

# FR 50 R

## Photoelectric retro-reflective sensor



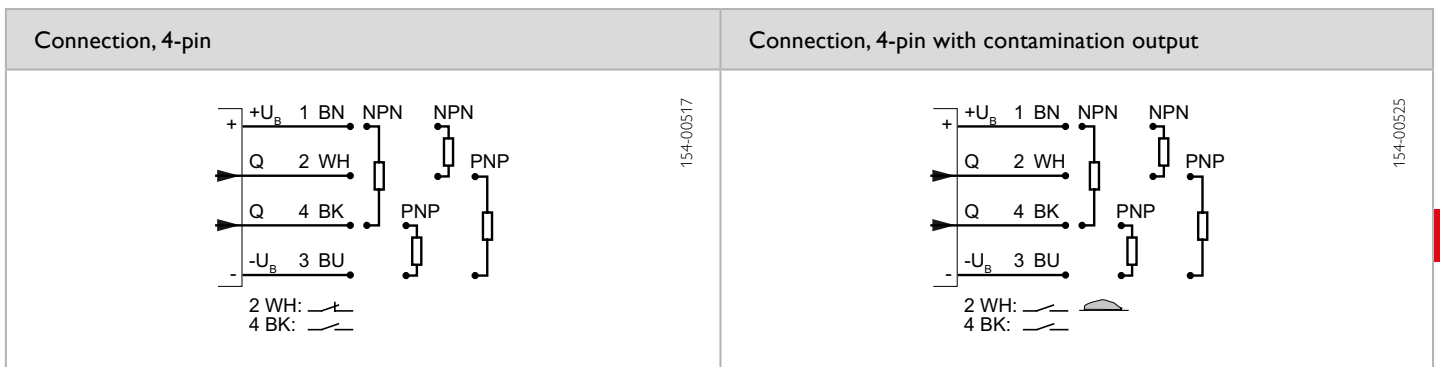
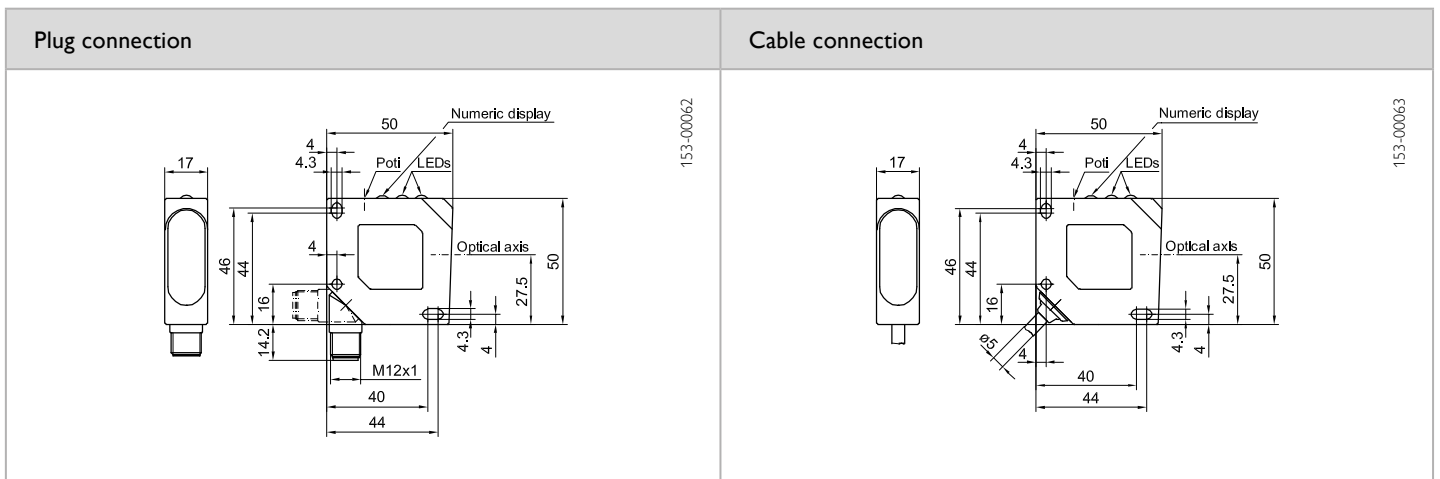
### PRODUCT HIGHLIGHTS

- Autocollimation principle for maximum precision even at long ranges
- No blind zone – detection from range of 0 mm
- Simple alignment thanks to easily visible light spot
- Plug connector rotatable

Optical data		Functions	
Limit operating range	0 ... 6 m <sup>1</sup>	Indicator LED, green	Operating voltage indicator
Operating range	0 ... 5.5 mm <sup>1</sup>	Indicator LED, yellow	Switching output indicator
Type of light	LED, red, 660 nm	Indicator LED, red	Contamination indicator
Light spot size	See table	Sensitivity adjustment	Via potentiometer
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>2</sup>	Dimensions	50 x 50 x 17 mm
No-load current, I <sub>0</sub>	≤ 30 mA <sup>3</sup>	Enclosure rating	IP 67 <sup>5</sup>
Output current, I <sub>e</sub>	≤ 200 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
Switching output, Q	PNP/NPN, antivalent (see selection table)	Ambient temperature: storage	-20 ... +80 °C
Output function	N.O./N.C. (see selection table)	Weight (plug device)	40 g
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz	Weight (cable device)	130 g
Response time	500 μs	Vibration and impact resistance	EN 60947-5-2
Connection, BK	N.O.		
Connection, WH <sup>4</sup>	N.C.		
Contamination output, WH (optional)	N.O. (see selection table)		

<sup>1</sup> Reference material: RD8 reflector    <sup>2</sup> Max. 10 % ripple, within U<sub>B</sub>    <sup>3</sup> At 24 V DC    <sup>4</sup> Without contamination output    <sup>5</sup> With connected IP 67 plug

Operating range	Switching output	Type of connection	Contamination output	Part number	Article number
0 ... 5.5 m	PNP, antivalent	Plug, M12x1, 4-pin	No	FR 50 R-PAL4	571-50004
0 ... 5.5 m	NPN, antivalent	Plug, M12x1, 4-pin	No	FR 50 R-NAL4	571-50005
0 ... 5.5 m	PNP (N.O.)	Plug, M12x1, 4-pin	Yes	FR 50 R-PSVL4	571-50006
0 ... 5.5 m	NPN (N.O.)	Plug, M12x1, 4-pin	Yes	FR 50 R-NSVL4	571-50007
0 ... 5.5 m	PNP (N.C.)	Plug, M12x1, 4-pin	Yes	FR 50 R-POVL4	571-50033
0 ... 5.5 m	PNP, antivalent	Cable, 3 m, 4-wire	No	FR 50 R-PAK4	571-50000
0 ... 5.5 m	NPN, antivalent	Cable, 3 m, 4-wire	No	FR 50 R-NAK4	571-50001
0 ... 5.5 m	PNP (N.O.)	Cable, 3 m, 4-wire	Yes	FR 50 R-PSVK4	571-50002
0 ... 5.5 m	NPN (N.O.)	Cable, 3 m, 4-wire	Yes	FR 50 R-NSVK4	571-50003



Light spot size		
Operating range (m)	0.1	0.5
Light spot size (mm)	15 x 10	Ø 15

Accessories	
Reflectors	From Page A-18
Connection cables	From Page A-38
Brackets	From Page A-4