

# FT 10-RF

Photoelectric diffuse sensor with background suppression, fixed focus



## PRODUCT HIGHLIGHTS

- Sub-miniature sensor with precise fixed background suppression
- Economical multi-purpose sensor
- Reliable switching behaviour even with varying object surfaces and colors
- Tamper-proof sensor design – no misalignment possible
- Simple mounting and adjustment through innovative dovetail clamp mounting

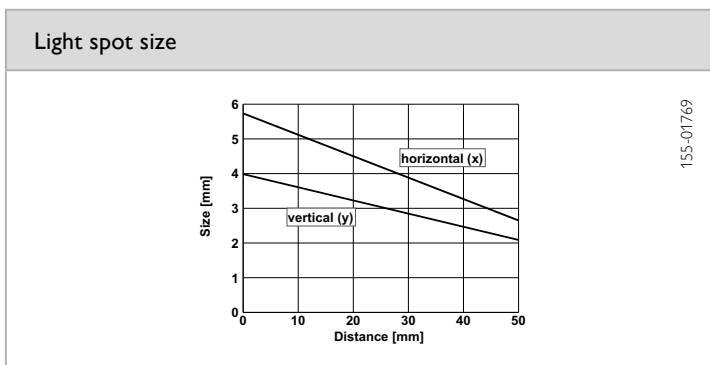
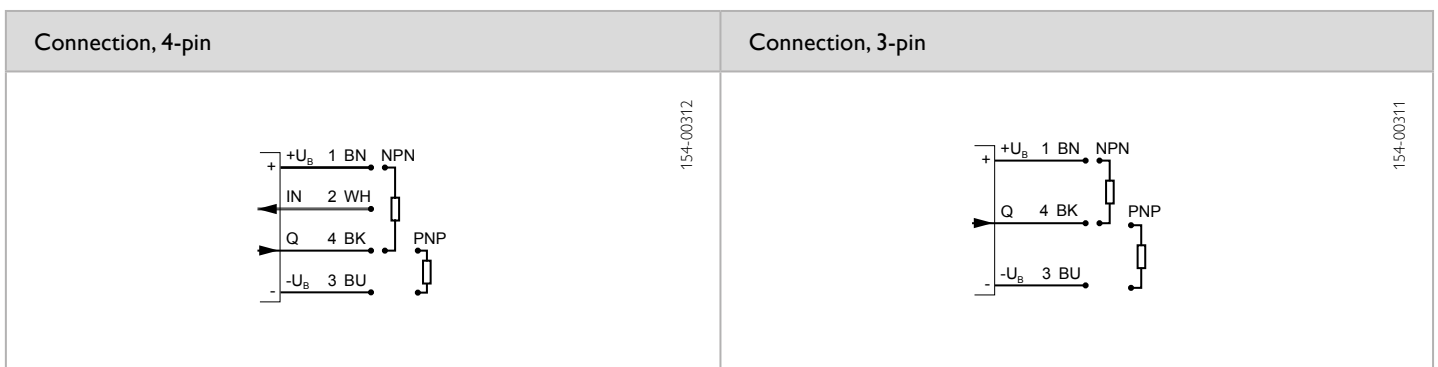
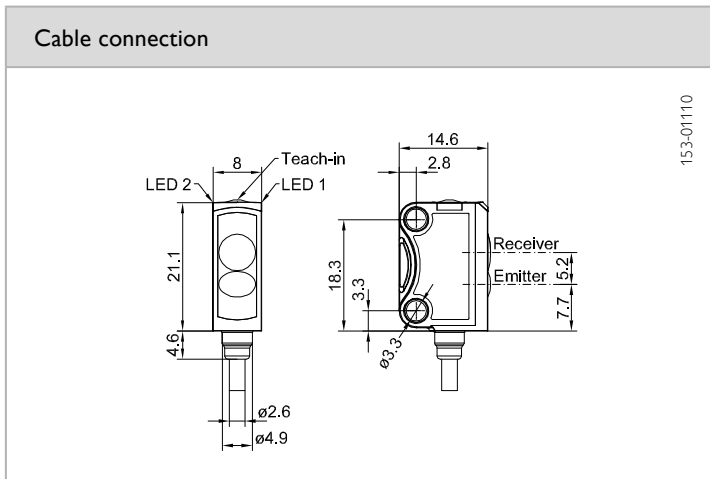
Optical data		Functions	
Scanning distance	2 ... 15 mm <sup>1</sup> 2 ... 30 mm <sup>1</sup> 2 ... 50 mm <sup>1</sup>	Indicator LED, green	Operating voltage indicator
Used light	LED, red, 650 nm	Indicator LED, yellow	Switching output indicator
Light spot size	See diagram	Adjustment possibilities	N.O. / N.C. via control input <sup>3</sup>
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>2</sup>	Dimensions	21,1 x 14,6 x 8 mm
No-load current, I <sub>0</sub>	≤ 20 mA	Enclosure rating	IP 67 <sup>4</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>5</sup>
Switching output, Q	PNP/NPN (see selection table)	Ambient temperature: storage	-20 ... +80 °C
Output function	N.O./N.C.	Weight (cable device)	Approx. 22 g
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz	Weight (pigtail)	Approx. 10 g
Response time	500 µs		
Control input, I <sub>N</sub> <sup>3</sup>	+U <sub>B</sub> = N.C. -U <sub>B</sub> / Open = N.O.		

