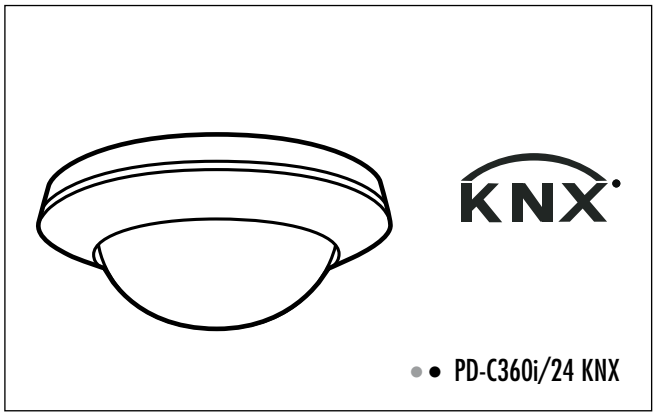
GB • PRESENCE DETECTOR PD-C360i/24 KNX (EP10425813)



• • PD-C360i/24 KNX

ESYLUX• www.esylux.com

GB • PRESENCE DETECTOR

Congratulations on your purchase of this high-quality ESYLUX product. To ensure proper operation, please read these user instructions carefully and keep them for future reference

1 • SAFETY INSTRUCTIONS

CAUTION: Work on the 230 V power system 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.

Use this product only as intended (as described in the user instructions). Changes or modifications to the product or painting it will result in loss of warranty.
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.

2 • DESCRIPTION

The ESYLUX PD-C360i/24 KNX is a presence detector with a 360° field of detection and integrated bus coupler for ceiling mounting. It offers independent control of 2 lighting areas: window and internal areas (switching or constant light control features) plus a third separate lighting area (switching feature).
For further features, please refer to the operating instructions **"Description of applications"**.
With a range of up to 24 m in diameter, the presence detector is suitable for use in offices, classrooms, conference facilities and halls with natural lighting.

The PD-C360i/24 KNX is intended to be used in a KNX (EIB), TP bus system in conjunction with other KNX components.

If the ESYLUX PD-C360i/24 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.

• Blended 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 apply the ETS (Engineering Tool Software) that is required for parameter setting.

3 • INSTALLATION / ASSEMBLY / CONNECTION

See separate assembly instructions.

4 • START-UP

All parameter setting is carried via the ETS (Engineering Tool Software).
The product database and application description are available to download at www.esylux.com.

5 • SWITCH-ON CHARACTERISTIC / LED INDICATIONS

- **Connect the bus supply**
  A warm-up phase of approx. 25 sec. is initiated.
  The **red LED** and **green LED** flash slowly (f = 1 Hz).

- **LED display after warm-up**
  Each time motion is detected, this is indicated by 2 x flashes of the **green LED**.

- **In the Master function, the remote control entries will be acknowledged as follows:**
  with the **red LED = channel 1**
  with the **green LED = channel 2**
  with the **red** and **green LEDs** in alternation = **channel 3**

- **In the Slave function**, each detection is acknowledged 2 x with the **green LED**.

NOTE: The LEDs are only active if they have been enabled by the ETS (Engineering Tool Software).

6 • TEST MODE

Parameters can be set via the ETS (Engineering Tool Software).
Test mode changes to RUN state after "storing" or 10 min after activating the test mode.

7 • REMOTE CONTROL

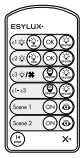
The optional user remote control Mobil-PDi/User (EM10425547) can be used to control lighting.
The Mobil-PDi/User adjusts the value for the period that persons are present plus switch-off delay time. Thereafter the values set via the ETS (Engineering Tool Software) will apply.

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

The lighting can be controlled as follows via the Mobil-PDi/User:

- Switching on or off (channel 1, 2, 3)
- Dimming (channel 1 and 2, 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 remote control Mobil-PDi/User.

