FS/FE 25-RL

Through-beam laser sensor

CE

IP 69

c(UL)us LISTED

ECOLAB

IO-Link
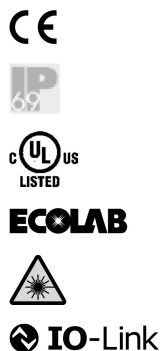
PRODUCT HIGHLIGHTS
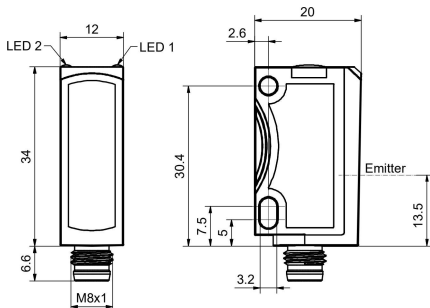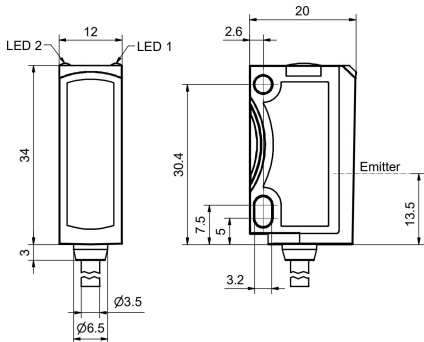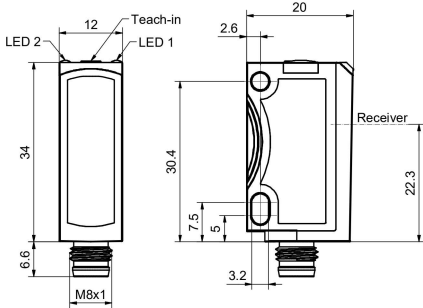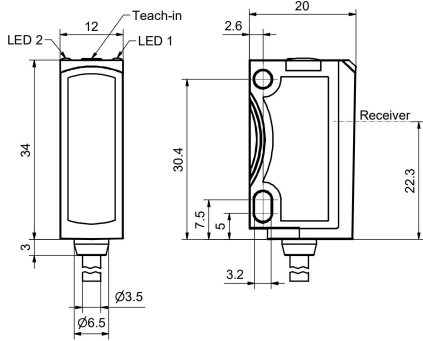
- Long range with small and compact housings
- Test input for checking sensor pair function
- Very small, easily visible laser light spot
- Sensor settings via teach-in and control input
- Robust glass-fibre-reinforced plastic housings
- Setting of smart functions via IO-Link

Optical data	
Limit range	0 … 20 m
Operating range	0 … 18 m
Type of light	Laser, red, 650 nm
Light spot size	See diagram
Laser Class (IEC 60825-1)	1

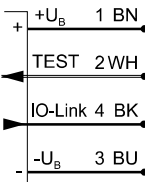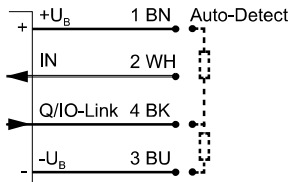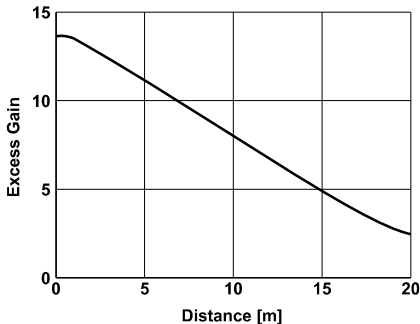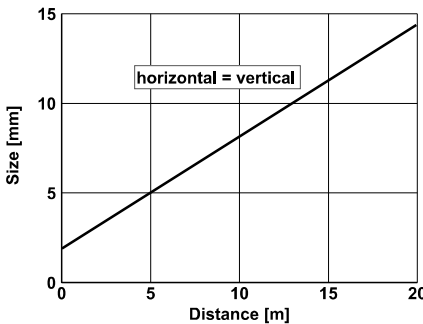| Functions	
Indicator LED, green	Operating voltage indicator
Indicator LED, yellow	Switching output indicator
Sensitivity adjustment (receiver)	Via Teach-in button, control input and IO-Link
Teach-in modes	Mode 1: during running process Mode 2: during standing process
Adjustment possibilities (receiver)	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	
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	1× Auto-Detect (PNP/NPN)[2]
Output function	N.O./N.C.
Switching frequency, f (ti/tp 1:1)	≤ 2000 Hz
Response time	250 µs
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	34 × 20 × 12 mm
Enclosure rating	IP 69 & IP 67[3]
Material, housing	ABS
Material, front screen	PMMA
Type of connection	See selection table
Ambient temperature: operation	-20 … +60 °C[4]
Ambient temperature: storage	-20 … +80 °C
Weight (metal plug device[5])	10 g
Weight (cable device)	40 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
Process bit length	16 Bit
Specification	1.1

