the set time.

7.11 Logic channels

7.11.1 Logic channel C18..C23

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

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

7.11.2 Objects logic channel C18...C23

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

<table>
<tr><th>Designation</th><th>Values</th><th colspan="2">Description</th></tr>
<tr><td rowspan="11"></td><td colspan="3">For Telegram type = Priority</td></tr>
<tr><td rowspan="4"></td><td>Function</td><td>Value</td></tr>
<tr><td>no priority</td><td>Priority inactive (no control)</td><td>0 (00_{bin})</td></tr>
<tr><td>Priority ON</td><td>Priority ON (control: enable, on)</td><td>3 (11_{bin})</td></tr>
<tr><td>Priority OFF</td><td>Priority OFF (control: disable, off)</td><td>2 (10_{bin})</td></tr>
<tr><td colspan="3">For Telegram type = Value</td></tr>
<tr><td>0...255</td><td colspan="2">Any value between 0 and 255 can be sent.</td></tr>
<tr><td colspan="3">For Telegram type = Percentage value</td></tr>
<tr><td>0...100%</td><td colspan="2">Any percentage value between 0 and 100% can be sent.</td></tr>
<tr><td colspan="3">For Telegram type = HVAC operating mode</td></tr>
<tr><td>Auto

Comfort
Standby
Temperature reduction at night
Frost protection</td><td colspan="2">HVAC operating modes:
Auto: 1
Comfort: 2
Standby: 3
Temperature reduction at night: 4

Frost protection: 5</td></tr>
<tr><td colspan="3">For Telegram type = Scene</td></tr>
<tr><td>Scene 1...2...64</td><td colspan="2">Any scene number can be sent.</td></tr>
<tr><td>Should a second telegram be sent?</td><td>no

yes</td><td colspan="2">No second telegram is sent.

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.</td></tr>
<tr><td>Activate block function</td><td>no

yes</td><td colspan="2">Block function is inactive.

Block function means that the detector does not send telegrams via logic module objects.</td></tr>
<tr><td>Telegram after reset or download</td><td>as with unfulfilled condition
as with fulfilled condition
Status unknown: do not send</td><td colspan="2">Reaction of channel upon a restart.</td></tr>
</table>

7.11.3 Logic channel C18...C23 - block function

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

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

7.12 Integrated push button I1

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

7.12.1 Configuration options parameter page, *Push button function*

Designation	Values	Description
Function	*Push button* ***Dimming*** *Blinds* *Control lighting channel C1 directly* *Control lighting channel C2 directly* *Control lighting channels C1 and C2 directly*	Desired use.
Debounce time	*30 ms,* ***50 ms****, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s*	In order to avoid a disruptive switching due to debouncing 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.
Long button push starting at	***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.
Time for double-click	***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.
Cycle time for sending cyclically	*every min* *every 2 min* *every 3 min* *…* ***every 30 min*** *every 45 min* *every 60 min*	Common cycle time for all 2 output objects of the channel.
How many telegrams are to be sent	***one telegram*** *two telegrams*	Each channel has 2 output objects and can thus send up to 2 different telegrams.
Activate block function	***no*** *yes*	No block function. Show parameters for the block function.
Block telegram	***Block with ON telegram*** *Block with OFF telegram*	0 = cancel block 1 = block 0 = block 1 = cancel block

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

Designation	Values	Description	
Object type	***Switching (1 bit)*** *Priority (2 bit)* *Value 0-255* *Percentage value (1 byte)*	Telegram type for this object.	
Send after short operation	*do not send* ***Send telegram***	Respond to short button push?	
Telegram	*With object type = switching 1 bit*		
	On *Off* ***Change over***	Send switch-on command Send switch-off command Invert current state (ON-OFF-ON etc.)	
	With object type = priority 2 bit		
		Function	Value
	no priority	Priority inactive (no control)	0 (00_{bin})
	Priority ON	Priority ON (control: enable, on)	3 (11_{bin})
	Priority OFF	Priority OFF (control: disable, off)	2 (10_{bin})
	With object type = value 0-255		
	*0-**255***	Any value between 0 and 255 can be sent.	
	With object type = percentage value 1 byte		
	*0-**100%***	Any percentage value between 0 and 100% can be sent.	
Send after long operation	***do not send*** *Send telegram*	Respond to long button push?	
Telegram	See above: Same object type as with short operation.		
Send after double-click	***do not send*** *Send telegram*	Respond to double-click?	
Telegram	See above: Same object type as with short operation.		
Send cyclically	***no*** *yes*	The cycle time is set on the main parameter page of the channel.	
Response after restoration of the bus supply	***none*** *as after short (immediately)* *as after short (after 5 s)* *as after short (after 10 s)* *as after short (after 15 s)* *as after long (immediately)* *as after long (after 5 s)* *as after long (after 10 s)* *as after long (after 15 s)* *as with double-click (immediately)* *as with double-click (after 5 s)* *as with double-click (after 10 s)* *as with double-click (after 15 s)*	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
Response when setting the block	***Ignore block***	The block function is ineffective with this telegram.
	no response	Do not respond when the block is set.
	as with short	Respond as with a short button push.
	as with long	Respond as with a long button push.
	as with double-click	Respond as with a double-click.
Response when the block is cancelled	***no response***	Do not respond when the block is cancelled.
	as with short	Respond as with a short button push.
	as with long	Respond as with a long button push.
	as with double-click	Respond as with a double-click.

7.12.2 Configuration options parameter page, *Dimming function*

Designation	Values	Description
Function	*Push button* ***Dimming*** *Blinds* *Control lighting channel C1 directly* *Control lighting channel C2 directly* *Control lighting channels C1 and C2 directly*	The push button controls a dimming actuator.
Debounce time	*30 ms,* ***50 ms****, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s*	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
Activate block function	***no*** *yes*	No block function. Show **Block function** parameter page.
Block telegram	***Block with ON telegram*** *Block with OFF telegram*	0 = cancel block 1 = block 0 = block 1 = cancel block
Long button push starting at	***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.
Double-click additional function	***no*** *yes*	No double-click function The **Double-click** parameter page is displayed.
Time for double-click	***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.

7.12.2.1 Dimming parameter page, *Dimming function*

Designation	Values	Description
Response to long/short		The input distinguishes between a long and a short button push, and can thus carry out 2 functions.
	One button operation	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).
	brighter/On	Short button push = ON Long button push = brighter Release = stop
	brighter/change over	Short button push = ON/OFF Long button push = brighter Release = stop
	darker/Off	Short button push = OFF Long button push = darker Release = stop
	darker/change over	Short button push = ON/OFF Long button push = darker Release = stop
Increment for dimming[7]		With a long button push, the dimming value is: Increased (or decreased) until the button is released.
	100% *50%* *25%* *12.5%* *6%* *3%* *1.5%*	Increased by the selected value (or reduced)
Response after restoration of the bus supply	***none*** *On*	Do not respond. Switch on dimmer

[7] Not available with one button operation.

Designation	Values	Description
	Off	Switch off dimmer
	after 5 s On *after 10 s On* *after 15 s On*	Switch on dimmer with delay
	after 5 s Off *after 10 s Off* *after 15 s Off*	Switch off dimmer with delay
Response when setting the block	***Ignore block***	The block function is ineffective with this telegram.
	no response	Do not respond when the block is set.
	On	Switch on dimmer
	Off	Switch off dimmer
Response when the block is cancelled	***no response***	Do not respond when the block is cancelled.
	On	Switch on dimmer
	Off	Switch off dimmer

7.12.2.2 Double-click parameter page, *Dimming function*

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

7.12.3 Configuration options parameter page, *Blinds function*

Designation	Values	Description
Function	*Push button* *Dimming* ***Blinds*** *Control lighting channel C1 directly* *Control lighting channel C2 directly* *Control lighting channels C1 and C2 directly*	The push button controls a blinds actuator.
Debounce time	*30 ms,* ***50 ms****, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s*	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.
Long button push starting at	***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.
Double-click additional function	***no*** *yes*	No double-click function The **Double-click** parameter page is displayed.
Time for double-click	***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.
Activate block function	***no*** *yes*	No block function. Display parameter page **Block function**.
Block telegram	***Block with ON telegram*** *Block with OFF telegram*	0 = cancel block 1 = block 0 = block 1 = cancel block

7.12.3.1 Blinds parameter page, *Blinds function*

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

7.12.3.2 Double-click parameter page, *Blinds function*

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

7.12.4 Function Control lighting channel C1, C2 directly: Switching.

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.

This function is available if at least one lighting channel is activated on the **General** parameter page and C1 only supports the switch function.[8]

Designation	Values	Description
Function	*Push button* ***Dimming*** *Blinds* *Control lighting channel C1 directly* *Control lighting channel C2 directly* *Control lighting channels C1 and C2 directly*	Control only C1, C2 or both together.
Debounce time	*30 ms,* ***50 ms****, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s*	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
Activate block function	***no*** *yes*	No block function. Show **Block function** parameter page.
Block telegram	***Block with ON telegram*** *Block with OFF telegram*	0 = cancel block 1 = block 0 = block 1 = cancel block

[8] With *Light function = Switching light* and *Lighting dimmable in switching mode = no*.

7.12.4.1 Direct switching parameter page

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

7.12.5 Function Control lighting channel C1, C2 directly: Dimming.

ⓘ 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.

ⓘ This function is available if at least one lighting channel is activated on the **General** parameter page and C1 only supports the dimming function.[9]

Designation	Values	Description
Function	*Push button* ***Dimming*** *Blinds* *Control lighting channel C1 directly* *Control lighting channel C2 directly* *Control lighting channels C1 and C2 directly*	Control only C1, C2 or both together.
Debounce time	*30 ms*, ***50 ms,*** *80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s*	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
Activate block function	***no*** *yes*	No block function. Show **Block function** parameter page.
Block telegram	***Block with ON telegram*** *Block with OFF telegram*	0 = cancel block 1 = block 0 = block 1 = cancel block
Long button push starting at	***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.
Double-click additional function	***no*** *yes*	No double-click function The **Double-click** parameter page is displayed.

[9] With *Light function = Constant lighting control* (with and without influence of presence) or with *Switching light* if *Lighting dimmable in switching mode = yes*.

Designation	Values	Description
Time for double-click	***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.