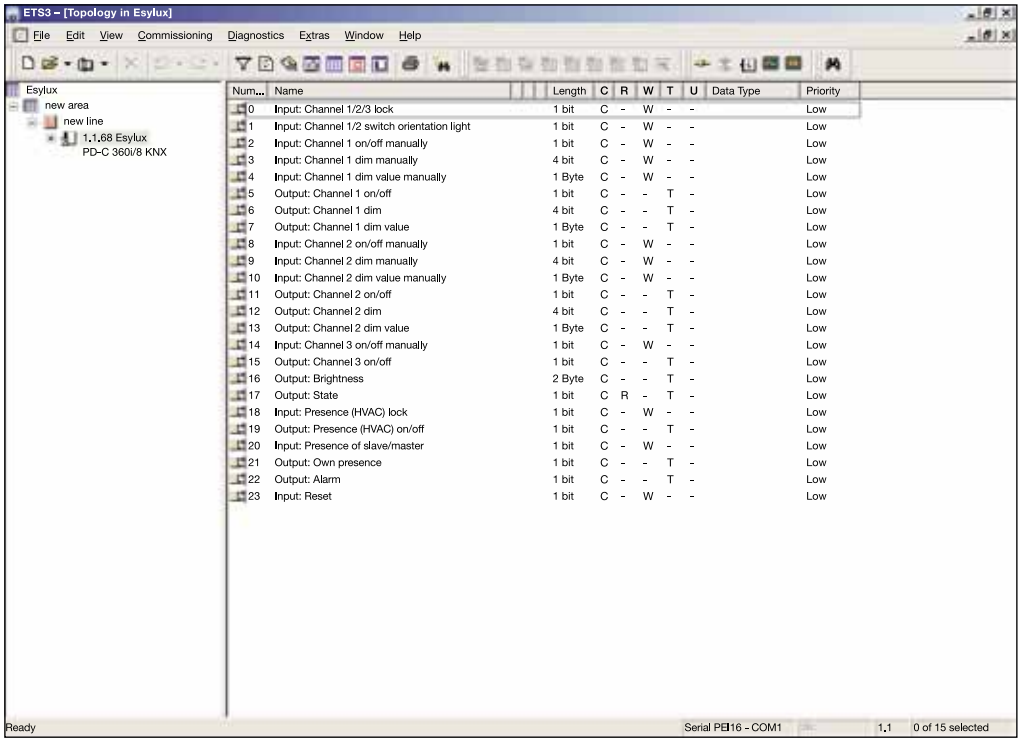


Mobil-PDi/User

8 • ESYLUX MANUFACTURER'S GUARANTEE

ESYLUX products are tested in accordance with applicable regulations and manufactured with the utmost care. The guarantor, Elektro-Technische-Systeme GmbH, Postfach 1840, D-22908 Ahrensburg, Germany (for Germany and Austria) 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.

DESCRIPTION OF COMMUNICATION OBJECTS



INPUTS

Object Ø:

Input light channel 1/2/3 lock

The three outputs light channel 1 (window), light channel 2 (room) and light channel 3 are locked with an ON telegram. This is unlocked with an OFF telegram.

Options for a change in state after input lock:

- No change
- Switch off
- Switch on

Object 1

Input light channel 1/2
Switches between the orientation light values (with constant light control feature)

An ON telegram changes the setting from orientation light value 1 to orientation light value 2.
An OFF telegram changes the setting from value 2 to value 1.

Object 2

Input light channel 1 (window), on/off manually

*Feature: Switching/Constant light control
Inputs for KNX touch sensors per light channel, 2 ON/OFF buttons for manual override of feature.

⚠ **Essential when in half automatic mode!**

Object 8

Input light channel 2 (room), on/off manually

Feature: *see Object 2

Object 14

Input light channel 3, on/off manually

Feature: Switching
Input for KNX touch sensors
2 ON/OFF buttons for manual override of feature.

Object 3

Input light channel 1 (window), dim manually

*Feature: Constant light control
Inputs for KNX touch sensors per light channel, 2 buttons
Dim up, dim down

Object 9

Input light channel 2 (room), dim manually

Feature: *see Object 3

Object 4

Input light channel 1 (window), dim value manually

*Feature: Constant light control
Input for presetting dim values (1 byte)

Object 10

Input light channel 2 (room), dim value manually

Feature: *see Object 4

Object 20

Input: Presence

Trigger input for parallel connection of Master/Master or input of Slave.

Object 23

Input: Reset

Resets the presence detector (see page 8 for behaviour at reset)

OUTPUTS

Object 5

Output light channel 1 (window, on/off

*Feature: Switching
If persons are present and artificial lighting is required, 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 11

Output light channel 2 (room), on/off

Feature: *see Object 5

Object 15

Output light channel 3, on/off

Feature: *see Object 5

Object 6

Output light channel 1 (window), dim manually

*Feature: Constant light control
If the touch sensors (Object 3 and 9) are manually pressed and held, the dim values of the presence detector are overwritten via these outputs.

Object 12

Output light channel 2 (room, dim manually

Feature: *see Object 6

Object 7

Output light channel 1 (window), dim value

*Feature: Constant light control
If persons are present and artificial lighting is required, each output sends an ON/value telegram (1 byte). If natural light is sufficient (controller to minimum) and/or no persons are present, an OFF telegram is sent once the switch-off delay time has elapsed.

