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KNX manual

Application description

Presence detector theRonda P360 KNX theRonda S360 KNX

theRonda P360 KNX
theRonda S360 KNX

theRonda S360 KNX FLAT DE   theRonda S360 KNX AP

Content

1. Functional characteristics

1.1 Presence detector theRonda P360 KNX/theRonda S360 KNX

Presence 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 set point value can be set via parameters, object, the management remote control, the installation remote control, or the app 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.

When constant light control is active, the brightness is held constant at the brightness set point value. 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 presence detector also has an integrated scene component as well as the possibility of processing scene numbers for the lighting groups. In combination with the remote control, the presence detector is not only capable of switching and dimming its own lighting groups, but also to control other external consumers such as lights, blinds etc.

1.2 Features

- Circular detection area 360°, up to Ø 24 m (452 m²) for theRonda P360 KNX, up to Ø 9 m (64 m²) for theRonda S360 KNX
- Restriction of detection area with cover clips (only theRonda P360 KNX UP and theRonda S360 KNX UP)
- Mixed light measurement suitable for fluorescent (FL/PL/ESL), halogen/incandescent lamps and LEDs.
- Two lighting channels C1, C2 with a joint light measurement
- Optional brightness-dependent switching or constant light control with standby function (orientation light)
- Switching mode with dimmable lighting
- Fully or semi-automatic
- Brightness switching value or set point value can be set in lux via parameters, the object or via remote control
- Teach-in of the brightness switching value or the set point value
- Light time delay can be set using parameters, the object or via remote control
- Reduction of time delay when present briefly (short-term presence)
- Manual override by telegram or remote control

- 2 presence channels, C4 and C5, can be programmed individually
- Switch-on delay and presence time delay can be set
- 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
- Separate disable objects for light and presence channel
- Scene controls with two scenes
- Scene functionality with scene numbers
- Detection and sending of current brightness
- Adjustable dimming value on standby
- Setting the room correction factor for brightness measurement comparison
- Adjustable detection sensitivity
- Test mode for checking function and detection area
- App remote control "theSenda B" (option) and corresponding app "theSenda Plug" (iOS/Android)
- Management remote control "SendoPro 868-A" (no longer available)
- Installation remote control "theSenda P" (option)
- User remote control "theSenda S" (option)

1.3 Information about this document

Style

< ..... >	Parameter names
active..	The two dots at the end of the text in a parameter selection indicate that an additional parameter page has been opened.

Terminology

Operating mode	Master
	Slave
Configuration type	Fully automatic device
	Semi-automatic device
Channel function	Switching
	Constant light control
	Constant light control without depending on presence

1.4   Technical data

Presence detector	theRonda P360 KNX	theRonda S360 KNX
Number of light measurements (mixed light)	1	
Recommended installation height	2.0 - 6.0 m (minimum height > 1.7 m / max. installation height 10 m)	2,0 – 3,0 m (minimum height > 1,7 m / max. minimum height 4 m)
Maximum range	Ø 8 m (Mh. 3 m) / 50 m² radially moving; Ø 24 m (Mh. 3 m) / 452 m² tangentially moving	Ø 4 m (Mh. 3 m) / 13 m² sitting, Ø 4 m (Mh. 3 m) / 13 m² radially moving, Ø 8 m (Mh. 3 m) / 50 m² tangentially moving
Detection angle horizontal	360°	
Operating voltage	Bus voltage KNX, max. 30 V	
Power consumption	max. 9 mA/13 mA with LED on	
Type of installation	Ceiling installation; Flush/surface mounted or ceiling installation	
Brightness switching value / set point value setting range	10 – 3000 lux	
Lighting time delay	30 s – 60 min	
Presence time delay	10 s – 120 min	
Presence switch-on delay	10 s – 30 min / inactive	
Standby dimming value	1 – 25% of the lamp output	
Standby time	30 s – 60 min / inactive / permanently on	
Remote control communication Receiving data	IR	
Parameter setting	All settings can be remotely controlled via ETS. Described in this document	
Connection type	Plug-in terminals, type WAGO 243	
Size of flush-mounted box	Size 1 (NIS, PMI)	
Protection rating	IP 20 (IP 54 installed)	IP 20 (when installed, IP 54 for version UP, DE, IP 54 for version AP
Ambient temperature	-15 °C – +50 °C	
CE Declaration of Conformity CE	This device conforms to the regulations of the EMC Directive 2014/30/EU	
RCM compliance	This device is compliant with the ACMA guidelines	

1.4.1 Product overview

Type of installation	Channel	Colour	Type	Item number
Ceiling installation	2 light | 2 HVAC	White	theRonda P360 KNX UP WH	2089000
Ceiling installation	2 light | 2 HVAC	White	theRonda S360 KNX UP WH	2089520
Ceiling installation	2 light | 2 HVAC	White	theRonda S360 KNX FLAT DE WH	2089560
Flush mounted installation	2 light | 2 HVAC	White	theRonda S360 KNX AP WH	2089550
Flush mounted installation	2 light | 2 HVAC	Grey	theRonda S360 KNX AP GR	2089551
Flush mounted installation	2 light | 2 HVAC	Special colour in accordance with customer information	theRonda S360 KNX AP SF	2089553

Accessories	Item number
Back box 110A (only for flush-mounted version)	9070912, 9070913
Ceiling installation box 68A (only for flush-mounted version)	9070992
Cover 110 GR (only for flush-mounted version)	9070591
Cover clips (only for flush-mounted version)	9070921
QuickSafe safety cover	9070531
SendoPro 868-A management remote control	no longer available
Installation remote control theSenda P	9070910
User remote control theSenda S	9070911
Remote control with app theSenda B/theSenda Plug	9070985

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1.4.2 Measures

Flush-mounting
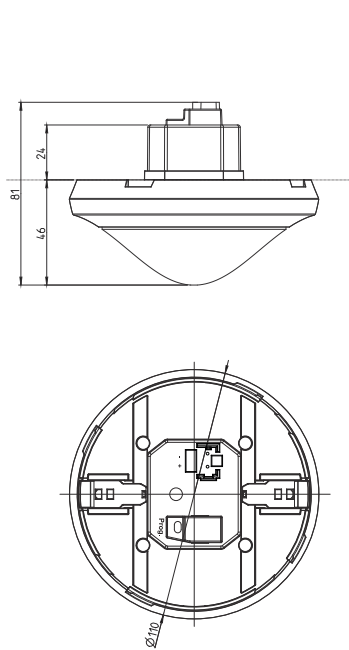
Surface-mounted
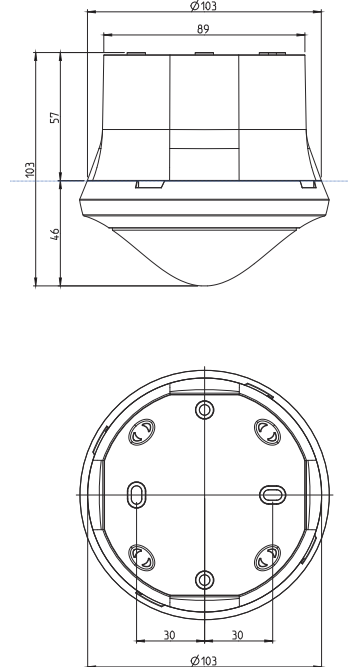
Ceiling installation
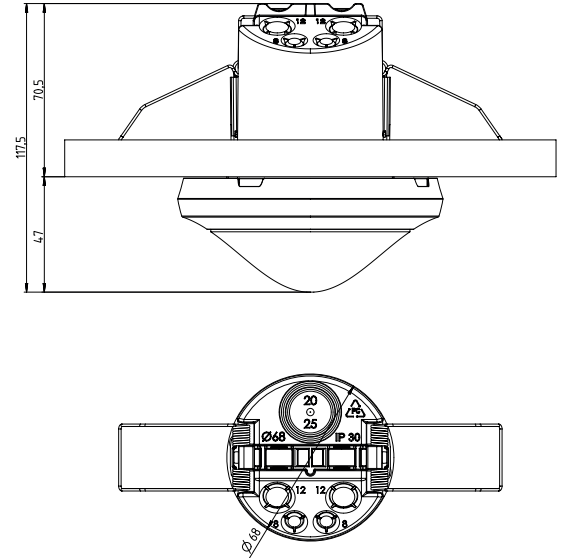
theRonda P360 KNX UP
theRonda P360 KNX UP

theRonda P360 KNX UP
with back box 110 A

theRonda P360 KNX UP
with ceiling installation box 68A
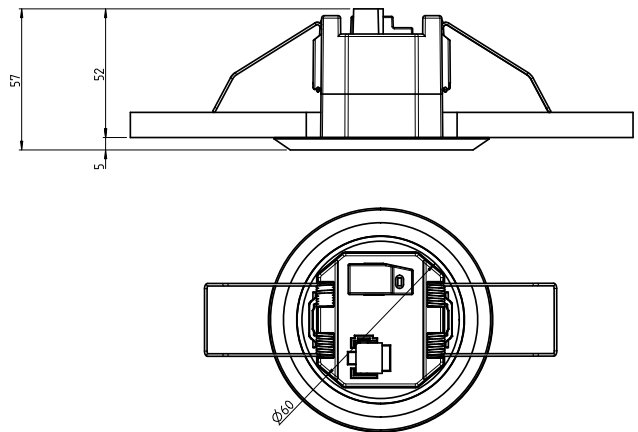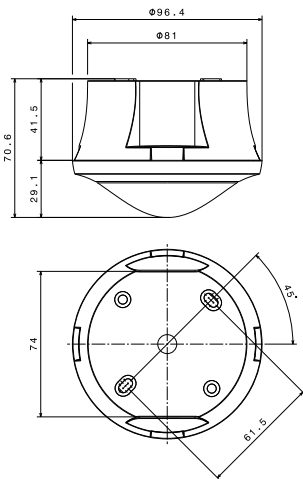
theRonda S360 KNX AP

theRonda S360 KNX FLAT DE

1.4.3 Detection area theRonda P360 KNX

The circular detection area of theRonda presence detector covers a large detection area and permits a good room coverage with many applications. Note that seated and walking persons are detected in differently-sized areas. The recommended installation height is 2.0 m − 6.0 m. As installation height increases, the sensitivity of the presence detector decreases. Walking motions are necessary from installation heights of 4 m, and the detection areas of several detectors should overlap in the marginal zones.

Seated persons:

The details relate to smallest movements at table height (approx. 0.8 m).

Moving persons:

From an installation height of > 5 m, the extent and distance between the active and passive zones increase.
More pronounced movements are required for clear detection.
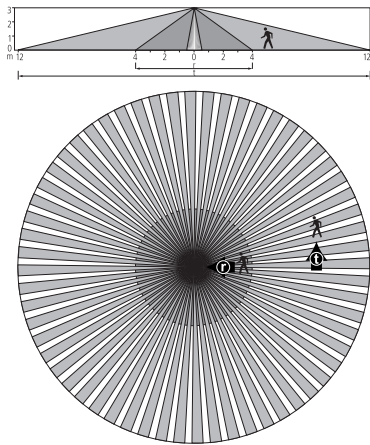
Installation height (A)	moving persons Frontal (r)		moving persons Across (t)		seated persons (s)	
2.0 m	28 m²	Ø 6 m	380 m²	Ø 22 m	16 m²	Ø 4.5 m
2.5 m	38 m²	Ø 7 m	415 m²	Ø 23 m	24 m²	Ø 5.5 m
3.0 m	50 m²	Ø 8 m	452 m²	Ø 24 m	28 m²	Ø 6 m
3.5 m	50 m²	Ø 8 m	452 m²	Ø 24 m	38 m²	Ø 7 m
4.0 m	50 m²	Ø 8 m	452 m²	Ø 24 m	–	–
5.0 m	50 m²	Ø 8 m	452 m²	Ø 24 m	–	–
6.0 m	50 m²	Ø 8 m	452 m²	Ø 24 m	–	–
10.0 m	50 m²	Ø 8 m	491 m²	Ø 25 m	–	–

1.4.4 Detection area theRonda S360 KNX

The circular detection area of theRonda presence detector covers a middle detection area and permits a good room coverage with many applications. Note that seated and moving persons can be detected in differently-sized areas. The recommended installation height is 2.0 m − 6.0 m. As installation height increases, the sensitivity of the presence detector decreases. Walking motions are necessary from installation heights of 4 m, and the detection areas of several detectors should overlap in the marginal zones. The detection range is reduced as the temperature increases. As installation height increases, the sensitivity of the presence detector decreases. The detection range is reduced as the temperature increases.

Seated persons:
The details relate to smallest movements at table height (approx. 0.8 m).

Moving persons:

From an installation height of > 4 m, the extent and distance between the active and passive zones increase. More pronounced movements are required for clear detection.
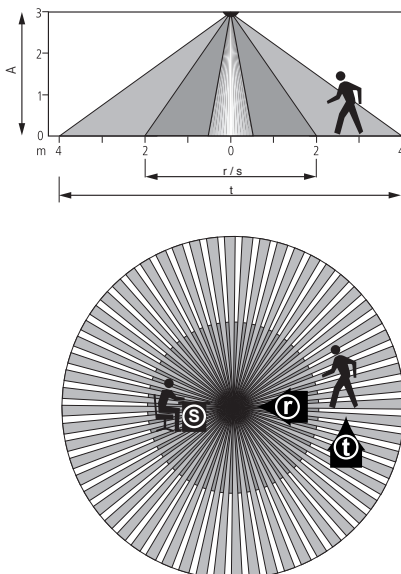
Montage-höhe (A)	gehende Personen Quer (t)		gehende Personen Frontal (r)		sitzende Personen (s)	
2,0 m	38 m²	Ø 7 m	5 m²	Ø 2,5 m	5 m²	Ø 2,5 m
2,5 m	38 m²	Ø 7 m	7 m²	Ø 3,0 m	7 m²	Ø 3,0 m
3,0 m	50 m²	Ø 8 m	13 m²	Ø 4,0 m	13 m²	Ø 4,0 m
3,5 m	50 m²	Ø 8 m	13 m²	Ø 4,0 m	–	–
4,0 m	64 m²	Ø 9 m	13 m²	Ø 4,0 m	–	–

2. The application programme for P360 KNX/theRonda S360 KNX

2.1 Selection in the product database

	theRonda P360 KNX	theRonda S360 KNX
Manufacturer	Theben AG	Theben AG
Product family	Physical sensors	Physical sensors
Product type	Presence detector	Presence detector
Program name	theRonda P360 KNX	theRonda S360 KNX

The KNX databases can be found on our website: http://www.theben-hts.ch or http://www.theben.de

2.2 Parameter pages

Name	Description
General	General settings, e.g. operating mode, etc.
Settings	Sensitivity, etc.
Brightness measurement	Source brightness measurement, room correction factor, settings for sending the current brightness value via the bus
Lighting channel C1	Settings for lighting control by lighting channel C1
Detail settings	Settings for lighting channel C1 - Switching
Detail settings	Settings for lighting channel C1 - Constant light control
Detail settings	Settings for lighting channel C1 constant light control without depending on presence
Light block function	Settings for blocking lighting channel C1 / C2
Lighting channel C2	Settings for lighting control by lighting channel C2
Detail settings	Settings for lighting channel C2 - Switching
Detail settings	Settings for lighting channel C2 - Constant light control
Detail settings	Settings for channel C2 Light constant light control without depending on presence
Presence channel C4	Channel C4 for the presence-dependent control of other systems such as heating, air conditioning
Objects	Setting of telegrams
Presence block function	Settings for blocking presence channel C4
Presence channel C5	Channel C5 for the presence-dependent control of other systems such as heating, air conditioning
Objects	Setting of telegrams
Presence block function	Settings for blocking presence channel C5
Remote control	Settings for allocation of commands in the user remote control
Scenes	Definition of scenes in relation to the user remote control
Scene functions	Definition of scene functions

2.3 Communication objects

2.3.1 Overview

The theRonda P360 KNX/theRonda S360 KNX presence detector has 41 communication objects. In switching mode, the designation of set point value changes to switching value.

