theben

Manual
Ceiling presence detector
LUXA 103 KNX

LUXA 103 S360-12 KNX
UP WH
1039052

LUXA 103 S360-28 KNX
UP WH
1039072

2024-02-27

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Contents

1 Function description

Presence detectors LUXA 103 S360-12 KNX UP WH and LUXA 103 S360-28 KNX UP WH (so-called corridor detectors)

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.
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 temperature measurement or integrated logic channels allow a variety of additional applications.

1.1 Features

- KNX passive infrared presence detector for ceiling installation
- 2 lighting channels
- 2 HVAC channels
- 3 logic channels (AND/OR/XOR)
- Integrated temperature sensor
- Day-night changeover via telegram with adjustable brightness, time delay and switch-on dimming value
- Additional telegram in the lighting channel (priority, value, percentage value or scene)
- KNX Data Secure
- Separate block telegrams for all channels and for parallel switching
- Matching corridor sensor
- For use in wet rooms and outdoor areas (IP 54)
- Area restriction included in the scope of supply
- Accessories for surface mounting are available in 3 colours (white, grey, black)
- 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

- Automatic presence and brightness-dependent control for lighting and HVAC

- Setting the room correction factor for brightness measurement calibration

- Detection and sending of current brightness

- Test mode for checking function and detection area

- The behaviour for manual override via an external push button, telegram or remote control can be selected

- KNX firmware update possible (ETS app)

- App remote control theSenda B/theSenda Plug (optional)

1.2 Proper Use

The LUXA 103 KNX presence detectors are part of the LUXA 103 device family, which can be used to automatically and efficiently control lighting and HVAC in indoor and outdoor areas. LUXA 103 S360-12 KNX with circular detection area (360°, Ø 12 m at 3 m installation height) is ideal for individual and open-plan offices, meeting and storage rooms, cellars and toilets.

LUXA 103 S360-28 KNX with rectangular detection area (360°, 28 x 5 m at 3 m installation height) functions as a special corridor detector. Both devices have 2 channels each for light and HVAC as well as 3 logic channels.

(i) The detector is not suitable for intruder alarm systems.

(i) Due to the IP 54 protection rating, the temperature measurement can be slow. Therefore, the use of the temperature value for room control in living rooms is not unconditionally recommended.

2 Installation

As the detector reacts to variations in temperature, avoid the following situations:

➢ Do not point the presence detector at objects with highly reflective surfaces such as mirrors, etc.

➢ Do not install the presence detector near heat sources such as heating vents, air conditioners, lamps, etc.

➢ Do not point the presence detector at objects that move in the wind such as curtains, large plants, etc.

➢ Pay attention to the direction of motion during the test run.

➢ Observe the recommended height for ceiling installation of 2.5 m - 3.5 m!

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

2.1 Connection
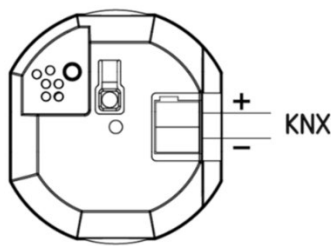
2.2 Detection area

LUXA 103 S360-12 KNX UP WH (with circular detection area)

The circular detection area of the detector provides reliable room coverage for many applications.

going transversally to the detector
seated
going frontally to the detector
Installation height: 3 m
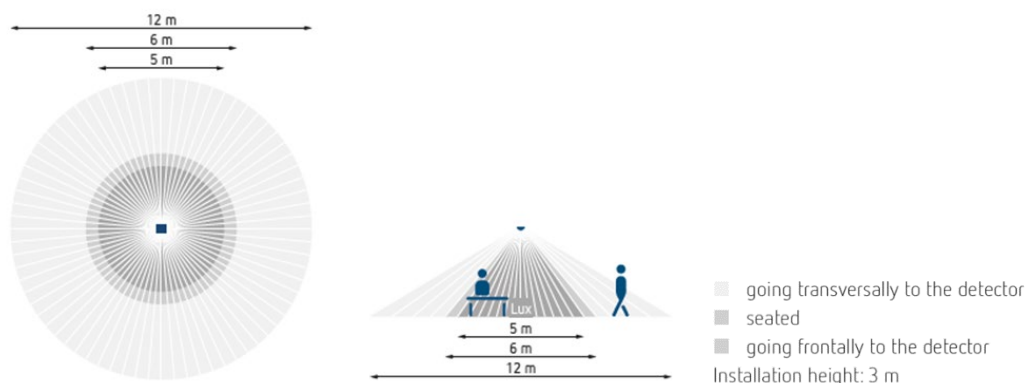
Installation height (A)	going transversally (T)	going frontally (R)	seated (S)
2.5 m	Ø 10 m	Ø 6 m	Ø 4 m
3 m	Ø 12 m	Ø 6 m	Ø 5 m
3.5 m	Ø 10 m	Ø 6 m	Ø 5 m

LUXA 103 S360-28 KNX UP WH (so-called corridor detector with rectangular detection area)

The rectangular detection area of the detector provides reliable room coverage for many applications. Note that frontally (radially) and transversally (tangentially) walking persons are detected in differently-sized areas.
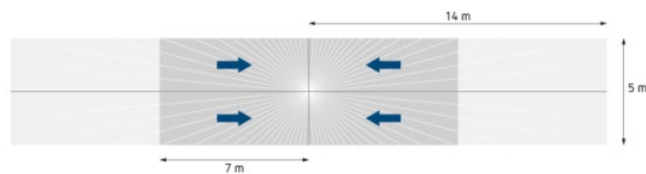
 going transversally to the detector
 going frontally to the detector
Installation height: 3 m

Installation height (A)	going transversally (T)	going frontally (R)
2.5 m	28 x 5 m	14 x 5 m
3 m	28 x 5 m	14 x 5 m
3.5 m	26 x 4 m	12 x 5 m

2.2.1 Limiting the detection area

- ➢ Use the enclosed cover clip to adjust the detector to the desired detection area.
- ➢ Remove the required section of the clip using scissors.
- ➢ Then place it on the lens.

Abdeckclips
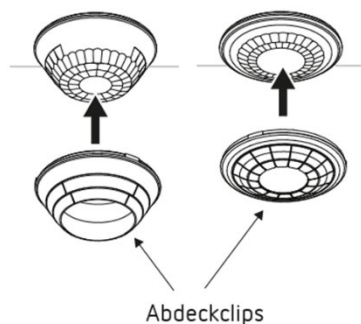
Presence detector
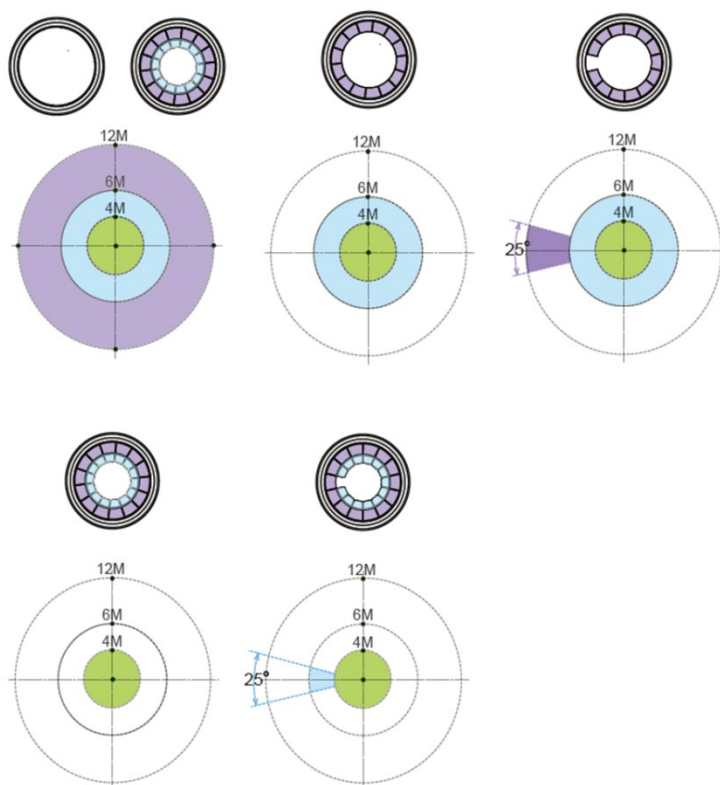
Corridor detector
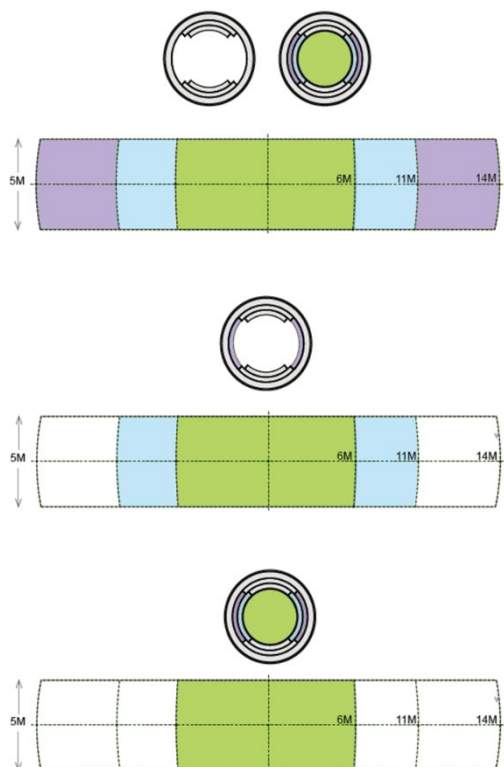
2.3 Flush-mounted installation
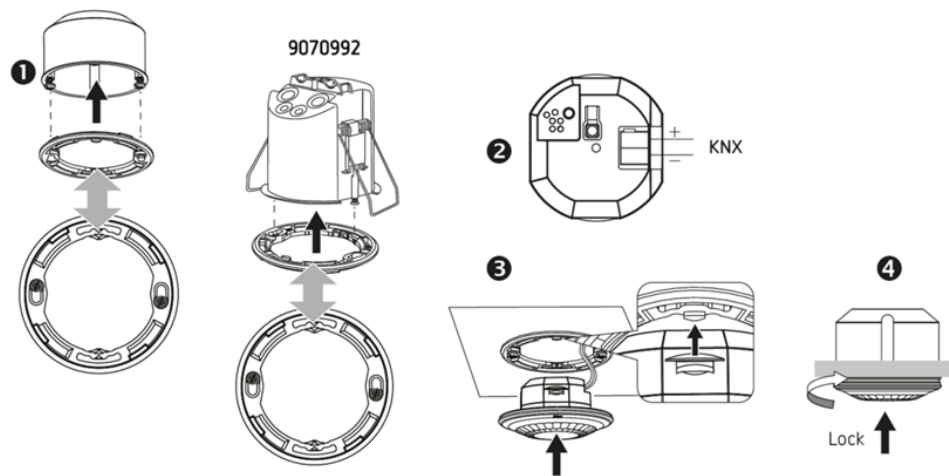
1. The flush-mounted installation is carried out in a ceiling installation box. The mounting ring of the presence detector is attached to the ceiling installation box using 2 screws.

2. After connecting the KNX bus line, the detector is pushed into the box (ensure correct positioning) until it clicks into place.

3. The bayonet socket is closed with a clockwise rotation.

For ceiling installation, the accessory with item number 9070992 is used. The ceiling installation box has springs for inserting into a suspended ceiling.

