CNS
CREATIVE NORTH SOLUTION

MANUAL
KNX FUNCTION DESCRIPTION

APPLIES TO THE FOLLOWING MODELS

DT-KNX-360i-10-MIC wo	DT202012
DT-KNX-360i-10-MIC ao	DT202013
DT-KNX-360i-10-SENSO wo	DT202015
DT-KNX-360i-10-SENSO ao	DT202016

MAN-No.: ME-901006-07

SAFETY INFORMATION

Work on electrical systems may only be carried out by authorized specialist personnel under consideration of the country's customary installation regulations/standards.

Disconnect the supply voltage before installation.
Do not put the device into operation if damaged!

GENERAL

The KNX sensors are passive infrared detectors for automated switching and regulation of connected lighting. They react according to ambient brightness and presence/movement indoors.
The 360° detector has a range of 10m in diameter at an installation height of 2.80m. The built-in temperature-, humidity- and air quality sensors, as well as the microphone, allow for additional settings and features. They can measure temperature, relative ambient humidity, and the air quality in a room.

The sensors are intended to be used in a KNX (EIB), TP bus system in conjunction with other KNX components.

INSTALLATION

Follow the separate installation instructions provided when installing the device.

ETS APPLICATION DOWNLOAD AND START-UP

The ETS application (Engineering Tool Software) is used to configure all parameter of the device.

The application for the sensors supports these languages: German, English and Chinese. The database and application are available to download at www.detectorline.com.

The programming push button on the detector is used to enter or leave the programming mode.
The LED on the detector will stay red during programming mode.
The physical address and the ETS configuration can be downloaded when the detector is in programming mode. Every successful application download will trigger a reboot of the detector.

During start-up, the detector shows a repetitive fade-in/fade-out of the red and green LEDs.

IR-REMOTE CONTROL

The IR-Remote control can be used to manually control the lighting. The options are as follows:

• Switching light-channel 1 and 2 off/on
• Dimming light-channel 1 and 2 (only with dim actuator)
• Activating up to 2 scenes
• Reset the KNX detector to the values set via ETS

Further information and instructions about the IR-Remote control can be found in the respective manual.

LED-FEEDBACK

Function	LED behavior	Time / Frequency	LED color
Start up	Fade-in / Fade-out toggle	10 sec.	Red & Green
Detection in fully automatic or semi-automatic mode when lux-value is greater than lux-threshold (in Standby-Mode)	Fade-in / Fade-out 1x	-	Off
Detection in fully automatic or semi-automatic mode when lux-value is lower than lux-threshold (in Standby-Mode)			Green
Detection in fully automatic or semi-automatic mode (in Presence-state for dim actuator)			Green
Detection in fully automatic or semi-automatic mode (in Control-state for dim actuator)			Violet
Detection in fully automatic or semi-automatic mode when the light-channels have the same states* (for switch actuator)			Violet
Detection in fully automatic or semi-automatic mode when the light-channels have different states* (for switch actuator)			Yellow
Detection in fully automatic mode and Lux-value is greater than Lux/Light-threshold (in Presence-state)			Red
Detection in Night Mode			Cyan
Detection in Alarm-Mode			Blue
Program mode	Permanently on, until programming mode is closed		Red
Remote control signal	Blink 3x	300ms On, 300ms Off	White
Night light (LED)	LED Off or on	-	Color selection**

*See general function description; operation states.

**Color selection: Red, Green, Blue, Yellow, White, Violet, Cyan

GENERAL FUNCTION DESCRIPTION

Operation modes

The detector can be used in three different modes of operation:
Normal Mode, Night Mode and Alarm Mode.

Normal Mode

By default, the detector operates in "Normal Mode".
It represents the standard behavior of a presence detector.

Night Mode

Night Mode is <u>only</u> usable with a dim actuator. It can be activated via the object "Object 21 Input: Night-mode ON/OFF". This mode was designed for usage during night, for example, in hotels or hospitals. Further explanation below.

Alarm Mode

Alarm Mode is used to block all output from the detector and change the light control to other devices. It can be activated via the object "Object 31 Input: Alarm".

Operation states

Each of these modes affect the behavior of the detector in the different operating states. These states are as follows.

Standby

All lighting and/or HLK-devices (all channels) are off.

Presence

Presence-state is entered when movement is detected (fully automatic) or the object "Object 27 Input: Switch ligth-channel all" is triggered. Light regulation is active only in Presence-Mode. During Night Mode this state of operation will trigger the light level settings "Level 1".

Control

Control-state is entered when the user manually controls the lighting(-value), for example via a KNX push button. Up to two channels can be controlled. Control-state can be entered via IR-Remote, push button / communication object.

During Night Mode this state of operation provides the user the possibility to increase the light level stepwise instead. Each ON button press will cycle through the light levels. An OFF button press will switch off the lighting. In total there are three levels: Level 1 = 10 – 50% | Level 2 = 60% | Level 3 = 100%. Level 1 can be defined in the ETS.

Orientation

Orientation-state can only be enabled when a dim actuator is used. This state is entered from Presence-state or Control-state as soon as the switch-off time has expired. It activates the orientation light.

Night light

The night light causes the detector LED to be permanently lit, ensuring minimal illumination of a room/hallway. The LED color can be selected in the ETS. The night light function will only be active in Standby-state.

Light regulation

The detector can be configured to work with a dim or switch actuator. Additionally, it can be configured as fully automatic or semi-automatic. Depending on the configuration the behavior varies.

- Light regulation for Dim-Actuator
  Proportional regulation will be applied to the dim actuator.
  The goal is to reach the ETS lux setting with a comfortable speed.
- Light regulation for Switch-Actuator
  The light will be switched on when it is too dark and switched off when it is too bright. A 10 second delay timer is implemented to avoid reaction to sudden changes in brightness.