Object 13

Output light channel 2 (room), dim value

Feature: *see Object 7

Object 17

Output state

The output state transmits the current status as a telegram every 1 min. - 30 min., depending on the telegram interval selected.
No interference = OFF telegram
Interference = ON telegram

Object 18

Output presence lock

The output presence (Object 19) is locked by an ON telegram.
This is unlocked with an OFF telegram.

Object 16

Output light value

The output light value transmits, every 1 min. - 30 min. (depending on the telegram interval selected), the current lux value (2 byte) measured at the presence detector.

Object 19

Output presence (HVAC) on/off

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

Object 21

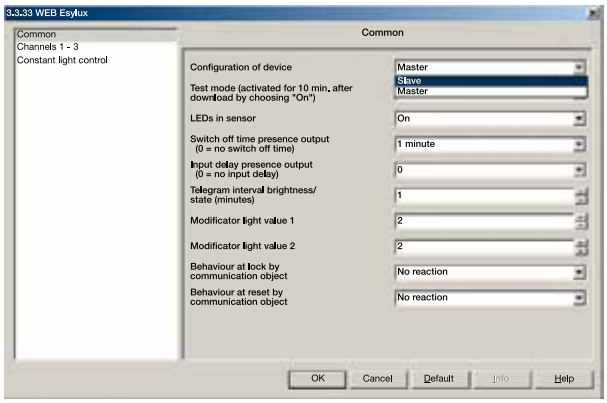
Output own presence

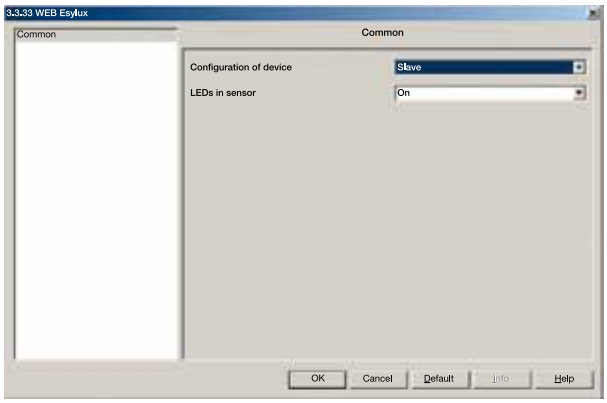
Trigger output for parallel connection of Master/Master or output of Slave.

Object 22

Output alarm

The output alarm sends an ON telegram if several detections are made within a fixed cycle (more secure detection of persons). No alarm output according to VDS.





DESCRIPTION OF APPLICATIONS

1 • MASTER/SLAVE SELECTION

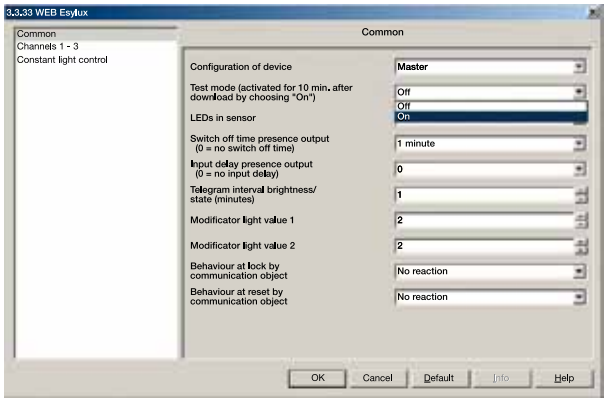
The Master detects presence and evaluates it according to set parameters.

Lighting ON/OFF or lighting light value higher/lower.

The Slave is used exclusively for extending the field of detection.
A presence is transferred to the Master (Object 20) for evaluation according to the set parameters.

- Master/Master selection
  To extend the field of detection, two Masters can work in parallel. Each Master evaluates the presence (Object 20 and 21) according to its parameters set via the ETS (Engineering Tool Software) and controls the lighting appropriately.

