

# FR 25-RGO

Photoelectric retro-reflective sensor for detection of transparent objects



## PRODUCT HIGHLIGHTS

- Reliable detection of transparent objects regardless of shape
- Autocollimation principle: reliable and precise detection from a range of 0 mm
- DELTA function (Dynamic Evaluation of Light for Threshold Adaption): dynamic sensor adaptation to changing environmental conditions – dust and dirt have no effect
- Precise and easily visible light spot with sharp contour for easy alignment of the sensor
- Setting of smart functions via IO-Link

Optical data		Functions	
Operating range	0 ... 2 m <sup>1</sup>	Indicator LED, green	Operating voltage indicator
Type of light	LED, red, 632 nm	Indicator LED, yellow	Switching output indicator
Polarising filter	Yes	Sensitivity adjustment	Via Teach-in button and control input
		Teach-in modes	Mode 1: during running process Mode 2: during standing process
		Adjustment possibilities	N.O./N.C. and Auto-Detect / NPN / PNP via teach-in button, control input and IO-Link Button lock via control input and IO-Link Wide variety of adjustment possibilities via IO-Link
		Default settings	Max. range and N.O.
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>2</sup>	Dimensions	34 × 20 × 12 mm
No-load current, I <sub>0</sub>	≤ 30 mA	Enclosure rating	IP 69 & IP 67 <sup>4</sup>
Output current, I <sub>e</sub>	≤ 100 mA	Material, housing	ABS
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / 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 <sup>5</sup>
Switching output, Q	1x Auto-Detect (PNP/NPN) <sup>3</sup>	Ambient temperature: storage	-20 ... +80 °C
Output function	N.O./N.C.	Weight (plug device)	10 g
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz	Weight (metal plug device <sup>6</sup> )	10 g
Response time	500 μs	Weight (cable device)	40 g
Control input, IN	+ U <sub>B</sub> = teach-in - U <sub>B</sub> = button locked Open = normal operation	Weight (pigtail)	20 g
		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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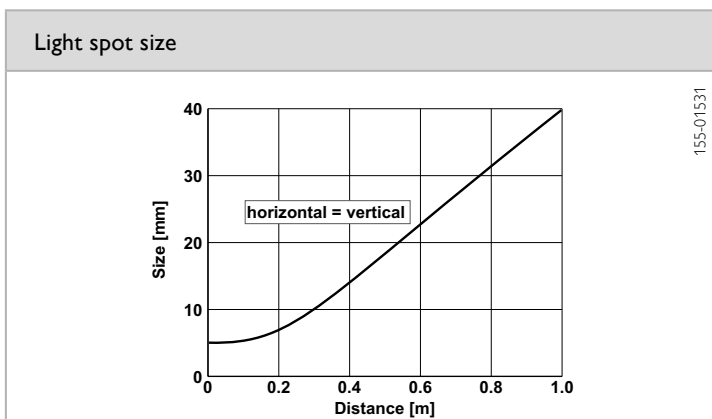
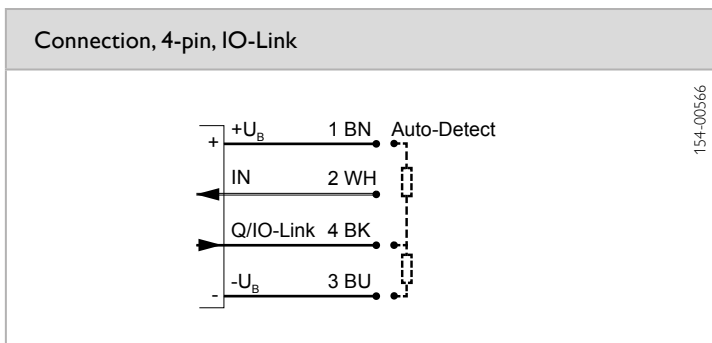
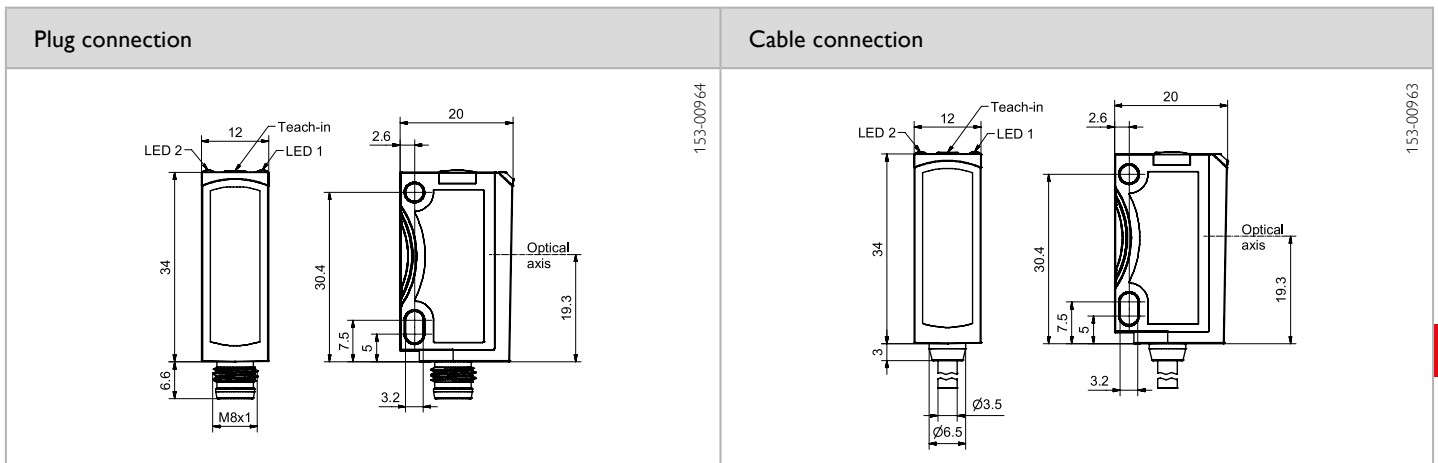
Toll Free Phone (877) SERV098

[www.electromate.com](http://www.electromate.com)

[sales@electromate.com](mailto:sales@electromate.com)

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

Operating range	Switching output	Type of connection	Part number	Article number
0 ... 2 m	Auto-Detect	Plug, M8x1, 4-pin, IO-Link	FR 25-RGO-PNSL-M4	606-11054
0 ... 2 m	Auto-Detect	Metal plug, M8x1, 4-pin, IO-Link	FR 25-RGO-PNSL-M4M	606-11052
0 ... 2 m	Auto-Detect	Cable, 2 m, 4-wire, IO-Link	FR 25-RGO-PNSL-K4	606-11053
0 ... 2 m	Auto-Detect	Pigtail, 150 mm with plug, M8, 4-pin, IO-Link	FR 25-RGO-PNSL-KM4	606-11055
0 ... 2 m	Auto-Detect	Pigtail, 150 mm with plug, M12, 4-pin, IO-Link	FR 25-RGO-PNSL-KL4	606-11056



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[www.electromate.com](http://www.electromate.com)  
[sales@electromate.com](mailto:sales@electromate.com)

Reflector / Reflective foil*	Operating range (min./max. reflector distance)	Accessories
R5/L	0.5 ... 2 m	Reflectors
RF-100 KL*	0 ... 2 m	Connection cables
R2-2LB1	0 ... 500 mm	Brackets
R3-2LK1	0 ... 500 mm	Sensolo (901-01001)