To remove, the bayonet socket is opened by turning clockwise. Using a screwdriver, the detector is lifted out of the mounting ring at the marking by a small lever movement.
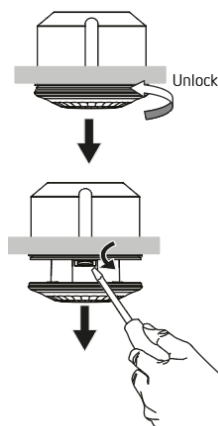
2.4 Surface mounting
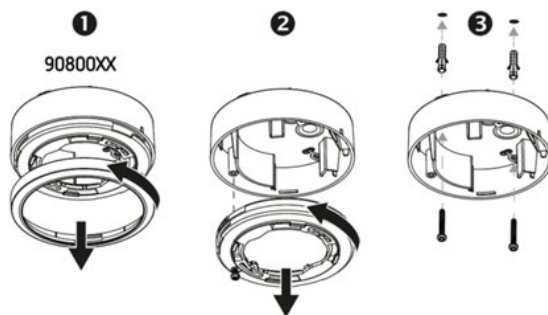
1. Surface mounting is carried out with accessory 9080019 / 9080020 / 9080021 in white, grey or black.
2. To install the surface mount frame, remove the decorative ring and the mounting ring.
3. Then attach the surface mount frame to the ceiling.
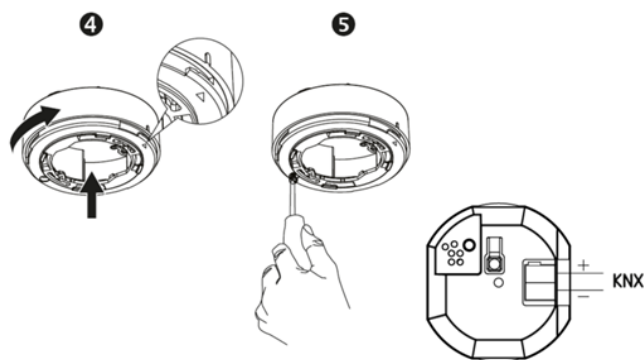
4. The mounting ring is fitted with a rotating movement (observe the marking) and
5. fixed with a screw.
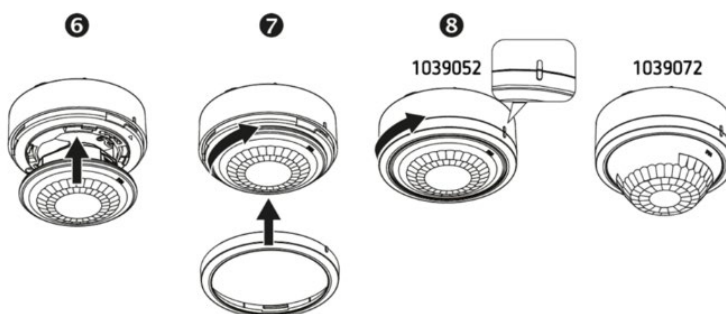
6. After connecting the KNX bus line, the detector is inserted into the surface mount frame and secured again by turning the bayonet socket.
7. The decorative ring is mounted on the surface mount frame in the same way and
8. closed with a rotating movement. Markings on decorative ring and surface mount frame indicate the closed position.

To remove, the bayonet socket of the decorative ring is opened with a rotating movement. Using a screwdriver, the detector is lifted out of the mounting ring at the marking by a small lever movement.
Then the screw is loosened, and the mounting ring is removed with a rotating movement.

The surface mount frame can then be dismounted by loosening the screws.
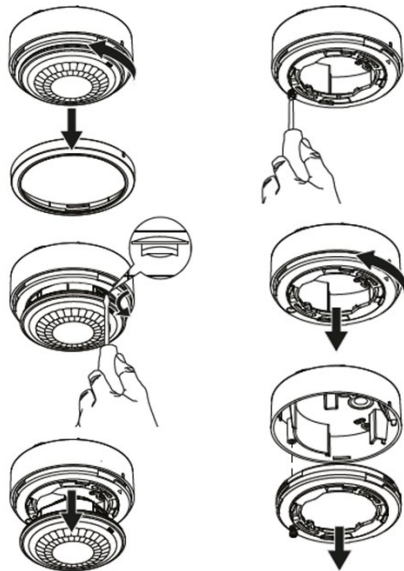
3 Technical data

Device variant	LUXA 103 S360-12 KNX UP WH	LUXA 103 S360-28 KNX UP WH
Recommended installation height	3 m	
Max. detection area	Ø 12 m walking transversely Ø 6 m head on to Ø 5 m presence	28 x 5 m walking transversely 14 x 5 m head on to
Detection angle	360°	
KNX operating voltage	21 − 32 V DC	
KNX medium	TP1-256	
KNX bus power input	< 12.5 mA	
Type of installation	flush-mounted Surface mounting possible with surface mount frame 9080019/20/21 Ceiling installation possible with mounting box 68A (9070992)	
Setting range brightness switching value/setpoint value	5 − 1000 lx	
Lighting time delay	30 s − 60 min.	
Standby dimming value	1 − 100% of the lamp output	
Standby time light	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 °C ... +45 °C	
Type of connection	KNX bus terminal	
Protection rating	IP 54 according to EN 60529 when assembled correctly	
Ambient temperature	-25 °C ... +55 °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 Settings via remote control/app

5.1 Functionality of the remote controls/app

The following parameters can be queried or changed with the remote control to support start-up and service work:

Parameter	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	
Outdoor use		X	
Lighting time delay		X	X
Lighting time delay night		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:

Parameter	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	

5.2 General functioning of the remote controls/app

5.2.1 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.

5.2.2 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 the remote control, 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 remote control/app

6.1 Parameter
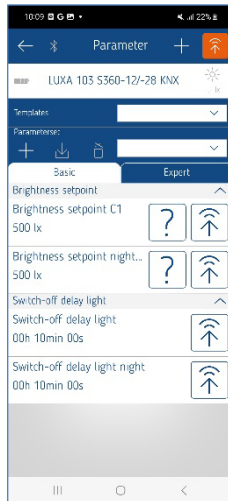
Parameter overview

Brightness setpoint value C1
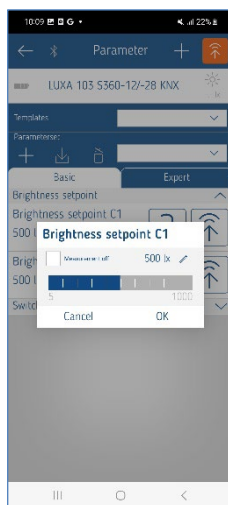
theSenda B/app   theSenda P

Brightness setpoint night value
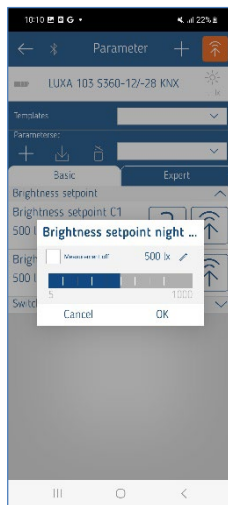
theSenda B/app

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 between brightness measurements on the ceiling and on the work area. The brightness measurement value at the ceiling 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.

Further information, see Chapter 10 Brightness switching value/brightness setpoint value.
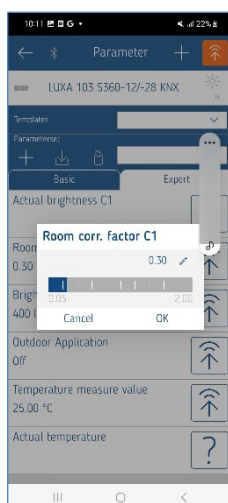
Brightness measurement value C1

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

➢ After selecting the parameter **Brightness measurement value C1** either press **Input** and enter the 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.

Outdoor application

LUXA 103 can also be used outdoors. This can be set in the app.
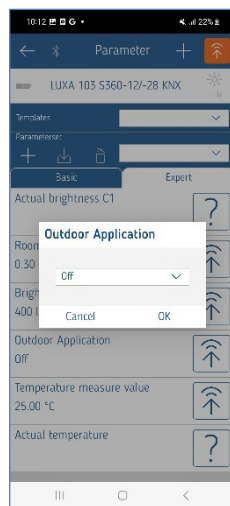
theSenda B/app

Switch-off delay light
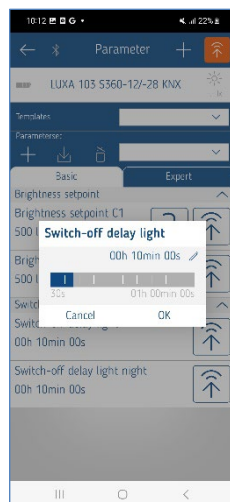
theSenda B/app   theSenda P

Switch-off delay light night   **Temperature measure value**
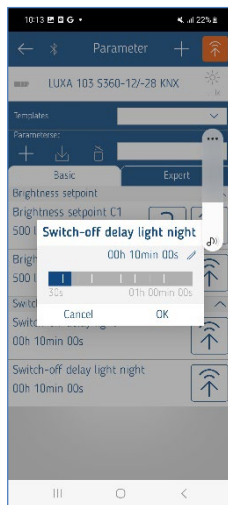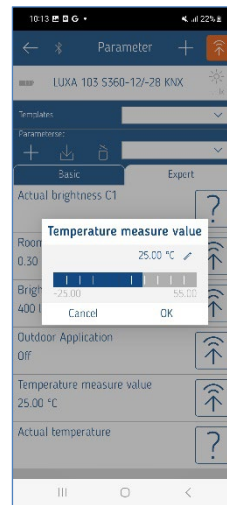
theSenda B/app   theSenda B/app

ⓘ 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
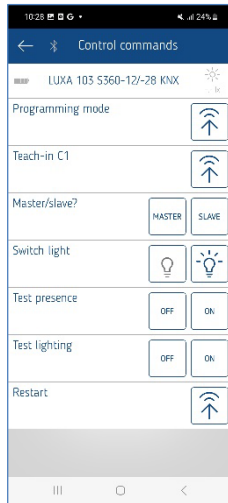
theSenda B/app   theSenda P

Teach-in C1
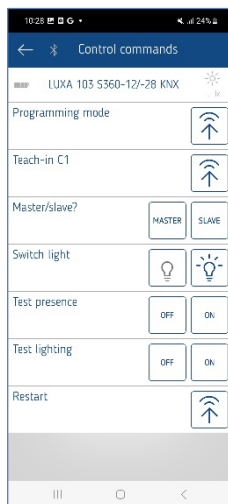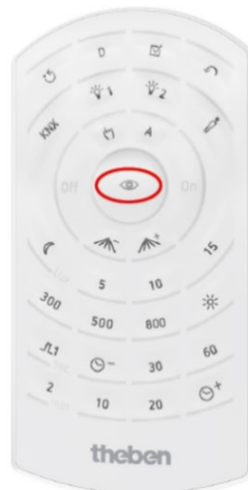
theSenda B/app   theSenda P

Always that setpoint is changed which is active when the teach-in function is carried out:

Brightness setpoint value C1
Brightness setpoint value C1 night

Master/Slave?
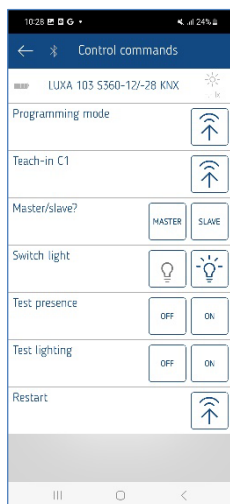
theSenda B/app

Switch light
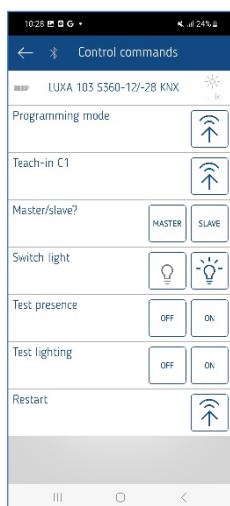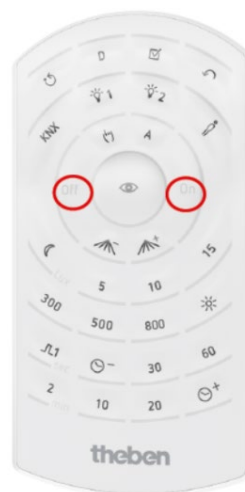
theSenda B/app theSenda B theSenda P theSenda S

