

FR 25-RL

Retro-reflective laser sensor



PRODUCT HIGHLIGHTS

- Particularly suitable for short-range applications
- Suitable for a wide variety of different reflectors
- Very small, easily visible laser light spot
- Sensor settings via teach-in and control input
- Robust glass-fibre-reinforced plastic housings
- Setting of smart functions via IO-Link

Optical data		Functions	
Limit range	0.1 ... 15 m ¹	Indicator LED, green	Operating voltage indicator
Operating range	0.1 ... 13 m ¹	Indicator LED, yellow	Switching output indicator
Type of light	Laser, red, 650 nm	Sensitivity adjustment	Via Teach-in button, control input ⁴ and IO-Link
Light spot size	See diagram	Teach-in modes	Mode 1: during running process Mode 2: during standing process
Laser Class (IEC 60825-1)	1	Adjustment possibilities	N.O./N.C. and Auto-Detect / NPN / PNP via teach-in button, control input ⁴ and IO-Link Button lock via control input ⁴ and IO-Link Wide variety of adjustment possibilities via IO-Link
Polarising filter	Yes	Default settings	Max. range and N.O.
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ²	Dimensions	34 × 20 × 12 mm
No-load current, I ₀	≤ 30 mA	Enclosure rating	IP 69 & IP 67 ⁵
Output current, I _e	≤ 100 mA	Material, housing	ABS
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)	Material, front screen	PMMA
Protection Class	2	Type of connection	See selection table
Power On Delay	< 300 ms	Ambient temperature: operation	-20 ... +60 °C ⁶
Switching output, Q	1x Auto-Detect (PNP/NPN) ³	Ambient temperature: storage	-20 ... +80 °C
Output function	N.O./N.C.	Weight (metal plug device ⁷)	10 g
Switching frequency, f (ti/tp 1:1)	≤ 4000 Hz	Weight (cable device)	40 g
Response time	125 µs	Weight (pigtail)	20 g
Control input, I _N ⁴	+ U _B = teach-in - U _B = button locked Open = normal operation	Vibration and impact resistance	EN 60947-5-2
IO-Link			
Communication mode	COM 2		
Min. cycletime	2.3 ms		
SIO mode	Compatible		
Length process data	16 Bit		
Specification	1.1		