Microphone

The microphone is a feature used in situations where movement is not directly detectable. This feature can be controlled via the ETS and is applied in Normal-Mode and Night-Mode.
When enabled, microphone detection will be active after the switch-off time.
When sound is detected during the detection time window of the microphone, the light value and state of the detector will return to the prior situation.
The detection time window can be configured in ETS.

Temperature, humidity and air quality [Only for SENSO variants]

The temperature, humidity and air quality sensors enable an extended use of the detector. Apart from motion, light and sound, the temperature, humidity as well as the air quality can thus also be measured and processed. Connected actuators, e.g. for HVAC can be controlled and/or provided with these values.

OVERVIEW OF COMMUNICATION OBJECTS

Object 1: [Input] Lock cyclic sending of light-channels (1 bit)
The periodically switching/dimming outputs for the light-channel are locked with an ON telegram and unlocked with an OFF telegram.
The status of the light-channel after locking and unlocking can be determined by parameter settings.

Object 2/5: [Output] Light-channel 1/2 ON/OFF (1 bit)
The output telegram sends ON as soon as the ambient brightness is too low and presence is detected.
If the ambient brightness (by natural light) has reached a sufficient level and/or no presence is detected, an OFF telegram is sent as soon as the switch-off time has elapsed.

Object 3/6: [Output] Dim light-channel 1/2 relative (4 bit)
Dim-Actuator necessary!
This object is used to increase or decrease the light value in a definable stepwise manner.

Object 4/7: [Output] Dim light-channel 1/2 absolute (1 byte)
Dim-Actuator necessary!
This object is used to set the light value directly to a certain percentage.

Object 8/10: [Input] Light-channel 1/2 feedback switch-actuator (1 bit)
Switch-Actuator necessary! Evaluate actuator feedback: On
This object enables the connection to the feedback object of the actuator. It is used in case the actuator is controlled by more than one device on the KNX bus. The feedback object of the actuator should be set as „Send on change".

Object 9/11: [Input] Light-channel 1/2 feedback dim value (1 byte)
Dim-Actuator necessary! Evaluate actuator feedback: On
This object enables the connection to the feedback object of the actuator. It is used in case the step dimming objects (Object 3/6) are used for e.g. dimming with a KNX pushbutton or remote control. The feedback object of the actuator should be set as „passive read". For relative dimming, the actuator feedback must be connected!

Object 12/13: [Output] HVAC-channel 1/2 ON/OFF (1 bit)
If movement/presence is detected, a switch-on delay is triggered.
An ON telegram is sent if movement is still detected after this delay.
If channel 1/2 is active and no movement/presence is detected, an OFF telegram is sent after the switch-off time.

Object 14: [Input] Lock HVAC-channel (1 bit)
The switching output for the HVAC channel is locked with an ON telegram and unlocked with an OFF telegram.

Object 15: [Input] Lock sending light value (1 bit)
Behavior during locked light value: Send current/default light value
An ON telegram locks periodical sending of the light value and enables the one-time sending of the current or default light value.

Object 16: [Output] Current light value (2 byte)
This object can be used to output the current light value. It consists of the internal and external light value. Adjustable with multipliers/divisors.

Object 17: [Input] Light value external (2 byte)
Process external light value: On
This object can be used to average the external and internal light value to have the actual value for light control. Multipliers are used for evaluation.

Object 18: [Input] Movement of slave/master (1 bit)
External master/slave: On
Trigger input for parallel connection master/master or input from slave.

Object 19: [Input] Lock sending motion detection (1 bit)
This object can be used to lock the sending of the motion detection output.
Motion is detected despite active lock and lighting will be switched on.

Object 20: [Output] Motion detection (1 bit)
Output of the motion detection from the PIR.

Object 21: [Input] Night-Mode ON/OFF (1 bit)
Dim-Actuator necessary!
An ON telegram activates the Night-Mode, an OFF telegram deactivates
the mode. A reset will be executed when the detector goes out of this mode.

Object 22: [Input] Reset (1 bit)
This object can be used to reset and restart the detector.
After reset, the device will load the last saved ETS parameters.

Object 23/24: [Input] Switch light-channel 1/2 (1 bit)
This object can be used to trigger the switch light-channels 1 or 2.

Object 25/26: [Input] Light-channel 1/2 dim relative (4 bit)
Dim-Actuator necessary!
This object will be used to monitor if light-channel 1/2 of the actor is dim-
med by a KNX pushbutton or other input unit.

Object 27: [Input] Switch light-channel all (1 bit)
This object can be used to switch all light-channels (On/Off) into the pre-
sence state with a KNX pushbutton or other input unit.

Object 28: [Input] Light-channel all dim relative (4 bit)
Dim-Actuator necessary!
This object will be used to monitor if all light-channels of the actor are
dimmed by a KNX pushbutton or other input unit.

Object 29: [Input] Scene (1 byte)
Dim-Actuator necessary! At least 1 scene is enabled.
This object can be used to trigger set scene(s) 1 and/or 2
(in ETS defined as scene 0/scene 1).

Object 30: [Input] Night light activated/deactivated (1 bit)
Night light function: Any LED color. LED Feedback: On
The night light function can be activated and deactivated with a telegram.

Object 31: [Input] Alarm (1 bit)
When activated it will block all light-channels output from the detector.
Nonetheless, the output of lux values and motion detection is preserved.
A reset will be executed when the detector goes out of this mode.

Object 32: [Input] Lock sending temperature value (1 bit)
Behavior during locked temperature: Send current/default
temperature value
An ON telegram locks periodical sending and enables sending of the
current or default temperature value.

Object 33: [Input] Lock sending humidity value (1 bit)
Behavior during locked humidity: Send current/default humidity value
An ON telegram locks periodical sending and enables the one-time
sending of the current or default humidity value.