7.12.5.1 Dimming directly parameter page

Designation	Values	Description
Response to long/short		The input distinguishes between a long and a short button push, and can thus carry out 2 functions.
	One button operation	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).
	brighter/On	Short button push = ON Long button push = brighter Release = stop
	brighter/change over	Short button push = ON/OFF Long button push = brighter Release = stop
	darker/Off	Short button push = OFF Long button push = darker Release = stop
	darker/change over	Short button push = ON/OFF Long button push = darker Release = stop
Increment for dimming[10]		With a long button push, the dimming value is: Increased (or decreased) until the button is released.
	100% *50%* *25%*	

[10] Not used with one button operation.

Designation	Values	Description
	12.5% *6%* *3%* *1.5%*	Increased by the selected value (or reduced)
Response when setting the block	***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
Response when the block is cancelled	***no response*** *On* *Off*	Do not respond when the block is cancelled. Switch on dimmer Switch off dimmer

7.12.5.2 Double-click parameter page

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

7.13 Binary input I2 and I3

The parameters are visible if for parameter *Activate binary inputs = yes* is set.

7.13.1 Configuration options parameter page, *Switch function*

Designation	Values	Description
Function	*Switch* ***Push button*** *Dimming* *Blinds*	Desired use.
Debounce time	*30 ms,* ***50 ms****, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s*	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
Cycle time for sending cyclically	*every min* *every 2 min* *every 3 min* *...* ***every 30 min*** *every 45 min* *every 60 min*	Common cycle time for both output objects of the channel.
How many telegrams are to be sent	***one telegram*** *two telegrams*	Each channel has 2 output objects and can thus send up to 2 different telegrams.
Activate block function	***no*** *yes*	No block function. Show parameters for the block function.
Block telegram	***Block with ON telegram*** *Block with OFF telegram*	0 = cancel block 1 = block 0 = block 1 = cancel block

7.13.1.1 Switch objects 1, 2 parameter page

Each of the 2 objects can be configured individually on its own parameter page.

Designation	Values	Description
Object type	***Switching (1 bit)*** *Priority (2 bit)* *Value 0-255* *Percentage value (1 byte)*	Telegram type for this object.
Send if input = 1	*no* ***yes***	Send if voltage is present at the input?
Telegram	*With object type = switching 1 bit*	
	On *Off* *Change over*	Send switch-on command Send switch-off command Invert current state (ON-OFF-ON etc.)
	With object type = priority 2 bit	
	no priority ***Priority ON*** *Priority OFF*	Function: Priority inactive (no control) — Value: 0 (00_{bin}) Function: Priority ON (control: enable, on) — Value: 3 (11_{bin}) Function: Priority OFF (control: disable, off) — Value: 2 (10_{bin})
	With object type = value 0-255	
	*0-**255***	Any value between 0 and 255 can be sent.
	With object type = percentage value 1 byte	
	*0-**100%***	Any percentage value between 0 and 100% can be sent.
Send if input = 0	*no* ***yes***	Send if no voltage is present at the input?
Telegram	See above: Same object type as *Send if input = 1*	
Send cyclically	***no*** *yes, always* *only if input = 1* *Only if input = 0*	When should cyclical sending take place? The cycle time is set on the main parameter page of the channel.
Response after restoration of the bus supply	***none*** *update (immediately)* *update (after 5 s)* *update (after 10 s)* *update (after 15 s)*	Do not send. Send update telegram immediately or with delay.
Response when setting the block	***Ignore block***	The block function is ineffective with this telegram.

Designation	Values	Description
	no response *as with input = 1* *as with input = 0*	Do not respond when the block is set. Respond as with rising edge. Respond as with falling edge.
Response when the block is cancelled	***no response*** *update*	Do not respond when the block is cancelled. Send update telegram.

ⓘ If a channel is blocked, no telegrams will be sent cyclically.

7.13.2 Configuration options parameter page, *Push button function*

Designation	Values	Description
Function	*Switch* ***Push button*** *Dimming* *Blinds*	Desired use.
Debounce time	*30 ms,* ***50 ms****, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s*	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
Connected push button	***NO contact*** *Opening contact*	Set the type of connected contact.
Long button push starting at	***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.
Time for double-click	***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.
Cycle time for sending cyclically	*every min* *every 2 min* *every 3 min* *…* ***every 30 min*** *every 45 min* *every 60 min*	Common cycle time for all 2 output objects of the channel.
How many telegrams are to be sent	***one telegram*** *two telegrams*	Each channel has 2 output objects and can thus send up to 2 different telegrams.
Activate block function	***no*** *yes*	No block function. Show parameters for the block function.
Block telegram	***Block with ON telegram*** *Block with OFF telegram*	0 = cancel block 1 = block 0 = block 1 = cancel block

7.13.2.1 Push button object 1,2 parameter page

Designation	Values	Description	
Object type	***Switching (1 bit)*** *Priority (2 bit)* *Value 0-255* *Percentage value (1 byte)*	Telegram type for this object.	
Send after short operation	*do not send* ***Send telegram***	Respond to short button push?	
Telegram	*With object type = switching 1 bit*		
	On *Off* ***Change over***	Send switch-on command Send switch-off command Invert current state (ON-OFF-ON etc.)	
	With object type = priority 2 bit		
		Function	Value
	no priority	Priority inactive (no control)	0 (00_{bin})
	Priority ON	Priority ON (control: enable, on)	3 (11_{bin})
	Priority OFF	Priority OFF (control: disable, off)	2 (10_{bin})
	With object type = value 0-255		
	*0-**255***	Any value between 0 and 255 can be sent.	
	With object type = percentage value 1 byte		
	*0-**100%***	Any percentage value between 0 and 100% can be sent.	
Send after long operation	***do not send*** *Send telegram*	Respond to long button push?	
Telegram	See above: Same object type as with short operation.		
Send after double-click	***do not send*** *Send telegram*	Respond to double-click?	
Telegram	See above: Same object type as with short operation.		
Send cyclically	***no*** *yes*	The cycle time is set on the main parameter page of the channel.	
Response after restoration of the bus supply	***none*** *as with short (immediately)* *as with short (after 5 s)* *as with short (after 10 s)* *as with short (after 15 s)* *as with long (immediately)* *as with long (after 5 s)* *as with long (after 10 s)* *as with long (after 15 s)* *as with double-click (immediately)* *as with double-click (after 5 s)*	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
	as with double-click (after 10 s) *as with double-click (after 15 s)*	
Response when setting the block	***Ignore block***	The block function is ineffective with this telegram.
	no response	Do not respond when the block is set.
	as with short	Respond as with a short button push.
	as with long	Respond as with a long button push.
	as with double-click	Respond as with a double-click.
Response when the block is cancelled	***no response***	Do not respond when the block is cancelled.
	as with short	Respond as with a short button push.
	as with long	Respond as with a long button push.
	as with double-click	Respond as with a double-click.

7.13.3 Configuration options parameter page, *Dimming function*

Designation	Values	Description
Function	*Switch* *Push button* ***Dimming*** *Blinds*	The input controls a dimming actuator.
Debounce time	*30 ms,* ***50 ms****, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s*	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.
Activate block function	***no*** *yes*	No block function. Show **Block function** parameter page.
Block telegram	***Block with ON telegram*** *Block with OFF telegram*	0 = cancel block 1 = block 0 = block 1 = cancel block
Long button push starting at	***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.
Double-click additional function	***no*** *yes*	No double-click function The **Double-click** parameter page is displayed.
Time for double-click	***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.

7.13.3.1 Dimming parameter page

Designation	Values	Description
Response to long/short		The input distinguishes between a long and a short button push, and can thus carry out 2 functions.
	One button operation	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).
	brighter/On	Short button push = ON Long button push = brighter Release = stop
	brighter/change over	Short button push = ON/OFF Long button push = brighter Release = stop
	darker/Off	Short button push = OFF Long button push = darker Release = stop
	darker/change over	Short button push = ON/OFF Long button push = darker Release = stop
Increment for dimming[11]		With a long button push, the dimming value is: Increased (or decreased) until the button is released.
	100% *50%* *25%* *12.5%* *6%* *3%* *1.5%*	Increased by the selected value (or reduced)
Response after restoration of the bus supply	***none*** *On*	Do not respond. Switch on dimmer

[11] Not used with one button operation.

Designation	Values	Description
	Off	Switch off dimmer
	after 5 s On *after 10 s On* *after 15 s On*	Switch on dimmer with delay
	after 5 s Off *after 10 s Off* *after 15 s Off*	Switch off dimmer with delay
Response when setting the block	***Ignore block***	The block function is ineffective with this telegram.
	no response	Do not respond when the block is set.
	On	Switch on dimmer
	Off	Switch off dimmer
Response when the block is cancelled	***no response***	Do not respond when the block is cancelled.
	On	Switch on dimmer
	Off	Switch off dimmer

7.13.3.2 Double-click parameter page

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

Designation	Values	Description
	as with double-click	Respond as with a double-click.

7.13.4 Configuration options parameter page, *Blinds function*

Designation	Values	Description
Function	*Switch* *Push button* *Dimming* ***Blinds***	The input controls a blinds actuator.
Debounce time	*30 ms,* ***50 ms****, 80 ms, 100 ms, 200 ms, 1 s, 5 s, 10 s*	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.
Long button push starting at	***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.
Double-click additional function	*no* ***yes***	No double-click function The **Double-click** parameter page is displayed.
Time for double-click	***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.
Activate block function	***no*** *yes*	No block function. Display **Block function** parameter page.
Block telegram	***Block with ON telegram*** *Block with OFF telegram*	0 = cancel block 1 = block 0 = block 1 = cancel block

7.13.4.1 Blinds parameter page

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

7.13.4.2 Double-click parameter page

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

8 Operation

8.1 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.

8.2 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 *C1* or *C2 Light input – Switching external push button* (obj. 2 or 29). 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 *C1* or *C2 Light input – Switching external push button* (obj. 2 or 29). 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.

8.3 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 *C1* or *C2 Light input – Switching external push button* (obj. 2 or 29). 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 *C1* or *C2 Light input – External button brighter / darker* (obj. 4 or 31). The lighting remains at the set dimming value for the configured time *Duration of manual override*.
Value telegram (1 byte)	The lighting is dimmed with a value telegram on object *C1* or *C2 Light input – Send value external push button* (obj. 6 or 33). 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 *C1* or *C2 Light input – Switching external push button* (obj. 2 or 29). 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.

