



IS 3360



IS 3360 MX Highbay



IS 3180



IS 345



IS 345 MX Highbay



Light Sensor Dual



**IS 3360 / IS 3360 MX Highbay**  
**IS 345 / IS 345 MX Highbay**  
**IS 3180**  
**HF 3360**  
**Light Sensor Dual**

**Application Description**

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## 1 Detector functions

The sensors from the 3000-series consist of motion detectors (passive infrared or high-frequency technology) with integrated light-level sensor. In addition to the motion detectors, the 3000-series also features a dual light sensor (consisting of two light-level sensors). All detectors are provided with an infrared communication interface via IR remote control or the Steinel SmartRemote for starting the programming mode and further settings as well as an LED for indicating feedback.

The following detectors are available:

### IS 3360 and IS 3360 MX Highbay:

The PIR presence detector comprises three passive infrared (PIR) motion detectors with integrated light-level sensor, integrated IR receiver and integrated red light-emitting diode (LED) for indicating a movement detected in test mode.

### IS 345, IS 345 MX Highbay and IS 3180:

The PIR motion detector comprises two passive infrared (PIR) motion detectors with integrated light-level sensor, integrated IR receiver and integrated red light-emitting diode (LED) for indicating a movement detected in test mode.

### HF 3360:

The HF motion detector comprises a high-frequency (HF) motion detector with integrated light-level sensor, integrated IR receiver and integrated red light-emitting diode (LED) for indicating a movement detected in test mode. The HF motion detector for ceiling mounting is distinguished from a PIR detector (PIR – Passive Infrared) by its

- better ability to detect radial movements,
- ability to detect movement through glass, wood or thin walls,
- immunity to heat sources in the detection zone.

### Light Sensor Dual:

The Light Sensor Dual comprises two light-level sensors for measuring diffuse and directed light in the room. The Light Sensor Dual for ceiling mounting differs from other sensors in the 3000 series by its particular design. The detector is capable of performing the following functions:

- Diffuse and directed light measurement
- Controlling lighting controller with light-level control / constant-lighting control

The following settings must be selected under the general settings:

- Selection of sensor to define the detector used

The detectors can take on the following functions which can be activated or deactivated in the general settings:

## 1.1 Functions

- Output, light outputs 1-2 – lighting switched ON and OFF for up to 2 light outputs
- Output, constant-lighting control 1-2 – constant-lighting control for up to 2 light outputs in addition to the 2 switched light outputs
- Output, basic illumination – switches to a basic level of illumination when persons are absent
- Presence output – switching in response to presence irrespective of light level
- Absence output – switching in response to absence irrespective of ambient light level
- HVAC output – switching in relation to presence
- Photo-cell controller output – switching in relation to light level without taking account of presence
- Light-level output – output of the light level measured
- Sabotage output – cyclical sending of a telegram (heartbeat)
- Output, logic gate – switching or scene selection on the basis of the state of one or more input objects

The function to be used (activated) is defined via the "General settings" parameter window using the Engineering Tool Software (ETS) version ETS 4.0 and higher.

## 1.2 Light output

The sensor has two independent light outputs. Each light output can be configured with an individual switching threshold. There is a choice of several data-point types for the output object. Depending on the output object's data-point type, input objects can be used to permit any appropriate overriding. Full and semi-automatic operating mode can be selected for the light output. The stay-ON time can be set to a fixed period or the IQ mode can be configured. Reach and sensor sensitivity can be set to suit any situation. A basic level of illumination can also be selected for each light output. A slave input object is available for each output to extend reach.

It is possible to select whether the light output uses motion-detector logic or presence-detector logic. With motion-detector logic, the sensor does not switch OFF light in relation to incidental daylight. With presence-detector logic, lighting is switched OFF if the daylight component provides a sufficient level of light. Presence-detector logic is configured with an offset. If the light level measured exceeds the "switching threshold + offset switching threshold OFF" value, the stay-ON time is not re-triggered when presence is detected. The output switches OFF after the stay-ON time elapses.

In example 1, presence is detected at time point  $t_1$  and the light output switches ON. From now on, presence is detected all the time. The change in light level is determined at time  $t_2$ . Light level continues to increase from  $t_3$ . The light level measured exceeds the "switching threshold + offset switching threshold OFF" value as from  $t_4$ . The stay-ON time is only no longer re-triggered from time  $t_5$ . Here, the light level measured is greater than "switching threshold + offset switching threshold OFF + offset". At time  $t_6$ , stay-ON time has elapsed and the light output is switched OFF.

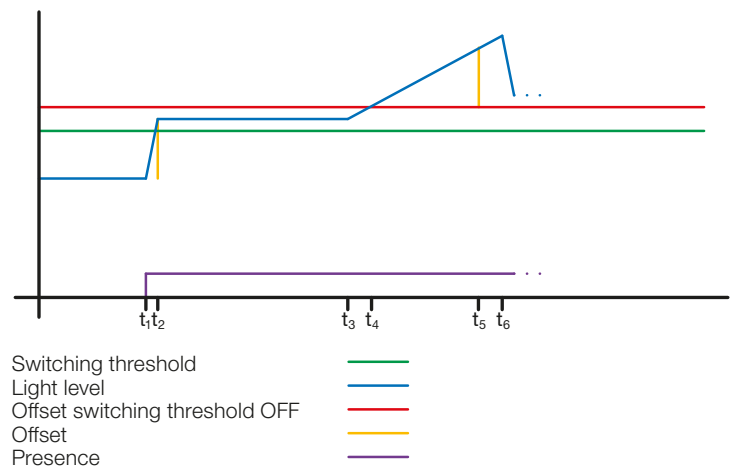


Figure 1: Example 1, switching OFF on the basis of light level

In example 2, light output 1 switches ON first ( $t_1$ ). The change in light level is determined at  $t_2$ . The light level measured then falls below the switching threshold of light output 2 and switches light output 2 ON ( $t_3$ ). The change in light level is determined at  $t_4$  and, with the change in light level of light output 1, is added to an offset. As of time  $t_5$ , the light level measured exceeds the "switching threshold light output 2 + offset switching threshold light output 2 OFF + offset" value and the stay-ON time for light output 2 is no longer re-triggered. The light output 2 switches OFF after the stay-ON time elapses ( $t_6$ ). The change in light level is determined at  $t_7$  and added to the offset. As of time  $t_8$ , the light level measured exceeds the "switching threshold light output 1 + offset switching threshold light output 1 OFF + offset" value and the stay-ON time for light output 1 is no longer re-triggered. The light output 1 switches OFF after the stay-ON time elapses ( $t_9$ ).

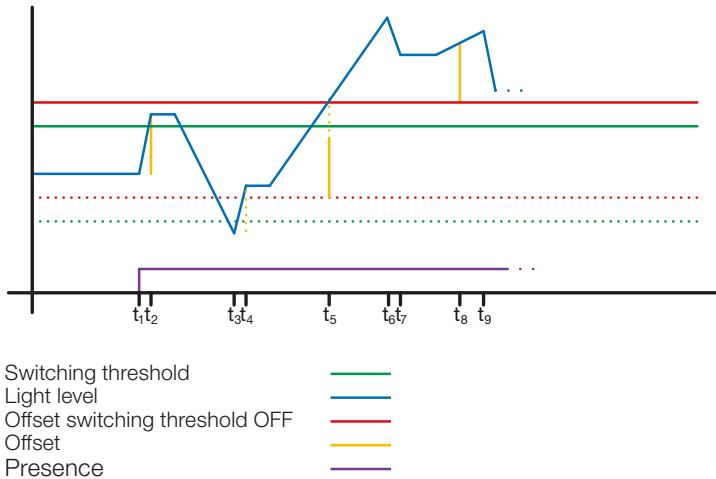


Figure 2: Example 2, switching OFF on the basis of light level

### 1.3 Constant-lighting controller output

Constant-lighting control always approaches the light-level setting from above to select the level of dimming. If constant-lighting control is active and below the setting, the setting must first be exceeded. The maximum deviation from the setting is only above the setting. Consequently, the permissible range in which control is corrected is only ever between the setting and the setting plus maximum deviation. This is illustrated in Figure "Constant-lighting control range corrected".

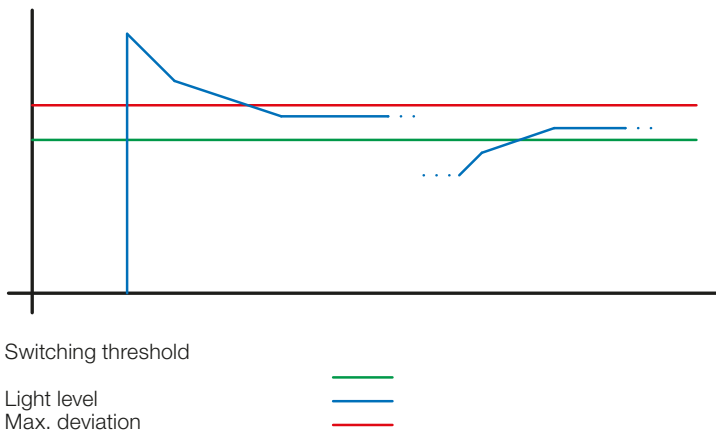


Figure 3: Constant-lighting control range corrected

The starting value for constant-lighting control can be configured as a fixed or dynamic value. When dynamic starting level is selected, the sensor tries to switch lighting ON as closely as possible to the light-level setting.

**Note:** the Teach cycle must take place before the dynamic starting value can be used. The fixed level is used until calibration has taken place.