Object 34: [Input] Lock sending air quality value (1 bit)
Behavior during locked air quality: Send current/default air quality value
An ON telegram locks periodical sending and enables the one-time
sending of the current or default air quality value.

Object 35: [Input] Temperature external (2 byte)
Process external temperature value: On
This object is the input of the external temperature. Used to average the
external and internal temperature value to have the actual value for
temp. control. Ratio of external values can be determined as a percentage.

Object 36: [Input] Humidity external (2 byte)
Process external humidity value: On
This object is the input of the external humidity. It can be used to average
the external and internal humidity value to have the actual value for humidity
control. The ratio of the external values can be determined as a percentage.

Object 37: [Output] Temperature internal (2 byte)
This object can be used to output the internal temperature value. It is the
raw value together with the offset.

Object 38: [Output] Humidity internal (2 byte)
This object can be used to output the internal humidity value. It is the raw
value together with the offset.

Object 39: [Output] Air quality internal (2 byte)
This object can be used to output the internal air quality value. It is the raw
value together with the offset.

Object 40: [Output] Current temperature (2 byte)
This object can be used to output the current temperature value.
It consists of the internal and external temperature value.
Current temperature can be sent periodically or based on difference.

Object 41: [Output] Current humidity (2 byte)
This object can be used to output the current humidity value.
It consists of the internal and external humidity value.
Current humidity can be sent periodically or based on difference.

Object 42: [Output] Current air quality (2 byte)
This object can be used to output the current air quality value.
Offset is considered. Current air quality can be sent periodically
or based on difference.

Object 43/52: [Input] Lock temperature threshold 1/2 (1 bit)
This object can be used to lock or unlock the reaction after falling below
or exceeding the temperature threshold.
Parameters can be set to determine the behavior after locking or unlocking.

Object 44/53: [Input] Lock humidity threshold 1/2 (1 bit)
This object can be used to lock or unlock the reaction after falling below or
exceeding the humidity threshold.
Parameters can be set to determine the behavior after locking or unlocking.

Object 45/54: [Input] Lock air quality threshold 1/2 (1 bit)
This object can be used to lock or unlock the reaction after falling below or
exceeding the air quality threshold.
Parameters can be set to determine the behavior after locking or unlocking.

Object 46/55: [Input] Temperature threshold 1/2 (2 byte)
Setting of thresholds via communication object: On
This object can be used to set the temperature threshold with a telegram.
Parameters can be set to determine the behavior after falling below or
exceeding the thresholds.

Object 47/56: [Input] Humidity threshold 1/2 (2 byte)
Setting of thresholds via communication object: On
This object can be used to set the humidity threshold with a telegram.
Parameters can be set to determine the behavior after falling below or
exceeding the thresholds.

Object 48/57: [Input] Air quality threshold 1/2 (2 byte)
Setting of thresholds via communication object: On
This object can be used to set the air quality threshold with a telegram.
Parameters can be set to determine the behavior after falling below or
exceeding the thresholds.

Object 49/58: [Output] Temperature threshold 1/2 ON/OFF (1 bit)
This object can be used to send an ON/OFF telegram when the value is
below or above the temperature threshold. Hysteresis, offset and
transmission delay are taken into account.

Object 50/59: [Output] Humidity threshold 1/2 ON/OFF (1 bit)
This object can be used to send an ON/OFF telegram when the value is
below or above the humidity threshold. Hysteresis, offset and
transmission delay are taken into account.

Object 51/60: [Output] Air quality threshold 1/2 ON/OFF (1 bit)
This object can be used to send an ON/OFF telegram when the value is
below or above the air quality threshold. Hysteresis, offset and
transmission delay are taken into account.

Object 61/62: [Input] Lock light-channel 1/2 (1 bit)
When active, the current state of the light-channel can no longer be changed. There is no switching or dimming. If the object is deactivated, the light-channel changes to the state it would have had at the time of deactivation. (Off after switch-off time or brighter/darker due to brightness change).

Object 63/64: [Output] Light-channel 1/2 lock status (1 bit)
Becomes active if light-channel 1/2 has been locked. Deactivated when light-channel 1/2 has been unlocked.

Object 65/66: [Input] Light-channel 1/2 dim absolute (1 byte)
Dim-Actuator necessary!
This object can be used to dim light-channel 1/2 to the received value.

Object 67: [Input] Light-channel all dim absolute (1 byte)
Dim-Actuator necessary!
This object can be used to dim all light-channels to the received value.

Object 68: [Input] Target brightness value (2 byte)
The target value for light regulation is set to the received value. The manually set target value is not reset to the ETS value until the detector has been disconnected from the power supply or the ETS configuration has been reloaded.

DESCRIPTION OF ETS APPLICATION

General settings

General	Device configuration	◉ Master ○ Slave
Light-channels	Behavior of light channel after ETS-Download	No response ▼
Light value	Remote control	○ Off ◉ On
HVAC-channel	LED-Feedback On/Off	○ Off ◉ On
Movement	Night light function	Cyan ▼
+ Scene		
+ Temperature		
+ Humidity		
+ Air quality		

Parameter	Options	Description
Device configuration	• Master • Slave	Determines if the detector is acting as master or slave device. The slave will only extend the total field of detection. Detected movement/presence is forwarded to and used by the master. Two master can also work together (as Master/Master) and thus extend field of detection. In this case, however, each master independently evaluates and controls the lighting.
Behavior of light-channel after ETS-Download	• No response • Switch On • Switch Off	Determines the light-channel status after the ETS download. Affects only light-channels.
Remote control	• Off • On	Disables/Enables the remote control. The remote control is used to manually overwrite the lighting control.
LED-Feedback ON/OFF	• Off • On	Disables/Enables the LED-feedback of the detector. Feedback is caused for example by motion detection.
Night light function	• Deactivated • Select LED-color	(Precondition: LED-Feedback: On | Night light function: Any color) Deactivates/Enables the night light function. Will only be active in Standby-Mode. The night light causes the detector LED to be permanently lit, ensuring minimal illumination. The LED color can be selected.