Test presence

See Chapter 11.1 Test mode presence

Test lighting

See Chapter 11.2 Test mode light

Restart
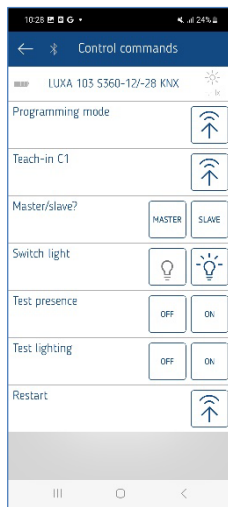
theSenda B/app   theSenda P

7 The LUXA 103 KNX application program

7.1 Selection in the product database

Manufacturer	Theben AG	Theben AG
Product family	Physical sensors	Physical sensors
Product type	Presence detector	Presence detector
Program name	LUXA 103 S360-12	LUXA 103 S360-28

Number of communication objects	83
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

No.	Object name	Function	Length	R	W	C	T	U	DPT
1	C1 Light output	Switching	1 bit	R		C	T	-	1001
2	C1 Light input	Switching external push button	1 bit	-	W	C	-	-	1001
3	C1 Light output	Brighter / darker	4 bit	R	-	C	T	-	3007
4	C1 Light input	External button brighter / darker	4 bit	-	W	C	-	-	3007
5	C1 Light output	Send value	1 byte	R	-	C	T	-	5001
6	C1 Light input	Send value external push button	1 byte	-	W	C	-	-	5001
7	C1 Light input	Feedback value	1 byte	-	W	C	T	U	5001
11	C1 Brightness switching value	Receive value	2 bytes	-	W	C	-	-	9004
	C1 Brightness setpoint value	Receive value	2 bytes	-	W	C	-	-	9004
12	C1 Brightness switching value	Send value	2 bytes	R	-	C	T	-	9004
	C1 Brightness setpoint value	Send value	2 bytes	R	-	C	T	-	9004
13	C1 Brightness switching value night	Receive value	2 bytes	-	W	C	-	-	9004
	C1 Brightness setpoint value night	Receive value	2 bytes	-	W	C	-	-	9004
14	C1 Brightness switching value night	Send value	2 bytes	R	-	C	T	-	9004
	C1 Brightness setpoint value night	Send value	2 bytes	R	-	C	T	-	9004
15	C1 Brightness switching value (teach-in)	$01= call up / $81 = save	1 byte	-	W	C	-	-	18001
	C1 Brightness setpoint value (teach-in)	$01= call up / $81 = save	1 byte	-	W	C	-	-	18001
18	Measurement value on lux meter	Receive value	2 bytes	-	W	C	-	-	9004
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	-	9004
21	External brightness value	Receive lux value	2 bytes	-	W	C	-	-	9004
22	Measurement value temperature	Receive value	2 bytes	-	W	C	-	-	9001
23	Temperature offset	Call up value	2 bytes	R	-	C	T	-	9002
24	Temperature value	Send value	2 bytes	R	-	C	T	-	9001
28	C2 Light output	Switching	1 bit	R	-	C	T	-	1001
29	C2 light input	Switching external push button	1 bit	-	W	C	-	-	1001
30	C2 Light output	Brighter / darker	4 bit	R	-	C	T	-	3007
31	C2 light input	External button brighter / darker	4 bit	-	W	C	-	-	3007
32	C2 Light output	Send value	1 byte	R	-	C	T	-	5001
33	C2 light input	Send value external push button	1 byte	-	W	C	-	-	5001
34	C2 light input	Feedback value	1 byte	-	W	C	T	U	5001
35	C1 light additional telegram	Priority	2 bit	R	-	C	T	-	2001
		Value	1 byte	R	-	C	T	-	5010
		Percentage value	1 byte	R	-	C	T	-	5001

No.	Object name	Function	Length	R	W	C	T	U	DPT
		Scene	1 byte	R	-	C	T	-	17001
36	C2 light additional telegram	Priority	2 bit	R	-	C	T	-	2001
		Value	1 byte	R	-	C	T	-	5010
		Percentage value	1 byte	R	-	C	T	-	5001
		Scene	1 byte	R	-	C	T	-	17001
38	C1, C2 light	Day-night changeover	1 bit	-	W	C	-	-	1024
39	C1, C2 light	Selection of constant lighting control	1 bit	-	W	C	-	-	1003
	C1, C2 light constant lighting control	Activate / deactivate	1 bit	-	W	C	-	-	1003
40	C1, C2 light	Standby function	1 bit	-	W	C	-	-	1003
41	C1, C2 lighting time delay	Receive value	2 bytes	-	W	C	-	-	7005
42	C1, C2 lighting time delay	Send value	2 bytes	R	-	C	T	-	7005
43	C1, C2 lighting time delay night	Receive value	2 bytes	-	W	C	-	-	7005
44	C1, C2 lighting time delay night	Send value	2 bytes	R	-	C	T	-	7005
45	C1, C2 light	Block / unblock	1 bit	-	W	C	-	-	1003
46	Central command	Receive	1 bit	-	W	C	-	-	1001
47	External scene	Receive	1 byte	-	W	C	-	-	17001
48	Red LED	Receive	1 bit	-	W	C	-	-	1001

7.2.2 HVAC channels

No.	Object name	Function	Length	R	W	C	T	U	DPT
50	C4.1 HVAC	Switching	1 bit	R	-	C	T	-	1001
		Priority	2 bit	R	-	C	T	-	2001
		Send value	1 byte	R	-	C	T	-	5010
		Send percentage value	1 byte	R	-	C	T	-	5001
		Send HVAC operating mode	1 byte	R	-	C	T	-	20102
		Send scene	1 byte	R	-	C	T	-	17001
51	C4.2 HVAC	Switching	1 bit	R	-	C	T	-	1001
		Priority	2 bit	R	-	C	T	-	2001
		Send value	1 byte	R	-	C	T	-	5010
		Send percentage value	1 byte	R	-	C	T	-	5001
		Send HVAC operating mode	1 byte	R	-	C	T	-	20102
		Send scene	1 byte	R	-	C	T	-	17001
52	C4 HVAC	Block / unblock	1 bit	-	W	C	-	-	1003
53 : 55		Channel C5 (details: see channel C4)							

7.2.3 General objects

No.	Object name	Function	Length	R	W	C	T	U	DPT
60	Parallel switching output	Send motion information	1 bit	-	-	C	T	-	1017
61	Parallel switching input	Receive motion information	1 bit	-	W	C	-	-	1017
62	Parallel switching output	Block / unblock	1 bit	-	W	C	-	-	1003
63	Parallel switching input	Block / unblock	1 bit	-	W	C	-	-	1003
65	Scene input	Scene 1 / 2	1 bit	-	W	C	-	-	1022
66	Scene output	Scene number	1 byte	-	-	C	T	-	17001
67	IR switching external 1	Switching	1 bit	-	-	C	T	-	1001
68	IR dimming external 1	Brighter / darker	4 bit	-	-	C	T	-	3007
69	IR switching external 2	Switching	1 bit	-	-	C	T	-	1001
70	IR dimming external 2	Brighter / darker	4 bit	-	-	C	T	-	3007
71	IR external blinds 1	Up / down	1 bit	-	-	C	T	-	1008
72	IR external blinds 1	Step / stop	1 bit	-	-	C	T	-	1007
73	IR external blinds 2	Up / down	1 bit	-	-	C	T	-	1008
74	IR external blinds 2	Step / stop	1 bit	-	-	C	T	-	1007
75	Test mode presence	On / Off	1 bit	-	W	C	-	-	1001
76	Test mode light	On / Off	1 bit	-	W	C	-	-	1001
77	Software version	Send	2 bytes	R	-	C	T	-	217001

7.2.4 Logic channels

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	1002
	C18 Logic module	Logic input 1 in OR gate	1 bit	-	W	C	-	U	1002
	C18 Logic module	Logic input 1 in XOR gate	1 bit	-	W	C	-	U	1002
81	C18 Logic module	Logic input 2 in UND gate	1 bit	-	W	C	-	U	1002
	C18 Logic module	Logic input 2 in ODER gate	1 bit	-	W	C	-	U	1002
	C18 Logic module	Logic input 2 in XOR gate	1 bit	-	W	C	-	U	1002
82	C18 Logic module	Logic input 3 in AND gate	1 bit	-	W	C	-	U	1002
	C18 Logic module	Logic input 3 in OR gate	1 bit	-	W	C	-	U	1002
83	C18 Logic module	Logic input 4 in AND gate	1 bit	-	W	C	-	U	1002
	C18 Logic module	Logic input 4 in OR gate	1 bit	-	W	C	-	U	1002
84	C18 Logic module	Block/unblock	1 bit	-	W	C	-	-	1003
85	C18.1 Logic module	Switching	1 bit	R	-	C	T	-	1001
	C18.1 Logic module	Priority	2 bit	R	-	C	T	-	2001
	C18.1 Logic module	Valuator	1 byte	R	-	C	T	-	5010
	C18.1 Logic module	Percentage value	1 byte	R	-	C	T	-	5001
	C18.1 Logic module	HVAC operating mode	1 byte	R	-	C	T	-	20102
	C18.1 Logic module	Scenes	1 byte	R	-	C	T	-	17001
86	C18.2 Logic module	Switching	1 bit	R	-	C	T	-	1001
	C18.2 Logic module	Priority	2 bit	R	-	C	T	-	2001
	C18.2 Logic module	Valuator	1 byte	R	-	C	T	-	5010
	C18.2 Logic module	Percentage value	1 byte	R	-	C	T	-	5001
	C18.2 Logic module	HVAC operating mode	1 byte	R	-	C	T	-	20102
	C18.2 Logic module	Scenes	1 byte	R	-	C	T	-	17001
90 : 96	Logic module C19 (details: see C18)								
100 : 106	Logic module C20 (details: see C18)								

7.2.5 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

7.3 Description of communication objects

7.3.1 light 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*	<u>Objects 3,5,7</u> 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 Typical applications. 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 8. 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 8. 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…1000 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…1000 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). 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 12 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 set to the appropriate limit value. For monitoring purposes, the room correction factor can be queried via this object 19.
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

Obj.	Name	Function	Description
			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 adjusted to the conditions inside the room by using 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 permitted range will be rejected and not adopted. For monitoring purposes the temperature offset can be queried via this object 23.
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

Obj.	Name	Function	Description
			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 <u>8.</u> 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 <u>8.</u> 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 <u>8.</u> Operation.
35	*C1 light additional telegram*	*Priority/ Value/ Percentage value/ Scene*	Object available if at channel C1 light <Send additional telegram> "Yes" has been selected. Depending on the selected <telegram type>: **priority**, **value**, **percentage value** or **scene**, the corresponding telegram is sent in the off and/or on state of the lighting channel. The sending of the corresponding telegram can be set separately for the OFF and ON state of the lighting channel via the parameters *Output value in OFF state* and *Output value in ON state* and can also be deactivated if necessary. The parameter *Cyclical transmission* can also be used to set whether the telegrams are to be sent cyclically.

Obj.	Name	Function	Description
36	*C2 light additional telegram*	*Priority/ Value/ Percentage value/ Scene*	Object available if at channel C2 light <Send additional telegram> "Yes" has been selected. For a detailed function description, see *Object 35*.
38	*C1, C2 light*	*Day-night changeover*	Object available if for a night parameter = yes is set, e.g. *Other lighting time delay at night = yes*. For channels C1, C2 Light, different values can be stored for the night depending on the parameter. OFF telegram to the object activates the day mode (standard). ON 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 object is available if *Light standby time = active* is set. The standby function can be deactivated and reactivated via this 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

Obj.	Name	Function	Description
			lighting time delay is adjusted adaptively. The adaptive adaptation of the lighting time delay can be deactivated via the *Self-learning lighting time delay* parameter.
42	*C1 lighting time delay* *C1, C2 lighting time delay*	*Send value*	Object is available if *Set lighting time delay via bus = yes* is set. 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. Via this object, the time delay can be set jointly for lighting channels C1, C2 for the night in a range from 30 s to 60 min. The value must be sent in seconds. Over the course of 2 to 30 minutes, the lighting time delay is adjusted adaptively. The adaptive adaptation of the lighting time delay can be deactivated via the *Self-learning lighting time delay* parameter.
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. The behaviour when unblocking can be selected as to whether the lighting channels send an OFF / ON / no telegram / value X% or the current status and thus continue 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 8. Operation.