A number of parameters can be configured in two different ways for switching between day/night operating mode.

#### 1.3.1 Calibration

The accuracy of constant-lighting control can be enhanced by including the current dimming level in sensing during the teach-in process. During the teach-in process, it is important to ensure that the maximum daylight component does not exceed 20lux.

After the teach-in process for the light-level setting, lighting comes on at 100% output and reduces to 0% in 10% steps.

As better compensation for daylight, a correction factor is used which provides the basis for calculating a correction intensity:

$$\text{Correction intensity} = \frac{\text{current dimming level} - \text{dimming level on teaching}}{\text{Correction factor}}$$

$$\text{New light level} = \text{current light level} \times (1 + \text{correction intensity})$$

**Note:** If the light-level setting is changed after calibration, calibration must be repeated for the new light-level setting.

#### 1.3.2 Calibration procedure

- 1) Deactivate (disable) constant-lighting control and wait for lighting to warm up (light level measured at lux meter remains constant)
- 2) Manually dim lighting until the chosen light level setting is reached.
- 3) Send a "1" to the teach communication object.
- 4) The sensor starts calibrating. Duration approx. 110 seconds

#### 1.3.3 Control speed

The control speed can be selected via the "Send new dimming level to" and "Max. dimming increment" parameters. The maximum increment is used for

$$\text{Current light level} \geq \text{light level target value} + \text{max. deviation} \times 2$$

or

$$\text{Current light level} \leq \text{light level target value} - \text{max. deviation.}$$

If the current light level is closer to the light-level setting, the increment is halved. The increment is set to a minimum at the 100% and 0% limits.

#### 1.3.4 Second output

A second output can be activated for constant-lighting control. The second output is controlled in relation to an adjustable offset to the first output. On switching ON, the second output is sent directly with value "Dimming Level Output 1 + Offset". The level is limited to 100%. If the first light output is set to 100%, a negative offset is selected and the current target level is not reached, the second output gradually increases light level to max. 100%. If the light output is at 0.5% or the minimum level, a positive offset is selected and the target light level is exceeded, the second output dims down to at least the level of the first output.

### 1.4 Basic illumination output

A basic level of illumination is available for the light outputs and constant-lighting control. The following settings are possible here:

- **Time-limited:** at the end of stay-ON time, the output switches lighting OFF and checks the level of light. As soon as the target level or threshold level is below the selected light level, basic illumination switches ON for the parameterised time. If the light level measured is above it, lighting stays OFF.
- **Dependent on light level:** if the sensor does not detect any presence and the light level measured is below the selected target level or threshold level, basic illumination is switched ON.
- **Dimming (for light output only):** at the end of stay-ON time, the sensor gradually dims lighting down to the point at which it switches OFF.
- **Always:** basic illumination is always active when the output is not switched ON.

The output switches back ON when basic illumination is active and the sensor is detecting presence.

**Note:** If light output is not in daylight mode and basic illumination has been parameterised to "always", the selected threshold level is irrelevant. The output then always switches between the activated state and basic illumination. The output switches ON whenever presence is detected during basic illumination.

### 1.5 Presence output

The presence output works irrespective of light level. A switch-ON delay and a stay-ON time can be configured. It is possible to send the current status cyclically in relation to state.

**Note:** The presence output can be used for an interconnected master/slave configuration. The slave presence output must be linked with the master's input object. Attention must be paid to the settings of the slave input at the master and the sending behaviour of the slave output.

### 1.6 Absence output

In the same way as the presence output, the absence output works irrespective of light level. A switch-ON delay and a stay-ON time can be configured. In this case, stay-ON time starts running as soon as someone re-enters the detection zone. It is possible to send the current status cyclically in relation to state.

### 1.7 HVAC output

The HVAC output works irrespective of light level and is only activated in response to a detected movement. A switch-ON delay and a stay-ON time can be configured.

### 1.8 Photo-cell controller output

The photo-cell controller output only works in relation to the light level measured and irrespectively of whether persons are present. If the level measured is below the selected threshold, the output is switched ON.

### 1.9 Light-level output

The light-level measurement output sends the light level measured by the sensor to the bus either after the light level changes by a defined minimum amount or cyclically after a defined interval.

### 1.10 Sabotage output

The sabotage output serves as a heartbeat in order to take note of detector failure or manipulation, e.g. detachment of the sensor head, on the basis of the absent interval telegram.

### 1.11 Logic gates

Up to two logic gates can be configured with up to four inputs. Possible logic operations are AND, OR and EXCLUSIVE OR. The output signal can take the form of a switching command or value. The switching command or value can be configured in relation to the logical state. In the event of a change, change to logical 1 or change to logical 0, the output can send the current status to the KNX bus.

## 2 Interconnection

A slave input is available for all outputs using the presence status. Own presence output is the exception here. The input can be operated in two different ways.

1. An ON and OFF signal is expected. In the ON state, the master keeps triggering stay-ON time until its own presence status is OFF and the slave input has the value OFF.
2. Only an ON signal is expected. In the ON state, the master re-triggers stay-ON time for every ON signal.

Master/slave interconnection for

- Light output
- Constant-lighting control
- HVAC

## 3 Fully and semi-automatic

A parameter can be used for setting the presence detector to work in fully automatic or semi-automatic mode. The operating mode for the light outputs and constant-lighting control can be selected via the "Light output mode" and "Constant-lighting control mode" parameters respectively.

When operating as a fully automatic detector, lighting is automatically switched ON when persons are present (depending whether or not it is set in relation to light level), and automatically switched OFF when no persons are present and there is sufficient ambient light.

When operating as a "semi-automatic detector", lighting must be switched ON manually. However, it is either switched OFF automatically in relation to light level (depending on setting) or switched OFF when no person is present any more in the sensor system's detection zone.

## 4 Day/night switchover

Via the "Day/night switchover" parameter, the light outputs 1-2 as well as constant-lighting control provide the capability of selecting different settings for lighting ON and OFF levels, stay-ON times, light levels, offset, switch-OFF behaviour and basic illumination. There is an input object for each light output and for constant-lighting control which can be switched over to "night mode".

## 5 Remote control, programming mode and feedback LED

### 5.1 Remote control

The remote-control functions can be activated or deactivated under General settings.

### 5.2 Remote control & programming mode

The sensors from the 3000-series can be put into KNX programming mode via the IR remote control or Smart Remote and the SmartRemote app.

### 5.3 Programming mode via button

By way of alternative to activating the programming mode, a button is provided on the back of the detector for programming the physical KNX address using the ETS.



## 5.4 Feedback LED

Function	Colour	Type	Remark
Non-programmed sensor on bus voltage	Red	Flashing	in response to movement
Initialisation of the sensor after a download or restoration of the bus voltage (already configured)	Red	Flashing	Once a second
Remote control command accepted	Red	Rapidly flashes	1x
KNX programming mode	Red	ON	
Normal mode		OFF	

## 6 Changing values via bus

Some of the setting parameters can be changed via the bus. For the light outputs and constant-lighting control, these are the switching thresholds or target light levels and time settings. The time settings for presence, absence and HVAC.

## 7 Behaviour after a bus voltage failure and return as well as on restarting and downloading

In the event of a bus voltage failure, the 3000-series detectors also cease to operate as their electronic system is powered by the bus voltage. Prior to a bus voltage failure, all user entries are saved (light levels, stay-ON times, switching thresholds, hystereses and disabled objects) so they can be restored automatically when the bus voltage returns after bus voltage failure.

Once the bus voltage returns and after completely or partially up-loading the product database to the detectors via ETS (i.e. after restarting), the detector is disabled for between 10 and 40 seconds. Lighting is switched ON at the start of the disabling time and switched OFF for approx. 3 seconds at the end of the disabling time. From then on, the detector is ready for operation and sends the latest telegrams from the outputs.

## 8 Behaviour after initial start-up and unloading

If a brand-new 3000-series detector is being installed, the integrated LED will light up every time movement is detected until such time as the sensor is configured. This shows that bus voltage is being applied to the detector and that it is ready for programming. If the motion detector's application programme is "unloaded" via ETS (unload), the detector indicates its status by LED in just the same way as it does after initial start-up.

## 9 Communication objects

All of the communication objects listed below are available to the presence detector. Which of these are visible and capable of being linked with group addresses are determined both via the "Sensor selected" parameter setting in the "General settings" parameter window as well as via further parameter settings for chosen functions and communication objects.

