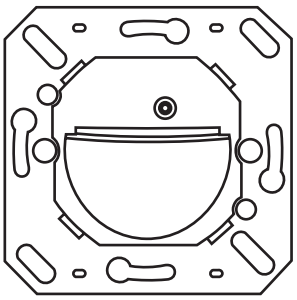


- PD-C180i KNX ECO
- PD-C180i KNX ECO DK
- PD-C180i KNX ECO CH

ESYLUX www.esylux.com

## GB OPERATING INSTRUCTIONS

**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.

**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-C180i KNX ECO... is a presence detector with a 180° field of detection and integrated bus coupler for wall mounting. Perform the installation in accordance with enclosed installation instructions. The device is able to control lighting ("switching" function). For further features, refer to **"Description of the applications"** in the operating instructions. With a range of up to 8 m in diameter for use in corridors, staircases and passageways with natural lighting.

The PD-C180i KNX ECO... is only intended to be used in a KNX (EIB), TP bus system in conjunction with other KNX components.

The ESYLUX PD-C180i KNX ECO... detects that persons are present in its field of detection and sends controlling telegrams for light outputs depending on ambient brightness.

• Blended light measurement is suitable for FL, PL, halogen and incandescent lamps.

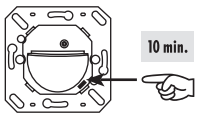
Certified KNX/EIB training centres provide specialist training on how to plan, install, activate, document and use the ETS (Engineering Tool Software) required for parameter setting.

### 3 • INSTALLATION / ASSEMBLY / CONNECTION

**See separate installation instructions.**

### 4 • START-UP

All parameter settings are carried out via the ETS (Engineering Tool Software). Pressing the recessed touch area (bottom right next to the lens) activates the programming mode for the physical address and this is indicated by the **blue LED**.
The product database and application description can be downloaded from www.esylux.com.




### 5 • SWITCH-ON BEHAVIOUR / LED DISPLAY

- **Connect the bus supply**
  A warm-up phase of approx. 10 seconds is initiated.
  The **red LED** and **green LED** slowly flash alternately (f = 1 Hz).

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

- **In the "Master" function, the remote control entries are acknowledged as follows:**
  acknowledged 3 x with the **blue LED**.

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

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

### 6 • TEST MODE

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

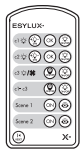
### 7 • REMOTE CONTROL

The optional user remote control Mobil-PDi/User (EM10425547) can be used to control the lighting.
The Mobil-PDi/User adjusts the value for the period in which 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 lighting can be controlled as follows via the Mobil-PDi/User:
- switched on or off
- pressing the "Reset" button resets the KNX presence detector to the values set via ETS (Engineering Tool Software).

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



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, 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: light channel locking" (length 1 bit)

The light channel's control/dimming outputs are locked with an ON telegram and unlocked with an OFF telegram.
Parameters can be used to set the light channel's status after locking and unlocking.

### Object 1: "Input: light channel manual ON/OFF" (length 1 bit)

**Note: essential in semi-automatic mode.**
If persons are present, manual operation is maintained until the switch-off delay time elapses if "When persons are present" is set in the parameters. If "With deactivated light measurement during off-period" is selected, the light measurement is not active, after this the detector switches to normal operating mode. Manual operation does not influence motion detection.

### Object 4: "Output: light channel 1 ON/OFF" (length 1 bit)

Bei Kunstlichtbedarf (Schaltschwelle 1 über Parameter) und Anwesenheit sendet der Ausgang ein Ein-Telegramm.
Bei ausreichendem Tageslicht und/oder Abwesenheit wird nach Ablauf der Nachlaufzeit ein Aus-Telegramm gesendet.

### Object 5: "Output: light channel 2 ON/OFF" (length 1 bit)

If artificial lighting is required (switching threshold 2 as opposed to 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 after the switch-off delay time has elapsed.

### Object 9: "Input: light channel 1 actuator acknowledgement" (length 1 bit)

### Object 10: "Input: light channel 2 actuator acknowledgement" (length 1 bit)

An actuator's status object can be processed by these objects.
If the actuator is not only controlled by the detector, the light channel switches to standby mode if the status of the channel and actuator differ.

