THE MEASURING PHOTOELECTRIC SENSOR

RL31-8-H-800-RT-IO

PEPPERL+FUCHS

SENSING YOUR NEEDS

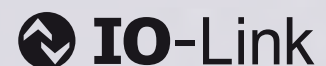## FLEXIBLE COST SAVER: MEASURING PHOTOELECTRIC SENSOR

- Triangulation measurement sensor with discrete output bridges the gap between distance sensors and photoelectric sensors
- Integral measuring principle enables various switching functionality in one device
- Optimally adapts to the application using IO-Link parameterization
- Selectable switching functionality:
- Background suppression
- Background evaluation
- Window operating mode (background and foreground suppression)
- Hysteresis mode

RELIABLE DETECTION: FOR ALL OBJECTS

- Large adjustment range can be precisely defined and low sensitivity to target color enable flexible adaptation to your application
- Reliable object detection, even with dark object surfaces without compromising accuracy or repeatability

COMMUNICATION SKILLS: IO-LINK INCLUDED

- Standard IO-Link interface for diagnosis and parameterization tasks
- Economical and efficient interface for off-line and in-line communication
- Standard connection – existing wiring does not need to be changed for this purpose

IO-Link
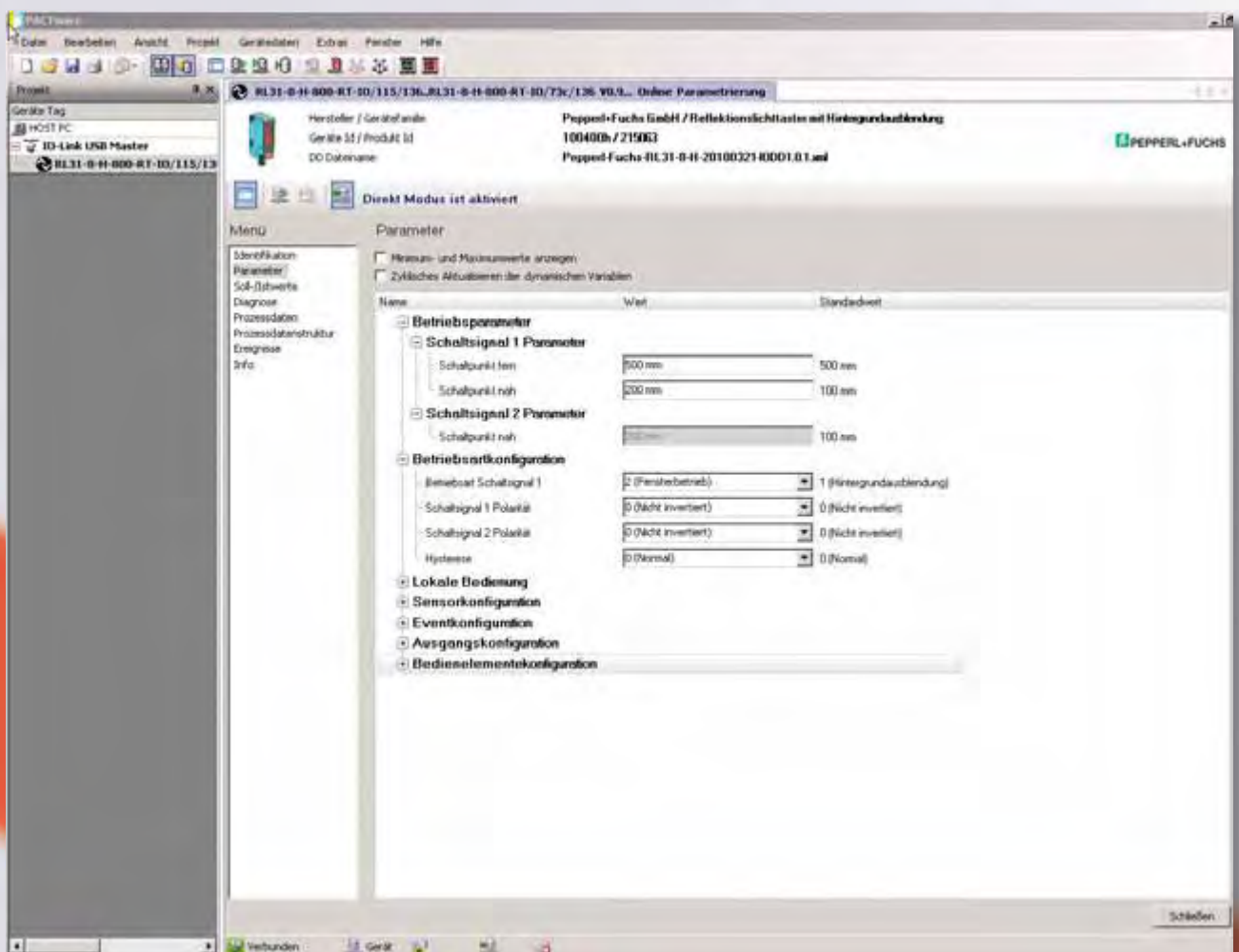
BEST AVAILABLE LIGHT: POWERBEAM

- Best visibility due to extremely bright transmitter LED
- Simple alignment and commissioning over the whole detection range
- Use of the latest LED technology: PowerBeam
- Uniform light spot, excellent visibility, no central bond spot

WINDOW OPERATING MODE (BACKGROUND AND FOREGROUND SUPPRESSION)

■ Detection of objects irrespective of type and color in a defined sensing range. Reliable detection when leaving the defined sensing range – Applications: e.g. web break monitoring

Active sensing range

Foreground suppression   **Background suppression**

GENERAL FEATURES

■ **Diffuse mode sensor with 4 adjustable operating modes**
■ **Large adjustable sensing range up to 800 mm**
■ **Dual push-pull output**
