Technical Manual

MDT Presence Detector
MDT Presence Detector MR16

SCN-P360D3.03	SCN-G360D3.03
SCN-P360K3.03	SCN-G360K3.03
SCN-P360D4.03	
SCN-P360K4.03	SCN-P360E3.03

Further Documents:

Datasheets:

https://www.mdt.de/EN_Downloads_Datasheets.html

Assembly and Operation Instructions:

https://www.mdt.de/EN_Downloads_Instructions.html

Solution Proposals for MDT products:

https://www.mdt.de/EN_Downloads_Solutions.html

1 Content

2 Overview

2.1 Overview devices

The manual refers to the following devices (Order code printed in bold type):

- **SCN-P360D4.03** Presence Detector 360° with 4 sensors, white matt finish
    - For ceiling installation in an installation box

- **SCN-P360K4.03** Presence Detector 360°, white matt finish, constant light control
    - For ceiling installation in an installation box
    - Intelligent constant light control for 3 light rows

- **SCN-P360D3.03** Presence Detector 360° with 3 sensors, white matt finish
    - For ceiling installation in an installation box

- **SCN-P360K3.03** Presence Detector 360°, white matt finish, constant light control
    - For ceiling installation in an installation box
    - Intelligent constant light control for 3 light rows

- **SCN-G360D3.03** Glass Presence Detector 360° with 3 sensors, white
    - For ceiling installation in an installation box
    - with temperature sensor

- **SCN-G360K3.03** Glass Presence Detector 360°, white, constant light control
    - For ceiling installation in an installation box
    - with temperature sensor
    - Intelligent constant light control for 3 light rows

- **SCN-P360E3.03** Presence Detector MR16 360° with 3 sensors
    - For installation in a standard MR16 mounting frame for LED Spots
    - with temperature sensor and LED night light

2.2 Usage & possible applications

The MDT Presence Detector switches the light accordingly to the brightness and presence. It can be used for switching on demand to switch the light economically. Especially in public buildings, but also in rarely used rooms as bath and WC, the presence detector can be used to minimalize the non-essential switching periods. An additional channel transmits information about presence in the room to other subsections as Heating-control, air-conditioning, ventilation or shutter controlling. So the presence detector can also be employed in a subsection comprehensive use.
The presence detectors SCN-P360K3.03/SCN-G360K3.03 und SCN-P360K4.03 contain of an additional intelligent constant light control. This can control up to 3 light bands in a way to hold the brightness in a room continuously at a constant value.

2.3 Exemplary circuit diagram
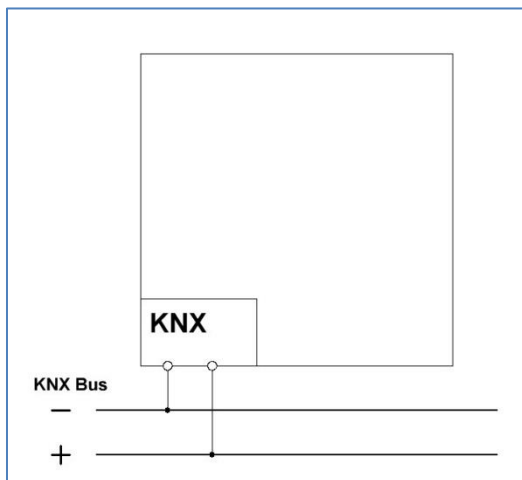
Figure 1: Exemplary circuit diagram

2.4 Structure & Handling

The following picture shows the structure of the presence detector with 4 sensors:

Figure 2: Structure and location of the sensors/LEDs – SCN-P360x4.03

1 = Bus connection terminal	3 = Green LED	5 = White LED, night light
2 = Programming button	4 = Red LED	S1 – S4 = Sensor position

The following picture shows the structure of the presence detector with 3 sensors:
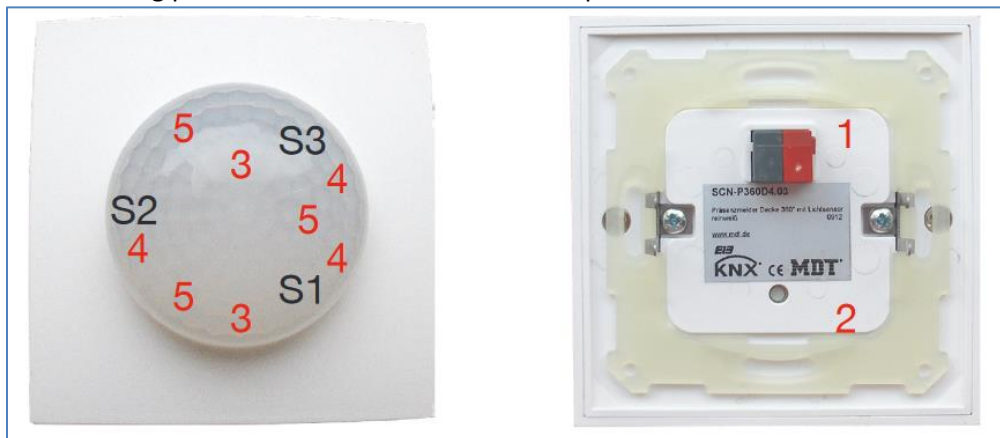
Figure 3: Structure and location of the sensors/LEDs – SCN-P/G360x3.03

1 = Bus connection terminal	3 = Green LED	5 = White LED, night light
2 = Programming button	4 = Red LED	S1 – S4 = Sensor position

The following picture shows the structure of the Presence Detector MR16 with 3 sensors:
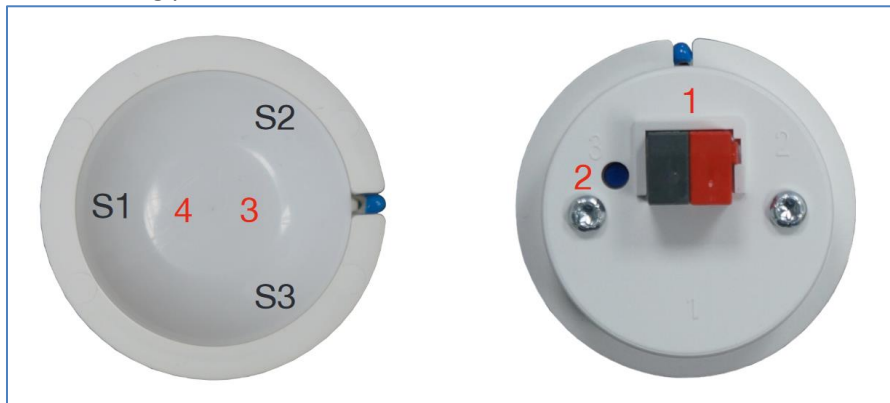
Figure 4: Structure and location of the sensors/LEDs – SCN-P360E3.03

1 = Bus connection terminal	3 = Red LED	S1 – S3 = Sensor position
2 = Programmiertaste	4 = White LED, night light	

The presence detector should be placed in the middle of the room. It is important for the constant light control to install the detector in a minimum distance of 60 cm to the next lamp and in the line of the middle light band.

The following pictures show the detection range of the presence detectors.

Example for detector with 4 sensors:
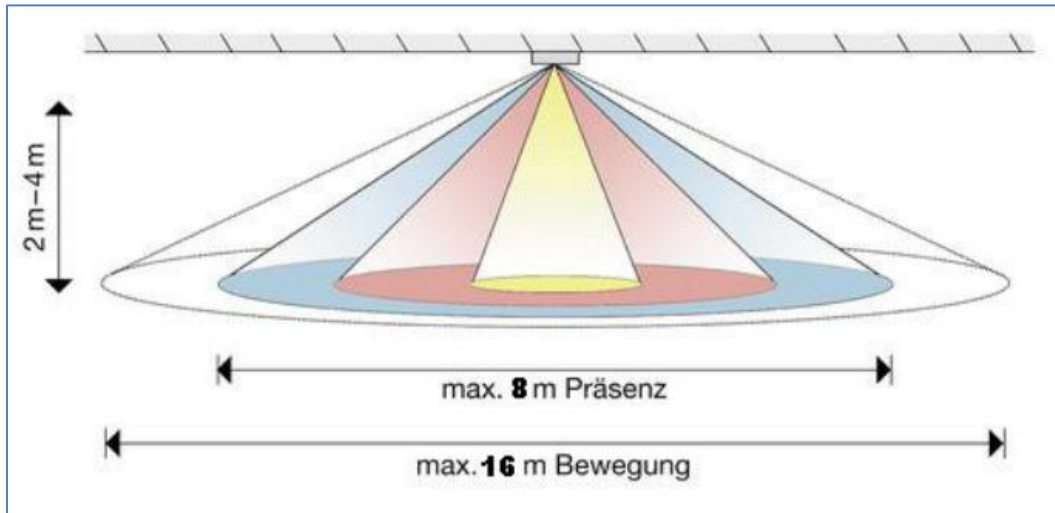
Figure 5: Detection area SCN-P360x4.03

Example for detector with 3 sensors:
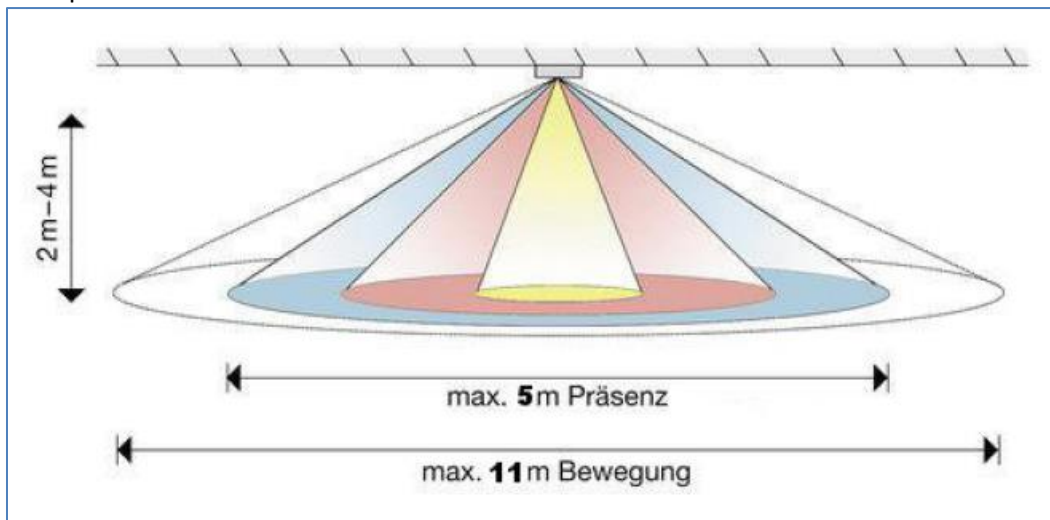
Figure 6: Detection area SCN-P360x3.03

2.5 Functions

The functions of the presence detector are divided into different areas. These can be individually configured. The following menus are available for this purpose:

- **General setting**
  General settings are used for basic configuration of the presence detector. Here, the usage of the day/night object (separate switching objects for day/night), basic settings of sensitivity and brightness, forced control as well as release of external push-button input are set.

- **LED**
  Settings for the LEDs in the unit (green, red, white) can be made here.

- **Scenes**
  Up to 8 scenes with different settings for the light channels 1-3 or 1-4 can be activated.

- **Brightness**
 The sending conditions of the measured brightness value, a threshold value with hysteresis, a lux correction value and a room reflection factor can be set here. For detectors with constant light control, the correction of the measured brightness value can be fixed via parameters or via a Teach-in object.

- **Channel selection**
  Up to 4 light channels, one HVAC channel and one Alarm/Message channel can be activated here.
  - **Light channel 1/2/3/4 (3 sensors = 3 light channels, 4 sensors = 4 light channels).**
    In this menu, settings can be made for presence operation such as active sensors, sensitivity, operating mode of the detector, forced control or blocking object, the sending conditions, the follow-up time as well as various parameters for external push-button inputs.
  - **HVAC**
    The heating, ventilation and air-conditioning channel is the interface between the presence detector and other systems. In contrast to the light channels, the HVAC channel has adjustable observation windows with which the presence in the room can be monitored. By using this channel, it is possible, for example, to control the ventilation of a room according to demand or to switch other HVAC functions on presence/absence.
  - **Alarm/Message channel**
    The alarm channel is used to recognise and detect movements in case of absence. For this purpose, the channel has a separate sensitivity setting and its own enable/disable object with which monitoring can be started. Like the HVAC channel, the alarm channel also has adjustable observation windows.

- **Temperature** *(only Glass Presence Detectors and MR16)*
  Here the temperature measurement can be activated and the measured values can be configured.

- **Constant light control** *(only for SCN-x360**Kx**.03)*
  In this menu, all settings for controlling the constant light function are made. The presence detector can control up to 3 light bands that are divided between the wall, middle and window. Intelligent proportional master/slave control ensures that the presence detector controls the entire room to the same brightness and thus compensates for external influences such as sunlight.

- **Logic**
  Up to 4 logics can be activated here. Each of these logics can be parameterised with AND/OR/XOR functions, various output objects, sending conditions, up to two internal inputs and up to four external inputs..

2.6 Commissioning

After wiring, the allocation of the physical address and the parameterization of every channel follows:
  (1) Connect the interface with the bus, e.g. MDT USB Interface
  (2) Switch on bus voltage
  (3) Press the programming button at the device (red programming LED lights)
  (4) Loading of the physical address out of the ETS-Software by using the interface (red LED goes off as soon as this process was completed successfully)
  (5) Loading of the application, with requested parameterization
  (6) If the device is enabled you can test the requested functions (also possible by using the ETS-Software)

3 Communication objects

3.1 Standard settings of the communication objects

The following table shows the standard settings for the communication objects:

No.	Name	Function	Length	C	R	W	T	U
	Standard settings							
0	Light channel 1 – Output 1	Switching	1 Bit	X	X		X	
0	Light channel 1 – Output 1 (Day)	Switching	1 Bit	X	X		X	
0	Light channel 1 - Output	Dimming absolute	1 Byte	X	X		X	
0	Light channel 1 - Output	Scene	1 Byte	X	X		X	
1	Light channel 1 – Output 1 (Night)	Switching	1 Bit	X	X		X	
2	Light channel 1 – Output 2 (Additional)	Switching	1 Bit	X	X		X	
3	Light channel 1 – Input	External push button short	1 Bit	X		X		
4	Light channel 1 – Input	External push button long	1 Bit	X		X		
5	Light channel 1 – Input	External motion (Slave)	1 Bit	X		X		
6	Light channel 1 – Input	Status of actuator channel	1 Bit	X		X		
7	Light channel 1 – Input	Lock motion detection	1 Bit	X		X		
8	Light channel 1 – Input	Forced guidance	2 Bit	X		X		
8	Light channel 1 – Input	Lock object	1 Bit	X		X		
9	Light channel 1 – Input	Lock object ON	1 Bit	X		X		
10	Light channel 1 – Status	Automatic mode	1 Bit	X	X		X	
10	Light channel 1 – Status	Locking/Manual mode	1 Bit	X	X		X	
11	Light channel 1 – Input	Switch dark	1 Bit	X		X		
12	Light channel 1 – Input	Teach-in dimming value for ON	1 Byte	X		X		
13	Light channel 1 – Input	Follow-up time 10-65000s	2 Byte	X		X		
+15	**Next light channel**							
60	HVAC – Output 1	Switching	1 Bit	X	X		X	
60	HVAC – Output 1	Dimming absolute	1 Byte	X	X		X	
60	HVAC – Output 1	Scene	1 Byte	X	X		X	
63	HVAC – Input	External push button short	1 Bit	X		X		
64	HVAC – Input	External push button long	1 Bit	X		X		
65	HVAC – Input	External motion (Slave)	1 Bit	X		X		
66	HVAC – Input	Status of actuator channel	1 Bit	X		X		

