

ESYLUX

www.esylux.com

GB OPERATING INSTRUCTIONS

Congratulations on your purchase of this high-quality ESYLUX product. To ensure correct device operation, please read these installation/operating instructions carefully and keep them in a safe place for future reference.

1 • SAFETY INSTRUCTIONS



WARNING! Work on electrical systems must be carried out by authorised personnel only, with due regard to the applicable installation regulations. Switch off the power supply before installing the system. Please observe the installation regulations laid out in the safety measure for separated extra-low voltage (SELV).

Use this product only as intended (as described in the user instructions). Do not make any changes or alterations as this will render any warranties null and void. You should check the device for damage immediately after unpacking it. If there is any damage, you should not install the device under any circumstances.

If you suspect that safe operation of the device cannot be guaranteed, you should turn the device off immediately and make sure that it cannot be operated unintentionally.

For correct use of the device, ensure that the UC network (or KNX/EIB) to be connected is designed for protection class 3.



NOTE: this device must not be disposed of as unsorted household waste. Used devices must be disposed of correctly. Contact your local town council for more information.

2 • DESCRIPTION

The ESYLUX PD-ATMO 360i/8...KNX is a presence detector with a 360° field of detection and integrated bus coupler for ceiling mounting. Depending on the design, it can measure room temperature, relative ambient humidity, sound and air quality. Follow the installation instructions provided when installing the device. The detector is able to control lighting ("switching" or "constant light control" features).

For additional features, please refer to the "Description of applications" section of the operating instructions. With a range of up to 8 m in diameter, the presence detector is suitable for use in offices, classrooms, conference facilities and halls with natural lighting.

The PD-ATMO 360i/8...KNX is intended to be used in a KNX (EIB), TP bus system in conjunction with other KNX components.

If the PD-ATMO 360i/8...KNX detects that persons are present in its field of detection, it transmits controlling telegrams for light outputs, depending on ambient brightness, and for HVAC (heating, ventilation and air conditioning) objects.

- Mixed light measurement is suitable for FL, PL, halogen and incandescent lamps.

Certified KNX/EIB training centres provide specialist training on how to plan, install, activate, document and use the ETS (Engineering Tool Software) that is required for parameter setting.

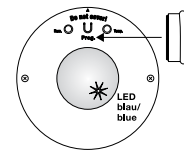
3 • INSTALLATION / ASSEMBLY / CONNECTION



See separate installation instructions.

4 • START-UP

All parameter settings are carried out via the ETS (Engineering Tool Software). The magnet provided can be used to activate the programming status for the physical address on the PD-ATMO 360i/8...KNX. This is indicated by the **blue LED**. The product database and application description are available to download at www.esylux.com.



5 • SWITCH-ON BEHAVIOUR / LED DISPLAY

- **Switch on the bus voltage and supply voltage**
This initiates a warm-up phase that lasts approx. 10 seconds. The **red LED** and **green LED** will slowly flash alternately (f = 1 Hz).
- **LED display after warm-up**
Each time motion is detected, this is indicated by 2 flashes of the **preset LED colour**.
- **In the "Master" function, the remote control entries will be acknowledged** by 3 flashes from the **blue LED**.
- **In the "Slave" function, each detection is acknowledged** by 2 flashes of the **green LED**.
- The VOC sensor only provides valid readings after 20 minutes.



NOTE: The green LED will only light up when motion is detected if it has been enabled by the ETS (Engineering Tool Software).

6 • TEST MODE

Parameters can be set via the ETS (Engineering Tool Software). Test mode switches to the RUN status after "storing", or 10 minutes after activating the test mode. The **blue LED** flashes to indicate movement.

7 • REMOTE CONTROL

The optional user remote control Mobil-PDi/User (EM10425547) can be used to regulate/control the lighting.

The Mobil-PDi/User remote control adjusts the lighting value for the period that persons are present plus the switch-off delay time. Thereafter, the values set via the ETS (Engineering Tool Software) will apply.



NOTE: In the "Slave" function the detector does not respond to the remote control!

The Mobil-PDi/User can be used to control the lighting as follows:

- switching on or off
- dimming (only with "controlling" feature)
- storing and calling up of 2 scenes
- pressing the "Reset" button resets the KNX presence detector to the values set via ETS (Engineering Tool Software). The stored light scenes 1 + 2 are kept.



For further information, please refer to the operating instructions for the Mobil-PDi/User remote control.

Mobil-PDi/User

2 • ESYLUX MANUFACTURER'S GUARANTEE

ESYLUX products are tested in accordance with applicable regulations and manufactured with the utmost care. The guarantor, ESYLUX Deutschland GmbH, Postfach 1840, D-22908 Ahrensburg, Germany (for Germany) or the relevant ESYLUX distributor in your country (visit www.esylux.com for a complete overview) provides a guarantee against manufacturing/material defects in ESYLUX devices for a period of three years from the date of manufacture. This guarantee is independent of your legal rights with respect to the seller of the device. The guarantee does not apply to natural wear and tear, changes/interference caused by environmental factors or damage in transit, nor to damage caused as a result of failure to follow the user or maintenance instructions and/or as a result of improper installation. Any illuminants or batteries supplied with the device are not covered by the guarantee.

The guarantee can only be honoured if the device is sent back with the invoice/receipt, unchanged, packed and with sufficient postage to the guarantor, along with a brief description of the fault, as soon as a defect has been identified.

If the guarantee claim proves justified, the guarantor will, within a reasonable period, either repair the device or replace it. The guarantee does not cover further claims; in particular, the guarantor will not be liable for damages resulting from the device's defectiveness. If the claim is unfounded (e.g. because the guarantee has expired or the fault is not covered by the guarantee), then the guarantor may attempt to repair the device for you for a fee, keeping costs to a minimum.

LIGHT CHANNEL OBJECTS

Object 0: "Input: Lock light channel" (length = 1 bit)

The switching/dimming outputs for the light channel are locked with an ON telegram and unlocked with an OFF telegram. Parameters can be set to determine the status of the light channel after locking and unlocking.

Object 1: "Input: Light channel manual ON/OFF" (length = 1 bit)

Note: essential when in semi-automatic mode!

Manual operation is maintained when persons are present until the switch-off delay time has elapsed if "while presence" is set in the parameters. Light measurement is not active if the parameter "With disabled light processing during off-period" has been selected. After this, the detector switches to normal operating mode. Manual operation has no impact on motion detection. The function is transmitted to communication objects 5/6.

Object 2: "Input: Light channel manual dimming" (length = 4 bits)

Function: active when constant light control/regulation has been selected!

Input for dim up/dim down KNX touch sensors. Writing on this object manually overrides the light channel and the commands are transmitted to the dimming actuator via object 7. Manual operation is maintained when persons are present until the switch-off delay time has elapsed if "while presence" is set in the parameters. Light measurement is not active if "With disabled light processing during off-period" has been selected. After this, the detector switches to normal operating mode. Manual operation has no impact on motion detection.

Object 3: "Input: Light channel manual dim value" (length = 1 byte)

Function: active when constant light control/regulation has been selected!

Input to preset dim values. Writing on this object manually overrides the light channel and the values are transmitted to the dimming actuator via objects 8 and 9. Manual operation is maintained when persons are present until the switch-off delay time has elapsed if "while presence" is set in the parameters. Light measurement is not active if "With disabled light processing during off-period" has been selected. After this, the detector switches to normal operating mode. Manual operation has no impact on motion detection.

Object 4: "Input: Light channel control/regulating without presence" (length = 1 bit)

Operating mode: controlling

This object can be used to enable light control without presence.

Operating mode: regulating

This object can be used to enable light regulation without presence.

Object 5: "Output: Light channel ON/OFF" (length = 1 bit)

If artificial lighting is required (switching threshold 1/set value via parameter) and persons are present, the output sends an ON telegram. If natural light is sufficient and/or no persons are present, an OFF telegram is sent once the switch-off delay time has elapsed.

Object 6: "Output: Light channel 2 ON/OFF" (length = 1 bit)

Function: switching - only available with switching function!

If artificial lighting is required (difference between switching threshold 2 and switching threshold 1 via parameter) and persons are present, the output sends an ON telegram. If natural light is sufficient and/or no persons are present, an OFF telegram is sent once the switch-off delay time has elapsed.