Object Number	Object name	Function	Length	Data type (ID)	Flags				
					C	R	W	T	U
0	Lighting channel C1	Switching	1 bit	1,001	✓		✓	✓	
1	Lighting channel C1	Brighter/darker	4 bit	3,007	✓		✓	✓	
2	Lighting channel C1	Send value	1 byte	5,001	✓		✓	✓	
3	Lighting channel C1	Feedback value	1 byte	5,001	✓		✓	✓	✓
4	Channel C1 brightness setpoint value	Receive value	2 byte	9,004	✓		✓	✓	
5	Channel C1 brightness setpoint value (teach-in)	$01=call up/$81=save	1 byte	18,001	✓		✓		
6	Channel C1 alternative brightness setpoint value	Receive value	2 byte	9,004	✓		✓	✓	
7	Measurement value on lux meter	Receive value	2 byte	9,004	✓		✓		
8	Room correction factor	Retrieve value	2 byte	9.*	✓	✓		✓	
9	Brightness value	Send lux value	2 byte	9,004	✓	✓		✓	
10	External brightness value	Receive lux value	2 byte	9,004	✓		✓		
11	Lighting channel C2	Switching	1 bit	1,001	✓		✓	✓	
12	Lighting channel C2	Brighter/darker	4 bit	3,007	✓		✓	✓	
13	Lighting channel C2	Send value	1 byte	5,001	✓		✓	✓	
14	Lighting channel C2	Feedback value	1 byte	5,001	✓		✓	✓	✓
22	Lighting channel C1, C2	Select brightness setpoint value	1 bit	1,003	✓		✓		
24	Lighting channel C1, C2	Selection of constant light control	1 bit	1,003	✓		✓		
24	Lighting channel C1, C2 - Constant light control	Activate/deactivate	1 bit	1,003	✓		✓		
25	Lighting channel C1, C2	Standby function	1 bit	1,003	✓		✓		
27	Channel C1, C2 Lighting time delay	Receive value	2 byte	7,005	✓		✓	✓	
28	Lighting channel C1, C2	Block/unblock	1 bit	1,003	✓		✓		
29	Central command	Receive	1 bit	1,001	✓		✓		
30	External scene	Receive	1 byte	18,001	✓		✓		
31	Presence channel C4.1	Switching	1 bit	1,001	✓	✓		✓	
31	Presence channel C4.1	Send value	1 byte	5,010	✓	✓		✓	
31	Presence channel C4.1	Send percentage value	1 byte	5,001	✓	✓		✓	
31	Presence channel C4.1	HVAC operating mode	1 byte	20,102	✓	✓		✓	
31	Presence channel C4.1	Send scene	1 byte	17,001	✓	✓		✓	
32	Presence channel C4.2	Switching	1 bit	1,001	✓	✓		✓	
32	Presence channel C4.2	Send value	1 byte	5,010	✓	✓		✓	
32	Presence channel C4.2	Send percentage value	1 byte	5,001	✓	✓		✓	
32	Presence channel C4.2	HVAC operating mode	1 byte	20,102	✓	✓		✓	
32	Presence channel C4.2	Send scene	1 byte	17,001	✓	✓		✓	
33	Presence channel C4	Block/unblock	1 bit	1,003	✓		✓		
34	Presence channel C5.1	Switching	1 bit	1,001	✓	✓		✓	
34	Presence channel C5.1	Send value	1 byte	5,010	✓	✓		✓	
34	Presence channel C5.1	Send percentage value	1 byte	5,001	✓	✓		✓	
34	Presence channel C5.1	HVAC operating mode	1 byte	20,102	✓	✓		✓	
34	Presence channel C5.1	Send scene	1 byte	17,001	✓	✓		✓	

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Object Number	Object name	Function	Length	Data type (ID)	Flags				
					C	R	W	T	U
35	Presence channel C5.2	Switching	1 bit	1,001	✓	✓		✓	
35	Presence channel C5.2	Send value	1 byte	5,010	✓	✓		✓	
35	Presence channel C5.2	Send percentage value	1 byte	5,001	✓	✓		✓	
35	Presence channel C5.2	HVAC operating mode	1 byte	20,102	✓	✓		✓	
35	Presence channel C5.2	Send scene	1 byte	17,001	✓	✓		✓	
36	Presence channel C5	Block/unblock	1 bit	1,003	✓		✓		
41	Parallel switching	Trigger input/output	1 bit	1,017	✓		✓	✓	
42	Scene input	Scene 1 / 2	1 bit	1,022	✓		✓		
42	Scene output	Scene number	1 byte	18,001	✓			✓	
43	IR external 1 switching/dimming	Switching	1 bit	1,001	✓			✓	
44	IR external 1 switching/dimming	Brighter/darker	4 bit	3,007	✓			✓	
45	IR external 2 switching/dimming	Switching	1 bit	1,001	✓			✓	
46	IR external 2 switching/dimming	Brighter/darker	4 bit	3,007	✓			✓	
47	IR external blinds 1	Blinds up/down	1 bit	1,008	✓			✓	
48	IR external blinds 1	Open/close slats	1 bit	1,009	✓			✓	
49	IR external blinds 2	Blinds up/down	1 bit	1,008	✓			✓	
50	IR external blinds 2	Open/close slats	1 bit	1,009	✓			✓	
51	Presence test mode	On/Off	1 bit	1,001	✓		✓		
52	Brightness test mode	On/Off	1 bit	1,001	✓		✓		
53	Software version	Send	2 byte	217,001	✓	✓		✓	

2.3.2 Explanation of the flags

Flag	Flag name	Description
C	Communication	Object can communicate
R	Read	Object value can be read (ETS / display etc.)
W	Write	Object can receive
T	Transmit	Object can send
U	Update	Object can overwrite

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2.3.3 Object characteristics for lighting control

In switching mode, the designation of set point value changes to switching value.

| Object	Object name	Function	Description
Object 0	Lighting channel C1	Switching	In the "switching" mode, the light switch output C1 sends an ON telegram upon detection of motion and insufficient brightness, and an OFF telegram upon the expiration of the time delay or with sufficient brightness: 0 = Absence or sufficient brightness (OFF) 1 = Presence and insufficient brightness (ON)
Object 0 Object 1 Object 2 Object 3	Lighting channel C1 Lighting channel C1 Lighting channel C1 Lighting channel C1	Switching Brighter/ darker Send value Feedback value	Objects 1 - 3 are available if "yes" has been selected in the "Constant light control" function or in "Switching mode" <Lighting dimmable in switching mode>. In the "Constant light control" function, objects 0 − 3 are used for constant light control. All four objects must be linked for a functioning constant light control. A different response is produced depending on configuration. The constant light control can be started with a value or an ON telegram. For further details see page 22 chapter 2.4.6. In the "Constant light control" or "Constant light control without presence" function, constant light control can also be used when there is no-one in the room. Use regardless of presence can be activated and deactivated via object 24. The presence detector does not have any specific push button inputs, but does respond to push button commands sent to objects 0 to 2. The response under manual control can be selected as either "school" or "office". Please observe the information on push button operation on page 32 chapter 3.
Object 4	Channel C1 brightness setpoint value	Receive value	Object available if "yes" has been selected at <Set brightness setpoint value via bus>. This enables changing of the brightness setpoint value during operation. The received brightness setpoint value is set to the corresponding limit automatically if it lies outside the value range (10..3000 lux) or the brightness setpoint value does not match the current room correction factor setting (see setting limit). Object 4 returns the stored value of the brightness setpoint value. When changing the brightness setpoint value via remote control, the new value is sent. In switching mode, value "0" means "Measurement OFF".
Object 5	Channel C1 brightness setpoint value (teach-in)	$01=call up, $81=save	Object available if "yes" has been selected at <Set brightness setpoint value via bus>. The presence detector accepts the currently measured brightness value [lux] as a new brightness setpoint value or alternative brightness setpoint value (depending on which is active at the time) via a value telegram $81 (129). For example, if the presence detector switches to the alternative brightness setpoint value, the current measured brightness value [lux] is transferred to the alternative brightness setpoint value via the value telegram $81 (129). Object 4 sends the saved value of the currently active brightness setpoint value, or object 6 sends the alternative brightness setpoint value (depending on which is active at the time). Object 4, or object 6 if the alternative brightness setpoint value is active, sends the current brightness setpoint value via a value telegram $01 (1). Transfer is made to the currently active brightness setpoint value.

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
Object	Object name	Function	Description
Object 6	Channel C1 Alternative brightness setpoint value	Receive value	Object available if "yes" has been selected at \<Set alternative brightness setpoint value via bus>. This enables resetting of the alternative brightness setpoint value during operation. The received brightness setpoint value is adjusted to the corresponding limit automatically if it lies outside the value range (10..3000 lux) or the brightness setpoint value does not match the current room correction factor setting (see setting limit). Object 6 returns the stored value of the alternative brightness setpoint value. When changing the alternative brightness setpoint value with the app remote control "theSenda B" ("theSenda Plug" app), or management remote control "SendoPro 868-A", the new value is sent. In the switching mode, the value "0" means "Measurement OFF".
Object 7	Measurement value on lux meter	Receive value	Object available if "yes" has been selected at \<Set brightness measurement value via bus>. The measured lux meter value is needed to calculate the room correction factor. The lux meter is placed on the work surface below the sensor and the measured lux value is entered via object 7 or the "SendoPro 868-A" management remote control. The room correction factor is calculated automatically immediately after entry. Object 8 sends the stored value (scale factor 100).
Object 8	Room correction factor	Retrieve value	Object available if "yes" has been selected at \<Set brightness measurement value via bus>. The room correction factor is calculated automatically following entry of the lux meter value or is entered via the ETS. Permissible values lie between 0.05 and 2.0. Calculated or entered values outside the permitted range will be set automatically to the appropriate limit value. For monitoring purposes, the room correction factor can be queried via the object 8 (scale factor 100).
Object 9	Brightness value	Send lux value	Object available if "yes" has been selected at \<Send brightness value via bus>. The presence detector sends the current brightness measurement value as a 2-byte telegram via object 9. The frequency of telegrams depends on the cycle time and the minimum change in brightness. The 2-byte telegrams to object 9 are used to visualise a brightness value. Use of the presence detector's internal constant light control function is recommended for control. The brightness value can be adapted to the conditions in a room with the room correction factor. See page 19 chapter 2.4.3.
Object 10	External brightness value	Receive lux value	Object available if "External" has been selected at \<Brightness measurement source>. As an alternative to light measurement, an external brightness value can be used via object 10.
Object 11	Lighting channel C2	Switching	If two switch outputs are used, object 11 provides brightness-dependent switching for lighting channel C2. For operation, see object 0: Lighting channel C1: Switching.
Object 11 Object 12 Object 13 Object 14	Lighting channel C2 Lighting channel C2 Lighting channel C2 Lighting channel C2	Switching Brighter/darker Send value Feedback value	Objects 12 - 14 are available if the "Constant light control" function or "yes" in "Switching mode" \<Lighting dimmable in switching mode> has been selected. If two channels are used, objects 11 − 14 provide control or constant light control for lighting channel C2. For operation, see objects 0 − 3: Lighting channel C1.

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Object	Object name	Function	Description
Object 22	Lighting channel C1 Lighting channel C1/C2	Select bright-ness setpoint value	Object available if "active" has been selected at <Select brightness setpoint value>. Depending on the configuration, it is possible to switch between two bright-ness setpoint values for daylight-dependent switching or constant light control. - An ON telegram to bus object 22 switches to the alternative brightness setpoint value. - An OFF telegram switches back to the original base brightness as setpoint value. This applies to both switching and constant light control.
Object 24	Lighting channel C1 Lighting channel C1/C2 Lighting channel C1 constant light control Lighting channel C1/C2 constant light control	Selection of constant light control Activate/deac-tivate	Object available if <Lighting channel C1 function> "constant light control" has been selected. Response when using "Constant light control": - ON telegram to object 24 starts the presence-independent control. The <configuration type> of the lighting channel is automatically switched to "fully automatic device". - OFF telegram to object 24 deactivates the presence-independent control and presence-dependent constant light control is resumed. The set <confi-guration type> will be restored. Object available if <Lighting channel C1 function> "presence-independent constant light control" has been selected. Response in case of "Presence-independent constant light control": - ON telegram to object 24 starts the control. - OFF telegram to object 24 deactivates the control and switches off lighting. - The 2 lighting channels C1/C2 can be switched and dimmed separately. Note: When set to "constant light control" (!) object 24 does not work in presence detectors with software version 00 00. The software version can be queried via object 53. See page 14 chapter 2.3.4.
Object 25	Lighting channel C1 Lighting channel C1/C2	Standby func-tion	The standby function is available if "active" has been selected at <Lighting standby time>. The standby function can be deactivated and reactivated via object. 25. The standard setting for the standby function is "activated".
Object 27	Lighting channel C1 time delay Lighting channel C1/C2 time delay	Receive value	Object available if "yes" has been selected at <Set lighting time delay via bus>. The time delay can be set jointly for lighting channels C1, C2 in a range of 30 s to 60 s via object. 27. The value must be sent in seconds. Over the course of 2 to 30 minutes, the lighting time delay is adjusted adap-tively.
Object 28	Lighting channel C1 Lighting channel C1/C2	Block/unblock	Object available if "yes" has been selected at <Activate blocking function>. The lighting channels are blocked jointly with an ON or OFF telegram. At the start of the blocking process, the light outputs optionally send one of the fol-lowing telegrams: ON, OFF, no telegram, value X%. While disabled, the channels do not send any telegrams, neither on the basis of presence/absence nor on the basis of brightness. The lighting channels are enabled via an ON or OFF telegram in addition to the telegram when setting disable process. When enabled, the detector always sends the current status and thereby continues the brightness-dependent switching or constant light control.