## LIGHT VALUE OBJECTS

### Object 13: "Input: lock light value send" (length 1 bit)

An ON telegram locks the sending, an OFF telegram activates the sending of the internal light value.

### Object 14: "Input: external light value" (length 2 byte)

With this object, an external light value can be added to the internal value for the constant light control's actual value.

### Object 15: "Output: internal light value" (length 2 byte)

Internal light value output.

## MOTION OBJECTS

### Object 18: "Input: Slave/Master motion" (length 1 bit)

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

### Object 19: "Input: lock motion detection" (length 1 bit)

Internal motion detection is locked with an ON telegram and unlocked again with an OFF telegram.

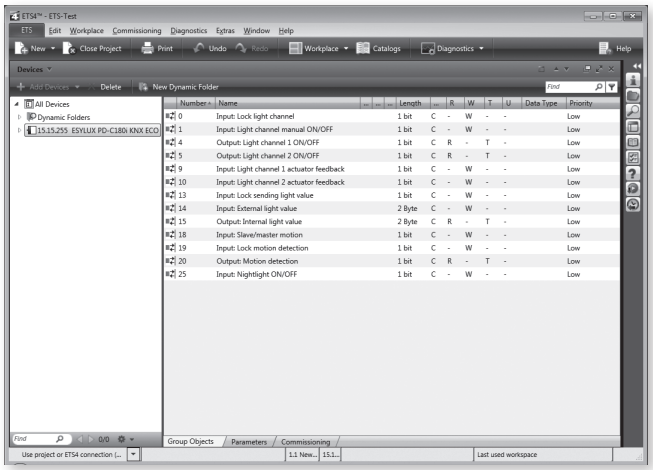
### Object 20: "Output: motion detection" (length 1 bit)

Internal motion output.

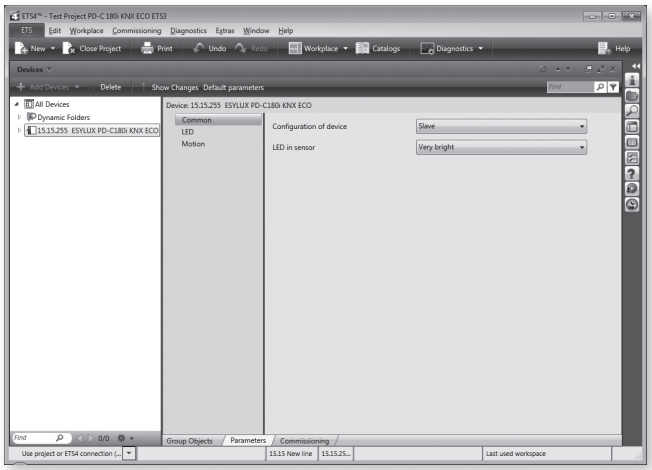
## NIGHTLIGHT OBJECT

### Object 25: "Input: nightlight ON/OFF" (length 1 bit)

Nightlight function is switched on or off, motion detection display/locking is maintained.



## DECRIPTION OF THE APPLICATION




### 1. MASTER/SLAVE

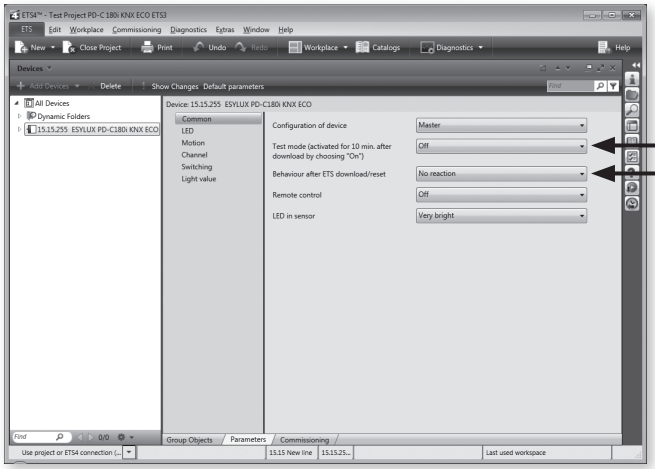
The Master detects presence and processes it according to set parameters.