Object 7: "Output: Light channel dimming" (length = 4 bits)

Function: constant light control/regulation

Telegrams can be transmitted to the dimming actuator via this object by manually pressing and holding down a touch sensor (object 2). Only active when "constant light control/regulation" has been enabled!

Object 8: "Output: Light channel dim value 1" (length = 1 byte)

Function: constant light control/regulation

If artificial lighting is required and persons are present, the output sends a value telegram (1 byte). If natural light is sufficient (controller to minimum) and/or no persons are present, the lighting is set to 0% or the device switches to orientation lighting once the switch-off delay time has elapsed. Only active when "constant light control/regulation" has been enabled!

Object 9: "Output: Light channel dim value 2" (length = 1 byte)

Function: constant light control/regulation

If artificial lighting is required and persons are present, the output sends a value telegram (1 byte). If natural light is sufficient (controller to minimum) and/or no persons are present, either 0% is sent or the device switches to orientation lighting once the switch-off delay time has elapsed. Option to offset dim value 2 and dim value 1 via parameter. Only active when "constant light control/regulation" has been enabled!

Object 10: "Input: Light channel 1 switching threshold" (length = 2 bytes)

(Operating mode: switching)

This object can be used to specify the switching threshold (lux) for channel 1 via telegram. This is only available if "switching threshold via telegram" has been selected.

Object 10: "Input: Light channel set value control" (length = 2 bytes)

(Operating mode: controlling)

This object can be used to specify the set value (lux) for light control via telegram. This is only available if "switching threshold via telegram" has been selected.

Object 10: "Input: Light channel regulating lower light value" (length = 2 bytes)

(Operating mode: regulating)

This object can be used to specify the lower light value (lux) for light regulation via telegram. This is only available if "switching threshold via telegram" has been selected.

Object 11: "Input: Light channel 2 switching threshold" (length = 2 bytes)

(Operating mode: switching)

This object can be used to specify the switching threshold (lux) for channel 2 via telegram. This is only available if "switching threshold via telegram" has been selected.

Object 11: "Input: Light channel regulating upper light value" (length = 2 bytes)

(Operating mode: regulating)

This object can be used to specify the upper light value (lux) for light regulation via telegram. This is only available if "switching threshold via telegram" has been selected.

Object 12/13: "Input: Light channel 1/2 actuator feedback" (length = 1 bit)

Function: Object 12 constant light control/regulation / Object 12/13 enabled in switching operating mode.

This object can be used to evaluate the status object of an actuator. In the event that the actuator is not only controlled by the detector, the detector will be switched on with an ON telegram and then switched off once the switch-off delay time has elapsed (provided no further movement is detected). If an OFF telegram is sent, the detector will be switched off and will then revert immediately to standby mode. This is only available if "actuator feedback" has been enabled.

Object 14: "Input: Toggle light channel orientation light" (length = 1 bit)

Function: constant light control/regulation

An ON telegram changes the setting from orientation light value 1 to orientation light value 2, while an OFF telegram switches it from value 2 to value 1.

Object 15: "Input: Light channel orientation light ON/OFF" (length = 1 bit)

Function: constant light control/regulation

An OFF telegram is used to switch off the orientation light function, while an ON telegram switches it on.

LIGHT VALUE OBJECTS

Object 16: "Input: Lock sending light value" (length = 1 bit)

An ON telegram locks sending, while an OFF telegram enables sending of the internal or a preset light value. This is only active if "Behaviour on lock" has been enabled.

Object 17: "Input: External light value" (length = 2 bytes)

This object can be used to mix an external light value with the internal one for the actual value for constant light control/regulation. This is evaluated using multipliers.

Object 18: "Output: Internal light value 1" (length = 2 bytes)

This object can be used to output the internal light value with offset or factor values.

Object 19: "Output: Current light value" (length = 2 bytes)

This object can be used to output the light's current actual value. This takes into account the offset, the internal light value factor and the external light value factor and value. This value is used by the light channel and the twilight switch to evaluate the light value.

HVAC CHANNEL OBJECTS

Object 20: "Input: Lock HVAC channel" (length = 1 bit)

The switching output for the HVAC channel is locked with an ON telegram and unlocked with an OFF telegram. Parameters can be set to determine the status of the channel after locking and unlocking.

Object 21: "Output: HVAC channel ON/OFF" (length = 1 bit)

If persons are detected, depending on the input delay, an ON telegram is sent. If no persons are detected, depending on the switch-off delay time, an OFF telegram is sent.

MOTION OBJECTS

Object 22: "Input: Slave/Master motion" (length = 1 bit)

Trigger input for parallel connection of Master/Master or input of Slave. Only possible when enabled. When enabled, only ON/OFF telegrams or only ON telegrams are possible.

Object 23: "Input: Lock motion detection" (length = 1 bit)

An ON telegram locks the internal motion detection function, while an OFF telegram unlocks it again.

Object 24: "Output: Motion detection" (length = 1 bit)

Output of own PIR motion detection.

OBJECTS FOR CONTROLLING/REGULATING TWILIGHT SWITCH FUNCTION

Object 25: "Input: Twilight switch manual ON/OFF" (length = 1 bit)

Manual override remains active until the off-period has elapsed.

Object 26: "Output: Twilight switch ON/OFF" (length = 1 bit)

If ambient brightness falls below the threshold value, the twilight switch sends an ON telegram once the time delay has elapsed. If ambient brightness exceeds the threshold value, the twilight switch sends an OFF telegram once the time delay has elapsed. Hysteresis can be adjusted using the parameters.

Object 27: "Output: Twilight switch dim value" (length = 1 byte)

This communication object can be used to output a parametrisable dim value ranging from 0 - 100%.

Object 28: "Output: Twilight switch scene" (length = 1 byte)

Individual scenes (1 of 64) can be called up for switch ON and switch OFF.

PRESENCE SIMULATION OBJECT

Object 29: "Input: Presence simulation ON/OFF" (length = 1 bit)

Presence simulation is switched on or off.

NIGHTLIGHT OBJECT

Object 30: "Input: Nightlight ON/OFF" (length = 1 bit)

The nightlight function is switched on or off - the motion detection/locking display is retained.

ALARM OBJECTS

Object 31: "Input: Lock alarm" (length = 1 bit)

"1" locks the alarm function, while "0" unlocks the alarm function.

Object 32: "Output: Alarm ON/OFF" (length = 1 bit)

An alarm is triggered if a continuous number of movements are detected within a parametrisable time frame. Different time frames can be defined for the switching ON and OFF of an alarm.

AIR QUALITY OBJECTS

Object 33: "Input: Lock sending air quality" (length = 1 bit)

The sending of the air quality value is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the air quality value after locking and unlocking. Setting only possible with selected values.

Object 34: "Input: External air quality" (length = 2 bytes)

This object can be used to mix an external air quality value with the internal one for the actual value of the air quality.
This is evaluated using multipliers.

Object 35: "Output: Internal air quality" (length = 2 bytes)

This object can be used to output the internal air quality value with offset or factor values.

Object 36: "Output: Current air quality" (length = 2 bytes)

This object can be used to output the current actual air quality value. This takes into account the offset, the internal air quality value factor and the external air quality value factor and value. This value is used to evaluate the air quality value.

ACOUSTIC WARNING OBJECTS (FOR AIR QUALITY ONLY)

Object 37: "Input: Lock acoustic warnings" (length = 1 bit)

The sending of the acoustic warning is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the locking and unlocking behaviour.

Object 38: "Input: Lock air quality threshold 1" (length = 1 bit)

The sending of air quality threshold 1 is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the locking and unlocking behaviour.

Object 39: "Input: Air quality threshold 1" (length = 2 bytes)

This object can be used to mix an external threshold with the internal one for the actual value of air quality threshold 1.
This is evaluated using multipliers.

Object 40: "Output: Air quality threshold 1 ON/OFF" (length = 1 bit)

This object can be used to output whether the air quality value has exceeded or fallen below air quality threshold 1. This takes into account the offset and factor (hysteresis) values.

Object 41: "Input: Lock air quality threshold 2" (length = 1 bit)

The sending of air quality threshold 2 is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the locking and unlocking behaviour.