Obj.	Name	Function	Description
			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 operation. *If Duration of light standby time* is set to *always ON*, channels C1, C2 will not be 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 7.8.1 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.

7.3.2 HVAC channels

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 (independent 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 General objects

Obj.	Name	Function	Description
60	*Parallel switching output*	*Motion information send*	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 9. Parallel switching.
61	*Parallel switching input*	*Motion information receive*	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	*Parallel switching output*	*Block/Unblock*	The sending of the motion information at the output of the parallel switching is blocked by means of an ON or OFF telegram, complementing the telegram when unblocking. This may be necessary as the triggers may still have to be sent by the parallel switching even if the lighting channel is blocked, for example.
63	*Parallel switching input*	*Block/Unblock*	The receiving of motion information at the input of the parallel switching is blocked by an ON or OFF telegram, complementing the telegram when unblocking.

Obj.	Name	Function	Description
65	*Scene input*	*Scene 1/2*	Object is available if at 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 at Scene controls = *Send scene number on bus* is set. When the scene buttons ⊿ on the user remote control theSenda B or theSenda S are pressed, the scene output object sends the set scene number.
67 68	*IR switching external 1* *IR dimming 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 a ON telegram (1) or an OFF telegram (0) to be sent via object 67. Holding down the ☼ button on the remote control causes "dim brighter" to be sent via object 68, 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 *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 72	*IR external blinds 1* *IR external blinds 1*	*Up/down* *Step / stop*	If during configuration an IR group address is allocated to the *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 71 "Blinds step/stop" for a short lamella turn. Holding down the ☼/♡ buttons causes a 0 or 1 telegram to be sent via the object 72 "Blinds up/down" for blinds up/down.
73 74	*IR external blinds 2* *IR external blinds 2*	*Up/down* *Step / stop*	If during configuration an IR group address is allocated to 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.

Obj.	Name	Function	Description
			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
00 85	0.2.5
00 86	0.2.6
00 87	0.2.7
00 88	0.2.8
00 89	0.2.9
00 C0	0.3.0
00 C1	0.3.1
00 C2	0.3.2
00 C3	0.3.3
00 C4	0.3.4
00 C5	0.3.5

7.3.4 Logic channels

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 behaviour when setting/cancelling the block (blocking 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 parameter page *Objects*, parameter *Telegram type*).

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

Object 86: C18.2 Logic module − switching, priority, value, HVAC operating mode, scenes
Second output object of the logic module.
The function of the object depends on the selected telegram type
(see parameter page *Objects*, parameter *Telegram type*).

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

Objects 90–96, 100–106
Objects for C19, C20, function: see C18.

7.4 Parameter pages

7.4.1 Overview

Parameter page	Description
General	Basic configuration of the device: Channels used and operating mode.
Setting	Application area, brightness/temperature measurement 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.
Additional telegram	Settings for sending an additional telegram when the lighting channel is in the switched off and/or on state
Block function	Blocking behaviour.
Channel C2 Light	Brightness difference to C1, send additional telegram
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.
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..C20	Number of inputs, links etc.
Objects	Telegram type, switch and blocking behaviour, etc.

7.4.2 General parameters

Parameter name	Values	Meaning
Operating mode	**Master**	A Master is capable of light 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 9. Parallel switching.
Master operating mode	*Individual switching* **Parallel switching**	Detector works as an independent device. Depending on requirements, additional detectors are connected to a "Master" as "Slaves" to extend the detection area, or several "Masters" are connected with each other. The *Cycle time parallel switching* parameter is displayed. Please observe the information on parallel switching in chapter 9.Parallel switching.
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.
Block telegram parallel switching	**Block with ON telegram** *Block with OFF telegram*	The output as well as the input of the parallel switching can be deactivated as desired via objects 62 or 63.
Activate channel C1 light	*no*	The detector is not used for light 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.
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 (independent of brightness).
Activate channel C5 HVAC	***no***	The detector is not used for controlling HVAC applications.

Parameter name	Values	Meaning
	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).
Number – logic channels	**0**...**3**	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
Activation of test mode	***via object or remote control, max. 30 min*** *2 min...60 min*	An activated test mode will automatically be ended after the set time has elapsed, and the detector will be restarted. Description: see Chapter 11. Test modes.

7.4.3 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* - *Outdoor use* *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 the default values will be loaded.
	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.
Application area		
Outdoor use	***Off*** *On*	The detector can be installed outdoors if *Outdoor use* is activated. This reduces the detection area. See Chapter 2.2. Detection area. By selecting the presence test mode, the set application area is not changed.
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***	This setting cannot be changed.

Parameter name	Values	Meaning
	measurement centre	
Room correction factor brightness		The room correction factor is a measurement for the difference between brightness measurements on the ceiling and the work area. The brightness measurement value at the ceiling 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.
	*0.05…**0.3**…2.0*	The standard value of 0.3 is suitable for most applications. For automatic calculation of the room correction factor see Chapter 10.2 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.
	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

Parameter name	Values	Meaning
		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 the 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** *1 min…30 min*	Temperature value is not sent cyclically. Temperature value is sent cyclically with selected time.
Send temperature value upon change	**no** *0.2* *0.5* *1* *1.5* *2* *2.5* *3* *3.5* *4* *4.5* *5*	Temperature value is not sent upon change. Send if the value has changed by the selected value (in K) since the last transmission.
LEDs		
Adjust red LEDs	**no**	The integrated red LED has no additional function.
	yes	The two parameters *Motion indicated by the LED* and *Control red LED via object* are displayed.
Motion indicated by the LED	**no**	An optically detected movement is not indicated. Red LED is switched off.
	yes	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** *yes*	Object 48 *Red LED – receive* is hidden. 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.

7.5 Lighting channels

7.5.1 Lighting channel C1

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 lighting will be switched on automatically. Switching off occurs 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. Switching off occurs automatically. See also Chapter 8. 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 device mode when the object *38* is used to change to night (ON telegram), and back to fully automatic device as soon as the object receives an OFF telegram (day).
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.

Parameter name	Values	Meaning
	*5 lx...**500 lx**... 1000 lx*	*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). The brightness switching / setpoint value is adjustable in increments between 5 – 1000 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**	<u>Object 11</u> *C1 brightness switching / setpoint value − receive value,* <u>Object 12</u> *C1 brightness switching / setpoint value − send value* and <u>Object 15</u> *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	<u>Object 11</u> *C1 brightness switching / setpoint value − receive value,* <u>Object 12</u> *C1 brightness switching / setpoint value − send value* and <u>Object 15</u> *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. 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 adaptive adaptation of the lighting time delay can be deactivated via

Parameter name	Values	Meaning
		the *Self-learning lighting time delay* parameter. The time delay applies jointly to all channels C1, C2 light.
Self-learning lighting time delay	*no*	The lighting time delay does *not* adapt automatically to the user behaviour. The set *lighting time delay* always applies.
	yes	The lighting 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 through self-learning with a setting of the *lighting time delay* ≤ 2 minutes ore ≥ 30 minutes.
Set the 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. (In *configuration type = fully automatic device* and *semi-automatic device*)
	no	The time delay is applied according to the set parameter.
	yes	If someone enters an unoccupied room and the room is only occupied for up to 30 seconds, the light will be switched off prematurely after 2 minutes. Short-term presence is also applied when a push button is used to switch on or a parallel switching trigger is received.
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.

Parameter name	Values	Meaning
		- An ON telegram to the object switches 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. The brightness switching/setpoint value night is adjustable in increments between 5−1000 lx.
	*5 lx...**500 lx**... 1000 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 (using 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 switching/setpoint value (teach-in)* are

Parameter name	Values	Meaning
		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 adaptive adaptation of the lighting time delay can be deactivated via the *Self-learning lighting time delay* parameter. 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 (using theSenda Plug app).
	yes	Object 43 *C1, C2 Lighting time delay night – receive value* and object 44 *C1, C2 Lighting time delay night*

Parameter name	Values	Meaning
		− *send value* are visible and can be used.

7.5.1.1 Channel C1 Light switching - detail settings

Parameter name	Values	Meaning
Lighting dimmable in switching mode	**no** *yes*	The lighting cannot be dimmed. The lighting can be dimmed manually. The parameters *Switch on with* and *Duration of manual override* are displayed. Objects 3-7 are visible and can be used.
Switch on with	*Value telegram* **ON telegram**	Parameter *Switch-on dimming value* is displayed. The lighting is switched on with the set dimming value. The lighting is switched on with an ON telegram.
Switch-on dimming value	 *1%...**70%**...100%*	The parameter is visible if parameter *Switch on with = value telegram* is set. When the lighting is switched on, it is switched on to the set *switch-on dimming value*.
Other switch-on dimming value at night	**no** *yes*	There is only one switch-on dimming value available. A switch-on dimming value for the night can be configured. During operation, it can be switched between two switch-on dimming values. The <u>object 38</u> *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. **Example:** Implementation of day and night operation with two different switch on dimming values.
Switch-on dimming value night	 *1%...**70%**...100%*	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. When the lighting is switched on, it is switched on to the set *switch-on dimming value*.

Parameter name	Values	Meaning
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.
Lighting standby time		The parameter is visible if parameter *Lighting dimmable in switching mode = yes* is set.
	not active	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.
	*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 setpoint/switching value.

Parameter name	Values	Meaning
Behaviour for manual OFF	*Set lighting time delay*	The light remains switched off while the room is occupied (motion/presence). The detector returns to normal operation after the room is vacated and after expiry of the presence lighting time delay (fully automatic/semi-automatic device).
	Optimised (lighting time delay or 2 min)	If motion/presence is only detected for a short time after the light has been switched off manually, the detector will return to normal operation after just 2 minutes.
	10 s.....120 s	The detector returns to normal operation after the selected time (fully automatic/semi-automatic device). This setting is only available with an active lighting channel C1!
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!
Send additional telegram	***no***	The additional telegram is deactivated.
	yes	An additional telegram type can be sent as well as the switching object (priority, dimming, percentage value, scene).
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.

7.5.1.2 Channel C1 light – Constant lighting control/Constant lighting control without influence of presence

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.

Parameter name	*Values*	Meaning
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		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.
	*1%…**70%**… 100%*	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		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.
	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.

Parameter name	Values	Meaning
		- 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.
	*1%...**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 moderate 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 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.

Parameter name	Values	Meaning
Lighting standby time[1]	*not active*	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[1]		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 *dimming value* instead of switching off, when the time delay has elapsed.
Standby dimming value[1]		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 standby operation when motion is detected, provided the brightness has fallen below the brightness setpoint value.

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[1] not available with constant lighting control without influence of presence
[1] not available with constant lighting control without influence of presence

Parameter name	Values	Meaning
Behaviour for manual OFF	*Set lighting time delay*	The light remains switched off while the room is occupied (motion/presence). The detector returns to normal operation after the room is vacated and after expiry of the presence lighting time delay (fully automatic/semi-automatic device).
	Optimised (lighting time delay or 2 min)	If motion/presence is only detected for a short time after the light has been switched off manually, the detector will return to normal operation after just 2 minutes.
	10 s.....120 s	The detector returns to normal operation after the selected time (fully automatic/semi-automatic device). This setting is only available with an active lighting channel C1!
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!
Send additional telegram	*no*	The additional telegram is deactivated.
	yes	An additional telegram type can be sent as well as constant lighting control objects (priority, dimming, percentage value, scene). For a description of the "Additional telegram" page, see Chapter 7.5.1.3.
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. For a description of the "block function" page, see Chapter 7.5.1.4.