8.4 Manual operation (external push button) with constant lighting control function

If the lighting is operated manually with *Light function = Constant lighting control*, 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 *C1* or *C2 Light input – Switching external push button* (obj. 2 or 29). The constant lighting control is activated. The detector controls the lighting depending on brightness. The two channels C1 / C2 are always switched on together.
Dimming telegram (4 bit)	The lighting is dimmed with a dimming telegram on object *C1* or *C2 Light input – External button brighter / darker* (obj. 4 or 31). *school:* Constant lighting control is temporarily interrupted by manual dimming. The setpoint value remains unchanged. office: Constant lighting control remains active temporarily after manual dimming to the current brightness value as the new setpoint value. After the time delay has expired, the originally configured set point value will be restored.
Value telegram (1 byte)	The lighting is dimmed with a value telegram on object *C1* or *C2 Light input – Send value external push button* (obj. 6 or 33). The lighting remains at the transmitted value while the room is occupied. The detector returns to normal control operation after the room is vacated and after expiry of the time delay.
OFF telegram	The lighting is switched off with an OFF telegram on object *C1* or *C2 Light input – Switching external push button* (obj. 2 or 29). The lighting remains switched off while the room is occupied. The detector returns to normal control operation after the room is vacated and after expiry of the time delay.

8.5 Manual operation (external push button) using the constant lighting control function without influence of presence

If the lighting is operated manually with *Light function = Constant lighting control without influence of presence*, 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 *C1* or *C2 Light input – Switching external push button* (obj. 2 or 29). The constant lighting control is activated. The detector controls the lighting depending on brightness. The two channels C1 / C2 are always switched on together.
Dimming telegram (4 bit)	The lighting is dimmed with a dimming telegram on object *C1* or *C2 Light input – External button brighter / darker* (obj. 4 or 31). *school:* Constant lighting control is interrupted by manual dimming until the controller is activated again via object *C1, C2 light constant lighting control – activate / deactivate* (obj. 39) or *External scene – receive* (obj. 47). The setpoint value remains unchanged. The setpoint value remains unchanged. office: Constant lighting control remains active as the new setpoint after manual dimming to the current brightness value. When deactivating the controller with object *C1, C2 light constant lighting control – activate / deactivate* (obj. 39) or *External scene – receive* (obj. 47) the set setpoint will be restored.
Value telegram (1 byte)	The lighting is dimmed with a value telegram on object *C1* or *C2 Light input – Send value external push button* (obj. 6 or 33). The lighting remains at the transmitted value until control is activated via object *C1, C2 light constant lighting control – activate / deactivate* (obj. 39) or *External scene – receive* (obj. 47).
OFF telegram	The lighting is switched off with an OFF telegram on object *C1* or *C2 Light input – Switching external push button* (obj. 2 or 29). The lighting remains switched off until control is activated via object *C1, C2 light constant lighting control – activate / deactivate* (obj. 39) or *External scene – receive* (obj. 47).

8.6 Manual operation (external push button) using two light outputs C1, C2

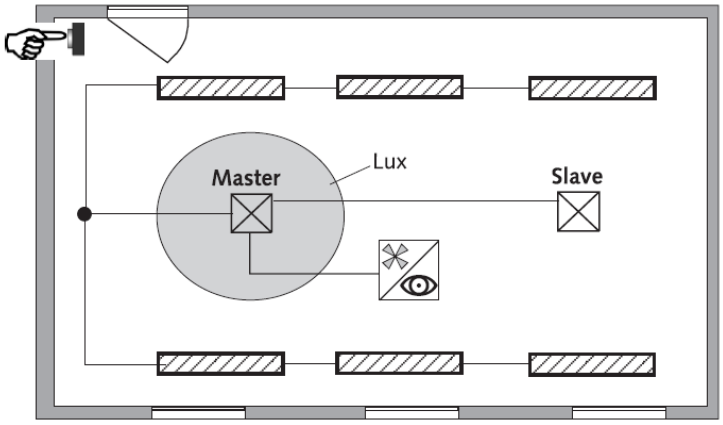
A separate push button with separate group address is used for each of the two lighting channels for manual override when the two lighting channels C1, C2 are used. It is also possible to use the integrated push button I1 for lighting control. To do this, *Function = Control lighting channels C1 and C2 directly* must be selected. In this case, no separate group addresses are needed because the objects are already internally linked.
Each of the two lighting channels C1, C2, can be switched on or off separately with *Light function = Switching light*.
With *Light function = Constant lighting control* both channels C1, C2 always switch on, as soon as one of the two push buttons is pressed. Important: It is not possible to switch on just one of the two lighting groups. On the other hand, each channel can be switched off separately when using constant lighting control.
Channels C1, C2 Light can be dimmed separately.

9 Parallel switching

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

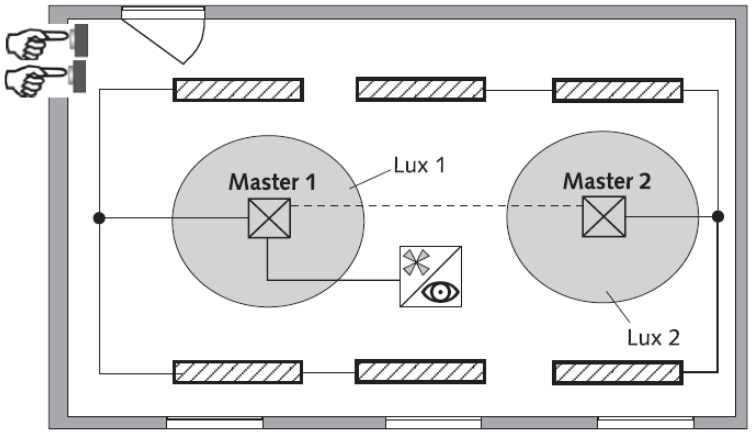
9.1 Master/Slave parallel switching

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.



9.2 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.



9.3 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.

10 Brightness switching value / brightness setpoint value

10.1 Setting the brightness switching / setpoint value

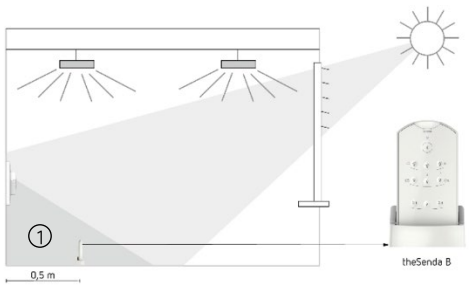
The brightness switching / setpoint value defines the minimum desired brightness. The currently prevailing brightness is measured underneath the detector. If the prevailing brightness is below the setpoint, the light is switched on if a presence is detected.

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 presence detector.

See parameter *Room correction factor.*



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

10.2 Calibration of brightness measurement

Using "theSenda B" app remote control and "theSenda Plug" app:

- Connect "theSenda B" remote control with the corresponding "theSenda Plug" app.
- Select the appropriate detector type and load the parameter set.
- Select the parameter <Brightness measurement value C1>.

1. Using the theSenda B remote control

- Set up the theSenda B according to the drawing, and move a few steps away from the measurement location, so the lux measurement will not be influenced.
- Press OK.
  → A new window with the measured brightness measurement value is shown. If you would like to apply this value.
- Press OK.
- Important: Press the send button ( ). After this, the brightness measurement is calibrated.

2. Using the lux meter

- Set up or align the lux meter according to the drawing and read the lux value.
- Press "Enter" in the app.
- → A new window opens.
- Enter the lux value and press OK.
  → The brightness measurement value appears in the display.
- **Important**: Press the send button ( ). After this, the brightness measurement is calibrated.
  → The room correction factor will be calculated automatically. Values between 0.05 and 2.0 are permitted. Calculated or entered values outside the permitted range are automatically set to the appropriate limit value.
  → The calculated room correction factor will be adopted.

As an alternative, calibration of brightness measurement can also 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).

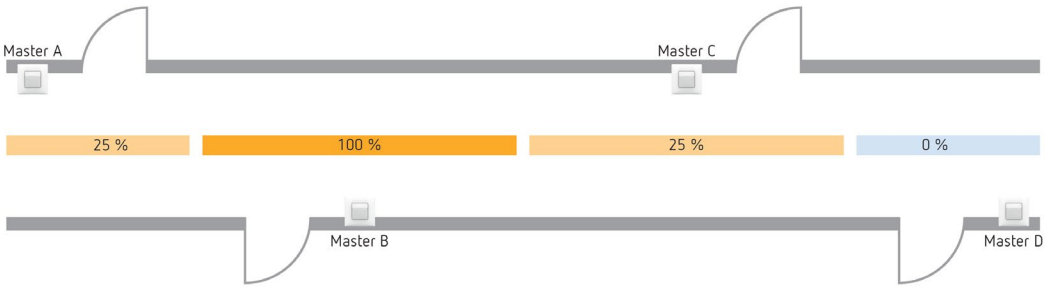
The room correction factor is calculated from this automatically. Values between 0.05 and 2.0 are permitted. Calculated values outside the permitted range will automatically be set to the appropriate limit value.
The calculated room correction factor will be applied immediately. For monitoring purposes,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

11 Aura effect

With the aura effect function, the light follows the users based on the area they are in. The surrounding areas are dimmed up to a set orientation light value. This guarantees better orientation and greater safety. If the person in the room moves, the light accompanies this person like an aura.

Example – corridor:



Trigger objects are available for sending and receiving the motion status:

Object 62, aura effect output, send motion status
Object 63, aura effect input, receive motion status

They can be linked up to adjacent areas. As soon as an aura signal is received and no motion has been detected in this area, the lighting channels in these areas will go to the set aura dimming value.

An example of the aura effect with the required object links and parameter settings can be found in chapter **Application examples**.