### List of communication objects

Object	Object name	Function	DPT	Flag
1	Status	Status	5,001	CRT
2	HF boost factor (HF sensor only)	0...255	5,005	CWT
3	Photo-cell controller output	ON/OFF	1,001	CRT
4	Twilight threshold	2 to 1000lux	9,004	CRWT
5	Disable photo-cell controller	ON/OFF	1,001	CWT

Object	Object name	Function	DPT	Flag
6	Photo-cell controller disable status	ON/OFF	1,001	CWT
7	Sabotage	ON/OFF	1,001	CRT
8	8-bit scene output	Select/save	18,001	CRT
9	Light level measured	Lux	9,004	CRWT
10	Spot light level measured (DUAL light sensor only)	2..1024 lux	9,004	CRWT
11	Disable presence output	ON/OFF	1,001	CWT
12	Presence output disable status	ON/OFF	1,001	CRT
13	Presence output presence	ON/OFF	1,001	CRT
14	Presence output stay-ON time	1 s...65535 s	7,005	CRWT
15	Presence output switch-ON delay	0 s...10 s	7,005	CRWT
16	Disable absence output	ON/OFF	1,001	CWT
17	Absence output disabling status	ON/OFF	1,001	CRT
18	Absence output: absence	ON/OFF	1,001	CRT
19	Absence output: stay-ON time	1 s...65535 s	7,005	CRWT
20	Absence output: switch-ON delay	1 s...10 s	7,005	CRWT
21	Light output 1 switch	ON/OFF	1,001	CRWT
22	Light output 1 switch input	ON/OFF	1,001	CWT
23	Light output 1 dimming level	0...100%	5,001	CRT
24	Light output 1 dim input	Brighter/darker	3,007	CWT
25	Light output 1 input dimming level	0...100%	5,001	CWT
26	Light output 1 scene	Activate scene	18,001	CRT
27	Light output 1 slave input	ON/OFF	1,001	CWT
28	Light output 1, switching threshold	2 to 1000lux	9,004	CRWT
29	Light output 1 stay-ON time	10 s...65535 s	7,005	CRWT
30	Light output 1 external light level	Lux	9,004	CWT
31	Light output 1 night input	ON/OFF	1,001	CWT
32	Light output 1 disable	ON/OFF	1,001	CWT
33	Light output 1 disable status	ON/OFF	1,001	CRT
34	Light output 2 switch	ON/OFF	1,001	CRWT
35	Light output 2 switch input	ON/OFF	1,001	CWT
36	Light output 2 dimming level	0...100%	5,001	CRT
37	Light output 2 dim input	Brighter/darker	3,007	CWT
38	Light output 2 input dimming level	0...100%	5,001	CWT
39	Light output 2 scene	Activate scene	18,001	CRT
40	Light output 2 slave input	ON/OFF	1,001	CWT
41	Light output 2 switching threshold	2 to 1000lux	9,004	CRWT
42	Light output 2 stay-ON time	10 s...65535 s	7,005	CRWT

Object	Object name	Function	DPT	Flag
43	Light output 2 external light level	Lux	9,004	CWT
44	Light output 2 night input	ON/OFF	1,001	CWT
45	Light output 2 disable	ON/OFF	1,001	CWT
46	Light output 2 disable status	ON/OFF	1,001	CRT
47	Switch HVAC	ON/OFF	1,001	CRT
48	HVAC stay-ON time	10 s ... 65535 s	7,005	CRWT
49	HVAC switch-ON delay	0 s ... 65535 s	7,005	CRWT
50	HVAC slave input	ON/OFF	1,001	CWT
51	Disable HVAC	ON/OFF	1,001	CWT
52	HVAC disabling status	ON/OFF	1,001	CRT
53	Logic gate 1 input 1	ON/OFF	1,001	CWT
54	Logic gate 1 input 2	ON/OFF	1,001	CWT
55	Logic gate 1 input 3	ON/OFF	1,001	CWT
56	Logic gate 1 input 4	ON/OFF	1,001	CWT
57	Logic gate 1 output	ON/OFF	1,001	CRT
58	Logic gate 1 output	0...255	5,001	CRT
59	Logic gate 1 disable	ON/OFF	1,001	CWT
60	Logic gate 1 disable status	ON/OFF	1,001	CRT
61	Logic gate 2 input 1	ON/OFF	1,001	CWT
62	Logic gate 2 input 2	ON/OFF	1,001	CWT
63	Logic gate 2 input 3	ON/OFF	1,001	CWT
64	Logic gate 2 input 4	ON/OFF	1,001	CWT
65	Logic gate 2 output	ON/OFF	1,001	CRT
66	Logic gate 2 output	0...255	5,001	CRT
67	Logic gate 2 disable	ON/OFF	1,001	CWT
68	Logic gate 2 disable status	ON/OFF	1,001	CRT
69	Constant-lighting control 1, switch input	ON/OFF	1,001	CRWT
70	Constant-lighting control, dimming level 1	0 % ... 100 %	5,001	CRT
71	Constant-lighting control light-level setting	2 - 1000 lux	9,004	CRWT
72	Constant-lighting control, stay-ON time	10 s...65535 s	7,005	CRWT
73	Constant-lighting control switch input 1	ON/OFF	1,001	CWT
74	Constant-lighting control dim input 1	Brighter/darker	3,007	CWT
75	Constant-lighting control Teach	ON/OFF	1,001	CWT
76	Constant-lighting control, switch 2	ON/OFF	1,001	CRWT
77	Constant-lighting control, dimming level 2	0%...100%	5,001	CRT
78	Constant-lighting control switch input 2	ON/OFF	1,001	CWT

Object	Object name	Function	DPT	Flag
79	Constant-lighting control dim input 2	Brighter/darker	3,007	CWT
80	Constant-lighting control slave input	ON/OFF	1,001	CWT
81	Constant-lighting control external light level	Lux	9,004	CWT
82	Constant-lighting control external light level (DUAL light sensor only)	Lux	9,004	CWT
83	Constant-lighting control night input	ON/OFF	1,001	CWT
84	Disable constant-lighting control	ON/OFF	1,001	CWT
85	Constant-lighting control disable status	ON/OFF	1,001	CRT

## 9.1 Description of communication object status

Object	Description
Status	<p>This object is always available.</p> <p>This object feeds back whether the sensor selected in the Sensor selected parameter in the general settings matches the sensor fitted. If they do match, the relevant sensor type is returned; if the combination does not match, a fault is returned and the sensor will not work.</p> <p>Product and associated hex value:</p> <p><b>Fault 0x00</b>  <b>IS 3360 0x01</b>  <b>IS 3180 0x02</b>  <b>IS 345 0x03</b>  <b>HF 3360 0x04</b>  <b>IS 345 MX 0x05</b>  <b>Light sensor Dual 0x06</b>  <b>IS 3360 MX 0x07</b></p>

## 9.2 Description of communication object HF 3360 boost factor

Object	Description
Boost factor	<p>This object is always available when the HF 3360 motion detector is selected.</p> <p>This object is used for setting the boost factor for HF 3360 sensor reach.</p>

## 9.3 Description of communication objects light output X (1..2)

Object	Description
Switch light output X	<p>This object is always available when the light output is activated.</p> <p>Light output X is switched with this object.</p> <p>The group address linked with this object is used for sending the switching command via bus to the actuator, with it also being possible to request the switching status from the detector.</p>
Light output X dimming level	<p>This object is only visible if the "Object light output" parameter is set to "Dimming level".</p> <p>The group address linked with this object is used for sending the dimming value via bus to the actuator, with it also being possible to request this from the detector.</p>
Light output X scene	<p>This object is only visible if the "Object light output" parameter is set to "Scene".</p> <p>The group address linked with this object is used for sending the scene via bus to the actuator, with it also being possible to request this from the detector.</p>
Light output X switching threshold	<p>This object is always available when the light output is activated.</p> <p>The group address linked with this object is used for receiving the switching threshold (in lux) for the light output via bus; this threshold can be requested at any time.</p>

Object	Description
Light output X external light-level	This object is only visible if the "Light-level sensor ON" parameter is set to "External". The group address linked with this object is used for receiving the light level measured by a light-level sensor and for comparing it with the threshold.
Light output X stay-ON time	This object is always available when the light output is activated. The group address linked with this object is used for receiving the stay-ON time for the light output X via bus. Any value received outside the permissible range is rejected. This object can also be used at any time for requesting the current stay-ON time.
Disable light output X	This object is only visible if the "Disable output" parameter is not set to "No". The "Disable output" parameter is also used for selecting whether to perform disabling on receiving a value of "1" or on receiving a value of "0". When presence output is disabled, the output sends no telegrams. Except when manually overridden via the input objects.
Light output X disabling status	This object is only visible if the "Disable output" parameter is not set to "No". The group address linked with this object is used for automatically sending the disabling status via bus after any change, with it being possible to request the disabling status at any time.
Light output X switch input	This object is always available when the light output is activated. If the "Light output mode" parameter is set to "Automatically ON and OFF" and a telegram is received via this object, light X will be disabled because the room user wishes to switch light ON or OFF permanently. It remains disabled until either a telegram for enabling is received via the "Disable light output X" object or until the detector establishes that no person is left in the room who re-enables light output X and switches light output X OFF. If the "Light output mode" parameter is set to "Automatically OFF" and a telegram "1" is received via this object, light output X will be switched ON for the stay-ON time selected. Any presence detected in the activated state will re-trigger the stay-ON time. If a "0" is received, light output X will switch OFF without disabling.
Light output X Dim input	This object is only visible if the "Object light output" parameter is set to "Dimming level". If a telegram is received via this object, light output X will be disabled because the room user wishes to permanently dim the light output to a different level. It remains disabled until either a telegram for enabling is received via the "Disable light output X" object or until the detector establishes that no person is left in the room who re-enables light output X and switches light output X OFF. On enabling, the light output X sends its set value via the bus.
Light output X input dimming level	This object is only visible if the "Object light output" parameter is set to "Dimming level". If a telegram is received via this object, light output X will be disabled because the room user wishes to permanently dim the light output to a different level. It remains disabled until either a telegram for enabling is received via the "Disable light output X" object or until the detector establishes that no person is left in the room who re-enables light output X and switches light output X OFF. On enabling, the light output X sends its set value via the bus.
Light output X slave input	This object is only visible if the "Slave input" parameter is not set to "inactive". The group address linked with this object is used for receiving the presence status of the slave via the bus and, if applicable, linked with the presence status of further slaves as well as that of the sensor via a logical OR function and evaluated as total presence for light output X.
Light output X night input	This object is only visible if the "Day/night switchover" parameter is not set to "inactive". The group address linked with this object is used for receiving switchover between day and night. Setting a "0" activates the parameters for daytime operation. Setting a "1" activates the parameters for night-time operation.