<sup>1</sup> Reference material white, 90 % reflectivity    <sup>2</sup> Max. 10 % ripple within U<sub>B</sub>, ~ 50 Hz / 100 Hz    <sup>3</sup> Only 4-pin design    <sup>4</sup> With connected IP 67 plug    <sup>5</sup> UL: -20 ... +30 °C

Scanning distance	Switching output	Type of connection	Part number	Article number
2 ... 15 mm <sup>1</sup>	PNP	Cable, 2 m, 4-wire	FT 10-RF1-PS-K4	600-11008
2 ... 15 mm <sup>1</sup>	NPN	Cable, 2 m, 4-wire	FT 10-RF1-NS-K4	600-11011
2 ... 30 mm <sup>1</sup>	PNP	Cable, 2 m, 4-wire	FT 10-RF2-PS-K4	600-11014
2 ... 30 mm <sup>1</sup>	NPN	Cable, 2 m, 4-wire	FT 10-RF2-NS-K4	600-11017
2 ... 50 mm <sup>1</sup>	PNP	Cable, 2 m, 4-wire	FT 10-RF3-PS-K4	600-11020
2 ... 50 mm <sup>1</sup>	NPN	Cable, 2 m, 4-wire	FT 10-RF3-NS-K4	600-11023
2 ... 15 mm <sup>1</sup>	PNP	Pigtail, 200 mm with M8 plug, 4-pin	FT 10-RF1-PS-KM4	600-11009
2 ... 15 mm <sup>1</sup>	NPN	Pigtail, 200 mm with M8 plug, 4-pin	FT 10-RF1-NS-KM4	600-11012
2 ... 30 mm <sup>1</sup>	PNP	Pigtail, 200 mm with M8 plug, 4-pin	FT 10-RF2-PS-KM4	600-11015
2 ... 30 mm <sup>1</sup>	NPN	Pigtail, 200 mm with M8 plug, 4-pin	FT 10-RF2-NS-KM4	600-11018
2 ... 50 mm <sup>1</sup>	PNP	Pigtail, 200 mm with M8 plug, 4-pin	FT 10-RF3-PS-KM4	600-11021
2 ... 50 mm <sup>1</sup>	NPN	Pigtail, 200 mm with M8 plug, 4-pin	FT 10-RF3-NS-KM4	600-11024
2 ... 15 mm <sup>1</sup>	PNP	Pigtail, 200 mm with M8 plug, 3-pin	FT 10-RF1-PS-KM3	600-11010
2 ... 15 mm <sup>1</sup>	NPN	Pigtail, 200 mm with M8 plug, 3-pin	FT 10-RF1-NS-KM3	600-11013

Scanning distance	Switching output	Type of connection	Part number	Article number
2 ... 30 mm <sup>1</sup>	PNP	Pigtail, 200 mm with M8 plug, 3-pin	FT 10-RF2-PS-KM3	600-11016
2 ... 30 mm <sup>1</sup>	NPN	Pigtail, 200 mm with M8 plug, 3-pin	FT 10-RF2-NS-KM3	600-11019
2 ... 50 mm <sup>1</sup>	PNP	Pigtail, 200 mm with M8 plug, 3-pin	FT 10-RF3-PS-KM3	600-11022
2 ... 50 mm <sup>1</sup>	NPN	Pigtail, 200 mm with M8 plug, 3-pin	FT 10-RF3-NS-KM3	600-11025

Including dovetail clamp mounting MBD F 10 for all types



Reference material	Detection range			Accessories	
white (90 %)	FT 10-RF1 2 ... 15 mm	FT 10-RF2 2 ... 30 mm	FT 10-RF3 2 ... 50 mm	Connection cables	From Page A-38
grey (18 %)	3 ... 15 mm	4 ... 30 mm	5 ... 50 mm	Brackets	From Page A-4
black (6 %)	4 ... 15 mm	5 ... 30 mm	7 ... 50 mm		