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Object	Object name	Function	Description
Object 29	Central command	Receive	An ON telegram switches on lighting channels C1, C2. The response of the presence detector is identical to that when the user switches it on via a push button. The response depends on the selected control type. See chapter 3 page 32 An OFF telegram switches lighting channels C1, C2 in accordance with the following conditions: - No motion within the last 5 seconds: The light switches off immediately. The running time delays for the lighting channels C1, C2 and standby time are set to 0. The presence detector then returns to normal operation. If <Duration of lighting standby time> is set to "on", channels C1, C2 are not switched off, but instead switch to the set standby operation. - Motion when receiving the OFF telegram: The light stays on. **Fully automatic device:** - If further motion is detected afterwards, the light switches on again if there is insufficient brightness. **Presence detector is disabled** - The central command is not carried out.
Object 30	External scene	Receive	Object available if "inactive" has not been selected at <Lighting channel C1 function>. Scene numbers sent directly to the actuator can be directed to the presence detector to disable/enable the lighting channels of the presence detector, to deactivate/activate control or to use internal scene 1/2. See page 31 chapter 2.4.18

2.3.4 Characteristics of other objects

Object	Object name	Function	Description
Object 31 Object 32 Object 34 Object 35	Presence channel C4.1 Presence channel C4.2 Presence channel C5.1 Presence channel C5.2	Switching Send value Send percentage value HVAC operating mode Send scene	Object available if "active" has been selected at <Presence channel C4.X> or at <Presence channel C5.X>. The presence channel C4, C5 sends the configured telegram (independently of brightness after a potential delay due to the configured switch-on delay) or no telegram if there is a presence. The configured telegram or no programme at all is sent after the time delay elapses. The telegram type is freely selectable.
Object 33 Object 36	Presence channel C4 Presence channel C5	Block/unblock	Object available if "yes" has been selected at <Activate blocking function>. The presence channel is disabled via an ON or OFF telegram. The response at the start of blocking can be defined as follows: - No response - As when presence detected - As at the end of the time delay The presence channel is enabled via an ON or OFF telegram in addition to the telegram when setting disable process. After unblocking, the current state is sent.

Object	Object name	Function	Description
Object 41	Parallel switching	Trigger input/output	Object available if "Parallel switching" has been selected at <Master operating mode> or <Operating mode> "Slave" has been selected.
			The trigger input/output is required for parallel switching of more than one presence detector. 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 the motion information among each other. The advantage is a zone with uniform presence detection but with several light measurements, for example 3 lighting groups in a room, where the group nearest to the window can be dimmed much darker than the lighting groups in the interior of the room.
			Each detector sends a maximum of two ON telegrams per minute on detection of motion. The interval (cycle time) between two telegrams can be set to a maximum of four minutes. Please note that the interval between two trigger telegrams is always shorter than the time delay.
			Please observe the information on parallel switching on page 34 chapter 4.
Object 42	Input/output scene		Depending on the chosen configuration, internal scenes can be called up via object 42 or scenes can be directly triggered.
		Scene 1/2	Internal scenes: Object 42 becomes the "Scene input" if "Internal scenes" has been selected at <Scene controls>.
			An OFF telegram to the scene input object calls up scene 1, an ON telegram retrieves scene 2.
		Scene number	Object 42 becomes the "Scene output" if "Send scene number to bus" has been selected under <Scene controls>.
			When the scene buttons ▱ on the user remote control theSenda S are pressed, the scene output object sends the set scene number.
Object 43 Object 44	IR external 1 switching/dimming IR external 1 switching/dimming	Switching Brighter/darker	The parameter <Upper button row theSenda S controls> has a permanently assigned group address I. If during configuration "Switching/dimming external 1" is set to the parameter <Upper button row theSenda S controls> and a command is received with the IR group address I, objects 43 and 44 assume the following function:
			Briefly pressing the ☼/♀ push buttons causes a ON telegram (1) or an OFF telegram (0) to be sent via object 43 switching. Holding down the ☼ button on the remote control causes "dim brighter" to be sent via object 44, and "stop" when released. Holding down the ♀ button on the remote control causes "dim darker" to be sent via object 44, and "stop" when released.
Object 45 Object 46	IR external 2 switching/dimming IR external 2 switching/dimming	Switching Brighter/darker	The parameter <Lower button row theSenda S controls> has a permanently assigned group address II. If during configuration "Switching/dimming external 2" is set to the parameter <Lower button row theSenda S controls> and a command with IR group address II is received, objects 45 and 46 assume the same function as described for objects 43 and 44.
Object 47 Object 48	IR external blinds 1 IR external blinds 1	Blinds up/down Open/close slat	The parameter <Upper button row theSenda S controls> has a permanently assigned group address I. If during configuration "Blinds external 1" is set to the parameter <Upper button row theSenda S controls> and a command is received with the IR group address I, objects 47 and 48 assume the following function:
			Briefly pressing the ☼/♀ buttons causes a 0 or 1 telegram to be sent via the object "Open/close slats". Holding down the ☼/♀ buttons causes a 0 or 1 telegram to be sent via the object "Blinds up/down".
Object 49 Object 50	IR external blinds 2 IR external blinds 2	Blinds up/down Open/close slat	The parameter <Lower button row theSenda S controls> has a permanently assigned group address II. If during configuration "Blinds external 2" is set to the parameter <Lower button row theSenda S controls> and a command with IR group address II is received, objects 49 and 50 assume the same function as described for objects 47 and 48.

Object	Object name	Function	Description
Object 51	Presence test mode	On/Off	An ON telegram activates the presence test mode for the duration of the configured time. See page 38 chapter 6.1 for a description of the presence test mode AN OFF telegram ends the presence test mode early and the detector restarts.
Object 52	Brightness test mode	On/Off	An ON telegram activates the brightness test mode for the duration of the configured time. See page 38 chapter 6.2 for a description of the brightness test mode AN OFF telegram ends the brightness test mode early and the detector restarts.
Object 53	Software version	Send	The software version of the presence detector can be queried via this object. The format of the queried software version corresponds to data type 217.001. {TABLE} Presence detectors with software version 0.00 (00 00) do not support object 53.

Table inside Object 53 Description:

Info (DPT 217.001)	Software Version
08 00	1.00
08 40	1.01
08 80	1.02
08 C0	1.03
09 00	1.04
09 40	1.05
09 80	1.06
09 C0	1.07
0A 00	1.08
0A 40	1.09
0A 80	1.10

2.4 Parameter

Default values appear in **bold**.

2.4.1 General

Parameter name	Values	Meaning
Operating mode	**Master**	A Master is capable of lighting control (switching or constant light control) and relaying the presence information.
	Slave	Slaves are used to extend the detection area. They supply presence information to the Master.
		The <Parallel switching cycle time> parameter is displayed.
		Please observe the information on parallel switching in chapter 4 page 34.
Master operating mode	**Individual switching**	Presence detector works as an independent device.
	Parallel switching	Parallel switching: If required, the detection area can be extended by connecting additional detectors to a "Master" as "Slaves", or a number of "Masters" can be connected to each other. The <Parallel switching cycle time> parameter is displayed.
		Please observe the information on parallel switching in chapter 4 page 34.
Parallel switching cycle time	**30 seconds** 1 minute 2, 3, 4 minutes	Each detector sends a maximum of two ON telegrams per minute on detection of motion. The interval between two telegrams can be set to up to 4 minutes, to reduce the number of telegrams.
		Please note that the interval between two trigger telegrams is always shorter than the time delay.
Lighting channel C1 function	**Switching light**	Lighting channel C1 switches a lighting group on the basis of the presence of persons and the current brightness level.
	Constant light control	Lighting channel C1 controls a lighting group on the basis of the presence of persons and the current brightness level.
	Constant light control without depending on presence	Lighting channel C1 controls a lighting group on the basis of the current brightness level.
	inactive	The presence detector is not used for lighting control.
Lighting channel C2 function	Switching light	Lighting channel C2 switches a lighting group on the basis of the presence of persons and the current brightness level.
	Constant light control	Lighting channel C2 controls a lighting group on the basis of the presence of persons and the current brightness level.
	Constant light control without depending on presence	Lighting channel C2 controls a lighting group on the basis of the current brightness level.
	inactive	Lighting channel C2 is not used. The associated parameters and objects are not displayed.
Presence channel C4 function	active	The "Presence channel C4" parameter page is displayed. Presence channel C4 switches other devices such as HVAC systems on/off on the basis of presence of persons or delivers the presence information to higher-level systems (independently of brightness).
	inactive	The presence detector is not used for controlling HVAC applications.
Presence channel C5 function	active	The "Presence channel C5" parameter page is displayed. Presence channel C5 switches other devices such as HVAC systems on/off depending on the presence of persons, or it delivers the presence information to higher-level systems (independently of brightness).
	inactive	The presence detector is not used for controlling HVAC applications.
Activation of test mode	**via object or remote control, max. 30 min** 2 – 60 min	An activated test mode will automatically be ended after expiry of the set time, and the detector will be restarted. See page 38 chapter 6 for the description of the test modes.

2.4.2 Settings

Parameter name	Values	Meaning
Detection sensitivity	1 – 5	The detector has 5 sensitivity levels: 1 very insensitive 2 insensitive 3 standard 4 sensitive 5 very sensitive By selecting the test presence operation mode, the set sensitivity increment is not changed.
	3 standard	The basic setting is the middle increment (3).
Parameter settings at download		The setting affects the following parameters: - Brightness setpoint value of lighting channel C1 - Alternative brightness setpoint value of lighting channel C1 - Lighting time delay - Room correction factor - Detection sensitivity - Scene values
	Overwrite via download	The relevant parameter values (see above) in the presence detector will be over-written. Settings modified with app remote control "theSenda B ("theSenda Plug" app), "SendoPro 868-A" management remote control, "theSenda P" installation remote control, or via bus object will be lost. The parameters set in the ETS are accepted.
	Unchanged via download	The relevant parameter values (see above) in the presence detector remain unchanged. Settings modified with app remote control "theSenda B ("theSenda Plug" app), "SendoPro 868-A" management remote control, "theSenda P" installation remote control, or via bus object will remain unchanged. **Note: With the first download (factory setting) or after discharging the detector, valid parameter values have to be downloaded first, otherwise error flashing will be displayed.**
Motion indicated by the LED	**no**	No display of motion. LED is switched off.
	yes	As soon as motion is detected, the LED illuminates. The LED remains on as long as motion is detected.

2.4.3 Brightness measurement

Parameter name	Values	Meaning
Brightness measure-ment source	**internal** external	The presence detector measures the artificial light and daylight by means of an internal light measurement. The brightness value must be supplied via object 10. The optimal cycle time is about 1 s for changes greater than 5 %.
Light measurement selection	**Use light measurement in middle**	The detector measures artificial light and daylight directly below the detector (beam angle for each approx. ± 25°). This light measurement cannot be changed. The light measurement area maps a rectangle of about 2 x 3.5 m at table height.
Room correction factor	0.05 – 2 **0.3**	The room correction factor is a measure of the difference between brightness measurements at the ceiling and on the work area. The brightness value measured 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 furniture. The room correction factor allows the brightness measurement made by the presence detector to be adapted to the conditions in the room. In this way, the brightness value measured by the presence detector can be scaled to the lux meter value measured on the surface below the resonance detector. Standard value, suitable for most applications. **Adjustment of the brightness value measured by the detector** For procedure, see chapter 5.2 "Calibration of brightness measurement, page 35".
Set brightness measure-ment value via bus	yes **no**	Objects 7 lux meter measurement value and object 8 room correction factor are displayed.
Send brightness value on bus	yes **no**	The measured brightness value is sent as a 2-byte telegram via bus object 9. The measured brightness value can be adjusted to the conditions in the room with the aid of the parameter <Room correction factor>. The parameters "Transmit bright-ness value cyclically" and "Transmit brightness value upon change" are displayed. Note: If the brightness value is used for external control, please note that <Trans-mit brightness value cyclically> is set to 5 s and <Transmit brightness value upon change> is set to > 5 %. The measured brightness value is not transmitted.
Transmit brightness value cyclically	5 s .... 30 min **every 1 min** no	The measured brightness value is transmitted cyclically at the selected time. Standard value The measured brightness value is not transmitted cyclically.
Transmit brightness value upon change	>5 % ... >80 % **from >30 %** no	The brightness value is sent if the measured value has changed by at least the con-figured value since the last transmission. This change is independent of the length of time taken for this process. If the brightness remains constant, the brightness value will be resent on completi-on of the configured cycle time. With frequent changes in brightness, the value is sent not earlier than 5 seconds after the last transmission. This time setting cannot be changed. Standard value The measured brightness value is not transmitted on the basis of a change in brightness.

2.4.4 Lighting channel C1

Parameter name	Values	Meaning
Configuration type	**Fully automatic device**	In the "fully automatic device" <configuration type>, the light channel automatically switches or controls the lighting on the basis of presence and surrounding brightness. Switching off occurs automatically.
	Semi-automatic device	In the "semi-automatic" <configuration type>, 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 and the light has gone off, the light comes on automatically. Switching off occurs automatically.
		See also page 32 chapter 3.
Brightness switching value Brightness setpoint value		Switching lights: The brightness switching value defines the minimum desired brightness. The currently prevailing brightness is measured below the presence detector. If the prevailing brightness is below the switching value, the light is switched on as soon as a presence is detected.
		Constant light control: The defined brightness setpoint value is achieved by controlling/dimming the lamps (objects 1 - 3 as well as 12 - 14).
	10 – 3000 lx	The brightness switching/setpoint value is adjustable in increments between 10 – 3000 lx.
	500 lx	Standard value.
	Measurement off (depending on presence only)	Switching lights:
		The brightness switching value can be deactivated by means of the setting "Measurement off (depending on presence only)".
		Management remote control "SendoPro 868-A", app remote control "theSenda B/theSenda Plug", or installation remote control "theSenda P" provide assistance when setting the brightness switching/setpoint value.
		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.
Set brightness switching/setpoint value via bus	yes	Bus object 4 and 5 are visible and can be used.
	no	Bus object 4 and 5 are not available.
		Note: The brightness switching/setpoint value can always be set with the remote control.
Lighting time delay	30 s – 60 min **10 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 minimum time. The time delay does not change through self-learning with a setting ≤2 minutes or ≥ 30 minutes.
		The time delay applies jointly to all light channels C1, C2.
Setting lighting time delay via bus	yes	The time delay can be set via the bus. Bus object 27 is available.
	no	The time delay can be set only via the remote control.
Short-term presence		The lighting channel time delay can be switched off sooner if a room is occupied for only a short time. (In fully automatic and semi-automatic configuration type)
	inactive	The time delay is used according to the set parameter.
	active	If someone enters an unoccupied room and it is only occupied for up to 30 seconds, the light goes off 2 minutes early. Short-term presence is also applied if a push button is used to switch on the lights.
Selection of brightness switching/setpoint value	**inactive**	There is only one brightness switching/setpoint value (basis) available.