**"Lighting ON/OFF"**
The Slave is used exclusively for extending the field of detection. Presence is transmitted to the Master (object 18) for processing according to the set parameters.

- **Master/Master selection**

Two Masters can work in parallel to extend the field of detection. Each Master processes the presence (objects 18 and 20, if applicable 21) according to its parameters set via the ETS (Engineering Tool Software), and controls the lighting appropriately.

Default setting: Master




### 2. TEST MODE

(Only for Master device configuration)

During test mode "ON" → light measurement deactivated.

When test mode is enabled, the connection with the lighting system is checked.
Depending on the parameter settings, in the event of detection via the motion sensor or microphone, the lighting will be "ON" for 5 seconds followed by a dead time of 5 seconds "OFF".
The blue LED indicates motion detection, the red/green LED indicates detection via the microphone whereby the red LED indicates a noise well beyond the limit value and the green LED a noise just above the limit value.
Test "ON" automatically switches to test "OFF" after 10 minutes or when the parameters are stored.

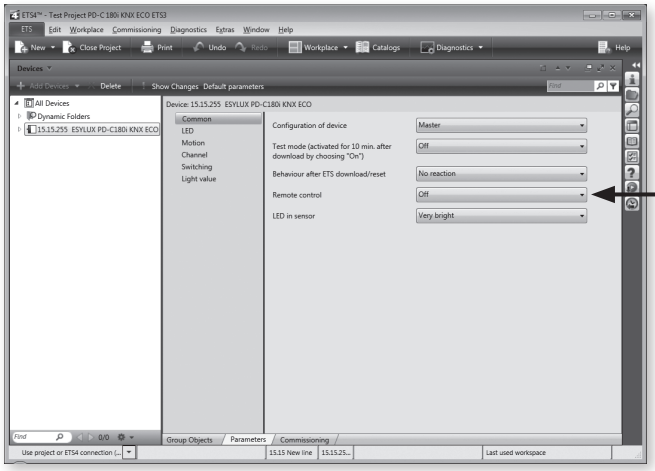
**NB: During test → Slave input enabled.**

### 3. BEHAVIOUR AFTER ETS DOWNLOAD/DEVICE RESTART

The choices include: "No reaction", "ON", "OFF"
In the process, the following objects are sent:

**Switching operating mode:**
- Object 4: "Output: light channel 1 ON/OFF"
- Object 5: "Output: light channel 2 ON/OFF"

- In addition, object 17: "Output: HVAC channel ON/OFF"

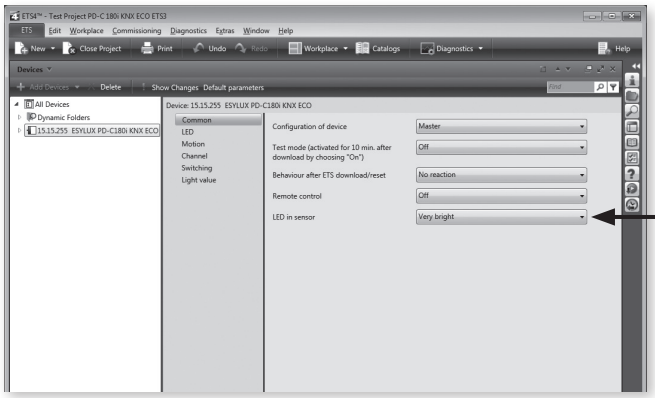



### 4. REMOTE CONTROL

Operation is deactivated with Mobil-PDi/User or X-REMOTE (iphone).

**Note: Remote control deactivated in test mode.**

## BESCHREIBUNG DER APPLIKATION

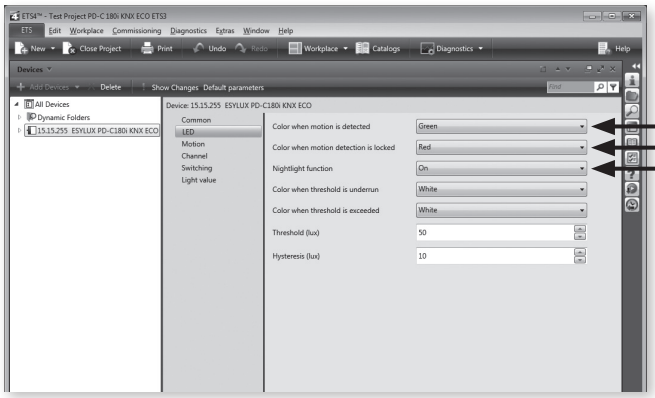



### 5. LED IN SENSOR

**Either LED brightness or "OFF"**
If the LED is not switched off, its colour upon motion detection (flashes 2x) and its colour when locking the motion detection can be set via object 19.