67	HVAC – Input	Lock motion detection	1 Bit	X		X		
68	HVAC – Input	Forced guidance	2 Bit	X		X		
68	HVAC – Input	Lock object	1 Bit	X		X		
69	HVAC – Input	Lock object ON	1 Bit	X		X		
70	HVAC – Status	Automatic mode	1 Bit	X	X		X	
70	HVAC – Status	Locking/Manual mode	1 Bit	X	X		X	
72	HVAC – Input	Teach-in dimming value for ON	1 Byte	X		X		
73	HVAC – Input	Follow-up time 10-65000s	2 Byte	X		X		
75	Alarm – Output	Switching	1 Bit	X	X		X	
76	Alarm – Output (Day)	Switching	1 Bit	X	X		X	
76	Alarm – Output (Night)	Switching	1 Bit	X	X		X	
83	Alarm – Input	Lock	1 Bit	X		X		
83	Alarm – Input	Enable	1 Bit	X		X		
90	Day/Night	Day = 0 / Night = 1	1 Bit	X		X	X	X
90	Day/Night	Day = 1 / Night = 0	1 Bit	X		X	X	X
91	LED green	Switching	1 Bit	X		X		
92	LED red	Flashing	1 Bit	X		X		
93	LED white	Switching	1 Bit	X		X		
94	Scene	Input	1 Bit	X		X		
95	Operating	Output	1 Bit	X	X		X	
96	Brightness	Threshold switch	1 Bit	X	X		X	
97	Brightness	Measured value	2 Byte	X	X		X	
98	Brightness	Set switch-on threshold for light channels	2 Byte	X		X		
99	Input Teach-in	Calibration start	1 Bit	X		X		
100	Input Teach-in	Status absolute dimming value	1 Byte	X		X		
110 - 113	Logic 1	Input C-F	1 Bit	X		X	X	X
114	Logic 1	Output 1	1 Bit/ 2 Bit/ 1 Byte	X	X		X	
+5	**Next logic**							

130	Constant light	Switch On/Off	1 Bit	X		X		
131	Constant light	Dimming relative	4 Bit	X		X		
132	Constant light	Dimming absolute	1 Byte	X		X		
134	Constant light	Lock	1 Bit	X		X		
135	Constant light	Control scenes	1 Byte	X		X		
136	Constant light	Dimming absolute output	1 Byte	X	X		X	
137	Constant light	Dimming absolute output wall	1 Byte	X	X		X	
138	Constant light	Dimming absolute output window	1 Byte	X	X		X	
139	Constant light	Status	1 Bit	X	X		X	
140	Temperature	Measured value	2Bytes	X	X		X	

Table 1: Communication objects – Standard settings

The tables above show the default settings. The priority of the individual communication objects and the flags can be adjusted by the user as required. The flags assign the communication objects their respective tasks in the programming. "C" stands for communication, "R" for reading, "W" for writing, "T" for transmitting and "U" for updating.

4 Reference ETS-Parameter

4.1 General Settings

The following picture shows the available general settings:

Send "Operating" cyclic	not active
Day / Night object	request after reset
Value for Day/Night	◉ Day = 1 / Night = 0 ○ Day = 0 / Night = 1
Toggle Day/Night	◉ at next presence ○ directly at toggle

Basic setting of sensitivity

Trigger sensitivity at Day	6
Trigger sensitivity at Night	3 (low)
Presence sensitivity	8 (high)
Reduce sensitivity for sensors	not active

Basic setting of brightness

Switch-on threshold Day	400	Lux
Switch-on threshold Night	400	Lux
Switch-off by exceedance	◉ not active ○ active	

Retrigger of forced guidance/lock	not active
Fallback for external push button long (Manual => Auto)	after fix time
Manual mode fallback time at ON by Day	10 min
Manual mode fallback time at OFF by Day	10 min
Manual mode fallback time at ON by Night	10 min
Manual mode fallback time at OFF by Night	10 min

Push-button short is interpreted as movement and starts the follow-up time (adjustable in corresponding channel menu), push-button long switches to manual operation.

Figure 7: General Settings

The following table shows the possible settings for this menu:

ETS-Text	Dynamic range [Default value]	Comment
Send „Operating" cyclically	**not active** 1 min – 24 h	Activation of a cyclic "in operation" telegram
Day/Night object	• not active • active, not request • **request after reset**	Definition of whether a Day/Night object is to be used and whether this is to be requested in the event of a reset.
Value for Day/Night	▪ **Day = 1 / Night = 0** ▪ Day = 0 / Night = 1	Sets the polarity for Day/Night switching
Toggle Day/Night	• **at next presence** • directly at toggle	Determining when the Day/Night switchover takes place
Basic setting of sensitivity		
Trigger sensitivity at Day	1 – 8 **[6]**	Setting the triggering sensitivity in Day mode
Trigger sensitivity at Night	1 – 8 **[3]**	Setting the triggering sensitivity in Night mode
Presence sensitivity	1 – 10 **[8]**	Setting the sensitivity when presence is detected
Reduce sensitivity for sensors	**not active** 1-- -2- 12- . . -23	Setting to reduce the sensitivity of individual sensors. As soon as sensors have been activated, further parameters appear for setting Day, Night, presence. **With 4 sensors, the selection is correspondingly ---- to -234**
Basic setting of brightness		
Switch-on threshold Day	5 – 1000 Lux **[400]**	Setting of the brightness threshold below which the sensor is activated in Day mode
Switch-on threshold Night	5 – 1000 Lux **[400]**	Setting of the brightness threshold below which the sensor is activated in Night mode
Switch-off by exceedance	• **not active** • active	Setting whether an OFF telegram should be sent when a certain brightness threshold is exceeded.
Switch-off at exceedance of…	75 – 1000 Lux **[800]**	Setting the brightness threshold from when the sensor sends an OFF telegram

Retrigger of forced guidance/lock	• **not active** • After presence and follow-up time • after fix time	Activation of a fallback time from the forced guidance
Follow-up time for forced guidance/lock at Day	1 s – 9 h **3 min**	Setting of a follow-up time for forced guidance/locking for Day/Night. **Displayed if the fallback of forced guidance is activated to "after presence and follow-up time".**
Follow-up time for forced guidance/lock at Night	1 s – 9 h **3 min**	
Fallback time for forced guidance/lock at Day	1 s – 9 h **10 min**	Setting of a fallback time for forced guidance/locking for Day/Night. **Displayed if the fallback of forced guidance is activated to "after fixed time".**
Fallback time for forced guidance/lock at Night	1 s – 9 h **10 min**	
Fallback for external push button long (Manual => Auto)	• **not active** • After presence and follow-up time • after fix time	Activation of a fallback time from override by an external push-button
Manual mode follow-up time at ON by Day	1 s – 9 h **3 min**	Setting of a follow-up time for manual operation for ON or OFF in Day or Night mode. **Displayed if "Fallback external push-button long (manual => auto)" is activated to "after presence and follow-up time".**
Manual mode follow-up time at OFF by Day	1 s – 9 h **3 min**	
Manual mode follow-up time at ON by Night	1 s – 9 h **3 min**	
Manual mode follow-up time at OFF by Night	1 s – 9 h **3 min**	
Manual mode fallback time at ON by Day	1 s – 9 h **10 min**	Setting of a fallback time for manual operation for ON or OFF in Day or Night mode. **Displayed if "Fallback external push-button long (manual => auto)" is activated to "after fixed time".**
Manual mode fallback time at OFF by Day	1 s – 9 h **10 min**	
Manual mode fallback time at ON by Night	1 s – 9 h **10 min**	
Manual mode fallback time at OFF by Night	1 s – 9 h **10 min**	

Table 2: General Settings

Value for Day/Night determines whether the detector is in Day or Night mode. The parameters set for Day/Night then apply accordingly.

Sensitivity

The sensitivity of the sensors is set here. 1 means very low, the higher the value, the more sensitive the sensors become. This setting has an influence on the detection range. If the value is set low, movement is only detected relatively close to the detector. If the value is set to e.g. 8, a movement is already detected at a greater distance from the detector.

Brightness

This allows a specific operating range to be specified for the Presence Detector. The parameters "**Switch-on threshold Day/Night**" defines the brightness threshold below which the detector detects presence. Above this threshold, no more movement is detected, but the detector does not switch off the light as soon as the brightness is exceeded; instead, the follow-up time runs normally.
The set threshold value can be changed via object "98 - Set switch-on threshold for light channels". The value always applies to the current operation. If the detector is in Day mode, the threshold for "Day" is changed. If the detector is in Night mode, the threshold for "Night" is changed.
The "**Switch off if exceedance**" parameter causes the light channel to switch off immediately when the set value is reached. The value should not be set too low, however, as this could result in the light channel switching on/off continuously.

Example: If the detector switches ON and the brightness in the room with the light switched on is brighter than the "Switch off if exceeded" value, the channel switches off again immediately.

The setting "**Reduce sensitivity for sensors**" is used, for example, if one or more sensors should react less sensitively for structural reasons. For example, sensor 1 can work with a high sensitivity of 8, but sensors 2 and 3 with a lower sensitivity.

Fallback forced guidance/lock: If the detector is in a certain state via forced guidance or locking, it can be defined whether it should fall back into automatic mode **after a fixed time**.
With the setting "**after presence and follow-up time**", the presence in the room continues to be detected during forced guidance/lock. If there is now no one in the room and the follow-up time of the channel has elapsed, the set "Manual mode follow-up time..." starts from this point, after which the detector switches back to automatic mode.
Fallback for external push-button long (manual => auto): If the detector is switched to manual mode via "External push-button long", a fallback to automatic mode "with fixed time" or "after presence and follow-up time" can also be achieved here. The procedure corresponds to the description in the previous point "Fallback forced guidance/lock".

The following table shows the general communication objects:

Number	Name	Length	Usage
90	Day/Night	1 Bit	Switching between Day/Night Mode
95	Operating	1 Bit	Sending a cyclic "In operation" telegram

Table 3: General communication objects

4.2 Light channel/HVAC

In the menu "**Channel selection**", up to 4 light channels (3 sensors = 3 light channels, 4 sensors = 4 light channels), one HVAC channel and one Alarm/Message channel (Alarm see 4.3 Alarm/Message channel) can be activated
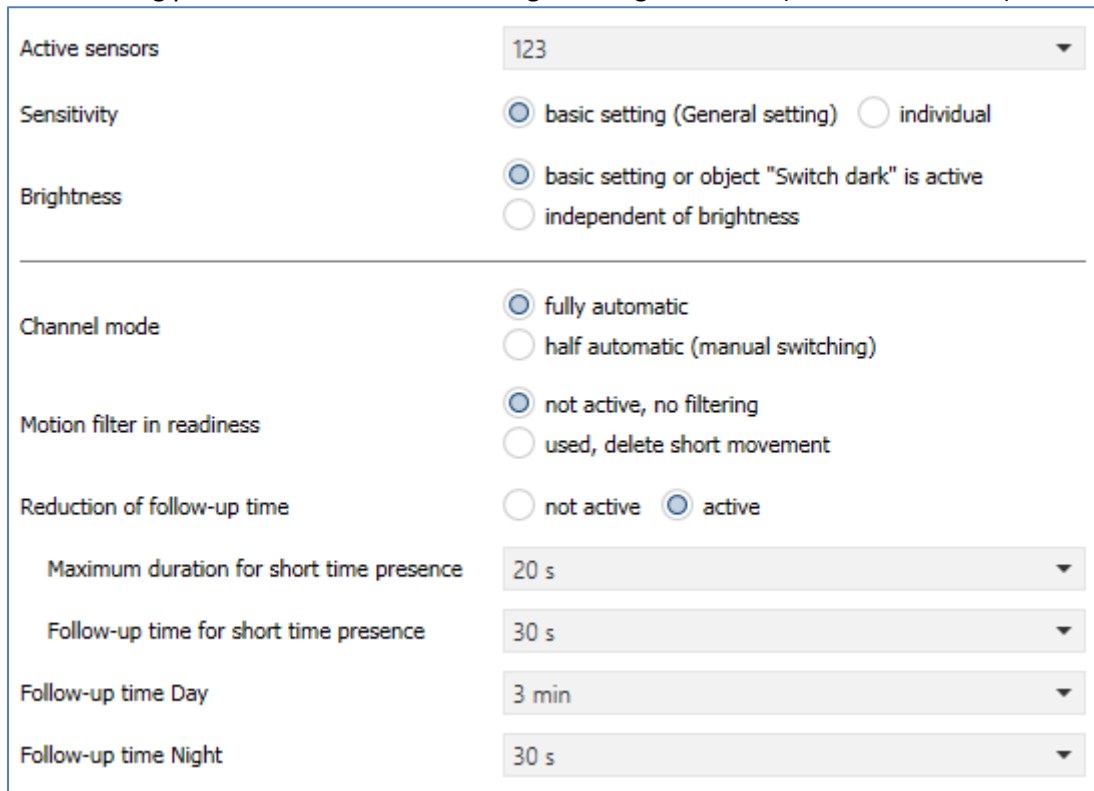Light channels differ in some "individual" parameters, but both are the same in other settings such as forced guidance, object type for output or external push-buttons.
The settings are explained in the following subsections.

4.2.1 Basic settings – Light channel
☑ Light channel

The following picture shows the basic settings for a light channel (here for 3 sensors):

Active sensors	123 ▼
Sensitivity	⦿ basic setting (General setting) ◯ individual
Brightness	⦿ basic setting or object "Switch dark" is active ◯ independent of brightness
Channel mode	⦿ fully automatic ◯ half automatic (manual switching)
Motion filter in readiness	⦿ not active, no filtering ◯ used, delete short movement
Reduction of follow-up time	◯ not active ⦿ active
Maximum duration for short time presence	20 s ▼
Follow-up time for short time presence	30 s ▼
Follow-up time Day	3 min ▼
Follow-up time Night	30 s ▼

Figure 8: Basic settings – Light channel

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
Active sensors	- ---- - 1--- . . - **1234**	Setting which sensors are active for this channel. **With 3 sensors, the selection is correspondingly "--- to 123".**
Sensitivity	- **basic setting (General setting)** - individual	**basic setting**: The values for sensitivity from the "General settings" menu are used. **individual**: Individual values can be set for the individual light channel. The settings shown are the same as in the menu "General settings".
Brightness	- **basic setting or object „Dark switch" active** - Independent of brightness	**Basic setting or object „Dark switch" active:** The light channel uses the brightness settings of the "General settings", but can be switched brightness-independently with a "1" on the "Switch dark" object. **Independent of brightness:** The light channel switches independently of the measured brightness.
Channel mode	- **fully automatic** - half automatic (manual switching)	Setting whether the device operates as a fully automatic or semi-automatic device
Motion filter in readiness	- **not active, no filtering** - active, filter short movements	Activation of a motion filter in readiness (= output is switched off). **Only in fully automatic operating mode**!
Reduction of follow-up time	- **not active** - active	Setting whether a shortening of the follow-up time is to be activated
Maximum duration for short time presence	10 s, **20 s**, 30 s,	Setting the maximum duration for a short-time presence
Follow-up time for short time presence	10 s, 20 s, **30 s**, 45 s, 60 s, 90 s, 120 s	Setting the follow-up time for the short-time presence
Follow-up time Day	1 s – 4 h **[3 min]**	Setting the follow-up time for Day mode
Follow-up time Night	1 s – 4 h **[30 s]**	Setting the follow-up time for Night mode

Table 4: Basic settings – Light channel

Active sensors

The active sensors can be set for each light channel. This allows the detection range of the channel to be limited. For example, if only one area in a corridor is to be detected, only one sensor can be activated. Please refer to the illustration at 2.4 Structure & Handling for the alignment of the sensors.
Please note: Due to the lens optics, the individual areas of each sensor scatter. An overlap between sensors is therefore possible and thus no sharp separation between the areas.