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Parameter name	Values	Meaning
	active	A second, alternative brightness setpoint value can be configured. Both of these brightness setpoint values can be used during normal operation. Bus object 22 is visible and can be used. - An ON telegram to the appropriate bus object switches to the alternative brightness setpoint value. - An OFF telegram restores the original value. This applies to both switching and constant light control. Example: Implementation of day and night operation with two different brightness levels.
Alternative brightness switching/setpoint value		The parameter is visible if <Selecting brightness switching/setpoint value> is active. During operation, bus object 22 can be used to switch between the brightness switching/setpoint values.
	10 – 3000 lx	The alternative brightness switching/setpoint value can be set in stages adjustable between 10-3000 lux.
	400 lx	Standard value
		Note: If the alternative brightness switching/setpoint value does not match the currently set room correction factor (see setting limit), the alternative brightness switching/setpoint value is set to the corresponding limit automatically.
	Measurement off	The presence detector operates only on the basis of presence. (possible only with the "Switch lights on/off" function)
Setting the alternative brightness switching/setpoint value via bus		Parameter only available if "active" has been selected at <Selecting brightness switching/setpoint value>.
	yes	Bus object 6 is visible and can be used.
	no	Bus object 6 is not available. Note: The brightness switching/setpoint value can always be set with the remote control.

2.4.5 Detail settings – Lighting channel C1 – Switching

The parameter page is visible if "Switch lights on/off" is set at the parameter <Lighting channel C1 function>. See page 17 chapter 2.4.1.

Parameter name	Values	Meaning
Lighting dimmable when in switching operation	yes	The lighting can be dimmed manually. The parameter "Duration of manual override" is displayed. Bus objects 1 – 3 are visible and can be used.
	no	The lighting cannot be dimmed manually.
Duration of manual override	**Until lighting time delay has expired**	The parameter is visible if "yes" has been set at the parameter <Lighting dimmable when in switching operation>. The set dimming value applies until the time delay has expired. Afterwards, automatic operation will start.
	15 min - 120 min	The set dimming value applies until the set time or the time delay has expired. Afterwards, automatic operation will start.
Lighting standby time		The parameter is visible if "yes" has been set at the parameter <Lighting dimmable when in switching operation>.
	inactive	The standby function is not available.
	active	The standby function is available and the parameters are displayed.
Duration of lighting standby time	30 s – 60 min	The parameter is visible if "active" has been set at the parameter <Lighting standby time>. The standby time causes both lighting groups to dim to the set standby dimming value instead of switching off, when the time delay has expired. The standby time can be set between 30 seconds and 60 minutes.
	30 min	Standard value
	on	With standby **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.

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Parameter name	Values	Meaning
Standby dimming value		The parameter is visible if "active" has been set at the parameter <Lighting stand-by time>.
	1 % – 25 %	The dimming values for standby can be selected in stages from 1 % to 25 %.
	10 %	Standard value
Transmit channel C1 output value cyclically	every 1 min .. 60 min	Current channel C1 output value is sent cyclically at the selected time.
	no	Note: If the lighting is dimmed brighter/darker (dimmable lighting) or manually switched off with a push button or with the remote control, the output value will NOT be transmitted cyclically anymore!
Activate block function	yes	Blocking lighting channel C1 means that the presence detector does not send telegrams via objects 0 to 3, although the evaluation of motion and brightness continues.
	no	Standard value

2.4.6 Detail settings – Lighting channel C1 – Constant light control

The parameter page is visible if "Constant light control" is set at the parameter <Lighting channel C1 function>. See page 17 chapter 2.4.1.

Parameter name	Values	Meaning
Start of control with	**Value telegram**	Control is started with a value telegram. The actuator dims up the lights at the set dimming time.
	ON telegram	Control is started with an ON telegram. The actuator switches on and jumps to, or dims up to the value configured on the actuator.
Start behaviour of control	**with 4 bit stop telegram**	If a „value telegram" has been selected at <Start of control with>, 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 an „ON telegram" has been selected at <Start of control with>, 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.
	without 4 bit stop telegram	If a „value telegram" has been selected at <Start of control with>, control starts with the set parameter value „switch-on dimming value".
		If an „ON telegram" has been selected at <Start of control with>, 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.
		Note: This parameter does not work in presence detectors with software version 00 00. The software version can be queried via object 53. See page 14 chapter 2.3.4.
Switch-on dimming value	30 % ... 100 %	The parameter is visible if parameter <Start of control with> is set to „value telegram", and parameter <Start behaviour of control> to „without 4 bit stop telegram".
		When the controller starts, the lighting is switched on to the set <switch-on dimming value>, and control starts from this value.
	70 %	Standard value
		Note: This parameter does not work in presence detectors with software version 00 00. The software version can be queried via object 53. See page 14 chapter 2.3.4.
Control speed		This parameter is used to change the increment of the sent dimming value.
	Standard	Response is set to its optimum level. The change happens gradually and is almost imperceptible.

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Parameter name	Values	Meaning
	moderate	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.
Control range	**Standard**	Control range: 10 % to 100 %.
	User-defined	The upper and lower limits of the control range can be user-defined. The parameters <Lower control limit> and <Upper control limit> are displayed.
Lower control limit	1 % .. 25 %	
	10 %	Standard value
Upper control limit	70 % .. 100 %	
	100 %	Standard value
Switch off when there is enough brightness	never switch off after 5 min ... 9 h	If the lighting is controlled down to the lower limit, the lighting will be switched off after the time set at the parameter <Switch off when there is enough brightness>. With the selection „never switch off", the lighting will never be switched off.
		This behaviour is valid, as long as people are present.
	after 10 min	Standard value
		Note: This parameter does not work in presence detectors with software version 00 00. The software version can be queried via object 53. See page 14 chapter 2.3.4.
Response with manual dimming	office	Constant light 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 setpoint value is restored.
	School	Constant light control is interrupted temporarily via manual dimming. The setpoint value remains unchanged.
Lighting standby time	**inactive**	The standby function is not available.
	active	The standby function is available and the parameters are displayed.
Duration of lighting standby time	30 s − 60 min	The parameter is visible if "active" has been set at the parameter <Lighting standby time>. The standby time causes both lighting groups to dim to the set standby dimming value instead of switching off, when the time delay has expired. The standby time can be set between 30 seconds and 60 minutes.
	30 min	Standard value
	on	With standby **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.
Standby dimming value		The parameter is visible if "active" has been set at the parameter <Lighting standby time>. The dimming values for standby can be selected in stages from 1 % to 25 %.
	1 % − 25 %	
	10 %	Standard value.
Transmit channel C1 output value cyclically	every 1 min. ... 60 min.	Current channel C1 output value is sent cyclically at the selected time.
		Note: If the lighting is dimmed brighter/darker (dimmable lighting) or manually switched off with a push button or with the remote control, the output value will NOT be transmitted cyclically anymore!
	no	Note: This parameter does not work in presence detectors with software version 00 00. The software version can be queried via object 53. See page 14 chapter 2.3.4.
Activate block function	yes	Blocking lighting channel C1 means that the presence detector does not send telegrams via objects 0 to 3, although the evaluation of motion and brightness continues.
	no	Standard value

2.4.7 Detail settings – Lighting channel C1 – Constant light control without depending on presence

The parameter page is visible if "Constant light control without depending on presence" is set at the parameter <Lighting channel C1 function>. See page 17 chapter 2.4.1.

Parameter name	Values	Meaning
Start of control with	**Value telegram**	Control is started with a value telegram. The actuator turns up the lights at the 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.
	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. The switching response is significantly determined by the setting 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.
Start behaviour of control	**with 4 bit stop telegram**	If a „value telegram" has been selected at <Start of control with>, 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 an „ON telegram" has been selected at <Start of control with>, 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.
	without 4 bit stop telegram	If a „value telegram" has been selected at <Start of control with>, control starts with the set parameter value „switch-on dimming value".
		If an „ON telegram" has been selected at <Start of control with>, 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.
		Note: This parameter does not work in presence detectors with software version 00 00. The software version can be queried via object 53. See page 14 chapter 2.3.4.
Switch-on dimming value	30 % … 100 %	The parameter is visible if parameter <Start of control with> is set to „value telegram", and parameter <Start behaviour of control> to „without 4 bit stop telegram".
		When the controller starts, the lighting is switched on to the set <switch-on dimming value>, and control starts from this value.
	70 %	Standard value
		Note: This parameter does not work in presence detectors with software version 00 00. The software version can be queried via object 53. See page 14 chapter 2.3.4.
Control speed		This parameter is used to change the increment of the sent dimming value.
	Standard	Response is set to its optimum level. The change happens gradually and is almost imperceptible.
	moderate	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.
Control range	**Standard**	Control range:10 % to 100 %.
	User-defined	The upper and lower limits of the control range can be user-defined. The parameter page for "Lower control limit" and "Upper control limit" is displayed.
Lower control limit	1 % .. 25 %	
	10 %	Standard value
Upper control limit	70 % .. 100 %	
	100 %	Standard value

Parameter name	Values	Meaning
Switch off when there is enough brightness	never switch off after 5 min ... 9 h	If the lighting is controlled down to the lower limit, the lighting will be switched off after the time set at the parameter <Switch off when there is enough brightness>. With the selection „never switch off", the lighting will never be switched off.
		This behaviour is valid, as long as people are present.
	after 10 min	Standard value
		Note: This parameter does not work in presence detectors with software version 00 00. The software version can be queried via object 53. See page 14 chapter 2.3.4.
Response with manual dimming	office	Constant light control remains active after manual dimming to the new setpoint value. After the controller has been deactivated via object 24, the originally configured setpoint value is restored.
	School	Constant light control is interrupted by manual dimming until the controller is activated again via object 24. The setpoint value remains unchanged.
Transmit channel C1 output value cyclically	every 1 min. ... 60 min.	Current channel C1 output value is sent cyclically at the selected time.
		Note: If the lighting is dimmed brighter/darker (dimmable lighting) or manually switched off with a push button or with the remote control, the output value will NOT be transmitted cyclically anymore!
	no	Note: This parameter does not work in presence detectors with software version 00 00. The software version can be queried via object 53. See page 14 chapter 2.3.4.
Activate block function	yes	Disabling lighting channel C1 means that the presence detector does not send telegrams via objects 0 to 3, although the evaluation of motion and brightness continues.
	no	Standard value

2.4.8 Lighting channel C1 - Blocking function

The parameter page is visible if "yes" has been set at the channel C1 detail settings parameter <Activate blocking function>.

Parameter name	Values	Meaning
Lock telegram		Disabling the lighting channel C1 outputs means that the presence detector does not send telegrams via objects 0 to 3 although the evaluation of motion and brightness continues.
		Note: Switching on/off and dimming are still possible with the user remote control.
		General unblocking If no person is present in the room and in the last 30 seconds **no** trigger telegram has been received via parallel switching object 41, the lighting time delay is 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 in the room and in the last 30 seconds a trigger telegram has been received via parallel switching object 41, the lighting time delay is set to 30 seconds upon unblocking. If no more movements are detected, the lighting is switched off once the time delay expires or is set to the standby dimming value (standby time active).
		The lighting is not switched off if motion is detected with insufficient brightness.
	Blocking with ON telegram	Lighting channel C1 is blocked with an ON telegram to the disable object. All telegrams are suppressed for the duration of the blocking. Lighting channel C1 is unblocked with an OFF telegram. After unblocking, the detector sends the current status or continues the constant light control.
	Blocking with OFF telegram	The lighting C1 output is blocked with an OFF telegram and unblocked with an ON telegram.

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Response at start of blocking	ON telegram	An ON telegram is sent at the start of blocking.
	OFF telegram	An OFF telegram is sent at the start of blocking.
	no telegram	No telegram is sent at the start of blocking.
	send X% value	A value between 10 % and 100 % can be sent in switching mode with dimmable lighting or in constant light control mode.
		The current status is always sent after unblocking, for instance, an ON telegram with absence and insufficient brightness in switching mode.
The current status is sent at the end of the blocking. Notice: Blocking/unblocking is also possible with scenes.		

2.4.9 Lighting channel C2

The parameter page is visible if "inactive" is not set at the parameters <Operating mode> "Master" and <Lighting channel C2 function>. See page 17 chapter 2.4.1.

Parameter name	Values	Meaning
Configuration type	same as lighting channel C1	The configuration type for lighting channel C1 is adopted for lighting channel C2.
Brightness difference to channel C1		The brightness difference sets the varying light requirements of lighting group C2 in comparison to lighting group C1.
		Application: Two lighting groups are installed in a room with daylight. Lighting group C1 is near the window, lighting group C2 in the interior of the room.
	5 %...120 %	A positive value means that in the area of lighting group C2 more artificial light is required.
	0 % synchronous	Synchronous means both lighting groups are switched or controlled together.
	-5 %...-60 %	A negative value means that in the area of lighting group C2 less artificial light is required than in the area of lighting group C1.
		See also note in Chapter 2.4.4. Lighting channel C1, parameter brightness switching value/setpoint value.
Lighting time delay	same as lighting channel C1	The lighting time delay for lighting channel C2 is adopted from lighting channel C1.

2.4.10 Detail settings - Lighting channel C2 - Switching

The parameters are visible if "Switch lights on/off" is set at the parameter <Lighting channel C2 function>. See page 17 chapter 2.4.1.

Parameter name	Values	Meaning
Lighting dimmable when in switching operation	are adopted from lighting channel C1	See page 21 chapter 2.4.5 "Detail settings - Lighting channel C1 - Switching" parameter <Lighting dimmable in switching mode>
Lighting standby time	are adopted from lighting channel C1	See page 21 chapter 2.4.5 "Detail settings - Lighting channel C1 - Switching" parameter <Lighting standby time>
Transmit channel C2 output value cyclically	are adopted from lighting channel C1	See page 21 chapter 2.4.5 "Detail settings - Lighting channel C1 - Switching" parameter <Transmit channel C1 output value cyclically>
Activate block function	are adopted from lighting channel C1	See page 21 chapter 2.4.5 "Detail settings - Lighting channel C1 - Switching" parameter <Activate blocking function>

2.4.11   Detail settings – Lighting channel C2 – Constant light control

The parameters are visible if "Constant light control" is set at the parameter <Lighting channel C2 function>. See page 17 chapter 2.4.1.

Parameter name	Values	Meaning
Start of control with	are adopted from lighting channel C1	See page 22 chapter 2.4.6 "Detail settings - Lighting channel C1 - Constant light control" parameter <Start of control with>
Start behaviour of control	are adopted from lighting channel C1	See page 22 chapter 2.4.6 "Detail settings - Lighting channel C1 - Constant light control" parameter <Start behaviour of control>
Control speed	are adopted from lighting channel C1	See page 22 chapter 2.4.6 "Detail settings - Lighting channel C1 - Constant light control" parameter <Control speed>
Control range	are adopted from lighting channel C1	See page 22 chapter 2.4.6 "Detail settings - Lighting channel C1 - Constant light control" parameter <Control range>
Switch off when there is enough brightness	are adopted from lighting channel C1	See page 22 chapter 2.4.6 "Detail settings - Lighting channel C1 - Constant light control" parameter <Switch off when there is enough brightness>
Response with manual dimming	are adopted from lighting channel C1	See page 22 chapter 2.4.6 "Detail settings - Lighting channel C1 - Constant light control" parameter <Response with manual dimming>
Lighting standby time	are adopted from lighting channel C1	See page 22 chapter 2.4.6 "Detail settings - Lighting channel C1 - Constant light control" parameter <Lighting standby time>
Transmit channel C2 output value cyclically	are adopted from lighting channel C1	See page 22 chapter 2.4.6 "Detail settings - Lighting channel C1 - Constant light control" parameter <Transmit channel C2 output value cyclically>
Activate block function	are adopted from lighting channel C1	See page 22 chapter 2.4.6 "Detail settings - Lighting channel C1 - Constant light control" parameter <Activate block function>

2.4.12   Detail settings – Lighting channel C2 – Constant light control without depending on presence

The parameters are visible if "Constant light control without depending on presence" is set at the parameter <Lighting channel C2 function>. See page 17 chapter 2.4.1.

