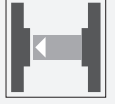




## Thru-beam sensor (pair)

### OBE35M-R202-SE5



- Medium design with versatile mounting options
- Degree of protection IP67
- Mounting on full metal sockets
- Very bright, highly visible light spot
- Highly visible LEDs for Power ON and switching state
- Easy to use
- Image is generic for this device type and may deviate from the specific variant



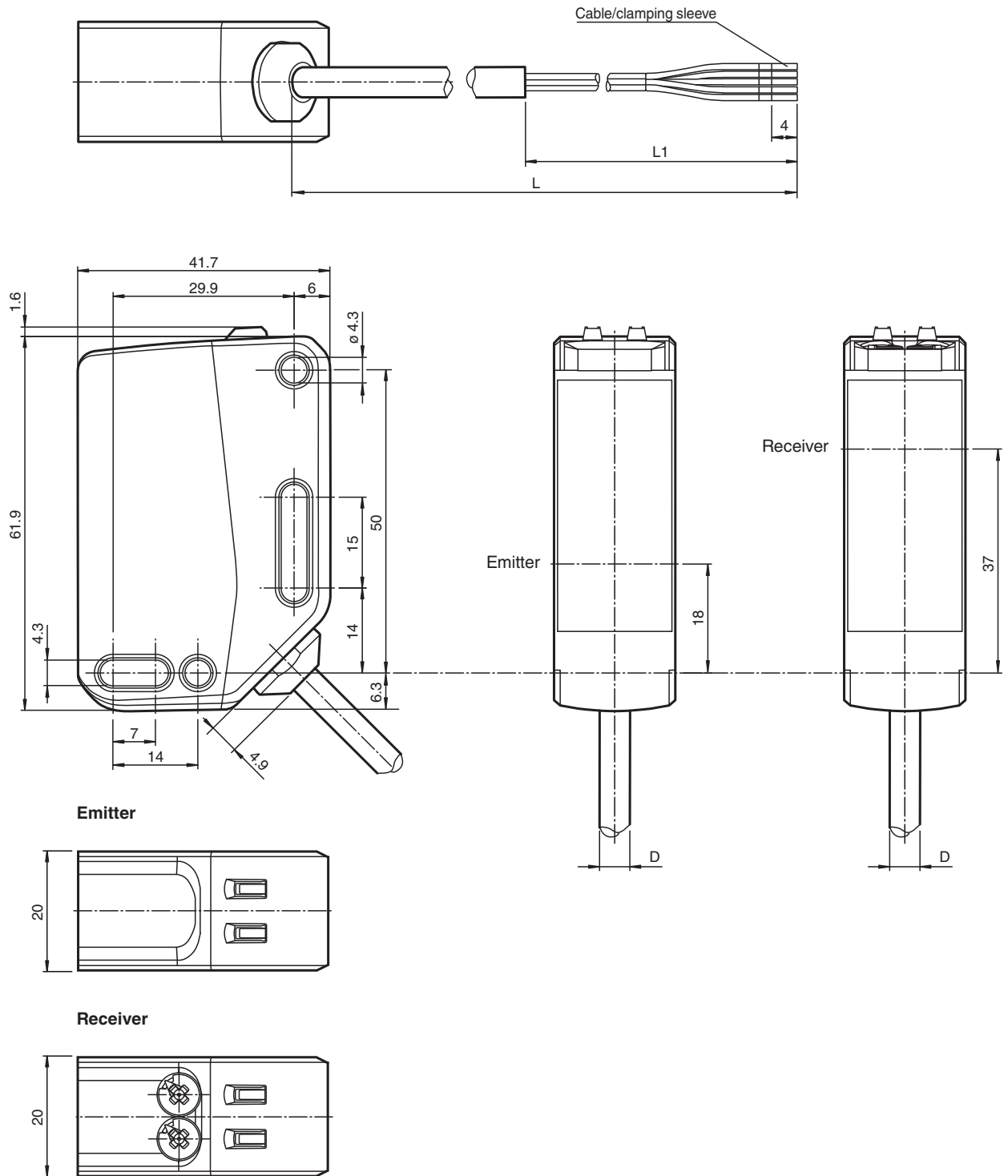
## Function

The optical sensors of this series for applications in standard automation have a modern housing design. The sensors are characterized by the many mounting options, easy handling and highly visible LED status indicators. The integrated full metal bushings ensure long-term secure and dimensionally stable mounting.