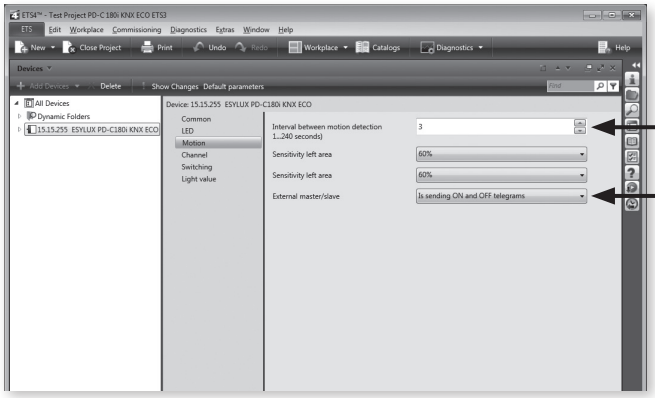
#### 5.1. Nightlight function

The LED can be used as a nightlight with this function. If the threshold value is exceeded/not reached, the device immediately switches to one of the set colours. The nightlight can be deactivated via object 25.



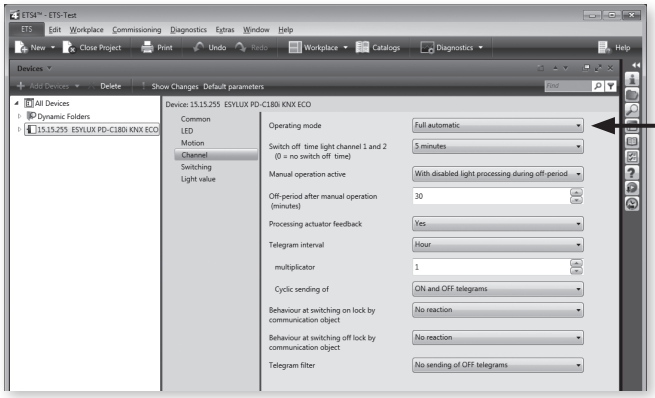

### 6. MOTION DETECTION

If motion is detected, this status is maintained for the set amount of time, the sensors will then be polled several times per second as to whether a new motion has been detected. The sensitivity of each sensor can be set separately. Output is made via object 20.
Motion detection can be locked with object 19 - the LED will display the selected colour for this.




### 7. EXTERNAL MASTER/SLAVE

These parameters can be used to set whether the external Master/Slave should only send ON telegrams upon motion detection or whether the external device should send ON telegrams with motion detection and OFF telegrams without motion detection.



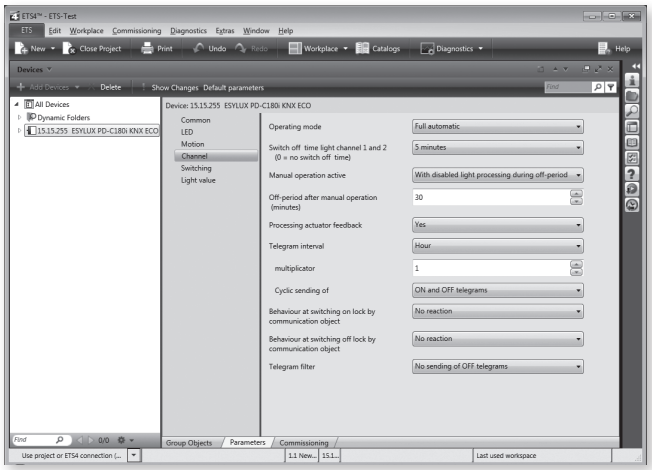

### 8. LIGHT CHANNEL

#### 8.1 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 pre-set 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 pre-set 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