12 Test modes

The theMura P180 KNX and theMura P180 2.20 KNX have two test modes:

- Test mode presence
- Test mode light

12.1 Test mode presence

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

Activate	- Control command test presence "ON" with "theSenda Plug" app or installation remote control "theSenda P" button ☑ .. - ON telegram via bus object 75. Test mode presence can be activated any time.
End	With subsequent restart: - Control command test presence "OFF" with the "theSenda Plug" app - OFF telegram via bus object 75. - Mains failure and thus power up. - Automatically according to the time set in the ETS, parameter *Activation of test mode* - Control command restart with "theSenda Plug" app - Reset with theSenda P button ↺ . Without restart: - Activation of light test with the "theSenda Plug" app

Display LED Status of channels	Description
On	When motion occurs, the LED goes on and channels C1, C2 switch 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.
- Configuration type Light changes to Switching if the configuration type Light is set to Contant lighting control. The light is not controlled.
- Light "On" with motion; light "Off" with absence of motion.
- Channels C1 and C2 Light have a fixed time delay of 10 s.
- Channels C4, C5 HVAC and C6 room monitoring respond unchanged as in normal operation.
- Acoustic sensor deactivated.

Commands and adjustable parameters
In test mode presence, the following commands are possible with the "theSenda Plug" app:

- End presence test.
- Activate light test.
- Change detection sensitivity.

The selected detection sensitivity (level 1 ... 3) is not changed when activating test mode presence. The sensitivity can be adjusted during the test and will remain unchanged after a restart. The detector performs a restart after the end of the test mode.

12.2 Test mode light

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

Activate	- Control command test light "ON" with the "theSenda Plug" app. - ON telegram via bus object 76. The light test mode can be activated anytime.
End	With subsequent restart: - Control command test light "OFF" with the "theSenda Plug" app - OFF telegram via bus object 76. - Mains failure and thus power up. - Automatically according to the time set in the ETS, parameter *Activation of test mode* - Control command restart with "theSenda Plug" app - Reset with theSenda P butt . Without restart: - Activation of presence test with the "theSenda Plug" app

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.

Commands and adjustable parameters
In test mode light, the following commands are possible with the "theSenda Plug" app:

- End light test.
- Brightness setpoint value of channel C1 Light
- Activate presence test
- Brightness measurement value C1

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

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.

13 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**.

14 User remote control theSenda S

See also theSenda S operating instructions.

14.1 Performance characteristics of theSenda S

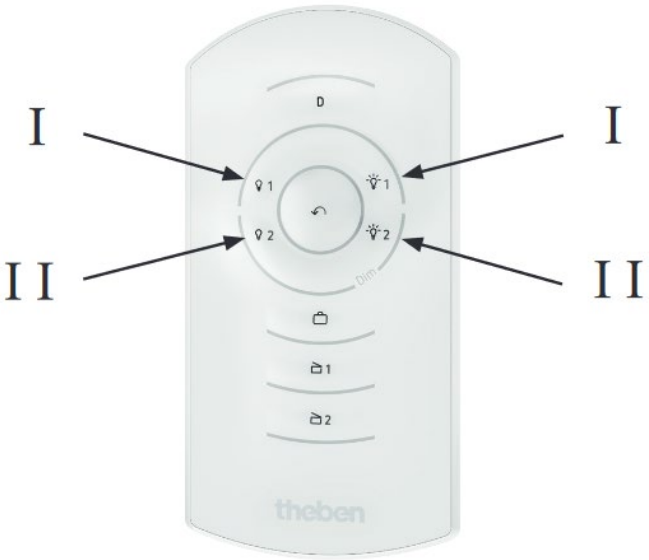
theSenda S user remote control makes it easy to switch and dim lighting using theMura P180 KNX and theMura P180 2.20 KNX presence detector. theSenda S has two channels for controlling lighting groups, blinds or external channels with switching and dimming. theSenda S also provides the option of saving two different lighting scenarios which can be retrieved anytime at the touch of a button.

14.2 Combining the detector and theSenda S

The detector channels and the theSenda S channels are linked via an IR group address. 2 IR group addresses are available for linking.

Operation of a lighting group requires that the IR group address of the presence detector channel and that of theSenda S channel match.

The selection of the IR group addresses enables the separation of neighbouring detectors controlled by the theSenda S user remote control. IR group addresses I and II are allocated permanently to 4 buttons on theSenda S user remote control and cannot be changed. Further information can be found in the operating instructions of theSenda S.

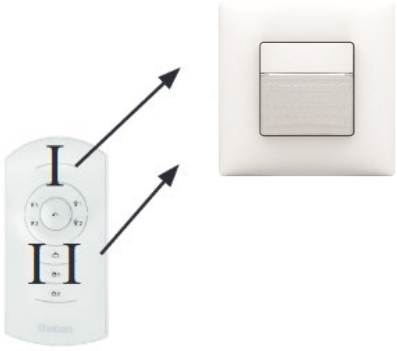


14.3 Examples of set IR group addresses

14.3.1 One presence detector, two lighting channels

Description	Using one theSenda S user remote control, two lighting channels are controlled manually by one presence detector. Channel C1 Light of the presence detector is controlled by channel 1 of theSenda S. Channel C2 Light of the presence detector is controlled by channel 2 of theSenda S.

Devices	theMura P180 KNX (2069655) theSenda S (9070911)

Overview	**Master addr.** **Channel** **IR grp.** Channel C1 Light I Channel C2 Light II 

theMura P180 KNX, Master:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*
	Channel C2 Light	*II*

14.3.2 Two presence detectors, one lighting channel each and blinds

Description	One lighting channel on each of two presence detectors as well as the blinds channel on one presence detector are controlled manually by a theSenda S user remote control. The respective channels C1 Light on the two presence detectors are controlled by channel 1 of theSenda S. As both lighting channels are controlled by the same IR group address, a mutual interaction between the lighting channels is possible. The user remote control must be aimed directly at the appropriate presence detector. Furthermore, the IR signals can be diverted in the room and therefore received by the other presence detector. The blinds are controlled by the Master 2 presence detector via channel 2 of theSenda S. Commands of channel 2 are ignored by Master 1.

Devices	theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658) theSenda S (9070911)

Overview

IR grp. addr. addr.	**Channel**	**Channel**	**IR grp.**
I	Channel C1 Light	Channel C1 Light	I
		External blinds 2	II
	Master 1	Master 2	

theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 1:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*

theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 2:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*
	External blinds 2	*II*

14.3.3 Two presence detectors, two lighting channels

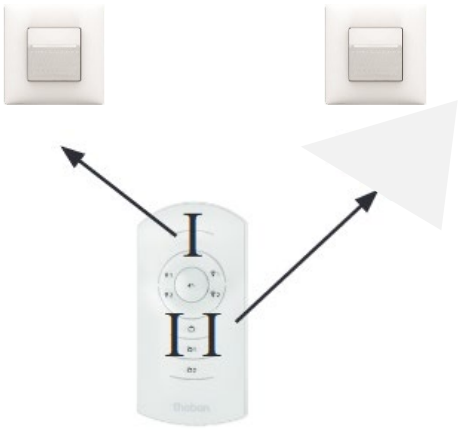
Description	One lighting channel each on two presence detectors is controlled manually by a theSenda S user remote control. Lighting channel C1 on the Master 1 presence detector is controlled by channel 1 of theSenda S. Lighting channel C1 on the Master 2 presence detector is controlled by channel 2 of theSenda S. The lighting channels of the presence detectors are not influenced mutually by theSenda S commands.

Devices	theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658) theSenda S (9070911)

Overview

IR grp. addr. addr.	Channel	Channel	IR grp.
I	Channel C1 Light	Channel C1 Light	II

Master 1 Master 2



theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 1:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*

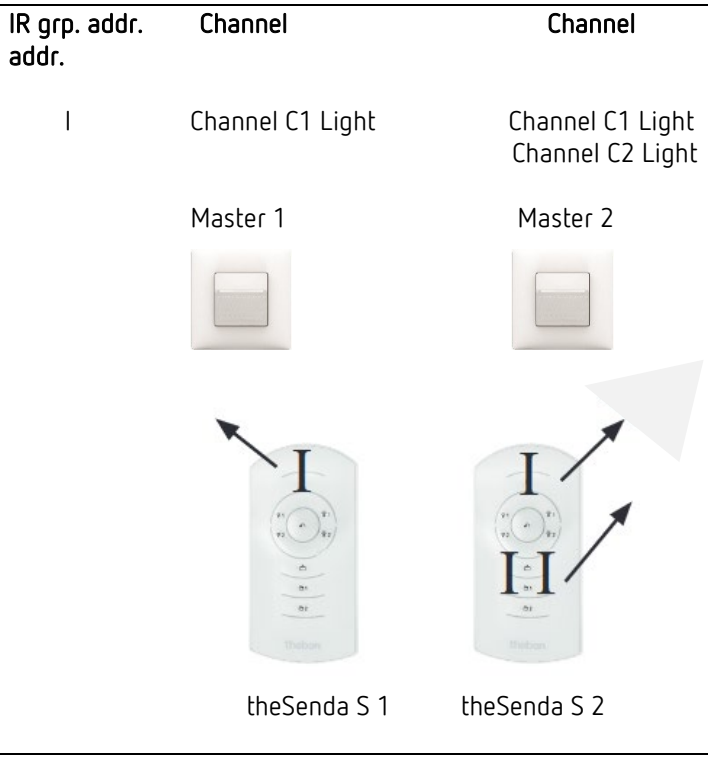
theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 2:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*II*

14.3.4 Two presence detectors with one and two internal lighting channels

Description	The lighting channels of two presence detectors are influenced separately by two theSenda S user remote controls. Channel C1 Light of Master 1 presence detector is controlled by channel 1 of theSenda S 1. Channel C1 Light of Master 2 presence detector is controlled by channel 1 of theSenda S 2. Channel C2 Light of Master 2 presence detector is controlled by channel 2 of theSenda S 2.

Devices	theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658) theSenda S (9070911)

Overview	

theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 1:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*/*

theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 2:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*/*
	Channel C2 Light	*//*

15 User remote control theSenda B

See also theSenda B operating manual.

15.1 Performance characteristics of theSenda B

theSenda B user remote control makes it easy to switch and dim lighting using theMura P180 KNX presence detector. theSenda B has three channels for controlling lighting groups, blinds or external channels with switching and dimming. theSenda B also provides the option of saving two different lighting scenarios which can be retrieved anytime at the touch of a button.
Together with theSenda B remote control and theSenda Plug app, many Theben presence and motion detectors, as well as theLeda D LED spotlights, can be configured and operated quickly, easily and safely. All remotely controllable presence and motion detectors from Theben come pre-installed. New and revised detector types are updated automatically, ensuring that you always have the latest versions. In this way, you will always be up-to-date.