7.5.1.3 Additional telegram

Designation	Values	Description
Telegram type	*Priority* *Value* **Percentage value** *Scene*	4 telegram types are available for selection.
Output value in OFF state	For *Telegram type = Priority*		

		Function	Value
	no priority OFF	Priority not active (no control: off)	0 (00$_{bin}$)
	no priority ON	Priority not active (no control: on)	1 (01$_{bin}$)
	Priority OFF	Priority OFF (control: disable, off)	2 (10$_{bin}$)
	Priority ON	Priority ON (control: enable, on)	3 (11$_{bin}$)
	do not send any telegram	No telegram is sent.	

For *Telegram type = Value*	
0...*255*	Any value between 0 and 255 can be sent.
do not send any telegram	No telegram is sent.

For *Telegram type = Percentage value*	
0...*100%*	Any percentage value between 0 and 100% can be sent.
do not send any telegram	No telegram is sent.

For *Telegram type = Scene*	
Scene **1**...*64*	Any scene number can be sent.
do not send any telegram	No telegram is sent.

Output value in ON state	For *Telegram type = Priority*		

		Function	Value
	no priority OFF	Priority not active (no control: off)	0 (00$_{bin}$)
	no priority ON	Priority not active (no control: on)	1 (01$_{bin}$)
	Priority OFF	Priority OFF (control: disable, off)	2 (10$_{bin}$)
	Priority ON	Priority ON (control: enable, on)	3 (11$_{bin}$)
	do not send any telegram	No telegram is sent.	

For *Telegram type = Value*	
0...**255**	Any value between 0 and 255 can be sent.
do not send any telegram	No telegram is sent.

For *Telegram type = Percentage value*	
0...**100%**	Any percentage value between 0 and 100% can be sent.
do not send any telegram	No telegram is sent.

Designation	Values	Description
	For *Telegram type = Scene*	
	*Scene 1...**2**...64*	Any scene number can be sent.
	do not send any telegram	No telegram is sent.
Cyclical transmission	**no**	Current output value of *Additional telegram* is not sent cyclically.
	1...60 min	Current output value of *Additional telegram* is sent cyclically at the selected time.
Send additional telegram when blocking	**no**	If a channel is blocked via the *block function*, no additional telegram will be sent.
	yes	If a channel is blocked via the *block function*, an additional telegram will be sent.
Send additional telegram when unblocking	**no**	If a channel is unblocked via the *block function*, no additional telegram will be sent.
	yes	If a channel is unblocked via the *block function*, an additional telegram will be sent

7.5.1.4 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 – Receive motion information*, 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 – Receive motion information*, 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.

Designation	Values	Description
	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.
	send value X%	A value between 10% and 100% can be sent in switching mode with dimmable lighting or in constant lighting control mode.
Response when the block is cancelled	*Send OFF telegram*	An OFF telegram is sent at when the block is cancelled.
	Send ON telegram	An ON telegram is sent when the block is cancelled.
	do not send any telegram	No telegram is sent when the block is cancelled.
	send current status	The current status is sent when the block is cancelled, for instance, an ON telegram with absence and insufficient brightness in switching mode.
	send value X%	A value between 10% and 100% can be sent in switching mode with dimmable lighting or in constant lighting control mode.
Also block infrared remote control	*no*	Commands from the infrared remote control *continue* to be processed while channel C1 Light is blocked.
	yes	Commands from the infrared remote control are *not* processed during the blocking of channel C1 Light.

7.5.2 Lighting channel C2

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 than in the area of lighting group C1.
	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*.
Send additional telegram	***no***	The additional telegram is deactivated.
	yes	An additional telegram type can be sent as well as constant lighting control objects (priority, dimming, percentage value, scene). For a description of the "Additional telegram" page, see Chapter 7.5.1.3.

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

7.6 HVAC channels C4, C5

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

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

Designation	Values	Description
HVAC switch-on delay	**not active**	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.

7.6.1 Objects

ⓘ The parameter page is visible if 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*	No telegrams are sent on detection of movement.	
	send following telegram once	When a motion is detected, a one-time telegram will be sent.	
	send cyclically	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	Value
	no priority OFF	Priority not active (no control, off)	0 (00_{bin})
	no priority ON	Priority not active (no control: on)	1 (01_{bin})
	Priority OFF	Priority OFF (control: disable, off)	2 (10_{bin})
	Priority ON	Priority ON (control: enable, on)	3 (11_{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*		

Designation	Values	Description
	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*	

	Values	Description
	ON	Send switch-on command
	OFF	Send switch-off command

For *Telegram type = Priority*

Values	Function	Value
no priority , OFF	Priority not active (no control: off)	0 (00_{bin})
no priority ON	Priority not active (no control: on)	1 (01_{bin})
Priority OFF	Priority OFF (control: disable, off)	2 (10_{bin})
Priority ON	Priority ON (control: enable, on)	3 (11_{bin})

	Values	Description
	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.

7.6.2 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.
Response when the block is cancelled	***Update channel on change***	At the end of the block, a telegram is sent if the output changes.
	Always update channel	A telegram of the current status is always sent.

7.7 Remote control

All adjustable parameters have the same selection options:

Designation	Values	Description
Channel C1 Light Channel C2 Light External switching/dimming 1 External switching/dimming 2 External blinds 1 External blinds 2	not active	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 assigned 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 assigned to the respective channel. The channel reacts to the commands from the user remote controls theSenda B and theSenda S.

7.8 Scenes

Designation	Values	Description
Scene control		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
	not active	Scene control is 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	Value of scene 1, channel C1 in switching mode without dimmable lighting.
	*0%...**30%**... 100%*	Value of scene 1, channel C1 in switching mode with dimmable lighting or constant lighting control.
Output value user remote control scene 2, channel C1	Off **On**	Value of scene 2, channel C1 in switching mode without dimmable lighting.
	*0%...**70%**... 100%*	Value of scene 2, channel C1 in switching mode with dimmable lighting or constant lighting control.

Designation	Values	Description
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 = not active)	 **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 = not active)	 **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.

7.8.1 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*		The behaviour of the detector can be controlled with 8 different scene functions.
	not active	No scene number that blocks or controls 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*. - Unblock 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.

7.9 Logic channels

(i) 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 *yes, inverted*	See above.
Use input 4	**no**	Input is not used.
	yes *yes, inverted*	See above.

7.9.1 Objects

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	Value
	no priority OFF	Priority not active (no control, off)	0 (00_{bin})
	no priority ON	Priority not active (no control, on)	1 (01_{bin})
	Priority OFF	Priority OFF (control: disable, off)	2 (10_{bin})
	Priority ON	Priority ON (control: enable, on)	3 (11_{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	

Designation	Values	Description	
	For *Telegram type = Priority*		
		Function	Value
	no priority OFF	Priority not active (no control, off)	0 (00_{bin})
	no priority ON	Priority not active (no control, on)	1 (01_{bin})
	Priority OFF	Priority OFF (control: disable, off)	2 (10_{bin})
	Priority ON	Priority ON (control: enable, on)	3 (11_{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...**2**...64*	Any scene number can be sent.	
Send	**when state of output changes** *on telegram reception of an input*	The telegram is only sent if the status of the output changes. The telegram is always sent as soon as a telegram is received at the input.	
Should a second telegram be sent?	**no** *yes*	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.	
Activate block function	**no** *yes*	Block function is inactive. Block function means that the detector does not send telegrams via logic module objects.	
Telegram after reset or download	**as with unfulfilled condition** *as with fulfilled condition* *Unknown status: do not send*	Reaction of channel upon a restart.	

7.9.2 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.

8 Operation

8.1 Push button operation

8.1.1 Manual operation via push button

The detector can be overridden by using push buttons or other higher-level commands. External push buttons are used for light control. For this purpose, separate push button input objects are available.
The manual operation only affects the light outputs. The HVAC and brightness outputs are not affected by manual operation.

8.1.2 Manual operation 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.

8.1.3 Manual operation via switching function with dimmable lighting

If the lighting is operated manually via the *function Light = 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.

8.1.4 Manual operation 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). *Behaviour at manual dimming= school:* Constant lighting control is temporarily interrupted by manual dimming. The setpoint value remains unchanged. *Behaviour at manual dimming = 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.

8.1.5 Manual operation with 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). *Behaviour at manual dimming= 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. *Behaviour at manual dimming = 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).

8.1.6 Manual operation using two light outputs

When using the two channels C1, C2 light, input objects for a separate push button must be used for manual override.

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.

8.2 Operation with (user) remote control

8.2.1 theSenda S

theSenda S user remote control makes it easy to switch and dim lighting using the LUXA 103 S360-12 KNX and the LUXA 103 S360-28 KNX presence detector.
Remote control 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.

For further information, see also theSenda S operating instructions.

8.2.1.1 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.
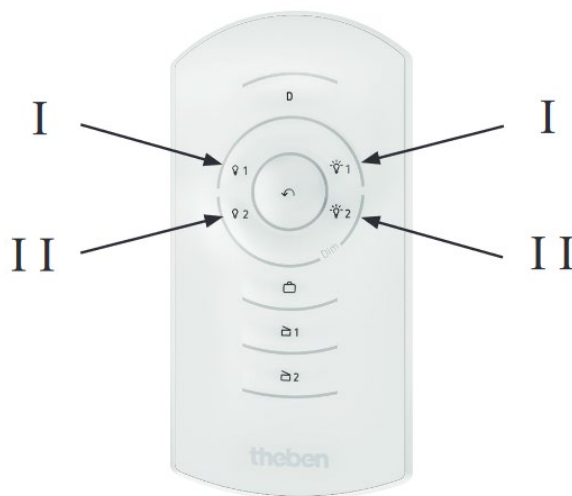
8.2.1.2 Examples of set IR group addresses

8.2.1.2.1 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	LUXA 103 S360-12 KNX UP WH / LUXA 103 S360-28 KNX UP WH (1039052 / 10309072) theSenda S (9070911)

Overview	

LUXA 103 S360-12 / -28 KNX, Master:

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

8.2.1.2.2 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 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	LUXA 103 S360-12 KNX UP WH / LUXA 103 S360-28 KNX UP WH (1039052 / 10309072) theSenda S (9070911)

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	

LUXA 103 S360-12/-28 KNX, Master 1:

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

LUXA 103 S360-12/-28 KNX, Master 2:

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

8.2.1.2.3 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	LUXA 103 S360-12 KNX UP WH / LUXA 103 S360-28 KNX UP WH (1039052/10309072) theSenda S (9070911)

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

LUXA 103 S360-12/-28 KNX, Master 1:

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

LUXA 103 S360-12/-28 KNX, Master 2:

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

8.2.1.2.4 Two presence detectors with one and two internal lighting channels

Description	The lighting channels of two presence detectors are influenced separately by two theSenda 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	LUXA 103 S360-12 KNX UP WH/LUXA 103 S360-28 KNX UP WH (1039052/10309072) theSenda S (9070911)

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

LUXA 103 S360-12/-28 KNX, Master 1:

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

LUXA 103 S360-12/-28 KNX, Master 2:

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

8.2.2   theSenda B

theSenda B user remote control makes it easy to switch and dim the lighting using the LUXA 103 S360-12 KNX and the LUXA 103 S360-28 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.

theSenda B also serves as a gateway between smartphone and detector for start-up.

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.

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. Especially for detectors with a particularly wide range of functions, theSenda Plug simplifies and speeds up programming considerably.
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.

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.

For further information, see also theSenda S operating instructions.

### 8.2.2.1 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 IR group address of the presence detector channel 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 be made easily via theSenda Plug app, menu "Configure theSenda B".

