FS/FE 55-R

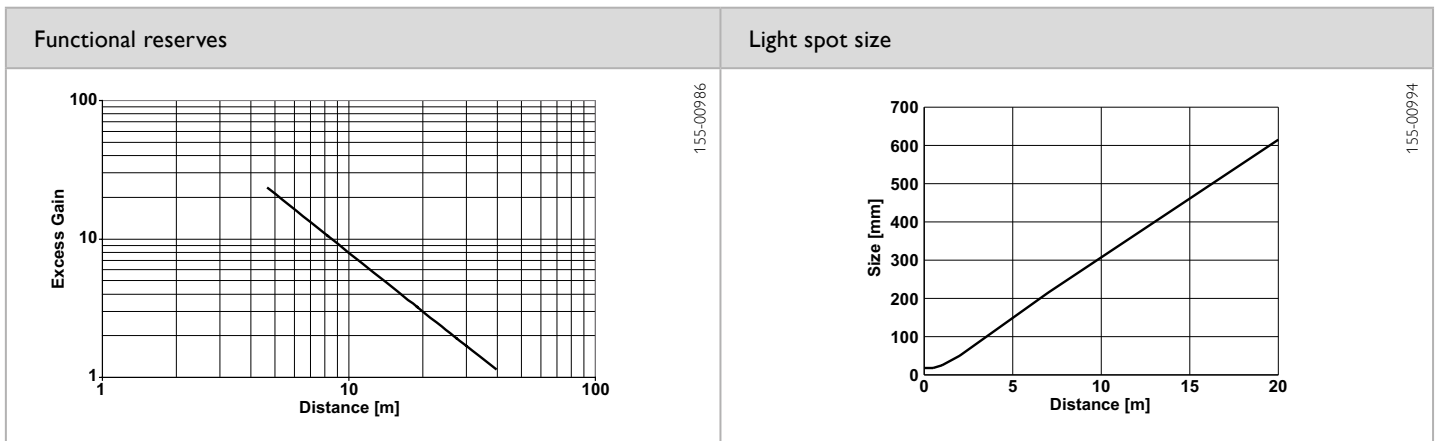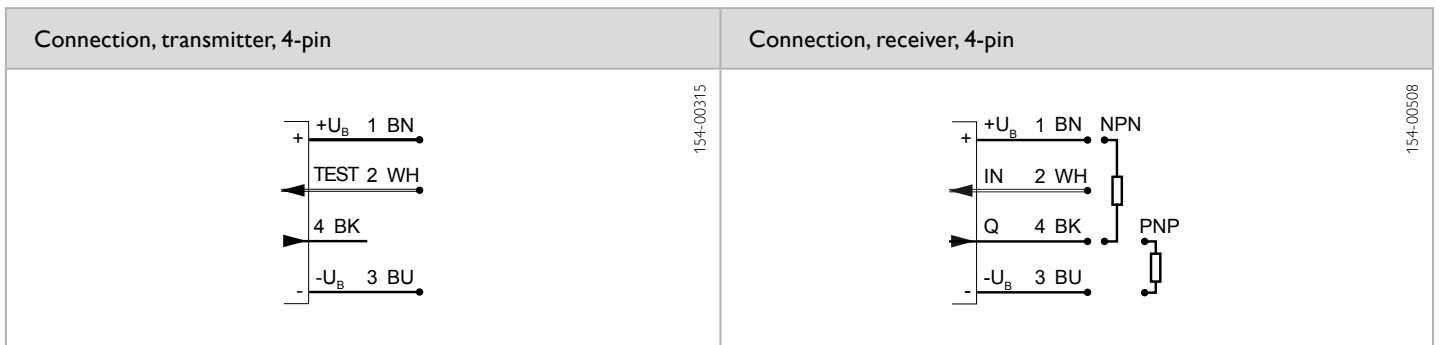