Brightness

With "**Basic setting or object "Dark switch" active**", brightness refers to the settings in "General setting". However, this can become brightness-independent via the "Dark switch" object with a 1 and thus switches at any brightness.
No threshold applies via the "**independent of brightness**" setting and the channel always switches.

Fully automatic

If the presence detector is set as fully automatic, every detected presence causes the output to switch on and is switched off again after the follow-up time has elapsed.

Half automatic (manual switching)

In half-automatic mode, the output is switched on via the object "External push-button short" and automatically switched off again after the follow-up time has elapsed.

The **follow-up time** describes the time that elapses after the last detection of a movement until the output is switched off. The follow-up time can be set differently for Day/Night. For example, with a follow-up time of 3 minutes, the light would be switched on for at least 3 minutes if movement was detected. Each new detection leads to a retriggering and thus a restart of the follow-up time.
In addition, a "**reduction of the follow-up time**" can be activated. In this case, two additional parameters are displayed:

Maximum duration for short-time presence: Indicates the duration between the first and the last movement detection to activate the short-time presence.

Follow-up time for short-time presence: Indicates the duration of the follow-up time when the short-time presence was activated.

If the first and last movement was detected within the set duration for short-time presence when short- time presence was activated, the output is not switched on for the regular follow-up time, but only for the follow-up time of the short-time presence.

4.2.2 Basic settings – HVAC

☑ HVAC channel

The following picture shows the basic settings for an HVAC channel:

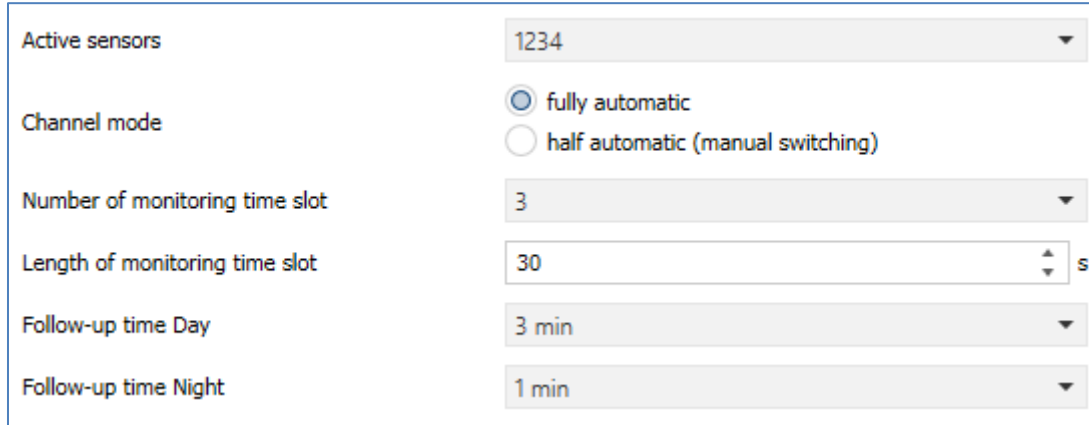| Active sensors	1234
Channel mode	⦿ fully automatic ◯ half automatic (manual switching)
Number of monitoring time slot	3
Length of monitoring time slot	30 s
Follow-up time Day	3 min
Follow-up time Night	1 min

Figure 9: Basic settings – HVAC channel

Die nachfolgende Tabelle zeigt die möglichen Einstellungen für diese Parameter:

ETS-Text	Dynamic range [Default value]	Comment
Active sensors	• ---- • 1--- . . • **1234**	Setting which sensors are active for this channel. **With 3 sensors, the selection is correspondingly "--- to 123".**
Channel mode	• **fully automatic** • half automatic (manual switching)	Setting whether the device operates as a fully automatic or semi-automatic device
Number of monitoring time slots	1 – 30 **[3]**	Setting the number of observation time windows
Length of monitoring time slot	0 … 30000 **[30]**	Setting the length for each of the observation time windows
Follow-up time Day	1 s – 4 h **[3 min]**	Setting the follow-up time for Day mode
Follow-up time Night	1 s – 4 h **[30 s]**	Setting the follow-up time for Night mode

Table 5: Basic settings – HVAC channel

Active sensors

The active sensors can be set for each light channel. This allows the detection range of the channel to be limited. For example, if only one area in a corridor is to be detected, only one sensor can be activated. Please refer to the illustration at 2.4 Structure & Handling for the alignment of the sensors.
Please note: Due to the lens optics, the individual areas of each sensor scatter. An overlap between sensors is therefore possible and thus no sharp separation between the areas.

Fully automatic

If the presence detector is set as fully automatic, every detected presence causes the output to switch on and is switched off again after the follow-up time has elapsed.

Half automatic (manual switching)

In half-automatic mode, the output is switched on via the object "External push-button short" and automatically switched off again after the follow-up time has elapsed.

Monitoring time slot

The monitoring time slot is available for the HVAC. This causes a longer detection to be required for switching on. To switch on the channel, at least one detection must have taken place in each of the set monitoring time windows.
The length of the monitoring time slot determines how long the system waits for a detection within a time slot.

The **follow-up time** describes the time that elapses after the last detection of a movement until the output is switched off. The follow-up time can be set differently for Day/Night. For example, with a follow-up time of 3 minutes, the light would be switched on for at least 3 minutes if movement was detected. Each new detection leads to a retriggering and thus a restart of the follow-up time.

4.2.3 Forced guidance/Lock object
☑ Light channel
☑ HVAC channel

The following picture shows the possible settings (here SCN-P360K4.03):
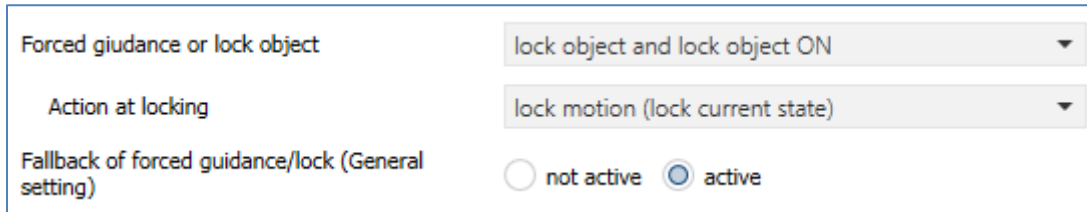

Figure 10: Settings – Forced guidance/Lock object

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
Forced guidance or lock object	• **force object (2Bit)** • lock object • lock object und lock object ON	Selection of whether a forced guidance object or a lock object is to be used
Action on locking	• **Lock motion (lock current state)** • switch ON • switch OFF	Defines the status that is to be sent during locking. **Parameter only available if "Lock object" is selected.**
Fallback of forced guidance/lock (General settings)	• **not active** • active	Setting whether or not the channel should react to "Fallback forced guidance/lock" in the menu "General settings". **For SCN-P360E3.03 only possible from hardware revision R4.2!**

Table 6: Settings – Forced guidance/Lock object

The presence detector can be overridden with the forced guidance/lock object and call up a certain status.
The forced guidance object knows 3 possible states:

• **Force control ON (control = 1, value = 1)**
   The command for "ON" is sent unconditionally to the output object. The evaluation is then stopped and the release time for force control begins. If nothing is received on the force control object after the release time has expired, normal operation is resumed..

• **Force control OFF (control = 1, value = 0)**
   The command for "OFF" is sent unconditionally to the output object. The evaluation is then stopped and the release time for force control begins. If nothing is received on the force control object after the release time has expired, normal operation is resumed.

• **Force control AUTO (control = 0, value = 0)**
   After that the normal operation of the detector is continued

As an alternative to the force control object, 1 or 2 locking objects of size 1 bit can be displayed.
3 different states can be configured for the lock object:

- **Lock motion (lock current state)**
  The channel is locked in its current state and remains locked until the locking process is deactivated.
- **Switch ON**
  The light channel sends the output value ON and remains in the ON state until the locking process is deactivated.
- **Switch OFF**
  The light channel sends the output value OFF and remains in the OFF state until the locking process is deactivated.

By activating "**Lock object ON**", the light channel sends the output value ON and remains in the ON state until the locking process is deactivated.

With the parameter "**Fallback of forced guidance/lock (general setting)**", it is possible to set individually for each channel whether it should react to the configuration for "Fallback of forced guidance/lock" in the "General settings" or not.

The following table shows the corresponding communication objects:

Number	Name	Length	Usage
8	Light channel 1 - Input – Lock object	1 Bit	Locking the light channel
8	Light channel 1 - Input – Forced guidance	2 Bit	Activate/deactivate forced guidance
9	Light channel 1 - Input – Lock object ON	1 Bit	Switching on the light channel and locking the light channel in the ON state
68	HVAC - Input – Lock object	1 Bit	Locking the light channel
68	HVAC - Input – Forced guidance	2 Bit	Activate/deactivate forced guidance
69	HVAC - Input – Lock object ON	1 Bit	Switching on the light channel and locking the light channel in the ON state

Table 7: Communication objects – Forced guidance/lock

4.2.4 Output object
☑ Light channel
☑ HVAC channel

Three different objects are possible for the output object.
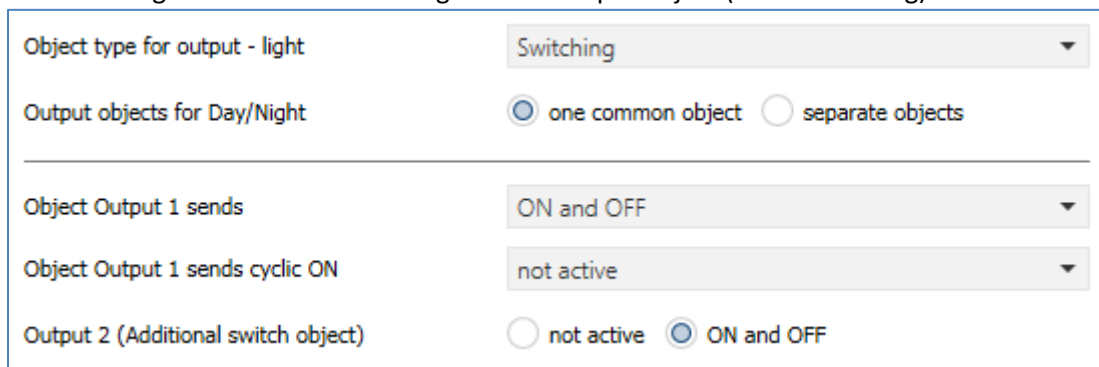The following table shows the settings for the output object (here: Switching):

Object type for output - light	Switching ▼
Output objects for Day/Night	◉ one common object ○ separate objects
Object Output 1 sends	ON and OFF ▼
Object Output 1 sends cyclic ON	not active ▼
Output 2 (Additional switch object)	○ not active ◉ ON and OFF

Figure 11: Settings – Output object

The following parameters are relevant for the output objects:

ETS-Text	Dynamic range [Default value]	Comment
Object type for output – Light	• **Switching** • Dimming absolute • Scene	Selection of the object type that is sent when a motion is detected.
Output 2 (Additional switch object)	• **not active** • ON and OFF	Activation of an additional switching object. **Only available for light channels!**

Table 8: Settings – Output object

Output 2 (Additional switch object)
This object is only available for the light channels. In addition, a separate switching object can be activated - regardless of the object type. This is always a 1-bit object.
If, for example, a dimming value is sent as output object 1, a 1-bit telegram can also be sent via output 2 to control a status LED or similar.

Object type for output
The parameter defines the data point type of the output object.
These are explained below:

4.2.4.1 Output object: Switching

The following settings are available for the **light channels**:

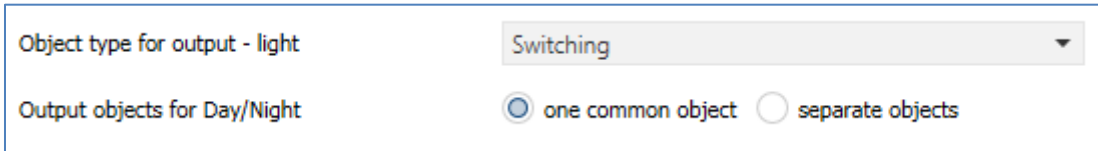| Object type for output - light	Switching	▼
Output objects for Day/Night	◉ one common object ○ separate objects	

Figure 12: Settings – Output object: Switching (Light channel)

The parameter **Output objects for Day/Night** can be used to select whether a common object is used for Day/Night or separate objects. In the case of "separate objects", a separate switching object is displayed for Night mode, so that two objects are available for Day and Night. For example, the main light can be switched on in Day mode and a small orientation light can be switched on in Night mode.

The following settings are available for the **HVAC channel**:

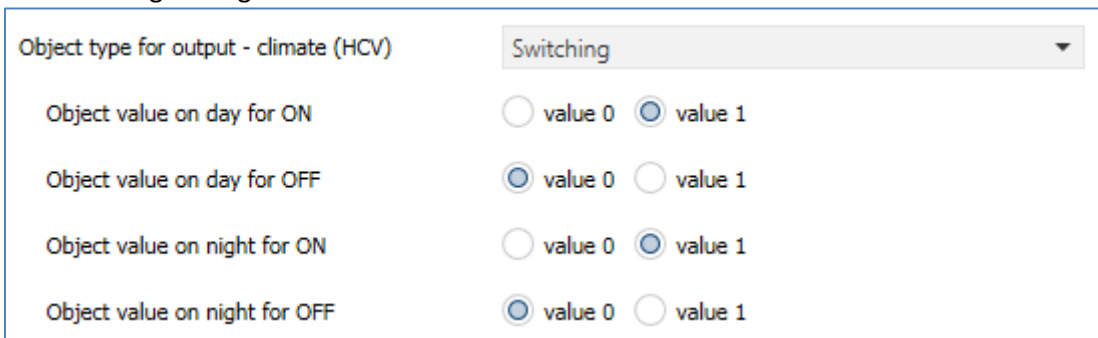| Object type for output - climate (HCV)	Switching	▼
Object value on day for ON	○ value 0 ◉ value 1	
Object value on day for OFF	◉ value 0 ○ value 1	
Object value on night for ON	○ value 0 ◉ value 1	
Object value on night for OFF	◉ value 0 ○ value 1	

Figure 13: Settings – Output object: Switching (HVAC)

There is only one output here. The **object values** for Day/Night and for ON and OFF are set directly.

The following table shows the available communication objects:

Number	Name	Length	Usage
0	Light channel 1 - Output 1 – Switching	1 Bit	Schaltfunktion des Lichtkanals für den Tag-/Nachtbetrieb
0	Light channel 1 - Output 1 (Day) – Switching	1 Bit	Schaltfunktion des Lichtkanals für den Tagbetrieb
1	Light channel 1 - Output 1 (Night) – Switching	1 Bit	Schaltfunktion des Lichtkanals für den Nachtbetrieb
2	Light channel 1 - Output 2 (additional)	1 Bit	Activation of an additional switch object
60	HVAC - Output 1 – Switching	1 Bit	Switching function of the HVAC channel

Table 9: Communication objects – Output object: Switching

4.2.4.2 Output object: Dimming absolute

For this purpose, different dimming values can be defined for Day and Night:

Object type for output - light	Dimming absolute
Dimming value on day for ON	100%
Dimming value on day for OFF	0%
Dimming value on night for ON	30%
Dimming value on night for OFF	0%
Orientation light for leaving	○ disable diractly ◉ other dimming value and off-delay time
Switching off delay for Day	30 s
Switch-off dimming value for Day	30%
Switching off delay for Night	30 s
Switch-off dimming value for Night	20%

Figure 14: Settings – Output object: Dimming absolute

With the **dimming values for Day/Night for ON/OFF**, the corresponding absolute values are defined that the channel sends after detection or after the follow-up time has elapsed. New values can be specified via the " Teach-in dimming value for ON" objects.
If the channel is in Day mode, the corresponding ON value for Day is changed.
If the channel is in Night mode, the corresponding ON value for Night is changed.