## Dimensions

Drawing is generic for this device type and may deviate from the specific variant.  
For the number of cores refer to connection diagram.

**Dimensions**



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**Technical Data**

|                               |                             |
|-------------------------------|-----------------------------|
| <b>System components</b>      |                             |
| Emitter                       | OBE35M-R202-S               |
| Receiver                      | OBE35M-R202-E5              |
| <b>General specifications</b> |                             |
| Effective detection range     | 0 ... 35 m                  |
| Threshold detection range     | 47 m                        |
| Light source                  | LED                         |
| Light type                    | modulated visible red light |

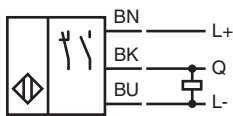
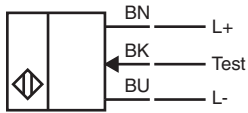
## Technical Data

|   |                |   |
|---|----------------|---|
| LED risk group labelling                    |                | exempt group  |
| Transmitter frequency                       |                | F1 = 8.2 kHz  |
| Diameter of the light spot                  |                | approx. 1200 mm at a distance of 35 m   |
| Opening angle                               |                | 2 °   |
| Ambient light limit                         |                | EN 60947-5-2 : 40000 Lux  |
| <b>Functional safety related parameters</b> |                |   |
| MTTF <sub>d</sub>                           |                | 656 a   |
| Mission Time (T <sub>M</sub> )              |                | 20 a  |
| Diagnostic Coverage (DC)                    |                | 0 %   |
| <b>Indicators/operating means</b>           |                |   |
| Operation indicator                         |                | LED green:<br>on - power on<br>flashing (4 Hz) - short circuit  |
| Function indicator                          |                | Yellow LED:<br>Permanently lit - light path clear<br>Permanently off - object detected<br>Flashing (4 Hz) - insufficient operating reserve<br>Flashing (8 Hz) - fault detected, the outputs maintain the status |
| Control elements                            |                | Receiver: light/dark switch   |
| Control elements                            |                | Receiver: sensitivity adjustment  |
| <b>Electrical specifications</b>            |                |   |
| Operating voltage                           | U <sub>B</sub> | 10 ... 30 V DC  |
| Ripple                                      |                | max. 10 %   |
| No-load supply current                      | I <sub>0</sub> | Emitter: ≤ 25 mA<br>Receiver: ≤ 40 mA at 24 V Operating voltage   |
| Protection class                            |                | III   |
| <b>Input</b>                                |                |   |
| Test input                                  |                | emitter deactivation at +U <sub>B</sub>   |
| <b>Output</b>                               |                |   |
| Switching type                              |                | The switching type of the sensor is adjustable. The default setting is:<br>Q - BK: PNP normally open / dark-on  |
| Signal output                               |                | 1 PNP output, short-circuit protected, reverse polarity protected, open collector   |
| Switching voltage                           |                | max. 30 V DC  |
| Switching current                           |                | max. 100 mA , resistive load  |
| Usage category                              |                | DC-12 and DC-13   |
| Voltage drop                                | U <sub>d</sub> | ≤ 1.5 V DC  |
| Switching frequency                         | f              | 1000 Hz   |
| Response time                               |                | 0.5 ms  |
| <b>Conformity</b>                           |                |   |
| Product standard                            |                | EN 60947-5-2  |
| <b>Approvals and certificates</b>           |                |   |
| UL approval                                 |                | E87056 , cULus Listed , class 2 power supply , type rating 1  |
| CCC approval                                |                | CCC approval / marking not required for products rated ≤36 V  |
| <b>Ambient conditions</b>                   |                |   |
| Ambient temperature                         |                | -30 ... 60 °C (-22 ... 140 °F) , cable, fixed installation<br>-20 ... 60 °C (-4 ... 140 °F) , movable cable not appropriate for conveyor chains   |
| Storage temperature                         |                | -40 ... 70 °C (-40 ... 158 °F)  |
| <b>Mechanical specifications</b>            |                |   |
| Degree of protection                        |                | IP67  |
| Connection                                  |                | 2 m fixed cable   |
| <b>Material</b>                             |                |   |
| Housing                                     |                | PC (Polycarbonate)  |
| Optical face                                |                | PMMA  |
| Mass  |                | Emitter: approx. 95 g<br>receiver: approx. 100 g  |
| Dimensions                                  |                |   |