Object 42: "Input: Air quality threshold 2" (length = 2 bytes)

This object can be used to mix an external threshold with the internal one for the actual value of air quality threshold 2.
This is evaluated using multipliers.

Object 43: "Output: Air quality threshold 2 ON/OFF" (length = 1 bit)

This object can be used to output whether the air quality value has exceeded or fallen below air quality threshold 2.
This takes into account the offset and factor (hysteresis) values.

Object 44: "Input: Lock air quality threshold 3" (length = 1 bit)

The sending of air quality threshold 3 is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the locking and unlocking behaviour.

Object 45: "Input: Air quality threshold 3" (length = 2 bytes)

This object can be used to mix an external threshold with the internal one for the actual value of air quality threshold 3.
This is evaluated using multipliers.

Object 46: "Output: Air quality threshold 3 ON/OFF" (length = 1 bit)

This object can be used to output whether the air quality value has exceeded or fallen below air quality threshold 3.
This takes into account the offset and factor (hysteresis) values.

TEMPERATURE OBJECTS

Object 52: "Input: Lock sending temperature" (length = 1 bit)

The sending of the temperature is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the value of the temperature after locking and unlocking. This function is only enabled when selected.

Object 53: "Input: External temperature" (length = 2 bytes)

This object can be used to mix an external temperature with the internal one for the actual value of the temperature.
This is evaluated using multipliers.

Object 54: "Output: internal temperature" (length = 2 bytes)

This object can be used to output the internal temperature with offset or factor values.

Object 55: "Output: Current temperature" (length = 2 bytes)

This object can be used to output the current actual temperature value.
This takes into account the offset, the internal temperature factor and the external temperature factor and value. This value is used to evaluate the temperature.

Object 56: "Input: Lock temperature threshold 1" (length = 1 bit)

The sending of temperature threshold 1 is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the locking and unlocking behaviour.

Object 57: "Input: Temperature threshold 1" (length = 2 bytes)

This object can be used to mix an external threshold with the internal one for the actual value of temperature threshold 1.
This is evaluated using multipliers.

Object 58: "Output: Temperature threshold 1 ON/OFF" (length = 1 bit)

This object can be used to output whether the temperature has exceeded or fallen below temperature threshold 1.
This takes into account the offset and factor (hysteresis) values.

Object 59: "Input: Lock temperature threshold 2" (length = 1 bit)

The sending of temperature threshold 2 is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the locking and unlocking behaviour.

Object 60: "Input: Temperature threshold 2" (length = 2 bytes)

This object can be used to mix an external threshold with the internal one for the actual value of temperature threshold 2.
This is evaluated using multipliers.

Object 61: "Output: Temperature threshold 2 ON/OFF" (length = 1 bit)

This object can be used to output whether the temperature has exceeded or fallen below temperature threshold 2.
This takes into account the offset and factor (hysteresis) values.

HUMIDITY OBJECTS

Object 65: "Input: Lock sending humidity" (length = 1 bit)

The sending of the humidity value is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the humidity value after locking and unlocking. This function is only enabled when selected.

Object 66: "Input: External humidity" (length = 2 bytes)

This object can be used to mix an external humidity value with the internal one for the actual value of the ambient humidity.
This is evaluated using multipliers.

Object 67: "Output: internal humidity" (length = 2 bytes)

This object can be used to output the internal humidity value with offset or factor values.

Object 68: "Output: Current humidity" (length = 2 bytes)

This object can be used to output the current actual humidity value.
This takes into account the offset, the internal humidity value factor and the external humidity value factor and value. This value is used to evaluate the humidity value.

Object 69: "Input: Lock humidity threshold 1" (length = 1 bit)

The sending of humidity threshold 1 is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the value of humidity threshold 1 after locking and unlocking.

Object 70: "Input: Humidity threshold 1" (length = 2 bytes)

This object can be used to mix an external threshold with the internal one for the actual value of humidity threshold 1.
This is evaluated using multipliers.

Object 71: "Output: Humidity threshold 1 ON/OFF" (length = 1 bit)

This object can be used to output whether the humidity level has exceeded or fallen below humidity threshold 1.
This takes into account the offset and factor (hysteresis) values.

Object 72: "Input: Lock humidity threshold 2" (length = 1 bit)

The sending of humidity threshold 2 is locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be set to determine the value of humidity threshold 2 after locking and unlocking.

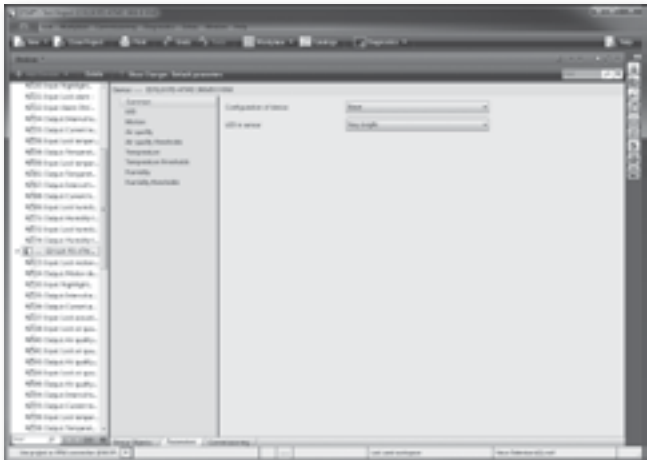
Object 73: "Input: Humidity threshold 2" (length = 2 bytes)

This object can be used to mix an external threshold with the internal one for the actual value of humidity threshold 2.
This is evaluated using multipliers.

Object 74: "Output: Humidity threshold 2 ON/OFF" (length = 1 bit)

This object can be used to output whether the humidity level has exceeded or fallen below humidity threshold 2.
This takes into account the offset and factor (hysteresis) values.

DESCRIPTION OF APPLICATIONS



1. MASTER/SLAVE

The Master detects presence and evaluates it according to set parameters.

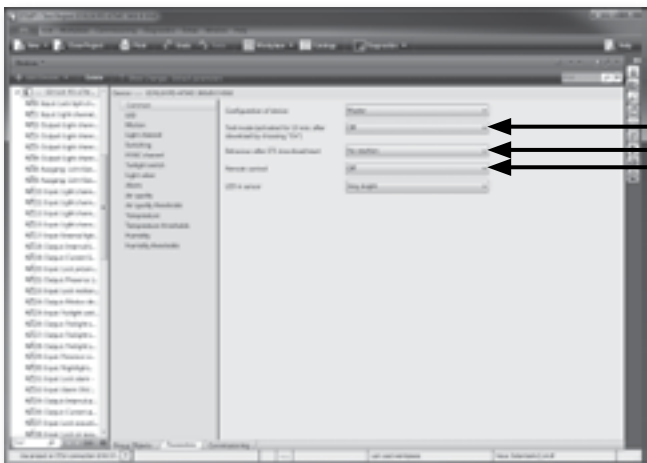
“Lighting ON/OFF” or “lighting light value higher/lower”

The Slave is used exclusively to extend the field of detection. Presence is transmitted to the Master (object 22) for evaluation according to the set parameters.

• **Master/Slave selection**

Two Masters can work in parallel to extend the field of detection. Each Master evaluates the presence (object 24) according to its parameters set via the ETS (Engineering Tool Software) and regulates/controls the lighting appropriately.

Default setting: Master



2. TEST MODE

(only for Master device configuration)

When test mode is “ON” → light measurement is disabled.

When test mode is enabled, the connection with the lighting system is checked.

If the motion sensor detects movement, the lighting will be “ON” for 5 seconds, followed by a dead time of 1 second “OFF”.

The blue LED indicates that movement has been detected.

Test ON switches to test OFF automatically after 10 minutes, or when the parameters are stored.

Note: During test → Slave input enabled.

