



# SMALL SENSORS FOR TIGHT SPACES

## ULTRA-SMALL PHOTOELECTRIC SENSORS

### R2 SERIES



# R2 Series — Ultra-small, high-performance photoelectric sensors

The new, ultra-small photoelectric sensor R2 Series combines compact dimensions and high performance in an exemplary manner and impresses with its special features. This is the only miniature sensor series to feature a 45° cable outlet, a background evaluation option, and a retroreflective sensor with polarization filters for extremely large detection ranges. Since this miniature series contains all the options you would expect to find in high-performance sensors of this size, its applications are extremely flexible. Application examples exist in the print and paper industry, in the semiconductor and solar power sector, in assembly automation, and anywhere in automation technology where maximum compactness is required.



## Ultra-small Housing

### Space-saving design

- Dimensions: 24 mm x 11.2 mm x 7.5 mm
- Industry-standard 15 mm hole separation

### Single housing style

- Same size for all sensing modes
- Easy to retrofit into existing applications



## User-Friendly Design

### Easy installation

- Threaded mounting holes — no need for nuts
- 45° cable exit — fits into the most space-restricted areas

### Simple operation

- Tamperproof — no adjustments or controls on the sensor
- Status LEDs — provide excellent visibility from any direction



## Powerful and Practical

### Superior performance

- Best-in-class sensing ranges
- Ultra-low current consumption — <10 mA

### Durable construction

- Antistatic and abrasion-resistant glass optical face
- IP67-rated housing, UL recognized

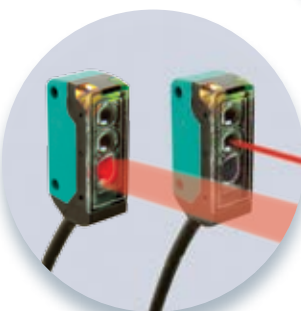
## Industry Problem Solver

### High-power emitter LED

- Super bright and easy to align
- Provides outstanding visibility on dark surfaces



### High-precision emitter LED

- Laser-like spot size — detects objects as small as 0.16 mm
- No external apertures required
- Selectable via control input on R2 Series thru-beam mode sensors (OBE2000-R2)



## Technical data

### TECHNICAL DATA

<b>Effective detection range</b>	Retroreflective sensor Thru-beam sensor	1000 mm 2 m / 200 mm
<b>Detection range</b>	Background suppression sensor Background evaluation sensor	15 mm, 20 mm, 30 mm, 40 mm, 50 mm, 80 mm 15 mm, 30 mm, 50 mm
<b>Light source</b>	Visible red light, 630 nm	
<b>Angle of divergence</b>	± 2°	
<b>Operating voltage</b>	10 VDC ... 30 VDC	
<b>No-load current</b>	< 10 mA	
<b>Switching type</b>	Normally open / normally closed	
<b>Switching output</b>	NPN, PNP	
<b>Switching frequency</b>	800 Hz	
<b>Response time</b>	600 µs	
<b>Operating temperature</b>	-13 °F ... 140 °F (-25 °C ... 60 °C)	
<b>Protection degree</b>	IP67	
<b>Connection</b>	PUR 2 m fixed cable or pigtail, 4-pin, M8 with 200 mm cable	
<b>Dimensions (mm)</b>	24 mm x 7.5 mm x 11.2 mm	
<b>Approvals</b>	 	

### TYPES

#### ■ OBE2000-R2 – Thru-beam sensor

With advanced Teach-in capabilities, a selectable emitter LED, and best-in-class sensing performance, R2 Series thru-beam sensors are an all-in-one solution for a wide array of applications.

#### ■ OBR1000-R2 – Polarized retroreflective sensor

R2 Series retroreflective sensors offer long-distance sensing and exceptional reliability, regardless of object color, texture, or shape and without the added expense of a thru-beam sensor.

#### ■ OBTxx-R2 – Background suppression sensor

R2 Series background suppression sensors detect object presence with precise control, superior color independence and high repeatability while ignoring objects in the background.

#### ■ OBTxx-R2-xx-1T – Background evaluation sensor

Utilizing a fixed background (e.g., conveyor, machine part) as a reference, R2 Series background evaluation sensors are a unique alternative to retroreflective sensors, reliably detecting objects regardless of color, texture, or shape and without the need for a reflector.

### Sensing Ranges by Type



Background Evaluation — 15 mm, 30 mm, 50 mm

Background Suppression — 15 mm, 20 mm, 30 mm, 40 mm, 50 mm, 80 mm

Polarized Retroreflective — 1000 mm

Thru-beam — 200 mm (high precision)      2000 mm (high power)

### ACCESSORIES

#### Mounting Brackets



MH-R2-01



MH-R2-02



MH-R2-03



MH-R2-04

#### Reflectors



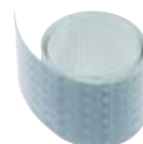
REF-H40



REF-H23



REF-MA21



RT1 X 2

#### Cordsets



V31-GM-BK2M-PUR-U



V31-WM-BK2M-PUR-U

# YOUR APPLICATION. OUR CHALLENGE.

## PROCESS INTERFACES

- Intrinsic Safety Barriers
- Signal Conditioners
- FieldConnex Fieldbus Infrastructure
- Remote I/O Systems
- HART Interface Solutions
- Level Measurement
- Purge+Pressurization Systems
- Industrial Monitors+HMI Solutions
- Explosion Protection Equipment
- Solutions for Process Interfaces
- Wireless Solutions

## INDUSTRIAL SENSORS

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- AS-Interface
- Identification Systems
- Logic Control Units
- Cordsets



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