



# KNX L

## Brightness Sensor

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### Technical specifications and installation instructions

Item number 70119



# 1. Description

The **KNX L brightness sensor** measures the intensity of illumination and transfers the value to the KNX system. Six switching outputs with adjustable threshold values as well as additional AND and OR logic gates are available. The sensor system, the evaluation electronics and the electronics of the bus connection are mounted in a compact housing.

## Functions:

- **Brightness measurement:** The current light intensity is measured by a sensor
- **3 switching outputs for twilight** (up to 1000 lux), 3 for **daylight** (1-99 klux), each with adjustable threshold values (Threshold values can be set by parameter or via communication objects)
- **8 AND and 8 OR logic gates** with each 4 inputs. Every switching incident as well as 8 logic inputs (in the form of communication objects) may be used as inputs for the logic gates. The output of each gate may optionally be configured as 1 bit or 2 x 8 bits

Configuration is made using the KNX software ETS. The **product file** can be downloaded from the Elsner Elektronik homepage on [www.elsner-elektronik.de](http://www.elsner-elektronik.de) in the "Service" menu.

## 1.1. Technical specifications

|                              |  |
|------------------------------|--|
| Housing                      | Plastic material                           |
| Colour                       | White / translucent                        |
| Mounting                     | On-wall                                    |
| Protection category          | IP 44                                      |
| Dimensions                   | approx. 96 × 77 × 118 (W × H × D, mm)      |
| Weight                       | approx. 150 g                              |
| Ambient temperature          | Operation -30...+50°C, storage -30...+70°C |
| Operating voltage            | KNX bus voltage                            |
| Current                      | max. 10 mA, residual ripple 10%            |
| Data output                  | KNX +/- bus terminal plug                  |
| BCU type                     | Own micro controller                       |
| PEI type                     | 0  |
| Group addresses              | max. 254                                   |
| Allocations                  | max. 255                                   |
| Communication objects        | 117  |
| Measurement range brightness | 0...150.000 lux                            |

|                         |   |
|-------------------------|---|
| Resolution (brightness) | 1 lux at 0...120 lux<br>2 lux at 121...1.046 lux<br>63 lux at 1.047...52.363 lux<br>423 lux at 52.364...150.000 lux |
| Accuracy (brightness)   | ±35%  |

The product conforms with the provisions of EU directives.

## 2. Installation and commissioning

### 2.1. Installation notes



Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.



#### **CAUTION!** **Live voltage!**

There are unprotected live components inside the device.

- National legal regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

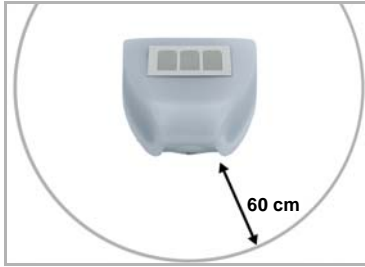
Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

### 2.2. Location

Select an assembly location at the building where sun may be collected by the sensors unobstructedly. The sensor may not be shaded by the building or for example by trees.

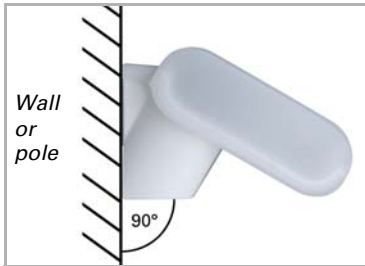
At least 60 cm of clearance must be left all round the device. Concurrently, the prevents spray (raindrops hitting the device) or snow (snow penetration) from impairing the

measurement. It also does not allow birds to bite it. Please ensure that the extended awning does not cast shade on the unit, and that this is not protected from the wind.



*Fig. 1*

*There must be at least 60 cm of space below, to the sides and in front of the sensor left from other elements (structures, construction parts, etc.).*



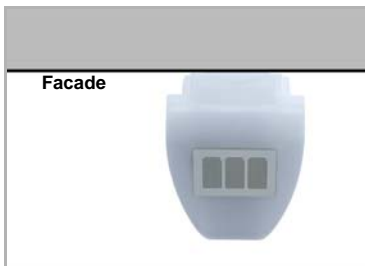
*Fig. 2*

*The sensor must be mounted onto a vertical wall (or pole).*



*Fig. 3*

*The sensor must be mounted horizontally in the lateral direction.*



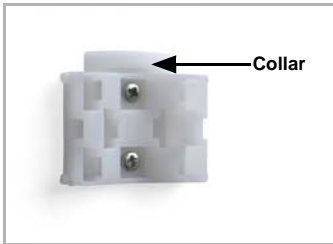
*Fig. 2*

*The sensor must be aligned in the direction of the façade on which shade is to be provided.*

## 2.3. Mounting the sensor

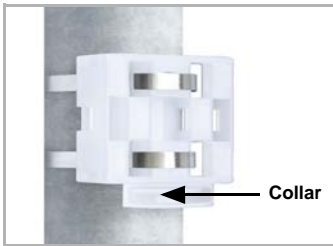
### 2.3.1. Attaching the mount

The sensor comes with a combination wall/pole mount. The mount comes adhered by adhesive strips to the rear side of the housing. Fasten the mount vertically onto the wall or pole.