3. BEHAVIOUR AFTER ETS DOWNLOAD/RESET

Choose from: “No reaction”, “ON”, “OFF”
 During the process, the following objects are sent:

Switching operating mode:

- Object 5: “Output: Light channel 1 ON/OFF”
- Object 6: “Output: Light channel 2 ON/OFF”

“Controlling” or “regulating” operating mode:

- Object 5: “Output: Light channel ON/OFF”
- Object 8: “Output: Light channel dim value 1”
- Object 9: “Output: Light channel dim value 2”

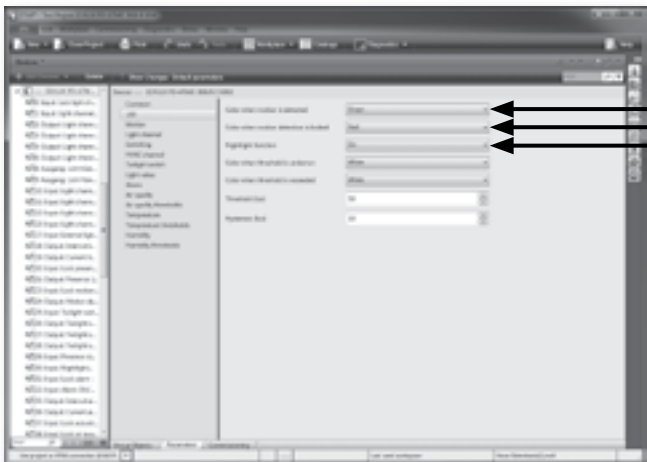
- Also, object 21: “Output: HVAC channel ON/OFF”

4. REMOTE CONTROL

This is where you can disable operation via the Mobil-PDi/User or X-REMOTE (iPhone).

Caution: Remote control is disabled in test mode.

DESCRIPTION OF APPLICATIONS



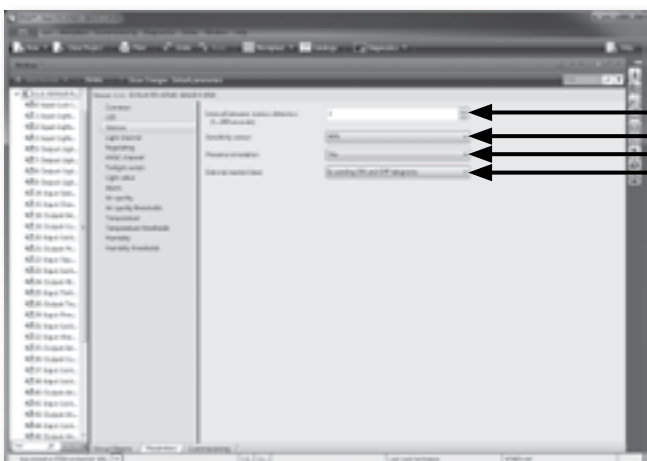
5. LEDS IN SENSOR

Options: choose between one of the LED brightness levels or "OFF"

If the LED is not switched off, you can specify its colour when motion is detected (2 x flashes) and when motion detection is locked via object 23. You can use the parameters to set the brightness of the LED to 1 of 5 different levels.

5.1 Night-light feature

This function allows you to use the LED as a nightlight. It will switch to one of the preset colours as soon as the light value falls below or exceeds the threshold. You can use object 30 to disable the nightlight.



6. MOTION DETECTION

When movement is detected, this status is maintained for the preset time period. Then, several requests are sent to the sensors each second to determine whether further motion has been detected (object 24). You can use one of the parameters to set the sensor's level of sensitivity. Object 23 can be used to lock motion detection. The LED will display the colour selected to indicate this.

7. SENSOR'S LEVEL OF SENSITIVITY

The detector is set to 90% sensitivity in the factory settings. The level of sensitivity can be reduced in 10% increments, if necessary.

! Note: If the sensitivity is set to 100%, this may result in switching errors.

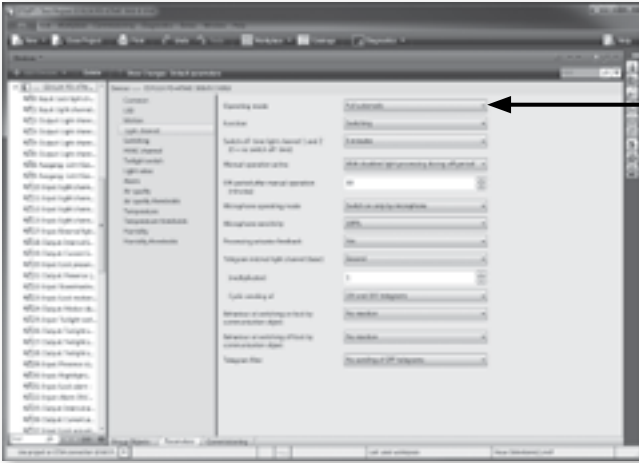
8. PRESENCE SIMULATION

The detector keeps a constant record of if and when movement has been detected, for a period of 1 week. An ON telegram via object 29 can then be used to switch the channels on or off according to this weekly record. The stored time lapse is taken into account. Normal motion detection also remains active during this process.

9. EXTERNAL MASTER/SLAVE

This parameter can be used to determine whether the external Master/ Slave only sends ON telegrams when motion is detected, or whether the external device sends an ON telegram when motion is detected and OFF telegrams when no movement is detected.

DESCRIPTION OF APPLICATIONS



10. LIGHT CHANNEL

10.1 Light channel operating mode

• "Fully automatic" operating mode

Lighting is automatically switched on if the detector detects presence and the ambient lighting level has fallen below the preset brightness threshold or set value. The lighting is automatically switched off if no persons are present and once the preset switch-off delay time has elapsed.

The lighting will also switch off automatically if the preset brightness threshold or set value is exceeded, regardless of presence.

When persons are present, in order to avoid sudden changes in brightness caused by undesired switching on/off of the lighting, the detector will only be triggered after a time delay.

Example: a passing cloud could potentially cause unnecessary switching.

Time delay from "light to dark": 30 seconds

Time delay from "dark to light": 5 minutes

• Additional manual lighting control in fully automatic mode

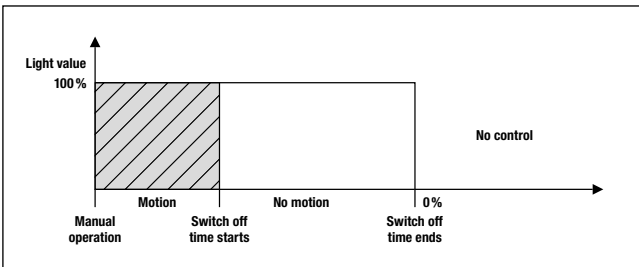
The lighting can be switched on or off manually using infrared remote control (Mobil-PDi/User, please also refer to separate Mobil-PDi/User operating instructions) or by telegrams, e.g. by pressing external KNX/EIB buttons.

If "Manual operation active while presence" is set, the light can be switched on manually. This will remain switched on for as long as the detector continues to detect movement, regardless of the ambient brightness.

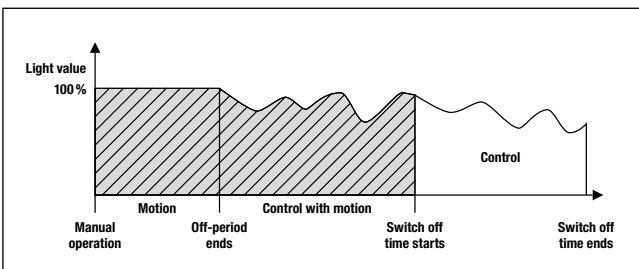
If "Manual operation active during off-period" is set, the detector turns the lighting to 100% during this period. Once the off-period comes to an end and if there are persons present, the device will start controlling the lighting according to the preset target value.

If no more movement is detected, the detector will revert to the previous automatic mode after the switch-off delay time has elapsed.

Manual operation active while presence



Manual operation active during off-period



Note: Applies to all light channel operating modes.

• "Semi-automatic" operating mode

If "semi-automatic" mode has been selected, the lighting must be switched on manually using infrared remote control (Mobil-PDi/User) or by telegrams, e.g. by pressing external KNX/EIB buttons. This means that the detector does not automatically switch "ON" the lighting when persons are present.

However, should the natural lighting level increase and the ambient lighting level exceed the preset light value, the detector will automatically switch the lighting off 5 minutes after reaching the preset light value, regardless of any presence.