In addition, an **orientation light for leaving** the room can be activated. The orientation light is called up when the follow-up time of the light channel has elapsed. Without the orientation light, the channel would be switched off immediately. The orientation light now causes the output to call up the configured value for the switch-off delay for Day/Night and the light channel is only switched off when the switch-off delay for Day/Night has elapsed.
For the light channels (not HVAC), an additional "Switching" output object can also be displayed.

The following table shows the available communication objects:

Number	Name	Length	Usage
0	Light channel 1 - Output 1 – Dimming absolute	1 Byte	Dimming function of the light channel
2	Light channel 1 - Output 2 (additional) – Switching	1 Bit	Second switching function of the light channel
12	Light channel 1 - Input – Teach-in dimming value for ON	1 Byte	Presetting a new dimming value when switching ON
60	HVAC - Output 1 – Dimming absolute	1 Byte	Dimming function of the HVAC channel
72	HVAC - Input – Teach-in dimming value for ON	1 Byte	Presetting a new dimming value when switching ON

Table 10: Communication objects – Output object: Dimming absolute

4.2.4.3 Output object: Scene

For this purpose, different scene numbers can be defined for Day and Night:.

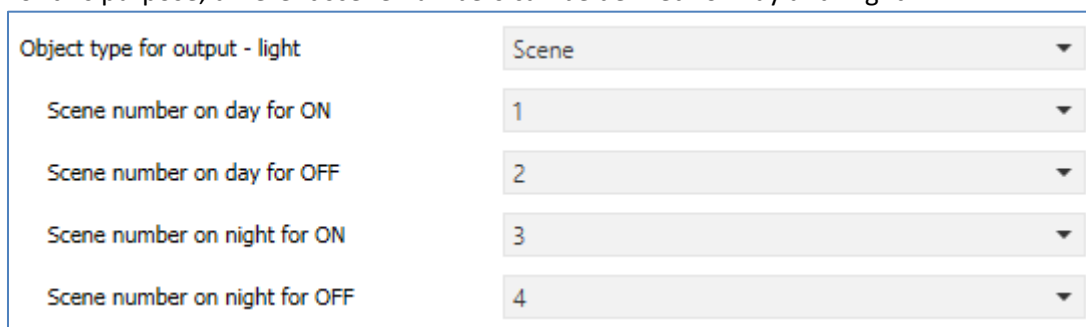| Object type for output - light	Scene
Scene number on day for ON	1
Scene number on day for OFF	2
Scene number on night for ON	3
Scene number on night for OFF	4

Figure 15: Settings – Output object: Scene

For the light channels (not HVAC), an additional "Switching" output object can also be displayed.

The following table shows the available communication objects:

Number	Name	Length	Usage
0	Light channel 1 - Output 1 – Scene	1 Byte	Scene function of the light channel
2	Light channel 1 - Output 2 (additional) – Switching	1 Bit	Second switching function of the light channel
60	HVAC - Output 1 – Scene	1 Byte	Scene function of the HVAC channel

Table 11: Communication objects – Output object: Scene

4.2.4.4 Sending conditions for output objects

The sending conditions can be set for all three object types (here: switching):

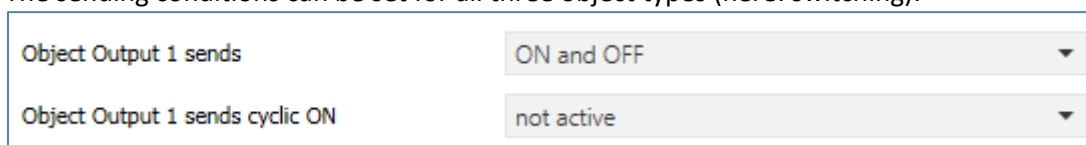| Object Output 1 sends	ON and OFF
Object Output 1 sends cyclic ON	not active

Figure 16: Settings – Sending conditions for output objects

When selecting "**Output object 1 sends**", it is possible to define what is to be sent at the output. The selection, according to the selected type, is as follows::

Switching: only ON / only OFF / ON and OFF

Dimming absolute: only dimming value for ON / only dimming value for OFF / dimming value for ON and OFF

Scene: only scene number for ON / only scene number for OFF / ON and OFF

Cyclical sending
Output object 1 (depending on the configuration Switching, Dimming absolute or Scene) can send the configured value for ON cyclically. In addition, the second switching object can send its value cyclically.

4.2.5 External Push Button short/long

☑ Light channel
☑ HVAC channel

The following picture shows the settings for the external push-button inputs:

External push button short starts the follow-up time, external push button long switches to manual mode with fallback time dependig on setting.

External push button short reacts to	ON and OFF ▼
Idle time after external button short is OFF	5 ▲▼ s
External push button long reacts to	ON and OFF ▼
Idle time after switch off	1 ▲▼ s

Externel push button short:

If Night light is active	◉ switch to Daylight ○ stay at Nightlight
If already output Day ON	◉ stays in automatic mode
	○ switch to manual mode

Figure 17: Settings – External push button short/long

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
External push button short/long reacts to	• **ON and OFF** • only ON • only OFF • toggle on telegram input	Selection of which telegrams are valid for the external button
External push button short:		
If Night light is active	• **switch to Day light** • stay at Night light	Setting what should happen when external button is shortly pressed while Night light is active. **For SCN-P360E3.03 only possible from HW R4.2 onwards**
If output "Day" is already ON	• stay in automatic mode • **switch to manual mode**	Setting the operating mode when output is already ON at "Day". **Visible with setting "switch to Day light".**
If output is already ON	• stay in automatic mode • **switch to manual mode**	Setting the operating mode when the output is already ON. **Visible with setting "stay at Night light".**

Table 12: Settings – External push button short/long

The **external push-button short** is used to manually switch between the states of the light channel or to switch on the light channel in the half-automatic operating mode.
The **external push-button long** is used to manually switch the light channel ON/OFF.

The external push-button input can be used to switch on the light/HVAC channel independently of a motion detection. The exact procedures for the "external push-button short/long" are explained in more detail in chapter 4.2.8 Process diagrams.

The parameters for "idle time" are described in the following chapter 4.2.6 Idle time.

The following table shows the available communication objects:

Number	Name	Length	Usage
3	Light channel 1 - Input – External push button short	1 Bit	Object for the input of an external push button
4	Light channel 1 - Input – External push button long	1 Bit	Object for the input of an external push button
63	HVAC - Input – External push button short	1 Bit	Object for the input of an external push button
64	HVAC - Input – External push button long	1 Bit	Object for the input of an external push button

Table 13: Communication objects – External push button short/long

4.2.6 Idle time
☑ Light channel
☑ HVAC channel

The idle time defines the time for which the presence detector is locked for further detection after it has been switched off. Two settings are available for this (here SCN-P360K4.03):
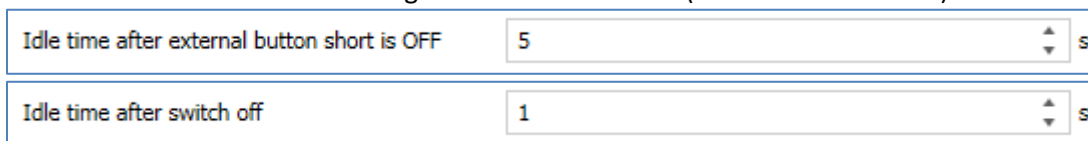
Idle time after external button short is OFF	5	s
Idle time after switch off	1	s

Figure 18: Settings – Idle time

The following settings are available:

ETS-Text	Dynamic range [Default value]	Comment
Idle time after external button short is OFF	1 … 30 s [5 s]	Setting of the time for which the presence detector is locked for further detection after it has been switched off via "external push-button short". **Function for SCN-P360E3.03 only possible from hardware revision R4.2**
Idle time after switch-off	0 … 60 s [1 s]	Setting the time for which the presence detector is locked for further detection after the follow-up time has expired.

Table 14: Settings – Idle time

The parameter "**Idle time after external button short OFF**" is useful, for example, to leave the room briefly after switching OFF via the external push-button without avoiding a renewed switching ON of the light by detection..

4.2.7 Status information
☑ Light channel
☑ HVAC channel

The following parameter can be activated here:

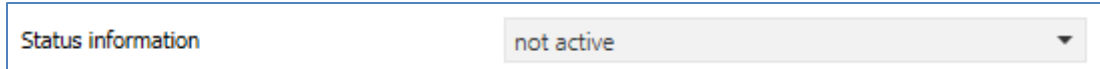| Status information	not active ▾

Figure 19: Settings – Status information

A status object is available for the light channels and the HVAC channel. The following settings are possible for this:

ETS-Text	Dynamic range **[Default value]**	Comment
Status information	• **not active** • send value 1 for automatic mode • send value 1 for locking/manual mode	Activation of a status object

Table 15: Settings – Status information

The following communication objects are available for this purpose:

Number	Name	Length	Usage
10	Light channel 1 - Status – Automatic mode	1 Bit	Sends the set status
10	Light channel 1 - Status – Locking/Manual mode	1 Bit	Sends the set status
70	HVAC - Status – Automatic mode	1 Bit	Sends the set status
70	HVAC - Status – Locking/Manual mode	1 Bit	Sends the set status

Table 16: Communication objects – Status information

4.2.8 Process diagrams
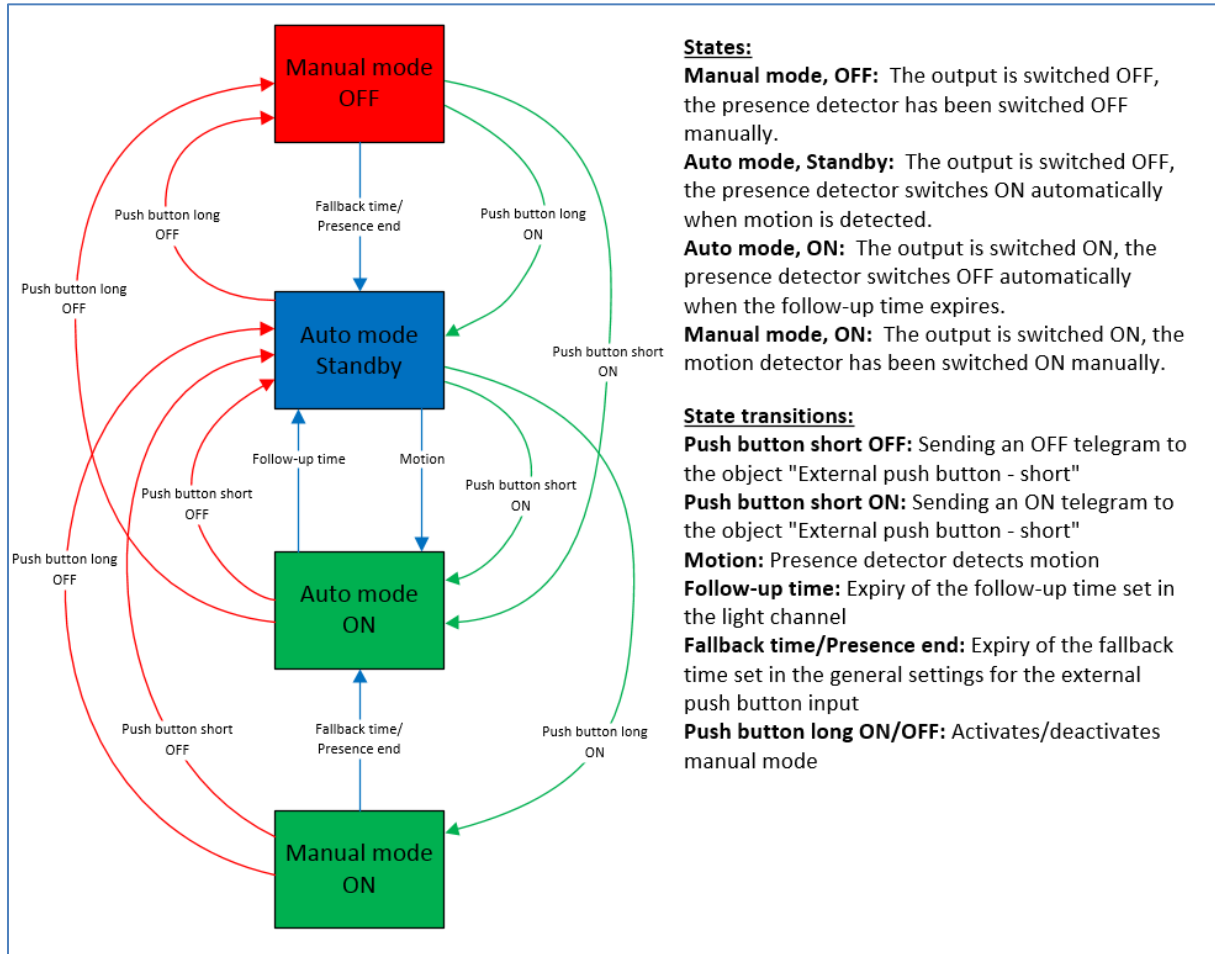
Fully automatic without orientation light:

States:
Manual mode, OFF: The output is switched OFF, the presence detector has been switched OFF manually.
Auto mode, Standby: The output is switched OFF, the presence detector switches ON automatically when motion is detected.
Auto mode, ON: The output is switched ON, the presence detector switches OFF automatically when the follow-up time expires.
Manual mode, ON: The output is switched ON, the motion detector has been switched ON manually.

State transitions:
Push button short OFF: Sending an OFF telegram to the object "External push button - short"
Push button short ON: Sending an ON telegram to the object "External push button - short"
Motion: Presence detector detects motion
Follow-up time: Expiry of the follow-up time set in the light channel
Fallback time/Presence end: Expiry of the fallback time set in the general settings for the external push button input
Push button long ON/OFF: Activates/deactivates manual mode

Figure 20: Process diagram – Fully automatic without orientation light

In the operating mode "Fully automatic" the Presence Detector switches on automatically when motion is detected. The object "External push button short" can be used to override the automatic mode of the motion detector and force the presence detector into manual mode. From this mode, the detector automatically returns to auto mode according to the settings in the menu "General settings" - "Release of push button input"
If the output of the light channel is switched on (automatic mode - ON or manual mode - ON) and the light channel is switched off via the object "External push button short", then the light channel is blocked for 10 seconds for motion detection in order to leave the room and prevent brief restart.
The detector can be switched to manual mode via the "external push-button - long" object. From this mode, the detector automatically returns to auto mode according to the settings in the General settings menu – Release time for push button.

Extended application example 1:
The room is entered, the detector detects presence and switches on the lighting group. However, the light should be switched off for the duration of the presence and automatically switched on again when the room is entered again.

To implement this scenario, you have to set the parameter "Fallback for external push button long" in the "General settings" as follows:

Fallback for external push button long (Manual => Auto)	after presence and follow-up time ▼
Manual mode follow-up time at ON by Day	3 min ▼
Manual mode follow-up time at OFF by Day	3 min ▼
Manual mode follow-up time at ON by Night	3 min ▼
Manual mode follow-up time at OFF by Night	3 min ▼

The follow-up time for the pushbutton can be set as desired according to your own requirements. Now the object 4 - external push-button long (light channel 1) is connected to the push-button which is to switch off the light.
After pressing the button, the light remains OFF (manual mode state, OFF) as long as the detector detects presence and then for the set follow-up time for the external button. The light is then switched off and the light channel changes to the state "Auto mode, ready".

Extended application example 2:
The room is entered, the detector detects presence, but the light is not switched on because the set brightness threshold is not exceeded. However, the light should be switched on for the duration of the presence and switched off again automatically after leaving the room.