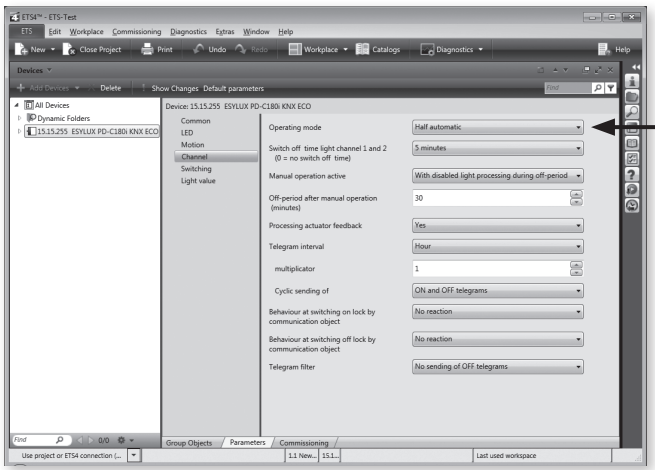
## BESCHREIBUNG DER APPLIKATION



**• Additional manual lighting control in "Fully automatic" mode**

The lighting can be switched on or off manually using infrared remote control (Mobil-PDi/User, refer also to the separate Mobil-PDi/User instructions) or by telegrams, e.g. by pressing external KNX/EIB buttons.
If manual operation when persons are present is set, despite high ambient brightness conditions (ambient lighting level is higher than the pre-set light value), the artificial light 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 be subsequently switched back on manually at any time. If the artificial light is switched off manually, the lighting will remain switched off for as long as the detector continues to detect movement.
If manual operation during off-period is set, during this time the detector behaves in the same way as when set for manual operation when persons are present. The detector then switches to normal operating mode. In this way, the light can be switched on by the user despite the threshold value being exceeded, and then switched off automatically after the set time has elapsed.
If no more movement is detected, the detector will revert to the previous automatic mode after the set switch-off delay time has elapsed.

**NB: Applies to all light channel operating modes.**

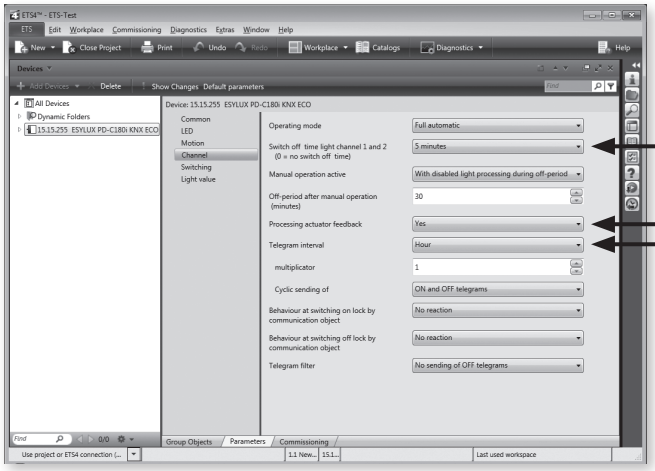


**• "Semi-automatic" operating mode**

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 pre-set light value, the detector will automatically switch the lighting off 5 minutes after reaching the pre-set light value, regardless of any presence.
The lighting can subsequently be switched back on manually at any time.
If manual operation during off-period is set, during this time the detector behaves in the same way as when set for manual operation when persons are present. The detector then switches to normal operating mode. In this way, the light can be switched on by the user despite the threshold value being exceeded, and then switched off automatically after the set time has elapsed.

**NB: External ON telegram, e.g. via KNX/EIB button, is essential in "semi-automatic" mode. Applies to all light channel operating modes.**