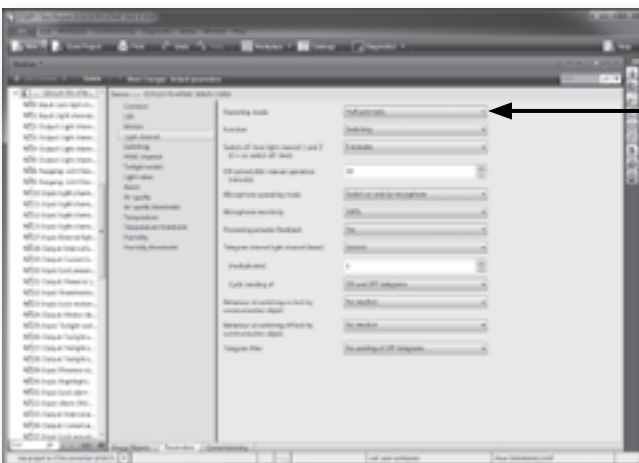
The lighting can subsequently be switched back on manually at any time.

If "Manual operation active during off-period" is set, during this time the detector behaves in the same way as when the setting "Manual operation active while presence" is set. The detector then switches to normal operating mode. This means that the light can be switched on by the user even if the threshold value has been exceeded, but will then be automatically switched off again once the preset time has elapsed.

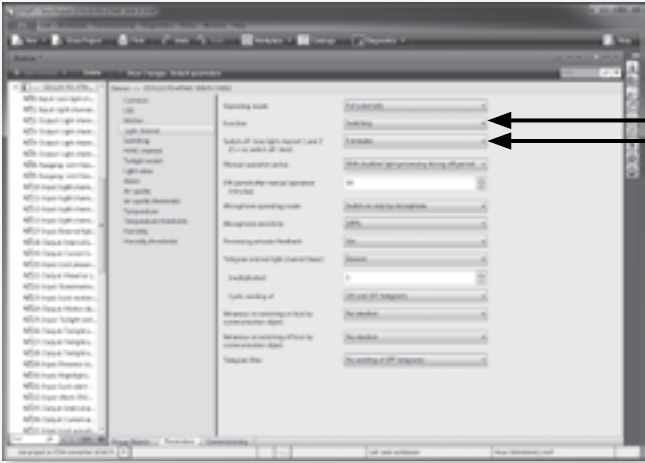


Note: External ON telegram, e.g. through KNX/EIB button, is essential in semi-automatic mode! Applies to all light channel operating modes.

Default setting: Fully automatic



DESCRIPTION OF APPLICATIONS



10.2 Light channel function

Options:

Switching: ON/OFF to a defined threshold.

Controlling: ON/light control to a defined set value/(OFF) constant light control.

Regulating: Light is regulated via linear correlation between the dim value and the light value.

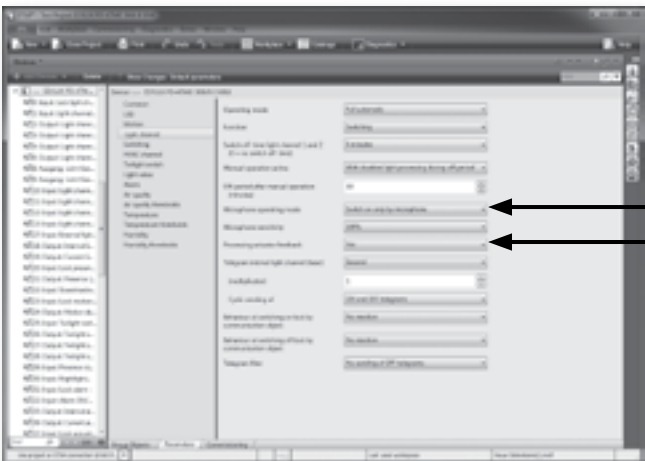
Default setting: Switching

10.3 Light channel switch-off delay time

• Light channel switch-off delay time

Options: 0 seconds, 30 seconds – 12 hours

Default setting: 5 minutes



10.4 Microphone operating mode

The microphone can be used for detecting presence. The following operating modes are available:

No microphone: only motion sensors are active.

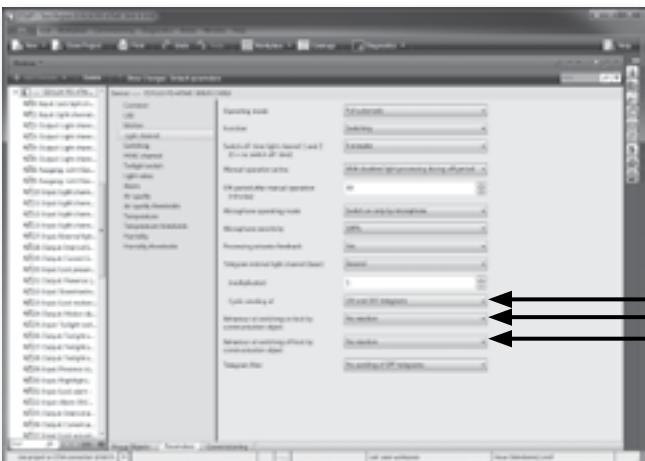
Switch-on via motion detection only: the light channel is not switched on via microphone, but sound is analysed during presence.

Switch-on via microphone only: the light channel is switched on via microphone only; motion sensors are also analysed during presence.

Microphone only, no motion detection: the microphone's sensitivity can be adjusted in test mode.

10.5 Processing actuator feedback

Objects 12 and 13 (or object 12 when "controlling" or "regulating" is selected) can be used to evaluate the status object of an actuator. In the event that the actuator is not only controlled by the detector, the light channel switches to standby mode if the status of the channel differs from that of the actuator.



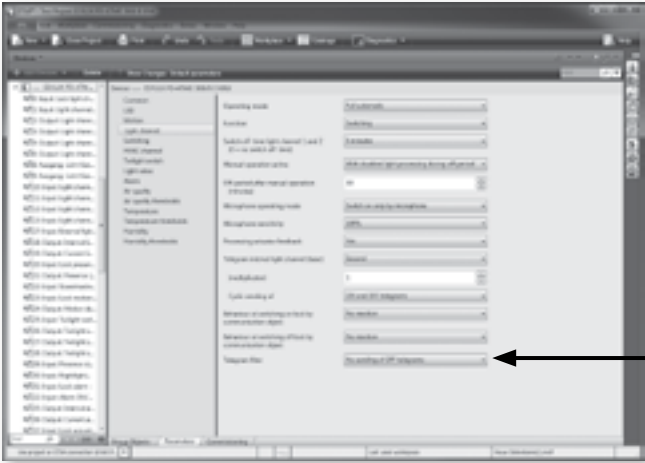
10.6 Cyclic sending

The light channel sends its current status in cycles according to specified time intervals. At the same time, it is also possible to determine whether it repeatedly sends OFF or ON telegrams in cycles.

10.7 Behaviour at switching lock ON or OFF

Options for each include: "No reaction", "Switch off" or "Switch on" the light channel.

DESCRIPTION OF APPLICATIONS

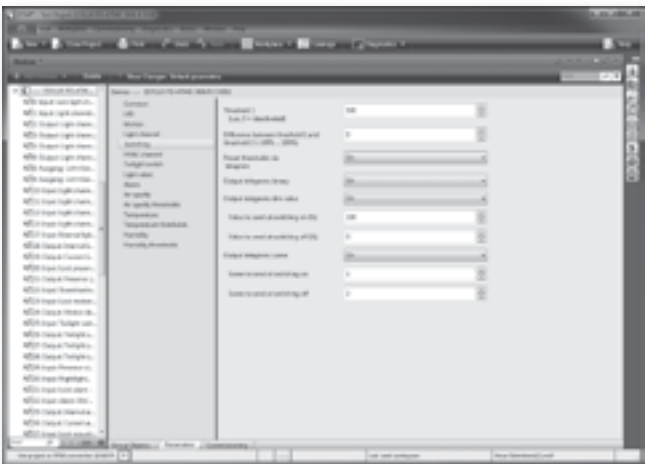


10.8 Telegram filter

This can be used to prevent OFF or ON telegrams from being sent through the light channel.

10.9 Lighting controlled/regulated regardless of presence

An ON telegram can be sent via object 4 to initiate light control/regulation regardless of presence if this function has been enabled in the parameters (only visible in controlling/regulating operating mode).

