

DATA SHEET

# LR 110

## Light transmitter



- Range from 0 to 10,000 lux
- 4-20 mA output, passive loop, power supply from 16 to 30 Vdc (2 wires)
- ABS V0 IP65 housing, with or without display
- "1/4 turn" system mounting with wall-mount plat
- Housing with simplified mounting system

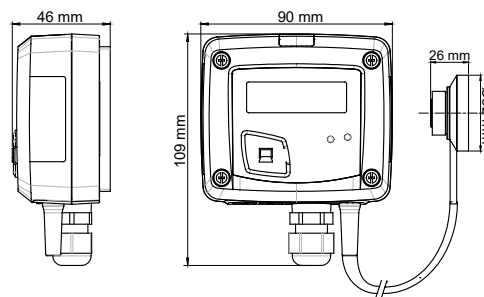
### Main features

|                                |   |
|--------------------------------|---|
| Measurement units              | lux, fc   |
| Measuring range                | From 0 to 10,000 lux/From 0 to 929 fc                               |
| Accuracy*                      | ±2% of reading or ±2 lux  |
| Resolution                     | 1 lux/0.01 fc   |
| Type of fluid                  | Air and neutral gases   |
| Conditions of use (°C/%RH/m)   | From 0 to +50 °C.<br>In non-condensing condition. From 0 to 2000 m. |
| Storage temperature            | From -10 to 70 °C   |
| Spectral range (f1)**          | As per standard photopic curve V (λ)<br>NF C 42-710 class C         |
| Directional sensitivity (f2)** | < 2%  |
| Linearity (f3)**               | < 2%  |

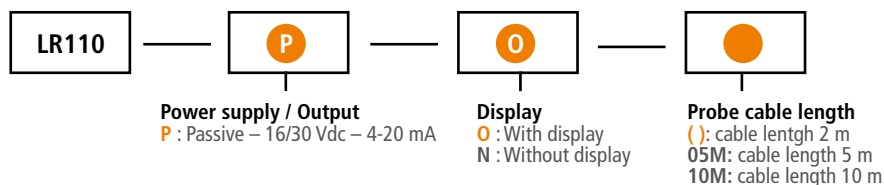
\* All the accuracies indicated in this technical datasheet were stated in laboratory conditions, and can be guaranteed for measurements carried out in the same conditions, or carried out with calibration compensation.  
 \*\* The f1, f2 and f3 coefficient are defined according to the French NF C 42-710 standard.

### Features of the housing

|                  |                                    |
|------------------|------------------------------------|
| Material         | ABS V0 as per UL94                 |
| Protection       | IP65                               |
| Display          | LCD 10 digits.<br>Size: 50 x 17 mm |
| Height of digits | Values: 10 mm; Units: 5 mm         |
| Remote probe     | Cable of 2 m length in PVC         |
| Cable gland      | For cables Ø 8 mm maximum          |
| Weight           | 140 g                              |



### Part number



**Example: LR110-PO**  
 Light transmitter, 4-20 mA passive transmitter with display, probe cable length 2 m.

## Technical specifications

|                       |  |
|-----------------------|--|
| Output / Power supply | Passive loop 4-20 mA (power supply 16/30 Vdc), 2 wires<br>Common mode voltage <30 VAC<br>Maximal load: 500 Ω (4-20 mA) / minimum load: 1 kΩ (0-10 V) |
| Consumption           | 0.6 VA (4-20 mA)   |
| European directives   | 2014/30/EU EMC; 2014/35/EU Low Voltage; 2011/65/EU RoHS II;<br>2012/19/EU WEEE   |
| Electrical connection | Screw terminal block for cables from 0.05 to 2.5 mm <sup>2</sup> or from 30 to 14 AWG.<br>Executed following the good practices guidelines.          |
| PC communication      | USB-mini DIN cable   |
| Environment           | Air and neutral gases  |

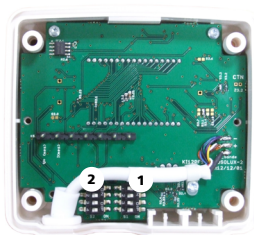


### Simplified calibration

Electronic board and measuring element fixed to the front panel of the sensor, allowing you to leave your installation intact to configure or calibrate your instruments.

## Connections

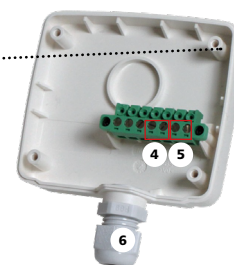
1. Active switch
2. Inactive switch
3. LCC-S software connection
4. Output terminal block
5. Power supply terminal block
6. Cable gland



Inside the front housing



Removable front face



Fixed back housing

## Symbols

For your safety and in order to avoid any damage of the device, please follow the procedure described in this document and read carefully the notes preceded by the following symbol:



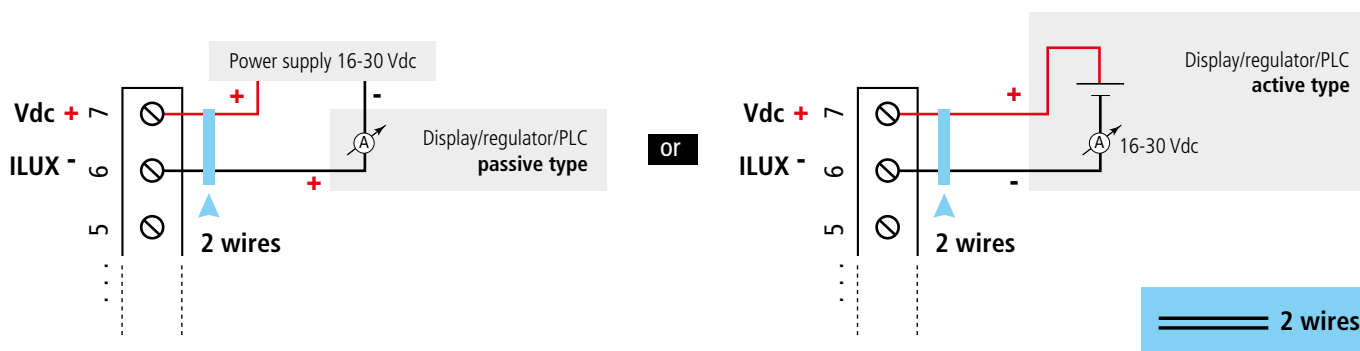
The following symbol will also be used in this document, please read carefully the information notes indicated after this symbol:



## Electrical connections – as per NFC15-100 standard



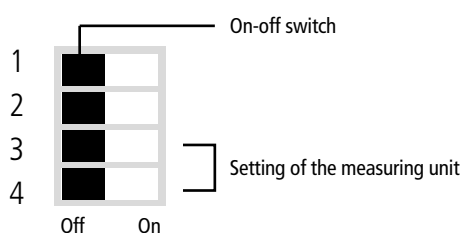
This connection must be made by a qualified and trained technician.  
To make the connection, the transmitter must not be energized.



## Settings and use of the transmitter

### Configuration

To configure the transmitter, unscrew the 4 screws of the housing then open it. DIP switches allowing the different settings are accessible.



To configure the transmitter, it must not be energized. Then you can make the required settings thanks to the DIP switches as shown on the drawing below. When the transmitter is configured, you can power it up.

### Measuring unit setting – Active switch

To set the unit of measurement, put the on-off switches 3 and 4 as shown in the table:

### Configurations

|   | lux | fc |
|---|-----|----|
| 1 |     |    |
| 2 |     |    |
| 3 |     |    |
| 4 |     |    |

### Configuration via LCC-S software (optional)

An easy and friendly configuration with the software!

**Caution:** The configuration of the parameters can be done either by DIP switch, or by software (you cannot combine both solutions).

To access to the configuration via software:

- Set the switch as shown below.
- Connect the cable of the LCC-S to the connection of the transmitter

### Configuration via PC



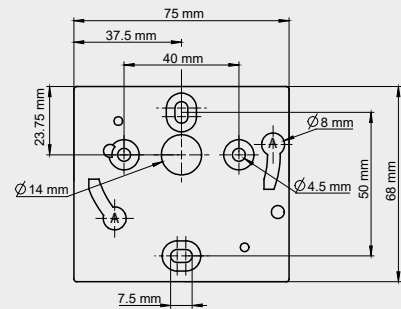
Switch 1

To configure the transmitter, please refer to the LCC-S user manual.

### Mounting

To mount the transmitter, mount the ABS plate on the wall (drilling: Ø 6 mm, screws and pins are supplied).

Insert the transmitter on the fixing plate (see A on the drawing beside). Rotate the housing in clockwise direction until you hear a "click" which confirms that the transmitter is correctly installed.



### Factor value according to the light sources

The following table indicates the factor value corresponding to different light sources with their examples.

The device is adjusted with an incandescent standard white light source owning its own spectral response. The following lighting sources have a different spectral response. Therefore, the presented coefficients in the following table enable to correct the measurement according to these different sources

The correction is carried out by multiplying the measured value by the F factor: Corrected value = F x measured value.

| Sources  | F Factor | Illustration |
|--|----------|--------------|
| Fluorescent tube with three bands                | 1.055    |              |
| High pressure mercury lamp                       | 1.085    |              |
| Sodium vapour lamp                               | 1.073    |              |
| Metal halide lamp with three additives           | 1.011    |              |
| Rare-earth metal halide lamp                     | 0.947    |              |
| White led: neutral colour                        | 0.950    |              |
| Halogen quartz lamp / tungsten (standard source) | 1        |              |

## Order of magnitude of lux according to applications

Here are a few examples of order of magnitude according to different current situations.

| Environment                  | Lux               |
|------------------------------|-------------------|
| Outside with open air        | 500 to 25 000     |
| Outside with direct sunlight | 50 000 to 100 000 |
| Full moon night              | 1                 |
| Overnight lit street         | 20 to 70          |
| Apartment well lit           | 200 to 400        |

| Environment                    | Lux          |
|--------------------------------|--------------|
| Factory: electronic assembling | 1500 to 3000 |
| Hotel reception hall           | 200 to 500   |
| Shop                           | 750 to 1500  |
| Hospital operating room        | 750 to 1500  |
| Classroom                      | 200 to 750   |


### Maintenance:

- Avoid any aggressive solvent.
- Protect the transmitter and its probes from any cleaning product containing formalin, that may be used for cleaning rooms or ducts.

**Precautions for use:** always use the device in accordance with its intended use and within parameters described in the technical features in order not to compromise the protection ensured by the device.

## Accessories

| Ref.      | Description  |
|-----------|--|
| KIAL-100A | Power supply class 2, 230 Vac input, 24 Vac output |
| KIAL-100C | Power supply class 2, 230 Vac input, 24 Vdc output |
| LCC-S     | Configuration software with USB cable              |

 Only the accessories supplied with the device must be used.

## Warranty

Instruments have 1-year guarantee for any manufacturing defect.

FT\_EN – LR110– 23/04/2021 – Non-contractual document – We reserve the right to modify the characteristics of our products without prior notice.