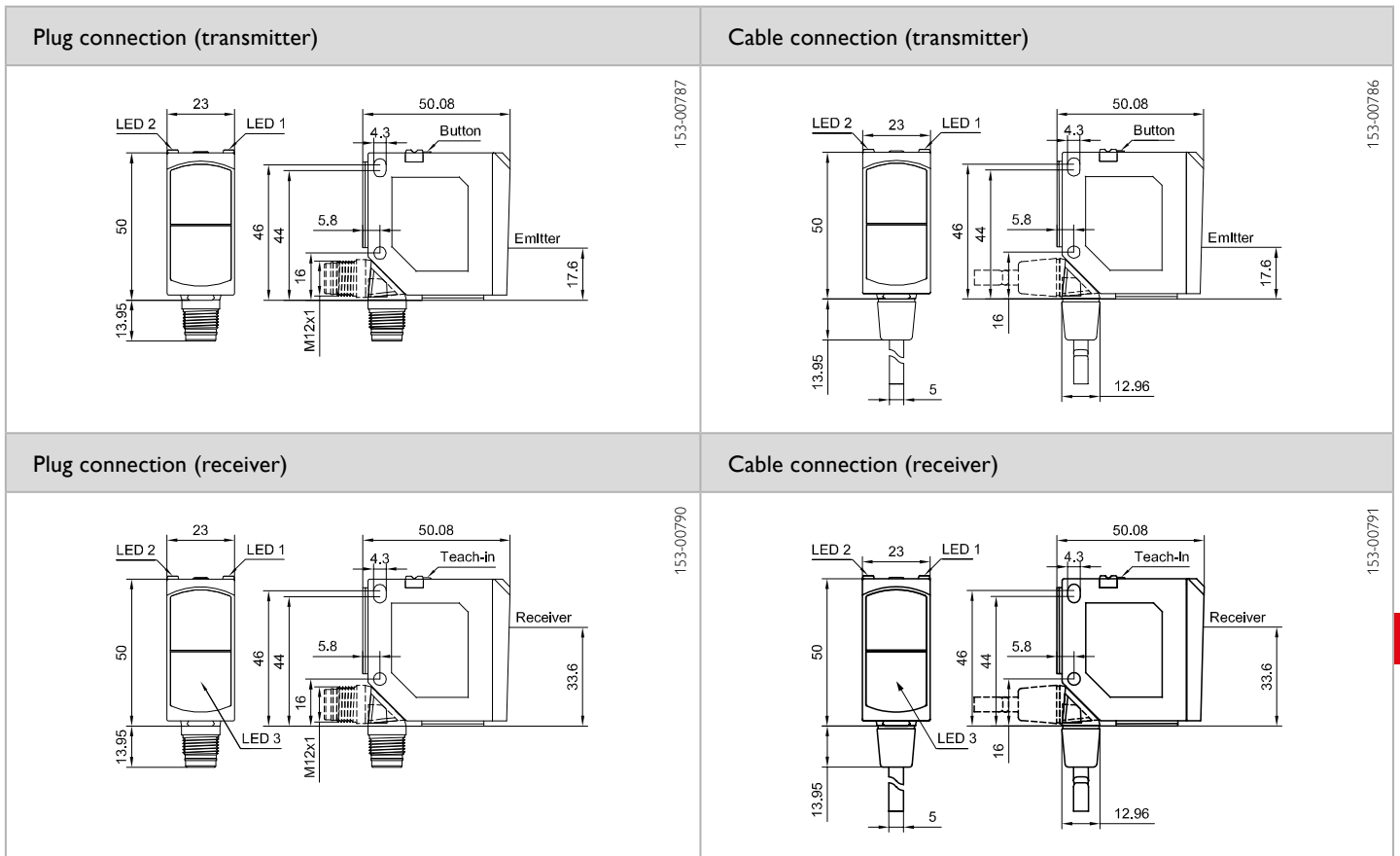## Photoelectric through-beam sensor

