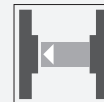




## Thru-beam sensor LA31/LK31/25/31/115 SET2



- Photoelectric sensor for detecting people, objects and vehicles
- Large construction with small housing
- Not sensitive to ambient light
- Version for universal voltages
- Relay output
- Version with accessories in scope of delivery

Mid-range photoelectric sensors for detecting people, objects, and vehicles



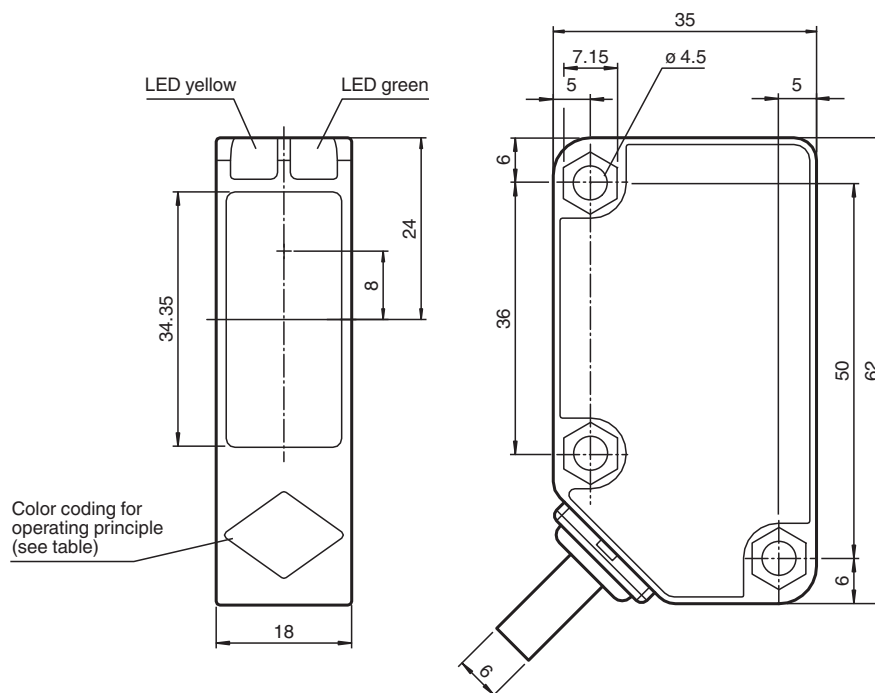
### Function

Series 31 is a range of cost-effective and, most importantly, reliable photoelectric sensors for standard applications in the fields of material handling and logistics, and for monitoring industrial doors, elevators, and automatic gates. The ultrasonic-welded plastic housing provides a high degree of protection, making these sensors ideal for tasks in harsh outdoor conditions. These sensors are currently the most compact "wide range power supply sensors" that can work with any DC and AC voltage between 24 V and 240 V. In addition to the robust technology, the sensors offer numerous product details that help the user with assembly, connection and operation.

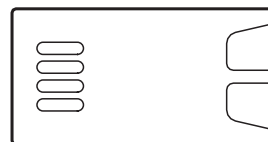
### Application

- Monitoring closing edges of automatic industrial doors and elevators
- Monitoring the swing range of automatic gates
- Detecting and tracking objects in material handling

## Dimensions



| Operating principle                               | color |
|---------------------------------------------------|-------|
| Retroreflective sensor with polarisation filter   | green |
| Retroreflective sensor                            | blue  |
| Diffusive mode sensor                             | white |
| Thru-beam sensor                                  | grey  |
| Diffusive mode sensor with background suppression | red   |



## Technical Data

### System components

|          |                |
|----------|----------------|
| Emitter  | LA31/115       |
| Receiver | LK31/25/31/115 |

