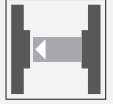




## Thru-beam sensor (pair) OBE35M-R202-SE5-V1



- 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



## Technical Data

### System components

|          |                   |
|----------|-------------------|
| Emitter  | OBE35M-R202-S-V1  |
| Receiver | OBE35M-R202-E5-V1 |

[illegible]

|                           |                             |
|---------------------------|-----------------------------|
| Effective detection range | 0 ... 35 m                  |
| Threshold detection range | 47 m                        |
| Light source              | LED                         |
| Light type                | modulated visible red light |

## Technical Data

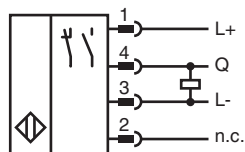
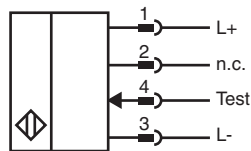
|                                             |                |                                                                                                                                                                                                                 |
|---------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 - Pin4: 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)                                                                                                                                                                                  |
| Storage temperature                         |                | -40 ... 70 °C (-40 ... 158 °F)                                                                                                                                                                                  |
| <b>Mechanical specifications</b>            |                |                                                                                                                                                                                                                 |
| Degree of protection                        |                | IP67                                                                                                                                                                                                            |
| Connection                                  |                | 4-pin, M12 x 1 connector                                                                                                                                                                                        |
| <b>Material</b>                             |                |                                                                                                                                                                                                                 |
| Housing                                     |                | PC (Polycarbonate)                                                                                                                                                                                              |
| Optical face                                |                | PMMA                                                                                                                                                                                                            |
| Mass                                        |                | Emitter: approx. 50 g<br>receiver: approx. 55 g                                                                                                                                                                 |
| Dimensions                                  |                |                                                                                                                                                                                                                 |

Release date: 2025-02-18 Date of issue: 2025-02-18 Filename: 70148120\_eng.pdf

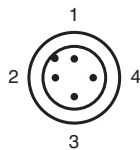
Technical Data

|        |         |
|--------|---------|
| Height | 61.9 mm |
| Width  | 20 mm   |
| Depth  | 41.7 mm |

Connection



Connection Assignment

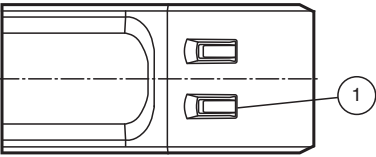


Wire colors in accordance with EN 60947-5-2

|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

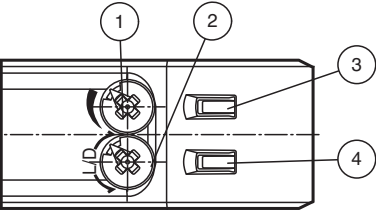
Indication

Emitter



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

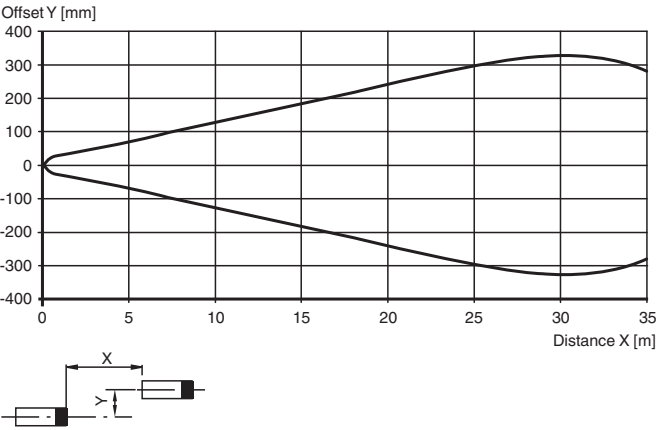
Receiver



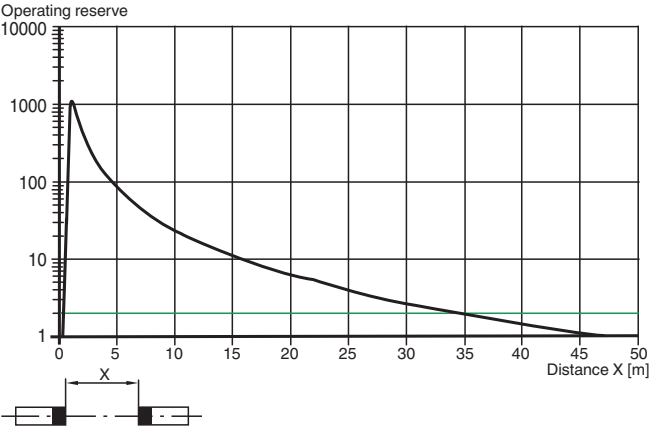
|   |                                      |    |
|---|--------------------------------------|----|
| 1 | Sensitivity adjuster                 |    |
| 2 | Light-on / dark-on changeover switch |    |
| 3 | Signal indicator                     | YE |
| 4 | Operation indicator                  | GN |

Characteristic Curve

Characteristic response curve



Relative received light strength



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