Parameter name	Values	Meaning
Start of control with	are adopted from lighting channel C1	See page 24 chapter 2.4.7 "Detail settings - Lighting channel C1 - Constant light control without depending on presence" parameter <Start of control with>
Start behaviour of control	are adopted from lighting channel C1	See page 24 chapter 2.4.7 "Detail settings - Lighting channel C1 - Constant light control without depending on presence" parameter <Start behaviour of control>
Control speed	are adopted from lighting channel C1	See page 24 chapter 2.4.7 "Detail settings - Lighting channel C1 - Constant light control without depending on presence" parameter <Control speed>
Control range	are adopted from lighting channel C1	See page 24 chapter 2.4.7 "Detail settings - Lighting channel C1 - Constant light control without depending on presence" parameter <Control range>
Switch off when there is enough brightness	are adopted from lighting channel C1	See page 24 chapter 2.4.7 "Detail settings - Lighting channel C1 - Constant light control without depending on presence" parameter <Switch off when there is enough brightness>
Response with manual dimming	are adopted from lighting channel C1	See page 24 chapter 2.4.7 "Detail settings - Lighting channel C1 - Constant light control without depending on presence" parameter <Response with manual dimming>
Transmit channel C2 output value cyclically	are adopted from lighting channel C1	See page 24 chapter 2.4.7 "Detail settings - Lighting channel C1 - Constant light control without depending on presence" parameter <Transmit channel C2 output value cyclically>
Activate block function	are adopted from lighting channel C1	See page 24 chapter 2.4.7 "Detail settings - Lighting channel C1 - Constant light control without depending on presence" parameter <Activate block function>

2.4.13 Presence channels C4, C5

The parameter page is visible if "active" is set at the parameter <Presence channel C4 function> or <Presence channel C5 function>. See page 17 chapter 2.4.1.

Parameter name	Values	Meaning
Presence switch-on delay	**inactive**	An inactive switch-on delay means the presence channel switches immediately upon detection of motion.
	10 s – 30 min	A switch-on delay of 10 seconds to 30 minutes can be set for the presence channel. The presence channel 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 presence channel 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.
Presence time delay	10 s – 120 min **15 min**	The presence switch-off time delay 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.

2.4.14 Objects – Presence channels C4, C5

The parameter page is visible if "active" is set at the parameter <Presence channel C4 function> or <Presence channel C5 function>. See page 17 chapter 2.4.1.

Parameter name	Values	Meaning
Telegram type C4.1, C4.2 Telegram type C5.1, C5.2	**Switch command** Value Percentage value HVAC operating mode Scene	Five telegram types are available.
When presence detected At the end of the time delay		Presence channel C4, C5 is switched on only by presence without the influence of brightness.
	Do not send telegram	No telegram is sent on detection of motion or at the end of the time delay.
	Send following telegram once	A telegram is sent once on detection of motion or at the end of the time delay (standard response).
	Send cyclically	A telegram is sent cyclically on detection of motion or at the end of the time delay.
Telegram with switch command	OFF	Select at <Telegram type C4.1, C4.2, C5.1, C5.2> "Switch command"
	ON	Standard value (when presence detected)
	OFF	Standard value (at the end of the time delay)
Telegram with value	0...255	Select at <Telegram type C4.1, C4.2, C5.1, C5.2> "Value"
	255	Standard value (when presence detected)
	0	Standard value (at the end of the time delay)
Telegram with percentage value	0 % ... 100 %	Select at <Telegram type C4.1, C4.2, C5.1, C5.2> "Percentage value"
	100 %	Standard value (when presence detected)
	0 %	Standard value (at the end of the time delay)
Telegram with HVAC Operating mode	Comfort	Select at <Telegram type C4.1, C4.2, C5.1, C5.2> "HVAC operating mode". these have the following byte values: Comfort: 1; Standby: 2; temperature reduction at night: 3; frost/heat protection: 4.
	Standby	Standard value (when presence detected)
	Temperature reduction at night	Standard value (at the end of the time delay)
	Frost/heat protection	

Parameter name	Values	Meaning
Telegram with scene	Scene 1 ... 64	Select at <Telegram type C4.1, C4.2, C5.1, C5.2> "Scene"
	Scene 1	Standard value telegram (when presence detected)
	Scene 2	Standard value telegram (at the end of the time delay)
Should a second tele-gram be sent?	**no**	Standard value
	yes	In addition to telegram C4.1 or C5.1, a second telegram C4.2 or C5.2 is sent. The telegrams and parameters available are the same as for C 4.1 and C 5.1.
Cycle time (if used)	every 1 ... 60 min	Select the cycle time for cyclical transmission.
	every 60 min	Standard value
Activate block function	yes..	Disabling presence channels C4 and C5 stops transmission of their telegrams.
	no	Presence channels C4, C5 are not disabled as standard. The telegrams are transmitted on detection of motion and after time delay elapses according to the configuration.

2.4.15 Presence channel C4, C5 – Blocking function

The parameter page is visible if "yes" has been set at the parameter <Activate blocking function>. See page 28 chapter 2.4.14.

Parameter name	Values	Meaning
Lock telegram	**Blocking with ON telegram**	Both presence channels C4, C5 are blocked via an ON telegram and unblocked with an OFF telegram. The presence detector sends its current status after unblocking.
	Blocking with OFF telegram	Both presence channels C4, C5 are blocked via an ON telegram and unblocked with an OFF telegram. The presence detector sends its current status after unblocking.
Response at start of blocking	**No response**	No response after blocking.
	As when presence detected	Once the channels are blocked, the presence detector responds as when presence is detected.
	As at the end of the time delay	Once the channels are blocked, the presence detector responds as at the end of the time delay.

2.4.16 Remote control

Parameter name	Values	Meaning
Allocation of IR group addresses		The IR group address of the presence detector and theSenda S user remote control must correspond so that lighting channels or external channels can be operated.
		For detailed information on the application of IR group addresses see chapter 7 „theSenda S user remote control" page 40.
		In the ETS, the same IR group address must be defined as the one set on theSenda S user remote control.
Upper button row theSenda S controls	**Lighting channel C1**	Switching or dimming of lighting group C1 (visible when channel C1 is activated)
	Lighting channel C2	Switching or dimming of lighting group C2 (visible when channel C2 is activated)
	External switching/dimming 1	Further information see 2.3.4 „Characteristics of other objects" page 14, object 43/44
	External blinds 1	Further information see 2.3.4 „Characteristics of other objects" page 14, object 47/48
	inactive	The presence detector cannot be controlled with the upper button row of theSenda S

Parameter name	Values	Meaning
IR group address upper button row theSenda S	I	On theSenda S, IR group address I is permanently assigned to the upper button row. This is why the IR group address has to be set to I, when using theSenda S.
	II	
	III	
	All	The presence detector responds to group addresses I, II, and III.
Lower button row theSenda S controls	Lighting channel C1	Switching or dimming of lighting group C1 (visible when channel C1 is activated)
	Lighting channel C2	Switching or dimming of lighting group C2 (visible when channel C2 is activated)
	External switching/dimming 2	Further information see 2.3.4 „Characteristics of other objects" page 14, object 45/46
	External blinds 2	Further information see 2.3.4 „Characteristics of other objects" page 14, object 49/50
	inactive	The presence detector cannot be controlled with the lower button row of theSenda S
IR group address lower button row theSenda S	I	
	II	On theSenda S, IR group address II is permanently assigned to the lower button row. This is why the IR group address has to be set to II, when using theSenda S.
	III	
	All	The presence detector responds to group addresses I, II, and III.

2.4.17 Scenes

Parameter name	Values	Meaning
Scene controls		The presence detector has a simple, internal scene component. One scene is used to store values (On, Off in switching operating mode, percentage values in constant light control operating mode) for the light outputs. **End** - Absent - Switching light on with remote control or push button (with theSenda S user remote control only channels C1 and C2 are possible)
	Using internal scenes	The <Set scenes with> parameter is displayed.
		The scenes can be called up by pressing the scene buttons on theSenda S user remote control or via a telegram to the scene object 30 (1 byte) / 42 (1 bit).
	Send scene number on bus	The <Scene number button scene 1> and <Scene number button scene 2> parameters are displayed.
		Scene numbers can be allocated to the Scene 1 ⊃1 and Scene 2 ⊃2 buttons on theSenda S user remote control.
	inactive	Scene controls are not supported.
Scene number on user remote control Scene button 1		The parameters are visible if the parameter <Scene controls> is set to "Send scene number on bus".
	inactive	No scene number is sent.
Scene number on user remote control Scene button 2	Scene 1-64	The set scene number is sent via object 42 (1 byte) by pressing the scene buttons on theSenda S user remote control. By holding the button (approx. 3 s) of the respective scene, the current scene will be saved.

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Parameter name	Values	Meaning
Define scenes with	ETS	This parameter is visible if the parameter <Scene controls> is set to "Use internal scenes". The following parameters are displayed: - <User remote control output value scene 1, channel lighting C1> - <User remote control output value scene 2, channel lighting C1> - <User remote control output value scene 1, channel lighting C2> - <User remote control output value scene 2, channel lighting C2> 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 S operating manual.
Output value user remote control scene 1, channel C1	**Off**, On	Value of scene 1, channel C1 in switching mode.
	Off, 1 % − 100 %, **30 %**	Value of scene 1, channel C1 in constant light control mode.
Output value user remote control scene 2, channel C1	Off, **On**	Value of scene 2, channel C1 in switching mode.
	Off, 1 % − 100 %, **70 %**	Value of scene 2, channel C1 in constant light control mode.
Output value user remote control scene 1, channel C2	**Off**, On	Value of scene 1, channel C2 in switching mode.
	Off, 1 % − 100 %, **30 %**	Value of scene 1, channel C2 in constant light control mode.
Output value user remote control scene 2, channel C2	Off, **On**	Value of scene 2, channel C2 in switching mode.
	Off, 1 % − 100 %, **70 %**	Value of scene 2, channel C2 in constant light control mode.

2.4.18 Scene functions

The lighting channels of the presence detector can be blocked, or the response affected further, when receiving and matching with a scene number.

The presence detector can be blocked in a defined manner:
- for a defined period of time
- until the presence detector is unblocked

See parameter <Validity of block>

Parameter name	Values	Meaning
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 presence detector can be controlled with 8 different scene functions.
	inactive	No scene number that blocks the presence detector is defined.
	Block lighting channels	Blocking of lighting channels C1/C2. Push button operation is still possible.
	Unblock lighting channels	Unblocking of lighting channels C1/C2.
	Use internal scene 1 / 2 output values	Use additional selection of internal scenes.
	deactivate control	Control is stopped, object 2 / 13 no longer transmits telegrams. An OFF telegram is transmitted via object 0 / 11 after the time delay has expired.
	activate control	The constant light control is activated. The presence detector controls the lighting depending on brightness.
Scene number	1 .. 64	
Validity of block	1 h − 9 h	Lighting channels remain disabled during the set time.
		Manual unblocking of the lighting channels is possible any time: - Receipt of corresponding scene number on bus object 30
	Until unblocking	- Unblock command for lighting channels on bus object 28

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3. Manual operation with push buttons

The presence detector can be overridden by using push buttons or other overriding commands. It is important to know that no separate push button input objects are required for this. On the contrary, the presence detector responds to telegrams sent directly to the actuators by the push buttons or superior functions. In addition, the same group address is used for the push button output, the detector output and the actuator input.

Manual operation applies exclusively to the light outputs. The presence, monitoring and brightness outputs are not affected by manual operation.

3.1 Manual operation via the switching function without dimmable lighting

If the lighting is operated manually via <Lighting channel C1/C2 function> "Switch lights", the presence detector responds as follows:

Push button operation	Response of lighting/presence detector
ON telegram	The lighting is switched on with an ON telegram to object 0/11. 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 at 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 to object 0/11. 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.

3.2 Manual operation via the switching function with dimmable lighting

If the lighting is operated manually via the <Lighting channel C1/C2 function> "Switch lights" and <Lighting dimmable in the switching mode> "yes", the presence detector responds as follows:

Push button operation	Response of lighting/presence detector
ON telegram	The lighting is switched on with an ON telegram to object 0/11. 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 at 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 switched off with a dimming telegram to object 1/12. 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 to object 2/13. 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 to object 0/11. 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.

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3.3 Manual operation with constant light control function

If the lighting is operated manually via <Lighting channel C1/C2 function> "Constant light control", the presence detector responds as follows:

Push button operation	Response of lighting/presence detector
ON telegram	The lighting is switched on with an ON telegram to object 0/11. The constant light control is activated. The presence detector controls the lighting depending on brightness. The two channels C1/C2 are always switched on simultaneously.
Dimming telegram (4 bit)	The lighting is switched off with a dimming telegram to object 1/12. School: Constant light control is interrupted temporarily via manual dimming. The setpoint value remains unchanged. Office: Constant light 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 setpoint value is restored.
Value telegram (1 byte)	The lighting is dimmed with a value telegram to object 2/13. The lighting remains at the transmitted value while the room is occupied. The detector returns to normal standard operating mode after the room is vacated and after expiry of the time delay.
OFF telegram	The lighting is switched off with an OFF telegram to object 0/11. The lighting remains switched off while the room is occupied. The detector returns to normal standard operating mode after the room is vacated and after expiry of the time delay.

3.4 Manual operation with constant light control function without depending on presence

If the lighting is operated manually via the <Lighting channel C1/C2 function> "Constant light control without depending on presence", the presence detector responds as follows:

Push button operation	Response of lighting/presence detector
ON telegram	The lighting is switched on with an ON telegram to object 0/11. The constant light control is activated. The presence detector controls the lighting depending on the brightness. The two channels C1/C2 are always switched on simultaneously.
Dimming telegram (4 bit)	The lighting is switched off with a dimming telegram to object 1/12. School: Constant light control is interrupted temporarily by manual dimming until the controller is activated again via object 24 or 30. The setpoint value remains unchanged. Office: Constant light control remains active after manual dimming to the new setpoint value. After the controller has been deactivated via object 24 or 30, the originally configured setpoint value is restored
Value telegram (1 byte)	The lighting is dimmed with a value telegram to object 2/13. The lighting remains at the transmitted value until control is activated via object 24 or 30.
OFF telegram	The lighting is switched off with an OFF telegram to object 0/11. The lighting remains off until control is activated via object 24 or 30.

3.5 Manual operation using two lighting outputs C1, C2

A separate push button with separate group address is used for each of the two lighting channels for manual override when the two lighting channels C1, C2 are used.

Each of the two lighting channels C1, C2 can be switched on or off separately with the switching type of control.