To implement this scenario, you have to set the parameter "Fallback for external push button long" in the "General settings" as follows:

Fallback for external push button long (Manual => Auto)	after presence and follow-up time ▼
Manual mode follow-up time at ON by Day	3 min ▼
Manual mode follow-up time at OFF by Day	3 min ▼
Manual mode follow-up time at ON by Night	3 min ▼
Manual mode follow-up time at OFF by Night	3 min ▼

The follow-up time for the pushbutton can be set as desired according to your own requirements. Now the object 4 - external push-button long (light channel 1) is connected to the push-button which is to switch on the light.
After the push-button has been pressed, the light remains ON (manual mode state, ON) as long as the detector detects presence and then for the set follow-up time for the external push-button. The light is then switched OFF and the light channel changes to the state "Auto mode, ready".
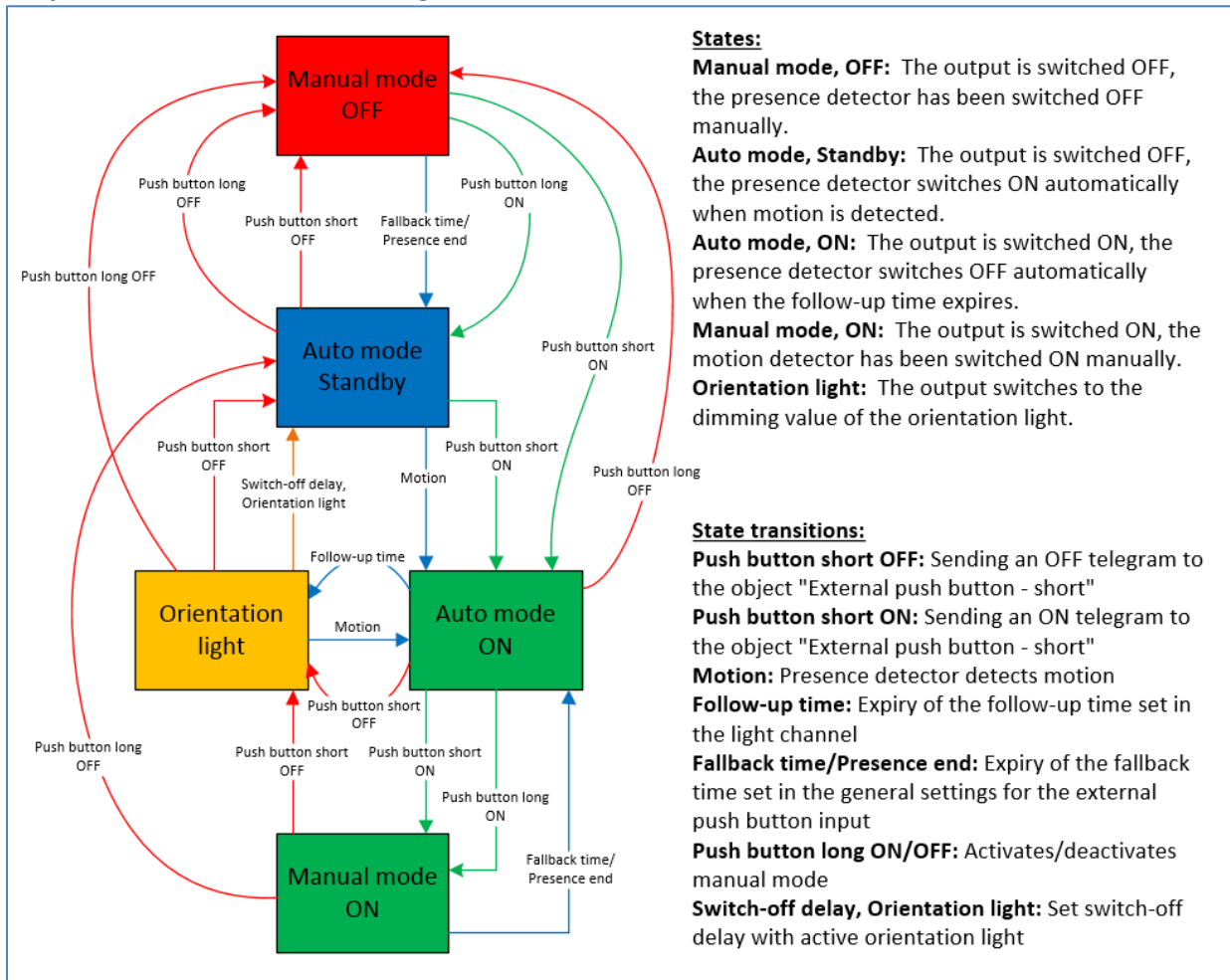
Fully automatic with orientation light:

States:
Manual mode, OFF: The output is switched OFF, the presence detector has been switched OFF manually.
Auto mode, Standby: The output is switched OFF, the presence detector switches ON automatically when motion is detected.
Auto mode, ON: The output is switched ON, the presence detector switches OFF automatically when the follow-up time expires.
Manual mode, ON: The output is switched ON, the motion detector has been switched ON manually.
Orientation light: The output switches to the dimming value of the orientation light.

State transitions:
Push button short OFF: Sending an OFF telegram to the object "External push button - short"
Push button short ON: Sending an ON telegram to the object "External push button - short"
Motion: Presence detector detects motion
Follow-up time: Expiry of the follow-up time set in the light channel
Fallback time/Presence end: Expiry of the fallback time set in the general settings for the external push button input
Push button long ON/OFF: Activates/deactivates manual mode
Switch-off delay, Orientation light: Set switch-off delay with active orientation light

Figure 21: Process diagram – Fully automatic with orientation light

The operating mode "fully automatic with orientation light" extends the operating mode fully automatic by the status orientation light. The orientation light can be activated as soon as the "Object type for output - light" parameter is set to absolute dimming.
The orientation light is switched on as soon as the follow-up time of the light channel has elapsed. The output is then switched to the orientation light state and can therefore dim the light to a darker level in order to leave the room safely.

Half automatic without orientation light:

States:
OFF: The output is switched OFF, the motion detector has to be switched ON manually.
Auto mode ON: The output is switched ON, the motion detector switches OFF automatically when the follow-up time expires.
Manual mode ON: The output is switched ON, the motion detector has been switched ON manually.

State transitions:
Push button OFF: Sending an OFF telegram to the object "External push button - short"
Push button ON: Sending an ON telegram to the object "External push button - short".
Follow-up time: Expiry of the follow-up time set in the light channel
Fallback time/Presence end: Expiry of the fallback time set in the general settings for the external push button input
Push button long ON/OFF: Activates/ deactivates manual mode

Figure 22: Process diagram – Half automatic without orientation light

In the operating mode "half-automatic", the motion detector has to be switched on manually via the object "external push-button - short". The light channel is automatically switched off again after the follow-up time (=no movement detection for the set follow-up time) has elapsed.
The light channel can also be overridden via the "external push-button - short" object. The motion detector can be switched to manual mode by pressing twice

Half automatic with orientation light:
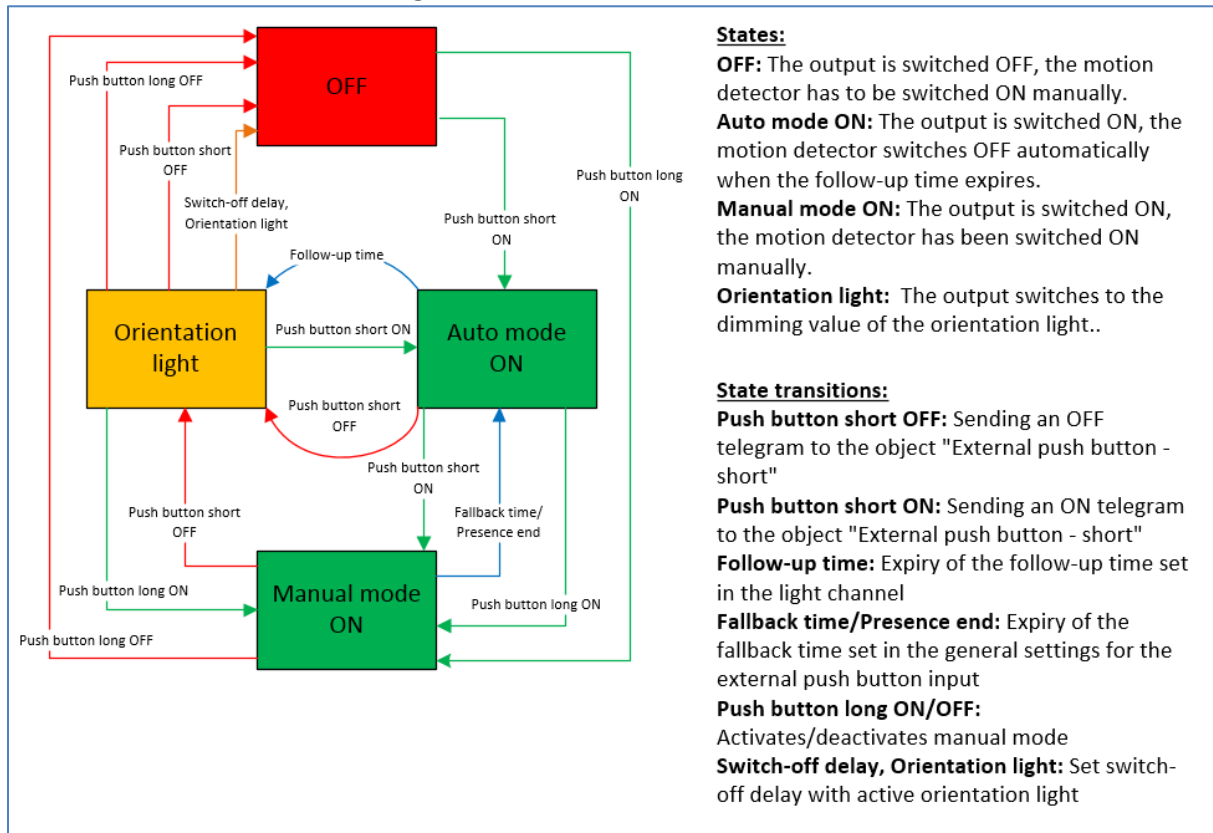
Figure 23: Process diagram – Half automatic with orientation light

The operating mode half-automatic with orientation light extends the operating mode half-automatic by the orientation light state. The orientation light can be activated as soon as the "Object type for output - light" parameter is set to absolute dimming.
The orientation light is switched on as soon as the follow-up time of the light channel has elapsed. The output is then switched to the orientation light state and can therefore dim the light to a darker level in order to leave the room safely.

4.2.9 Master/Slave Operation

The following is a short description of the settings. For more details, there is a suggested solution on our website https://www.mdt.de/EN_Downloads_Solutions.html under „Presence Detector".

4.2.9.1 Light channel

In larger rooms, the use of a single motion detector is often not sufficient. In order to detect motion in every corner of the room, several detectors have to be used throughout the entire room. Here, however, a detected motion should always lead to the same settings regardless of the corner of the room in which the presence was detected. For this purpose, one detector is switched as master and any number of others as slaves.
The settings for the master-slave control are made in the menu of the respective light channels.

The master is configured as desired as a fully or half-automatic unit.
A value of 3-5 minutes is recommended for the follow-up time.

Slaves are set as follows:

- The brightness must be set to "**independent of brightness**".
- Set the operating mode of the channel to "**fully automatic**".
- The **follow-up time** should be significantly shorter than that of the master.
- Object type for output – light to "**Switching**"
- The output object transmits "**only ON**".
- A value of **30 seconds** is recommended for the time "**sending cyclic ON**".

The "slaves" send their output object for "switch" to the "external motion (slave)" object of the master.

4.2.9.2 HVAC / Alarm channel

The master-slave control can also be applied to the HVAC/Alarm channels. The settings for the "slave" are the same as for the slaves for the lighting groups. However, the settings for the brightness values are omitted for the HVAC/alarm channel. The observation windows are to be set according to the individual requirements..

Attention: As long as the slave is in its follow-up time, it cyclically sends a "1" to the master. After the last "1" has been sent to the master, the master's follow-up time elapses before the master switches off its output. In this case, the follow-up time of the master and slave are added up.

4.3 Alarm/Message channel

The Alarm / Message function can be used to monitor a room in case of absence and to call up certain actions in the KNX system when motion is detected.
The Alarm / Message channel is always brightness-independent.

The following image shows the settings for the Alarm / Message function:

Active sensors	1234
Trigger sensitivity at Day	3 (low)
Trigger sensitivity at Night	2
Presence sensitivity	6
Reduce sensitivity for sensors	not active
Inteference / motion filter	○ not active, no filtering ◉ active, filter interferences or short movements
Length of monitoring time slot	2s
Number of monitoring time slot	3
Follow-up time Day	3 min
Follow-up time Night	1 min
Locking or enabling object	◉ lock object ○ enabling object
Fallback of forced guidance/lock (General setting)	◉ not active ○ active
Output objects for Day/Night	◉ one common object ○ separate objects
Output object sends at	○ only ON ◉ ON and OFF
Output object sends cyclic	not active

Figure 24: Settings – Alarm/Message channel

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
Active sensors	• ---- • 1--- . . • **1234**	Setting which sensors are active for this channel. **With 3 sensors, the selection is correspondingly "--- to 123".**
Trigger sensitivity at Day	1 – 8 **[6]**	Setting the triggering sensitivity in Day mode
Trigger sensitivity at Night	1 – 8 **[3]**	Setting the triggering sensitivity in Night mode
Presence sensitivity	1 – 10 **[8]**	Setting the sensitivity when presence is detected
Reduce sensitivity for sensors	**not active** 1-- -2- to -23	Setting to reduce the sensitivity of individual sensors. **With 4 sensors, the selection is correspondingly --- to -234**
Interference/motion filter	• **not active, no filtering** • active, filter interferences/short motions	Activation of a motion filter on standby (= output is switched off)
Length of monitoring time slot	1 – 5 s **[2 s]**	**Only if "Interference/ motion filter" is set to "active, filter interferences/ short motions".**
Number of monitoring time slot	2 – 5 **[3]**	Setting the number and length of monitoring time slots for detecting the channel
Follow-up time Day/Night	1 s – 4 h **[3 min]**	Setting the follow-up time for Day or Night operation
Locking or enabling object	• **Lock object** • Enabling object	Setting whether a locking or enabling object is to be used
Fallback of forced guidance/lock (General settings)	• **not active** • active	**Only available with lock object.** Setting whether or not the channel should react to "Fallback forced guidance/lock" in the menu "General settings". **For SCN-P360E3.03 only possible from hardware revision R4.2!**
Output objects for Day/Night	• **one common object** • separate objects	Setting whether to send via one object or separate objects for Day and Night
Output objekt sends at	• Only ON • **ON and OFF**	Output filter for the first output object
Output objekt sends cyclic	• **not active** • 10 s – 60 min	Activation of cyclic sending for the first output object

Table 17: Settings – Alarm/Message channel

Active sensors can be set for each channel. This allows the detection range of the channel to be limited. For example, if only one direction is to be detected in a corridor, only one sensor can be activated. Please refer to the illustration at 2.4 Structure & Handling for the orientation of the sensors.

Please note: Due to the lens optics, the individual areas of each sensor scatter. Overlapping between sensors is therefore possible and consequently there is no sharp separation between the areas.

The **trigger sensitivity Day/Night** describes the sensitivity in standby mode (the output is switched off, no movement was detected).

The **presence sensitivity** describes the sensitivity in presence mode (the output is switched on, movement was detected).

Reduce sensitivity for sensors can be used, for example, if one or more sensors are to react less sensitively for structural reasons.

To avoid false detections, an **interference/motion filter** can be activated that filters out very short movements, e.g. due to draughts. If this filter is activated, 2 additional parameters appear: "**Length of monitoring time slot**" and "**Number of monitoring time slots**".

