

FR 25-R

Retroreflective photoelectric sensor



PRODUCT HIGHLIGHTS

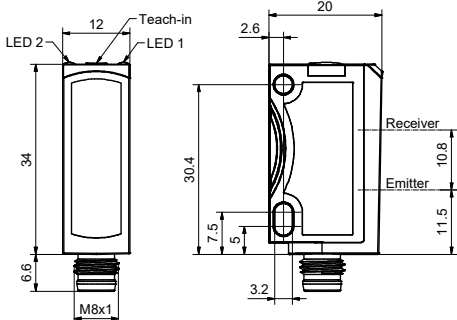
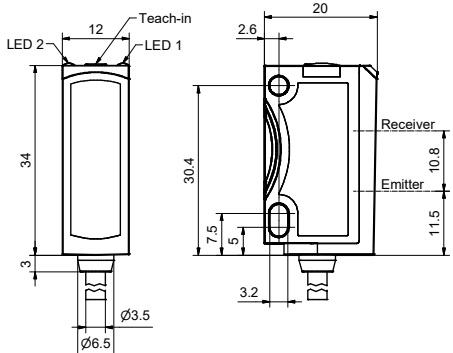
- Auto-detect retroreflective photoelectric sensor with real PNP and real NPN functions
- Particularly suitable for short-range applications
- Simple alignment thanks to easily visible light spot
- Robust glass-fibre-reinforced plastic housings
- Durable laser printing
- Wide range of variants

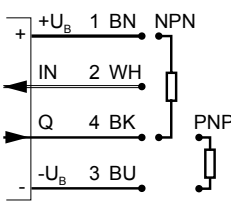
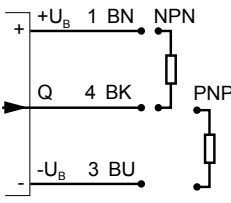
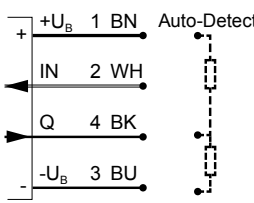
Optical data		Functions	
Limit range	0.1 ... 7 m ¹	Indicator LED, green	Operating voltage indicator
Operating range	0.1 ... 6 m ¹	Indicator LED, yellow	Switching output indicator
Type of light	LED, red, 632 nm	Sensitivity adjustment	Via Teach-in button and control input
Light spot size	See diagram	Teach-in modes	Mode 1: during running process
Polarising filter	Yes	Adjustment possibilities	Mode 2: during standing process
			N.O./N.C. via Teach-in button and control input
			Button lock via control input
			Auto-detect / NPN / PNP via Teach-in button and control input (only Auto-detect variants)
		Default settings	Max. range and N.O.
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ²	Dimensions	34 x 20 x 12 mm
No-load current, I ₀	≤ 30 mA	Enclosure rating	IP 69K & IP 67 ⁴
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 ⁵
Switching output, Q	PNP/NPN/Auto-detect (see Selection Table)	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 ⁶)	10 g
Response time	500 µs	Weight (cable device)	40 g
Control input, IN ³	+U _B = teach-in -U _B = button locked Open = normal operation	Weight (pigtail)	20 g
		Vibration and impact resistance	EN 60947-5-2

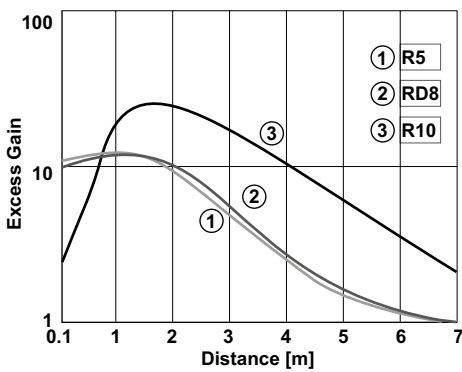
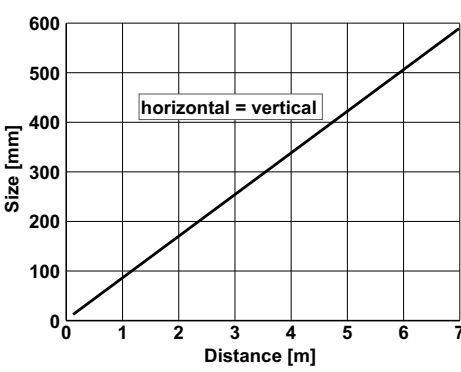
¹ Reference material: R10 reflector ² Max. 10 % ripple, within U_B, ~ 50 Hz / 100 Hz ³ Only 4-pin design ⁴ With connected IP 67 / IP 69K plug ⁵ UL: -20 ... +50 °C ⁶ No Ecolab

Operating range	Switching output	Type of connection	Part number	Article number
0.1 ... 6 m	PNP	Plug, M8x1, 4-pin	FR 25-R-PS-M4	606-11000
0.1 ... 6 m	NPN	Plug, M8x1, 4-pin	FR 25-R-NS-M4	606-11002
0.1 ... 6 m	PNP	Metal plug, M8x1, 3-pin	FR 25-R-PS-M3M	606-11006
0.1 ... 6 m	NPN	Metal plug, M8x1, 3-pin	FR 25-R-NS-M3M	606-11007
0.1 ... 6 m	PNP	Metal plug, M8x1, 4-pin	FR 25-R-PS-M4M	606-11008
0.1 ... 6 m	NPN	Metal plug, M8x1, 4-pin	FR 25-R-NS-M4M	606-11009
0.1 ... 6 m	PNP	Cable, 2 m, 4-wire	FR 25-R-PS-K4	606-11001
0.1 ... 6 m	NPN	Cable, 2 m, 4-wire	FR 25-R-NS-K4	606-11003

Operating range	Switching output	Type of connection	Part number	Article number
0.1 ... 6 m	PNP	Pigtail, 150 mm with plug, M8, 4-pin	FR 25-R-PS-KM4	606-11028
0.1 ... 6 m	NPN	Pigtail, 150 mm with plug, M8, 4-pin	FR 25-R-NS-KM4	606-11029
0.1 ... 6 m	PNP	Pigtail, 150 mm with plug, M12, 4-pin	FR 25-R-PS-KL4	606-11004
0.1 ... 6 m	NPN	Pigtail, 150 mm with plug, M12, 4-pin	FR 25-R-NS-KL4	606-11005
0.1 ... 6 m	Auto-detect	Metal plug, M8x1, 4-pin	FR 25-R-PNS-M4M	606-11011

Plug connection	Cable connection
 153-00835	 153-00834

Connection, 4-pin	Connection, 3-pin	Connection, 4-pin, Auto-Detect
 154-00312	 154-00311	 154-00313

Functional reserves	Light spot size
 155-00978	 155-00981

Reflector	Operating range	Accessories
R10	0.1 ... 6 m	Reflectors
RD8	0,05 ... 4 m	Connection cables
R5	0.1 ... 4 m	Brackets
		From Page A-18
		From Page A-38
		From Page A-4