[1] Max. 10 % ripple, within U_B, ~ 50 Hz / 100 Hz   [2] Auto-Detect, automatic PNP/NPN selection by the sensor, PNP or NPN fixed   [3] With connected IP 67/IP 69 plug
[4] UL: -20 ... +50 °C   [5] No Ecolab

Operating range	Switching output	Type of connection	Part number	Article number
0 … 18 m	Auto-Detect	Metal plug, M8×1, 4-pin, IO-Link ◉	FE 25-RL-PNSL-M4M	605-21022
0 … 18 m	–	Metal plug, M8×1, 4-pin, IO-Link ◉	FS 25-RL-L-M4M	605-11013
0 … 18 m	Auto-Detect	Cable, 2 m, 4-wire, IO-Link ◉	FE 25-RL-PNSL-K4	605-21021
0 … 18 m	–	Cable, 2 m, 4-wire, IO-Link ◉	FS 25-RL-L-K4	605-11012

Version: 07/2022. Subject to changes; diagrams similar

Plug connection (transmitter)

153-00940

LED 2 | LED 1 | 12 | 2.6 | 20 | 30.4 | 7.5 | 5 | 34 | 6.6 | M8x1 | 3.2 | 13.5 | Emitter

Cable connection (transmitter)

153-00939

LED 2 | LED 1 | 12 | 2.6 | 20 | 30.4 | 7.5 | 5 | 34 | 3 | 3.2 | 13.5 | Emitter | Ø3.5 | Ø6.5

Plug connection (receiver)

153-00854

Teach-in | LED 2 | LED 1 | 12 | 2.6 | 20 | 30.4 | 7.5 | 5 | 34 | 6.6 | M8x1 | 3.2 | 22.3 | Receiver

Cable connection (receiver)

153-00853

Teach-in | LED 2 | LED 1 | 12 | 2.6 | 20 | 30.4 | 7.5 | 5 | 34 | 3 | 3.2 | 22.3 | Receiver | Ø3.5 | Ø6.5

Connection, transmitter, 4-pin, IO-Link

154-00581

+ $+U_B$ 1 BN

TEST   2 WH

IO-Link   4 BK

- $-U_B$ 3 BU

Connection, receiver, 4-pin, IO-Link

154-00566

+ $+U_B$ 1 BN   Auto-Detect

IN   2 WH

Q/IO-Link   4 BK

- $-U_B$ 3 BU

Functional reserves

155-01388

Y-axis: Excess Gain (0, 5, 10, 15)
X-axis: Distance [m] (0, 5, 10, 15, 20)

Light spot size

155-01389

horizontal = vertical

Y-axis: Size [mm] (0, 5, 10, 15)
X-axis: Distance [m] (0, 5, 10, 15, 20)

Accessories

Connection cables	www.sensopart.com/en/accessories
Brackets	
SensoIO (901-01001)	