This means that a longer detection is required for switching on. To switch on the channel at least one detection must have taken place in each of the set monitoring time slots. For example, with 3 monitoring time slots and a length of 2 seconds for a monitoring time slot, at least one detection would have to take place in the first 2 seconds, at least one detection in the second 2s and at least one detection in the third 2 seconds. Thus, it takes at least 6 seconds for the alarm channel to trigger. If the motion filter is not activated, the detection takes place for only one movement with the sensitivity set accordingly.

The **follow-up time** describes the time that elapses after the last detection of a movement until the output is switched off. For example, with a follow-up time of 3 minutes, the light would be switched on for at least 3 minutes if movement was detected. Each new detection restarts the follow-up time. This time can be set differently for Day and Night.

A **lock object or enable object** can be activated to lock or enable the Alarm channel. The lock object switches the channel off with a 1. The enable object activates the Alarm channel with a 1. With the parameter "**Fallback forced guidance/lock" (general setting)**, you can set whether the channel should react to the configuration for "Fallback forced guidance/lock" in the "General settings" or not.

With "**Output objects for Day/Night**" you can set whether switching is done via a common object or separate objects for Day and Night. Using separate objects, for example, a different action can be carried out for Day than for Night.

With the parameter "**Output object sends**", a send filter can be activated for the output. If the output is only to send ON commands the setting "only ON" can be used.

Via "**Output object sends cyclically**", it can be set that the output object sends its value cyclically to the bus at an interval to be defined.
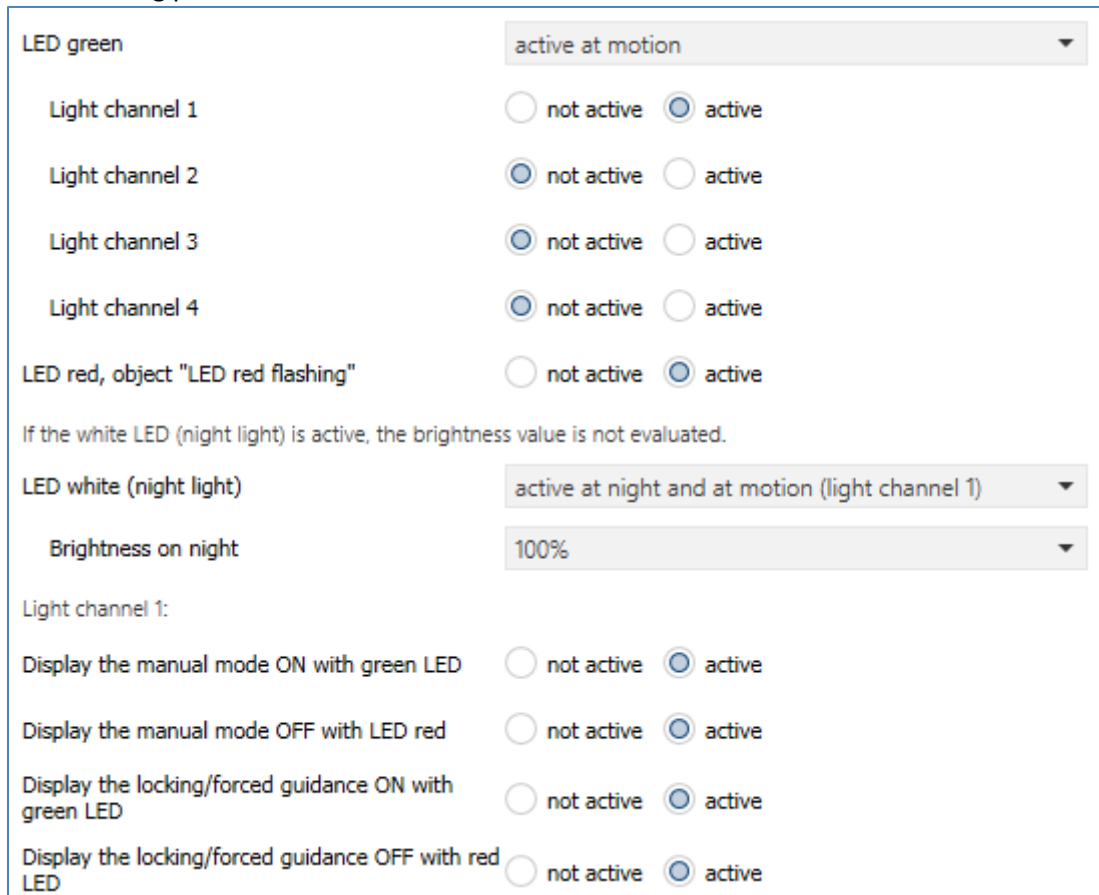
The following table shows the corresponding communication objects:

Number	Name	Length	Usage
75	Alarm - Output – Switching	1 Bit	Output of the alarm function (common object for Day and Night)
75	Alarm - Output (Day)– Switching	1 Bit	Output of the alarm function in Day mode
76	Alarm - Output (Night)– Switching	1 Bit	Output of the alarm function in Night mode
83	Alarm - Input – Lock	1 Bit	Locking the alarm function
83	Alarm - Input – Enable	1 Bit	Enabling the alarm function

Table 18: Communication objects – Alarm/Message channel

4.4 LED

The following picture shows the LED submenu:

Figure 25: Settings – LED

The following table shows the parameter settings for the LEDs:

ETS-Text	Dynamic range [Default value]	Comment
LED green	• not active • **active at motion** • active at motion, only during „Day" • active over external object • active over external object, flashing	Setting the lighting behaviour of the green LEDs
Light channel 1 – 3/4	• *Light channel 1:* not active/**active** • *Light channel 2 - 4:* **not active**/active	Setting whether the green LED for this channel should signal a detected motion. **Number of light channels depending on device type**
LED red, object „LED red flashing"	• **not active** • active	Activation of an object to control the red LED

LED white (Night light)	• **not active** • active at „Night" and at motion (Light channel 1) • active at „Night" and at motion (Light channel 2) • active at „Night" and at motion (Light channel 3) • active at „Night" via external object „switching" • always active at „Night"	Setting whether and how the white LED (Night light) is switched on.
Brightness at „Night"	0 – 100% **[10%]**	**Only shown if "Night" is active.** Defines the brightness value at which the white LED switches on.
Light channel 1		
Display „manual mode ON" with green LED	• not active • **active**	Setting whether LED green/red should indicate the status (only light channel 1) for manual operation or forced guidance/lock.
Display „manual mode OFF" with red LED	• not active • **active**	
Display "forced guidance/ lock ON" with green LED	• not active • **active**	
Display "forced guidance/ lock OFF" with red LED	• not active • **active**	

Table 19: Settings – LED

The following table shows the corresponding communication objects:

Number	Name	Length	Usage
91	LED green – Switching	1 Bit	**Object only available if "active via external object" is set.** Controlling the LED via an external object
92	LED red – flashing	1 Bit	Control of the LED via an external object
93	LED white – Switching	1 Bit	**Object only available if "active via external object" is set.** Controlling the LED via an external object

Table 20: Communication objects – LED

Attention: When the white LED (Night light) is active, the brightness value is not evaluated!

4.5 Scenes

The following picture shows the setting options for scenes:

Scene A number	1
Scene A Light channel 1	lock active, ON
Scene A Light channel 2	lock active
Scene A Light channel 3	set external push button short to value 1
Scene A Light channel 4	set object Day/Night to Day (for all channels)
Scene B number	not active

Figure 26: Settings – Scenes

The following tabel shows the setting options for scenes:

ETS-Text	Dynamic range [Default value]	Comment
Scene A – H number	**not active** 1 – 64	Setting of the scene number
Scene A – H Light channel 1-4	• **not active** • lock active, ON • lock active, OFF • lock active • disable lock (last state)) • Disable lock, OFF • Set external push-button short to value 1 • Set external push-button short to value 0 • Set external push-button long (manual mode) to value 1 • Set external push-button long (manual mode) to value 0 • Set object Day/Night to Day (for all channels) • Set object Day/Night to Night (for all channels)	Settings of the action to be performed for calling up a scene. Number of light channels depending on the device type. **"Disable lock, OFF" is only available with SCN-P360E3.03 from hardware R4.3!** **Important:** **Actions can only be set for active light channels!**

Table 21: Settings – Scenes

With the scene function, actions for the light channels 1-4 (not HVAC and alarm) can be triggered by sending the corresponding scene numbers.
Actions can only be configured for light channels that have also been activated via "Selection of channels"! If, for example, only light channel 1 is active, only "Scene X light channel 1" will be displayed for the corresponding scene X.

The following table shows the corresponding communication object:

Number	Name	Length	Usage
94	Scene – Input	1 Byte	Call of the scene

Table 22: Communication object – Scene

4.6 Brightness

The following picture shows the available settings (here SCN-P360K4.03):

Figure 27: Settings – Brightness

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
Light channels influence the brightness measurement	• yes (several lights in the room) • nein (separate functions)	Setting whether the brightness measurement is influenced by several light sources in the room or not
Send brightness on change of	not send 5 % – 50 % [10 %]	Minimum rate of change for the current brightness value to be sent

Send measured value cyclically	**not active** 5 s – 30 min	Defining a fixed period of time after which the current brightness measurement value is sent repeatedly
Correction Lux value	-50 % … 70 % **[0 %]**	Increase/decrease by the set value
Room reflection factor	• 1 • 0,7 very high • 0,5 high • **0,4 medium** • 0,3 low • 0,25 low • 0,2 very low	Reflectance of the environment; indicates what percentage of the light is reflected (1 = 100%, 0 = 0%)
Threshold switch	• **not active** • active	Activation of a threshold switch
The following parameters appear after activating the threshold switch:		
Threshold switch switches at	5 Lux– 1000 Lux **[300 Lux]**	Setting of the threshold at which the threshold switch switches over = defined switch-on point
Hysteresis of threshold switch	5 Lux – 200 Lux **[30 Lux]**	Distance between switch-off and switch-on point Switch-off point = value for switching the threshold switch - Hysteresis
Object value at Day and exceedance	• **ON** • OFF	Setting the value to be sent
Object value at Night and exceedance	• **ON** • OFF	Setting the value to be sent
Object value at lower deviation	• **ON** • OFF	Setting the value to be sent
Send at Day	• no send • only ON • only OFF • **ON und OFF**	Transmit filter during daytime operation
Send at Night	• no send • only ON • only OFF • **ON und OFF**	Transmit filter during night operation
Lux value for TeachIn	200 … 1000 **[450]**	Adjustment value for external read-in. **Only for constant light control!**
Teach-in value at application download	• hold TeachIn value • **use default value**	Specifies whether the presence detector should retain the TeachIn values after the download or load the factory settings. **Only for constant light control!**

Table 23: Settings – Brightness

The parameter "Light channels influence brightness measurement" can be used to set whether several light sources in a room influence each other or not.

Example for setting "Yes": Light channel 1, 2 and 3 react to the basic setting for brightness (general setting) and switch 3 independent light sources in the room. If, for example, light channel 1 is switched on via an external button and the brightness value of the switch-on threshold is exceeded, the other two channels automatically become "brightness-independent" and can therefore also switch their lamps via motion.

Example for setting "No": If several light sources are switched in a staircase with one detector, but the positions of these sources have no influence on each other (e.g. indirect LED lighting), each light group can be set to "Basic setting" of the switch-on threshold. If it is now bright due to daylight and the switch-on threshold is exceeded, all indirect LED lights should also no longer switch on.

Furthermore, the sending conditions for the measured brightness value can be defined. This can be sent both at a specific **change of** (value in %) and **cyclically** at specific intervals.

Via **correction lux value**, the measured lux value is shifted by an adjustable percentage offset. Thus, with a set value of -50%, the measured value is reduced by 50%. Thus, with a measured value of 400 lux and a correction value of -50%, the presence detector would output the value 200.

The **reflection factor** indicates what percentage of the emitted light is reflected back by the environment. A value of "1" means that 100% of the emitted light is reflected back. For dark floors, a reflection factor of 0.25 is usually suitable.

For example, you measure 400 lux at workstation height and only 100 lux under the ceiling. These are then converted to 400 lux.

In addition, a **threshold switch** can be set for a certain brightness. This can be set with a hysteresis, which avoids too frequent switching.
The interaction of hysteresis and threshold value is illustrated in the following graphic:
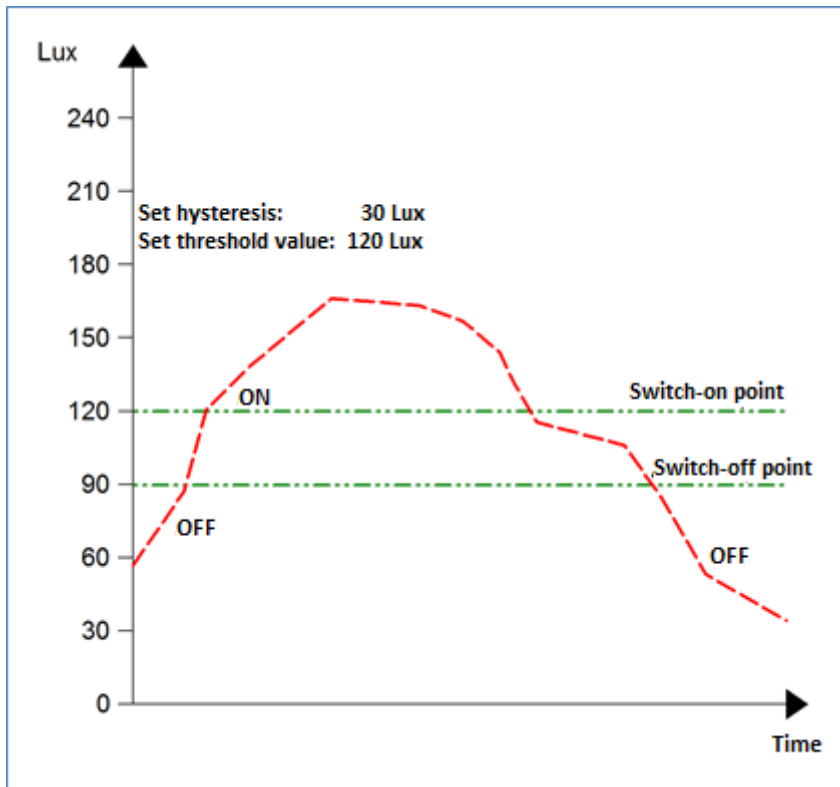
Figure 28: Diagram – Hysteresis of threshold switch

The **object values** and the **sending conditions** can be set as desired with the other parameters. Both the polarity and a sending filter can be set.

Teach-in (only with constant light control)
If a Teach-in is carried out, the brightness measurement is automatically corrected. The reflection factor should not be changed after a Teach-in. The Teach-in procedure should be carried out to increase the accuracy of the control.
The procedure for Teach-in with constant light control (SCN-P/G360K3.03 and SCN-P360K4.03) is described in the following chapter.