■ **Simple operating concept**
■ **Flexible mounting options with hex retainers**
■ **Versatile mounting set available**
■ **Highly visible status LEDs**

BACKGROUND SUPPRESSION OPERATING MODE

■ Detection of objects irrespective of type and color in a defined sensing range. Objects in the background are reliably suppressed. Applications: e.g. presence checks, triggers, stacking height detection

■ Background suppression with 2 switching points. Applications: e.g. tension checks, stroke height monitoring, fill level monitoring, collision avoidance

Active sensing range

Background suppression

BACKGROUND EVALUATION OPERATING MODE

■ Detection of objects irrespective of type and color in front of a defined background. Reliable detection of objects at close range (detection range ≥ 0 mm). The background serves as reference. Applications: e.g. presence checks, front edge detection
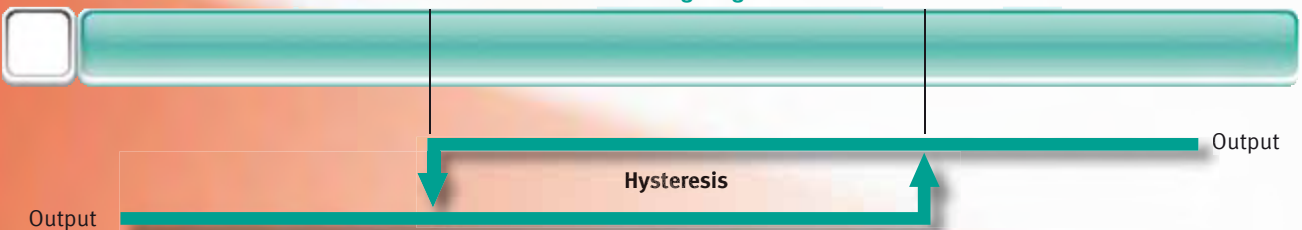
Active sensing range

Background evaluation

HYSTERESIS OPERATING MODE

■ Detection of objects irrespective of type and color between a defined switch-on and switch-off point. Applications: e.g. tension checks, stroke height monitoring, fill level monitoring

Active sensing range

Output

Hysteresis

Output

TECHNICAL DATA

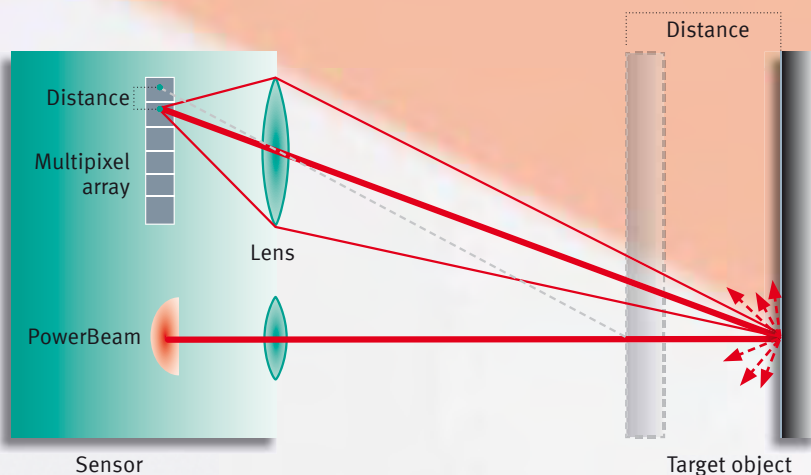|	
Sensing range	50 mm to 800 mm
Adjustment range	100 mm to 800 mm
Reference object	Standard white 100 mm x 100 mm
bw/wb difference	5% at 800 mm
Type of light	Red LED, PowerBeam
Diameter of the light spot	25 mm at 800 mm
Opening angle	±2.0°
Ambient light limit	20,000 Lux
LED indicators	Green: power on, short circuit/undervoltage Yellow: Switching state
Operating controls	Detection range adjustment
Operating voltage	10 V DC to 30 V DC
Operating mode	Light on mode, switchable
Signal output	2 push-pull outputs
Switching frequency	200 Hz
Response time	2.5 ms
Ambient temperature	-30 °C to 50 °C
Degree of protection	IP67
Connection	4-pin, M12 plug or 2 m fixed cable