CE
IP 69k
c(UL)us LISTED
ECOLAB

PRODUCT HIGHLIGHTS

- Alignment indicator and easily visible light spot for simple alignment of the through-beam system
- Test input to check sensor pair function
- Sensor adjustment via teach-in and control input
- Plug and cable connection rotatable

Optical data	
Limit range	0 … 25 m
Operating range	0 … 20 m
Type of light	LED, red, 640 nm
Light spot size	See diagram

Functions	
Indicator LED, green	Operating voltage indicator
Indicator LED, yellow	Switching output indicator / contamination indicator
Indicator LED, red (receiver)	Alignment indicator
Sensitivity adjustment (receiver)	Via Teach-in button and control input
Teach-in modes	Mode 1: during running process Mode 2: during standing process
Adjustment possibilities (receiver)	N.O./N.C. via Teach-in button and control input Button lock via control input
Default settings	Max. range and N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC[1]
No-load current, I_0	≤ 30 mA
Output current, Ie	≤ 100 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Protection Class	2
Power On Delay	< 300 ms
Switching output, Q	PNP/NPN (see selection table)
Output function	N.O./N.C.
Switching frequency, f (ti/tp 1:1)	≤ 500 Hz
Response time	1 ms
Control input, IN (receiver)	$+U_B$ = teach-in $-U_B$ = button locked Open = normal operation
Control input, TEST (transmitter)	$+U_B$ = Test (transmitter off) $-U_B$ / Open = normal operation

Mechanical data	
Dimensions	50 × 50.1 × 23 mm
Enclosure rating	IP 69K & IP 67[2]
Material, housing	PC-ABS
Material, front screen	PMMA
Type of connection	See selection table
Ambient temperature: operation	-20 … +60 °C[3]
Ambient temperature: storage	-20 … +80 °C
Weight (plug device)	35 g
Weight (cable device)	125 g
Vibration and impact resistance	EN 60947-5-2

[1] Max. 10 % ripple, within U_B, ~ 50 Hz / 100 Hz   [2] With connected IP 67 / IP 69K plug   [3] UL: max. +45 °C

Operating range	Switching output	Type of connection	Part number	Article number
0 … 20 m	PNP	Plug, M12x1, 4-pin	FE 55-R-PS-L4	620-21000
0 … 20 m	NPN	Plug, M12x1, 4-pin	FE 55-R-NS-L4	620-21001
0 … 20 m	–	Plug, M12x1, 4-pin	FS 55-R-L4	620-11000
0 … 20 m	PNP	Cable, 3 m, 4-wire	FE 55-R-PS-K4	620-21003
0 … 20 m	NPN	Cable, 3 m, 4-wire	FE 55-R-NS-K4	620-21004
0 … 20 m	–	Cable, 3 m, 4-wire	FS 55-R-K4	620-11001

Version: 05/2021. Subject to changes; diagrams similar

Plug connection (transmitter)

153-00787

LED 2 | 23 | LED 1 | 50.08 | 4.3 | Button
50 | 13.95 | 46 | 44 | 5.8 | 16 | M12x1 | Emitter | 17.6

Cable connection (transmitter)

153-00786

LED 2 | 23 | LED 1 | 50.08 | 4.3 | Button
50 | 13.95 | 46 | 44 | 5.8 | 16 | 5 | Emitter | 17.6 | 12.96

Plug connection (receiver)

153-00790

LED 2 | 23 | LED 1 | 50.08 | 4.3 | Teach-in
50 | 13.95 | 46 | 44 | 5.8 | 16 | LED 3 | M12x1 | Receiver | 33.6

Cable connection (receiver)

153-00791

LED 2 | 23 | LED 1 | 50.08 | 4.3 | Teach-In
50 | 13.95 | 46 | 44 | 5.8 | 16 | LED 3 | 5 | Receiver | 33.6 | 12.96

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Connection, transmitter, 4-pin

154-00315

+ $+U_B$ 1 BN

TEST 2 WH

4 BK

- $-U_B$ 3 BU

Connection, receiver, 4-pin

154-00508

+ $+U_B$ 1 BN NPN

IN 2 WH

Q 4 BK PNP

- $-U_B$ 3 BU

Functional reserves

155-00986

Excess Gain vs Distance [m]

Light spot size

155-00994

Size [mm] vs Distance [m]

Accessories

| Connection cables | www.sensopart.com/en/accessories | Brackets | www.sensopart.com/en/accessories |