IR group addresses I to VIII are available for selection. It is also possible to assign several IR group addresses to the channels and scenes. The theSenda B user remote control 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
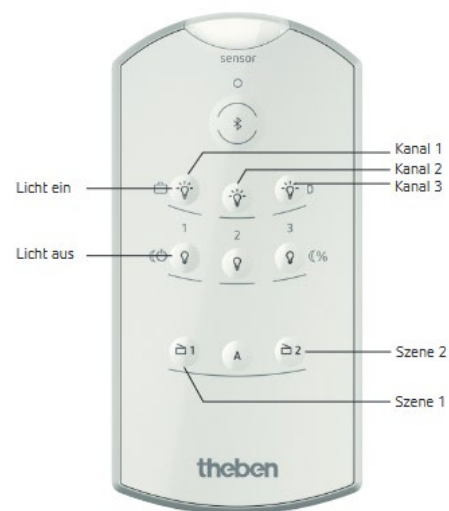
8.2.2.2 Examples of set IR group addresses

8.2.2.2.1 One presence detector, two lighting channels

Description	Using one 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	LUXA 103 S360-12 KNX UP WH / LUXA 103 S360-28 KNX UP WH (1039052 / 10309072) theSenda B (9070985)

Overview	 **Master addr.**　**Channel**　**IR grp.** Channel C1 Light　I Channel C2 Light　II
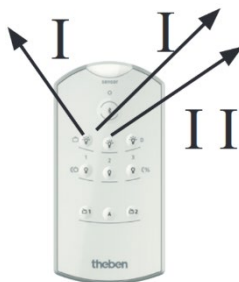
LUXA 103 S360-12 / -28 KNX, Master:

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

8.2.2.2.2 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	LUXA 103 S360-12 KNX UP WH / LUXA 103 S360-28 KNX UP WH (1039052 / 10309072) 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	

LUXA 103 S360-12/-28 KNX, Master 1:

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

LUXA 103 S360-12/-28 KNX, Master 2:

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

8.2.2.2.3 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	LUXA 103 S360-12 KNX UP WH / LUXA 103 S360-28 KNX UP WH (1039052 / 10309072) theSenda B (9070985)

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

LUXA 103 S360-12 / -28 KNX, Master 1:

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

LUXA 103 S360-12 / -28 KNX, Master 2:

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

8.2.2.2.4 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	LUXA 103 S360-12 KNX UP WH / LUXA 103 S360-28 KNX UP WH (1039052 / 10309072) 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	

LUXA 103 S360-12 /-28 KNX, Master 1:

Parameter page	Parameter	Setting
Remote control	*Channel C1 Light*	*I*
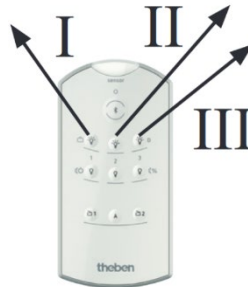
LUXA 103 S360-12 /-28 KNX, Master 2:

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

8.2.2.2.5 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	LUXA 103 S360-12 KNX UP WH / LUXA 103 S360-28 KNX UP WH (1039052 / 10309072) 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	

LUXA 103 S360-12/-28 KNX, Master 1:

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

LUXA 103 S360-12/-28 KNX, Master 2:

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

9 Parallel switching

In larger rooms, several detectors can be connected in parallel. This increases their joint detection area.

9.1 Master/Slave parallel switching

A "Master in parallel switching" can be connected to several "Slaves". For this purpose, the "Send motion information" trigger outputs of the Slaves are linked with the "Receive motion information" 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.
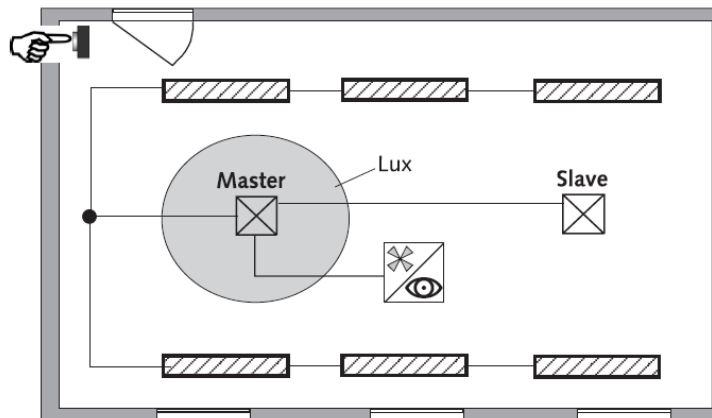
Several "Masters in parallel switching" can be linked with each other. Presence detection is completed jointly, while light measurement, parameter settings and lighting control are individually processed by each Master. This results in several light outputs with their own light measurement but with joint presence detection.
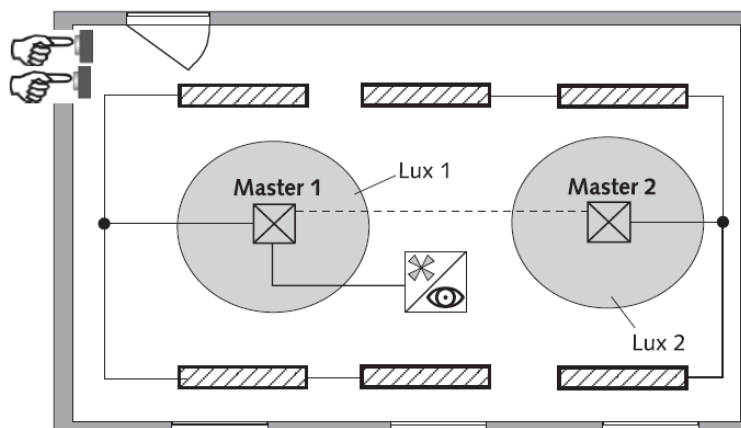
9.3 Telegram load when using parallel switching

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 object "Receive motion information" or with the object "Send motion information".

The integrated block objects for sending motion information and receiving motion information can significantly reduce the bus load while the block is active.

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 between the brightness measurement on the ceiling and on the work area.

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

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

See parameter *Room correction factor brightness*.
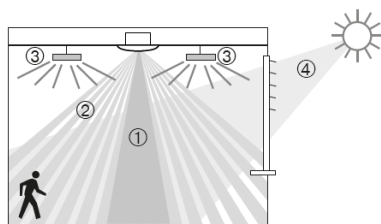
① Mischlichtmessung
② Präsenzerfassung
③ Kunstlicht
④ Einfallendes Tageslicht

$$\text{Room correction factor} \quad = \quad \frac{\text{Brightness value at the ceiling}}{\text{Brightness value on the work area}}$$

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

➢ Place 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.

➢ 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 calculated room correction factor is 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 affected by the change in the room correction factor.

11 Test modes

The two devices LUXA 103 S360-12 KNX UP WH and LUXA 103 S360-28 KNX UP WH have two test modes:

- Test mode presence
- Test mode light

11.1 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 restart. - Automatic end 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 reacts as in configuration type fully automatic device, even if semi-automatic device is set.
- Configuration type Light changes to Switching if the configuration type Light is set to Constant 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 respond unchanged as in normal operation.

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

- End presence test
- Activate light test
- Outdoor use

11.2 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 restart. - Automatic end 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 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 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.

12 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

13 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 device; light was switched off manually via push button or theSenda S/B; person not within detection area; obstruction(s) interrupt detection; time delay set too short
Light stays on with detection of presence despite sufficient brightness	Lux value 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 warm-up phase was not problem-free.
Error flashing (3x per second)	Error during warm-up phase or during operation; device is not functional.

14 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.

14.1 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. If the room is vacated or the amount of daylight increases, the lighting will automatically be switched off.

14.1.1 Devices

- LUXA 103 S360-12 KNX UP WH / LUXA 103 S360-28 KNX UP WH (1039052 / 10309072)
- RMG 4 U (4930223)

14.1.2 Overview

Obj. 1 ──────────────► Obj. 1
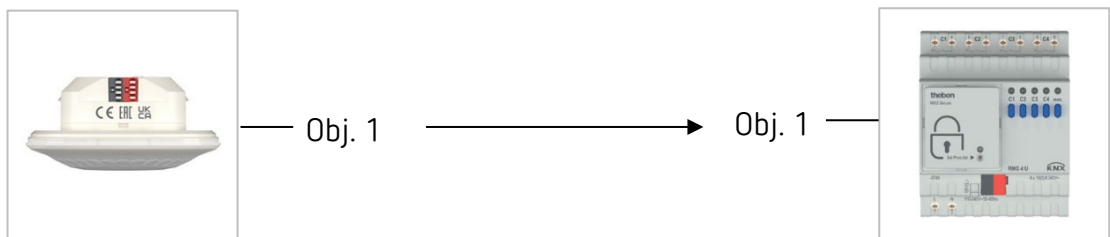
14.1.3 Objects and links

No.	LUXA 103 S360-12/-28 KNX	No.	RMG 4 U	Comment
	Object name / function		Object name / function	
1	C1 Light output / switching	1	RMG 4 U channel C1 / switch object	Switching lighting on and off

14.1.4 Important parameter settings

Standard or customer-defined parameter settings apply to unlisted parameters.

LUXA 103 S360-12/-28 KNX

Parameter page	Parameter	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	Parameter	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*

14.2 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).

14.2.1 Devices

- LUXA 103 S360-12 KNX UP / LUXA 103 S360-28 KNX UP (1039052 / 1039072)
- RMG 4 U (4930223)

14.2.2 Overview
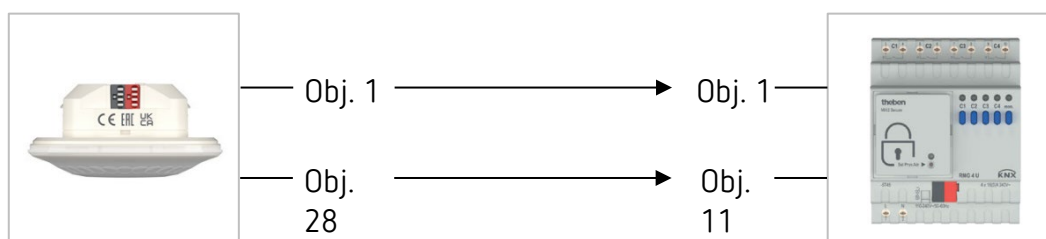
14.2.3 Objects and links

Links

No.	LUXA 103 S360-12/-28 KNX	No.	RMG 4 U	Comment
	Object name/function		**Object name/function**	
1	*C1 Light output/switching*	1	*RMG 4 U channel C1/switch object*	Switching lighting near the window on and off
28	*C2 Light output/switching*	11	*RMG 4 U channel C2/switch object*	Switching lighting in the interior of the room on and off

14.2.4 Important parameter settings

LUXA 103 KNX S360-12/-28 KNX

Parameter page	Parameter	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	Parameter	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	*Type of basic module*	*RMG 4 U..*
	Function	*Switching On/Off*
	Activation of function via	*Switch object*

14.3 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. Due to the IP 54 protection rating, the temperature measurement can be slow. Therefore, the use of the temperature value for room control in living rooms is not unconditionally recommended.