#### 9.4 Description of constant-lighting control communication objects

Object	Description
Constant-lighting control Switch 1	This object is always available when constant-lighting control is activated. Depending on the "Send switching object" parameter, the group address linked with this object sends the switching command via bus to the actuator, with it also being possible to request the switching status from the detector.
Constant-lighting control Dimming level 1	This object is always available when constant-lighting control is activated. The group address linked with this object is used for sending the dimming value via bus to the actuator, with it also being possible to request this from the detector.
Constant-lighting control Switch 2	This object is only visible if the "2nd output" parameter is set to "active". Depending on the "Send switching object" parameter, the group address linked with this object sends the switching command via bus to the actuator, with it also being possible to request the switching status from the detector.
Constant-lighting control Dimming level 2	This object is only visible if the "2nd output" parameter is set to "active". The group address linked with this object is used for sending the dimming value via bus to the actuator, with it also being possible to request this from the detector.
Constant-lighting control Light-level setting	This object is always available when constant-lighting control is activated. The group address linked with this object is used for receiving the constant lighting-level control setting (in lux) via bus; this setting can be requested at any time.
Constant-lighting control External light level	This object is only visible if the "Light-level sensor" parameter is set to "External". The group address linked with this object is used for receiving the light level measured by a light-level sensor and for comparing it with a selected setting.
Constant-lighting control Stay-ON time	This object is always available when constant-lighting control is activated. The group address linked with this object is used for receiving the stay-ON time for constant-lighting control via bus. Any value received outside the permissible range is rejected. This object can also be used at any time for requesting the current stay-ON time.
Constant-lighting control Disable	This object is only visible if the "Disable output" parameter is not set to "No". The "Disable output" parameter is also used for selecting whether to perform disabling on receiving a value of "1" or on receiving a value of "0". If the output is disabled, it can be manually overridden via the input objects.
Constant-lighting control Disabling status	This object is only visible if the "Disable output" parameter is not set to "No". The group address linked with this object is used for automatically sending the disabling status via bus after any change, with it being possible to request the disabling status at any time.
Constant-lighting control Switch input 1	This object is always available when constant-lighting control is activated. If the "Constant-lighting control mode" parameter is set to "Automatically ON and OFF" and a telegram is received via this object, constant lighting control will be disabled because the room user wishes to switch constant-lighting control light ON or OFF permanently. It remains disabled until either the "Disable constant-lighting control" object delivers a telegram for enabling or until the detector establishes that no person is left in the room who re-enables and switches OFF constant-lighting control. If the "Constant-lighting control mode" parameter is set to "Automatically OFF" and a telegram "1" is received via this object, constant lighting control will be switched ON for the stay-ON time selected. Any presence detected in the activated state will re-trigger the stay-ON time. If a "0" is received, constant-lighting control will switch OFF without disabling.



Object	Description
Constant-lighting control Dim input 1	This object is always available when constant-lighting control is activated. If a telegram is received via this object, and depending on the "Dim light-level control at input" parameter setting, constant-lighting control is either disabled with the relevant output being dimmed, or light-level control is not disabled and the constant-lighting control setting is increased or decreased accordingly, automatically resulting in a lighter or darker dimming of the lighting. If the detector establishes that nobody remains in the room, the altered light-level setting is returned to its original value and constant-lighting control is switched OFF.
Constant-lighting control Switch input 2	This object is only visible if the "2nd output" parameter is set to "active". If the "Constant-lighting control mode" parameter is set to "Automatically ON and OFF" and a telegram is received via this object, constant lighting control will be disabled because the room user wishes to switch constant-lighting control light ON or OFF permanently. It remains disabled until either the "Disable constant-lighting control" object delivers a telegram for enabling or until the detector establishes that no person is left in the room who re-enables and switches OFF constant-lighting control. If the "Constant-lighting control mode" parameter is set to "Automatically OFF" and a telegram "1" is received via this object, constant lighting control will be switched ON for the stay-ON time selected. Any presence detected in the activated state will re-trigger the stay-ON time. If a "0" is received, constant-lighting control will switch OFF without disabling.
Constant-lighting control Dim input 2	This object is only visible if the "2nd output" parameter is set to "active". If a telegram is received via this object, and depending on the "Dim light-level control at input" parameter setting, constant-lighting control is either disabled with the relevant output being dimmed, or light-level control is not disabled and the constant-lighting control setting is increased or decreased accordingly, automatically resulting in a lighter or darker dimming of the lighting. If the detector establishes that nobody remains in the room, the altered light-level setting is returned to its original value and constant-lighting control is switched OFF.
Constant-lighting control Teach-in	This object is always available when constant-lighting control is activated. The group address linked with this object is used for carrying out artificial light calibration with a "1" telegram.
Constant-lighting control Slave input	This object is only visible if the "Slave input" parameter is not set to "inactive". The group address linked with this object is used for receiving the presence status of the slave via the bus and, if applicable, linked with the presence status of further slaves as well as that of the sensor via a logical OR function and evaluated as total presence for constant-lighting control.
Constant-lighting control Night input	This object is only visible if the "Day/night switchover" parameter is not set to "inactive". The group address linked with this object is used for receiving switchover between day and night. Setting a "0" activates the parameters for daytime operation. Setting a "1" activates the parameters for night-time operation.

## 9.5 Description of presence output communication objects

Object	Description
Presence output Presence	This object is always available when presence output is activated. The group address linked with this object is sent to the actuator via bus, indicating whether presence of persons have been detected (output = "ON") or not (output = "OFF"); presence status can be requested from the detector at any time.
Presence output Stay-ON time	This object is always available when presence output is activated. The group address linked with this object is used for receiving the stay-ON time for the presence output via bus. Any value received outside the permissible range is rejected. This object can also be used at any time for requesting the current stay-ON time.
Presence output Switch-ON delay	This object is always available when presence output is activated. The group address linked with this object is used for receiving the switch-ON delay for the presence output via bus. Any value received outside the permissible range is rejected. This object can also be used at any time for requesting the current stay-ON time.
Presence output Disable	This object is only visible if the "Disable output" parameter is not set to "No". The "Disable output" parameter is also used for selecting whether to perform disabling on receiving a value of "1" or on receiving a value of "0". When presence output is disabled, the output sends no telegrams.
Presence output Disabling status	This object is only visible if the "Disable output" parameter is not set to "No". The group address linked with this object is used for automatically sending the disabling status via bus after any change, with it being possible to request the disabling status at any time.

## 9.6 Description of absence output communication objects

Object	Description
Absence output: absence	This object is always available when the absence output is activated. The group address linked with this object is sent to the actuator via bus, indicating whether absence of persons have been detected (output = "ON") or not (output = "OFF"); absence status can be requested from the detector at any time.
Absence output: stay-ON time	This object is always available when the absence output is activated. The group address linked with this object is used for receiving the stay-ON time for the absence output via bus. Any value received outside the permissible range is rejected. This object can also be used at any time for requesting the current stay-ON time.
Absence output: switch-ON delay	This object is always available when the absence output is activated. The group address linked with this object is used for receiving the switch-ON delay for the absence output via bus. Any value received outside the permissible range is rejected. This object can also be used at any time for requesting the current stay-ON time.
Absence output: disable	This object is only visible if the "Disable output" parameter is not set to "No". The "Disable output" parameter is also used for selecting whether to perform disabling on receiving a value of "1" or on receiving a value of "0". When presence output is disabled, the output sends no telegrams.
Absence output: disable status	This object is only visible if the "Disable output" parameter is not set to "No". The group address linked with this object is used for automatically sending the disabling status via bus after any change, with it being possible to request the disabling status at any time.

## 9.7 Description of HVAC communication objects

Object	Description
Switch HVAC	This object is always available when HVAC output is activated. This object must be linked with the presence input of the room-temperature regulator used for switching the room mode between "comfort mode" and "energy-saving mode". The group address linked with this object is used for sending the HVAC status via bus to the actuator, with it also being possible to request this from the detector.
HVAC stay-ON time	This object is always available when HVAC output is activated. The group address linked with this object is used for receiving the stay-ON time for the HVAC output via bus. Any value received outside the permissible range is rejected. This object can also be used at any time for requesting the current stay-ON time.
HVAC switch-ON delay	This object is always available when HVAC output is activated. The group address linked with this object is used for receiving the switch-ON delay for the HVAC output via bus. Any value received outside the permissible range is rejected. This object can also be used at any time for requesting the current stay-ON time.
Disable HVAC	This object is always available when the HVAC output is activated and if the "Disable output" parameter is not set to "No". The "Disable output" parameter is also used for selecting whether to perform disabling on receiving a value of "1" or on receiving a value of "0".
HVAC disabling status	This object is only visible if the "Disable output" parameter is not set to "No". The group address linked with this object is used for automatically sending the disabling status via bus after any change, with it being possible to request the disabling status at any time.
HVAC slave input	This object is only visible if the "Slave input" parameter is not set to "inactive". The group address linked with this object is used for receiving the presence status of the slave via the bus and, if applicable, linked with the presence status of further slaves as well as that of the sensor via a logical OR function and evaluated as total presence for HVAC control.