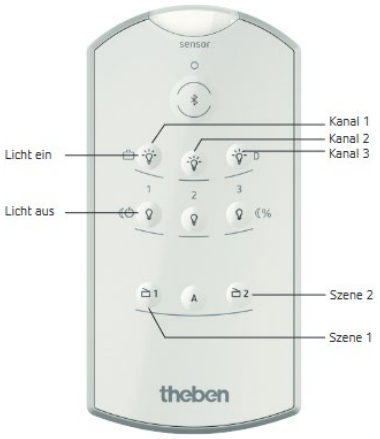
Flexible detector search and configuration
The automatic search takes the installer directly to the corresponding detector. Alternatively, the filter function can be used. What's more, it is possible to search for detectors based on stored parameter sets. All detectors can be programmed with just a few clicks via the intuitive user interface. Comprehensive graphic and text-based help functions as well as animations provide assistance with configuration. Particularly in the case of detectors with an especially large range of functions, such as the DALI presence detectors, theSenda Plug makes configuration much easier and faster.
Parameter sets can be saved and named in a customer-specific way. This makes them easier to reuse, for example in different buildings. The parameter sets can also be created with theSenda Plug in advance, and transferred later, during start-up. For archiving and administration purposes, the parameter sets can be exported, for instance via email.

Perfect functional interaction with theSenda B remote control
While the detectors are configured via the theSenda Plug app, the programmed data is transmitted to the respective detector via the theSenda B remote control and infrared. Communication between app and remote control is via Bluetooth. The highlight: theSenda B offers a built-in lux meter which can be used to calibrate the light measurement simply and conveniently. The measured lux values are then transmitted back to theSenda Plug via Bluetooth. The supplied wall and table mount ensures that the remote control is always at hand.

15.2 Combining the presence detector and theSenda B

The presence detector channels and the theSenda B channels are linked via an IR group address. 8 IR group addresses are available for linking.
Operation of a lighting group requires that the presence detector channel IR group address and that of theSenda B channel match.
The selection of the IR group addresses enables the separation of neighbouring detectors controlled by the theSenda B user remote control. The IR group addresses on theSenda B user remote control can flexibly be allocated to channels 1 to 3 and scenes 1 + 2. The setting can easily be made via “theSenda Plug”, menu “theSenda B”. IR group addresses I to VIII are available for selection. It is also possible to allocate several IR group addresses to the channels and scenes. The user remote control theSenda B is delivered with the following factory settings:

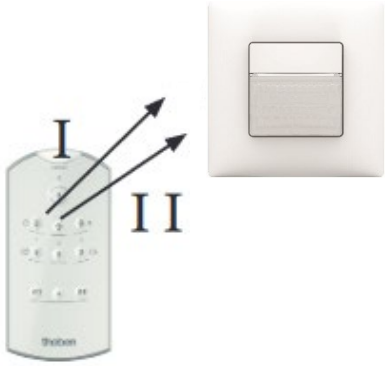
- Channel Light 1: IR group address I
- Channel Light 2: IR group address II
- Channel Light 3: IR group address III
- Scene 1: IR group address I, II and III
- Scene 2: IR group address I, II and III



15.2.1 One presence detector, two lighting channels

Description	Using a theSenda B user remote control, two lighting channels are controlled manually by one presence detector. Channel C1 light of the presence detector is controlled by channel 1 of theSenda B. Channel C2 light of the presence detector is controlled by channel 2 of theSenda B.

Devices	theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658) theSenda B (9070985)

Overview	**Master addr.** **Channel** **IR grp.** Channel C1 Light I Channel C2 Light II 

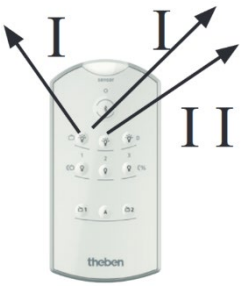
theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*
	Channel C2 Light	*II*

15.2.2 Two presence detectors, one lighting channel each and blinds

Description	One lighting channel on each of two presence detectors as well as the blinds channel on one presence detector are controlled manually by a theSenda B user remote control. The respective channels C1 light on the two presence detectors are controlled by channel 1 of theSenda B. As both lighting channels are controlled by the same IR group address, a mutual interaction between the lighting channels is possible. The user remote control must be aimed directly at the appropriate presence detector. Furthermore, the IR signals can be diverted in the room and therefore received by the other presence detector. The blinds are controlled by the Master 2 presence detector via channel 2 of theSenda B. Commands of channel 2 are ignored by Master 1.

Devices	theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658) theSenda B (9070985)

Overview	**IR grp. addr. addr.**	**Channel**	**Channel**	**IR grp.**
	I	Channel C1 Light	Channel C1 Light External blinds 2	I II
		Master 1	Master 2	
				

theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 1:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*

theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 2:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*
	External blinds 2	*II*

15.2.3 Two presence detectors, two lighting channels

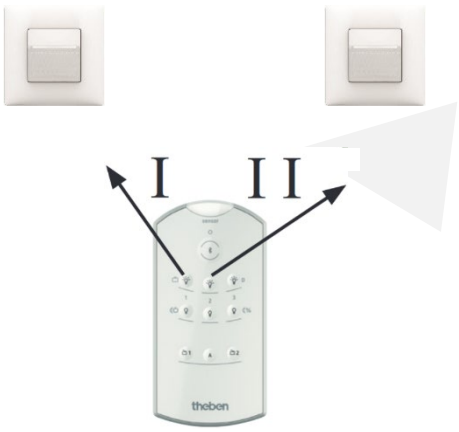
Description	One lighting channel each on two presence detectors is controlled manually by a theSenda B user remote control. Lighting channel C1 on the Master 1 presence detector is controlled by channel 1 of theSenda B. Lighting channel C1 on the Master 2 presence detector is controlled by channel 2 of theSenda B. The lighting channels of the presence detectors are not influenced mutually by theSenda B commands.

Devices	theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658) theSenda B (9070985)

Overview

IR grp. addr. addr.	Channel	Channel	IR grp.
I	Channel C1 Light	Channel C1 Light	II

Master 1 Master 2



theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 1:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*

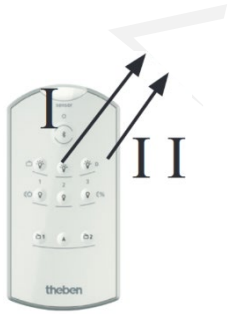
theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 2:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*II*

15.2.4 Two presence detectors with one and two internal lighting channels

Description	The lighting channels of two presence detectors are influenced separately by two theSenda B user remote controls. Channel C1 light of Master 1 presence detector is controlled by channel 1 of theSenda B 1. Channel C1 Light of Master 2 presence detector is controlled by channel 1 of theSenda B 2. Channel C2 Light of Master 2 presence detector is controlled by channel 2 of theSenda S 2.

Devices	theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658) theSenda B (9070985)

Overview	**IR grp. addr. addr.**	**Channel**	**Channel**	**IR grp.**
	I	Channel C1 Light	Channel C1 Light Channel C2 Light	I II
		Master 1	Master 2	
				
		theSenda B 1	theSenda B 2	

theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 1:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*

theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 2:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*
	Channel C2 Light	*II*

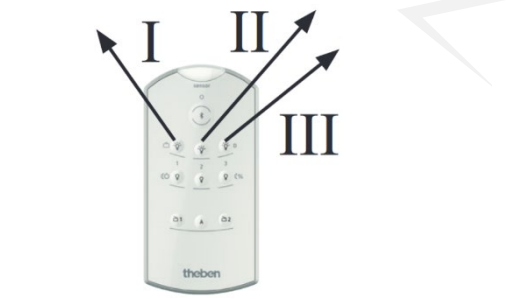
15.2.5 Two presence detectors, two lighting channels and blinds

Description	One lighting channel on each of two presence detectors as well as the blinds channel on one presence detector are controlled manually by the theSenda B user remote control. Lighting channel C1 on the Master 1 presence detector is controlled by channel 1 of theSenda B. Lighting channel C1 on the Master 2 presence detector is controlled by channel 2 of theSenda B. The blinds are controlled by the Master 2 presence detector via channel 3 of theSenda B. The lighting channels of the presence detectors and the blinds are not influenced mutually by theSenda B.

Devices	theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658) theSenda B (9070985)

Overview

IR grp. addr. addr.	Channel	Channel	IR grp.
I	Channel C1 Light	Channel C1 Light	II
		External blinds 2	III
	Master 1	Master 2	



theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 1:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*I*

theMura P180 KNX or theMura P180 2.20 KNX (2069658), Master 2:

Parameter page	Parameters	Setting
Remote control	*Channel C1 Light*	*II*
	External blinds 2	*III*

16 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

17 Troubleshooting

Fault/error	Cause
Light does not switch on or switches off during presence and darkness	Lux value is set too low; detector set on semi-automatic; light was switched off manually via button or theSenda S/B; person not within detection area; obstruction(s) interrupting detection; time delay set too short
Light stays on with detection of presence despite sufficient brightness	Lux value is set too high; the light was just switched on manually via push button or remote control (wait 30 minutes); detector is in test mode
Light does not switch off, or light switches on spontaneously when no one is present	Wait for time delay (self-learning); 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)	- Error during start-up phase or during operation. - Device not functional.

18 Typical applications

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.

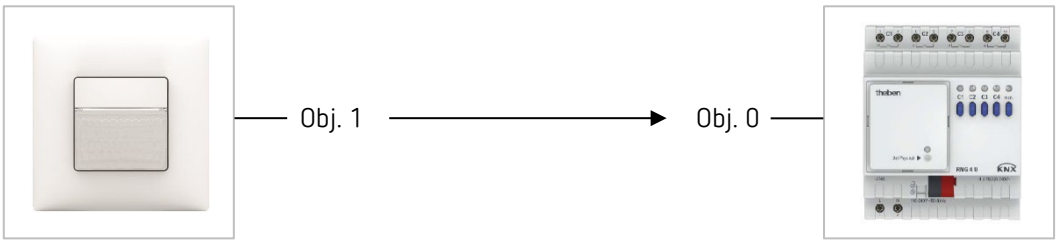
18.1 Presence and brightness-dependent switching of light

The classic function of a presence detector is switching lights on only if a room is occupied and there is insufficient natural daylight. The lighting is automatically switched off if the room is vacated or the amount of daylight increases.