14.3.1 Devices

- LUXA 103 S360-12 KNX UP / LUXA 103 S360-28 KNX UP (1039052 / 1039072)
- RMG 4 U (4930223)
- HME 6 T (4930245) } MIX combination

14.3.2 Overview

Obj. 1 → Obj. 1

Obj. 24 → Obj. 83

Obj. 50 → Obj. 84
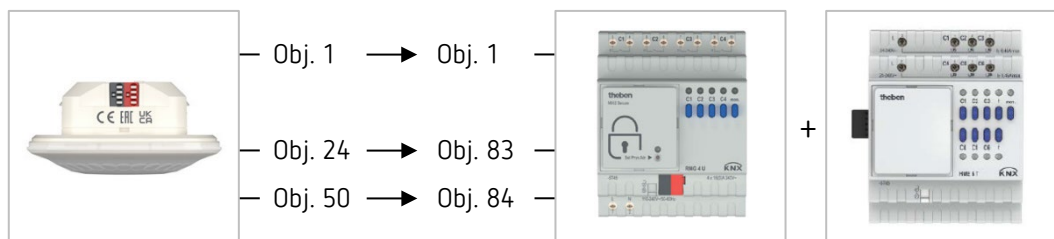
14.3.3 Objects and links

Links

No.	LUXA 103 S360-12/-28 KNX	No.	MIX combination	Comment
	Object name / function		Object name / function	
1	*C1 Light output / switching*	1	*RMG 4 U channel C1 / switch object*	Switching lighting on and off
24	*Temperature value / Send value*	83	*1.HME 6 T H1 / Actual value*	Transmission of actual temperature
50	*C4.1 HVAC / Send HVAC operating mode*	84	*1.HME 6 T H1 / Operating mode preselection*	Adjustment of the operating mode

14.3.4 Important parameter settings

LUXA 103 KNX S360-12/-28 KNX

Parameter page	Parameter	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	Parameter	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*

14.4 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 "Behaviour for manual off" parameter can be used to influence the behaviour. If the "Set lighting time delay" option is selected, the presence detector only takes over control after the time delay has elapsed, until then the light remains off.

If motion/presence is only detected for a short time after manual switch-off in the "Optimised (follow-up time light or 2 min)" option, the detector returns to normal operation after just 2 minutes.
However, a time can also be selected in which the detector switches back to normal operation, e.g. to bridge the time between pressing the external push button and leaving a room. The detector is then in normal operation and reliably recognises the person who enters the room shortly after manual switch-off.

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.

14.4.1 Devices

- LUXA 103 S360-12 KNX UP/LUXA 103 S360-28 KNX UP (1039052/1039072)
- iON 102 (4969232)
- RMG 4 U (4930223)

14.4.2 Overview
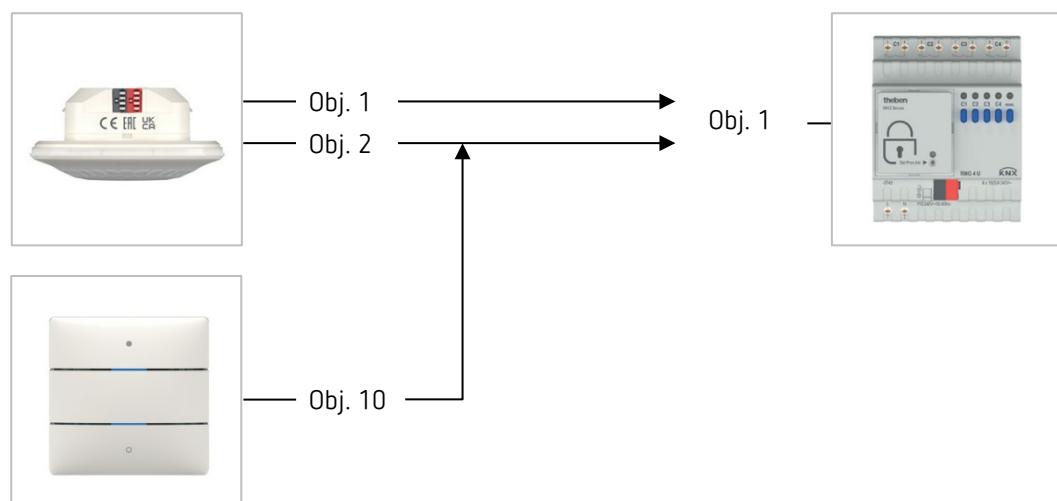
14.4.3 Objects and links

Links

No.	LUXA 103 S360-12/-28 KNX Object name/function	No.	RMG 4 U Object name/function	No.	iON 102 Object name/Function
1	*C1 Light output/switching*	1	*RMG 4 U channel C1/switch object*		
2	*C1 Light input/switching external push button*	1	*RMG 4 U channel C1/switch object*	10	Button T1.1/switching

14.4.4 Important parameter settings

LUXA 103 S360-12/-28 KNX

Parameter page	Parameter	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)*
	Behaviour for manual Off	*e.g. optimised (according to customer request)*

RMG 4 U

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

14.5 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.

14.5.1 Devices

- LUXA 103 S360-12 KNX UP / LUXA 103 S360-28 KNX UP (1039052 / 1039072)
- DALI Gateway S64 KNX (4940301)

14.5.2 Overview
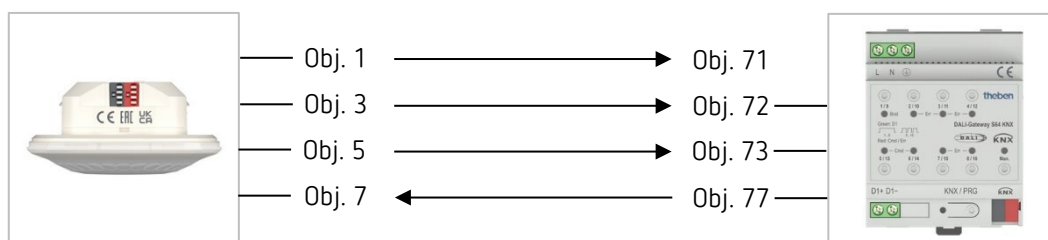
14.5.3 Objects and links

Links

No.	LUXA 103 S360-12/-28 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	

14.5.4 Important parameter settings

LUXA 103 S360-12/-28 KNX

Parameter page	Parameter	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	*Lighting standby time*	*active*

DALI Gateway S64 KNX

Parameter page	Parameter	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*

14.6 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 (only in *Behaviour at manual dimming = school*). The presence detector remains at the set dimming value while the room is occupied. The presence detector takes control only after the time delay has elapsed.

When the light is switched off via an external push button, the lighting remains switched off as long as the presence detector detects that people are present. The "Behaviour for manual off" parameter can be used to influence the behaviour. If the "Set lighting time delay" option is selected, the presence detector only takes over control after the time delay has elapsed, until then the light remains off.
If motion / presence is only detected for a short time after manual switch-off in the "Optimised (follow-up time light or 2 min)" option, the detector returns to normal operation after just 2 minutes.
However, a time can also be selected in which the detector switches back to normal operation, e.g. to bridge the time between pressing the external push button and leaving a room. The detector is then in normal operation and reliably recognises the person who enters the room shortly after manual switch-off.

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.

14.6.1 Devices

- LUXA 103 S360-12 KNX UP / LUXA 103 S360-12 KNX UP (1039052 / 1039072)
- iON 102 (4969232)
- DALI Gateway S64 KNX (4940301)

14.6.2 Overview
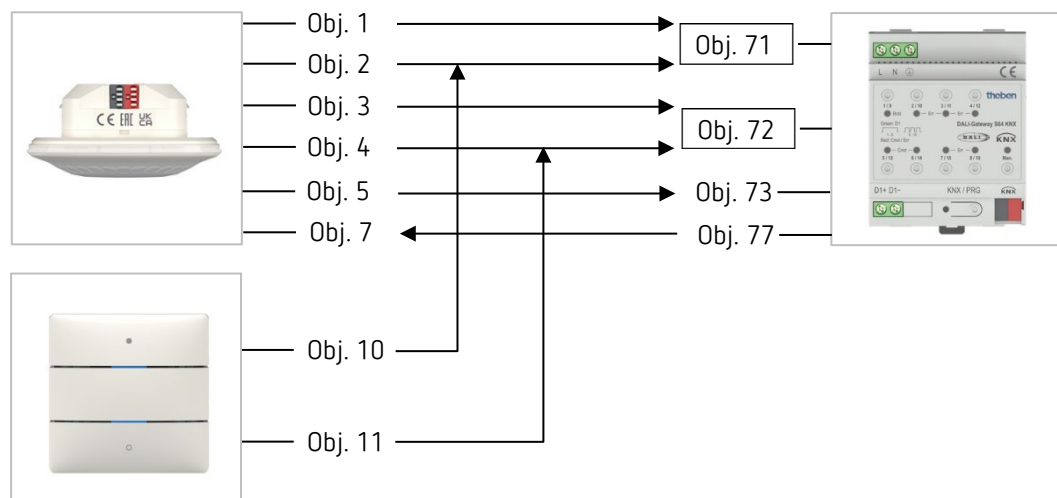
14.6.3 Objects and links

Links

No.	LUXA 103 S360-12/-28 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		

14.6.4 Important parameter settings

LUXA 103 S360-12/-28 KNX

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

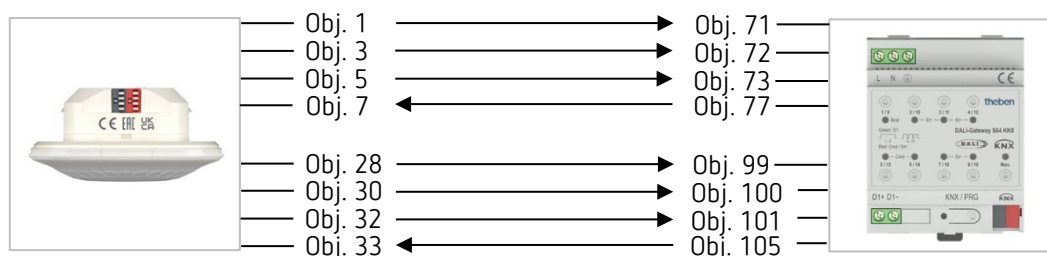## 14.7 Constant lighting control with two lighting groups

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.

14.7.1　Devices

- LUXA 103 S360-12 KNX UP / LUXA 103 S360-28 KNX UP (1039052 / 1039072)
- DALI Gateway S64 KNX (4940301)

14.7.2　Overview

14.7.3 Objects and links

Links

No.	LUXA 103 S360-12 / -28 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*	

14.7.4 Important parameter settings

LUXA 103 S360-12/-28 KNX

Parameter page	Parameter	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	*Lighting standby time*	*active*
Channel C2 Light	*Brightness difference to channel C1*	*20% (according to customer request)*

DALI Gateway S64 KNX

Parameter page	Parameter	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*

14.8 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 "Send/receive motion information" acts on the lighting channel and on the HVAC channel of the Master.
In Slave mode, the "Send motion information" telegram can be blocked with the block telegram. This reduces the bus load during blocking.

