FT 10-RH

Photoelectric diffuse sensor with background suppression



PRODUCT HIGHLIGHTS

- Sub-miniature sensor with precise adjustable background suppression
- Precise and reliable switching behaviour even with varying object surfaces and colors
- Reliable operation even with highly reflective machine parts in the background, thanks to SensoPart ASIC technology
- Static and dynamic teach-in via electronic teach-in button or control line
- Setting of smart functions via IO-Link

Optical data

Scanning distance	2 … 70 mm[1]
Adjustment range	10 … 70 mm[1]
Used light	LED, red, 650 nm
Light spot size	See diagram
Hysteresis	≤ 2 mm[2]
Grey/white shift (18 % / 90 %)	≤ 3 mm[2]
Black/white shift (6 % / 90 %)	≤ 4 mm[2]

Functions

Indicator LED, green	Operating voltage indicator
Indicator LED, yellow	Switching output indicator
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. and Auto-Detect / NPN / PNP via teach-in button, control input[5] and IO-Link Button lock via control input[5] 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[3]
No-load current, I_0	≤ 20 mA
Output current, Ie	≤ 50 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Protection class	2
Power On Delay	< 300 ms
Switching output, Q	1x Auto-Detect (PNP/NPN)[4]
Output function	N.O./N.C.
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz
Response time	500 µs
Control input, IN[5]	$+U_B$ = teach-in $-U_B$ = button locked Open = normal operation

Mechanical data

Dimensions	21,1 x 14,6 x 8 mm
Enclosure rating	IP 67[6]
Material, housing	PUR
Material, front screen	PMMA
Type of connection	See selection table
Ambient temperature: operation	-20 … +60 °C[7]
Ambient temperature: storage	-20 … +80 °C
Weight (plug device)	Approx. 3 g
Weight (cable device)	Approx. 22 g
Weight (pigtail)	Approx. 10 g

IO-Link

Communication mode	COM 2
Min. cycletime	2.3 ms
SIO mode	Compatible
Length process data	16 Bit
Specification	1.1

[1] Reference material white, 90 % reflectivity [2] At maximum scanning distance [3] Max. 10 % ripple within U_B, ~ 50 Hz / 100 Hz [4] Auto-Detect, automatic PNP/NPN selection by the sensor, PNP or NPN fixed [5] Only 4-pin design [6] With connected IP 67 plug [7] UL: -20 ... +30 °C

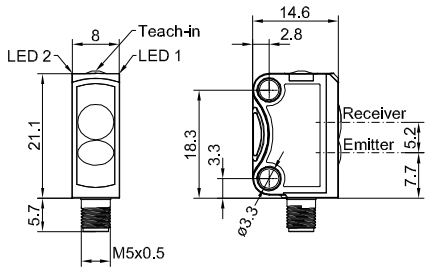
Version: 07/2023. Subject to changes; diagrams similar

Scanning distance	Switching output	Type of connection	Part number	Article number
2 … 70 mm[1]	Auto-Detect	Plug, M5x0.5, 4-pin, IO-Link	FT 10-RH-PNSL-E4	600-11048
2 … 70 mm[1]	Auto-Detect	Cable, 2 m, 4-wire, IO-Link	FT 10-RH-PNSL-K4	600-11049
2 … 70 mm[1]	Auto-Detect	Pigtail, 200 mm with M8 plug, 4-pin, IO-Link	FT 10-RH-PNSL-KM4	600-11050
2 … 70 mm[1]	Auto-Detect	Pigtail, 200 mm with M8 plug, 3-pin, IO-Link	FT 10-RH-PNSL-KM3	600-11051

Including dovetail clamp mounting MBD F 10 for all types

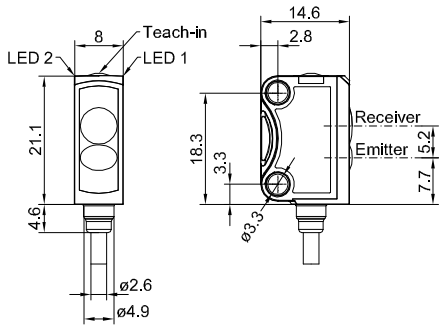
Plug connection

153-01109



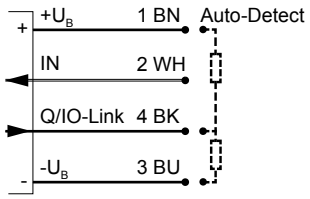
Cable connection

153-01110



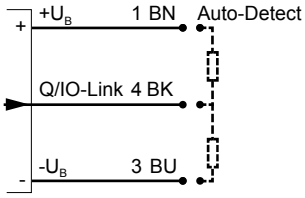
Connection, 4-pin, IO-Link

154-00566



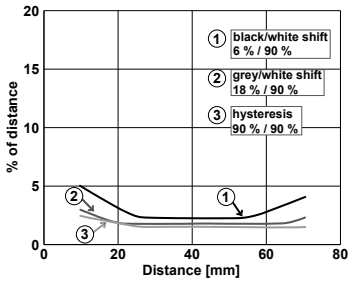
Connection, 3-pin, IO-Link

154-00572



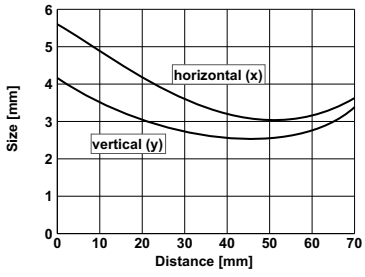
Scanning properties

155-02718



Light spot size

155-01770



Reference material	Detection range (typ.)	Accessories	
White (90 %)	2 … 70 mm	Connection cables	www.sensopart.com/en/accessories
Grey (18 %)	4 … 70 mm	Brackets	
Black (6 %)	5 … 70 mm	SensoIO (901-01001)	