18.1.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- RMG 4 U (4930223)

18.1.2 Overview



18.1.3 Objects and links

Links

No.	theMura P180 KNX Object name/function	No.	RMG 4 U Object name/function	Comment
1	*C1 Light output/switching*	0	*RMG 4 U channel C1/switch object*	Switching lighting on and off

18.1.4 Important parameter settings

theMura P180 KNX

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

RMG 4 U

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

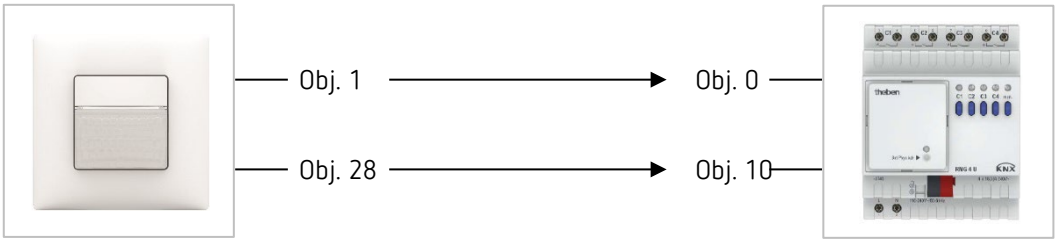
18.2 Presence and brightness-dependent switching of light with two lighting groups in a room

The presence detector switches two lighting groups, one near the window and the second in the interior of the room. The lighting group near the window is switched off by the presence detector before the one in the interior of the room due to the greater amount of daylight (energy saving).

18.2.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- RMG 4 U (4930223)

18.2.2 Overview



18.2.3 Objects and links

Links

No.	theMura P180 KNX Object name / function	No.	RMG 4 U Object name / function	Comment
1	*C1 Light output / switching*	0	*RMG 4 U channel C1 / switch object*	Switching lighting near the window on and off
28	*C2 Light output / switching*	10	*RMG 4 U channel C2 / switch object*	Switching lighting in the interior of the room on and off

18.2.4 Important parameter settings

theMura P180 KNX

Parameter page	Parameters	Setting
General	*Operating mode*	*Master*
	Master operating mode	*Individual switching*
	Activate channel C1 light	*yes*
	Activate channel C2 light	*yes*
Channel C1 Light	*Light function*	*Switching light*
	Configuration type	*Fully automatic device*
	Brightness switching value	*500 lx (according to customer request)*
	Lighting time delay	*10 min (according to customer request)*
Channel C2 Light	*Brightness difference to channel C1*	*20% (according to customer request)*

RMG 4 U

Parameter page	Parameters	Setting
RMG 4 U channel C1: configuration options	*Type of basic module*	*RMG 4 U..*
	Function	*Switching On/Off*
	Activation of function via	*Switch object*
RMG 4 U channel C2: configuration options	*Copy main parameters from channel C1*	*yes*

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

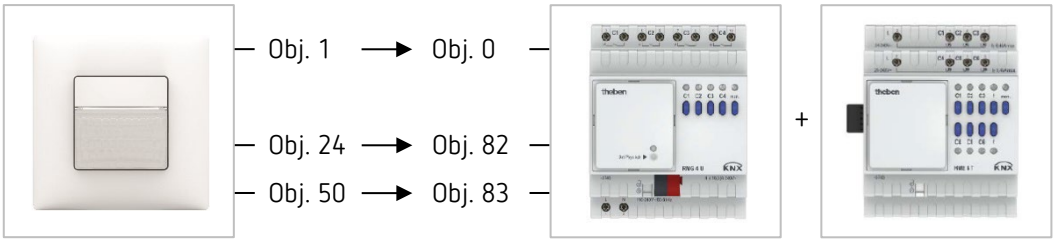
In addition to presence and daylight-dependent switching of a lighting group, the presence detector also controls the heating control. When motion is detected, the corresponding HVAC operating mode is sent. The output is configured with a switch-on delay.
The integrated temperature sensor measures the ambient temperature in order to regulate to the desired setpoint temperature.

18.3.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- RMG 4 U (4930223)
- HME 6 T (4930245)

} MIX combination

18.3.2 Overview



18.3.3 Objects and links

Links

No.	theMura P180 KNX Object name/function	No.	MIX combination Object name/function	Comment
1	*C1 Light output/switching*	0	*RMG 4 U channel C1/switch object*	Switching lighting on and off
24	*Temperature value/ Send value*	82	*EM1 HME 6 T channel H1/ Actual value*	Transmission of actual temperature
50	*C4.1 HVAC/ Send HVAC operating mode*	83	*EM1 HME 6 T channel H1/ Operating mode preselection*	Adjustment of the operating mode

18.3.4 Important parameter settings

theMura P180 KNX

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

MIX combination RMG 4 U and extension module HME 6 T

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

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

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

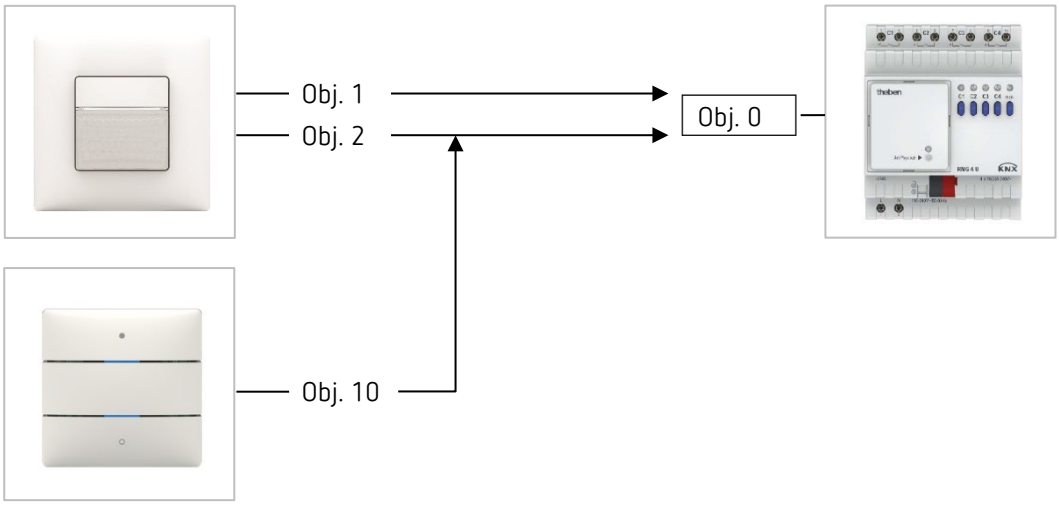
When the light is switched on via the external push button, the user has 30 minutes of light if the room is occupied before the presence detector takes control again. When the light is switched off via the external push button, the lighting remains switched off as long as the presence detector detects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

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. The presence detector switches off the lighting as usual if there is sufficient daylight or if the room is unoccupied.

18.4.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- iON 102 (4969232)
- RMG 4 U (4930223)

18.4.2 Overview



18.4.3 Objects and links

Links

No.	theMura P180 KNX Object name / function	No.	RMG 4 U Object name / function	No.	iON 102 Object name / Function
1	*C1 Light output / switching*	0	*RMG 4 U channel C1 / switch object*		
2	*C1 Light input / switching external push button*	0	*RMG 4 U channel C1 / switch object*	10	Button T1.1 / switching

18.4.4 Important parameter settings

theMura P180 KNX

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

RMG 4 U

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

iON 102

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

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, C2 directly: Switching.**

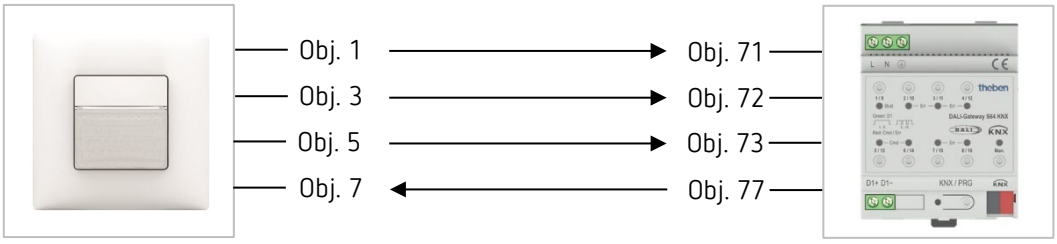
18.5 Constant lighting control

Presence detectors with constant lighting control control the lighting depending on the natural daylight when people are present in the room. When the amount of daylight decreases, the artificial light is automatically dimmed up, and when the amount of daylight increases, the artificial light is automatically dimmed down and finally switched off. The lighting is automatically dimmed to the standby dimming value if the room is vacated.

18.5.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- DALI Gateway S64 KNX (4940301)

18.5.2 Overview



18.5.3 Objects and links

Links

No.	theMura P180 KNX Object name/function	No.	DALI Gateway S64 KNX Object name/function	Comment
1	*C1 Light output/switching*	71	*G1 switching, / On/Off*	
3	*C1 Light output/ Brighter/darker*	72	*G1 Dimming, / Brighter/darker*	
5	*C1 Light output/ Send value*	73	*G1 set value, / Value*	
7	*C1 Light input/ Feedback value*	77	*G1 status, / Value*	

18.5.4 Important parameter settings

theMura P180 KNX

Parameter page	Parameters	Setting
General	*Operating mode*	*Master*
	Master operating mode	*Individual switching*
	Activate channel C1 light	*yes*
Channel C1 Light	*Light function*	*Constant lighting control*
	Configuration type	*Fully automatic device*
	Brightness setpoint value	*500 lx (according to customer request)*
	Lighting time delay	*10 min (according to customer request)*
Channel C1 Light/detail settings	*Light standby time*	*active*

DALI Gateway S64 KNX

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

18.6 Constant lighting control, additional manual override via external push button

The presence detector controls the lighting (see application example: constant lighting control). In addition, the lighting can be switched and dimmed manually with an external push button.