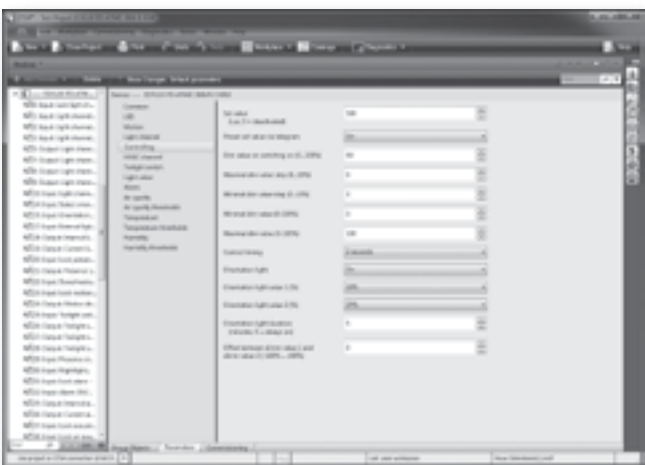


11. LIGHT CHANNEL FUNCTION

11.1 Switching

Threshold 0 = disabled, motion detection only
 Threshold 1 - 2,000 lux (using the up/down menu) or directly enter a value between 0 and 2,000 lux
 Default setting: 500 lux
 There is an option of determining an offset (can also be assigned using objects 10 and 11) between "switching threshold ON/OFF 1" and "switching threshold ON/OFF 2"
 -50% to +50%
 Default setting: ±0%

Output telegrams can be sent in binary form (objects 5 and 6), as dim values (objects 8 and 9), (0-100%), or as scenes (objects 2 and 3), (1-64). Individual parameters can be set for the switch ON and OFF values.



11.2 Controlling

• Dim value when controlling begins

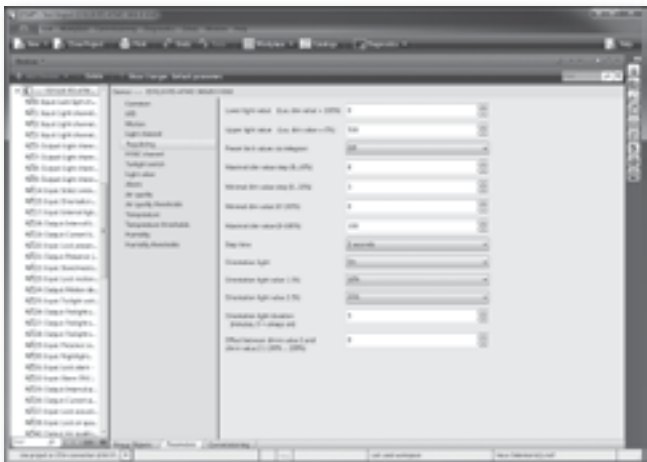
Options: 0 - 100% (using the up/down menu) or direct entry 0 - 100%
 Default setting: 60%

Control timing: Options: 0.5 - 10 seconds (up/down menu)

⚠ Note: If the control loop exhibits a hunting tendency, the sensor can be adjusted to various illuminants and ballasts using the "control timing" parameter.

As a rule of thumb: the slower the lighting responds, the longer the control timing (0.5-10 seconds).

DESCRIPTION OF APPLICATIONS



11.3 Regulating

Lower light value: 0 - 2,000 lux
 Upper light value: 0 - 2,000 lux

Lower minimal dim value: 0 - 100%
 Upper maximal dim value: 0 - 100%

Caution: Always ensure that the maximal value selected is higher than the chosen minimal value.

Step time: Options: 0.5 - 10 seconds (up/down menu)

Note: If the control loop exhibits a hunting tendency, the sensor can be adjusted to various illuminants and ballasts using the "step time" parameter.

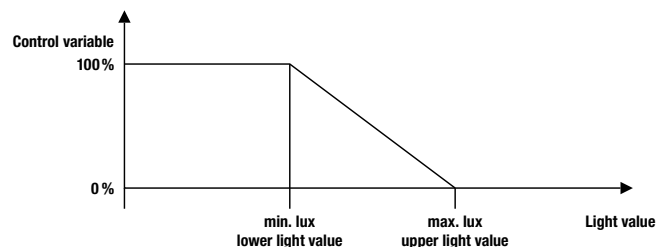
As a rule of thumb: the slower the lighting responds, the longer the step time (0.5-10 seconds).

Default setting: 2 seconds

You can specify 2 light values for light regulation using parameters or telegrams (communication objects 10 and 11). If the maximal light value is reached, a telegram is sent with a value of 0%. If the lower light value is measured, a telegram is sent with a value of 100%. In between this, the control variable is calculated on a linear basis and sent to the dimming actuator (objects 8 & 9).

The externally connected or internal light sensor must be positioned in such a way to ensure that it receives a large amount of natural light, but little artificial light.

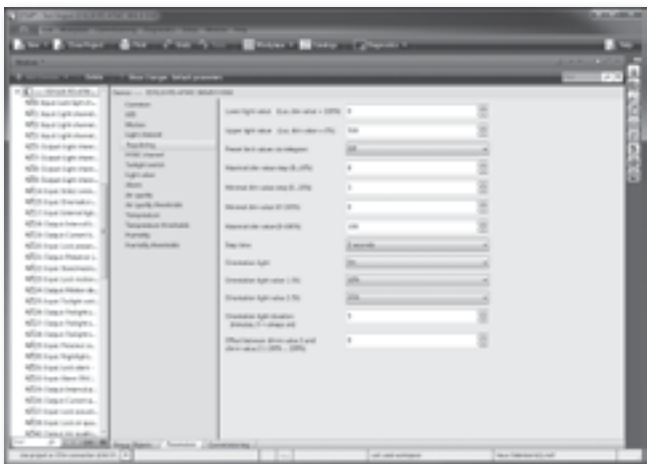
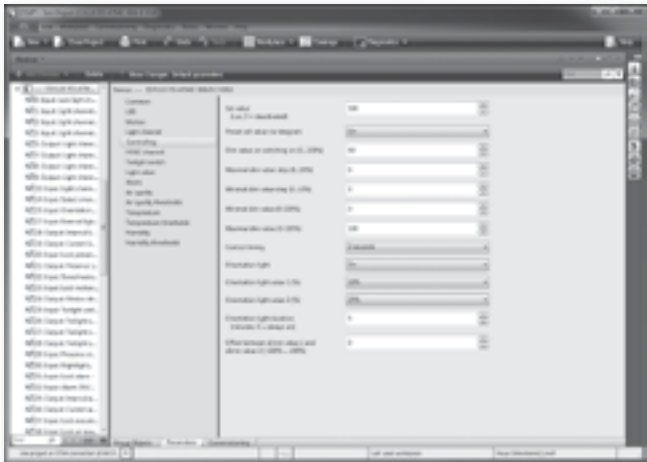
Example



Setting of minimal and maximal dim value step (0 - 10%), enabled during controlling and regulating

Setting of minimal and maximal dim value (0 - 100%), enabled during controlling and regulating

DESCRIPTION OF APPLICATIONS



11.4 Orientation light value

• Orientation light value 1

Options: 0/5 - 50% (up/down menu) in 5% steps

! Note: only active for "Controlling" and "Regulating"! The orientation light value 1 is active as standard. Via object 14, an ON telegram changes the setting to orientation light value 2 and an OFF telegram changes the setting to orientation light value 1. This is only active if the orientation light has been set to "ON".