## 9.8 Description of photo-cell controller communication objects

Object	Description
Photo-cell controller output	This object is always available when photo-cell controller outputs are activated. The group address linked with this object is sent to the actuator via bus if the light level measured is below the twilight threshold selected (output = "ON") or not (output = "OFF"); photo-cell controller status can be requested from the detector at any time.
Twilight threshold	This object is always available when photo-cell controller is activated. The group address linked with this object is used for receiving the switching threshold (in lux) for the light output via bus; this threshold can be requested at any time.
Disable photo-cell controller	This object is always available when the photo-cell controller is activated and if the "Disable output" parameter is not set to "No". The "Disable output" parameter is also used for selecting whether to perform disabling on receiving a value of "1" or on receiving a value of "0".
Photo-cell controller disable status	This object is only visible if the "Disable output" parameter is not set to "No". The group address linked with this object is used for automatically sending the disabling status via bus after any change, with it being possible to request the disabling status at any time.

## 9.9 Description of light level communication objects

Object	Description
Light level measured	This object is always available when light-level output is activated. The group address linked with this object is used for sending the internal light level measured by the detector via bus, with it also being possible to request the light level from the detector.
Spot light level measured (DUAL light sensor only)	This object is always available when light-level output is activated. The group address linked with this object is used for sending the internal light level measured by the detector (DUAL light sensor spot measurement) via bus, with it also being possible to request the light level from the detector.

## 9.10 Description of sabotage communication objects

Object	Description
Sabotage	This object is always available when sabotage output is activated. An ON or OFF telegram is sent cyclically to the group address linked to this object while the sensor is not disconnected from the bus or if it is faulty.

## 9.11 Description of logic gate X (1..2) communication objects

Object	Description
Logic gate X Output 1 bit	This object is only visible if the "Logic gate" parameter is set to "active" in the "General parameters" parameter window and the "Logic gate X type output object" is set to "ON/OFF". The group address linked with this object is used for sending the output state via bus to the actuator, with it also being possible to request this from the detector.
Logic gate X Output 1 byte	This object is only visible if the "Logic gate" parameter is set to "active" in the "General parameters" parameter window and the "Logic gate X type output object" is set to "Level". The group address linked with this object is used for sending the output value via bus to the actuator, with it also being possible to request this from the detector.
Logic gate X Input 1	This object is always available when logic gate is activated. The group address linked with this object is used for controlling the logical input of the logic gate. The inputs can be linked in the way defined by the "Type of logic operation" parameter.
Logic gate X Input 2	This object is always available when at least one logic gate is activated and if the "Number of inputs" parameter is greater than or equal to two inputs. The group address linked with this object is used for controlling the logical input of the logic gate. The inputs can be linked in the way defined by the "Type of logic operation" parameter.
Logic gate X Input 3	This object is always available when at least one logic gate is activated and if the "Number of inputs" parameter is greater than or equal to three inputs. The group address linked with this object is used for controlling the logical input of the logic gate. The inputs can be linked in the way defined by the "Type of logic operation" parameter.
Logic gate X Input 4	This object is always available when at least one logic gate is activated and if the "Number of inputs" parameter is greater than or equal to four inputs. The group address linked with this object is used for controlling the logical input of the logic gate. The inputs can be linked in the way defined by the "Type of logic operation" parameter.
Logic gate X Disable	This object is always available when logic gate is activated. The "Disable output" parameter is also used for selecting whether to perform disabling on receiving a value of "1" or on receiving a value of "0". When presence output is disabled, the output sends no telegrams.

Object	Description
Logic gate X Disabling status	This object is only visible if the "Disable output" parameter is not set to "No". The group address linked with this object is used for automatically sending the disabling status via bus after any change, with it being possible to request the disabling status at any time.

## 10 ETS parameters

Note on the colours in the parameter settings:

	Parameters always available. All parameter-related colours are reset from here on downwards.
	Parameter only visible in relation to a setting of another parameter. Settings and dependent parameters are marked in the same colour.
	Parameter only visible in relation to settings of two other parameters. Settings and dependent parameters are marked in the same colour.

### 10.1 General parameters

Name	Settings	Factory setting
<b>Sensor selected</b>	IS 3360 IS 3180 IS 345 IS 345 MX IS 3360 MX HF 3360 Light Sensor DUAL	IS 345 MX
Please select the sensor used.		
<b>Number of light outputs</b>	0...2	1
This parameter is used for setting how many light outputs are to be available.		
<b>Presence output</b>	Inactive active	inactive
<u>Active</u> : the presence output with the associated parameters is additionally available. <u>Inactive</u> : the presence output is not available.		
<b>Absence output</b>	Inactive active	inactive
<u>Active</u> : the absence output with the associated parameters is additionally available. <u>Inactive</u> : the absence output is not available.		
<b>HVAC output</b>	Inactive active	inactive
<u>Active</u> : the HVAC output with the associated parameters is additionally available. <u>Inactive</u> : the HVAC output is not available.		
<b>Constant-lighting control</b>	Inactive active	inactive
<u>Active</u> : the constant-lighting control output with the associated parameters is additionally available. <u>Inactive</u> : the constant-lighting control output is not available.		
<b>Photo-cell controller output</b>	Inactive active	inactive
<u>Active</u> : the photo-cell controller output with the associated parameters is additionally available. <u>Inactive</u> : the twilight output is not available.		
<b>Light level output</b>	Inactive active	inactive

Name	Settings	Factory setting
<u>Active</u> : the light-level output with the associated parameters is additionally available. <u>Inactive</u> : the light-level output is not available.		
<b>Sabotage</b>	Inactive active	inactive
<u>Active</u> : the sabotage output with the associated parameters is additionally available. <u>Inactive</u> : the sabotage output is not available.		
<b>Logic gate</b>	Inactive 1 ... 2	inactive
1 ... 2: the selected number of logic gates with the associated parameters is additionally available. <u>Inactive</u> : the logic gate output is not available.		
<b>Remote control</b>	inactive Program User Program and user	inactive
<u>Inactive</u> : the IR receiver integrated in the detector is deactivated. <u>Program</u> : enables service personnel to change a number of detector parameters (e.g. switch-ON delay, stay-ON times and light-level setting) via a special IR remote control without using ETS. <u>User</u> : enables the room user to operate and dim lighting, save and select as many as 4 scenes as well as re-activate (enable) light-level control with a small IR remote control. <u>Program &amp; user</u> : enables switching, dimming and scene control as well as the changing of detector parameters via IR remote control.		

### 10.2 HF settings (only visible for HF 3360)

Name	Settings	Factory setting
<b>Boost factor</b>	0...255	255
Q: minimum reach 85: 1/3 reach 170: 2/3 reach 255: maximum reach		
<b>Sensitivity</b>	- (= low) N (=normal)	N
If a low sensitivity setting is selected, several movement triggers will be necessary to initiate movement detection. In the event of inadvertent triggering, this function can be used for filtering out brief non-recurring interference signals. Unlike the boost factor, this setting does not reduce reach.		

### 10.3 Light output 1..2

Name	Settings	Factory setting
<b>General parameters</b>		
<b>Object light output</b>	ON / OFF Dimming level Scenario	ON / OFF
This parameter is used to select which object the output sends with.		
<b>ON level in percent</b>	0 %...100 %	100 %
This parameter is used to select which dimming level to send for the ON state.		
<b>OFF level in percent</b>	0 %...100 %	0 %
This parameter is used to select which dimming level to send for the OFF state.		
<b>Send switching object</b>	ON / OFF ON OFF	ON / OFF
This parameter is used to select whether to send the ON and OFF switching commands for the dimming level object or whether to send only ON or only OFF.		
<b>Switch ON scene</b>	1...64	1
This parameter is used to select which scene to send for the ON state.		
<b>Switch OFF scene</b>	1...64	2
This parameter is used to select which scene to send for the OFF state.		

Name	Settings	Factory setting
Send status cyclically	Do not send status cyclically	
	ON/OFF	
	ON	
	OFF	
<p>This parameter is used for selecting whether the output not only sends after any change but also cyclically and, if so, for which status.</p> <p><u>Do not send status cyclically</u>: no status is sent cyclically.</p> <p><u>ON/OFF</u>: ON and OFF status is sent cyclically</p> <p><u>ON</u>: only ON status is sent cyclically.</p> <p><u>OFF</u>: only OFF status is sent cyclically.</p>		
Interval for sending cyclically	hh:mm:ss	00:00:30
<p>Time interval for sending at cyclical intervals.</p> <p>The maximum time interval is 18:12:15.</p>		
Light output mode	automatically ON and OFF automatically OFF only	automatically ON and OFF
<p>This parameter is used for selecting whether to switch the light output ON and OFF automatically in relation to presence and light level (fully automatic operation) or whether only to switch it OFF automatically (semi-automatic operation).</p>		
Stay-ON time, IQ mode	Active	inactive
	Inactive	
<p>This parameter is used to define whether to select the stay-ON time for the light output via a parameter (inactive) or whether the stay-ON time of between 5 and 20 minutes is to be automatically and continually matched to room usage via the IQ mode (active).</p>		
Light output stay-ON time	hh:mm:ss	00:05:00
<p>Stay-ON time is started if no presence is detected. This has the purpose of preventing the output from switching OFF immediately if the room is vacated for a short time and having to be switched back ON again when a person returns to the room.</p> <p>Stay-ON time can be set from 00:00:10 to 18:12:15.</p>		
Slave input	inactive ON ON/OFF	ON
<p>This parameter defines whether the slave input expects an ON telegram or an ON and OFF telegram.</p>		
Light level		
Daytime operation	Yes	NO
	No	
<p>Setting to define whether light output is to be switched irrespective of light level.</p>		
Light-level sensor ON	Internal	Internal
	External	
<p>This parameter is used to define which light-level measurement the sensor compares its switching threshold with.</p>		
Initial level, light-level sensor, external	2lux ... 1000lux	200
<p>This parameter is used to define which value the sensor works with until the first value is received via the KNX bus.</p>		
Weighting, light-level sensor, external	1 % ... 100 %	100 %
<p>This value defines the extent to which the external value is weighted.</p>		
Switching threshold ON	2lux...1000lux	500
<p>This parameter is used to select the light level and detected presence from which to switch the light output ON.</p>		
Switch OFF in relation to light level	Yes	Yes
	No	
<p><u>Yes</u>: despite presence being detected, the light output is switched OFF if light level is sufficient.</p> <p><u>No</u>: the light output stays switched ON until stay-ON time elapses. Stay-ON time is re-triggered if presence is detected.</p>		
Offset switching threshold OFF	10lux...1000lux	100
<p>This parameter is used to select the offset from which to switch the light output OFF.</p>		