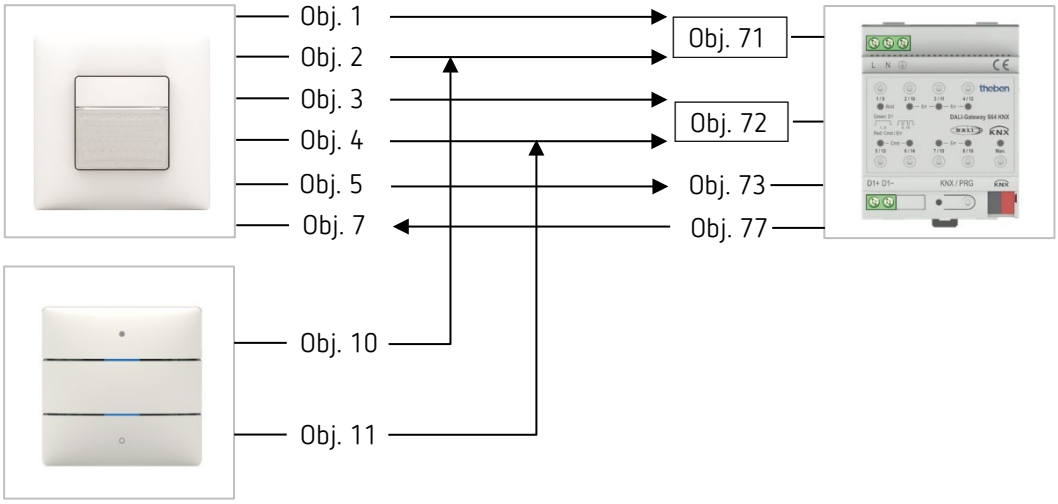
Dimming via push button ends the control. The presence detector remains at the set dimming value while the room is occupied. When the light is switched off via a push button, the lighting remains switched off as long as the presence detector detects that the room is occupied. Only after the time delay has elapsed, the presence detector takes over control (only for behaviour with manual dimming = school).

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.

18.6.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- iON 102 (4969232)
- DALI Gateway S64 KNX (4940301)

18.6.2 Overview



18.6.3 Objects and links

Links

No.	theMura P180 KNX Object name / function	No.	DALI Gateway S64 KNX Object name / function	No.	iON 2 Object name Function
1	*C1 Light output / switching*	71	*G1 switching, / On / Off*		
2	*C1 Light input / switching external push button*	71	*G1 switching, / On / Off*	10	*Button T1 / switching*
3	*C1 Light output / Brighter / Darker*	72	*G1 Dimming, / Brighter / darker*		
4	*C1 Light input / External button brighter / darker*	72	*G1 Dimming, / Brighter / darker*	11	*Button T1 / Brighter / darker*
5	*C1 Light output / Send value*	73	*G1 set value, / Value*		
7	*C1 Light input / Feedback value*	77	*G1 status, / Value*		

18.6.4 Important parameter settings

theMura P180 KNX

Parameter page	Parameters	Setting
General	*Operating mode*	*Master*
	Master operating mode	*Individual switching*
	Activate channel C1 light	*yes*
Channel C1 Light	*Light function*	*Constant lighting control*
	Configuration type	*Fully automatic device*
	Brightness setpoint value	*500 lx (according to customer request)*
	Lighting time delay	*10 min (according to customer request)*

DALI Gateway S64 KNX

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

iON 102

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

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, C2 directly: Dimming.**

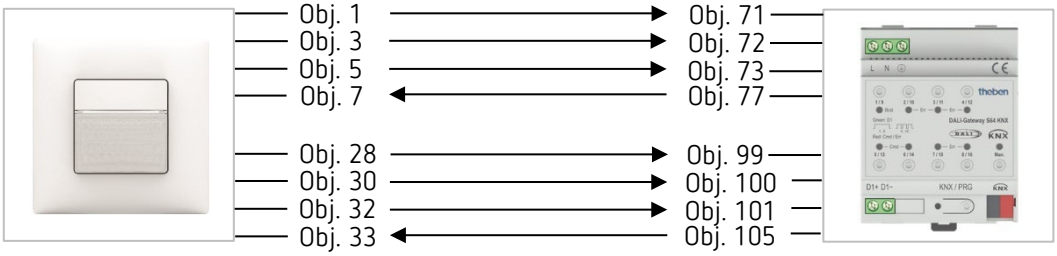
18.7 Constant lighting control with two lighting groups

The constant light control controls the lighting dependent on natural daylight (see application example **Constant light control**).
The lighting is divided into two lighting groups to make maximum use of the daylight near the window. The two lighting groups are switched on and controlled together.

18.7.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- DALI Gateway S64 KNX (4940301)

18.7.2 Overview



18.7.3 Objects and links

Links

No.	theMura P180 KNX Object name/function	No.	DALI Gateway S64 KNX Object name/function	Comment
1	*C1 Light output/switching*	71	*G1 switching, / On/Off*	
3	*C1 Light output/ Brighter/darker*	72	*G1 Dimming, / Brighter/darker*	
5	*C1 Light output/ Send value*	73	*G1 set value, / Value*	
7	*C1 Light input/ Feedback value*	77	*G1 status, / Value*	
28	*C2 Light output/switching*	99	*G2 switching, / On/Off*	
30	*C2 Light output/ Brighter/darker*	100	*G2 Dimming, / Brighter/darker*	
32	*C2 Light output/ Send value*	101	*G1 set value, / Value*	
33	*C2 Light input/ Feedback value*	105	*G1 status, / Value*	

18.7.4 Important parameter settings

theMura P180 KNX

Parameter page	Parameters	Setting
General	*Operating mode*	*Master*
	Master operating mode	*Individual switching*
	Activate channel C1 light	*yes*
	Activate channel C2 light	*yes*
Channel C1 Light	*Light function*	*Constant lighting control*
	Configuration type	*Fully automatic device*
	Brightness setpoint value	*500 lx (according to customer request)*
	Lighting time delay	*10 min (according to customer request)*
Channel C1 Light/detail settings	*Light standby time*	*active*
Channel C2 Light	*Brightness difference to channel C1*	*20% (according to customer request)*

DALI Gateway S64 KNX

Parameter page	Parameters	Setting
G1,	*Operating mode*	*Normal operation*
	Function of additional object	*no object*
	Enabled for panic mode	*No*
G1, / behaviour	*Switch-on value*	*100%*
	Switch-on behaviour	*Dim to value in 10 seconds*
	Switch-off value	*0%*
	Behaviour on value setting	*Dim to value in 10 seconds*
	Time for dimming	*10 seconds*
	Max. value for dimming	*100%*
	Min. value for dimming	*0%*
	Min/max values apply to	*Dimming object*
	Switch-on via dimming	*No*
G2,	*Operating mode*	*Normal operation*
	Function of additional object	*no object*
	Enabled for panic mode	*No*
G2, / behaviour	*Switch-on value*	*100%*
	Switch-on behaviour	*Dim to value in 10 seconds*
	Switch-off value	*0%*
	Behaviour on value setting	*Dim to value in 10 seconds*
	Time for dimming	*10 seconds*
	Max. value for dimming	*100%*
	Min. value for dimming	*0%*
	Min/max values apply to	*Dimming object*
	Switch-on via dimming	*No*

18.8 Master/Slave parallel switching

Several presence detectors can be linked together to provide coverage of large areas such as open-plan offices or corridors. One presence 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.

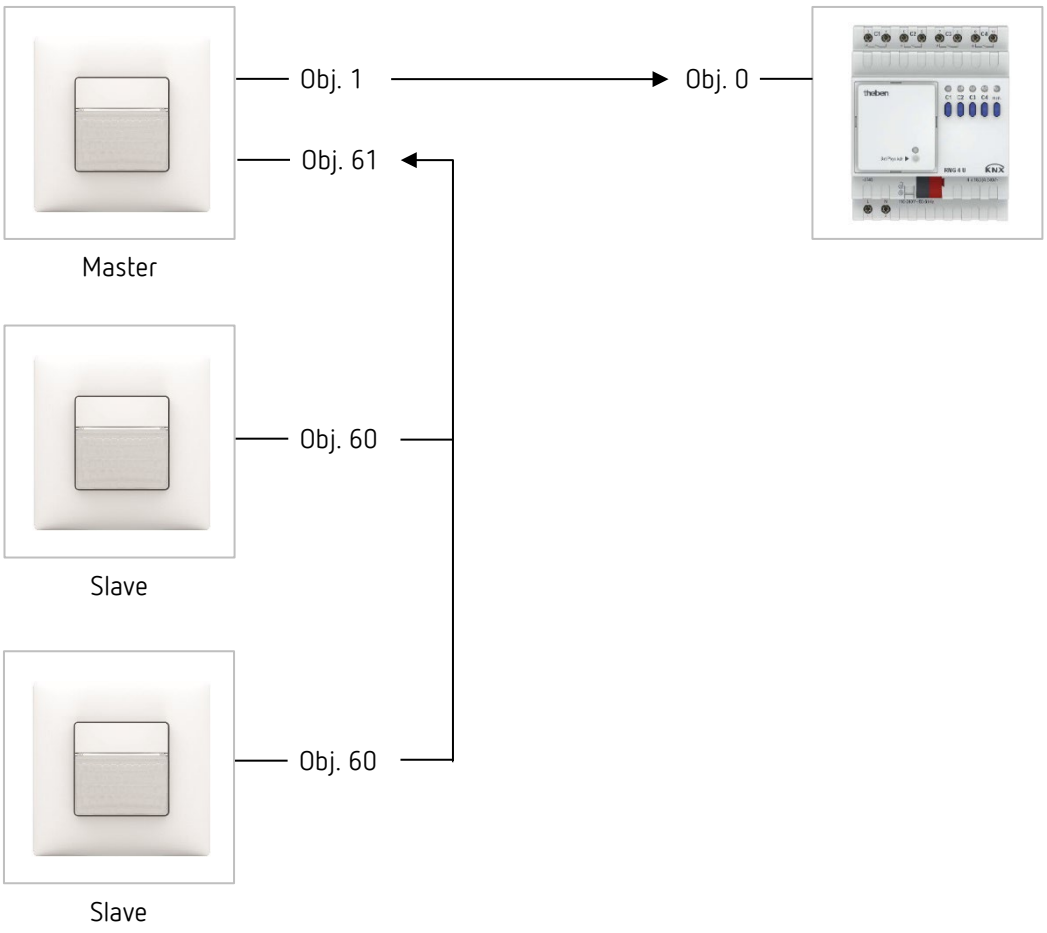
The trigger signal acts on the lighting channel and on the HVAC channel of the Master.