With the control type of constant light control, both channels C1, C2 always switch on, as soon as one of the two push buttons is pressed. 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 light control.

Channels C1, C2 can be dimmed separately.

4. Parallel switching

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

4.1 Master / Slave parallel switching

A "Master in parallel switching" can be connected to several "Slaves". For this, the trigger inputs / outputs are connected with each other. The Slaves only supply presence information from their detection area. The Master performs the brightness measurement and the administration of all parameter settings.
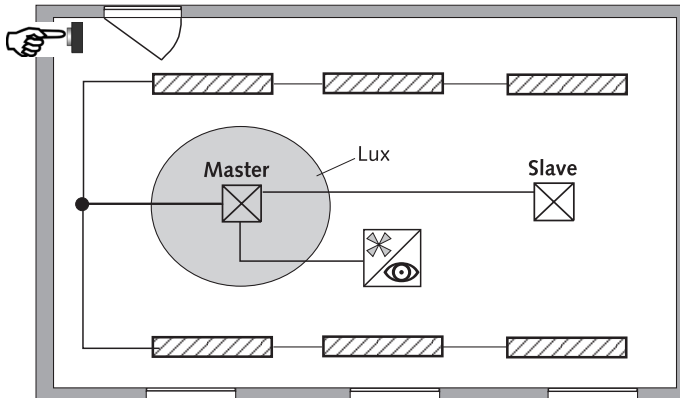
4.2 Master / Master parallel switching

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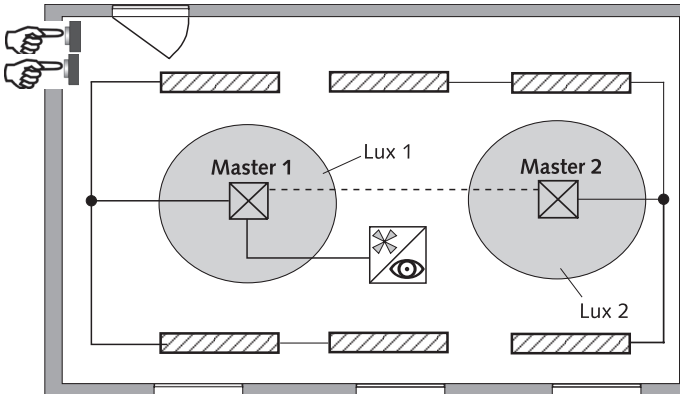
4.3 Telegram load when using parallel switching

With parallel switching, each master sends in parallel switching and each Slave a maximum of two telegrams per minute, provided there is somebody in the detection area. The interval between two telegrams can be increased to 4 minutes to reduce the telegram load. 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 presence detectors.

5. Brightness setpoint value / constant light control

5.1 Setting the brightness setpoint value

The brightness setpoint value defines the minimum required brightness. The currently prevailing brightness is measured below the presence detector. If the prevailing brightness is below the set point, the light switches on as soon as a presence is detected.

The room correction factor is a measure of the difference between brightness measurements at 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 made by the presence detector to be adapted to the conditions in the room. In this way, the brightness value measured by the presence detector can be scaled to the lux meter value ① measured in the area below the presence detector.

See parameter <Room correction factor> see page 19.
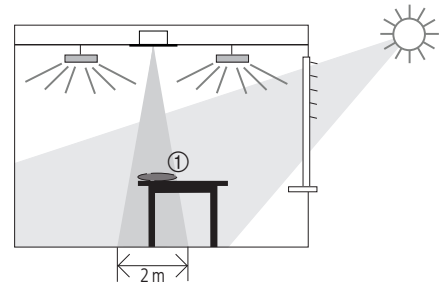
$$\text{Room correction factor} = \frac{\text{Brightness value at the ceiling}}{\text{Brightness value on the work surface}}$$

5.2 Calibration of brightness measurement

Using management „SendoPro 868-A" remote control and lux meter:
➤ Dim all lights to maximum power. If possible, move down the blinds.
　→ The lux meter is placed on the work surface below the sensor and the measured lux value is entered via the management remote control «SendoPro 868-A», parameter <brightness measurement value C1>.
　→ The room correction factor will be calculated automatically. Values between 0.05 and 2.0 are permitted. Calculated or entered values outside the permitted range will automatically be set to the appropriate limit value.
　→ The calculated room correction factor will be applied.

Using „theSenda B" 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 <Brightness measurement value C1> parameter.

1. Using theSenda B remote control
➤ Set up theSenda B according to the drawing, and move away a few steps from the measurement location, so the lux measurement will not be influenced.
➤ Press OK.
　→ A new window with the measured brightness measurement value is shown. If you would like to apply this value,
➤ press OK.

➤ Important: Press the send button (🔼). After this, the brightness measurement is harmonised.

2. Using 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.
➤ And the lux value and press OK.
　→ Brightness measurement value appears in the display.
➤ Important: Press the send button (🔼). After this, the brightness measurement is harmonised.

　→ The room correction factor will be calculated automatically. Values between 0.05 and 2.0 are permitted. Calculated or entered values outside the permitted range will automatically be set to the appropriate limit value.
　→ The calculated room correction factor will be applied.

As an alternative, calibration of brightness measurement can also be carried out via the ETS. Prerequisite is that the <Set brightness measurement value via bus> parameter has been set to "yes". The measured lux value is transmitted to the presence detector via objects 7 (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 8 (scale factor 100).

> 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.

5.3   Configuration of switching/dimming actuators and DALI gateways for constant light control

5.3.1 Recommended configuration

The following configuration of the actuators is recommended for the optimum functioning of constant light control:

Time for running through dimming range (0 %-100 %)	10 seconds
Jump to or dim to dimming values	Soft on
Immediately accept dimming values	immediately
Can be switched off by dimming	No
Can be switched on by dimming	Yes
Lower dimming limit	minimum
Upper dimming limit	maximum
Switch off behaviour: Switch off or dim until off	Switch off
Brightness value at switch on (optional)	as required, approx. 50 %
Send status value of the dimming value	only via read request

Note: The parameter designations can vary according to the model of the dimming actuator, switching/dimming actuators or DALI Gateway.
The actuator does not need to generate automatic status reports. The detector acquires this information itself.

5.3.2 Actuators with separate object for status feedback (value)

Numerous actuators and gateways have a separate object for status feedback (1 byte value), for example:
- Theben DMG 2 T / DME 2 T universal dimming actuator
- Theben SMG 2 S / SME 2 S control device for dimmable electronic ballasts

They are connected to the theRonda P360 KNX/theRonda S360 KNX as follows to ensure perfect constant light control:

Actuator group addresses				C	R	W	T	Act.
0	On/Off	⇐	10/0/1	✓			✓	
1	Dimming	⇐	10/0/2	✓			✓	Leave default
2	Set value	⇐	10/0/3	✓			✓	
10	Status (value)	⇒	10/0/7	✓	✓			

theRonda P360 KNX/theRonda S360 KNX group addresses			
0	Switching	⇒	10/0/1
1	Brighter/darker	⇒	10/0/2
2	Send value	⇒	10/0/3
3	Feedback value	⇐	10/0/7

5.3.3 Actuators without separate object for status feedback (value)

Some actuators do not have a separate object for status feedback. They are connected to the P360 KNX/theRonda S360 KNX as follows to ensure perfect constant light control:

Actuator group addresses					C	R	W	T	Act.
x	On/Off	⇐	10/0/1		✓		✓		Leave default
x	Dimming	⇐	10/0/2		✓		✓		
x	Set value	⇐ ⇨	10/0/7 *)	10/0/3	✓	✓ **)	✓		

P360 KNX/theRonda S360 KNX group addresses			
0	Switching	⇨	10/0/1
1	Brighter/darker	⇨	10/0/2
2	Send value	⇨	10/0/3
3	Feedback value	⇐	10/0/7

*) set to sending!

**) The read flag has to be set manually with some actuators

x) Object in accordance with used product

NOTE: If a number of actuators are connected to the detector's light output, it is necessary to ensure identical configuration of the actuators. Exception: The read flag can be set on only one of the actuators per lighting group.

6. Test modes

The P360 KNX/theRonda S360 KNX has two test modes.

- Presence test, page 38 chapter 6.1
- Light test, page 38 chapter 6.2

6.1 Presence test

The presence test serves to test presence detection and parallel switching.

Activation	- Control command presence test "ON" with "theSenda Plug" app, "On" with management remote control "SendoPro 868-A", or installation remote control "theSenda P" button ☑ I - ON telegram via bus object 51 The presence test mode can be activated anytime.
End	With subsequent restart: - Control command presence test "Off" with "theSenda Plug" app, or "Off" with management remote control "SendoPro 868-A" - OFF telegram via bus object 51 - Mains failure and thus power up - Automatically according to the time set in the ETS, parameter <Activation of test mode> - Control command "Restart" (theSenda Plug app, or SendoPro 868-A) - Reset with theSenda P ↺ Without restart: - Activation of test light with the "SendoPro 868-A" management remote control

LED display Status channels	Description
On	When movement occurs, the LED goes on and channels C1, C2 switch on.
Off	After the movement stops, the LED is off and the channels C1, C2 switch off after approx. 10 s.

Test response

- Brightness measurement deactivated, light output does not react to brightness.
- The detector reacts as in configuration type fully automatic device, even if semi-automatic device is set.
- The control type changes to switching if the control type is set to constant light control. The light is not controlled.
- Light "On" during motion; light "Off" during absence
- Lighting channels C1 and C2 have a fixed time delay of 10 s.
- The response of the presence channels C4 and C5 and room monitoring channel C6 remains unchanged as in normal operating mode.

Commands and adjustable parameters

In presence test mode, the following commands are possible with "theSenda Plug" app, or «SendoPro 868-A» management remote control:
- End presence test
- Activating the light test
- Changing detection sensitivity

The selected detection sensitivity (1 .. 5) is unchanged on activation of the presence test. The sensitivity can be adjusted during the test, and will remain unchanged after a restart. The presence detector performs a restart after the end of the test mode.

6.2 Light test

The "light test" test mode is used to monitor the brightness setpoint level (brightness threshold).

Activation	- Light test "On" control command via the "SendoPro 868-A" management remote control - ON telegram via bus object 52 The light test mode can be activated anytime.

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End	With subsequent restart: - Control command light test "OFF" with "theSenda Plug" app, or "Off" with management remote control "SendoPro 868-A" - OFF telegram via bus object 52 - Mains failure and thus power up - Automatically according to the time set in the ETS, parameter <Activation of test mode> - Control command "Restart" ("theSenda Plug" app, or "SendoPro 868-A") - Reset with theSenda P ↺ Without restart: - Activation of presence test with "theSenda Plug" app, or "SendoPro 868-A" management remote control

LED display	Description
Flashing, 5 s On/0.3 s Off	The LED flashes as long as the light test is active.

Test response

The presence detector responds 100 % as in normal operating mode, only the reaction to bright/dark is faster. This makes it possible to test the brightness threshold and the adaptive response.

All selected functions and parameters remain unchanged.

Commands and adjustable parameters

In light test mode, the following commands are possible with "theSenda Plug" app, or «SendoPro 868-A» management remote control::

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

The presence detector performs a reset after the end of the test mode.

⚠️ Do not use a torch to switch the presence detector. The presence detector will teach-in this and thereby distort the adaptive light thresholds and hysteresis values.
In order to simulate this response, the area below the presence detector should be illuminated or the blinds be operated. Reactivate the light test for a new test.

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7. theSenda S user remote control

See theSenda S operating manual as well.

### 7.1 Performance characteristics of theSenda S

theSenda S user remote control makes it easy to switch and dim lighting using P360 KNX/theRonda S360 KNX presence detector. theSenda S has two channels for controlling lighting groups, blinds or external channels with switching and dimming. theSenda S also provides the option of saving two different lighting scenarios which can be retrieved anytime at the touch of button.

7.2 Combining the presence detector and theSenda S

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

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

Selection of 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 and cannot be changed. Further information can be found in the operating manual for theSenda S.
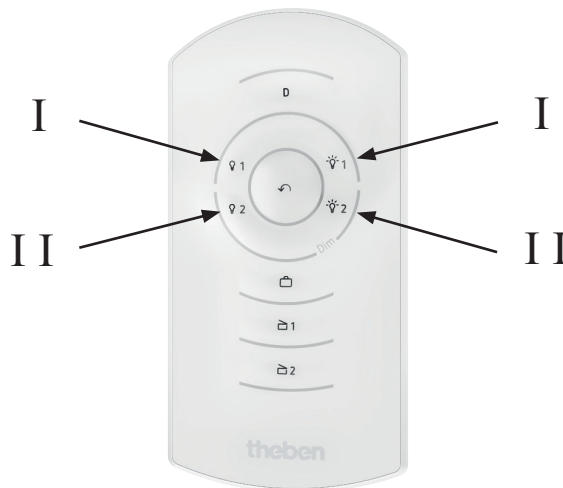
7.3 Examples of set IR group addresses

Subject	Chapter/page
One presence detector, two lighting channels	7.3.1 page 41
Two presence detectors, each with one lighting channel and blinds	7.3.2 page 42
Two presence detectors, two lighting channels	7.3.3 page 43

7.3.1 One presence detector, two lighting channels

Description	Using one theSenda S user remote control, two lighting channels can be controlled manually by one presence detector. Lighting channel C1 of the presence detector is controlled by channel 1 on theSenda S. Lighting channel C2 of the presence detector is controlled by channel 2 on theSenda S.

Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550) theSenda S (Order No. 9070911)

Overview	

	Master	Channel	IR Grp. Addr.
		Lighting channel C1	I
		Lighting channel C2	II

Parameter	theRonda P360 KNX / theRonda S360 KNX Master		
	Parameter page	Parameter	Setting
	Remote control	Upper button row theSenda S controls	Lighting channel C1
		IR group address upper button row theSenda S	I
		Lower button row theSenda S controls	Lighting channel C2
		IR group address lower button row theSenda S	II

Channel 1 → Upper button row
Channel 2 → Lower button row

7.3.2 Two presence detectors, each with one lighting channel and blinds

Description	One lighting channel on each of two presence detectors as well as the blinds channel on one presence detector can be controlled manually by a theSenda S user remote control.
	The respective channels C1 on the two presence detectors are controlled by channel 1 on 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 other presence detectors.
	The blinds are controlled by the Master 2 presence detector via channel 2 on theSenda S. Channel 2 commands are ignored by Master 1.

