



## Diffuse mode sensor OBD450-18GM60A-E4-V1



- Strong metallic housing in cylindrical shape M18 x 1
- Operating distance adjustable
- Not sensitive to ambient light
- Degree of protection IP67
- High operating distance

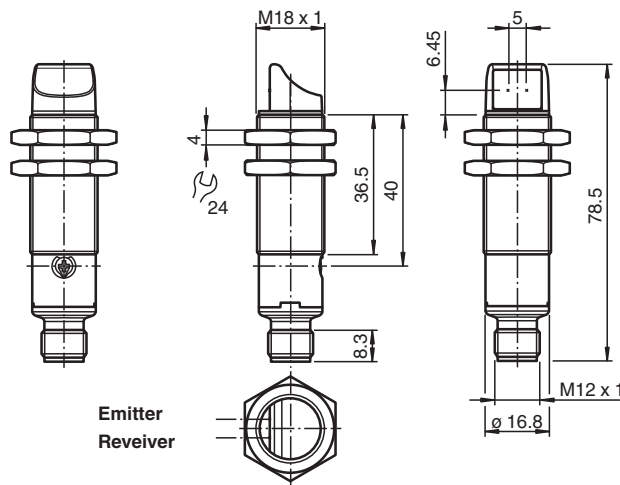
### Diffuse mode sensor



### Function

The optical sensors of this series have an M18 threaded housing that is optionally available in plastic or metal. The sensors are robust and versatile. Focusing on the essential requirements simplifies selection and commissioning, saving time and costs.

### Dimensions



### Technical Data

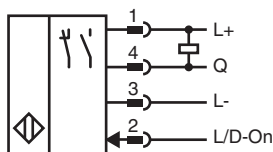
#### General specifications

|                            |                                |
|----------------------------|--------------------------------|
| Detection range            | 0 ... 450 mm                   |
| Detection range min.       | 0 ... 30 mm                    |
| Detection range max.       | 0 ... 450 mm                   |
| Adjustment range           | 30 ... 450 mm                  |
| Reference target           | standard white 200 mm X 200 mm |
| Light source               | LED                            |
| Light type                 | modulated visible red light    |
| Diameter of the light spot | approx. 30 mm at 450 mm        |
| Opening angle              | approx. 2.6 °                  |
| Optical face               | lateral                        |
| Ambient light limit        | EN 60947-5-2 20000 Lux         |

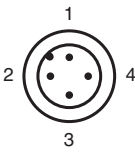
## Technical Data

|                                             |                |                                                                                                                                         |
|---------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Hysteresis                                  | H              | < 15 %                                                                                                                                  |
| <b>Functional safety related parameters</b> |                |                                                                                                                                         |
| MTTF <sub>d</sub>                           |                | 854 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                          |                | LED yellow:<br>constantly on - object detected<br>constantly off - object not detected                                                  |
| Control elements                            |                | sensitivity adjustment                                                                                                                  |
| Control elements                            |                | light/dark on electrically switchable                                                                                                   |
| <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> | < 25 mA                                                                                                                                 |
| Protection class                            |                | III                                                                                                                                     |
| <b>Output</b>                               |                |                                                                                                                                         |
| Switching type                              |                | The switching type of the sensor is adjustable. The default setting is: Q - Pin4: NPN output / light-on L/D-On - Pin2: Low-active input |
| Signal output                               |                | 1 NPN output, short-circuit protected, reverse polarity protected, open collector                                                       |
| Switching voltage                           |                | max. 30 V DC                                                                                                                            |
| Switching current                           |                | max. 100 mA , resistive load                                                                                                            |
| Voltage drop                                | U <sub>d</sub> | ≤ 2 V DC                                                                                                                                |
| Switching frequency                         | f              | 500 Hz                                                                                                                                  |
| Response time                               |                | ≤ 1 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                                                                            |
| <b>Ambient conditions</b>                   |                |                                                                                                                                         |
| Ambient temperature                         |                | -40 ... 60 °C (-40 ... 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                                     |                | brass, nickel-plated                                                                                                                    |
| Optical face                                |                | PMMA                                                                                                                                    |
| Connector                                   |                | plastic                                                                                                                                 |
| Mass                                        |                | approx. 24 g                                                                                                                            |