Default setting: Master



2 • TEST MODE OFF/ON

(Only for Master device configuration for all 3 light outputs)

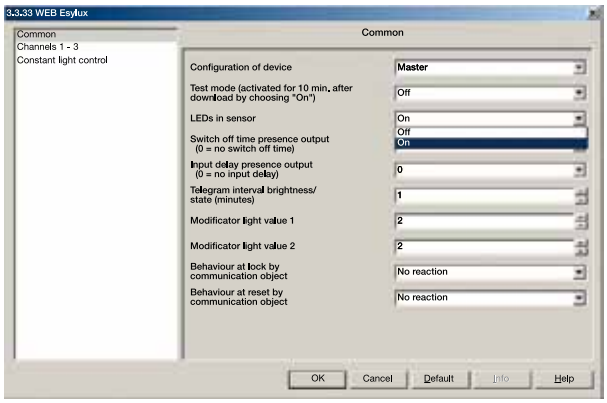
When test mode ON → light measurement deactivated.

When test mode is enabled, the connection with the lighting system is checked.
In the event of detection, the lighting will be ON for 5 sec., followed by a dead time of 5 sec. OFF.
The LED display is enabled.

Test ON changes to test OFF automatically after 10 min. or when parameters are stored.

NOTE: During test → Salve input enabled.

Default setting: Test OFF

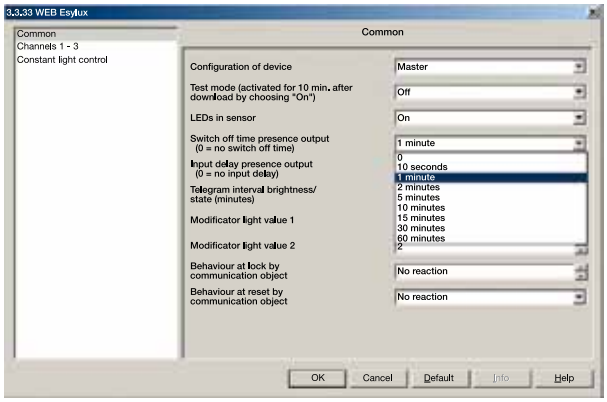


3 • LEDS IN SENSOR

Options: ON or OFF

NOTE: If ON is selected, each detection will result in the green LED flashing twice.

Default setting: ON

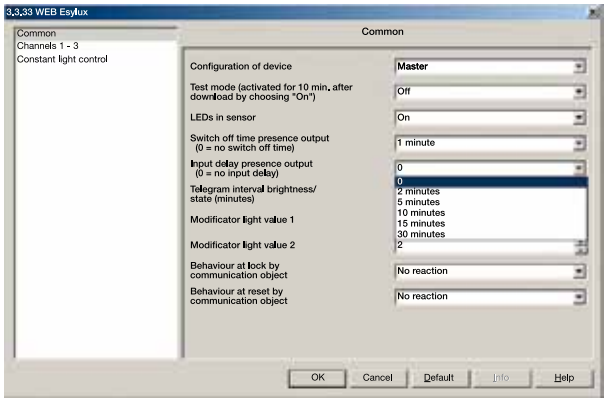


4 • SWITCH OFF TIME – PRESENCE OUTPUT (HVAC)

Option of selecting a switch-off time delay of 0 sec., 10 sec. or 1 min. - 60 min.

NOTE: The presence output is independent of the set light values.

Default setting: 60 min.

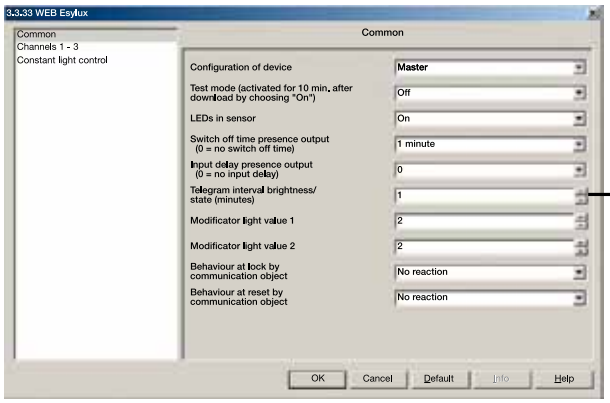


5 • INPUT DELAY – PRESENCE OUTPUT (HVAC)

Option of selecting input delay of 0 min. or 2 min. - 30 min.

NOTE: The presence output is independent of the set light values.

Default setting: 60 min.