LIGHT-CHANNEL SETTINGS

Light-channel settings page is only available when Device configuration is set to Master.
It is used to configure the light-channels. Two possibilities to configure the light-channels are provided: Switch-Actuator and Dim-Actuator.

Settings for actuator select: "Switch actuator"

General	
Light-channels	
Light value	
HVAC-channel	
Movement	
+ Temperature	
+ Humidity	
+ Air quality	

Actuator select   ⦿ Switch actuator   ○ Dim actuator

Switch-on threshold

(0 = deactivated)   [500 ⏶⏷] Lux

Channel 1:

Operating mode   ⦿ Fully automatic   ○ Semi-automatic

Switch-off time   [00:05:00] hh:mm:ss

Channel 2:

Operating mode   ⦿ Fully automatic   ○ Semi-automatic

Switch-off time   [00:05:00] hh:mm:ss

Evaluate actuator feedback   ○ Off   ⦿ On

Telegram for periodic sending   ○ Off   ⦿ On

Telegram interval for periodic sending   [00:01:00] hh:mm:ss

Periodic sending of   [On Telegrams ▾]

Behavior at switching on cyclic sending   [No response ▾]

Behavior at switching off cyclic sending   [No response ▾]

Deactivate lock by   ○ Communication object   ⦿ Expiry of a set time

Time to deactivate the lock   [01:00] hh:mm

Parameter	Options	Description
Actuator select	• Switch actuator • Dim actuator	Select the used actuator. It affects the light-channel behavior and available settings/objects in the ETS.
Switch-on threshold	• 0 Lux – 2000 Lux	If the ambient brightness is lower than this threshold and motion is detected, the lighting is switched on. When the ambient brightness is significantly greater than the set threshold, the lighting is switched off immediately.
Light-channel 1/2: Operation mode	• Fully automatic • Semi-automatic	Determines if light-channel 1/2 is operated in fully automatic or semi-automatic mode.
Light-channel 1/2: Switch-off time	• 00:00:01 – 18:12:15 (hh:mm:ss)	Defines the switch-off time for light-channel 1/2. Switch-off time starts as soon as no presence is detected. After that time, the lighting is switched off.
Evaluate actuator feedback	• Off • On	Disables/Enables evaluation of communication objects from the actuator (Object 8/10).
Telegram for periodic sending	• Off • On	Disables/Enables sending of periodical telegrams
Telegram interval for periodic sending	• 00:00:01 – 18:12:15 (hh:mm:ss)	(Precondition: Telegram for periodic sending: On) Determines the time between sent light-channel telegrams.
Periodic sending of	• On/Off telegrams • On telegrams • Off telegrams	(Precondition: Telegram for periodic sending: On) Select what kind of telegram should be sent. Sending is periodically.
Behavior at switching on/off lock by communication object	• No response • Switch on • Switch off	This selection determines the reaction after switching periodic sending on/off.

Deactivate lock by	• Communication object • Expiry of a set time	This selection determines how the lock of the light-channels is to be deactivated. If „Communication object" is selected, objects 61/62 are used.
Time to deactivate the lock	• 00:01 – 23:59 (hh:mm)	(Precondition: Deactivate lock by: Expiry of a set time) Lock of the light-channels will be deactivated after the set time has elapsed. The lock can still be deactivated via communication objects 61/62.

Settings for actuator select: "Dim actuator"

General	
Light-channels	
Light value	
HVAC-channel	
Movement	
+ Scene	
+ Temperature	
+ Humidity	
+ Air quality	

Actuator select   ◯ Switch actuator   ⦿ Dim actuator

Target value

(0 = deactivated)   `500` ▲▼   Lux

Delay until start of regulation   `Deactivate` ▼

Interval for regulation   `5` ▲▼   Hundred Milliseconds

Maximum dimming steps   `20` ▲▼   %

Operating mode   ⦿ Fully automatic   ◯ Semi-automatic

Light value C2 of C1   `100%` ▼

Switch-on level   `10` ▲▼   %

Switch-off time   `00:05:00`   hh:mm:ss

Orientation light level   `10` ▲▼   %

Switch-off time orientation light (0 = deactivated)   `00:00`   hh:mm

Night-Mode light level   `10` ▲▼   %

Switch-off time night-mode (0 = deactivated)   `00:00`   hh:mm

Evaluate actuator feedback   ◯ Off   ⦿ On

Telegram for periodic sending   ◯ Off   ⦿ On

Telegram interval for periodic sending   `00:01:00`   hh:mm:ss

Periodic sending of   `All telegrams` ▼

Behavior at switching on cyclic sending   `No response` ▼

Behavior at switching off cyclic sending   `No response` ▼

Deactivate lock by   ◯ Communication object   ⦿ Expiry of a set time

Time to deactivate the lock   `01:00`   hh:mm

Parameter	Options	Description
Actuator select	• Switch actuator • Dim actuator	Select the used actuator. It affects the light-channel behavior and available settings/objects in the ETS.
Target value	• 0 Lux – 2000 Lux	This lux value is the target brightness light value used for light regulation. The detector will adjust (dim) the lighting accordingly, to reach this value. When no presence is detected, the lighting is switched off after the switch-off time.
Delay until start of regulation	• Deactivate • 0,5 - 5 sec.	After switching on the light channel with the switch-on light value, this value determines the time until the start of the light value control. This value can be used to give the dimming actuator the time to dim to the switch-on value.
Interval for regulation	• 5 – 50 (hundred milliseconds)	Determines the interval for dimming telegrams in regulation. Used to enable the smoothest possible regulation behavior.
Maximum dimming steps	• 5% – 100%	Limits the maximum step of the light regulation for dimm telegrams.