Default setting: 10%

• Orientation light value 2

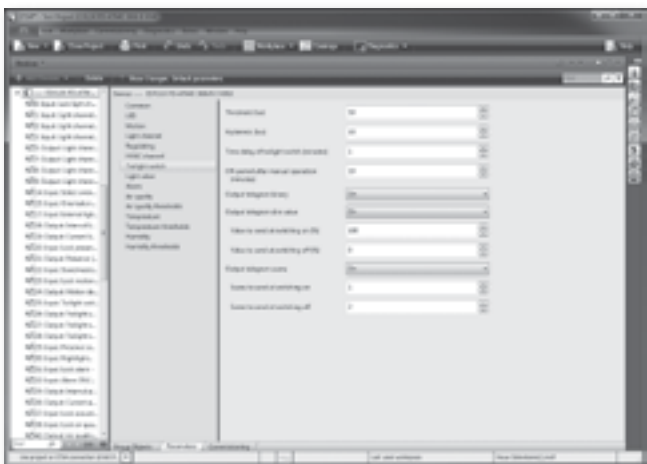
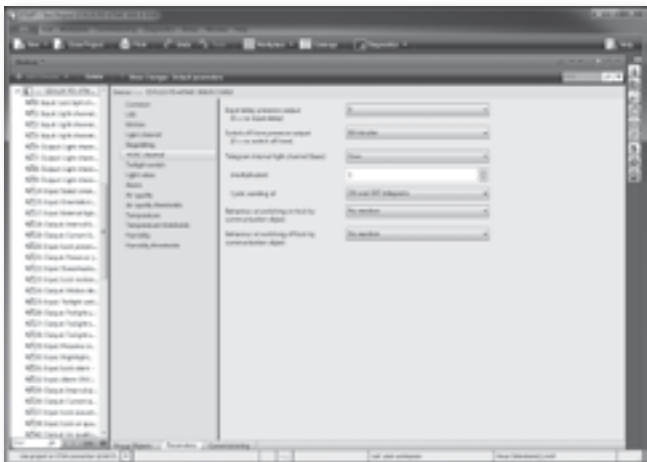
Options: 0/5 - 50% (up/down menu) in 5% steps

! Note: only active for constant light control/regulation! Only active if orientation light has been set to "ON".

Default setting: 25%

An OFF telegram via object 15 is used to switch off the orientation light function, while an ON telegram switches it on. If the orientation light function is switched off, the detector switches to OFF/0% once there is no more presence and once the switch-off delay time has elapsed.

DESCRIPTION OF APPLICATIONS



12. HVAC CHANNEL

⚠ Note: the presence output is independent of the set light values.

Option of selecting input delay of 0 minutes or 2 minutes – 30 minutes.
 Default setting: 0 minutes

Option of selecting a switch-off delay time of 0, 1 - 60 minutes or up to 12 hours.
 Default setting: 60 minutes

12.1 Cyclic sending

The HVAC channel sends its current status in cycles according to specified time intervals. At the same time, it is also possible to determine whether it repeatedly sends OFF or ON telegrams in cycles.

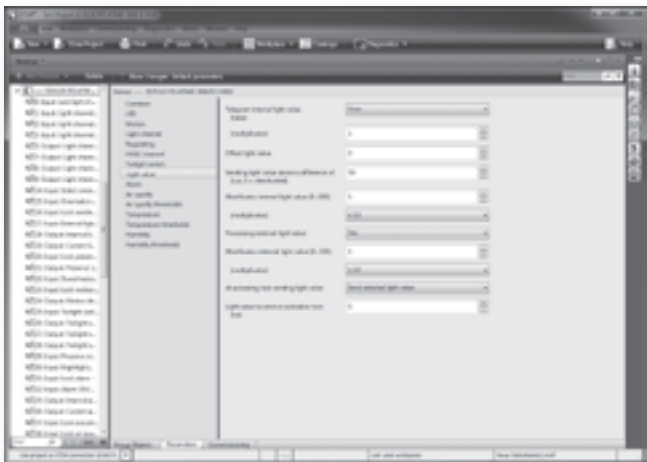
12.2 Behaviour at switching lock ON or OFF

Options for each include: "No reaction", "Switch off" or "Switch on" the light channel.

13. TWILIGHT SWITCHES

In normal operating mode, the twilight switch sends an ON telegram if the threshold value is not reached during the entire switching time and an OFF telegram if the threshold value is exceeded (plus hysteresis) during the entire switching time (via communication object 26). The output telegram can be sent in binary form (object 26), as a dim value (object 27), (0-100%) or as a scene (object 28), (1-64). Individual parameters can be set for the switch ON and OFF values. The twilight switch remains inactive if it is manually switched using communication object 25 until the off-period has elapsed, at which point it reverts to normal operating mode.

DESCRIPTION OF APPLICATIONS



14. LIGHT VALUE

14.1 Current light value

The current light value can be transmitted either in cycles or from a specified offset to the last actual value sent. This value is calculated as follows:

$$\text{Value} = [\text{light value from sensor} \times \text{modifier} \times \text{multiplier}] + \text{offset}$$

Object 16 can be used to lock sending of the current light value. This allows you to send either the current value or a value specified in the parameters.

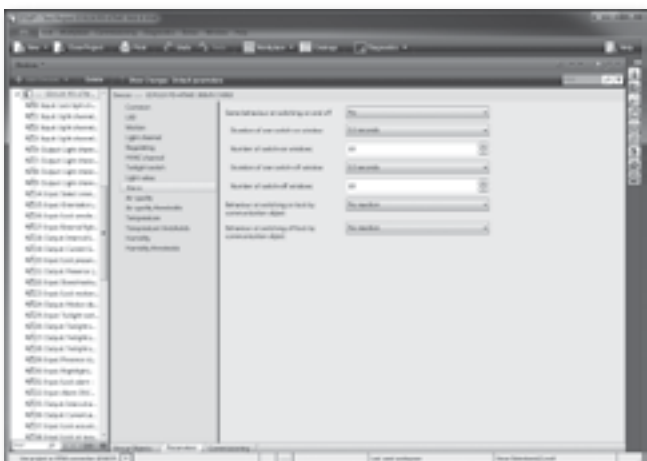
14.2 External light value

An external sensor can also be integrated and assessed via KNX for internal light control/regulation. The actual value for controlling/regulating is then:

$$\text{Value} = \text{actual light value} + [\text{external light value} \times \text{modifier} \times \text{multiplier}]$$

14.3 Internal light value

You can also check light control/regulation by using object 18 to output the internal light value directly from the sensor without factor or offset values. This value is always sent along with the current light value via communication object 19.



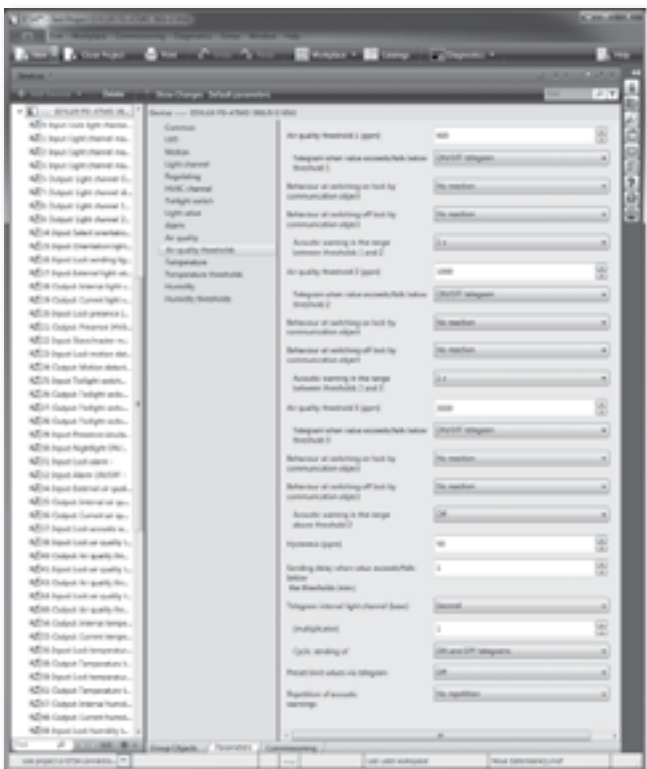
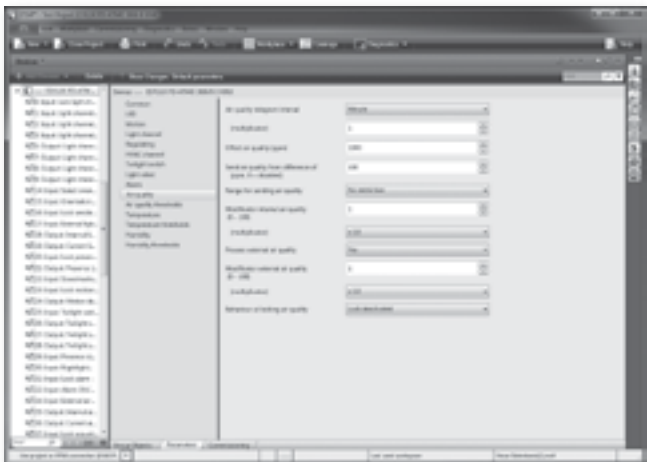
15. ALARM

The alarm function can be set to react differently or the same at switch ON and switch OFF.