6 • TELEGRAM INTERVAL – BRIGHTNESS/STATE

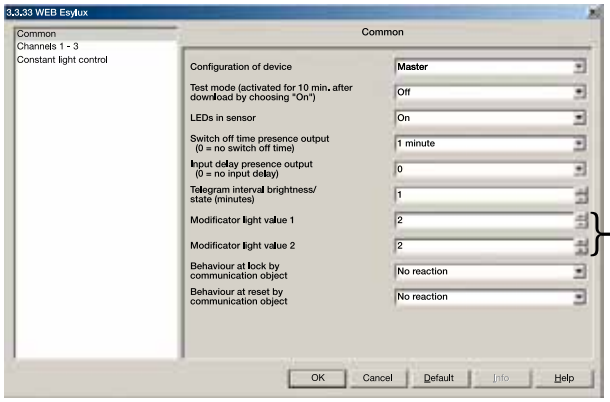
Options: 1 min. - 30 min. (up/down menu)

The presence detector transmits, in preset telegram time intervals, the measured room brightness (2 byte, Object 16).

The status report acts as a cyclical check of the sensor (Object 17).

[1...30 min.]

Default setting: 1 min.



7 • MODIFICATOR LIGHT VALUE 1 / LIGHT VALUE 2

Due to reflection, the light value measured by the presence detector will always be smaller than the light value on the work surface below.

The difference varies greatly and is dependent on local conditions.

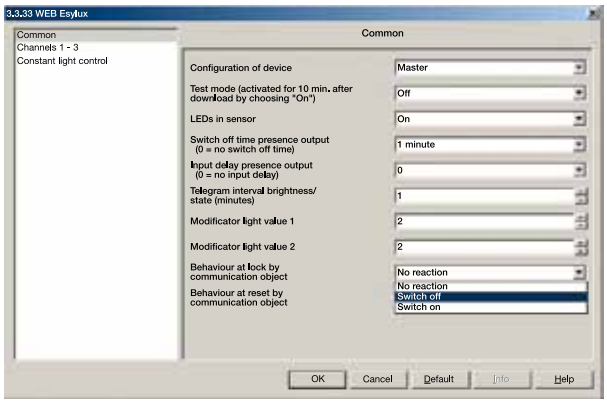
Dark surfaces cause a low level of reflection.
Light, matte surfaces cause a medium level of reflection.
Light surfaces cause a high level of reflection.

To enable optimal adjustment of the threshold or set value, a separate modificator can each be set for channel 1 and 2.

A separate setting can be entered for each channel 1 and 2 within the range:
Factor 1 - 10

[1...10]

Default setting: 5

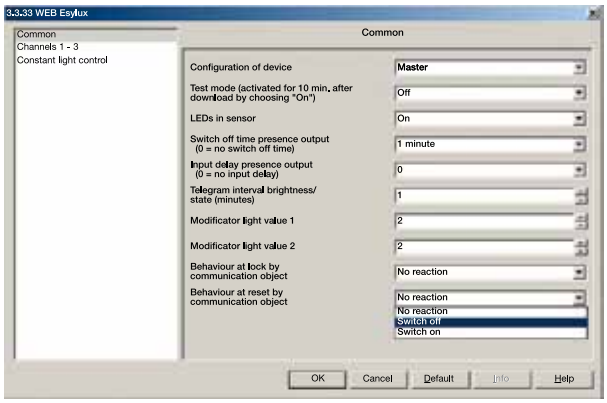


8 • LOCK

Options for change in state after lock:

- No reaction (outputs remain the same as before lock)
- Switch off (outputs send OFF telegram)
- Switch on (outputs send ON telegram)

Default setting: No reaction

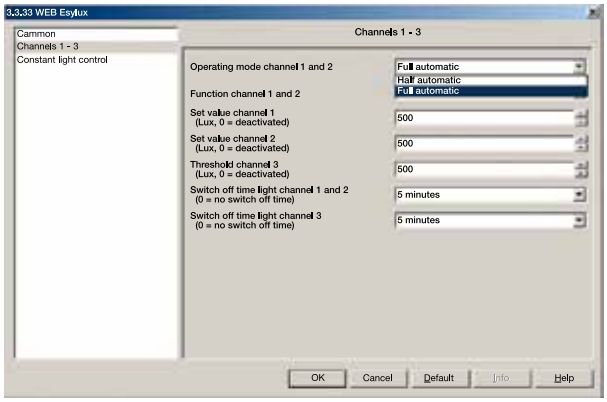


9 • RESET

Options for a change in state after a reset:

- No reaction (outputs remain the same as before reset)
- Switch off (outputs send OFF telegram)
- Switch on (outputs send ON telegram)

Default setting: No reaction



10 • OPERATING MODE FOR CHANNEL 1 AND CHANNEL 2

• **"Full 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 set switch-off delay time has elapsed.

The lighting will also switch off 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 sec.
Time delay from dark to light: 5 min.