Name	Settings	Factory setting
Basic illumination (only visible when light output = dimming level)		
Basic illumination	inactive	inactive
	active	
Setting to specify whether the basic illumination is to be activated.		
Basic illumination ON	for a limited time	for a limited time
	in relation to light level	
	dim	
	always	
If required, the output can either be set to provide basic illumination either for a limited period at the end of the stay-ON time or always when the light level falls below a threshold.  <u>Time-limited</u> : at the end of stay-ON time, the output switches lighting to basic illumination if the detector was configured in daytime mode or the light level currently being measured is below the switch-ON threshold + switch-OFF threshold offset.  <u>Depending on light level</u> : when no presence is being identified by the detector, this does not result in the output being switched OFF but in the activation of basic illumination if the level of light measured at this time by the sensor is below the basic light-level threshold. It remains switched ON until either presence is detected or the level of light measured significantly exceeds the basic light-level threshold. The light-level measurement setting is used by the "Light-Level Measurement ON" parameter.  <u>Dim</u> : the sensor automatically dims lighting down to the point at which it switches OFF.  <u>Always</u> : basic illumination is always active when the output is not switched ON.		
Basic illumination dimming level	1 %...100 %	10
This parameter is used for setting the dimming level at which basic illumination is switched ON.		
Basic illumination threshold level	2 lux ...1000 lux	50
This parameter is used for setting the threshold at which basic illumination is activated if the threshold is not met, and at which it is deactivated again if the threshold is significantly exceeded. This takes place irrespective of whether persons are present in the detection zone or not.		
Basic illumination ON period	hh:mm:ss	00:15:00
Basic illumination is switched OFF after expiry of the ON period that is set here. The ON-period can be set from 00:00:10 to 18:12:15.		
Day night parameters		
Day/night switchover	inactive	inactive
	active	
When day/night switchover is activated, the parameter setting can be switched over via an input object.		
ON level in percent (only for General parameters: Object light output -> dimming level)	0 %...100 %	100 %
This parameter is used to select which dimming level to send for the ON state.		
OFF level in percent (only for General parameters: Object light output -> dimming level)	0 %...100 %	0 %
This parameter is used to select which dimming level to send for the OFF state.		
Switch ON scene (only for General parameters: Object light output -> scene)	1...64	1
This parameter is used to select which scene to send for the ON state.		
Switch OFF scene (only for General parameters: Object light output -> scene)	1...64	2
This parameter is used to select which scene to send for the OFF state.		



Name	Settings	Factory setting
Daytime operation	Yes	No
	No	
Setting to define whether light output is to be switched irrespective of light level.		
Switching threshold ON	2lux...1000lux	500
This parameter is used to select the light level and detected presence from which to switch the light output ON.		
Switch OFF in relation to light level	Yes	No
	No	
This parameter is used to switch OFF the light output in relation to ambient light level in spite of someone being present.		
Offset switching threshold OFF	10lux...1000lux	100
This parameter is used to select the offset from which to switch the light output OFF.		
Light output stay-on time	hh:mm:ss	00:05:00
Stay-ON time is started if no presence is detected. This has the purpose of preventing the output from switching OFF immediately if the room is only vacated for a short time and having to be switched back ON again when a person returns to the room. Stay-ON time can be set from 00:00:10 to 18:12:15.		
Basic illumination dimming level (for basic illumination only: basic illumination -> active and basic illumination: basic illumination ON -> time-limited, in relation to ambient light level and always)	1 %...100 %	10
This parameter is used for setting the dimming level at which basic illumination is switched ON.		
Basic illumination threshold level (for basic illumination only: basic illumination -> active and basic illumination: basic illumination ON -> time-limited, in relation to ambient light level and always)	2lux ...1000lux	50
This parameter is used for setting the threshold at which basic illumination is activated if the threshold is not met, and at which it is deactivated again if the threshold is significantly exceeded. This takes place irrespective of whether persons are present in the detection zone or not.		
Basic illumination ON-period (for basic illumination only: basic illumination -> active and basic illumination: basic illumination ON -> time-limited)	hh:mm:ss	00:15:00
Basic illumination is switched OFF after expiry of the ON period that is set here.		
Disable		
Disable output	No	No
	ON for disabling / OFF for enabling	
	OFF for disabling / ON for enabling	
This parameter is used for selecting whether the output can be disabled, and which telegram is used for disabling and re-enabling the output. No: the output cannot be disabled. Disabling with ON / enabling with OFF: the output is disabled by a telegram with value "1" to the disabled object and enabled by a telegram with value "0". Disabling with OFF / enabling with ON: the output is disabled by a telegram with value "0" to the disabled object and enabled by a telegram with value "1".		

Name	Settings	Factory setting
Behaviour on disabling	no action ON OFF	no action
<p>This parameter is used to select whether to switch the output ON or OFF before disabling or whether to leave the output unchanged.</p> <p><u>No action</u>: no further action takes place before disabling.</p> <p><u>ON</u>: output is switched ON before disabling.</p> <p><u>OFF</u>: output is switched OFF before disabling.</p>		
Behaviour on enabling	Continue control ON OFF	Continue control
<p>This parameter is used to select whether the output is to resume its activity after enabling or whether to switch the output ON and OFF first.</p> <p><u>Continue control</u>: the output is immediately in normal mode and sets the output in line with configuration.</p> <p><u>ON</u>: output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p> <p><u>OFF</u>: output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p>		

#### 10.4 Constant-lighting control

Name	Settings	Factory setting
General parameters		
Stay-ON time constant-lighting control	hh:mm:ss	00:05:00
Stay-ON time is started if no presence is detected. This has the purpose of preventing the output from switching OFF immediately if the room is vacated for a short time and having to be switched back ON again when a person returns to the room. Stay-ON time can be set from 00:00:10 to 18:12:15.		
Automatic starting value	Yes	Yes
	No	
Yes: the sensor automatically determines the starting value after artificial light calibration. No: the sensor always starts with the given starting value.		
Starting value, dimming level until first Teach	1 % ... 100 %	80
This parameter defines the ON level when constant-lighting control is started. The value is adopted until artificial light calibration. The sensor then determines the starting value for directly reaching the light-level setting as accurately as possible.		
Starting value, dimming level	1 % ... 100 %	80
This parameter defines the ON level when constant-lighting control is started.		
Send switching object	ON / OFF ON OFF	ON / OFF
This parameter is used to select whether to send the ON and OFF switching commands or whether to send only ON or only OFF.		
Mode Constant-lighting control mode	automatically ON and OFF automatically OFF only	automatically ON and OFF
This parameter is used for selecting whether to switch constant-lighting control ON and OFF automatically (fully automatic operation) or whether only to switch it OFF automatically (semi-automatic operation).		
Light-level control for dimming input	disable and dim	disable and dim
	do not disable and alter setting	
<u>Disable and dim</u> : if a telegram is received via the "Dim Light x Input" object, light-level control is disabled and the addressed output dimmed. This setting is recommended if room lighting consists of several lighting groups. <u>Do not disable and alter set value</u> : constant-lighting control is not disabled after receiving a telegram via the dimming object. After receiving a telegram, a delay of approx. 5 seconds elapses before the new light-level value is adopted as the set value. This setting is recommended if only one output is used for illuminating the room.		
2nd output	inactive	inactive
	active	
This parameter can be used to activate a second output.		



Name	Settings	Factory setting
<b>Offset, 2nd output</b>	-100 % ... 100 %	
This parameter is used for selecting the offset value for second output that must be added to or subtracted from the dimming level measured by the light-level controller for the first output (depending on whether the second output is further away from or closer to the window than output 1) to provide a workplace below output 2 with a level of light that is roughly the same as that provided at the light-level setting selected for output 1.		
<b>Slave input</b>	inactive ON ON/OFF	ON
This parameter defines whether the slave input expects an ON telegram or an ON and OFF telegram.		
<b>Light level</b>		
<b>Light-level setting</b>	2lux ... 1000lux	500
This parameter is used for selecting the setting for light level control.		
<b>Light-level sensor input (not DUAL light sensor)</b>	Internal External	Internal
This parameter is used for activating an input object for external light-level measurement. This value is used instead of the light level measured internally.		
<b>Light-level sensor input (DUAL light sensor only)</b>	Diffuse Spot Mixed light External	Diffuse
This parameter is used for selecting which light-level measurement to apply for constant-lighting control.		
<b>Mixed light component Diffuse</b>	1..100 %	50 %
This parameter can be used for defining the component of diffusely measured light in the light level used for constant lighting control. The remaining component is fed in via spot measurement.		
<b>Initial level, light-level sensor, external</b>	2lux ... 1000lux	200
This parameter is used to define which value the sensor works with until the first value is received via the KNX bus.		
<b>Weighting, light-level sensor, external</b>	1 % ... 100 %	100 %
This value defines the extent to which the external value is weighted.		
<b>Max. variation from the setting</b>	10lux ... 1000lux	30
This parameter defines the precision with which the required level of light is controlled. This is necessary because lighting is controlled in dimming steps. Setting an insufficient maximum variation from the set level can therefore sometimes result in a further "brighter" adjustment step exceeding the set level and in a further "darker" adjustment step taking illumination below the set level. This leads to light being dimmed or brightened all the time (i.e. continuously fluctuating light level). If this is the case, the maximum permissible variation from the set level must either be increased or the dimming step reduced.		
<b>Max. dimming step</b>	0.5%; 1%; 1.5%; 2%; 2.5%; 3%; 5 %	2 %
This parameter is used for setting the maximum dimming "step" (this being the maximum level by which a new dimming level may increase or decrease from the previous level with constant-lighting control).		
<b>Note:</b> The larger the "Max. dimming step", the larger the "Max. variation from the set value" should be.		
<b>Send new dimming level after</b>	0.5s; 1 s; 2 s; 3 s; 4 s; 5 s	2 s
This parameter is used for setting the delay after which a new dimming level is sent in constant-lighting control mode. This ensures that even if actuator dimming times are short they do not result in constant-lighting control producing any abrupt change in light level that a room user may find unpleasant.		