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

14.8.1 Devices

- LUXA 103 S360-12 KNX UP/LUXA 103 S360-28 KNX UP (1039052/1039072)
- RMG 4 U (4930223)

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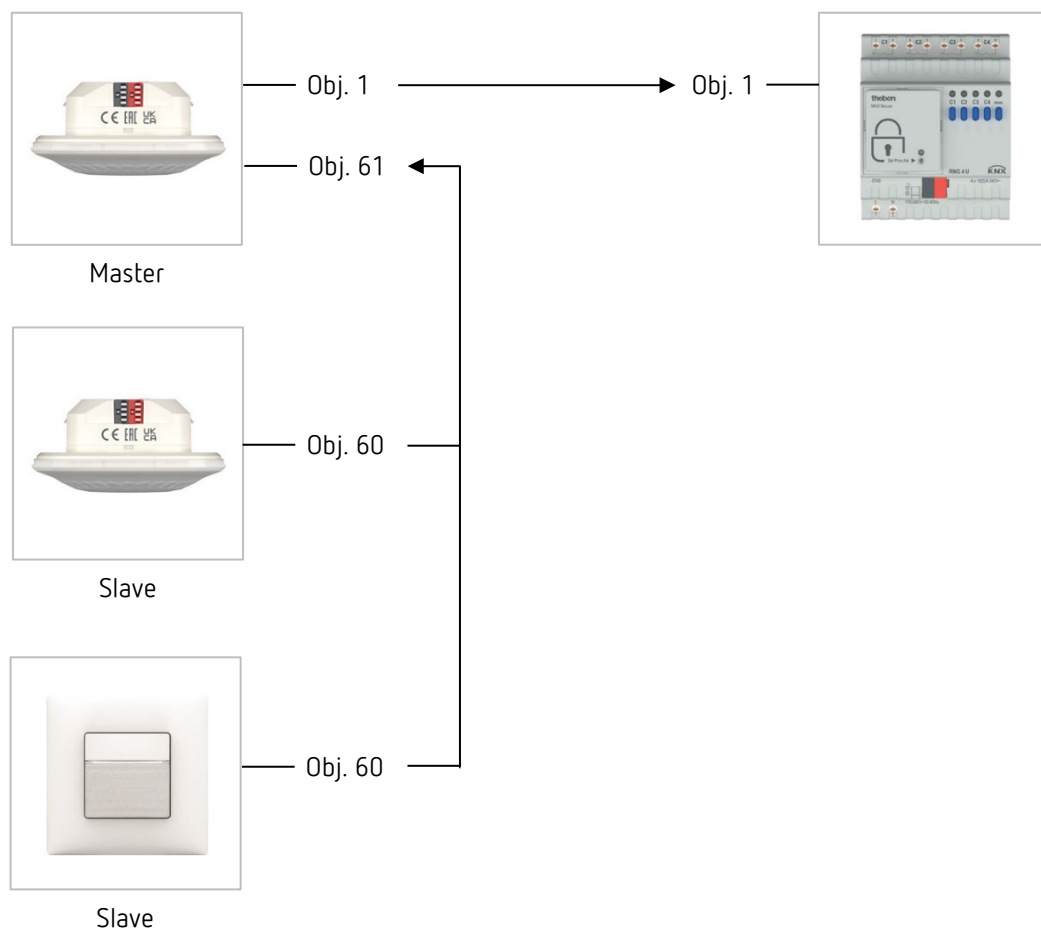
ⓘ Parallel switching is compatible with all Theben KNX detectors. This means that detectors with a common trigger object (trigger input/output) can also be linked to each other with the trigger input object or with the trigger output object.

14.8.3 Objects and links

Links

No.	LUXA 103 S360-12/-28 KNX	No.	RMG 4 U	Comment
	Object name/function		Object name/function	
1	C1 Light output/switching	1	RMG 4 U channel C1/switch object	Switching lighting on and off

No.	LUXA 103 S360-12/-28 KNX (Master)	No.	LUXA 103 S360-12/-28 KNX (Slaves)	Comment
	Object name/function		Object name/function	
61	Parallel switching input / Receive motion information	60	Parallel switching output/ Send motion information	Connection between Master and Slaves

14.8.4 Important parameter settings

LUXA 103 S360-12/-28 KNX (Master)

Parameter page	Parameter	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)

LUXA 103 S360-12/-28 KNX (Slaves)

Parameter page	Parameter	Setting
General	Operating mode	Slave

RMG 4 U

| Parameter page	Parameter	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

14.9 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 the motion information with each other, allowing the detection area to be increased. It should be noted that each Master can only influence the light switched or controlled by itself.
In Master/Master parallel switching, the "Send motion information" and "Receive motion information" telegrams can be blocked independently of each other with a block telegram. This reduces the bus load while the block is active.

14.9.1 Devices

- LUXA 103 S360-12 KNX UP/LUXA 103 S360-28 KNX UP (1039052/1039072)
- RMG 4 U (4930223)

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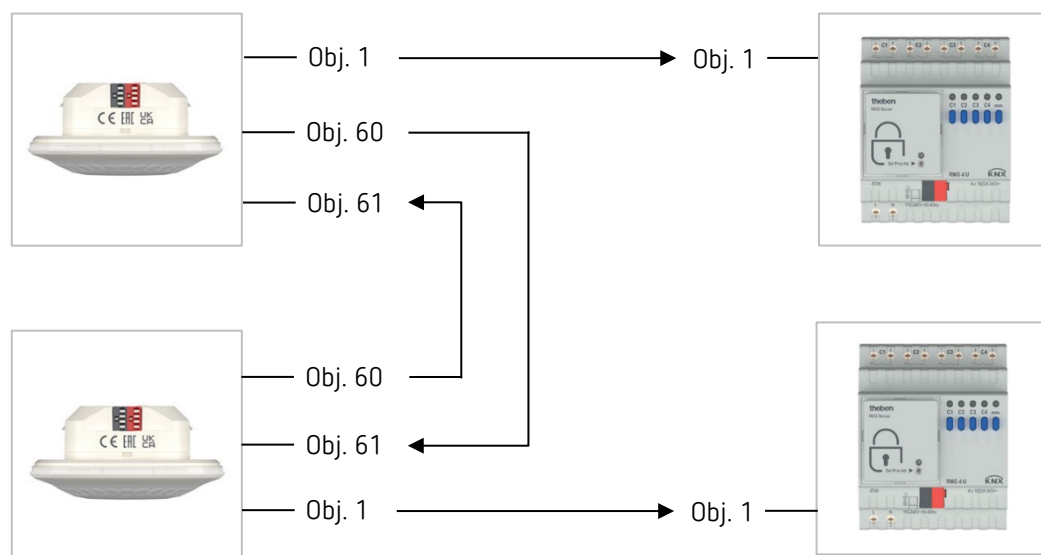
ⓘ Parallel switching is compatible with all Theben KNX detectors. This means that detectors with a common trigger object (trigger input/output) can also be linked to each other with the trigger input object or with the trigger output object.

14.9.3 Objects and links

Links

No.	LUXA 103 S360-12/-28 KNX Object name/function	No.	RMG 4 U Object name/function	Comment
1	C1 Light output/switching	1	RMG 4 U channel C1/switch object	Switching lighting on and off

No.	LUXA 103 S360-12/-28 KNX Object name/function	No.	LUXA 103 S360-12/-28 KNX Object name/function	Comment
61	Parallel switching input/ Receive motion information	60	Parallel switching output/ Send motion information	Connection between Master and Master
60	Parallel switching output/ Send motion information	61	Parallel switching input/ Receive motion information	Connection between Master and Master

14.9.4 Important parameter settings

LUXA 103 S360-12/-28 KNX

Parameter page	Parameter	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	Parameter	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

14.10 Day-night changeover

The requirements for lighting at night differ considerably from those during the day. Often a soft light and a shorter time delay are sufficient to orientate yourself at night.
The following parameters can be adapted to the different requirements at night:

- Configuration type fully automatic device / semi-automatic device
- Time delay
- Brightness setpoint value
- Switch-on dimming value

It is possible to change the detector's configuration type, which is set to fully automatic device during the day, to semi-automatic device at night so that the light can only be switched on by an external push button.

The brightness setpoint value can also be set differently at night than during the day. The setpoint value can either be set as a fixed value or sent via the bus.

The switch-on dimming value can be activated in "Switch light" mode via the detailed settings "Lighting dimmable in switching operation" and specified as a value telegram.
By activating the "Other switch-on dimming value at night" option, the switch-on value at night can be selected independently.
In "Constant lighting control" operation, the settings "Value telegram" and "without 4-bit stop telegram" can be selected in the detailed settings of channel C1 Light in order to configure the dimming value during the day and the dimming value at night independently.

14.10.1 Devices

- LUXA 103 S360-12 KNX UP / LUXA 103 S360-28 KNX UP (1039052 / 1039072)
- DMG 2 T KNX (4930270) dimming actuator

14.10.2 Overview
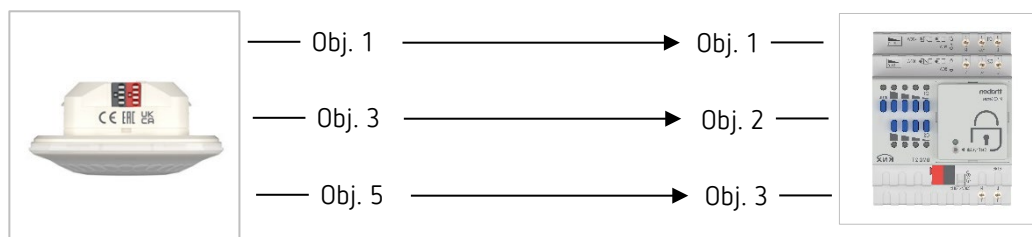
ⓘ For day / night changeover, a light measurement outdoors can be used, e.g. a weather station (Theben Meteodata 140 S 24V KNX - 1409201). Here, a dawn/dusk threshold can be defined in a universal channel. When the threshold is fallen below it is night, when it is exceeded it is day.

14.10.3 Objects and links

Links

No.	LUXA 103 S360-12/-28 KNX Object name/function	No.	DMG 2 T Object name/function	Comment
1	*C1 Light output/switching*	1	*DMG 2 T Channel C1 / switching ON/OFF*	Switching lighting on and off
3	*C1 Light output / Brighter/Darker*	2	*DMG 2 T channel C1 / brighter/darker*	Dimming the lighting brighter/darker
5	*C1 Light output / dimming value*	3	*DMG 2 T channel C1 / dimming value*	Dimming value of the lighting in %

14.10.4 Important parameter settings

LUXA 103 S360-12/-28 KNX

Parameter page	Parameter	Setting
General	*Operating mode*	*Master*
	Activate channel C1 light	*yes*
Channel C1 Light	*Light function*	*Switching light / constant lighting control*
	Configuration type	*Fully automatic device*
	Change over to semi-automatic at night	*No / yes*
	Other brightness setpoint value at night	*Yes*
	Brightness setpoint value night	*500 lx (as per customer specification)*
	Other time delay at night	*Yes*
	Lighting time delay night	*10 min (as per customer specification)*
Detail settings	*Start of control with*	*Value telegram*
	Start behaviour of control	*Without 4 bit stop telegram*
	Other switch-on dimming value at night	*Yes*
	Switch-on dimming value night	*20% (as per customer specification)*

14.11 Additional second telegram of lighting channels C1, C2

By activating the additional telegram in the detailed settings of the lighting channels, an additional telegram in the lighting channel can be sent.

The following telegram types can be sent: priority, value, percentage value, scene.
The additional telegram can be used, for example, if blinds have to be lowered manually for a presentation and the blinds are to be raised again automatically when the lighting channel is switched off manually. In addition, for example the percentage value 0% can be sent to the blinds control when leaving the room.

14.11.1 Devices

- LUXA 103 S360-12 KNX UP / LUXA 103 S360-28 KNX UP (1039052 / 1039072)
- JM 4 T (4940250) blinds actuator

14.11.2 Overview
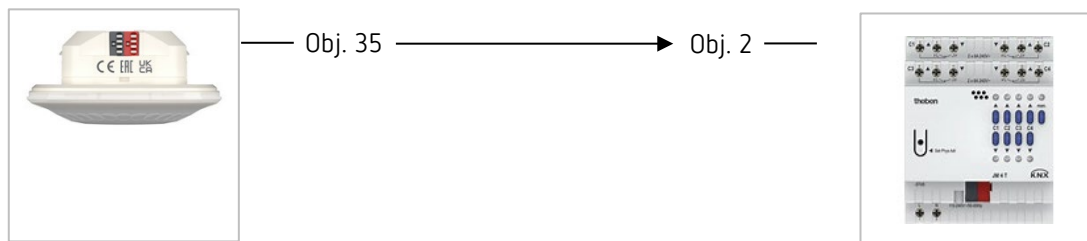
14.11.3 Objects and links

Links

No.	LUXA 103 S360-12/-28 KNX	No.	DMG 2 T	Comment
	Object name/function		Object name/function	
35	*C1 light additional telegram / percentage value*	2	*JM 4 T channel C1 / % height*	Move blinds to % value

14.11.4 Important parameter settings

LUXA 103 S360-12/-28 KNX

Parameter page	Parameter	Setting
General	*Operating mode*	*Master*
	Activate channel C1 light	*yes*
Channel C1 Light detail settings	*Send additional telegram*	*Yes*
Additional telegram	*Telegram type*	*Percentage value*
	Output value in OFF state	*0%*
	Output value in ON state	*Do not send any telegram*
	Cyclical transmission	*no*

15 Appendix

15.1 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

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