*Fig. 3*

*When wall mounting: flat side on wall, crescent-shaped collar upward.*



*Fig. 4*

*When pole mounting: curved side on pole, collar downward.*



*Fig. 5*

*Different mounting arms are available from Elsner Elektronik as additional, optional accessories for flexible installation of the weather station on a wall, pole or beam (pictures of sensors exemplary).*

*Example of the use of a mounting arm: Due to flexible ball joints, the sensor can be brought into ideal position.*



*Fig. 6*

*Example use of the hinge arm mounting: With the hinge arm mounting, the weather station projects from beneath the roof overhang. Sun, wind and precipitation can act upon the sensors without hindrance.*

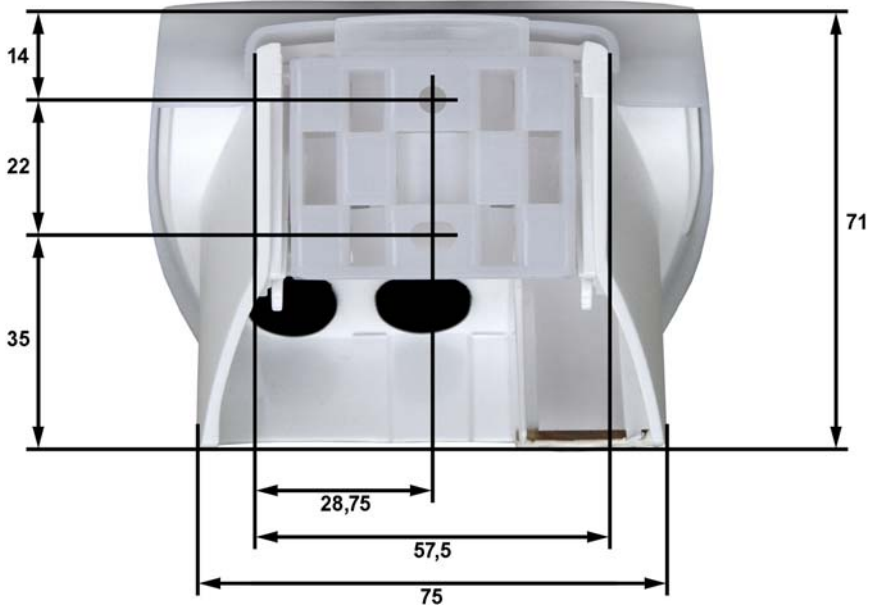
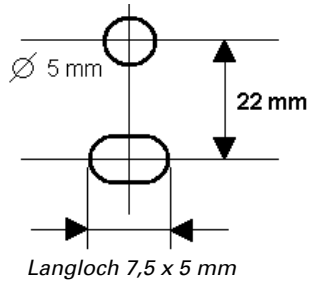


*Fig. 7*  
*Example use of the hinge arm mounting:*  
*Fitting to a pole with worm drive hose clips*

### 2.3.2. View of rear side and drill hole plan

*Fig. 8 a+b*  
*Drill hole plan*

*Dimensions of rear side of housing with bracket. Subject to change for technical enhancement.*



### 2.3.3. Preparing the sensor



Fig. 9

- 1 Cover Snaps
- 2 Bottom part of housing

The sensor cover snaps in on the left and right along the bottom edge (see Fig.). Remove the cover.

Push the bus connection cable through the rubber seal on the bottom of the sensor and connect bus +/- to the provided clamps.

### 2.3.4. PCB layout

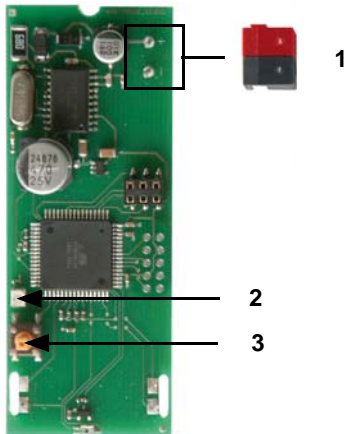
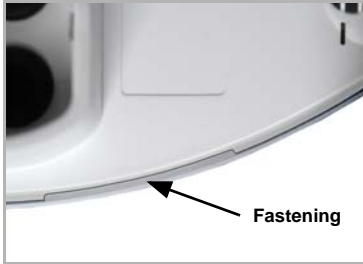


Fig. 10

- 1 Slot for KNX clamp +/-
- 2 Programming LED
- 3 Programming pushbutton for the teach-in of the device

### 2.3.5. Mounting the sensor

Close the housing by putting the cover back over the bottom part. The cover must snap in on the left and right with a definite "click".



*Fig. 11*  
Make sure the cover and bottom part are properly snapped together! This picture is looking at the closed sensor from underneath.



*Fig. 12*  
Push the housing from above into the fastened mount. The bumps on the mount must snap into the rails in the housing.

To remove it, the sensor can be simply pulled upwards out of the mount, against the resistance of the fastening.

## **2.4. Notes on mounting and commissioning**

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Do not open the device if water (rain) might ingress: even some drops might damage the electronic system.

After the bus voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.

## **3. Addressing of the device at the bus**

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The device is supplied with the bus address 15.15.250. You can program another address into the ETS by overwriting the 15.15.250 address or by teaching via the programming key on the circuit board inside the housing.



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## 4. Maintenance

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**WARNING!****Risk of injury caused by components moved automatically!**

The automatic control can start system components and place people in danger.

- Always isolate the device from the mains for servicing and cleaning.

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The device must regularly be checked for dirt twice a year and cleaned if necessary. In case of severe dirt, the sensor may not work properly anymore.

**ATTENTION**

The device can be damaged if water penetrates the housing.

- Do not clean with high pressure cleaners or steam jets.