Name	Settings	Factory setting
<b>Lighting with sufficient daylight</b>	switch OFF dim to minimum dimming level	switch OFF
This parameter is used for selecting whether to switch the lighting OFF completely when constant-lighting control is activated and there is sufficient daylight or whether to leave it ON but dim it to the selectable "minimum dimming level".		
<b>Switch OFF:</b> lighting is switched OFF if the dimming level remains dimmed at the minimum level for a specific period. If stay-ON time elapses first, the output switches OFF directly.		
<b>Dim to minimum dimming level:</b> lighting remains switched ON and is dimmed to "minimum dimming level" even if the dimming level measured by the light-level controller is below the "minimum dimming level" selected. It is only brightened again when the dimming level measured by the light-level controller is above the "minimum dimming level" selected.		
<b>Minimum dimming level</b>	0.5 %; 1 %; 2 %; 3 %; 4 %; 5 %; 6 %; 7 %; 8 %; 9 %; 10 %	0.5 %
If constant-lighting control measures a dimming level below the level selected here, lighting remains dimmed at the minimum dimming level.		
<b>Basic illumination</b>		
<b>Basic illumination</b>	inactive active	inactive
If required, the output can either be set to provide basic illumination either for a limited period at the end of the stay-ON time or always when the light level falls below a threshold.		
<b>Basic illumination ON</b>	for a limited time in relation to light level dim always	for a limited time
<b>Time-limited:</b> at the end of stay-ON time, the output switches lighting OFF and checks the level of light for max. 5 seconds. As soon as the target level or threshold level is below the selected light level, basic illumination switches ON for the parameterised time. If the light level measured is above it, lighting stays OFF.		
<b>Light-level dependent:</b> if the measured light level is below the setting and the output is not switched ON, basic illumination is activated.		
<b>Always:</b> basic illumination is always active when the output is not switched ON.		
<b>Basic illumination dimming level</b>	1 %...100 %	10
This parameter is used for setting the dimming level at which basic illumination is switched ON.		
<b>Basic illumination ON period</b>	hh:mm:ss	00:15:00
Basic illumination is switched OFF after expiry of the ON period that is set here. The ON-period can be set from 00:00:10 to 18:12:15.		
<b>Basic illumination threshold level</b>	2lux ... 1000lux	50
This parameter is used for setting the threshold at which basic illumination is activated if the threshold is not met, and at which it is deactivated again if the threshold is significantly exceeded. This takes place irrespective of whether persons are present in the detection zone or not.		
<b>Day night parameters</b>		
<b>Day/night switchover</b>	inactive active	inactive
When day/night switchover is activated, the parameter setting can be switched over via an input object.		
<b>Stay-ON time, constant-lighting control</b>	hh:mm:ss	00:05:00
Stay-ON time is started if no presence is detected. This has the purpose of preventing the output from switching OFF immediately if the room is vacated for a short time and having to be switched back ON again when a person returns to the room. Stay-ON time can be set from 00:00:10 to 18:12:15.		
<b>Light-level setting</b>	2lux ... 1000lux	500
This parameter is used for selecting the setting for light level control.		

Name	Settings	Factory setting
Automatic starting value	Yes	x
	No	
<u>Yes</u> : the sensor automatically determines the starting value after artificial light calibration.		
<u>No</u> : the sensor always starts with the given starting value.		
Starting value, dimming level	1 % ... 100 %	80
This parameter defines the ON level when constant-lighting control is started.		
Lighting with sufficient daylight	switch OFF	switch OFF
	dim to minimum dimming level	
This parameter is used for selecting whether to switch the lighting OFF completely when constant-lighting control is activated and there is sufficient daylight or whether to leave it ON but dim it to the selectable "minimum dimming level".		
<u>Switch OFF</u> : lighting is switched OFF if the dimming level remains dimmed at the minimum level for a specific period. If stay-ON time elapses first, the output switches OFF directly.		
<u>Dim to minimum dimming level</u> : lighting remains switched ON and is dimmed to "minimum dimming level" even if the dimming level measured by the light-level controller is below the "minimum dimming level" selected. It is only brightened again when the dimming level measured by the light-level controller is above the "minimum dimming level" selected.		
Minimum dimming level	0.5 %; 1 %; 2 %; 3 %; 4 %; 5 %; 6 %; 7 %; 8 %; 9 %; 10 %	0.5 %
If the light-level controller measures a dimming level below the level selected here, lighting remains dimmed at the minimum dimming level.		
Basic illumination dimming level (for basic illumination only: basic illumination -> active and basic illumination: basic illumination ON -> time-limited, in relation to ambient light level and always)	1 %...100 %	10
This parameter is used for setting the dimming level at which basic illumination is switched ON.		
Basic illumination ON-period (for basic illumination only: basic illumination -> active and basic illumination: basic illumination ON -> time-limited)	hh:mm:ss	00:15:00
Basic illumination is switched OFF after expiry of the ON period that is set here. Maximum ON time is 18:12:15.		
Basic illumination threshold level (for basic illumination only: basic illumination -> active and basic illumination: basic illumination ON -> time-limited, in relation to ambient light level and always)	2 lux ...1000 lux	50
This parameter is used for setting the threshold at which basic illumination is activated if the threshold is not met, and at which it is deactivated again if the threshold is significantly exceeded. This takes place irrespective of whether persons are present in the detection zone or not.		

Name	Settings	Factory setting
Disable		
Disable output	No	No
	ON for disabling / OFF for enabling	
	OFF for disabling / ON for enabling	
<p>This parameter is used for selecting whether the output can be disabled, and which telegram is used for disabling and re-enabling the output.</p> <p><u>No</u>: the output cannot be disabled.</p> <p><u>Disabling with ON / enabling with OFF</u>: the output is disabled by a telegram with value "1" to the disabled object and enabled by a telegram with value "0".</p> <p><u>Disabling with OFF / enabling with ON</u>: the output is disabled by a telegram with value "0" to the disabled object and enabled by a telegram with value "1".</p>		
Behaviour on disabling	no action ON OFF	no action
<p>This parameter is used to select whether to switch the output ON or OFF before disabling or whether to leave the output unchanged.</p> <p><u>No action</u>: no further action takes place before disabling.</p> <p><u>ON</u>: output is switched ON before disabling.</p> <p><u>OFF</u>: output is switched OFF before disabling.</p>		
Behaviour on enabling	Continue control ON OFF	Continue control
<p>This parameter is used to select whether the output is to resume its activity after enabling or whether to switch the output ON and OFF first.</p> <p><u>Continue control</u>: the output is immediately in normal mode and sets the output in line with configuration.</p> <p><u>ON</u>: output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p> <p><u>OFF</u>: output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p>		

## 10.5 Presence output

Name	Settings	Factory setting
Switch-ON delay (in seconds)	0s...10s	1
A movement must be detected throughout the switch-ON delay period. Only then will the output switch ON.		
Stay-ON time	hh:mm:ss	00:00:30
Stay-ON time is started if no presence is detected. This has the purpose of preventing the output from switching OFF immediately if the room is vacated for a short time and having to be switched back ON again when a person returns to the room. Stay-ON time can be set from 00:00:00 to 18:12:15.		
Send status cyclically	Do not send status cyclically	ON
	ON/OFF	
	ON	
	OFF	
This parameter is used for selecting whether the output not only sends after any change but also cyclically and, if so, for which status. Do not send status cyclically: no status is sent cyclically. ON/OFF: ON and OFF status is sent cyclically ON: only ON status is sent cyclically. OFF: only OFF status is sent cyclically.		
Interval for sending cyclically	hh:mm:ss	00:00:30
Time interval for sending at cyclical intervals.		