4.6.1 Procedure for Teach-in with constant light control

In order to be able to use all the advantages of intelligent constant light control, the presence detector should be set once using the Teach-in procedure. A lux meter is required for this. The procedure should be as follows:

1. Adjust the parameter "Lux value for Teach-in" to the desired brightness value.
   Mostly 400-500 Lux are used.
2. Adjust the Parameter "Teach in value at loading of application" to "hold Teach in values".
3. Make the desired settings for the constant light function. (see chapter 4.7 Constant light control)
4. Connect the communication objects for the different light groups with the objects of the dimming actuator
5. Connect the object "100 - Status absolute dimming value" with the status object of the dimming actuator for the light band in the middle.
6. Connect the object "99 - Calibration start" with a new group address, if the calibration shall be activated via the ETS (Group monitor) or with a push button.
7. Download the application.
8. The room has to be darkened or the measurement has to be carried out at dusk. The constant light control learns the brightness and dimming values of the artificial lighting with the Teach-in. If the Teach-in is carried out in daylight/sunlight, the measurement is disturbed and saves incorrect measured values.
9. Activate the Teach-in function by sending a logical 0 to the object "99 - Calibration start". The green LED in the presence detector starts flashing with a 1s rhythm. Sending a logical 0 again causes an interruption of the Teach-in process.
10. Change the illuminance by sending dimming commands (relative or absolute) until the lux meter displays the set value (lux value for Teach-in) at workplace level (usually 400 - 500 lux).
11. Now send a logical 1 to the object "99 - Calibration start". The red and green LED flashes alternating.
12. The presence detector now compares the light measurement, learns the associated dimming value and learns the brightness values at different dimming values.
13. After successful completion of the Teach-in process, the green LED flashes quickly for 10 seconds. The control is now automatically reactivated and controlled to the setpoint. If an error occurs, the process is aborted and the red LED flashes quickly for 10 seconds. This occurs if, for example, no valid dimming value (status) is received from the dimmer. Then check point 5 above and repeat the process.
14. If the parameter "use switch on dimming value" is adjusted to "calculate switch on value", the switch on value is calculated automatically now.

The light codes for the LEDs can be taken from the following table:

LED behaviour	State
green LED flashes slowly	Teach-in is activated; detector is in TeachIn mode
green and red LED flashes alternately	Teach-in process in progress
green LED flashes fast for 10 sec	Teach-in was successfully completed
red LED flashes fast for 10 sec	Teach-in process failed

Table 24: LED behaviour – Teach-in

The following table shows the relevant communication objects:

Number	Name	Length	Usage
96	Brightness – Threshold switch	1 Bit	Sends the set value when it is exceeded / fallen below
97	Brightness – Measured value	2 Byte	Measured brightness value
98	Brightness – Set switch-on threshold for light channels	2 Byte	Here the switch-on threshold Day/Night (see general setting) can be changed via object. The threshold that is currently in operation (Day or Night) is always changed. **Only applies to light channels**.
99	Input Teach-in – Start calibration	1 Bit	Starts the adjustment via Teach-in
100	Input Teach-in – Status absolute dimming value	1 Byte	Receiving the dimming value status from the dimming actuator

Table 25: Communication objects – Brightness and Teach-in

4.7 Constant light control

Only for Presence Detectors: SCN-P360K3.03, SCN-P360K4.03, SCN-G360K3.03

With the new proportional master/slave constant light control, it is possible to intelligently control the light in the room so that external influences can be almost completely eliminated. By controlling up to 3 light strips - wall, middle, window - the light in the room can be kept constant despite the influence of sunlight and other light sources. With its intelligent control, the constant light control helps to save energy.
Note: The selection lighting groups should be set to 1 lighting group or 1 lighting group + HVAC. Constant lighting control with 2 lighting groups (zones) is not useful.

The figure below illustrates the principle of constant lighting control:
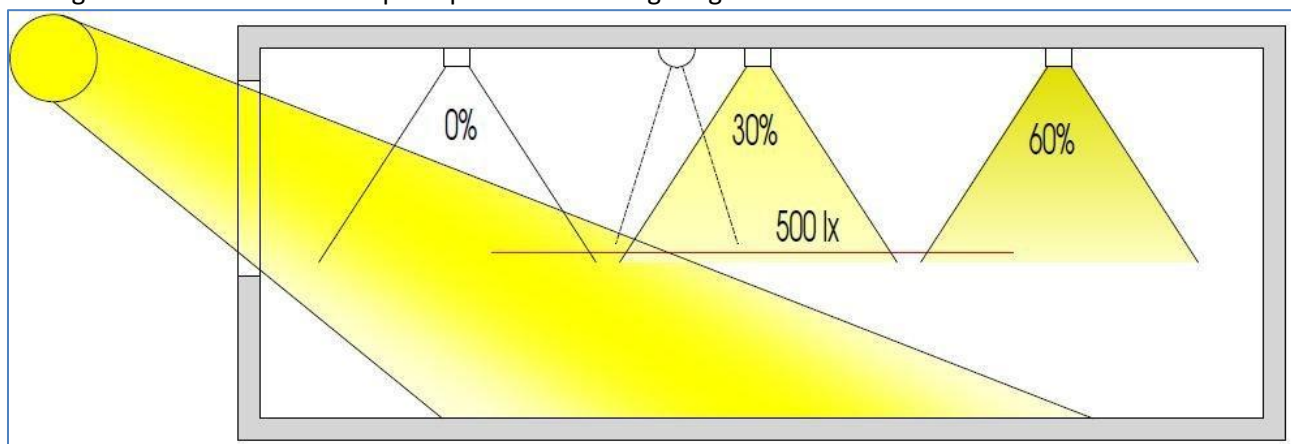
Figure 29: Operating principle – Proportional zone control

4.7.1 General Settings/ Principle of control

The following figure shows the general settings for constant light control:

Figure 30: General settings – Constant light control

The following table shows the possible settings for constant light control:

ETS-Text	Dynamic range [Default value]	Comment
Constant light control	• **not active** • active	Activation/Deactivation of the constant light control
Control out sunlight	• **normal** • few • very few	defines the influence of the solar radiation to the regulation
Selection light band	• 1 light group • light group main + wall • light group main + window • **light group main + wall + window**	Selection of the light bands, which shall be controlled
Influence proportional wall control	• no change (x 1) • very low (x 1,2) • low (x 1,4) • **medium (x 1,6)** • high (x 1,8) • very high (x 2)	defines the influence of the light group wall to the constant level light regulation
Influence proportional window control	• no change (x 1) • very low (x 0,9) • low (x 0,8) • **medium (x 0,7)** • high (x 0,6) • very high (x 0,5)	defines the influence of the light group window to the constant level light regulation

Table 26: Settings – Constant light control

The parameter "**Influence of proportional zone control**" specifies how strong the influence of the lighting group on the control should be. The setting "no influence" (x 1) switches off the proportionality of the control and all lighting groups always light up with the same value. The setting "very strong" (0.5 for window and 2 for wall) means that the difference between the absolute dimming values at the wall and window is very large.

If a room is to be controlled using the constant light control, it is recommended to use the Teach-in procedure, as this is the only way to achieve good results.

The influences of the wall and window lighting groups have to be adapted to the specific conditions. Simplified, the larger the room, the stronger the control factor has to be, i.e. the stronger the influence has to deviate from 1. However, the parameters should always be checked on site and corrected if necessary.

Adjustment of the control is possible via the "**Control sunlight**" parameter. If the Presence Detector reduces the light in the room too much when the sun is shining, the value for this parameter should be set to little or very little. Alternatively, the Presence Detector can also be moved further into the middle of the room.

The following diagram illustrates the dimming behaviour for the 3 lighting groups with different levels of sunlight. In this example, the Teach-in value was reached at an absolute dimming value of 80% with 450 lux, the influences were both set to medium.
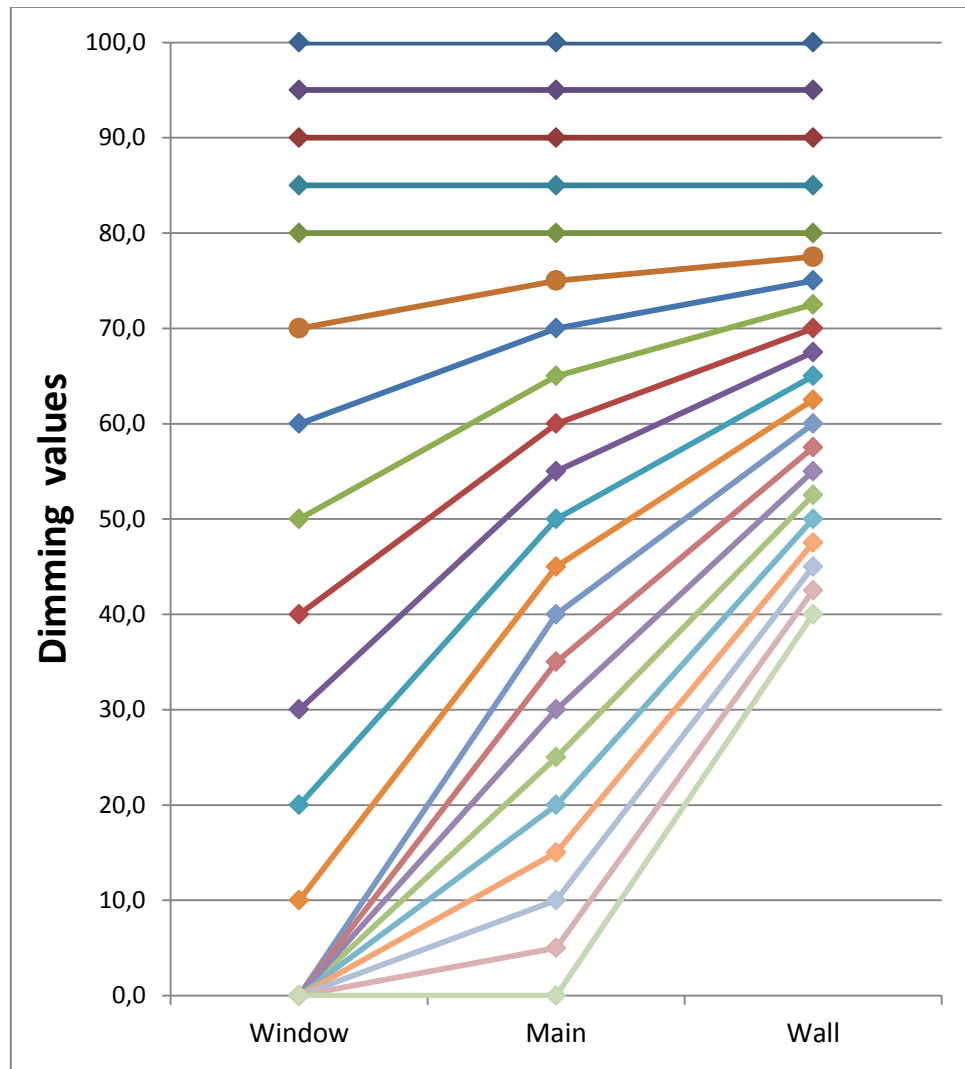
Figure 31: Diagram – Behavior of proportional zone control

It is obvious that depending on the intensity of the sunlight, the window side is dimmed down more than the middle, and the wall side correspondingly more slowly.
When the solar radiation decreases again, all light strips are regulated to 80% again.

If the light intensity is set, for example, from 450 lux to 300 lux (relative dimming, absolute dimming or scene), the control factors are only used automatically at the correct dimming value. In this case for example, 50%. Without sunlight, all three light strips then regulate to 300 lux with 50% dimming value. With sunlight, the dimming values below 50% shift accordingly.

With the new "proportional master/slave constant light control", all disadvantages of the commercially available "offset master/slave constant light control" with fixed offset have been eliminated.

The following diagram shows the influence of the different control parameters to the regulation:
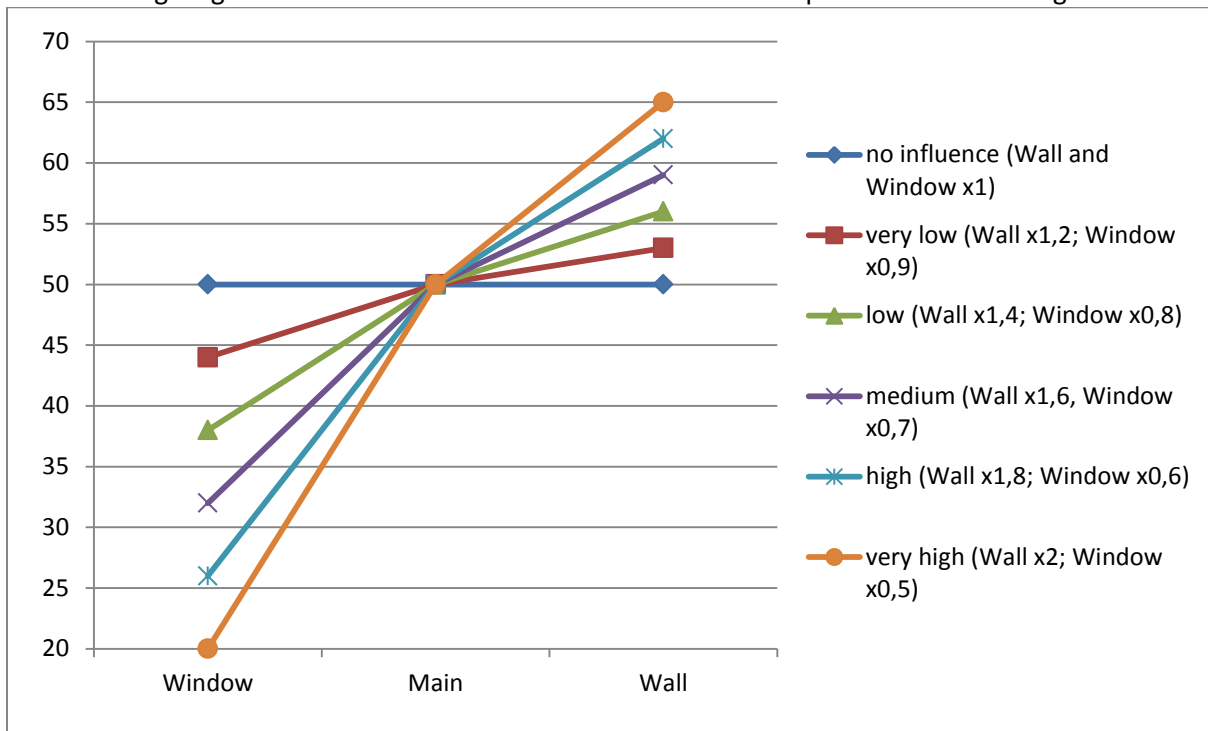
Figure 32: Diagram – Influence of control parameters

4.7.2 Setting Options

The following figure shows the available specific settings for the constant light control:

Constant light controlled by	○ external object ● Presence Light channel 1
Switch On control delay	5s ▼
Controller switches the light off	● not active ○ active
Minimum dimming value at dimming output	0% ▼
Maximum dimming value at dimming output	100% ▼
Use switch on value Day	parameter (select dimming value) ▼
Switch on dimming value Day	50% ▼
Constant light control at Night	○ not active ● active
Use switch on value Night	parameter (select dimming value) ▼
Switch on dimming value Night	20% ▼
Brightness value [Lux] for switch on	○ use last dimming setpoint ● use parameter value
CL state sends Value 1	active during control ▼
Cyclical sending of dimming value	not used ▼
Send dimming value on change of	1% ▼
CL behavior at relative dimming	● use new dimming value ○ disable CL control
Relative dimming time	20 s ▼
Standby / orientation light	● not used ○ used
Lock object active	● no ○ yes
Scens	● not active ○ active

Figure 33: Settings – Constant light control

The tables show the setting options for constant light control (referred to as "CL" in the following):

