



Model Number

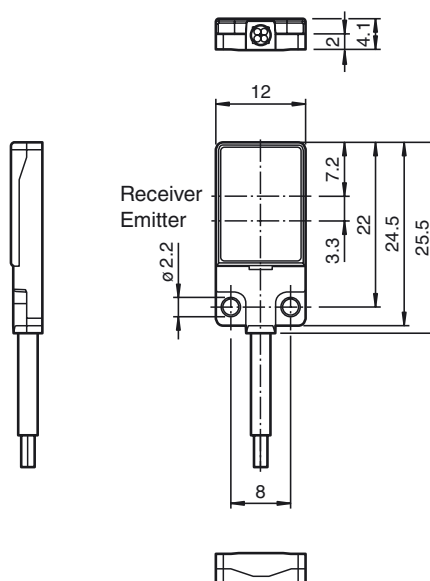
OBT15-R2F-E2-L

Laser triangulation sensor with background suppression
with 2 m fixed cable

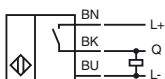
Features

- Very flat design for direct mounting without mounting bracket
- DuraBeam Laser Sensors - durable and employable like an LED
- Small parts detection from 0.05 mm
- Highly visible light spot, even on dark materials
- Extremely small light spot for very high switching point accuracy
- Precision object detection, almost irrespective of the color

Dimensions



Electrical connection



Technical data**General specifications**

| | |
|-----------------------------------|---------------------------------------|
| Detection range | 2 ... 15 mm |
| Reference target | standard white, 100 mm x 100 mm |
| Light source | LASER LIGHT |
| Light type | modulated visible red light , 680 nm |
| Laser nominal ratings | |
| Note | LASER LIGHT , DO NOT STARE INTO BEAM |
| Laser class | 1 |
| Wave length | 680 nm |
| Beam divergence | > 5 mrad |
| Pulse length | approx. 3 µs |
| Repetition rate | approx. 16.6 kHz |
| max. pulse energy | 8 nJ |
| Black/White difference (6 %/90 %) | < 15 % at 15 mm |
| Angle deviation | approx. 0.5 ° |
| Object size | typ. starts from 0.05 mm @ 14 mm |
| Diameter of the light spot | approx. 0.5 mm at a distance of 15 mm |
| Angle of divergence | approx. 1 ° |
| Optical face | frontal |
| Ambient light limit | EN 60947-5-2 : 25000 Lux |

Functional safety related parameters

| | |
|--------------------------------|-------|
| MTTF _d | 800 a |
| Mission Time (T _M) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

Indicators/operating means

| | |
|---------------------|--|
| Operation indicator | LED green, statically lit Power on , short-circuit : LED green flashing (approx. 4 Hz) |
| Function indicator | LED yellow ON: lights when object is detected |

Electrical specifications

| | | |
|------------------------|----------------|-------------|
| Operating voltage | U _B | 12 ... 24 V |
| No-load supply current | I ₀ | < 10 mA |
| Protection class | | III |

Output

| | | |
|---------------------|---|---------------|
| Switching type | NO contact / light on | |
| Signal output | 1 PNP output, short-circuit protected, reverse polarity protected, open collector | |
| Switching voltage | max. 30 V DC | |
| Switching current | max. 50 mA , resistive load | |
| Voltage drop | U _d | ≤ 1.5 V DC |
| Switching frequency | f | approx. 2 kHz |
| Response time | 250 μs | |

Directive conformity

| | |
|-------------------------------|--|
| Electromagnetic compatibility | |
| Directive 2014/30/EU | EN 60947-5-2:2007 EN 60947-5-2/A1:2012 |

Standard conformity

| | |
|-----------|---|
| Standards | EN 60947-5-2:2007 EN 60947-5-2/A1:2012 EN 60825-1:2007 UL 60947-5-2: 2014 |
|-----------|---|