Master/Slave parallel switching can be used independently of whether the Master switches one or two lighting groups or operates in constant lighting control.

18.8.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- RMG 4 U (4930223)

18.8.2 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.

18.8.3 Objects and links

Links

No.	theMura P180 KNX Object name/function	No.	RMG 4 U Object name/function	Comment
1	*C1 Light output/switching*	0	*RMG 4 U channel C1/switch object*	Switching lighting on and off

No.	theMura P180 KNX (Master) Object name/function	No.	theMura P180 KNX (Slaves) Object name/function	Comment
61	*Parallel switching input/ Trigger input*	60	*Parallel switching output/ Trigger output*	Connection between Master and Slaves

18.8.4 Important parameter settings

theMura P180 KNX (Master)

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

theMura P180 KNX (Slaves)

Parameter page	Parameters	Setting
General	*Operating mode*	*Slave*

RMG 4 U

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

18.9 Master/Master parallel switching

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

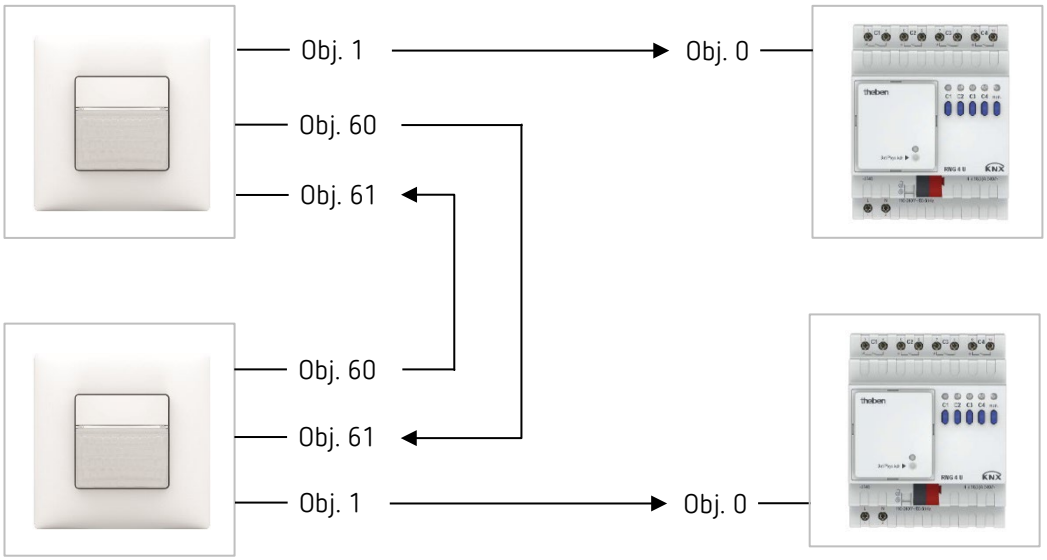
Each Master operates its lighting group according to its light measurement and settings. They exchange presence among each other. This extends the detection area. It should be noted that each Master can only detect the light switched or controlled by itself.

Master/Master parallel switching can be used independently of whether the Master is configured for switching or constant lighting control.

18.9.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- RMG 4 U (4930223)

18.9.2 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.

18.9.3 Objects and links

Links

No.	theMura P180 KNX Object name / function	No.	RMG 4 U Object name / function	Comment
1	*C1 Light output / switching*	0	*RMG 4 U channel C1 / switch object*	Switching lighting on and off

No.	theMura P180 KNX Object name / function	No.	theMura P180 KNX Object name / function	Comment
61	*Parallel switching input / Trigger input*	60	*Parallel switching output / Trigger output*	Connection between Master and Master
60	*Parallel switching output / Trigger output*	61	*Parallel switching input / Trigger input*	Connection between Master and Master

18.9.4 Important parameter settings

theMura P180 KNX

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

RMG 4 U

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

18.10 Aura effect

With the aura effect, the light follows users in the area where they currently are. The lighting in the adjacent detection zones is switched or dimmed to the <Aura dimming value>. It follows an example of 3 presence detectors and 3 lighting groups. Each Master switches one lighting group.

Procedure:

① Make settings at Master A, B and C.

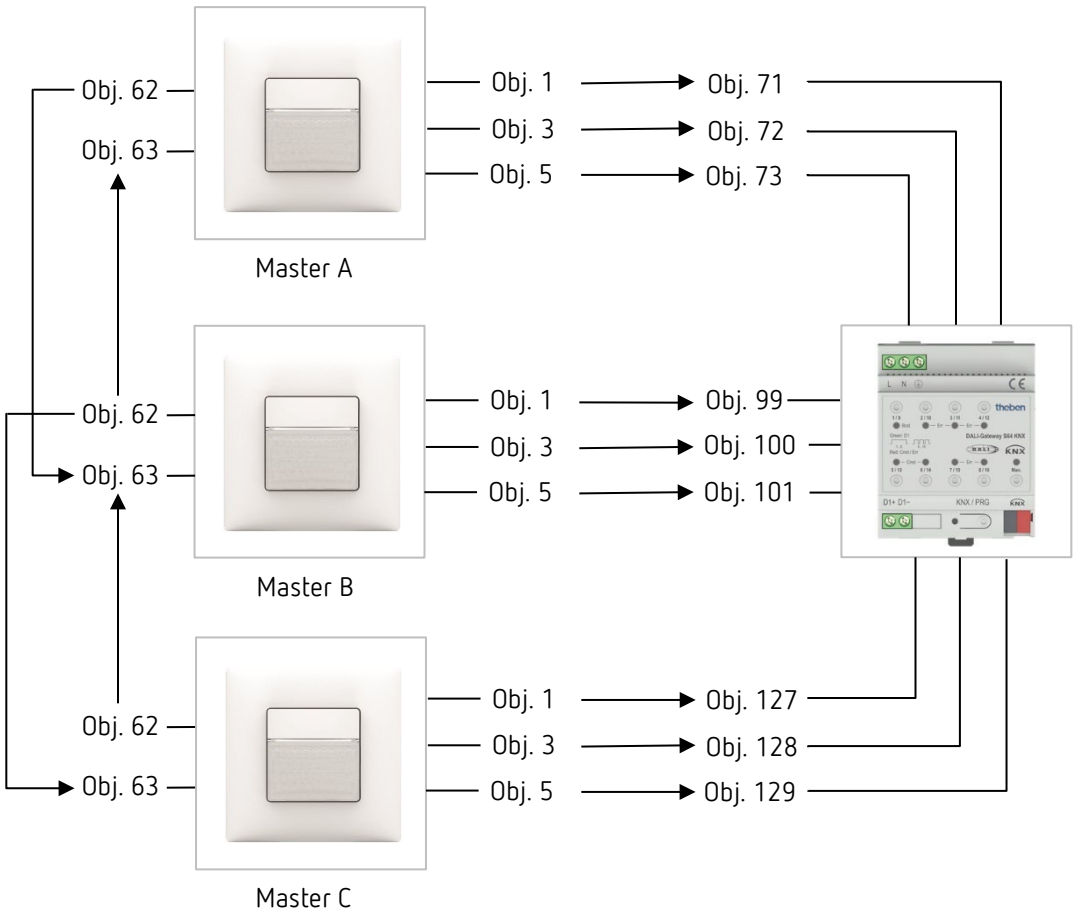
② Assign an individual group address to the aura effect object (Master A, B and C).

③ Connect the aura effect objects of the adjacent zones of the individual Master devices. Example: Connect Master A, object 62 with Master B, object 63.

18.10.1 Devices

- theMura P180 KNX (2069655) or theMura P180 2.20 KNX (2069658)
- DALI Gateway S64 KNX (4940301)

18.10.2 Overview



18.10.3 Objects and links

Links

No.	theMura P180 KNX / Master A, B, C Object name/function	No.	DALI Gateway S64 KNX Object name/function	Comment
1	*C1 Light output/switching*	71, 99, 127	*Gx switching, / On/Off*	
3	*C1 Light output / Brighter/Darker*	72, 100, 128	*Gx dimming, / Brighter/darker*	
5	*C1 Light output / send value*	73, 101, 129	*Gx set value, / Value*	

Links ③

No.	theMura P180 KNX / Master A Object name/function	No.	theMura P180 KNX / Master B Object name/function	Comment
62	*Aura effect output/ Send motion status*	63	*Aura effect input/ Receive motion status*	Object link Master A – Master B
63	*Aura effect input/ Receive motion status*	62	*Aura effect output/ Send motion status*	Object link Master B – Master A

Links ③

No.	theMura P180 KNX / Master B Object name/function	No.	theMura P180 KNX/ Master C Object name/function	Comment
62	*Aura effect output/ Send motion status*	63	*Aura effect input/ Receive motion status*	Object link Master B – Master C
63	*Aura effect input/ Receive motion status*	62	*Aura effect output/ Send motion status*	Object link Master C – Master B

18.10.4 Important parameter settings

theMura P180 KNX

Parameter page	Parameters	Setting
General	*Operating mode*	*Master*
	Master operating mode	*Aura effect*
	Activate channel C1 light	*yes*
Channel C1 Light	*Light function*	*Switching light*
	Configuration type	*Fully automatic device*
	Brightness switching value	*200 lx (according to customer request)*
	Lighting time delay	*5 min (according to customer request)*
Channel C1 Light/detail settings	*Light standby time*	*active*
	Standby dimming value	*10% (according to customer request)*

DALI Gateway S64 KNX

Parameter page	Parameters	Setting
Group 1…3		
Gx,	*Operating mode*	*Normal operation*
	Function of additional object	*no object*
	Enabled for panic mode	*No*
Gx, / behaviour	*Switch-on value*	*100%*
	Switch-on behaviour	*Dim to value in 10 seconds*
	Switch-off value	*0%*
	Behaviour on value setting	*Dim to value in 10 seconds*
	Time for dimming	*10 seconds*
	Max. value for dimming	*100%*
	Min. value for dimming	*0%*
	Min/max values apply to	*Dimming object*
	Switch-on via dimming	*No*

19 Appendix

19.1 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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