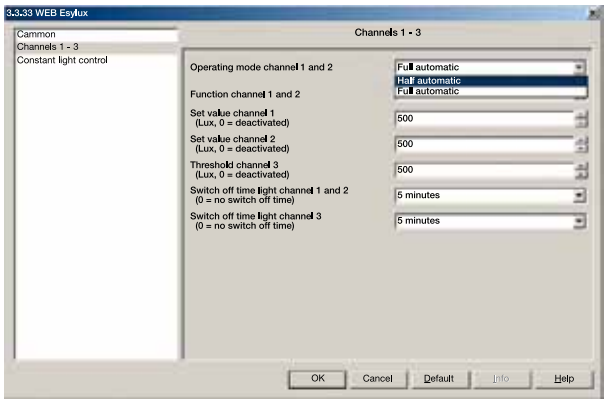
This behaviour is constantly optimised by fuzzy logic.

• Additional manual lighting control in "Full automatic" mode
The lighting can be switched on or off manually at any time using infrared remote control (Mobil-PDi/User, please also refer to separate Mobil-PDi/User instructions) or by telegrams, e.g. by pressing external KNX/EIB buttons.

If the artificial light has been switched on manually despite high ambient brightness conditions (ambient lighting level is higher than the preset light value), the lighting will remain switched on for as long as the detector continues to detect movement. If no more movement is detected, the lighting is switched off after the set switch-off delay time has elapsed.
The lighting can subsequently be switched back on manually at any time.

If the artificial light has been switched off manually, the lighting will remain switched off for as long as the detector continues to detect movement.
If no more movement is detected, the detector will revert to the previous automatic mode after the set switch-off time has elapsed.

NOTE: Applies to switching and constant light control features.



10.1 • OPERATING MODE FOR CHANNEL 1 AND CHANNEL 2

- **"Half automatic"** operating mode
  If "Half 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.

If the artificial light has been switched on manually despite high ambient brightness conditions (ambient lighting level is higher than the preset light value), the lighting will remain switched on for as long as the detector continues to detect movement (light measurement is disabled). If no more movement is detected, the lighting is switched off after the set switch-off delay time has elapsed.
The lighting can subsequently be switched back on manually at any time.

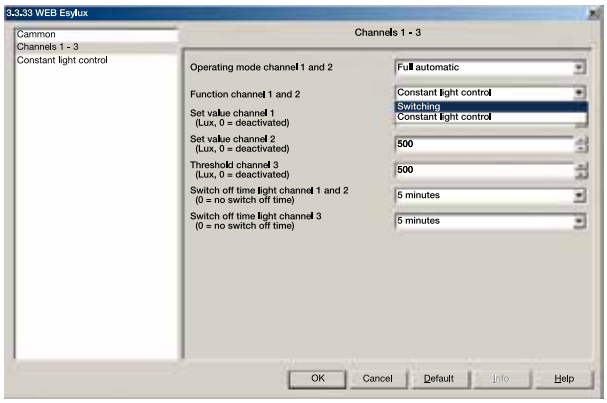
If the artificial light has been switched on manually due to low ambient brightness conditions (ambient lighting level is below the preset light value), the lighting will remain switched on for as long as the detector continues to detect movement (light measurement is enabled). If no more movement is detected, the lighting is switched off after the set switch-off delay time has elapsed.
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.

NOTE: External ON telegram, e.g. through KNX/EIB button, is essential in "Half automatic" mode.

NOTE: Applies to switching and constant light control features.

NOTE: Channel 3 is always on full automatic.

