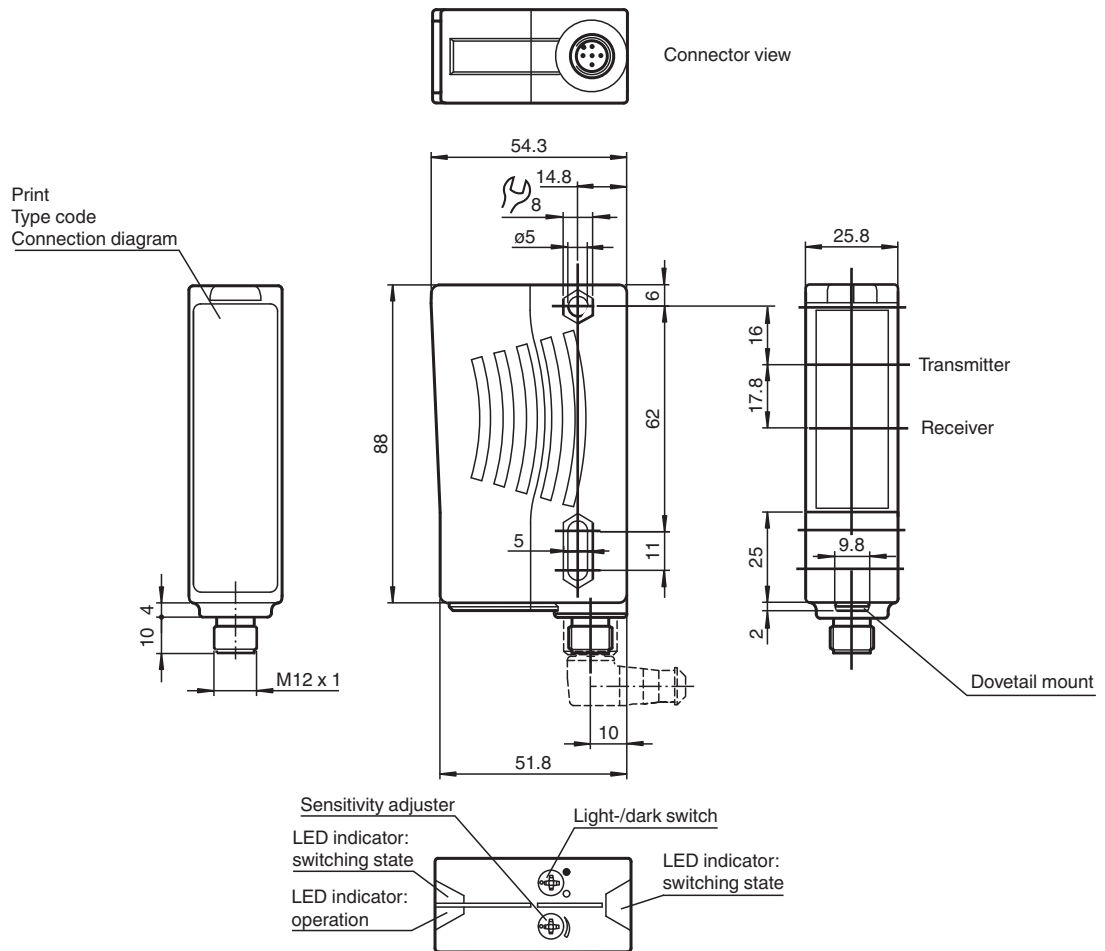# Retroreflective sensor

RL28-55/82b/105/110

- Ultra bright LEDs for power on, weak signal indication and switching state
- Powerful push-pull output
- Not sensitive to ambient light, even with switched energy saving lamps
- Waterproof, degree of protection IP67
- Protection class II

