

# 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		Functions	
Scanning distance	5 ... 70 mm <sup>1</sup>	Indicator LED, green	Operating voltage indicator
Adjustment range	10 ... 70 mm <sup>1</sup>	Indicator LED, yellow	Switching output indicator
Used light	LED, red, 650 nm	Scanning distance adjustment	Via Teach-in button, control input <sup>6</sup> and IO-Link
Light spot size	See diagram	Teach-in modes	Mode 1: during running process Mode 2: during standing process
Repeatability	0,45 mm <sup>2,3</sup>	Adjustment possibilities	N.O./N.C. and Auto-Detect / NPN / PNP via teach-in button, control input <sup>6</sup> and IO-Link Button lock via control input <sup>6</sup> and IO-Link Wide variety of adjustment possibilities via IO-Link
Hysteresis	≤ 2 mm <sup>2</sup>	Default settings	Max. range and N.O.
Grey/white shift (18 % / 90 %)	≤ 3 mm <sup>2</sup>		
Black/white shift (6 % / 90 %)	≤ 4 mm <sup>2</sup>		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>4</sup>	Dimensions	21,1 × 14,6 × 8 mm
No-load current, I <sub>0</sub>	≤ 20 mA	Enclosure rating	IP 67 <sup>7</sup>
Output current, I <sub>e</sub>	≤ 50 mA	Material, housing	PUR
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, front screen	PMMA
Protection class	2	Type of connection	See selection table
Power On Delay	< 300 ms	Ambient temperature: operation	-20 ... +60 °C <sup>8</sup>
Switching output, Q	1x Auto-Detect (PNP/NPN) <sup>5</sup>	Ambient temperature: storage	-20 ... +80 °C
Output function	N.O./N.C.	Weight (plug device)	Approx. 3 g
Switching frequency, f (ti/tp 1:1)	≤ 800 Hz	Weight (cable device)	Approx. 22 g
Response time	500 μs	Weight (pigtail)	Approx. 10 g
Control input, IN <sup>3</sup>	+U <sub>B</sub> = teach-in -U <sub>B</sub> = button locked Open = normal operation		
IO-Link			
Communication mode	COM 2		
Min. cycletime	2.3 ms		
SIO mode	Compatible		
Length process data	16 Bit		
Specification	1.1		

<sup>1</sup> Reference material white, 90 % reflectivity    <sup>2</sup> At maximum scanning distance    <sup>3</sup> In constant environmental conditions    <sup>4</sup> Max. 10 % ripple within U<sub>B</sub>, ~ 50 Hz / 100 Hz

<sup>5</sup> Auto-Detect, automatic PNP/NPN selection by the sensor, PNP or NPN fixed    <sup>6</sup> Only 4-pin design    <sup>7</sup> With connected IP 67 plug    <sup>8</sup> UL: -20 ... +30 °C

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

Connection, 4-pin, IO-Link	Connection, 3-pin, IO-Link

Scanning properties	Light spot size

Reference material	Detection range	Accessories	
White (90 %)	5 ... 70 mm	Connection cables	From Page A-38
Grey (18 %)	8 ... 70 mm	Brackets	From Page A-4
Black (6 %)	8 ... 70 mm	Sensolo (901-01000)	From Page A-56