Name	Settings	Factory setting
Disable output	No	No
	ON for disabling / OFF for enabling	
	OFF for disabling / ON for enabling	
<p>This parameter is used for selecting whether the output can be disabled, and which telegram is used for disabling and re-enabling the output.</p> <p><u>No</u>: the output cannot be disabled.</p> <p><u>Disabling with ON / enabling with OFF</u>: the output is disabled by a telegram with value "1" to the disabled object and enabled by a telegram with value "0".</p> <p><u>Disabling with OFF / enabling with ON</u>: the output is disabled by a telegram with value "0" to the disabled object and enabled by a telegram with value "1".</p>		
Behaviour on disabling	no action ON OFF	no action
<p>This parameter is used to select whether to switch the output ON or OFF before disabling or whether to leave the output unchanged.</p> <p><u>No action</u>: no further action takes place before disabling.</p> <p><u>ON</u>: output is switched ON before disabling.</p> <p><u>OFF</u>: output is switched OFF before disabling.</p>		
Behaviour on enabling	Continue control ON OFF	Continue control
<p>This parameter is used to select whether the output is to resume its activity after enabling or whether to switch the output ON and OFF first.</p> <p><u>Continue control</u>: the output is immediately in normal mode and sets the output in line with configuration.</p> <p><u>ON</u>: output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p> <p><u>OFF</u>: output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p>		

## 10.6 Absence output

Name	Settings	Factory setting
Switch-ON delay (in seconds)	1...10	1
No movement must be detected throughout the switch-ON delay period. Only then will the output switch ON.		
Stay-ON time	hh:mm:ss	00:00:30
Stay-ON time is started if no absence is detected. This has the purpose of preventing the output from switching OFF immediately if the room is only vacated for a short time and having to be switched back ON again when a person returns to the room. Stay-ON time can be set from 00:00:01 to 18:12:15.		
Send status cyclically	Do not send status cyclically	ON
	ON/OFF	
	ON	
	OFF	
This parameter is used for selecting whether the output not only sends after any change but also cyclically and, if so, for which status. Do not send status cyclically: no status is sent cyclically. ON/OFF: ON and OFF status is sent cyclically ON: only ON status is sent cyclically. OFF: only OFF status is sent cyclically.		
Interval for sending cyclically	hh:mm:ss	00:00:30
Time interval for sending at cyclical intervals.		

Name	Settings	Factory setting
Disable output	No	No
	ON for disabling / OFF for enabling	
	OFF for disabling / ON for enabling	
<p>This parameter is used for selecting whether the output can be disabled, and which telegram can be used for disabling and re-enabling the output.</p> <p><u>No</u>: the output cannot be disabled.</p> <p><u>Disabling with ON / enabling with OFF</u>: the output is disabled by a telegram with value "1" to the disabled object and enabled by a telegram with value "0".</p> <p><u>Disabling with OFF / enabling with ON</u>: the output is disabled by a telegram with value "0" to the disabled object and enabled by a telegram with value "1".</p>		
Behaviour on disabling	no action ON OFF	no action
<p>This parameter is used to select whether to switch the output ON or OFF before disabling or whether to leave the output unchanged.</p> <p><u>No action</u>: no further action takes place before disabling.</p> <p><u>ON</u>: output is switched ON before disabling.</p> <p><u>OFF</u>: output is switched OFF before disabling.</p>		
Behaviour on enabling	Continue control ON OFF	Continue control
<p>This parameter is used to select whether the output is to resume its activity after enabling or whether to switch the output ON and OFF first.</p> <p><u>Continue control</u>: the output is immediately in normal mode and sets the output in line with configuration.</p> <p><u>ON</u>: output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p> <p><u>OFF</u>: output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p>		

## 10.7 HVAC output

Name	Settings	Factory setting
Switch-ON delay (presence governed only)	hh:mm:ss	00:05:00
A movement must be detected throughout the switch-ON delay period. Only then will the output switch ON. The maximum switch-ON delay is 18:12:15.		
Stay-ON time (only in relation to presence)	hh:mm:ss	00:15:00
Stay-ON time is started if no presence is detected. This has the purpose of preventing the output from switching OFF immediately if the room is only vacated for a short time and having to be switched back ON again when a person returns to the room. Stay-ON time can be set from 00:00:10 to 18:12:15.		
Slave input	inactive ON ON/OFF	ON
This parameter defines whether the slave input expects an ON telegram or whether it expects an ON and OFF telegram.		
Disable output	No	No
	ON for disabling / OFF for enabling	
	OFF for disabling / ON for enabling	
This parameter is used for selecting whether the output can be disabled, and which telegram can be used for disabling and re-enabling the output. No: the output cannot be disabled. Disabling with ON / enabling with OFF: the output is disabled by a telegram with value "1" to the disabled object and enabled by a telegram with value "0". Disabling with OFF / enabling with ON: the output is disabled by a telegram with value "0" to the disabled object and enabled by a telegram with value "1".		

Name	Settings	Factory setting
<b>Behaviour on disabling</b>	no action ON OFF	no action
<p>This parameter is used to select whether to switch the output ON or OFF before disabling or whether to leave the output unchanged.  <b>No action:</b> no further action takes place before disabling.  <b>ON:</b> output is switched ON before disabling.  <b>OFF:</b> output is switched OFF before disabling.</p>		
<b>Behaviour on enabling</b>	Continue control ON OFF	Continue control
<p>This parameter is used to select whether the output is to resume its activity after enabling or whether to switch the output ON and OFF first.  <b>Continue control:</b> the output is immediately in normal mode and sets the output in line with configuration.  <b>ON:</b> output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.  <b>OFF:</b> output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p>		
<b>Slave input</b>	inactive ON ON/OFF	ON
<p>This parameter defines whether the slave input expects an ON telegram or whether it expects an ON and OFF telegram.</p>		

## 10.8 Photo-cell controller output

Name	Settings	Factory setting
<b>Twilight threshold</b>	2 lux .. 1000 lux	50 lux
<p>This parameter is used to select the light level from which to switch ON the photo-cell controller output.</p>		
<b>Disable output</b>	No ON for disabling / OFF for enabling OFF for disabling / ON for enabling	No
<p>This parameter is used for selecting whether the output can be disabled, and which telegram is used for disabling and re-enabling the output.  <b>No:</b> the output cannot be disabled.  <b>Disabling with ON / enabling with OFF:</b> the output is disabled by a telegram with value "1" to the disabled object and enabled by a telegram with value "0".  <b>Disabling with OFF / enabling with ON:</b> the output is disabled by a telegram with value "0" to the disabled object and enabled by a telegram with value "1".</p>		
<b>Behaviour on disabling</b>	no action ON OFF	no action
<p>This parameter is used to select whether to switch the output ON or OFF before disabling or whether to leave the output unchanged.  <b>No action:</b> no further action takes place before disabling.  <b>ON:</b> output is switched ON before disabling.  <b>OFF:</b> output is switched OFF before disabling.</p>		
<b>Behaviour on enabling</b>	Continue control ON OFF	Continue control
<p>This parameter is used to select whether the output is to resume its activity after enabling or whether to switch the output ON and OFF first.  <b>Continue control:</b> the output is immediately in normal mode and sets the output in line with configuration.  <b>ON:</b> output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.  <b>OFF:</b> output is switched ON after enabling. Normal operation is reactivated after a delay of 5 seconds.</p>		

## 10.9 Light level output

Name	Settings	Factory setting
Send measured value	upon change	upon change
	cyclically	
This parameter is used for selecting whether only to send the measurement readings after any change or cyclically via bus.		
Min. light-level change	1lux .. 255lux	30lux
This parameter is used to select which level the light level measured last sent must have changed by before the light level measured is to be sent again.		
Send measured level cyclically	hh:mm:ss	00:00:30
Time interval for sending all measured light levels at cyclical intervals. The cyclical sending mode can be set from 00:00:10 to 18:12:15.		

## 10.10 Sabotage

Name	Settings	Factory setting
Interval for sending cyclically	hh:mm:ss	00:01:00
Time interval for cyclically sending the sabotage telegram as heartbeat. The cyclical sending mode can be set from 00:00:10 to 18:12:15.		
Telegram	ON	ON
	OFF	
This parameter defines whether to send an ON telegram or OFF telegram cyclically.		

## 10.11 Logic gates 1...2 (all identical)

Name	Settings	Factory setting
Logic gate type of logic operation	OR; AND; exclusive OR	OR
This parameter defines the logic operation the gate performs.		
Logic gate number of inputs	1 ... 4	2
This parameter defines how many inputs the gate has.		
Logic gate type of output object	ON/OFF	ON/OFF
	Value	
This parameter selects output type.		
Logic gate switching command for logical 0	ON; OFF	OFF
This parameter is used to configure which switching command is sent for a logical "0".		
Logic gate switching command for logical 1	ON; OFF	ON
This parameter is used to configure which switching command is sent for a logical "1".		
Logic gate value for logical 0	0 ... 255	0
This parameter is used to configure which value is sent for a logical "0".		
Logic gate value for logical 1	0 ... 255	255
This parameter is used to configure which value is sent for a logical "1".		
Logic gate output sending behaviour	on changing logic; on changing logic to 1; on changing logic to 0;	on changing logic;
This parameter is used for setting output sending behaviour.		
Disable logic gate	No	No
	ON for disabling / OFF for enabling	
	OFF for disabling / ON for enabling	
This parameter is used for selecting whether the output can be disabled, and which telegram is used for disabling and re-enabling the output. <u>No</u> : the output cannot be disabled. <u>Disabling with ON / enabling with OFF</u> : the output is disabled by a telegram with value "1" to the disabled object and enabled by a telegram with value "0". <u>Disabling with OFF / enabling with ON</u> : the output is disabled by a telegram with value "0" to the disabled object and enabled by a telegram with value "1".		

Name	Settings	Factory setting
<b>Logic gate behaviour on disabling</b>	no action ON OFF	no action
<p>This parameter is used to select whether to switch the output ON or OFF before disabling or whether to leave the output unchanged.</p> <p><u>No action</u>: no further action takes place before disabling.</p> <p><u>ON</u>: output is switched ON before disabling.</p> <p><u>OFF</u>: output is switched OFF before disabling.</p>		