Retroreflective sensor with polarization filter

CE □ c(UL)us UKCA

Dimensions

Connector view

54.3

14.8

8

ø5

6

25.8

16

17.8

Transmitter

62

Receiver

88

5

11

25

9.8

Print
Type code
Connection diagram

10 4

M12 x 1

2

Dovetail mount

51.8

10

Sensitivity adjuster

Light-/dark switch

LED indicator: switching state

LED indicator: switching state

LED indicator: operation

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

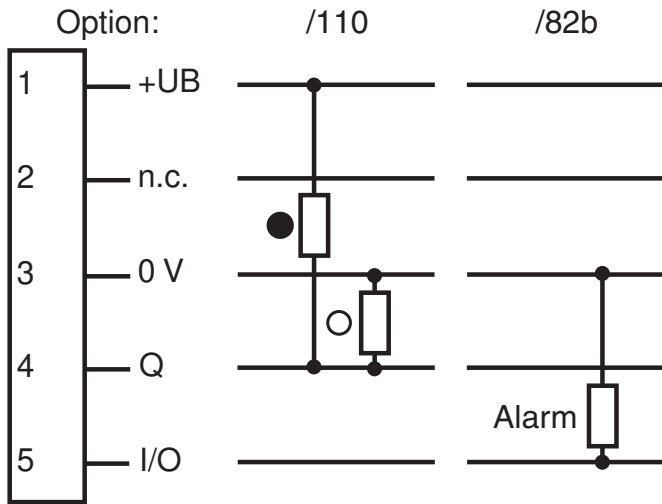Pepperl+Fuchs Group
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Technical Data

General specifications

Effective detection range		0 ... 17 m
Reflector distance		0.05 ... 17 m
Threshold detection range		21 m
Reference target		H85-2 reflector
Light source		LED
Light type		modulated visible red light , 660 nm
Polarization filter		yes
Diameter of the light spot		approx. 290 mm at a distance of 17 m
Opening angle		emitter 1.2° receiver 2°
Ambient light limit		80000 Lux

Functional safety related parameters

$MTTF_d$		950 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %

Indicators/operating means

Operation indicator		LED green
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
Control elements		sensitivity adjustment (Adjustment to < 25% of the effective operating range) , Light-on/dark-on changeover switch

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I_0	≤ 40 mA

Output

Stability alarm output		1 PNP, inactive when falling short of the stability control for 10;s immediately inactive if 4 light beam interruptions take place
Switching type		light/dark on switchable
Signal output		1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Switching frequency	f	1000 Hz
Response time		0.5 ms

Conformity

Product standard		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
UL approval		E87056 , cULus Listed , class 2 power supply , type rating 1

Ambient conditions

Ambient temperature		-40 ... 60 °C (-40 ... 140 °F)
Storage temperature		-40 ... 60 °C (-40 ... 140 °F)

Mechanical specifications

Housing width		25.8 mm
Housing height		88 mm
Housing depth		54.3 mm
Degree of protection		IP67
Connection		5-pin, M12 x 1 connector
Material		
Housing		Plastic ABS
Optical face		plastic
Connector		plastic
Mass		70 g

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

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Connection Assignment

Option:	/110	/82b
1	+UB	
2	n.c.	
3	0 V	
4	Q	
5	I/O	Alarm

○ = Light on
● = Dark on

Connection Assignment

```
        1
          5
   2  ( • • )  4
      ( • • • )
        3
```

Wire colors in accordance with EN 60947-5-2

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

Characteristic Curve

Characteristic response curve
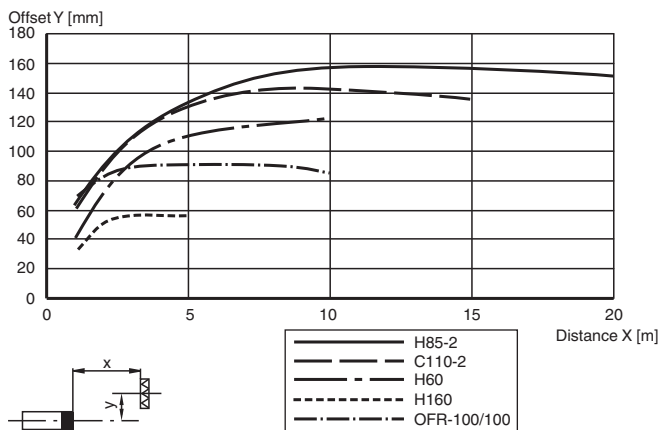
Offset Y [mm]

