Model Number

RLG28-55-4921/115b/136

Retroreflective area sensor

with 300 mm fixed cable and 4-pin, M12 x 1 connector

Features

- Retro-reflective area sensor with 6 light beams in standard photoelectric-sensor enclosure

- Connection compatibly replaces single beam photoelectric sensor

- Reliable detection of the front edge of the object irrespective of its shape and position

- Constant object detection from 12 mm within the entire detection area

- Reliable detection of all surfaces irrespective of the object texture

- Switches when contrast difference 10%

- Bright, highly visible transmitter beams, guarantee convenient alignment of the sensor

Product information

The RLG28 retro-reflective area sensor contains several transmitters and receivers in one housing and with a reflector positioned opposite forms a 60 mm detection area over a sensing range of 4 m.

When the light beams are interrupted by an object, the switching function is triggered. The smallest detectable object size is 12 mm. The RLG28 switches at a 10% contrast difference with a response time of 1 ms. An intelligent gain control compensates for effects such as dirt, misalignment, and temperature.
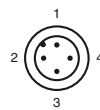
Dimensions
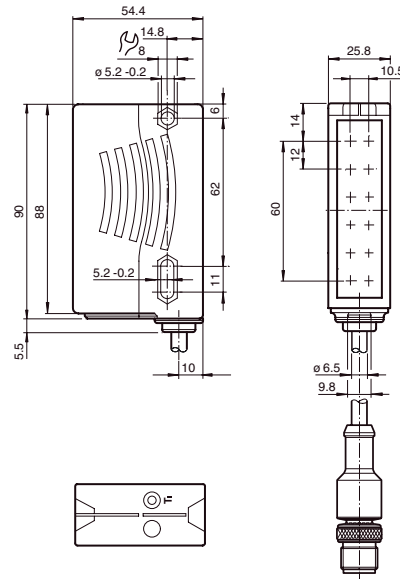
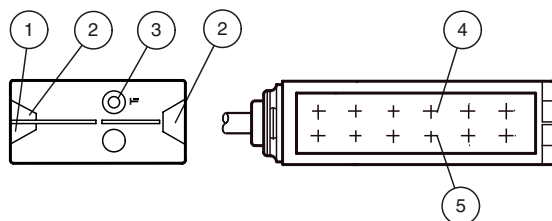## Electrical connection

Option:
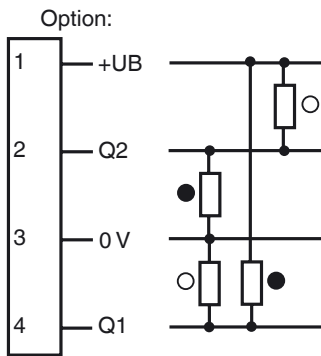
○ = Light on
● = Dark on

Pinout

Wire colors in accordance with EN 60947-5-2

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

Indicators/operating means

1	Operating display	green
2	Signal display	yellow
3	TEACH-IN button	
4	Emitter	
5	Receiver	

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

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Technical data

General specifications

Effective detection range	0 ... 4 m
Reflector distance	Reflector A80: 0.4 ... 4 m , H85-2 reflector: 0.2 ... 4 m , Foil reflector OFR-100/100: 0.4 ... 3 m
Threshold detection range	5.6 m
Sensing range	typical 60 mm , Object has to cover the refelector completely in one dimension
Reference target	Reflector A80 H85-2 reflector Foil reflector OFR-100/100
Light source	LED
Light type	modulated visible red light , 625 nm
Polarization filter	yes
Number of beams	6
Diameter of the light spot	approx. 220 mm at detection range 4 m
Angle of divergence	+/- 2.5 °
Ambient light limit	5000 Lux
Resolution	12 mm to 4 m Detection/capture range: 60 mm (no dead band) 5 mm to 1 m Detection/capture range: 55 mm (dead band: 150 mm in front of the sensor; 50 mm in front of the reflector) 5 mm to 1.5 m Detection/capture range: 40 mm (dead band: 150 mm in front of the sensor; 50 mm in front of the reflector)

Functional safety related parameters

$MTTF_d$	310 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operation indicator	LED green, statically lit Power on Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) short-circuit : LED green flashing (approx. 4 Hz)
Function indicator	2 LEDs yellow, light up when light beam is free, flash when falling short of the stability control, off when light beam is interrupted Teach-In : LED yellow/green; equiphase flashing; 2,5 Hz Changeover signal tracking: LED yellow, 1 Hz flashing / 2x flashing
Control elements	Teach-In key

Electrical specifications

Operating voltage	U_B	12 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	max. 50 mA

Output

Switching type		light/dark on
Signal output		2 push-pull (4 in 1) outputs, complementary, short-circuit proof, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	U_d	≤ 2.5 V DC
Switching frequency	f	230 Hz
Response time		1 ms

Conformity

Product standard	EN 60947-5-2

Ambient conditions

Ambient temperature	-10 ... 40 °C (14 ... 104 °F) -30 ... 60 °C (-22 ... 140 °F) at active signal tracking
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

Housing width	25.8 mm
Housing height	88 mm
Housing depth	54.3 mm
Degree of protection	IP67
Connection	300 mm fixed cable with M12 x 1, 4-pin connector
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	100 g

Approvals and certificates

UL approval	cULus Listed, Class 2 Power Source
CCC approval	CCC approval / marking not required for products rated ≤36 V

Notes

Mounting:
Ensure that the red light transmitted by the sensor fully illuminates the reflector.
To ensure optimal detection, the entire 60 mm detection field must appear on the reflector.