### Technical Data

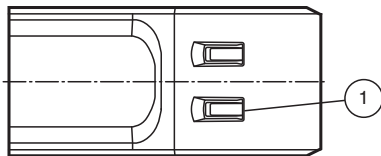
|              |         |
|--------------|---------|
| Height       | 61.9 mm |
| Width        | 20 mm   |
| Depth        | 41.7 mm |
| Cable length | 2 m     |

### Connection



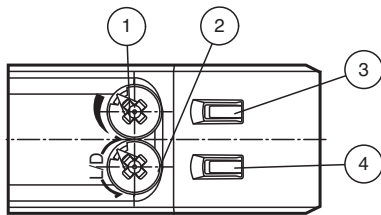
### Indication

#### Emitter



|   |                     |    |
|---|---------------------|----|
| 1 | Operation indicator | GN |
|---|---------------------|----|

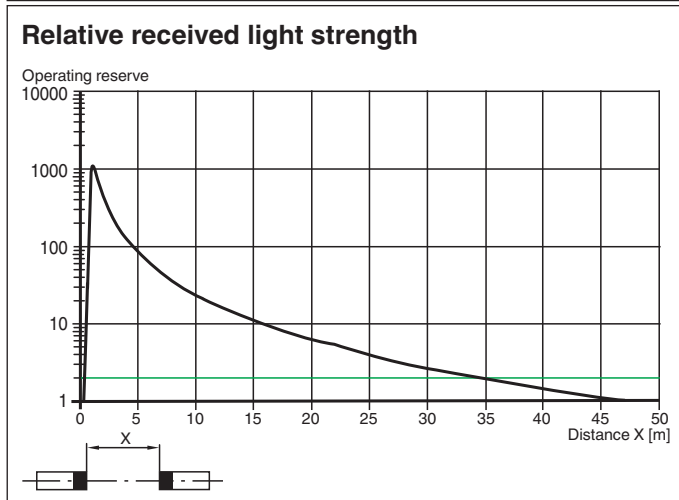
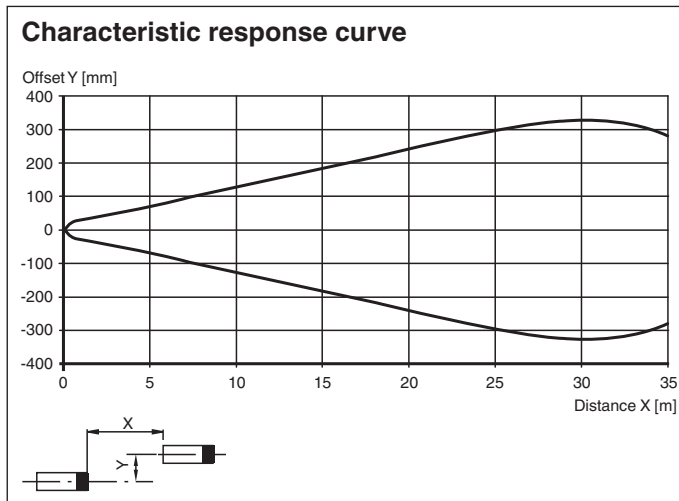
#### Receiver



|   |                                      |    |
|---|--------------------------------------|----|
| 1 | Sensitivity adjuster                 |    |
| 2 | Light-on / dark-on changeover switch |    |
| 3 | Signal indicator                     | YE |
| 4 | Operation indicator                  | GN |

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## Characteristic Curve



## Commissioning

### Sensing Range / Sensitivity

Turn sensing range / sensitivity adjuster clockwise to increase sensing range / sensitivity.  
Turn sensing range / sensitivity adjuster counter clockwise to decrease sensing range / sensitivity.  
The internal end stop signals the end of the adjustment range.

### Light-on / Dark-on Configuration

To set light switching or dark switching, turn the light/dark changeover switch to the end stop:

- clockwise: dark switching
- counterclockwise: light switching