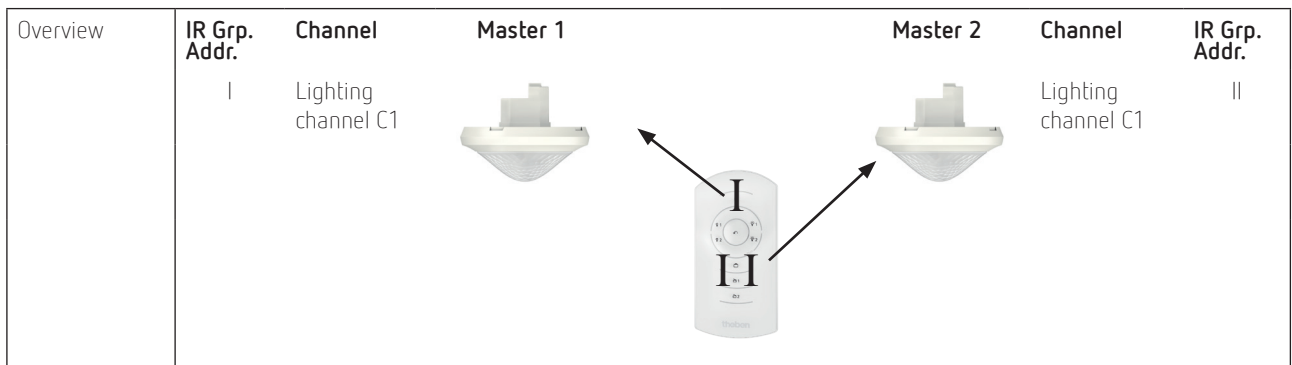| Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550)
	theSenda S (Order No. 9070911)

Overview	IR Grp. Addr.	Channel	Master 1	Master 2	Channel	IR Grp. Addr.
⚠	I	Lighting channel C1			Lighting channel C1	I
					External blinds 2	II

Parameter	theRonda P360 KNX/theRonda S360 KNX Master 1		
	Parameter page	Parameter	Setting
	Remote control	Upper button row theSenda S controls	Lighting channel C1
		IR group address upper button row theSenda S	I
	theRonda P360 KNX/theRonda S360 KNX Master 2		
	Parameter page	Parameter	Setting
	Remote control	Upper button row theSenda S controls	Lighting channel C1
		IR group address upper button row theSenda S	I
		Lower button row theSenda S controls	External blinds 2
		IR group address lower button row theSenda S	II

7.3.3 Two presence detectors, two lighting channels

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

Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550)
	theSenda S (Order No. 9070911)

Overview	IR Grp. Addr.	Channel	Master 1	Master 2	Channel	IR Grp. Addr.
	I	Lighting channel C1			Lighting channel C1	II

Parameter	theRonda P360 KNX/theRonda S360 KNX		
	Master 1		
	Parameter page	Parameter	Setting
	Remote control	Upper button row theSenda S controls	Lighting channel C1
		IR group address upper button row theSenda S	I
	theRonda P360 KNX/theRonda S360 KNX		
	Master 2		
	Parameter page	Parameter	Setting
		Lower button row theSenda S controls	Lighting channel C1
		IR group address lower button row theSenda S	II

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8. Troubleshooting

| Fault/error	Cause
Light does not switch on or switches off if presence is detected and in darkness	Lux value is set too low; detector set on semi-automatic; light was switched off manually via push button or theSenda S; person not within detection area; obstruction(s) interrupting detection; time delay set too short
Light stays on with detection of presence despite sufficient bright-ness	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 startup phase was not problem-free.
Error flashing (3 x per second)	Error during start-up phase or during operation: - With the first download (factory setting) or after discharging the detector, valid parameter values have to be downloaded first, otherwise error flashing will be displayed. - Device not properly functional.

9. Appendix

9.1 Typical applications

9.1.1 Presence and brightness-dependent switching of light

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

Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550), RMG 8 S KNX (Order No. 4930220)

Overview	
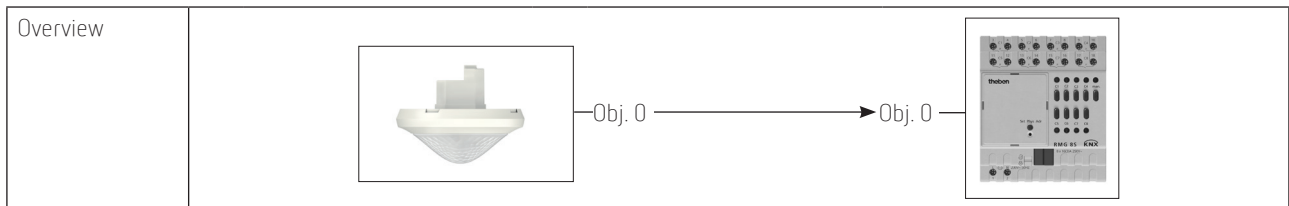
Links	theRonda P360 KNX/theRonda S360 KNX		RMG 8 S		Comment
	No.	Object name / Function	No.	Object name	
	0	Lighting channel C1/Switching	0	RMG 8 S channel C1	Switching lighting on and off

Parameter	theRonda P360 KNX/theRonda S360 KNX		
	Parameter page	Parameter	Setting
	General	Operating mode	Master
		Master operating mode	Individual switching
		Lighting channel C1 function	Switch lights on/off..
		Lighting channel C2 function	inactive
	Lighting channel C1	Configuration type	Fully automatic device
		Brightness switching value	500 lx (e.g. for office application)
		Lighting time delay	10 min (as per customer specification)
	RMG 8 S		
	Parameter page	Parameter	Setting
	RMG 8 S channel C1 config. options	Channel function	Switching On/Off
	Standard or customer-defined parameter settings apply to unlisted parameters.		

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

Description	The presence detector switches the lighting. The lighting can also be switched on and off manually.
	When the light is switched on via 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 push button, the lighting remains switched off as long as the presence detector detects that the room is occupied. The presence detector takes control only after the time delay has elapsed.
	It is also possible to operate the presence detector in semi-automatic mode. In this case, the lighting must always be switched on by hand; the detector does not switch on the lighting automatically. The presence detector switches off the lighting as usual if there is sufficient daylight or if the room is unoccupied.

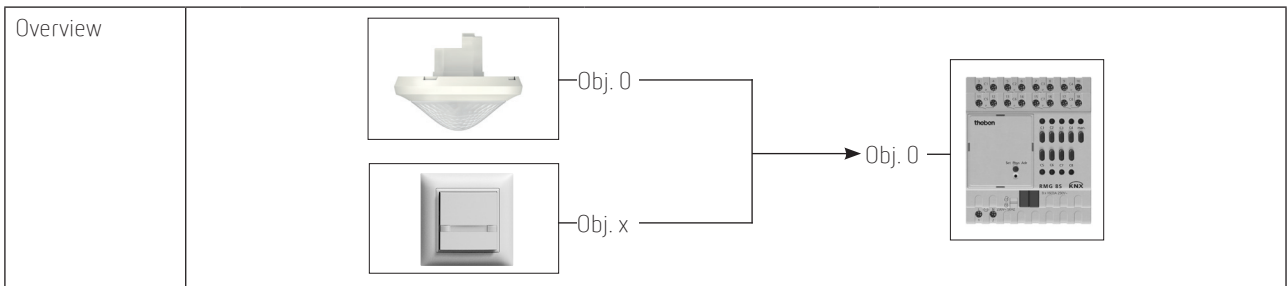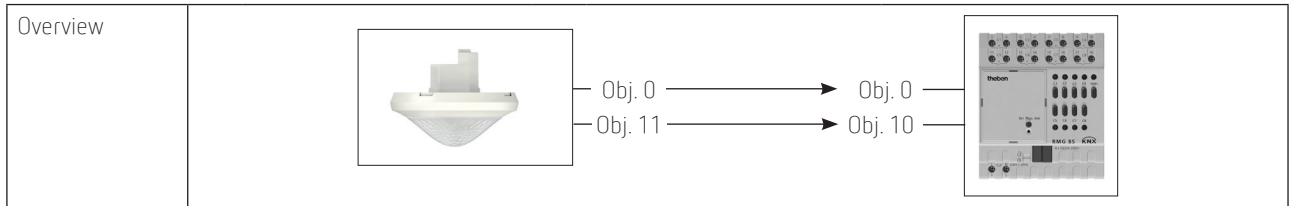| Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550), RMG 8 S KNX (Order No. 4930220)

Overview	

Links	theRonda P360 KNX/theRonda S360 KNX		RMG 8 S		Comment
	No.	Object name / Function	No.	Object name	
	0	Lighting channel C1/Switching	0	RMG 8 S channel C1	Switching lighting on and off

	any KNX push button		RMG 8 S		Comment
	No.	Object name	No.	Object name	
	x	e.g. button 1	0	RMG 8 S channel C1	Manual switching on and off via push button

Parameter	theRonda P360 KNX/theRonda S360 KNX		
	Parameter page	Parameter	Setting
	General	Operating mode	Master
		Master operating mode	Individual switching
		Lighting channel C1 function	Switch lights on/off..
		Lighting channel C2 function	inactive
	Lighting channel C1	Configuration type	Fully automatic device/semi-automatic device
		Brightness switching value	500 lx (e.g. for office application)
		Lighting time delay	10 min (as per customer specification)
	KNX push button (example)		
	Parameter page	Parameter	Setting
	Rocker 1 left	Telegram on pressing the button	On
		Telegram when released	no telegram
	Rocker 1 right	Telegram on pressing the button	Off
		Telegram when released	no telegram
	RMG 8 S		
	Parameter page	Parameter	Setting
	RMG 8 S channel C1 config. options	Channel function	Switching On/Off
	Standard or customer-defined parameter settings apply to unlisted parameters.		

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

Description	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, making it possible to save energy.

| Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550)
	RMG 8 S KNX (Order No. 4930220)

Overview	

Links	theRonda P360 KNX/theRonda S360 KNX		RMG 8 S		Comment
	No.	Object name / Function	No.	Object name	
	0	Lighting channel C1 / Switching	0	RMG 8 S channel C1	Switching lighting near the window on and off
	11	Lighting channel C2 / Switching	10	RMG 8 S channel C2	Switching lighting in the interior of the room on and off

Parameter	theRonda P360 KNX/theRonda S360 KNX		
	Parameter page	Parameter	Setting
	General	Operating mode	Master
		Master operating mode	Individual switching
		Lighting channel C1 function	Switch lights on/off..
		Lighting channel C2 function	Switch lights on/off..
	Lighting channel C1	Configuration type	Fully automatic device
		Brightness switching value	500 lx (e.g. for office application)
		Lighting time delay	10 min (as per customer specification)
	Lighting channel C2	Brightness difference to channel C1	+ 20% (as per customer specification)
	RMG 8 S		
	Parameter page	Parameter	Setting
	RMG 8 S channel C1 configuration options	Channel function	Switching On/Off
	RMG 8 S channel C2 configuration options	Channel function	Switching On/Off
	Standard or customer-defined parameter settings apply to unlisted parameters.		

9.1.4 Presence and brightness-dependent switching with additional heating control

Description	The presence output on the detector is also used for heating control in addition to the presence and daylight-dependent switching of one or two lighting groups. The output is configured with a switch-on delay.
	In large rooms this switching can be extended with additional presence detectors (Master or Slave).

Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550)
	Mix combination: RMG 8 S + extension module HME 6 T (Order No. 4930220 + 4930245)
	RAMSES 713 S KNX (Order No. 7139201)

Overview	
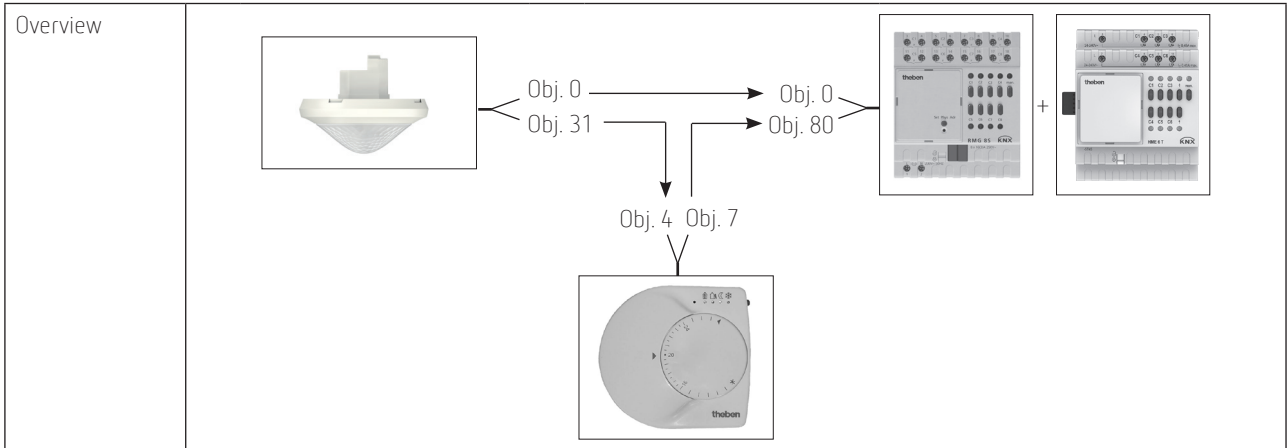
Links	theRonda P360 KNX/theRonda S360 KNX		MiX combination		Comment
	No.	Object name / Function	No.	Object name	
	0	Lighting channel C1 / Switching	0	RMG 8 S channel C1	Switching lighting on and off
	theRonda P360 KNX/theRonda S360 KNX		RAMSES 713 S		Comment
	No.	Object name / Function	No.	Object name	
	31	Presence channel C4.1 / Switching	4	Presence	If the presence object is set, RAMSES 713 S changes to comfort mode.
	RAMSES 713 S		MiX combination		Comment
	No.	Object name	No.	Object name	
	7	Channel 1 switching	80	EM HME 6 T Channel 1	RAMSES 713 sends the actuating value for heating to the heating actuator

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Parameter	theRonda P360 KNX/theRonda S360 KNX		
	Parameter page	Parameter	Setting
	General	Operating mode	Master
		Master operating mode	Individual switching
		Lighting channel C1 function	Switch lights on/off..
		Lighting channel C2 function	inactive
		Presence channel C4 function	active..
	Lighting channel C1	Configuration type	Fully automatic device
		Brightness switching value	500 lx (e.g. for office application)
		Lighting time delay	10 min (as per customer specification)
	Presence channel C4	Presence switch-on delay	as per customer specification
		Presence time delay	as per customer specification
	RAMSES 713 S		
	Parameter page	Parameter	Setting
	Operating mode	Objects for determining the operating mode	new: operating mode, presence, window status
		Operating mode after reset	Standby
		Presence sensor type (on obj. 4)	Presence detector
	Heating control [1]	Type of control	Continuous control
	1) This setting is only required if a user-defined control is selected on the Settings parameter page.		
	MiX combination RMG 8 S and extension module HME 6 T		
	Parameter page	Function	Setting
	General	Number of basic modules	RMG 8 S
		Type of 1st extension module	HME 6 T...
	RMG 8 S channel C1 configuration options	Function	Switching On/Off
	HME 6 T Channel H1: Configuration options	Type of actuating value	Continuous
	Standard or customer-defined parameter settings apply to unlisted parameters.		

9.1.5 Constant light control

Description	Presence detectors with constant light control control lighting dependent on natural daylight if the room is occupied. Artificial light is automatically dimmed up with reducing levels of daylight, and with increasing amount of daylight the artificial light automatically dims down and finally switches off. The lighting is automatically dimmed to the standby dimming value if the room is vacated.