Accessories

OMH-05
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

OMH-07
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

OMH-21
Mounting bracket

OMH-RLK29-HW
Mounting bracket for rear wall mounting

OMH-K01
dove tail mounting clamp

REF-H85-2
Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes

V1-G-2M-PVC
Female cordset, M12, 4-pin, PVC cable

V1-G-2M-PUR
Female cordset, M12, 4-pin, PUR cable
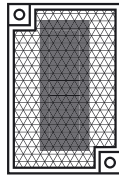
V1-W-2M-PUR
Female cordset, M12, 4-pin, PUR cable

REF-A80
Reflector, rectangular 80 mm x 50 mm, self-adhesive

Additional accessories can be found in the Internet.

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To check this illumination, look at the reflector from over the top of the sensor housing.

correct   **incorrect**

Teach-in:

Press the
Teach-In button > 2s

Teach-in process

faulty   successful

Previous teach
values and normal
operation adopted after
1 min without changes   Alignment mode   Normal operation

LED green
2.5 Hz flashing   -   Alignment mode is active

Signal status (LED yellow):
Off   -   Strength of reflected light inadequate
flashes slowly   -   Strength of reflected light weak
flashes quickly   -   Strength of reflected light improving
lit permanently
(not flashing)   -   Strength of reflected light good
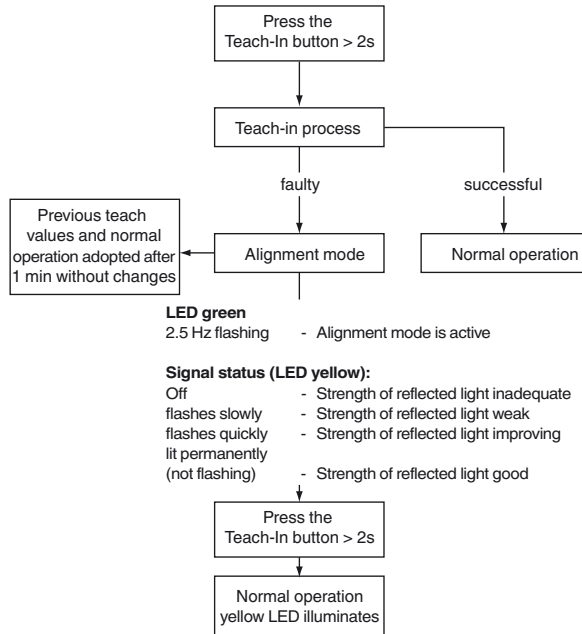
Press the
Teach-In button > 2s
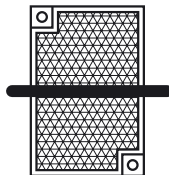
Normal operation
yellow LED illuminates

More stringent adjustment requirements: Ensure that the device is correctly aligned in the near range of 0.2 m ... 0.6 m.

Object detection after successful Teach-in
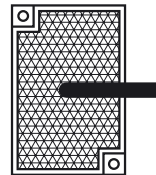The target should be large enough so that the reflector is always completely covered in one dimension!

optimal   **not optimal**
object = resolution   object > resolution
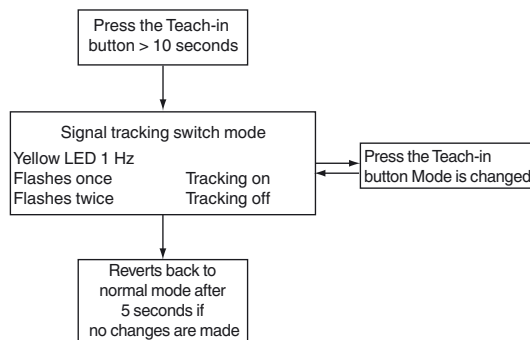
Signal tracking:
Active:
- At variable temperature
- Objects located in the light path that lie below the switching point. These objects result in a readjustment of the emitter. This allows these objects to be taught in or taught out.

Inactive:
- Function not available

To alter the signal tracking, press the Teach-in button for >10 seconds. The current status is displayed. Briefly pressing the Teach-in button changes the mode.

Press the Teach-in
button > 10 seconds

Signal tracking switch mode

Yellow LED 1 Hz
Flashes once   Tracking on   Press the Teach-in
Flashes twice   Tracking off   button Mode is changed

Reverts back to
normal mode after
5 seconds if
no changes are made

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