FT 25-RLHP

Diffuse laser sensor with background suppression



PRODUCT HIGHLIGHTS

- Compact time-of-flight sensor with long range up to 1500 mm
- Excellent detection properties on almost all surfaces such as metal or coloured plastic
- Precisely adjustable background suppression
- Simple alignment thanks to easily visible light spot
- Switching point, window mode and switching frequency adjustable via button, control input or IO-Link

Optical data	
Scanning distance	0 … 1500 mm (see selection table)[1]
Adjustment range	100 … 1500 mm[1]
Switching hysteresis	4 … 7 mm[1/2], see diagram
Black/white shift typ. (5 %/90 %)	≤ 20 mm
Grey value shift typ. (20 %/90 %)	≤ 15 mm
Type of light	Laser, red, 658 nm
Light spot size	See diagram
Laser Class (IEC 60825-1)	1

Functions	
Indicator LED, green	Constantly lit operating voltage indicator Flashing: IO-Link operation
Indicator LED, yellow	Switching output indicator Q
Scanning distance adjustment	Via Teach-in button, control input[5] and IO-Link
Teach-in modes	Mode 1: during running process Mode 2: during standing process
Adjustment possibilities	N.O./N.C., window mode, switching frequency 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 for service and process data via IO-Link
Default settings	Max. scanning distance and N.O.

Electrical data	
Operating voltage, $+U_B$	18 … 30 V DC[3]
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	Auto-Detect (PNP/NPN)[4]
Output function	N.O./N.C.
Thermal response	0.7 mm/K
Switching frequency, f (ti/tp 1:1)	5 ... 300 Hz[5], default 50 Hz[6]
Response time	1 ... 100 ms
Control input, IN[4]	$+U_B$ = teach-in / $-U_B$ = button locked Open = normal operation

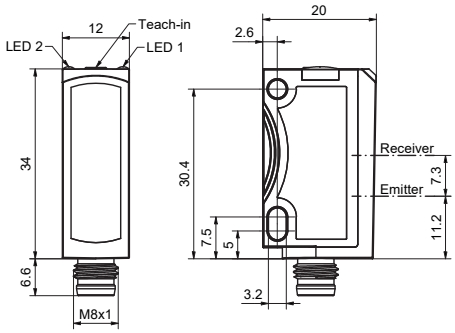
Mechanical data	
Dimensions	34 x 20 x 12 mm
Enclosure rating	IP 69 & IP 67[7]
Material, housing	ABS
Material, front screen	PMMA
Type of connection	See selection table
Ambient temperature: operation	-30 … +50 °C
Ambient temperature: storage	-20 … +80 °C
Weight (metal plug device[8])	10 g
Weight (pigtail)	20 g
Vibration and impact resistance	EN IEC 60947-5-2

IO-Link			
Communication mode	COM 2	Length process data	8 bit input, 8 bit output
Min. cycletime	3 ms	Specification	1.1.3
SIO mode	Compatible		

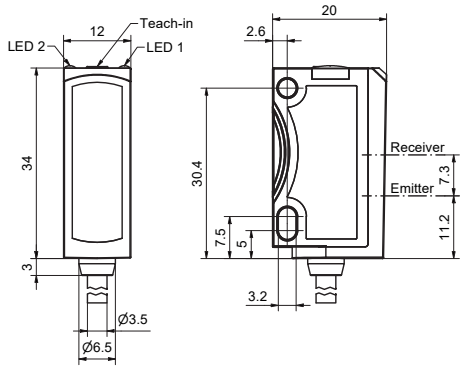
[1] Reference material: white, 90 % reflectivity [2] At switching frequency 5 Hz [3] Max. 10 % ripple, within UB, ~ 50 Hz / 100 Hz [4] Auto-Detect, automatic PNP/NPN selection by the sensor, PNP or NPN fixed [5] At 800 mm, reference material: white, 90 % reflectivity [6] Adjustable via teach-in button, control input and IO link [7] With connected IP 67/IP 69 plug [8] No Ecolab

Scanning distance	Switching output	Type of connection	Part number	Article number
0 … 1500 mm[1]	1 x Auto-Detect	Metal plug, M8x1, 4-pin, IO-Link	FT 25-RLHP-PNSL-M4M	609-11023
0 … 1500 mm[1]	1 x Auto-Detect	Pigtail, 150 mm with plug, M12 4-pin, IO-Link	FT 25-RLHP-PNSL-KL4	609-11022

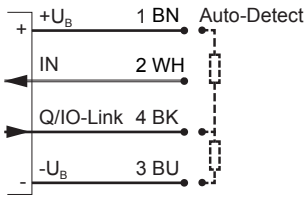
Plug connection



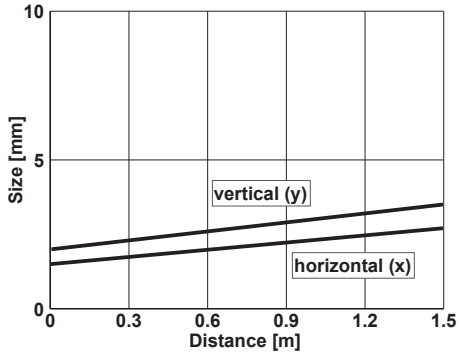
Cable connection



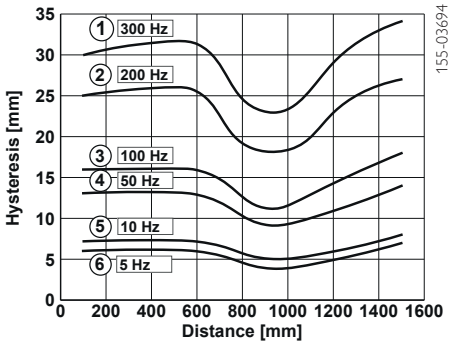
Connection, 4-pin, IO-Link



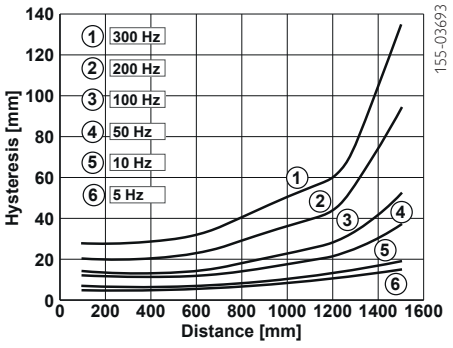
Light spot size



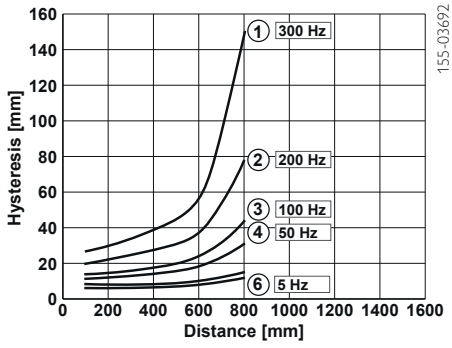
Hysteresis 90 %



Hysteresis 20 %



Hysteresis 5 %



Reference material	Detection range	Accessories	
White (90 %)	0 … 1500 mm	Connection cables	www.sensopart.com/en/accessories
Grey (20 %)	0 … 1500 mm	Brackets	
Black (5 %)	5 … 800 mm	SensoIO (901-01001)	