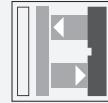




Laser triangulation sensor with background suppression

OBT80-R3-E0-L



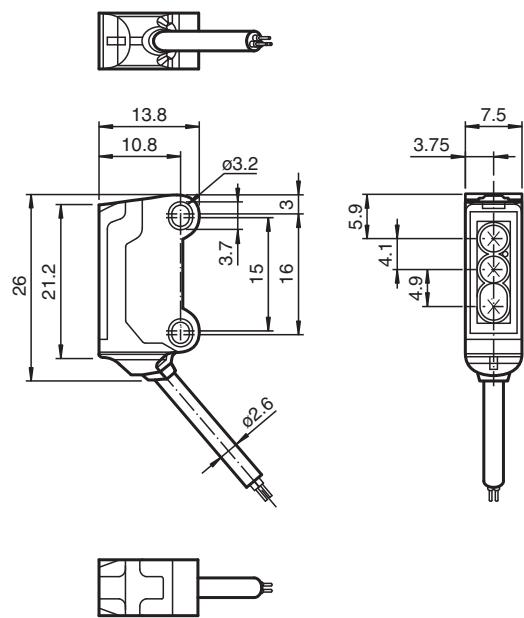
- High-performance miniature photoelectric sensors
- DuraBeam Laser Sensors - durable and employable like an LED
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Improvement in machine availability with abrasion-resistant, antistatic glass front
- Precision object detection, almost irrespective of the color

Laser triangulation sensor with background suppression, ultra-small design with M3 mounting, 80 mm sensing range, NPN output, 2 m fixed cable



The R3 series nano sensor has been developed for a broad range of applications. It offers excellent durability and is exceptionally easy to install. The housing is compact and, with its 45° cable outlet, can be installed in the smallest spaces. New functional principles and functionality open up a range of new options. The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

Dimensions



Technical Data

General specifications

Release date: 2022-06-03 Date of issue: 2022-06-03 Filename: 282064_eng.pdf

| | |
|-----------------------|--------------------------------------|
| Detection range | 20 ... 80 mm |
| Reference target | standard black, 100 mm x 100 mm |
| Light source | laser diode |
| 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 |

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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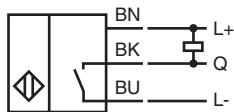
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 PEPPERL+FUCHS

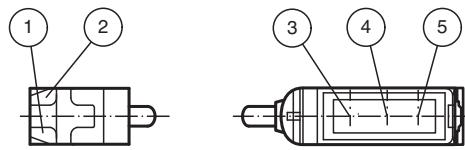
Technical Data

| | | |
|---|--|--|
| Repetition rate | approx. 16.6 kHz | |
| max. pulse energy | 9.5 nJ | |
| Black-white difference (6 %/90 %) | < 15 % at 80 mm | |
| Diameter of the light spot | approx. 2 mm at a distance of 80 mm | |
| Opening angle | approx. 2 ° | |
| Optical face | frontal | |
| Ambient light limit | EN 60947-5-2 : 30000 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: 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 |
| Signal output | | 1 NPN output, short-circuit protected, reverse polarity protected, open collector |
| Switching voltage | | max. 30 V DC |
| Switching current | | max. 50 mA |
| Voltage drop | U _d | ≤ 1.5 V DC |
| Switching frequency | f | approx. 2 kHz |
| Response time | | 250 µs |
| Conformity | | |
| Product standard | | EN 60947-5-2 |
| Laser safety | | EN 60825-1:2007 |
| Approvals and certificates | | |
| EAC conformity | | TR CU 020/2011 |
| 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 |
| Ambient conditions | | |
| Ambient temperature | | -20 ... 60 °C (-4 ... 140 °F) |
| Storage temperature | | -30 ... 70 °C (-22 ... 158 °F) |
| Mechanical specifications | | |
| Housing width | | 7.5 mm |
| Housing height | | 26 mm |
| Housing depth | | 13.8 mm |
| Degree of protection | | IP67 |
| Connection | | 2 m fixed cable |
| Material | | |
| Housing | | PC/ABS and TPU |
| Optical face | | glass |
| Cable | | PUR |
| Mass | | approx. 20 g |
| Cable length | | 2 m |

Connection



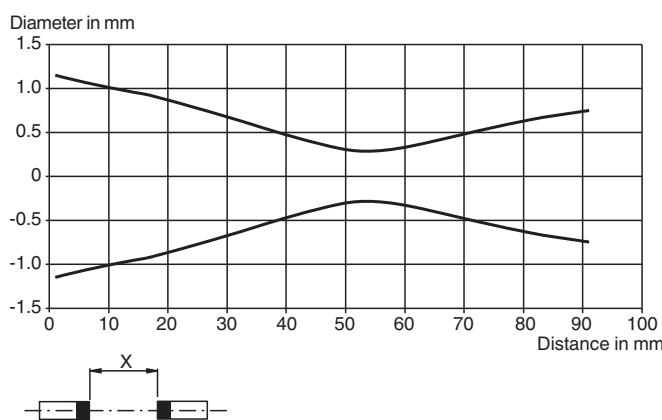
Assembly



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

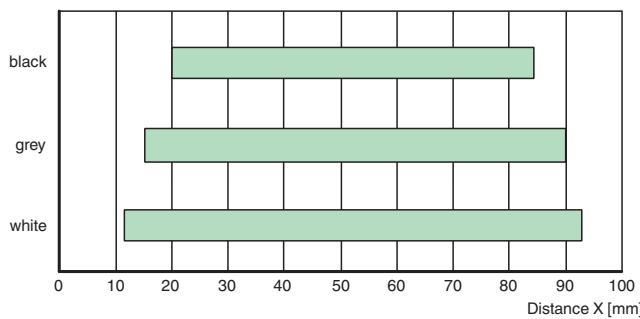
Characteristic Curve

Light spot diameter

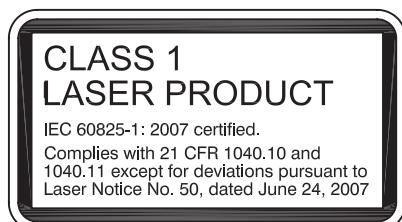


Detection ranges

Object colour



Safety Information



Accessories

| | | |
|---|-----------------|---|
|  | MH-R3-01 | Mounting aid for sensors from the R3 series, mounting bracket |
|  | MH-R3-02 | Mounting aid for sensors from the R3 series, mounting bracket |
|  | MH-R3-03 | Mounting aid for sensors from the R3 series, mounting bracket |
|  | MH-R3-04 | Mounting aid for sensors from the R3 series, mounting bracket |