

FR 25-R

Photoelectric retro-reflective sensor



PRODUCT HIGHLIGHTS

- Auto-Detect photoelectric retro-reflective sensor with real PNP and real NPN functions
- Particularly suitable for short-range applications
- Simple alignment thanks to easily visible light spot
- Robust glass-fibre-reinforced plastic housings
- Durable laser printing
- Wide range of variants
- Setting of smart functions via IO-Link

Optical data		Functions	
Limit range	0.1 ... 7 m ¹	Indicator LED, green	Operating voltage indicator
Operating range	0.1 ... 6 m ¹	Indicator LED, yellow	Switching output indicator
Type of light	LED, red, 632 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
Polarising filter	Yes	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
		Default settings	Max. range and N.O.
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30 V DC ²	Dimensions	34 x 20 x 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 (plug device)	10 g
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz	Weight (metal plug device ⁷)	10 g
Response time	500 µs	Weight (cable device)	40 g
Control input, IN ⁴	+U _B = teach-in -U _B = button locked Open = normal operation	Weight (pigtail)	20 g
		Vibration and impact resistance	EN IEC 60947-5-2
IO-Link			
Communication mode	COM 2		
Min. cycle time	2.3 ms		
SIO mode	Compatible		
Length process data	16 Bit		
Specification	1.1		

¹ Reference material: R10 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 ... 6 m	Auto-Detect	Plug, M8x1, 3-pin, IO-Link	FR 25-R-PNSL-M3	606-11048
0.1 ... 6 m	Auto-Detect	Metal plug, M8x1, 3-pin, IO-Link	FR 25-R-PNSL-M3M	606-11045
0.1 ... 6 m	Auto-Detect	Plug, M8x1, 4-pin, IO-Link	FR 25-R-PNSL-M4	606-11042
0.1 ... 6 m	Auto-Detect	Metal plug, M8x1, 4-pin, IO-Link	FR 25-R-PNSL-M4M	606-11046
0.1 ... 6 m	Auto-Detect	Cable, 2 m, 4-wire, IO-Link	FR 25-R-PNSL-K4	606-11043
0.1 ... 6 m	Auto-Detect	Pigtail, 150 mm with plug, M8, 4-pin, IO-Link	FR 25-R-PNSL-KM4	606-11047
0.1 ... 6 m	Auto-Detect	Pigtail, 150 mm with plug, M12, 4-pin, IO-Link	FR 25-R-PNSL-KL4	606-11044

Plug connection	Cable connection

Connection, 4-pin, IO-Link	Connection, 3-pin, IO-Link

Functional reserves	Light spot size

Reflector	Operating range	Accessories
R10	0.1 ... 6 m	Reflectors
RD8	0.05 ... 4 m	Connection cables
R5	0.1 ... 4 m	Brackets
		Sensolo (901-01001)
		www.sensopart.com/en/accessories