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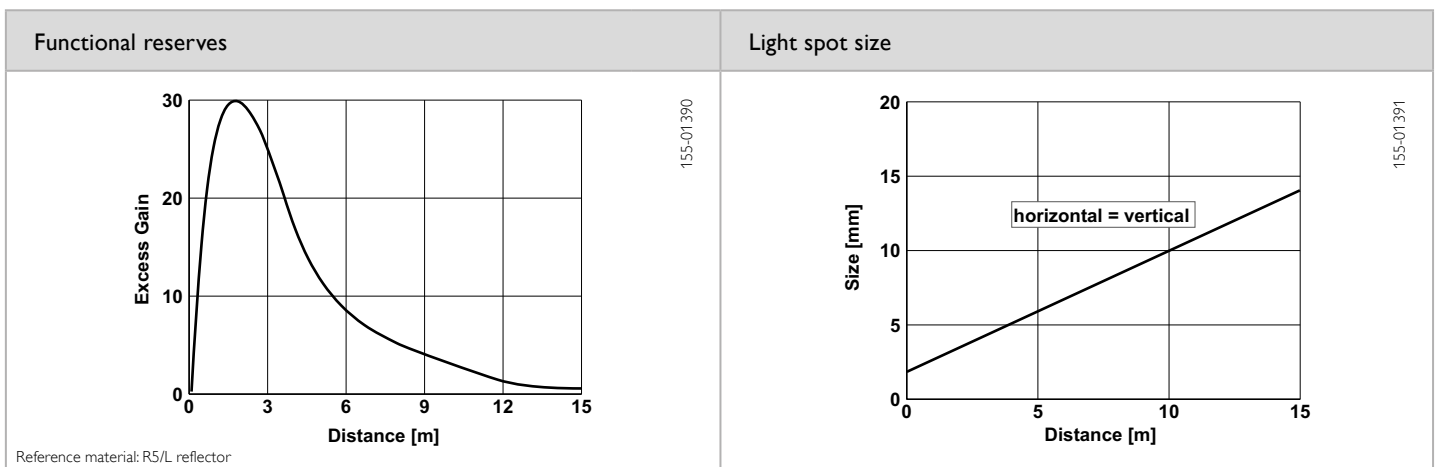
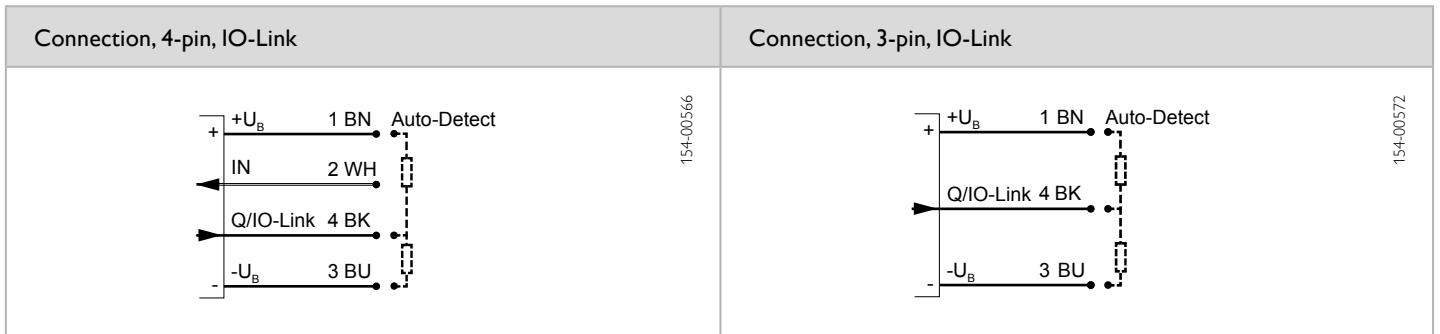
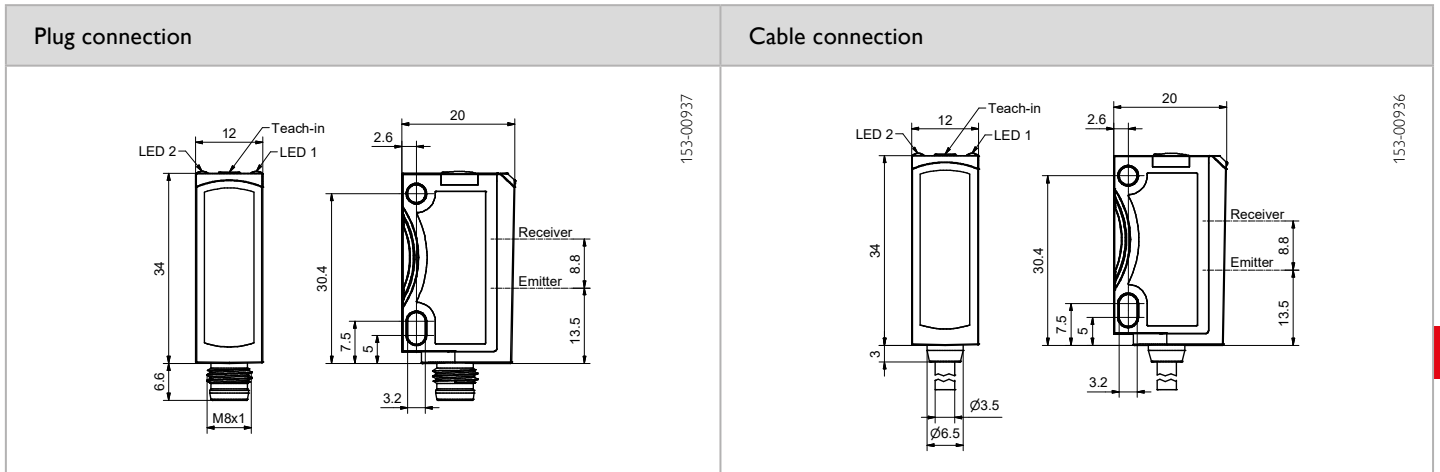
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¹ Reference material: R5/L reflector ² Max. 10 % ripple, within U_B, ~ 50 Hz / 100 Hz ³ Auto-Detect, automatic PNP/NPN selection by the sensor; PNP or NPN fixed ⁴ Only 4-pin design
⁵ With connected IP 67 / IP 69 plug ⁶ UL: -20 ... +50 °C ⁷ No Ecolab

Operating range	Switching output	Type of connection	Part number	Article number
0.1 ... 13 m	Auto-Detect	Metal plug, M8x1, 3-pin, IO-Link	FR 25-RL-PNSL-M3M	609-31017
0.1 ... 13 m	Auto-Detect	Metal plug, M8x1, 4-pin, IO-Link	FR 25-RL-PNSL-M4M	609-31018
0.1 ... 13 m	Auto-Detect	Cable, 2 m, 4-wire, IO-Link	FR 25-RL-PNSL-K4	609-31014
0.1 ... 13 m	Auto-Detect	Pigtail, 150 mm with plug, M8, 4-pin, IO-Link	FR 25-RL-PNSL-KM4	609-31016
0.1 ... 13 m	Auto-Detect	Pigtail, 150 mm with plug, M12, 4-pin, IO-Link	FR 25-RL-PNSL-KL4	609-31015



Reflector (especially for short range)	Operating range	Accessories
RD 25LK	0.15 ... 1 m	<ul style="list-style-type: none"> Reflectors Connection cables Brackets Sensolo (901-01000)
		<ul style="list-style-type: none"> From Page A-18 From Page A-38 From Page A-4 From Page A-56