### General specifications

|                            |                                                                                                                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Effective detection range  | 0 ... 30 m                                                                                                                                                                                                                  |
| Threshold detection range  | 43 m                                                                                                                                                                                                                        |
| Light source               | LED                                                                                                                                                                                                                         |
| Light type                 | modulated visible red light , 630 nm                                                                                                                                                                                        |
| Alignment aid              | LED yellow:<br>1. LED illuminates: Sufficient light signal received, emitter and receiver alignment is correct<br>2. LED flashes: Reaching switching point<br>3. LED off: Light beam is interrupted or the alignment is out |
| Diameter of the light spot | approx. 800 mm at a distance of 30 m                                                                                                                                                                                        |
| Opening angle              | Emitter: 0.5 ° , Receiver: 1.5 °                                                                                                                                                                                            |
| Ambient light limit        | 50000 Lux                                                                                                                                                                                                                   |
| Accessories provided       | 2 x Mounting bracket OMH-RL31-05 and mounting materials                                                                                                                                                                     |

### Functional safety related parameters

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 790 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

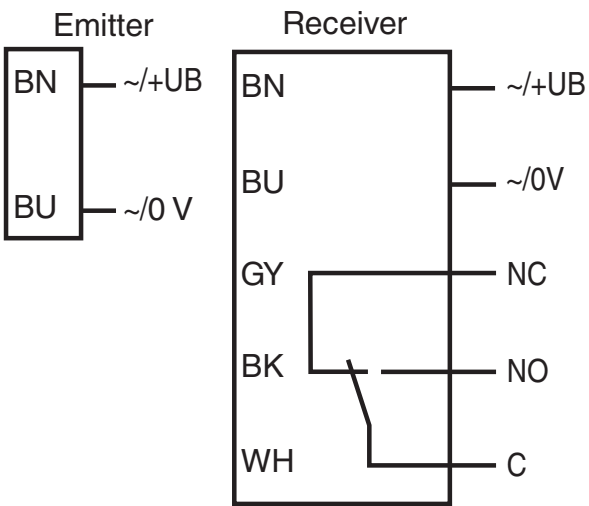
### Indicators/operating means

|                     |                     |
|---------------------|---------------------|
| Operation indicator | LED green: power on |
|---------------------|---------------------|

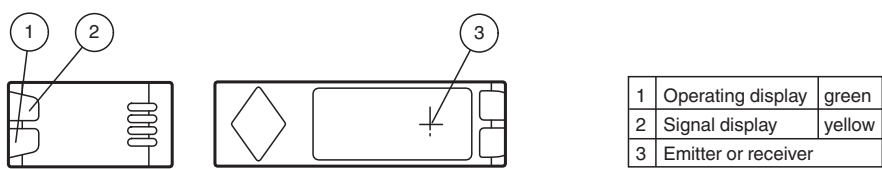
## Technical Data

|                                                 |                |                                                                                                                                                                                                             |
|-------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function indicator                              |                | LED yellow:<br>1. LED lit constantly: signal > 2 x switching point (function reserve)<br>2. LED flashes: signal between 1 x switching point and 2 x switching point<br>3. LED off: signal < switching point |
| <b>Electrical specifications</b>                |                |                                                                                                                                                                                                             |
| Operating voltage                               | U <sub>B</sub> | 24 ... 240 V AC<br>12 ... 240 V DC                                                                                                                                                                          |
| No-load supply current                          | I <sub>0</sub> | Emitter: ≤ 40 mA<br>Receiver: ≤ 3 mA                                                                                                                                                                        |
| Power consumption                               | P <sub>0</sub> | Emitter: ≤ 1 VA<br>Receiver: ≤ 1 VA                                                                                                                                                                         |
| <b>Output</b>                                   |                |                                                                                                                                                                                                             |
| Switching type                                  |                | light-on                                                                                                                                                                                                    |
| Signal output                                   |                | Relay, 1 alternator                                                                                                                                                                                         |
| Switching voltage                               |                | max. 250 V AC/DC                                                                                                                                                                                            |
| Switching current                               |                | max. 3 A                                                                                                                                                                                                    |
| Switching power                                 |                | DC: max. 150 W AC: max. 750 VA                                                                                                                                                                              |
| Switching frequency                             | f              | ≤ 20 Hz                                                                                                                                                                                                     |
| Response time                                   |                | ≤ 25 ms                                                                                                                                                                                                     |
| <b>Conformity</b>                               |                |                                                                                                                                                                                                             |
| Product standard                                |                | EN 60947-5-2                                                                                                                                                                                                |
| <b>Compliance with standards and directives</b> |                |                                                                                                                                                                                                             |
| Standard conformity                             |                |                                                                                                                                                                                                             |
| Standards                                       |                | EN 62103                                                                                                                                                                                                    |
| <b>Approvals and certificates</b>               |                |                                                                                                                                                                                                             |
| EAC conformity                                  |                | TR CU 020/2011<br>TR CU 004/2011                                                                                                                                                                            |
| Protection class                                |                | II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1<br>Output circuit basis insulation of input circuit according to EN 50178, rated insulation voltage 240 V AC                |
| CCC approval                                    |                | Certified by China Compulsory Certification (CCC)                                                                                                                                                           |
| <b>Ambient conditions</b>                       |                |                                                                                                                                                                                                             |
| Ambient temperature                             |                | -25 ... 55 °C (-13 ... 131 °F)                                                                                                                                                                              |
| Storage temperature                             |                | -40 ... 70 °C (-40 ... 158 °F)                                                                                                                                                                              |
| <b>Mechanical specifications</b>                |                |                                                                                                                                                                                                             |
| Degree of protection                            |                | IP67                                                                                                                                                                                                        |
| Connection                                      |                | Emitter: 2 m fixed cable, 2-wire<br>Receiver: 2 m fixed cable, 5-wire                                                                                                                                       |
| Material                                        |                |                                                                                                                                                                                                             |
| Housing                                         |                | Polycarbonate                                                                                                                                                                                               |
| Optical face                                    |                | PMMA                                                                                                                                                                                                        |
| Mass                                            |                | Emitter: 116 g<br>Receiver: 131 g                                                                                                                                                                           |