## Connection



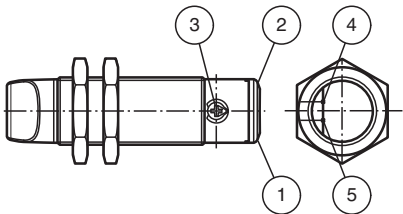
Connection Assignment



Wire colors in accordance with EN 60947-5-2

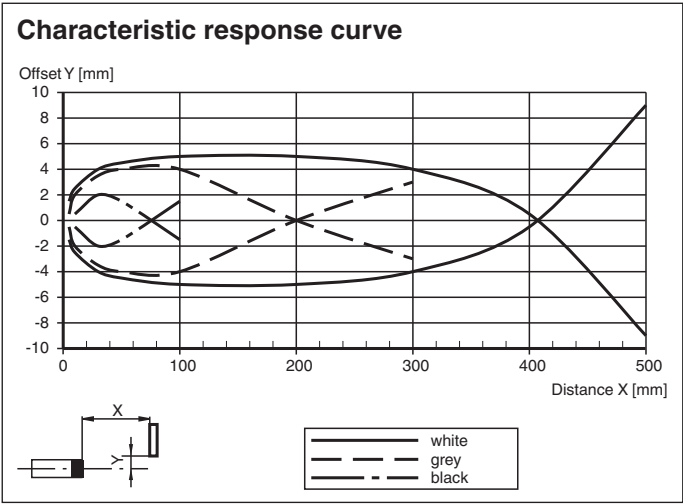
|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

Indication



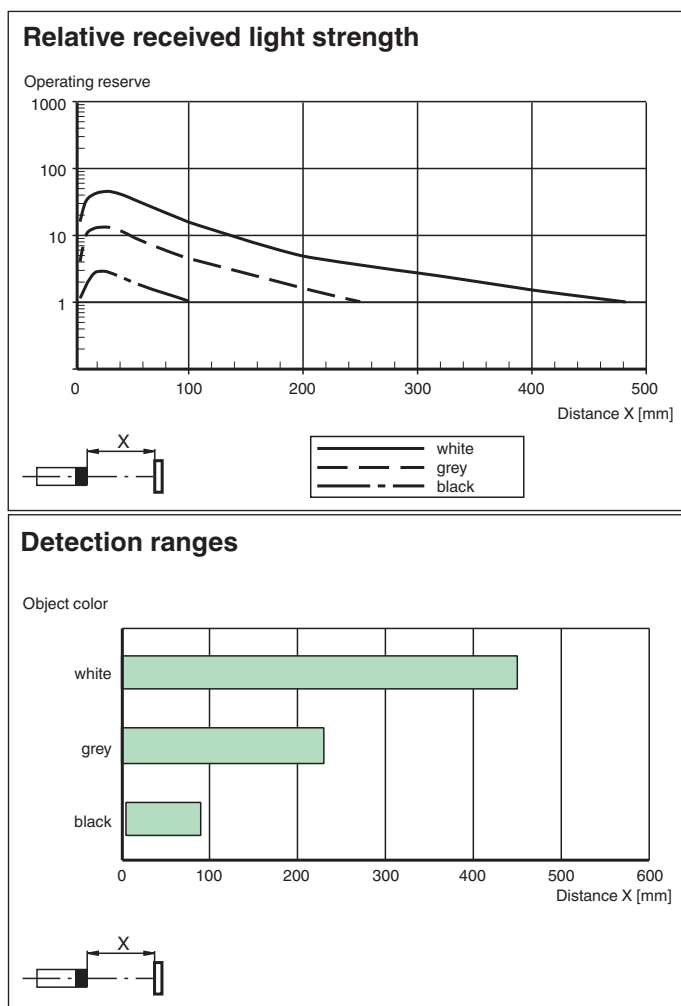
|   |                        |        |
|---|------------------------|--------|
| 1 | Operating display      | green  |
| 2 | Signal display         | yellow |
| 3 | Sensitivity adjustment |        |
| 4 | Emitter                |        |
| 5 | Receiver               |        |

Characteristic Curve



Release date: 2022-05-12 Date of issue: 2022-05-12 Filename: 70113328-100126\_eng.pdf

## Characteristic Curve



## Accessories

|  |                    |                                                                                   |
|--|--------------------|-----------------------------------------------------------------------------------|
|  | <b>V1-W-2M-PUR</b> | Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey             |
|  | <b>V1-G-2M-PUR</b> | Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey           |
|  | <b>OMH-04</b>      | Mounting aid for round steel $\varnothing$ 12 mm or sheet 1.5 mm ... 3 mm         |
|  | <b>BF 18</b>       | Mounting flange, 18 mm                                                            |
|  | <b>BF 18-F</b>     | Plastic mounting adapter, 18 mm                                                   |
|  | <b>BF 5-30</b>     | Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm |
|  | <b>CPZ18B03</b>    | Mounting Bracket with swivel nut                                                  |