Model Number

RLG28-55/40a/73c/136

Retroreflective area sensor
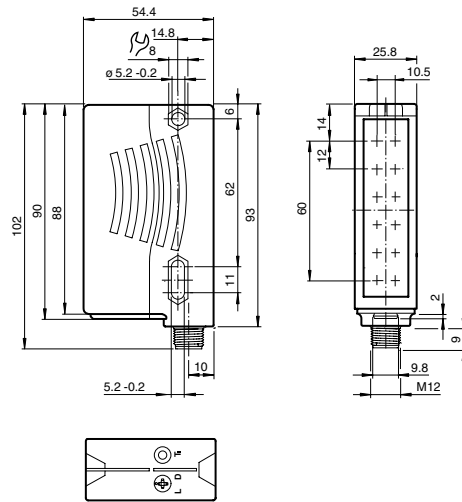with 4-pin, M12 x 1 connector

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
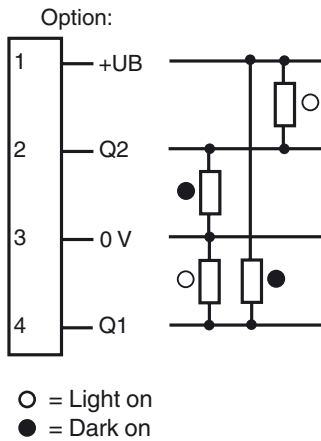
Product information

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.
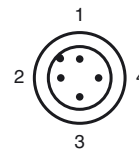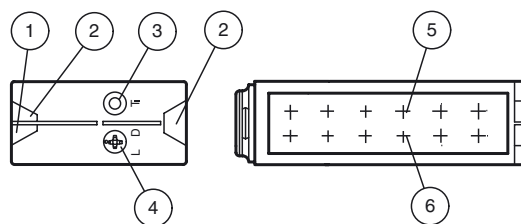
Dimensions

Electrical connection

Option:

○ = Light on
● = Dark on

Pinout

Indicators/operating means

1	Operating display	green
2	Signal display	yellow
3	TEACH-IN button	
4	Light/dark switch	
5	Emitter	
6	Receiver	

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Technical data

General specifications

Effective detection range	0 ... 4 m
Reflector distance	H60 reflector: 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 refeflector completely in one dimension
Reference target	H60 reflector , H85-2 reflector , Foil reflector OFR-100/100
Light source	LED
Light type	modulated visible red light , 625 nm
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

Functional safety related parameters

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

Indicators/operating means

Operating display	LED green, statically lit Power on Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) short-circuit : LED green flashing (approx. 4 Hz)
Function display	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
Controls	rotary switch for light/dark , TEACH-IN key

Electrical specifications

Operating voltage	U_B	12 ... 30 V DC Power from Class 2 Power Source
Ripple		max. 10 %
No-load supply current	I_0	max. 50 mA

Output

Switching type		light/dark on, switchable
Signal output		2 Push-pull 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

Ambient conditions

Ambient temperature	-30 ... 60 °C (-22 ... 140 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

Protection degree	IP67
Connection	connector M12 x 1, 4-pin
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	100 g

Compliance with standards and directives

Directive conformity	
Low Voltage Directive 2006/95/EC	EN 60947-5-2
EMC Directive 2004/108/EC	EN 60947-5-2

Approvals and certificates

Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 , functional insulation acc. to DIN EN 50178
UL approval	cULus Listed, Class 2 Power Source
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

Note

Mounting:
Ensure that the transmitted red light fully illuminates the reflector.
To ensure optimal detection, the entire 60 mm high light spot 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-H60
Reflector, rectangular 40.5 mm x 60 mm, mounting holes

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

V1-G-2M-PVC
Cable socket, M12, 4-pin, PVC cable

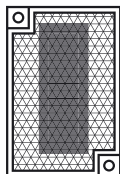**V1-G-2M-PUR**
Cable socket, M12, 4-pin, PUR cable
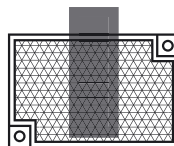
V1-W-2M-PUR
Cable socket, M12, 4-pin, PUR cable

Additional accessories can be found in the Internet.

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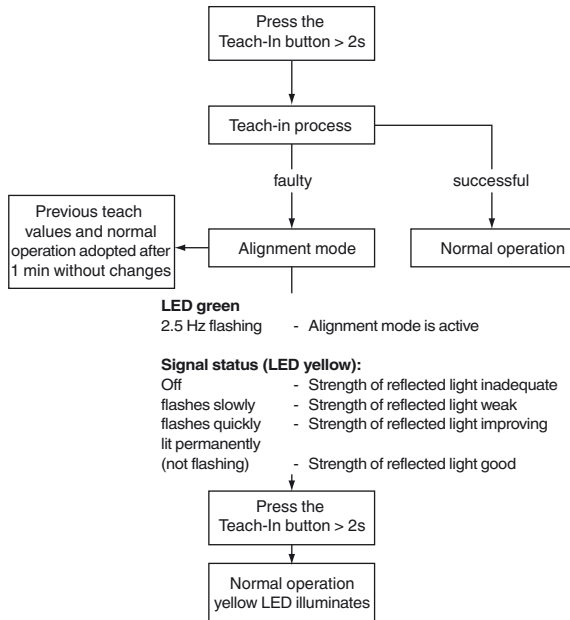
correct	incorrect

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
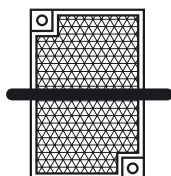
Normal operation
yellow LED illuminates

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
target = correct coverage	target > incorrect coverage

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