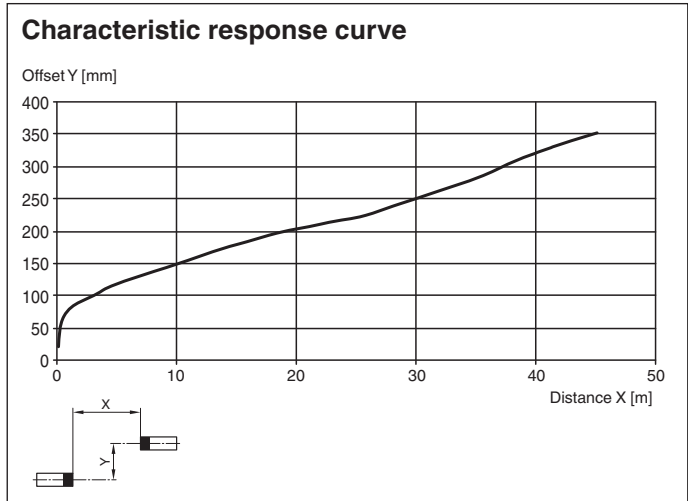
Connection Assignment



Assembly

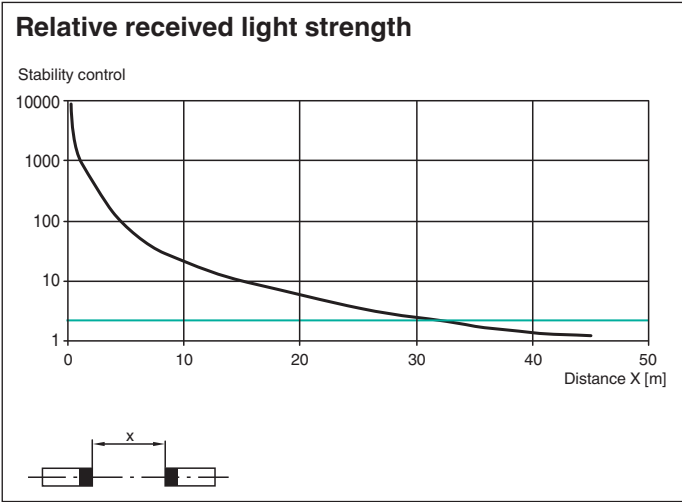


Characteristic Curve



Release date: 2022-08-03 Date of issue: 2022-08-03 Filename: 213224\_eng.pdf

Characteristic Curve



Application

