

FT 25-RA

Miniature distance sensor



PRODUCT HIGHLIGHTS

- Miniature housing with measurement ranges up to 200 mm for an easy integration and high flexibility
- High linearity and high repeatability for precise control tasks
- Almost surface independent detection on homogeneous object surfaces
- Invertible analogue characteristic
- Window mode e.g. for two-step controls separately adjustable
- Measurement value output via IO-Link

Optical data		Functions	
Measurement range	20 ... 80 mm ¹	30 ... 200 mm ¹	Indicator LED, green
Resolution	0.12 mm (12-bit)	0.68 mm (12-bit)	Indicator LED, yellow
Linearity	± 0.4 mm ²	± 2 mm ²	Measurement range adjustment
Repeatability	< 0.4 mm ^{2,3}	< 1 mm ^{2,3}	Adjustment possibilities
Type of light	LED, red, 632 nm	LED, red, 632 nm	Operating voltage indicator
Light spot size	See diagram	See diagram	Switching output indicator
			Via Teach-in button and IO-Link
			Analogue measurement range Q _A
			Invertible analogue characteristic
			Switching output Q (window mode)
			N.O./N.C. via teach-in button
			Wide variety of adjustment possibilities of service and process data via IO-Link
			See Table
			Default settings
Electrical data		Mechanical data	
Operating voltage, +U _B	13 ... 30V DC	Dimensions	34 x 20 x 12 mm
No-load current, I ₀	≤ 30 mA	Enclosure rating	IP 67 / IP 69 ⁵
Output current, I _{e Q}	≤ 100 mA	Material, housing	ABS
Protective circuits	Reverse-polarity protection, U _B / 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 ⁶
Switching output, Q	1x Auto-Detect (PNP/NPN) ⁴	Ambient temperature: storage	-20 ... +80 °C
Output function	N.O./N.C.	Weight (metal plug device ⁷)	10 g
Max. capacitive load, Q	10 nF	Weight (pigtail)	20 g
Switching frequency, f (ti/tp 1:1), Q	≤ 1000 Hz	Resistance to vibrations and impacts	EN 60947-5-2
Response time, Q	500 µs		
Analogue output, Q _A	1 ... 10V / max. 3 mA	IO-Link	
Response time, Q _A	400 µs (FT 25-RA-60) 3.4 ms (FT 25-RA-170)	Communication mode	COM 2
Warm-up time	10 min.	Min. cycletime	2.7 ms
Temperature drift	< 0.1 mm/K (FT 25-RA-60) < 0.2 mm/K (FT 25-RA-170)	SIO mode	Compatible
		Length process data	24 Bit
		Specification	1.1

¹ Reference material: 6 ... 90 % reflectivity ² Reference material grey, 18 % reflectivity ³ At constant ambient conditions ⁴ Auto-Detect, automatic PNP/NPN selection by the sensor, PNP or NPN fixed ⁵ With connected IP 67 / IP 69 plug ⁶ UL: -20 ... +50 °C ⁷ No Ecolab

Measurement range	Analogue output	Switching output	Type of connection	Part number	Article number
20 ... 80 mm	1 ... 10V	Auto-Detect	Metal plug, M8x1, 4-pin, IO-Link	FT 25-RA-60-PNSUL-M4M	604-41008
30 ... 200 mm	1 ... 10V	Auto-Detect	Metal plug, M8x1, 4-pin, IO-Link	FT 25-RA-170-PNSUL-M4M	604-41009
20 ... 80 mm	1 ... 10V	Auto-Detect	Pigtail, 500 mm with plug, M8 4-pin, IO-Link	FT 25-RA-60-PNSUL-KM4-X15	604-41014