Operation mode	• Fully automatic • Semi-automatic	Determines if the detector operates in fully automatic or semi-automatic mode. In semi-automatic mode, light control is only active when „switch light-channel all" (Object 27) is used.
Light value C2 of C1	• 10% - 100%	Determines the light value from the second light-channel in relation to the first.
Switch-on level	• 10% - 100%	Determines the light value that is sent as soon as presence is detected, and the ambient brightness is too low.
Switch-off time	• 00:00:01 – 18:12:15 (hh:mm:ss)	Defines the switch-off time. Switch-off time starts as soon as no presence is detected.
Orientation light level	• 1% - 50%	Determines the light level in Orientation-state. Orientation-state is activated after the switch-off time and will slightly dim down the lighting before turning it off completely.
Switch-off time orientation light level	• 00:00 – 04:15 (hh:mm)	Defines the switch-off time for the orientation mode. Switch-off time starts as soon as the switch-off time of the detector expires. After that time, the lighting is switched off completely.
Night-Mode light level	• 1% - 50%	Determines the light level during night mode.
Switch-off time night mode	• 00:00 – 04:15 (hh:mm)	Defines the switch-off time for the night mode. Switch-off time starts as soon as no presence is detected.
Evaluate actuator feedback	• Off • On	Disables/Enables evaluation of communication objects from the actuator. (Object 9/11).
Telegram for periodic sending	• Off • On	Disables/Enables sending of periodical telegrams
Telegram interval for periodic sending	• 00:00:01 – 18:12:15 (hh:mm:ss)	(Precondition: Telegram for periodic sending: On) Determines the time between sent light-channel telegrams.
Periodic sending of	• All telegrams • On telegrams • Off telegrams • Dim value telegrams	(Precondition: Telegram for periodic sending: On) Select what kind of telegram should be sent. Sending is periodically.
Behavior at switching on/off lock by communication object	• No response • Switch on • Switch off	This selection determines the reaction after switching periodic sending on/off.
Deactivate lock by	• Communication object • Expiry of a set time	This selection determines how the lock of the light-channels is to be deactivated. If „Communication object" is selected, objects 61/62 are used.
Time to deactivate the lock	• 00:01 – 23:59 (hh:mm)	(Precondition: Deactivate lock by: Expiry of a set time) Lock of the light-channels will be deactivated after the set time has elapsed. The lock can still be deactivated via communication objects 61/62.

LIGHT VALUE SETTINGS

Light value settings page is only available when Hardware configuration is set to Master.
It is used to configure the light measurement.

General
Light-channels
Light value
HVAC-channel
Movement
+ Scene
+ Temperature
+ Humidity
+ Air quality

Telegram interval light value (0 = deactivated)	00:00	mm:ss
Send light value from difference of (Lux, 0 = deactivated)	0	
Internal light value (multiplicator)	1	
Internal light value (divisor)	1	
Process external light value	◯ Off ⦿ On	
External light value (multiplicator)	1	
External light value (divisor)	1	
Behavior during locked light value	Send default light value ▼	
Default light value (Lux)	0	

Parameter	Options	Description
Telegram interval light value	• 00:00 – 04:15 (mm:ss)	Determines the time between sent light value telegrams.
Send light value from difference of	• 0 Lux – 2000 Lux	Light value will be sent when measured light value exceeds the set difference.
Internal light value	• Multiplicator (0 - 100) • Divisor (1 - 10)	This is used to change the light value measurement. Communication object value = Measured value * Multiplicator / Divisor
Process external light value	• Off • On	Disables/Enables an object for external light value input. The average of the internal and external light value will be used for light regulation.
External light value	• Multiplicator (0 - 100) • Divisor (1 - 10)	(Precondition: Process external light value: On) External light value = Communication object value * Multiplicator / Divisor
Behavior when light value is locked	• Lock deactivated • Send current light value • Send default light value	A communication object is used to block the periodically sending of light value. This parameter can determine the behavior after locking.
Default light value	• 0 Lux – 2000 Lux	(Precondition: Behavior during locked light value: Send default light value) Determines the default light value to be sent after blocking the sending of light values.

HVAC CHANNEL SETTINGS

HVAC channel settings page is only available <u>when Hardware configuration</u> is set to <u>Master</u>.
It is used to configure the HVAC channels.

General
Light-channels
Light value
HVAC-channel
Movement
✚ Scene
✚ Temperature
✚ Humidity
✚ Air quality

Switch-on delay C1 (0 = deactivated)	00:01	hh:mm
Switch-off time C1 (0 = deactivated)	00:02	hh:mm
Switch-on delay C2 (0 = deactivated)	00:01	hh:mm
Switch-off time C2 (0 = deactivated)	00:02	hh:mm

Parameter	Options	Description
Switch-on delay C1	• 00:00 – 04:15 (hh:mm)	When movement is detected, this switch-on delay is triggered. HVAC channel 1 will switch on if motion is still detected after this delay. It cannot be retriggered.
Switch-off time C1	• 00:00 – 04:15 (hh:mm)	When no movement is detected, HVAC channel 1 will switch off after this time. It can be retriggered.
Switch-on delay C2	• 00:00 – 04:15 (hh:mm)	When movement is detected, this switch-on delay is triggered. HVAC channel 2 will switch on if motion is still detected after this delay. It cannot be retriggered.
Switch-off time C2	• 00:00 – 04:15 (hh:mm)	When no movement is detected, HVAC channel 2 will switch off after this time. It can be retriggered.