MODEL NUMBER

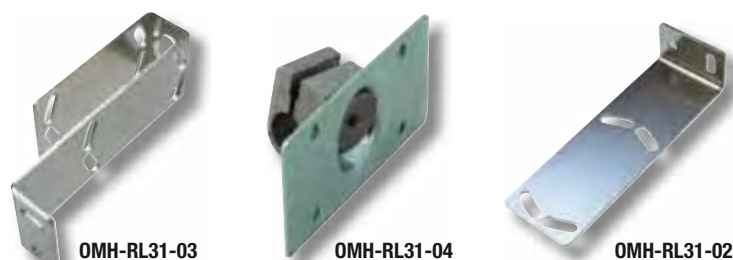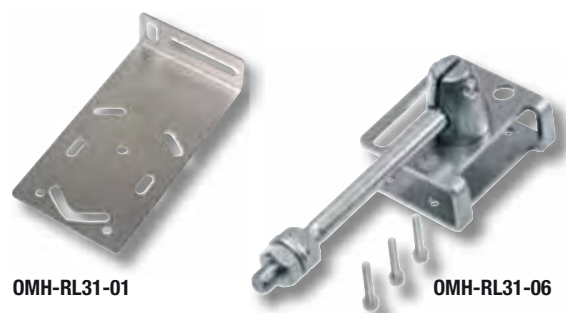| Designation	Version
RL31-8-H-800-RT-IO/59/73c/136	Version with M12 connecting plug, 4-pin
RL31-8-H-800-RT-IO/59/115/136	Version with fixed cable connection, 2 m

FUNCTIONAL PRINCIPLE

Diffuse mode sensor based on the triangulation principle with measuring functionality:

- Row of photodiodes as receiver
- µ processor and software provide the measuring principle
- IO-Link interface for diagnosis and parameterization
- Distance information accessible via IO-Link

Distance

Distance

Distance

Multipixel array

Lens

PowerBeam

Sensor

Target object

MOUNTING ACCESSORIES

Designation	Description
OMH-RL31-01	Wide, right-angle mounting bracket (galvanized sheet steel)
OMH-RL31-02	Narrow, right-angle mounting bracket (galvanized sheet steel)
OMH-RL31-03	Wrap-around, right-angle mounting bracket (galvanized sheet steel)
OMH-RL31-04	Mounting bracket for circular profiles ø 12 mm or flat profiles 1.5 mm to 3 mm
OMH-RL31-05	Mounting bracket standard wide (stainless steel)
OMH-RL31-06	Mounting bracket on M10 threaded bar with rotating head

OMH-RL31-01

OMH-RL31-06

OMH-RL31-03   **OMH-RL31-04**   **OMH-RL31-02**

OMH-RL31-05

CONNECTING CABLE

Designation	Description
V1-G-2M-PVC	Female cordset, straight, M12, 4-pin, PVC cable, length: 2 m
V1-G-2M-PUR	Female cordset, straight, M12, 4-pin, PUR cable, length: 2 m
V1-W-2M-PVC	Female cordset, angled, M12, 4-pin, PVC cable, length: 2 m
V1-W-2M-PUR	Female cordset, angled, M12, 4-pin, PUR cable, length: 2 m

IO-Link

IO-LINK PARAMETERIZATION ACCESSORIES

Designation	Description
IO-Link-Master01-USB	Parameterization tool IO-Link-Master, incl. power supply, USB cable
IODD	see download area **www.pepperl-fuchs.com**
PactWare 4.0	see download area **www.pepperl-fuchs.com**

Further accessories available on request

www.pepperl-fuchs.com

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