Default setting: Channel 1 and 2 on full automatic

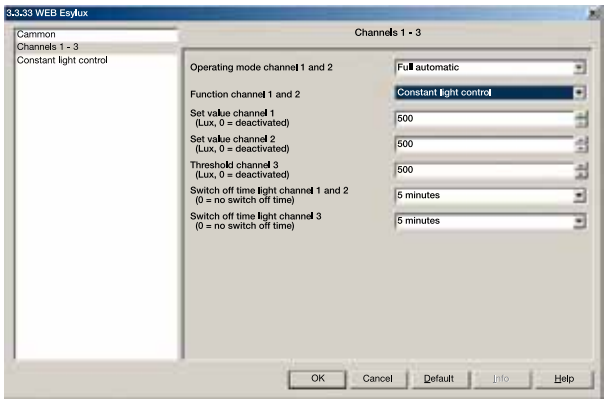


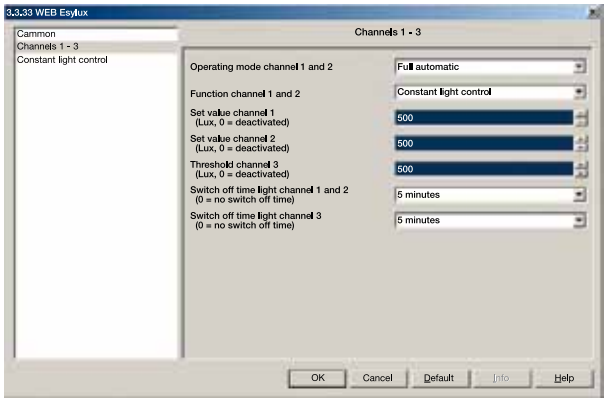
11 • FUNCTION CHANNEL 1 AND 2

Options: **Switching**: ON/OFF to a defined switching threshold
or **controlling**: ON/light control to a defined set value/(OFF)
Constant light control

NOTE: Operating mode channel 3 is always on full automatic.
Feature: Switching ON/OFF.

Default setting: Switching





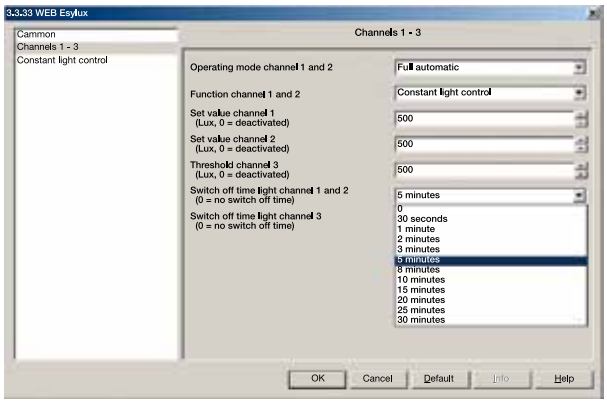
12 • THRESHOLD (SWITCHING) / SET VALUE (CONTROLLING)

Options for lighting channel 1, 2 and 3
(inputted separately for each channel):

Options: 0 = disabled
Options: 1 lux - 2000 lux (up/down menu)
or direct entry 0 lux - 2000 lux

NOTE: Operating mode channel 3 is always on full automatic.
Feature: Switching ON/OFF.

Default setting: 500 lux

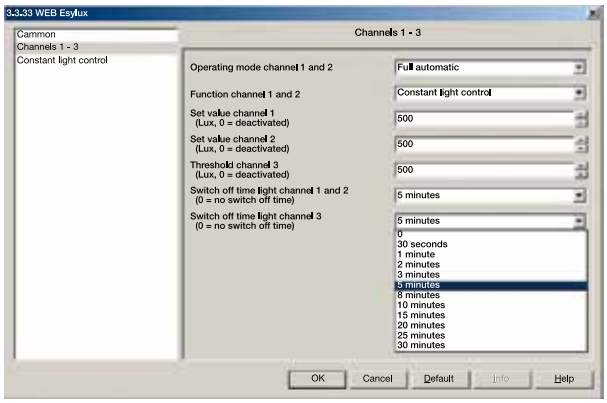


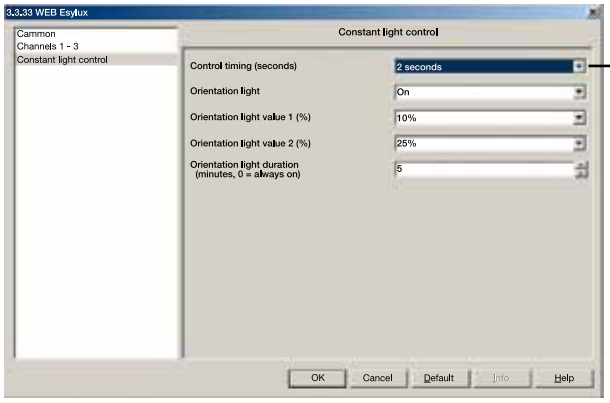
13 • SWITCH OFF TIME LIGHT CHANNEL 1/2 AND LIGHT CHANNEL 3

- Switch off time light channel 1 and 2
  Options: 0 sec., 30 sec. - 30 min.

- Switch off time light channel 3
  Options: 0 sec., 30 sec. - 30 min.

Default setting for light channel 1, 2, 3: 5 min.