MOVEMENT SETTINGS

Movement page is used for settings around the PIR and microphone.

| General |
| Light-channels |
| Light value |
| HVAC-channel |
| **Movement** |
| + Scene |
| + Temperature |
| + Humidity |
| + Air quality |

Time between motion detection	3	Seconds
Telegram for motion detection	○ On/Off Telegrams ○ On Telegrams	
PIR sensitivity	Standard ▼	
External Master/Slave	○ Off ● On	
Microphone	○ Off ● On	
Microphone sensitivity	60% ▼	
Reactivation period by microphone	00:20	mm:ss

Parameter	Options	Description
Time between motion detection	• 1 – 240 sec.	Determines the time interval between sent movement telegrams when movement is detected. This time interval equally influences the switching of the lighting.
Telegram for motion detection	• On/Off Telegrams • On Telegrams	Determines which telegrams are sent when movement is detected. On telegrams are sent after motion detection. Off telegrams are sent after the time between motion detection has elapsed, provided no movement was detected during this period.
PIR sensitivity	• Low • Standard • High	Determines the sensitivity of the movement detection. High is the most sensitive option. Standard is the factory settings.
Reactivation period by movement	• 1 – 60 sec.	(Precondition: Actuator select: Switch actuator) The reactivation period begins after the switch-off time has expired. If motion is detected again within the set reactivation period, the detector will not simply switch the light on again but will recall the previously active state. This state was, for example, a manually switched-off light.
External master/slave	• Off • On	Disables/Enables the external input of movement communication objects.
Microphone	• Off • On	Disables/Enables the microphone function.
Microphone sensitivity	• 10% - 100%	(Precondition: Microphone: On) Determines the sensitivity of the sound detection. 100% is the most sensitive option. 60% is the factory settings.
Microphone activation period	• 1 - 60 sec.	(Precondition: Microphone: On) The microphone activation period starts after the switch-off time has expired. If a sound is detected within the set activation period, the detector will not simply switch the light on again but will recall the previously active state. This state was, for example, a manually switched-off light.

SCENE SETTINGS

Scene page is only available when Hardware configuration is set to Master and Actuator select is set to Dim actuator.
There are two scenes for configuration. The scene can be activated via remote control or via communication object.

| General |
| Light-channels |
| Light value |
| HVAC-channel |
| Movement |
| − Scene |
| **Scene 0-1** |
| + Temperature |
| + Humidity |
| + Air quality |

Scene 0 / F1	○ Off ● On	
Channel 1 light value (%)	100	
Channel 2 light value (%)	100	
Scene 1 /F2	○ Off ● On	
Channel 1 light value (%)	100	
Channel 2 light value (%)	100	

Parameter	Options	Description
Scene 0 / F1	• Off • On	Disables/Enables scene 0 function.
Channel 1 light value	• 0 – 100%	(Precondition: Scene 0/F1: On) Channel 1 light value for scene 0.
Channel 2 light value	• 0 – 100%	(Precondition: Scene 0/F1: On) Channel 2 light value for scene 0.
Scene 1 / F2	• Off • On	Disables/Enables scene 1 function.
Channel 1 light value	• 0 – 100%	(Precondition: Scene 1/F2: On) Channel 1 light value for scene 1.
Channel 2 light value	• 0 – 100%	(Precondition: Scene 1/F2: On) Channel 2 light value for scene 1.

TEMPERATURE SETTINGS [ONLY FOR SENSO VARIANTS]

Temperature thresholds settings are only available <u>when Hardware configuration</u> is set to <u>Master</u>.
It is used to make settings regarding temperature measurement and threshold values.

General
Light-channels
Light value
HVAC-channel
Movement
+ Scene
− Temperature
Temperature
Temperature threshold 1
Temperature threshold 2
+ Humidity
+ Air quality

Temperature offset (°C)	0
Send periodically or from difference	⦿ Periodical ◯ Difference
Telegram interval for periodic sending (0 = deactivated)	00:01:00 hh:mm:ss
Range for sending the temperature	Send only in the range between ▾
Lower threshold (°C)	0
Upper threshold (°C)	50
Process external temperature value	◯ Off ⦿ On
Percentage of external temperature (%)	50
Behavior during locked temperature value	Send default temperature value ▾
Default temperature value (°C)	0

Parameter	Options	Description
Temperature offset	• -50 – 50°C	Determines by how many degrees Celsius the temperature values will be adjusted when sent as a value.
Send periodically or from difference	• Periodical • Difference	Determines whether the values should be sent periodically or only when a certain difference is reached.
Telegram interval for periodic sending	• 00:00:00 – 18:12:15 (hh:mm:ss)	(Precondition: Send periodically or from difference: Periodically) Defines a time interval between sent values.
Send temperature from difference of	• 0 – 50°C	(Precondition: Send periodically or from difference: Difference) Determines how big the temperature difference must be before a telegram is sent.
Range for sending the temperature	• No restrictions • Send only in the range between • No sending in the range between	Determines in which range temperature values are to be sent.
Upper/Lower threshold	• 0 – 50°C	(Precondition: Range for sending the temperature: ...in the range between) Determines the temperature values for the upper and lower threshold.
Process external temperature value	• Off • On	Disables/Enables the external input of temperature values. If activated, the internal and external values are averaged and then further processed.
Percentage of external temperature	• 1 – 100%	Affects the external temperature value and allows customization options when evaluating it.
Behavior during locked temperature	• Lock deactivated • Send current temperature value • Send default temperature value	A communication object is used to block the periodically sending of temperature values. This parameter can determine the behavior after locking.
Default temperature value	• -50 – 50°C	(Precondition: Behavior during locked light value: Send default light value) Determines the default temperature value to be sent after blocking the sending of temperature values.