Default setting: Fully automatic



### 8.3 Switch-off delay time light channel

**• Switch-off delay time channel light**

Options: 0 seconds, 30 seconds - 30 minutes

Default setting: 5 minutes

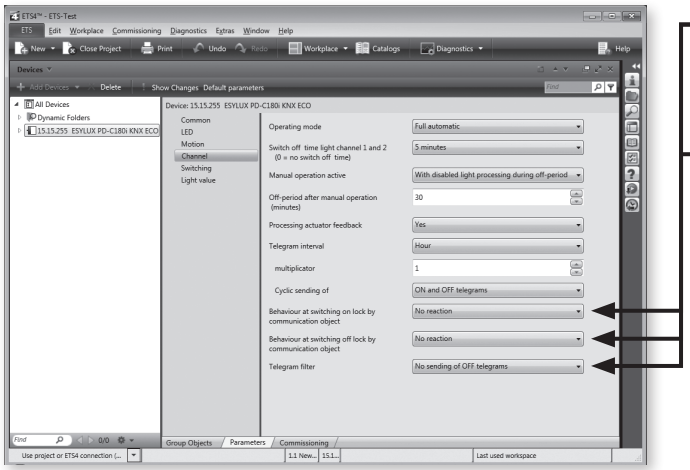
### 8.5 Processing actuator acknowledgement

An actuator's status object can be processed via objects 9 and 10. If the actuator is not only controlled by the detector, the light channel switches to standby mode if the status of the channel and actuator differ.

### 8.6 Sending in cycles

The light channel sends its current status in cycles according to set time intervals. At the same time a setting can be made to define whether it should repeatedly send ON or OFF telegrams in cycles.

## BESCHREIBUNG DER APPLIKATION

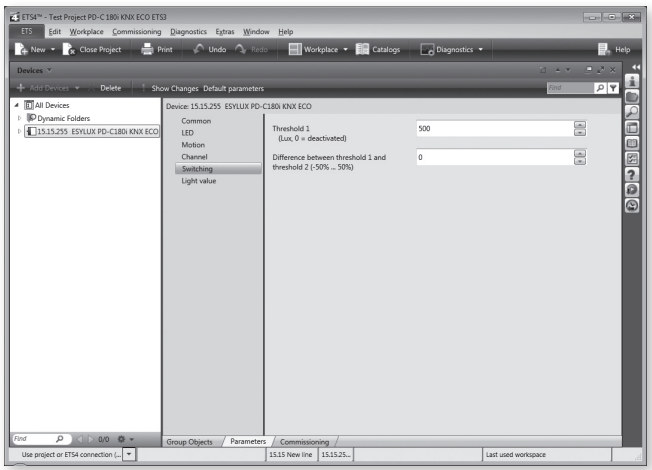



### 8.7 Behaviour during locking and unlocking

Choice of No reaction, Switch light channel off or on.

### 8.8 Telegram filter

Sending OFF or ON telegrams via the light channel can be disabled here.

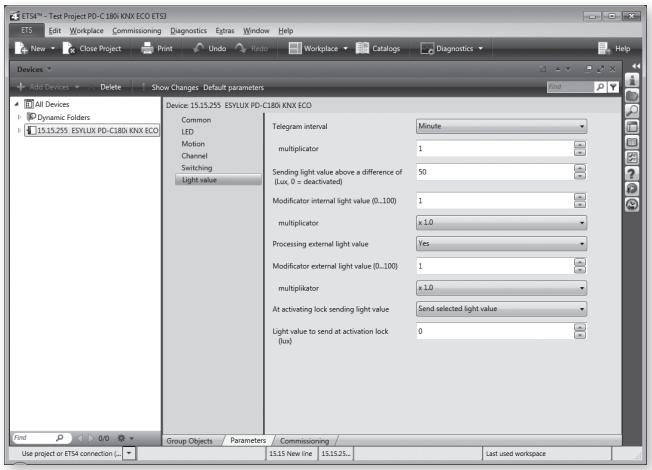



## 9. SWITCHING FUNCTION

### 9.1 Switching

Options: 0 = disabled
Choice between 1 - 2000 lux (up/down menu) or as
direct input of 0 - 2000 lux
Default setting: 500 lux
There is an option of determining an offset between:
"switching threshold ON/OFF 1" and "switching threshold ON/OFF 2"
-50% to +50%

Default setting: ±0%




## 12. LIGHT VALUE

### 12.1 Internal light value

The internal light value can be transmitted in cycles or at a difference to the last light value sent. The internal light value is calculated from:

Light value from sensor x modificator x multiplier

Sending the internal light value can be locked via object 13, in doing so, the current value or a value set in the parameters can be sent.

### 12.2 External light value

For the internal light control, an external sensor can also be integrated and weighted via KNX. The control's actual value is then:

Internal light value + external light value x modificator x multiplier

ESYLUX

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