ETS-Text	Dynamic range [Default value]	Comment
Settings: Switching behaviour/control behaviour		
Constant light controlled by	• external object • **Presence**	Defining how the constant light control is to be switched on
Switch On control delay	1 s – 5 min **[5 s]**	Determination of the delay between activation and start of regulation
Controller switches the light Off	• **not active** • active	Setting whether the controller may switch off the light completely
Minimum dimming value at dimming output	0 – 50 % **[0 %]**	Setting the minimum dimming value for the constant light control
Maximum dimming value at dimming output	50 – 100 % **[100 %]**	Setting the minimum dimming value for the constant light control
Switch-on value Day	• **parameter (settable dimming value)** • Teach-in (teached value) • calculate switch-on value (over Lux value)	Determination of the value with which the constant light control is to be switched on
Switch-on dimming value Day	0 – 100 % **[80 %]**	**Only with setting "Parameter (settable dimming value").** Sets the switch-on value for Day
Preset setpoint at Day	100 – 750 Lux **[450 Lux]**	Setpoint for Day mode. **Only with setting "calculate switch-on value (over Lux value)"**
Constant light control at Night	• **not active** • active	Activation of the constant light control during Night Operation
Switch-on value Night	• **parameter (settable dimming value)** • Teach-in (teached value) • calculate switch-on value (over Lux value)	Determination of the value with which the constant light control is to be switched on
Switch-on dimming value Night	0 – 100 % **[20 %]**	**Visible if constant light control is not active or, if active, with the setting "Parameter (settable dimming value)".** Sets the switch-on value for Night
Preset setpoint at Night	25 – 500 Lux **[50 Lux]**	Setpoint for Day mode. **Only with setting "calculate switch-on value (over Lux value)"**
Brightness value (Lux) for switch-on	• use last dimming setpoint • **use parameter value**	Setting whether the last setpoint from relative dimming or the scenes should be used or the setpoint should be loaded from the parameters.
CL Status sends value 1	• when ready • active during control • if lock active	Setting for which action the status of the CL is sent

Settings: Dimming behaviour		
Cyclical sending of dimming value	**not used** 5 s – 10 min	Sets the cyclical sending of the dimming value
Send dimming value on change of	0,50 – 5 % **[0,50 %]**	Determination of the change from which the dimming value is sent
CL behavior at relative dimming	• **use new dimming value** • disable CL control	Setting whether control remains active during relative dimming
Relative dimming time	5 – 60 s **[20 s]**	Defines the time for dimming from 0 to 100%
Settings: Standby/Orientation light		
Standby/Orientation light	• **not used** • used	Setting whether the light should continue to run after it has been switched off
Standby setpoint	5 – 100 % **[50 %]**	Value for Standby setpoint
Standby time	5 s – 60 min **[10 s]**	Length of Standby time
Settings: Lock object		
Lock object active	• **no** • yes	Activation of a lock object
Lock object value = 1	• Off • **On (100%)** • no change (hold value) • select value	Settings what should happen when the lock object is activated
Value	0-100% **[0%]**	Setting of the value when the lock is active. **Only visible if the lock object "select value" is active.**
Lock object value = 0	• OFF • ON (100%) • no change (hold value) • **restore previous state**	Settings what should happen when the lock object is deactivated
Settings: Scenes		
Scenes	• **not active** • active	Setting whether scenes are to be used for constant light control
Behaviour at setting of scene	• switch ON • **sets only switch-on value**	Setting the behaviour when activating the scenes
Scenes learning mode	• not active • **active**	Setting whether scenes are saved when they are changed
Scene 1 - 8	25 – 750 Lux **[Default value varies per scene]**	Adjustable values for the different scenes

Table 27: Settings – Constant light control

The individual parameters are described in more detail below:

- **Settings Switching behaviour/control behaviour**
  The general settings for the constant light control are made here. The parameter "**Constant light controlled by**" can be used to set whether the control is switched via the detected presence or via an external object, which can be connected to a push-button, for example. The parameter "**Controller switches the light off**" defines whether the controller may regulate the light to 0%, e.g. in the case of strong sunlight, and is thus switched off. If the parameter is set to "not active", the outputs are not set to 0% but maintain a minimum value that prevents the lamps from being switched off. This setting is useful in offices/workrooms, as switching off the lighting is usually perceived as annoying. Furthermore, the dimming range (**minimum and maximum dimming value**) for the CL can be limited.
  The "**Switch-on value Day/Night**" parameter can be used to specify to the presence detector the value with which the control is to be initialised. It is possible to define a fixed value, to use the value adjusted during the TeachIn procedure or to have the switch-on value calculated directly internally. The time until the control starts after switching on can also be defined.
  The parameter "**Brightness value at switch-on**" defines whether the control should always work with the configured value or whether it should use the last setpoint value that was read in, for example, via absolute/relative dimming or the scene function.
  The control can also be configured here for different values for Day and Night. Day is active as soon as the CL has been activated, "**Constant light control at Night**" can be additionally activated via parameters. If not active, a fixed dimming value is set for switching on.
  With the parameter "**CL status sends value 1**", it is possible to receive information about the current status (standby, control active or lock active) via an object.

- **Settings: Dimming behaviour**
  The dimming value can be passed on both cyclically and at a specific percentage change.
  The parameter "**Behaviour of the CL on relative dimming**" also defines whether the control should be switched off by manual relative dimming or should continue to operate with the new value.

- **Settings: Standby/Orientation light**
  The standby/orientation light defines a dimming after the constant light control has been switched off. This means that if this parameter has been activated, the detector does not switch the light off immediately, but to the set value for the specified duration.

- **Settings: Lock object**
  This displays a lock object which, when activated, locks the constant light control and causes a certain forced position.
  The following settings are available:
  - OFF: The output is switched off (0%).
  - ON: The output is switched on (100%):
  - No change: The current absolute value is maintained.
  - Settable value (only for locking): The set absolute value is called up.
  - Restore previous state (only for unlocking): The absolute value that the constant light control had before locking is recalled.

- **Scenes**
  Various setpoints (lux) can be set via up to 8 scenes. This means that the brightness value of the CL for a room can be changed with a simple press of a button. It is also possible to set whether triggering the scene switches the CL on directly or only the new value is set. It is also possible to adopt a changed scene value.

The following table shows the relevant communication objects:

Number	Name	Length	Usage
130	Constant light – Switch On/Off	1 Bit	Object to activate/deactivate control via external command
131	Constant light – Dimming relative	4 Bit	Manual adjustment of the current brightness
132	Constant light – Dimming absolute	1 Byte	Adjusting the current brightness to a new absolute value
134	Constant light – Lock	1 Bit	Locking the control
135	Constant light – Scenes	1 Bit	Controlling scenes
136	Constant light – Dimming absolute output main	1 Byte	Output for middle group
137	Constant light – Dimming absolute output wall	1 Byte	Output for wall group
138	Constant light – Dimming absolute output window	1 Byte	Output for window group
139	Constant light – Status	1 Bit	Sending the current status

Table 28: Communication objects – Constant light control

4.8 Temperature

Temperature measurement only available with MR16 Presence Detectors and Glass Presence Detectors!

The following picture shows the available settings:
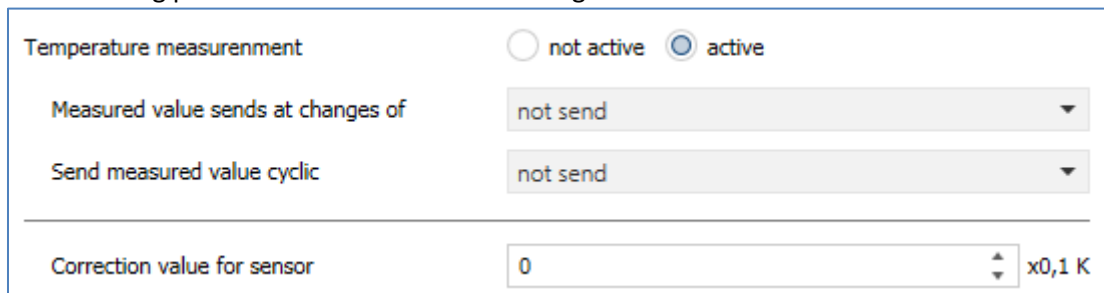
Figure 34: Settings – Temperature

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
Temperature measurement	• **not active** • active	Activation of the temperature measurement
Measured temperature sends on change of	not send 0,1 – 1 K **[0,2 K]**	Minimum rate of change for the current measured value to be sent
Send measured value cyclically	**not send** 1 min – 120 min	Defining a fixed period of time after which the current brightness measurement value is sent repeatedly
Correction value for sensor	-80 … 50 x0,1 K **(0)**	Setting the value by which the temperature is corrected

Table 29: Settings – Temperature

With temperature measurement, the temperature in the room can be measured and sent to the bus. The temperature can be sent to the bus both at an adjustable change and cyclically (at fixed time intervals).
The measured temperature can be shifted up or down via the "Correction value for sensor" parameter. For example, a correction value of "50" corresponds to a correction of 5 K.

The following table shows the available communication object:

Number	Name	Length	Usage
140	Temperature – Measured value	2 Byte	Sending the current temperature value

Table 30: Communication object – Temperature

4.9 Logic

4.9.1 Activation of the logic function

The following picture shows the activation of logic functions 1-4:

Logic function 1	⦿ not active ○ active
Logic function 2	⦿ not active ○ active
Logic function 3	⦿ not active ○ active
Logic funkction 4	⦿ not active ○ active
Request inputs after bus powert reset	⦿ not active ○ active

Figure 35: Settings –Activation of the logic function

After activating the logic function, a submenu for the corresponding logic function is displayed in which the logic can be further configured accordingly.
The parameter "**Request inputs after bus voltage return**" defines whether the external inputs of the logics are to be actively requested after a restart.

4.9.2 Logic settings

There are 2 text fields available:

Description of function	Logic lighting
Additional text	Outdoor lighting terrace

Figure 36: Settings –Text fields logic function

Texts with up to 40 characters can be stored for both fields.
The text entered for the "**Description of the function**" appears in the menu behind the corresponding logic as well as with the communication objects of the logic.

— Logic settings	
Logic 1 Logic lighting	‖↯‖114 Logic 1 Logic lighting Output 1

The "Additional text" is merely additional information to the logic. This is not visible anywhere else.

The following picture shows the submenu for logic:
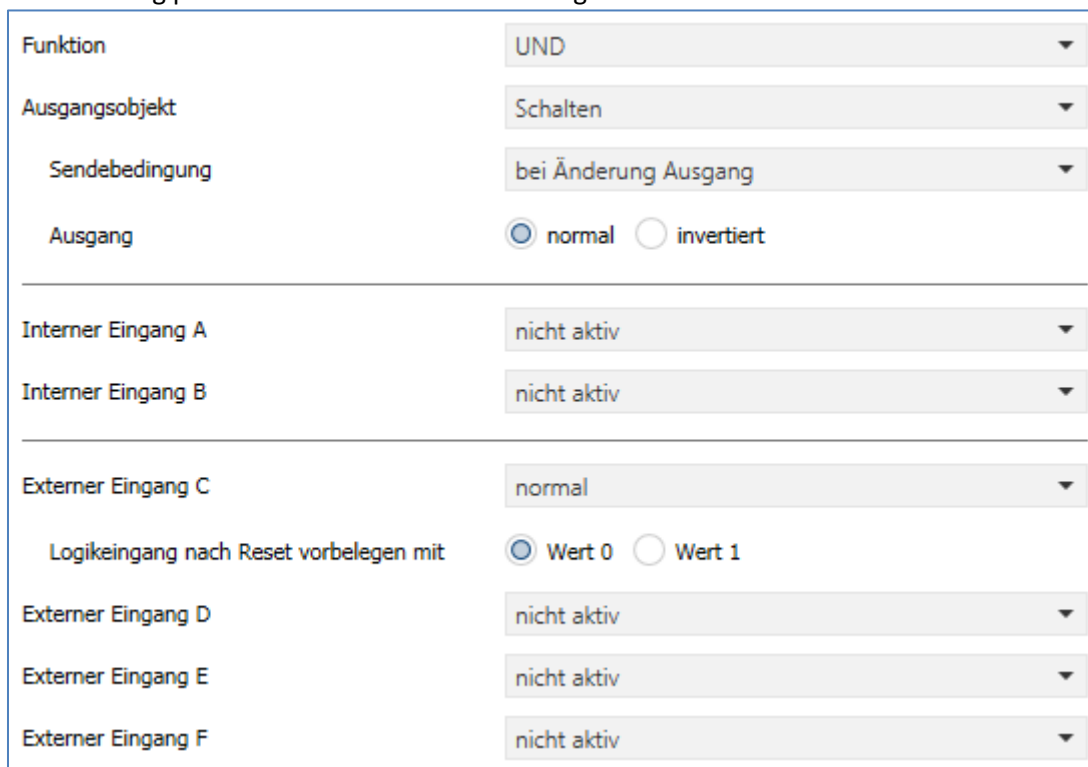
Figure 37: Settings – Logic

With the logic function, different objects can be logically linked. Each logic function can link and evaluate up to 2 internal objects and up to 4 external objects. The sending behaviour of the output can be adjusted via the sending condition.

The following table shows the parameter settings for the logic:

ETS-Text	Dynamic range [Default value]	Comment
Function	• **AND** • OR • XOR	Setting of the logic function
Output object	• **Switching** • Scene • Value • Force 2bit	Setting the output object for the logic
Scene number for output value "False/True"	**not active** 1 – 64	**Visible when "Output object" – "Scene" is set**. Setting the scene number to be sent
Value type	• **1 Byte Decimal (DPT 5.005)** • 1 Byte Percent (DPT 5.001)	**Visible when "Output object" – "Value" is set**. Setting the DPT for value to be sent
Percent value for output value "False/True"	0 – 100 % **[0 %]**	**Visible when "1 Byte Percent" is set**. Setting the value to be sent
Value for output value "False/True"	0 … 255 **[0 %]**	**Visible when "1Byte Decimal" is set**. Setting the value to be sent

Force for output value "False/True"	• **00 - no priority, Off** • 01 - no priority, On • 10 - priority, Off • 11 - priority, On	**Visible when "Force 2Bit" is selected**. Setting the value to be sent
Send condition	• at input telegram • **at output change** • send only 0 at output change • send only 1 at output change • send only 0 at input telegram • send only 1 at input telegram	Setting the Sending Condition: **At input telegram:** The output value is sent with every input telegram, regardless of whether the output value has changed or not **At output change:** The output value is only sent if the output has changed. **Send only 1 at output change:** The output value is only sent if the output changes and the logic has the corresponding value (0/1). **Send only 0/1 at input telegram:** Output value is sent with each input telegram if the logic has the corresponding value (0/1)
Output	• **normal** • inverse	Defines how the output object is sent.
Internal Input A/B	• **not active** • normal • inverse	Activation of an internal object as logic input
Object number	0-99 **[0]**	Selection of the internal object - **Attention:** Only bit values are evaluated correctly!
External Input C-F	• **not active** • normal • inverse	Activation of an external object as logic input
Initialize logic input with… after reset	• **Value 0** • Value 1	Setting of a pre-assignment of the logic after a bus voltage recovery

Table 31: Settings – Logic

The following table shows the associated communication objects:

Number	Name	Length	Usage
110	Logic 1 – Input C	1 Bit	External input for the logic function
111	Logic 1 – Input D	1 Bit	External input for the logic function
112	Logic 1 – Input E	1 Bit	External input for the logic function
113	Logic 1 – Input F	1 Bit	External input for the logic function
114	Logic 1 – Output 1	1 Bit/ 2 Bit/ 1 Byte	Output of the logic function. DPT depending on the output object parameter

Table 32: Communication objects – Logic

5 Index

5.1 Register of illustrations

5.2 List of tables

6 Attachment

6.1 Statutory requirements

The above-described devices must not be used with devices, which serve directly or indirectly the purpose of human, health- or lifesaving. Further the devices must not be used if their usage can occur danger for humans, animals or material assets.
Do not let the packaging lying around careless, plastic foil/ -bags etc. can be a dangerous toy for kids.

6.2 Disposal routine

Do not throw the waste equipment in the household rubbish. The device contains electrical devices, which must be disposed as electronic scrap. The casing contains of recyclable synthetic material.

6.3 Assemblage

Danger to life from electric current!

The device may only be installed and connected by qualified electricians. Observe the country-specific regulations and the applicable KNX directives.

The devices are approved for operation in the EU and bear the CE mark. Use in the USA and Canada is not permitted.

6.4 History

V1.0   First Version of Technical Manual   DB V4.2   07/2021