TEMPERATURE THRESHOLD SETTINGS [ONLY FOR SENSO VARIANTS]

General
Light-channels
Light value
HVAC-channel
Movement
＋ Scene
− Temperature
Temperature
Temperature threshold 1
Temperature threshold 2
＋ Humidity
＋ Air quality

Temperature threshold 1 (°C)	18	
Hysteresis (°C)	5	
Reaction when falling below the limit value	Switch on	
Reaction when threshold is exceeded	Switch off	
Behavior when locked via communication object	Switch off	
Behavior when unlocked via communication object	Switch off	
Delay when exceeding/falling below the thresholds	00:00	hh:mm
Telegram interval for periodic sending	00:00:00	hh:mm:ss
Setting of thresholds via communication object	◯ Off ⦿ On	

Parameter	Options	Description
Temperature threshold	• 0 – 50°C	Determines the temperature value from which a reaction is triggered if the measured value is above or below. This value is influenced if offset or hysteresis are set.
Hysteresis	• 0 – 50°C	Determines the hysteresis to the temperature threshold setting value. A hysteresis influences both the upper and the lower value of the threshold.
Reaction when falling below the limit value	• No response • Switch on • Switch off	Determines the reaction when the value of the temperature threshold is undercut.
Reaction when threshold is exceeded	• No response • Switch on • Switch off	Determines the reaction when the value of the temperature threshold is exceeded.
Behavior when locked/unlocked via communication object	• No response • Switch on • Switch off	This selection determines the reaction after switching periodic sending on/off.
Delay when exceeding/falling below the thresholds	• 00:00 – 04:00 (hh:mm)	Defines a delay that triggers after passing the thresholds. Telegrams will be sent after this delay has elapsed. Delay setting will be ignored when telegram periodic sending is active.
Telegram interval for periodic sending	• 00:00:00 – 18:12:15 (hh:mm:ss)	Determines the time between periodically sent temperature telegrams.
Setting of thresholds via communication object	• Off • On	Disables/Enables setting of threshold values via telegrams.

HUMIDITY SETTINGS [ONLY FOR SENSO VARIANTS]

Humidity threshold settings are only available <u>when Hardware configuration</u> is set to <u>Master</u>.
It is used to make settings regarding the relative humidity measurement and threshold values.

General	Humidity offset (%) — `0`
Light-channels	Send periodically or from difference — ● Periodical ○ Difference
Light value	Telegram interval for periodic sending (0 = deactivated) — `00:01:00` hh:mm:ss
HVAC-channel	Range for sending the humidity — Send only in the range between ▼
Movement	Lower threshold (%) — `0`
+ Scene	Upper threshold (%) — `100`
+ Temperature	Process external humidity value — ○ Off ● On
− Humidity	Percentage of external humidity (%) — `50`
Humidity	Behavior during locked humidity value — Send default humidity value ▼
Humidity threshold 1	Default humidity value (%) — `0`
Humidity threshold 2	
+ Air quality	

Parameter	Options	Description
Humidity offset	• -50 – 50%	Determines by how many percent the humidity values will be adjusted when sent as a value.
Send periodically or from difference	• Periodical • Difference	Determines whether the values should be sent periodically or only when a certain difference is reached.
Telegram interval for periodic sending	• 00:00:00 – 18:12:15 (hh:mm:ss)	(Precondition: Send periodically or from difference: Periodically) Allows a time interval between sent values.
Send humidity from difference of	• 0 – 100%	(Precondition: Send periodically or from difference: Difference) Determines how big the humidity difference must be before a telegram is sent.
Range for sending the humidity	• No restrictions • Send only in the range between • No sending in the range between	Determines in which range humidity values are to be sent.
Upper/Lower threshold	• 0 – 100%	(Precondition: Range for sending the temperature: …in the range between) Determines the humidity values for the upper and lower threshold.
Process external humidity value	• Off • On	Disables/Enables the external input of humidity values. If activated, the internal and external values are averaged and then further processed.
Percentage of external humidity	• 0 – 100%	Affects the external humidity value and allows customization options when evaluating it.
Behavior during locked humidity	• Lock deactivated • Send current humidity value • Send default humidity value	A communication object is used to block the periodically sending of humidity values. This parameter can determine the behavior after locking.
Default humidity value	• 1 – 100%	(Precondition: Behavior during locked light value: Send default light value) Determines the default humidity value to be sent after blocking the sending of humidity values.

HUMIDITY THRESHOLD SETTINGS [ONLY FOR SENSO VARIANTS]

| General |
| Light-channels |
| Light value |
| HVAC-channel |
| Movement |
| + Scene |
| + Temperature |
| − Humidity |
| Humidity |
| **Humidity threshold 1** |
| Humidity threshold 2 |
| + Air quality |

Humidity threshold 1 (%)	0
Hysteresis (%)	0
Reaction when falling below the limit value	Switch on
Reaction when threshold is exceeded	Switch off
Behavior when locked via communication object	Switch off
Behavior when unlocked via communication object	Switch off
Delay when exceeding/falling below the thresholds	00:00 hh:mm
Telegram interval for periodic sending	00:00:00 hh:mm:ss
Setting of thresholds via communication object	○ Off ● On

Parameter	Options	Description
Humidity threshold	• 0 – 100%	Determines the humidity value from which a reaction is triggered if the measured value is above or below. This value is influenced if offset or hysteresis are set.
Hysteresis	• 0 – 100%	Determines the hysteresis to the humidity threshold setting value. A hysteresis influences both the upper and the lower value of the threshold.
Reaction when falling below threshold	• No response • Switch on • Switch off	Determines the reaction when the value of the humidity threshold is undercut.
Reaction when exceeding threshold	• No response • Switch on • Switch off	Determines the reaction when the value of the humidity threshold is exceeded.
Behavior when locked/unlocked via communication object	• No response • Switch on • Switch off	This selection determines the reaction after switching periodic sending on/off.
Delay when exceeding/falling below the thresholds	• 00:00 – 04:00 (hh:mm)	Defines a delay that triggers after passing the thresholds. Telegrams will be sent after this delay has elapsed. Delay setting will be ignored when telegram periodic sending is active.
Telegram interval for periodic sending	• 00:00:00 – 18:12:15 (hh:mm:ss)	Determines the time between periodically sent humidity telegrams.
Setting of thresholds via communication object	• Off • On	Disables/Enables setting of threshold values via telegrams.