The alarm output (object 32) can be locked using object 31. Options for behaviour at switching lock ON or OFF via object 31 include "no reaction", "switch OFF", "switch ON".

The number of detected movements within a time frame can be set.

DESCRIPTION OF APPLICATIONS



16. AIR QUALITY

16.1 Current air quality value

The detector sends the current air quality status in cycles according to specified time intervals. This value is calculated as follows:

$$\text{VALUE} = [\text{air quality from sensor} \times \text{modifier} \times \text{multiplier}] + \text{offset}$$

Object 33 can be used to lock sending of the current air quality value. This allows you to send either the current value or a value specified in the parameters.

16.2 External air quality value

An external sensor can also be integrated and assessed via KNX for internal air quality control/regulation. The actual value for controlling/regulating is then:

$$\text{VALUE} = \text{actual air quality value} + [\text{external air quality value} \times \text{modifier} \times \text{multiplier}]$$

16.3 Internal air quality value

You can also check air quality control/regulation by using objects 34 and 35 to output the internal air quality value directly from the sensor without internal factor or offset values. This value is always sent along with the current air quality value via communication object 36.

16.4 Air quality thresholds

This parameter can be used for configuring air quality thresholds 1, 2 and 3. The respective reactions when the value exceeds or falls below the thresholds are adjustable and can sent with an:

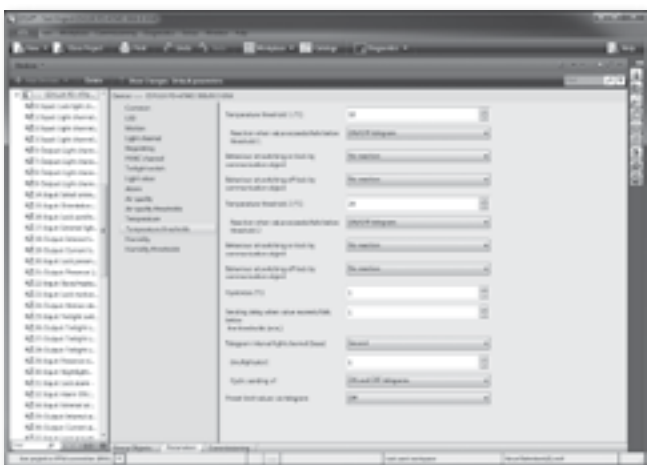
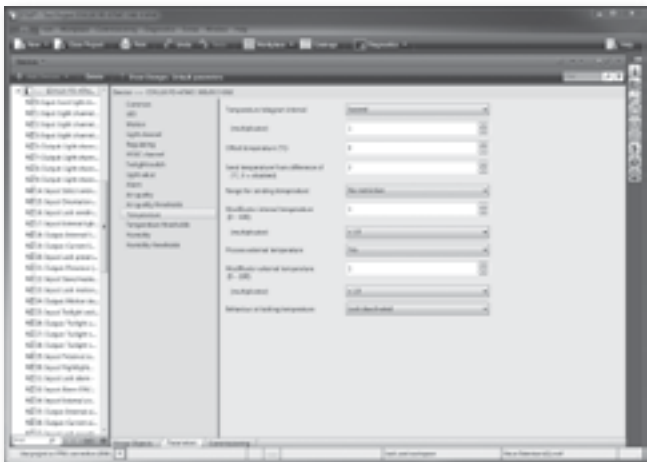
ON/OFF telegram

OFF/ON telegram or an

ON/OFF telegram with no additional reaction.

You can also set a sending delay of 1 minute to 4 hours when the value exceeds/falls below the thresholds. A repeated acoustic warning is emitted if 1 of the 3 thresholds is exceeded.

DESCRIPTION OF APPLICATIONS



17. TEMPERATURE

17.1 Current temperature

The detector sends the current temperature status in cycles according to specified time intervals. This value is calculated as follows:

$$\text{VALUE} = [\text{temperature from sensor} \times \text{modifier} \times \text{multiplier}] + \text{offset}$$

Object 52 can be used to lock sending of the current temperature. This allows you to send either the current temperature or a value specified in the parameters.

17.2 External temperature

An external sensor can also be integrated and assessed via KNX for internal temperature control/regulation. The actual value for controlling/regulating is then:

$$\text{VALUE} = \text{actual temperature} + [\text{external temperature} \times \text{modifier} \times \text{multiplier}]$$

17.3 Internal temperature

You can also check temperature control/regulation by using objects 53 and 54 to output the internal temperature directly from the sensor without factor or offset values. This value is always sent along with the current temperature via communication object 55.

17.4 Temperature thresholds

This parameter can be used for configuring temperature thresholds 1, 2 and 3. The respective reactions when the value exceeds or falls below the thresholds are adjustable and can sent with an:

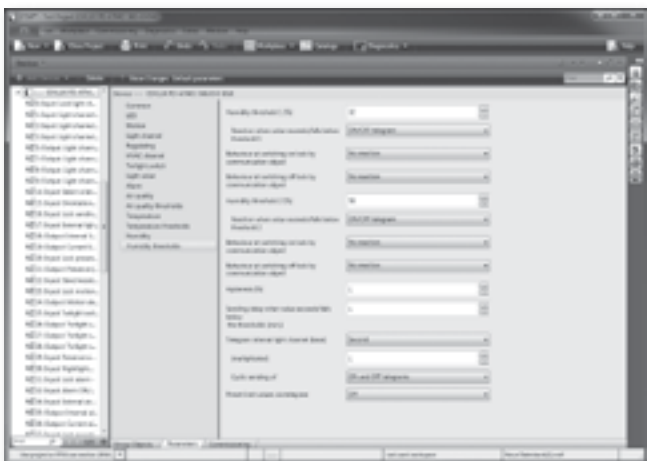
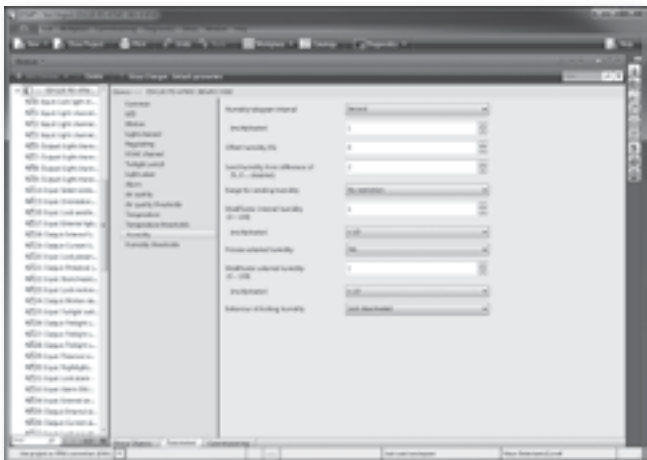
ON/OFF telegram

OFF/ON telegram or an

ON/OFF telegram with no additional reaction.

You can also set a sending delay of 1 minute to 4 hours when the value exceeds/falls below the thresholds.

DESCRIPTION OF APPLICATIONS



18. HUMIDITY

18.1 Current humidity value

The detector sends the current humidity status in cycles according to specified time intervals. This value is calculated as follows:

$$\text{VALUE} = [\text{humidity from sensor} \times \text{modifier} \times \text{multiplier}] + \text{offset}$$

Object 65 can be used to lock sending of the current humidity value. This allows you to send either the current value or a value specified in the parameters.

18.2 External humidity value

An external sensor can also be integrated and assessed via KNX for internal humidity control/regulation. The actual value for controlling/regulating is then:

$$\text{VALUE} = \text{actual humidity value} + [\text{external humidity value} \times \text{modifier} \times \text{multiplier}]$$

18.3 Internal humidity value

You can also check humidity control/regulation by using objects 66 and 67 to output the internal humidity value directly from the sensor without factor or offset values. This value is always sent along with the current humidity value via communication object 68.

18.4 Humidity thresholds

This parameter can be used for configuring humidity thresholds 1, 2 and 3. The respective reactions when the value exceeds or falls below the thresholds are adjustable and can sent with an:

ON/OFF telegram

OFF/ON telegram or an

ON/OFF telegram with no additional reaction.

You can also set a sending delay of 1 minute to 4 hours when the value exceeds/falls below the thresholds.