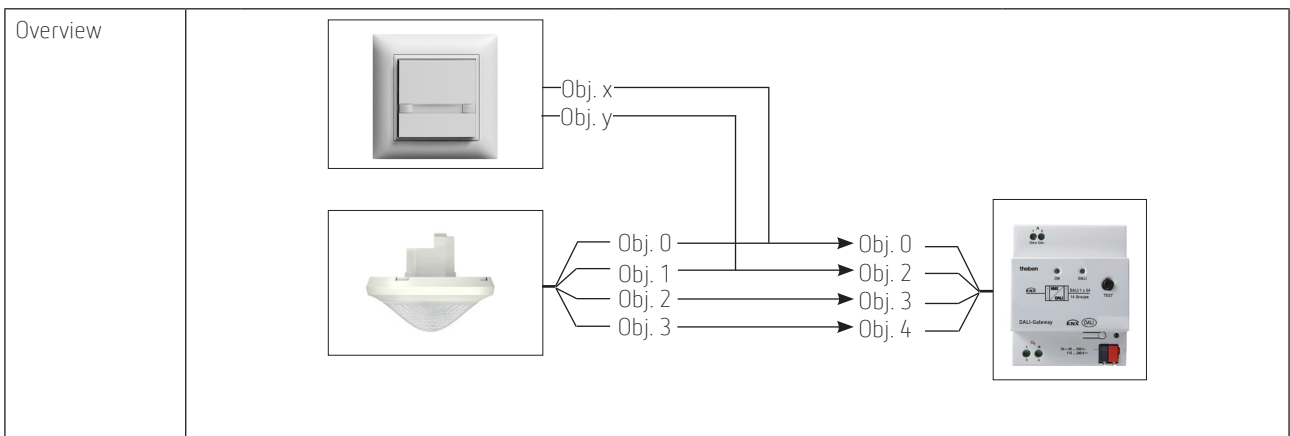| Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550), DALI Gateway KNX (Order No. 9070722)

Overview	

Links	theRonda P360 KNX/theRonda S360 KNX		DALI Gateway KNX		Comment
	No.	Object name / Function	No.	Object name / Function	
	0	Lighting channel C1 / Switching	0	Group 1 / Switching	
	1	Lighting channel C1 / Brighter/Darker	2	Group 1 / Relative dimming	
	2	Lighting channel C1 / Send value	3	Group 1 / Brightness value	
	3	Lighting channel C1 / Feedback value	4	Group 1 / Brightness value status	

Parameter	theRonda P360 KNX/theRonda S360 KNX		
	Parameter page	Parameter	Setting
	General	Operating mode	Master
		Master operating mode	Individual switching
		Lighting channel C1 function	Constant light control..
	Lighting channel C1	Configuration type	Fully automatic device
		Brightness setpoint value	500 lx (e.g. for office application)
		Time delay Lighting	10 min (as per customer specification)
	Lighting channel C1 / Detail settings	Lighting standby time	active..
	DALI Gateway KNX		
	Parameter page	Parameter	Setting
	G1 Group	Minimum dimming value	adjustable
		Maximum dimming value	adjustable
		Allowing switching on via dimming	no
		Dimming time until switch-on/switch-off value reached	Recommendation: 4 s to 11.5 s
		Dimming time until brightness value reached	Recommendation: 4 s to 11.5 s
	G1 status	Brightness value status report for the group	yes: via separate "Brightness value status" object
		Send	on request
	Standard or customer-defined parameter settings apply to unlisted parameters.		

9.1.6 Constant light control, additional manual override via push button

Description	The presence detector controls the lighting (see example of use, page 50 chapter 9.1.5). The lighting can also be switched and dimmed manually.
	Dimming via push button ends the control. The presence detector remains at the set dimming value while the room is occupied. When the light is switched off via push button, the lighting remains switched off as long as the presence detector detects that the room is occupied. The presence detector takes control only after the time delay has elapsed. (Only with school mode, see 2.4.6 „Detail settings - Lighting channel C1 - Constant light control" page 22.)
	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.

Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550)
	DALI Gateway KNX (Order No. 9070722)

Overview	

Links	theRonda P360 KNX/theRonda S360 KNX		DALI Gateway KNX		Comment
	No.	Object name	No.	Object name	
	0	Lighting channel C1 / Switching	0	Group 1 / Switching	
	1	Lighting channel C1 / Brighter/Darker	2	Group 1 / Relative dimming	
	2	Lighting channel C1 / Send value	3	Group 1 / Brightness value	
	3	Lighting channel C1 / Feedback value	4	Group 1 / Brightness value status	
	any KNX push button		DALI Gateway KNX		Comment
	No.	Object name	No.	Object name	
	x	e.g., button 1: Switching	0	Group 1 / Switching	Switching on and off via push button
	y	e.g. button 1: Brighter/darker	2	Group 1 / Relative dimming	Dimming via push button

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Parameter	theRonda P360 KNX/the Ronda S360 KNX		
	Parameter page	Parameter	Setting
	General	Operating mode	Master
		Master operating mode	Individual switching
		Lighting channel C1 function	Constant light control..
	Lighting channel C1	Configuration type	Fully automatic device
		Brightness setpoint value	500 lx (e.g. for office application)
		Time delay Lighting	10 min (as per customer specification)
	Lighting channel C1 / Detail settings	Lighting standby time	active..
	DALI Gateway KNX		
	Parameter page	Parameter	Setting
	G1 Group	Minimum dimming value	adjustable
		Maximum dimming value	adjustable
		Allowing switching on via dimming	no
		Dimming time until switch-on/switch-off value reached	Recommendation: 4 s to 11.5 s
		Dimming time until brightness value reached	Recommendation: 4 s to 11.5 s
	G1 status	Brightness value status report for the group	yes: via separate "Brightness value status" object
		Send	on request
	KNX push button (example)		
	Parameter page	Parameter	Setting
	Rocker 1 left	Telegram on pressing the button	On
		Telegram when released	no telegram
	Rocker 1 right	Telegram on pressing the button	Off
		Telegram when released	no telegram
	Standard or customer-defined parameter settings apply to unlisted parameters.		

9.1.7 Constant light control with two lighting groups

Description	The constant light control controls the lighting dependent on natural daylight (see example 9.1.5).
	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.

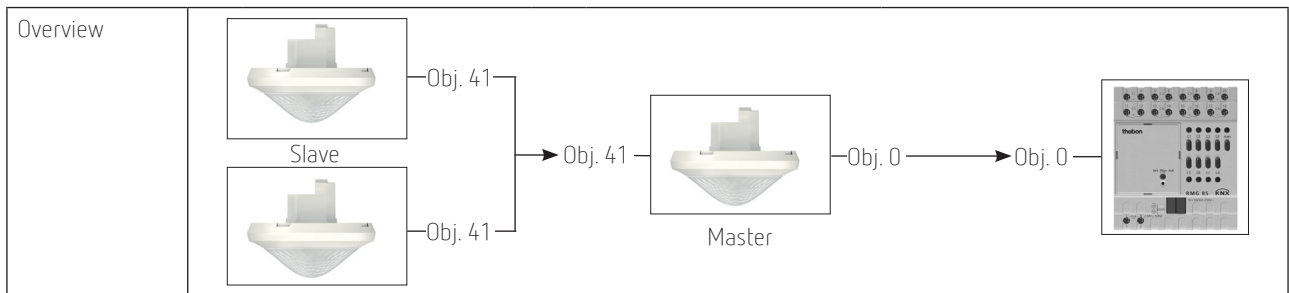| Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550)
	DALI Gateway KNX (Order No. 9070722)

Overview	

Links	theRonda P360 KNX/theRonda S360 KNX		DALI Gateway KNX		Comment
	No.	Object name / Function	No.	Object name / Function	
	0	Lighting channel C1 / Switching	0	Group 1 / Switching	
	1	Lighting channel C1 / Brighter/Darker	2	Group 1 / Relative dimming	
	2	Lighting channel C1 / Send value	3	Group 1 / Brightness value	
	3	Lighting channel C1 / Feedback value	4	Group 1 / Brightness value status	
	11	Lighting channel C2 / Switching	6	Group 2 / Switching	
	12	Lighting channel C2 / Brighter/Darker	8	Group 2 / Relative dimming	
	13	Lighting channel C2 / Send value	9	Group 2 / Brightness value	
	14	Lighting channel C2 / Feedback value	10	Group 2 / Brightness value status	

Parameter	theRonda P360 KNX / theRonda S360 KNX		
	Parameter page	Parameter	Setting
	General	Operating mode	Master
		Master operating mode	Individual switching
		Lighting channel C1 function	Constant light control..
		Lighting channel C2 function	Constant light control..
	Lighting channel C1	Configuration type	Fully automatic device
		Brightness setpoint value	500 lx (e.g. for office application)
		Time delay Lighting	10 min (as per customer specification)
	Lighting channel C1 / Detail settings	Lighting standby time	active..
	Lighting channel C2	Brightness difference to channel C1	+ 20% (as per customer specification)
	DALI Gateway KNX		
	Parameter page	Parameter	Setting
	G1 Group	Minimum dimming value	adjustable
		Maximum dimming value	adjustable
		Allowing switching on via dimming	no
		Dimming time until switch-on / switch-off value reached	Recommendation: 4 s to 11.5 s
		Dimming time until brightness value reached	Recommendation: 4 s to 11.5 s
	G1 status	Brightness value status report for the group	yes: via separate "Brightness value status" object
		Send	on request
	G2 Group	Minimum dimming value	adjustable
		Maximum dimming value	adjustable
		Allowing switching on via dimming	no
		Dimming time until switch-on / switch-off value reached	Recommendation: 4 s to 11.5 s
		Dimming time until brightness value reached	Recommendation: 4 s to 11.5 s
	G2 status	Brightness value status report for the group	yes: via separate "Brightness value status" object
		Send	on request
	Standard or customer-defined parameter settings apply to unlisted parameters.		

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9.1.8 Master – Slave parallel switching

Description	A number of presence detectors can be linked together to provide coverage of large areas such as offices or corridors. One device is used as Master, the others as Slaves.
	The slaves trigger the master when motion is detected. All settings, possible delay times and brightness thresholds are configured on the Master.
	Master/Slave parallel switching can be used independently of whether the Master switches one or two lighting groups or operates in constant light control mode.

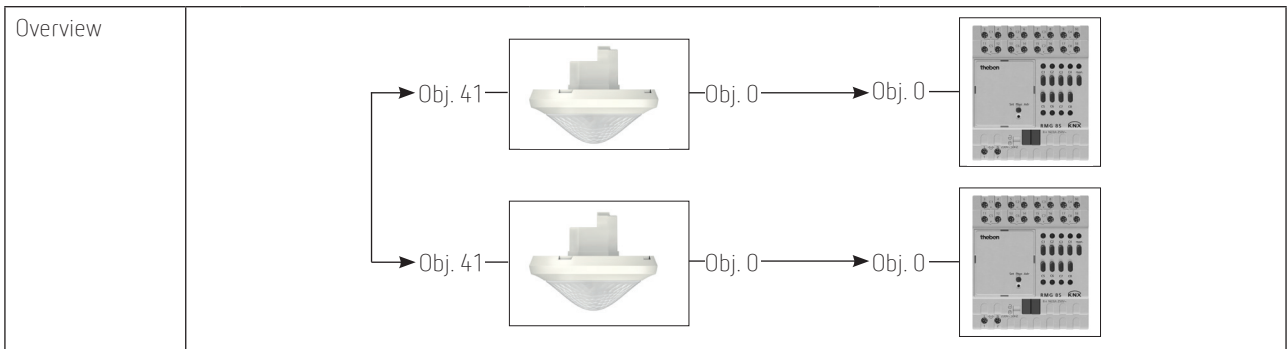| Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550), RMG 8 S (Order No. 4930220)

Overview	

Slave — Obj. 41 → Obj. 41 — Master — Obj. 0 → Obj. 0
Slave — Obj. 41

Links	theRonda P360 KNX/theRonda S360 KNX		RMG 8 S		Comment
	No.	Object name	No.	Object name	
	0	Lighting channel C1/Switching	0	RMG 8 S channel 1	Switching lighting on and off
	theRonda P360 KNX/theRonda S360 KNX (Slaves)		P360 KNX/theRonda S360 KNX (Master)		Comment
	No.	Object name	No.	Object name	
	41	Parallel switching: Trigger input/output	41	Parallel switching: Trigger input/output	Connection between Master and Slave

Parameter	theRonda P360 KNX/theRonda S360 KNX (Master)		
	Parameter page	Parameter	Setting
	General	Operating mode	Master
		Master operating mode	Parallel switching
		Lighting channel C1 function	Switch lights on/off..
		Lighting channel C2 function	inactive..
	Lighting channel C1	Configuration type	Fully automatic device
		Brightness setpoint value	500 lx (e.g. for office application)
		Time delay Lighting	10 min (as per customer specification)
	theRonda P360 KNX/theRonda S360 KNX (Slaves)		
	Parameter page	Parameter	Setting
	General	Operating mode	Slave
	RMG 8 S		
	Parameter page	Parameter	Setting
	RMG 8 S channel C1 config. options	Channel function	Switching On/Off
	Standard or customer-defined parameter settings apply to unlisted parameters.		

9.1.9 Master – Master parallel switching

Description	A number of Master presence detectors can be connected together to cover large areas with varying lighting conditions such as offices.
	Each Master operates its lighting group according to its measurements and settings. They exchange presence among each other. This extends the detection area. Master/master parallel switchings permit several lighting groups to operate with their own light measurement. It should be noted that every Master can only detect light switched or controlled by itself.
	The Master/Master parallel switching can be used independently of whether the Master is configured for switching or constant light control.

Devices	theRonda P360 KNX (Order No. 2089000); theRonda S360 KNX UP (Order No. 2089520), theRonda S360 KNX FLAT DE (Order No. 2089560), theRonda S360 KNX AP (Order No. 2089550), RMG 8 S (Order No. 4930220)

Overview	
	Obj. 41 — Obj. 0 → Obj. 0
	Obj. 41 — Obj. 0 → Obj. 0

Links	theRonda P360 KNX/theRonda S360 KNX		RMG 8 S		Comment
	No.	Object name / Function	No.	Object name	
	0	Lighting channel C1 / Switching	0	RMG 8 S channel 1	Switching lighting on and off
	theRonda P360 KNX/theRonda S KNX		P360 KNX/theRonda S360 KNX		Comment
	No.	Object name	No.	Object name	
	41	Parallel switching: Trigger input/output	41	Parallel switching: Trigger input/output	Connection between Master and Master

Parameter	theRonda P360 KNX/theRonda S360 KNX		
	Parameter page	Parameter	Setting
	General	Operating mode	Master
		Master operating mode	Parallel switching
		Lighting channel C1 function	Switch lights on/off..
		Lighting channel C2 function	inactive..
	Lighting channel C1	Configuration type	Fully automatic device
		Brightness setpoint value	500 lx (e.g. for office application)
		Time delay Lighting	10 min (as per customer specification)
	RMG 8 S		
	Parameter page	Parameter	Setting
	RMG 8 S channel C1 configuration options	Channel function	Switching On/Off
	Standard or customer-defined parameter settings apply to unlisted parameters.		

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