Ambient conditions

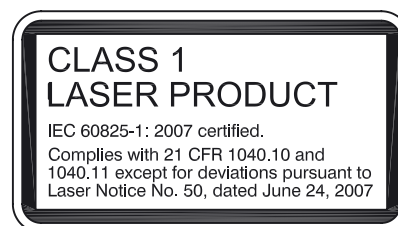
| | |
|---------------------|-------------------------------|
| Ambient temperature | -10 ... 60 °C (14 ... 140 °F) |
| Storage temperature | -20 ... 70 °C (-4 ... 158 °F) |

Mechanical specifications

| | |
|-------------------------------------|--|
| Degree of protection | IP67 |
| Connection | 2 m fixed cable |
| Material | |
| Housing | PC (Polycarbonate) and Stainless steel |
| Optical face | PMMA |
| Cable | PUR |
| Mass | approx. 20 g |
| Tightening torque, fastening screws | 0.25 Nm |
| Cable length | 2 m |

Approvals and certificates

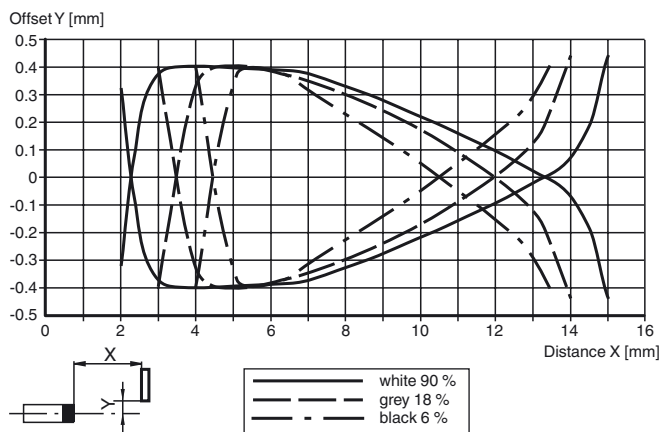
| | |
|--------------|--|
| UL approval | E87056 , cULus Recognized, Class 2 Power Source |
| CCC approval | CCC approval / marking not required for products rated ≤36 V |
| FDA approval | IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007 |

Laserlabel

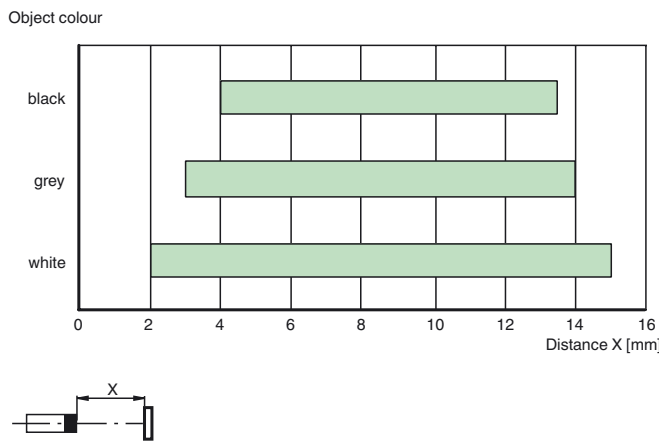
Other suitable accessories can be found at
www.pepperl-fuchs.com

Curves/Diagrams

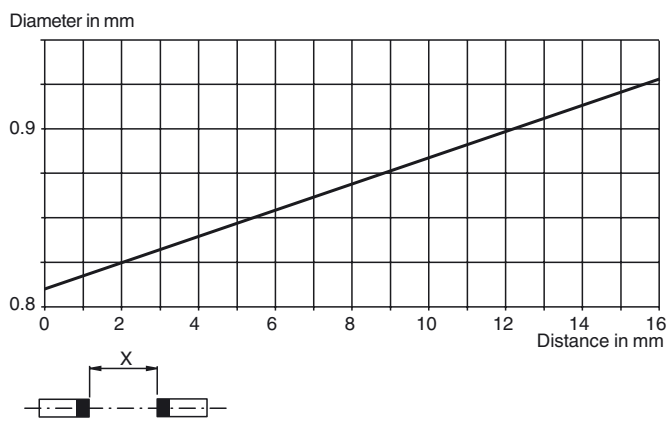
Characteristic response curve



Detection ranges



Light spot diameter



Laser notice laser class 1

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- The warning accompanies the device and should be attached in immediate proximity to the device.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.