AIR QUALITY SETTINGS [ONLY FOR SENSO VARIANTS]

Note: Air quality threshold settings page is only available when Hardware configuration is set to Master.
It is used to make settings regarding the air quality measurement and threshold values.

| General |
| Light-channels |
| Light value |
| HVAC-channel |
| Movement |
| + Scene |
| + Temperature |
| + Humidity |
| − Air quality |
| **Air quality** |
| Air quality threshold 1 |
| Air quality threshold 2 |

Offset air quality (ppm)	0
Send periodically or from difference	● Periodical ○ Difference
Telegram interval for periodic sending (0 = deactivated)	00:01:00 hh:mm:ss
Range for sending the air quality	Send only in the range between
Lower threshold (ppm)	0
Upper threshold (ppm)	500
Behavior during locked air quality	Send default air quality value
Default air quality value (ppm)	0

Parameter	Options	Description
Offset air quality	• -100 – 100	Determines by how much the air quality values will be adjusted when sent as a value.
Send periodically or from difference	• Periodical • Difference	Determines whether the values should be sent periodically or only when a certain difference is reached.
Telegram interval for periodic sending	• 00:00:00 – 18:12:15 (hh:mm:ss)	(Precondition: Send periodically or from difference: Periodically) Allows a time interval between sent values.
Send air quality from difference of	• 0 – 100	(Precondition: Send periodically or from difference: Difference) Determines how big the humidity difference must be before a telegram is sent.
Range for sending the air quality	• No restrictions • Send only in the range between • No sending in the range between	Determines in which range humidity values are to be sent.
Upper/Lower threshold	• 0 – 500	(Precondition: Range for sending the temperature: …in the range between) Determines the air quality values for the upper and lower threshold.
Behavior during locked air quality	• Lock deactivated • Send current humidity value • Send default humidity value	A communication object is used to block the periodically sending of air quality values. This parameter can determine the behavior after locking.
Default air quality value	• 0 – 500	(Precondition: Behavior during locked light value: Send default light value) Determines the default air quality value to be sent after blocking the sending of air quality values.

AIR QUALITY THRESHOLD SETTINGS [ONLY FOR SENSO VARIANTS]

| General |
| Light-channels |
| Light value |
| HVAC-channel |
| Movement |
| + Scene |
| + Temperature |
| + Humidity |
| − Air quality |
| Air quality |
| **Air quality threshold 1** |
| Air quality threshold 2 |

| Air quality threshold 1 (ppm) | 0 |
Hysteresis (ppm)	0
Reaction when falling below the limit value	Switch on
Reaction when threshold is exceeded	Switch off
Behavior when locked via communication object	Switch off
Behavior when unlocked via communication object	Switch off
Delay when exceeding/falling below the thresholds	00:00 hh:mm
Telegram interval for periodic sending	00:00:00 hh:mm:ss
Setting of thresholds via communication object	◯ Off ⦿ On

Parameter	Options	Description
Air quality threshold	• 0 – 500 ppm	Determines the air quality value from which a reaction is triggered if the measured value is above or below. This value is influenced if offsets or hysteresis are set.
Hysteresis	• 0 – 50 ppm	Determines the hysteresis to the air quality threshold setting value. A hysteresis influences both the upper and the lower value of the threshold.
Reaction when falling below threshold	• No response • Switch on • Switch off	Determines the reaction when the value of the air quality threshold is undercut.
Reaction when exceeding threshold	• No response • Switch on • Switch off	Determines the reaction when the value of the air quality threshold is exceeded.
Behavior when locked/unlocked via communication object	• No response • Switch on • Switch off	This selection determines the reaction after switching periodic sending on/off.
Delay when exceeding/falling below the thresholds	• 00:00 – 04:00 (hh:mm)	Defines a delay that triggers after passing the thresholds. Telegrams will be sent after this delay has elapsed. Delay setting will be ignored when telegram periodic sending is active.
Telegram interval for periodic sending	• 00:00:00 – 18:12:15 (hh:mm:ss)	Determines the time between sent air quality telegrams.
Setting of thresholds via communication object	• Off • On	Disables/Enables setting of threshold values via telegrams.

Information on the VOC Index

normal
100

0   VOC Index   500

better   worse
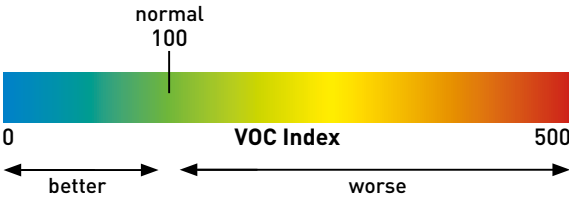
• Indicates changes in intensity relative to history in the room
• Relates to the average of the VOC concentration present in the room over the last 24h
• Declines to a normal VOC index of about 100 after very long events

DETECTOR SETTINGS [SLAVE]

The slave will only extend the total field of detection. Detected movement/presence is forwarded to and evaluated by the master.
Therefore, the slave detector has only limited ETS configurations.

General	
Movement	
+ Temperature	
+ Humidity	
+ Air quality	

Time between motion detection	3 Seconds
Telegram for motion detection	⦿ On/Off Telegrams ◯ On Telegrams
PIR sensitivity	Standard ▼

Parameter	Options	Description
Time between motion detection	• 1 – 240 sec.	Determines the time between sent movement communication objects when movement is detected.
Telegram for motion detection	• On/Off Telegrams • On Telegrams	Determines which telegrams are sent when movement is detected. On telegrams are sent after motion detection. Off telegrams are sent after the time between motion detection has elapsed, provided no movement was detected during this period.
PIR sensitivity	• Low • Standard • High	Determines the sensitivity of the movement detection. High is the most sensitive option. Standard is the factory setting.