Distance X [m]

- H85-2
- C110-2
- H60
- H160
- OFR-100/100

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

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Characteristic Curve

Relative received light strength

Reflector type:

H85-2	50 mm	21 m
C110-2	50 mm	14 m
H60	50 mm	12 m
F2000 (Foil, 100 mm x 100 mm) OFR-100/100	250 mm	10 m
H160	50 mm	5 m

□ Stability control > 3

▨ Stability control < 3

Stability control

Curves legend:
- H85-2
- C110-2
- H60
- H160
- OFR-100/100

Distance X [m]
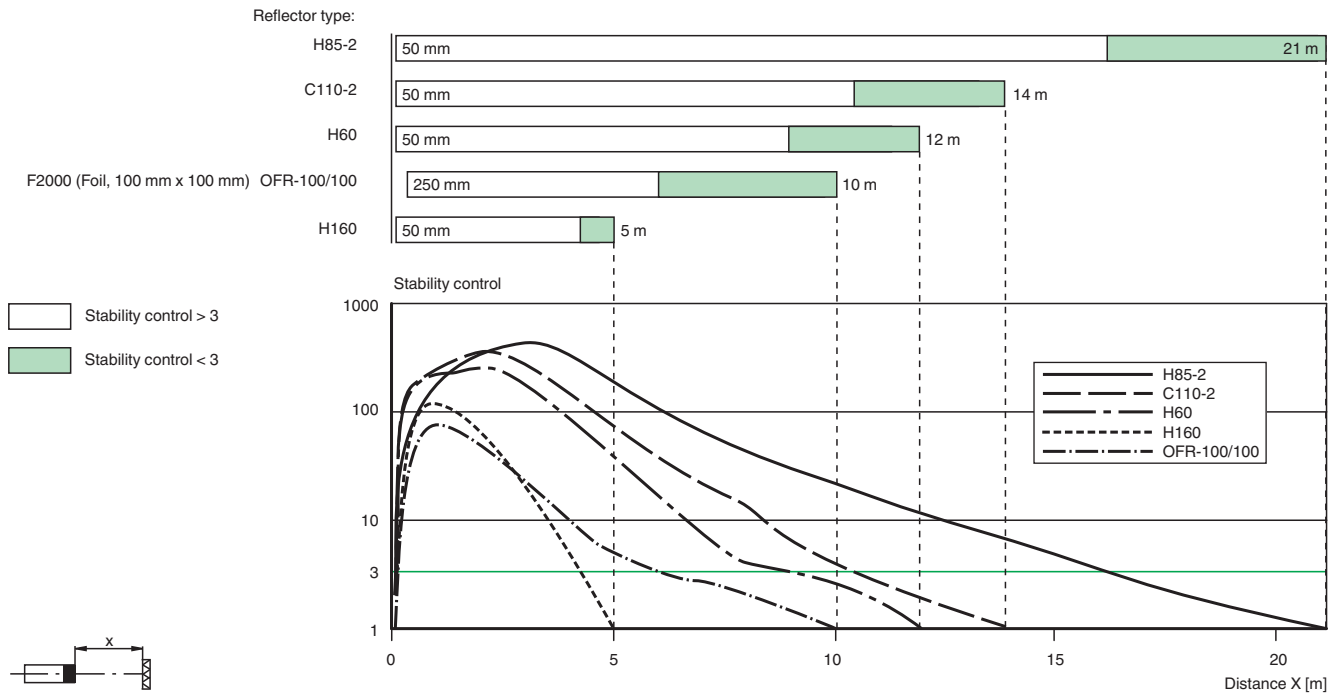
Application

Accessories

	OMH-05	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
	OMH-21	Mounting bracket: mounting aid for sensors in the RL* series
	OMH-22	Mounting aid for RL* series
	OMH-RLK29-HW	Mounting bracket for rear wall mounting
	OMH-RL28-C	Weld slag cover model

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

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