FT 55-RLHP2 / -RLHP3

Diffuse laser sensor with background suppression – Time-of-flight technology



PRODUCT HIGHLIGHTS

- For detection tasks with all object surfaces at high scanning distances
- Reliable object detection even with tilted objects and with bright, highly reflective or shiny backgrounds
- Simple teach-in (also external)
- Clearly visible laser light spot (laser class 1) for an easy alignment and full eye safety
- Stable switching performance when mounted in series (Variant RLHP3)

Optical data

Scanning distance	0 … 5 m (see selection table)[1]
Hysteresis	20 mm[1]
Black/white shift (6 % / 90 %)	≤ ± 40 mm
Grey value shift (18 % / 90 %)	≤ ± 40 mm
Type of light	Laser, red 655 nm
Laser class (IEC 60825-1)	1

Functions

Indicator LED 2 green	Operating voltage indicator
Indicator LED 2 yellow[2]	Switching output indicator Q_2
Indicator LED 1 yellow	Switching output indicator Q resp. Q_1
Scanning distance adjustment	Via Teach-in Button and control input
Adjustment possibilities	N.O. / N.C. / antivalent[2] via Teach-in Button and control input, wide variety of adjustment possibilities for service and process data via IO-Link
Default settings	3 m, N.O., Auto-Detect

Electrical data

Operating voltage $+U_B$	18 … 30 V DC
No-load current I_0	≤ 60 mA
Output current Ie Q	≤ 100 mA
Protection circuits	Reverse polarity protection U_B / short-circuit protection (Q)
Protection class	2
Power On Delay	< 500 ms
Switching output Q	1 x Auto-Detect (PNP/NPN)[3] 2 x Auto-Detect (PNP/NPN)[3]
Output function	N.O./N.C. / antivalent[2]
Switching frequency f (ti/tp 1:1) Q	See selection table
Response time Q	1 ms
Temperature drift	< 1 mm / K
Warm-up time	20 min.
Control input IN	$+U_B$ = Teach-in $-U_B$ = button locked Open = normal operation

Mechanical data

Dimensions	50 x 50.1 x 23 mm
Enclosure rating	IP 67 & IP 69K[4]
Material, housing	ABS
Material, front screen	PMMA
Type of connection	See selection table
Ambient temperature: operation	-40 … +60 °C[5]
Ambient temperature: storage	-40 … +80 °C
Weight (plug device)	42 g
Resistance to vibration and impacts	EN 60947-5-2

IO-Link

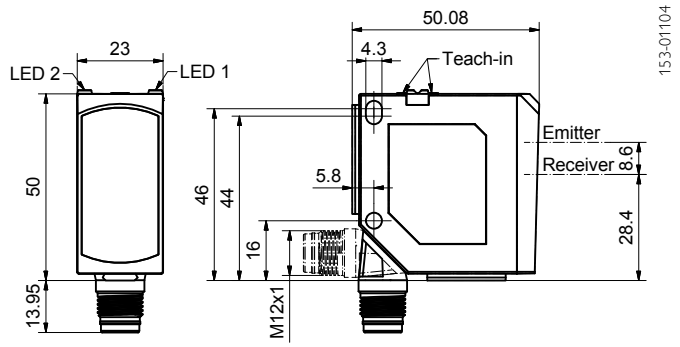
Communication mode	COM 2
Min. cycle time	2.3 ms
SIO mode	compatible
Process bit length	16 Bit
Specification	1.1

[1] Reference material 90 % reflectivity [2] For variant FT 55-RLHP2-2PNSL-L5 [3] Auto-Detect: Automatic selection of PNP or NPN by the sensor, PNP or NPN can be fixed
[4] With connected IP 67 / IP 69K plug [5] UL: max. +45 °C

Switching frequency, f (ti/tp 1:1)	Scanning distance	Switching output	Type of connection	Part Number	Article number
≤ 500 Hz	0 … 5 m	1 x Auto-Detect	Plug, M12x1, 4-pin, IO-Link	FT 55-RLHP2-PNSL-L4	623-11038
≤ 500 Hz	0 … 5 m	2 x Auto-Detect	Plug, M12x1, 5-pin, IO-Link	FT 55-RLHP2-2PNSL-L5	623-11039
≤ 250 Hz (Variant for mounting in series)	0 … 5 m	1 x Auto-Detect	Plug, M12x1, 4-pin, IO-Link	FT 55-RLHP3-PNSL-L4	623-11040

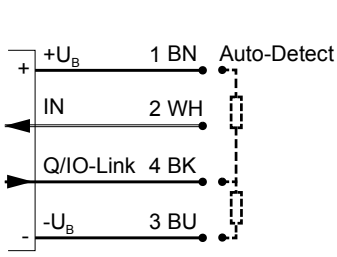
Version: 05/2021. Subject to changes; diagrams similar

Plug connection[6]

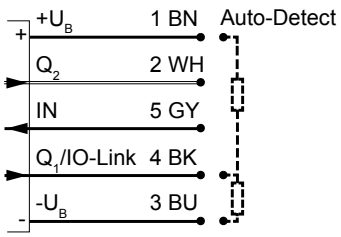


[6] FT 55-RLHP2-PNSL-L4 with a teach-in button

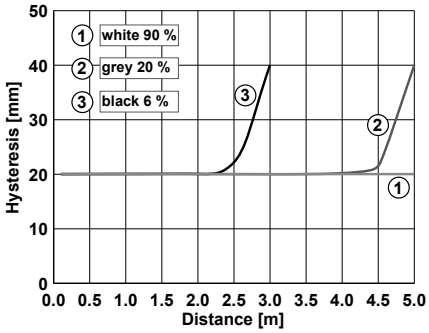
Connection, 4-pin, Auto-Detect



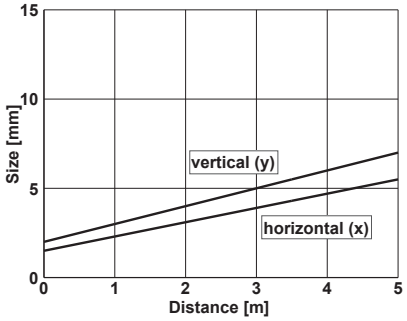
Connection, 5-pin, Auto-Detect



Hysteresis



Light spot size



Reference material	Scanning distance
White (90 %)	0 … 5 m
Grey (18 %)	0 … 5 m
Black (6 %)	0.05… 3 m

Accessories

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