14 • CONSTANT LIGHT CONTROL

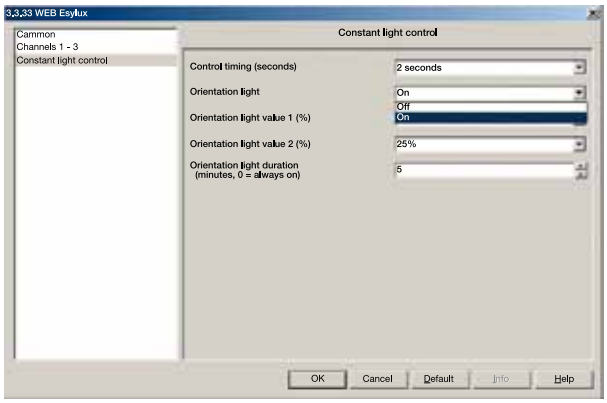
Control timing: Options: 0,5 sec. - 10 sec. (up/down menu)

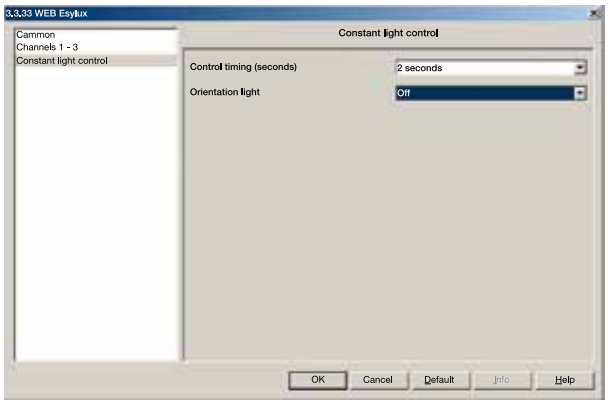
NOTE: If the control loop exhibits a hunting tendency, the sensor can be adjusted to various illuminants and ballasts using the parameter "control timing".

Rule of thumb: The slower the lighting responds, the longer the control timing.

[0,5...10 sec.]

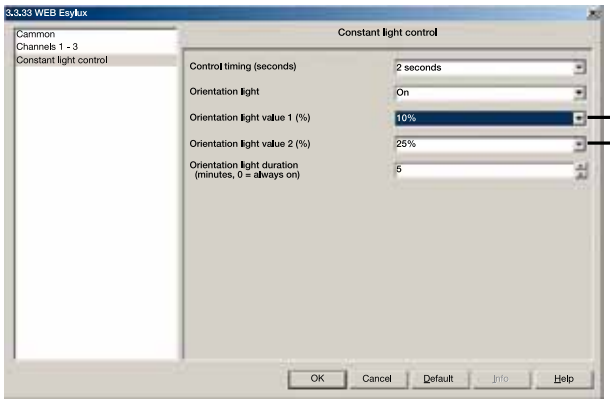
Default setting: 2 sec.





15 • ORIENTATION LIGHT

Orientation light
Options: ON/OFF



16 • ORIENTATION LIGHT VALUE 1 AND 2

Orientation light value 1
Options: 0/10% - 50% (up/down menu) in 5% steps

NOTE: Only active for constant light control.

NOTE: The orientation light value 1 is active as standard. Via Object 1, an ON telegram changes the setting to orientation light value 2 and an OFF telegram changes the setting to orientation light value 1.

NOTE: Only active if orientation light has been set to ON.

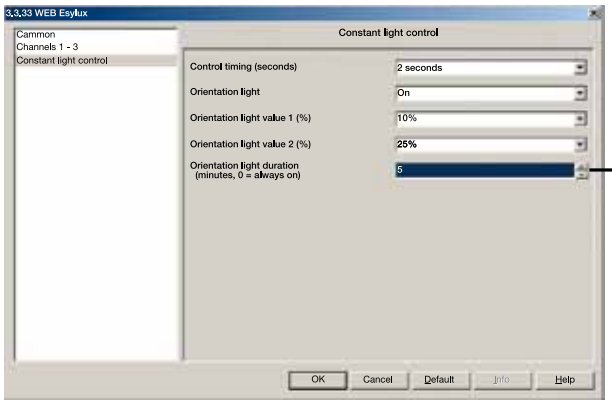
Default setting: 10%

Orientation light value 2
Options: 0/10% - 50% (up/down menu) in 5% steps

NOTE: Only active for constant light control.

NOTE: Only active if orientation light has been set to ON.

Default setting: 25%



17 • ORIENTATION LIGHT DURATION

0 = always on (if the light falls below the set value)
1 min. - 250 min. (up/down menu) or
as direct entry 0 min. - 250 min. (applies to both orientation light values)

NOTE: Only active for constant light control.

NOTE: Only active if orientation light has been set to ON.

[0,1...250 min.]

Default setting: 5 min.

SAM 11/2009
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ESYLUX CE