

# FT 25-RA

## Miniature distance sensor



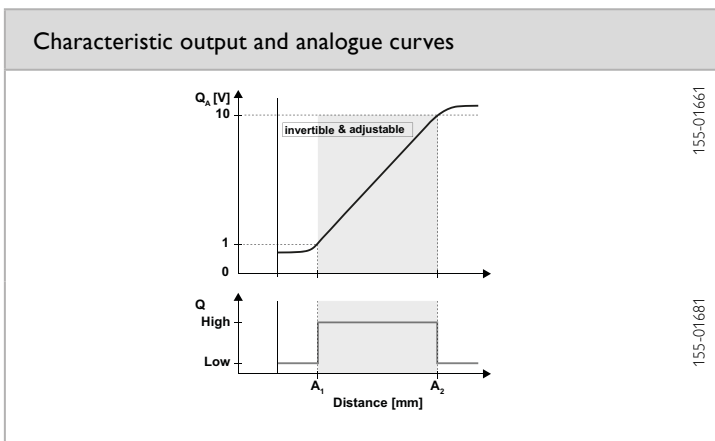
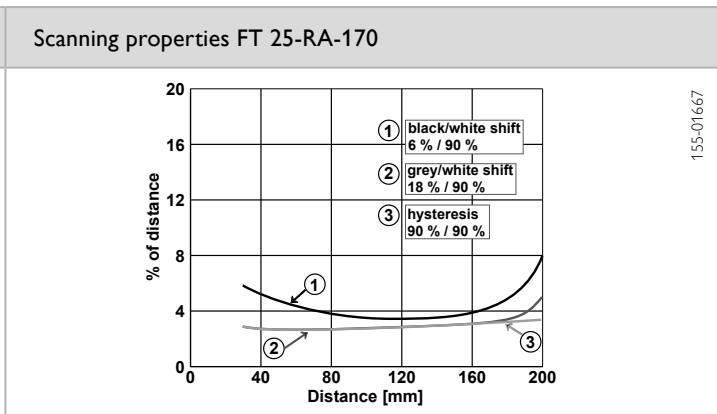
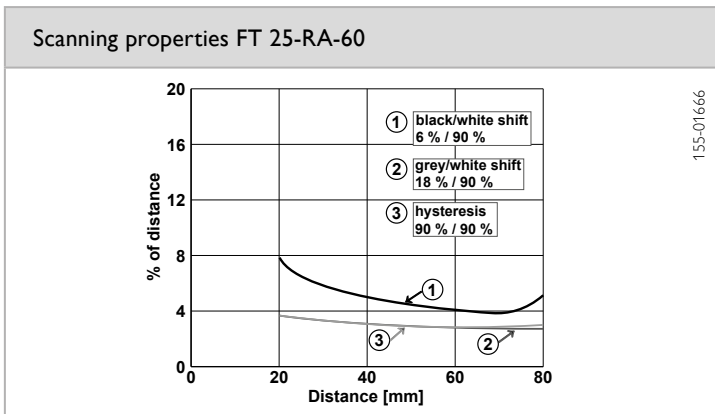
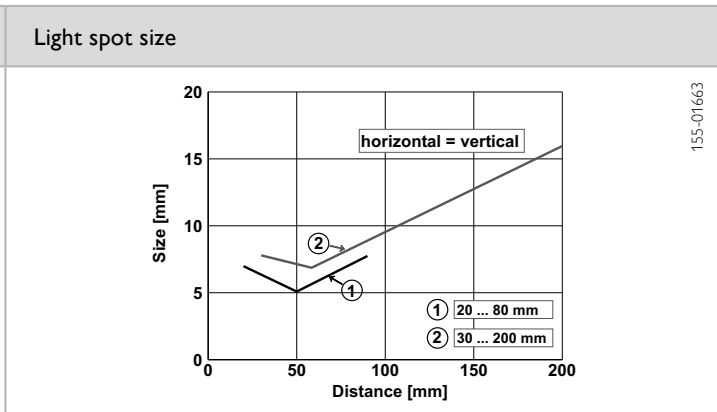
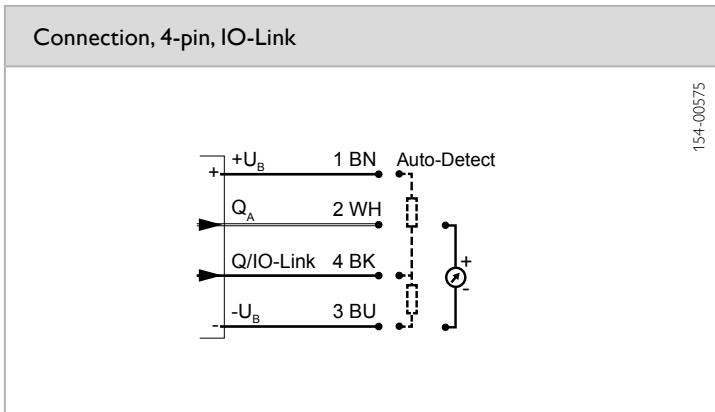
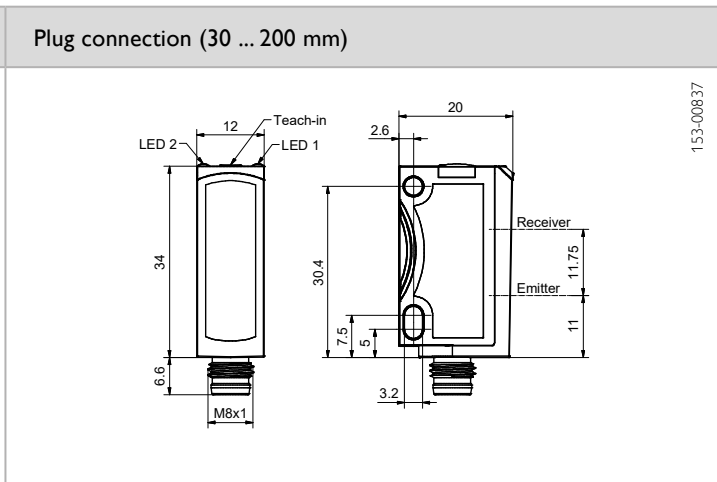
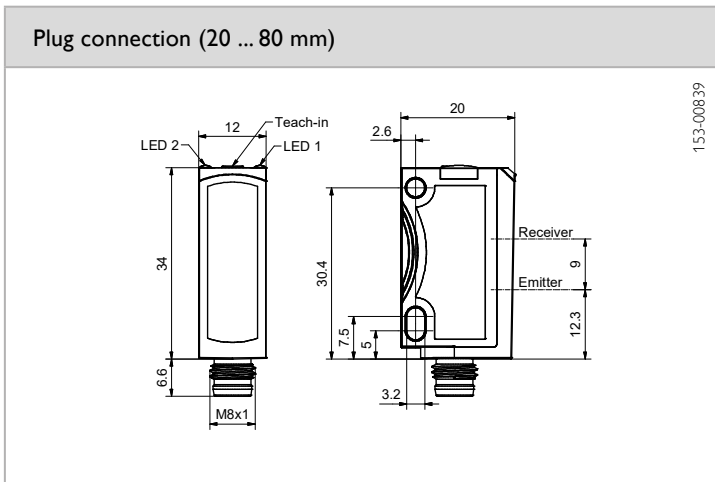
### PRODUCT HIGHLIGHTS

- 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 <sup>1</sup>	30 ... 200 mm <sup>1</sup>	Indicator LED, green
Resolution	0.12 mm (12-bit)	0.68 mm (12-bit)	Indicator LED, yellow
Linearity	± 0.4 mm <sup>2</sup>	± 2 mm <sup>2</sup>	Measurement range adjustment
Repeatability	< 0.4 mm <sup>2,3</sup>	< 1 mm <sup>2,3</sup>	Adjustment possibilities
Type of light	LED, red, 632 nm	LED, red, 632 nm	Default settings
Light spot size	See diagram	See diagram	Operating voltage indicator
			Switching output indicator
			Via Teach-in button and IO-Link
			Analogue measurement range Q <sub>A</sub>
			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
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	13 ... 30V DC	Dimensions	34 x 20 x 12 mm
No-load current, I <sub>0</sub>	≤ 30 mA	Enclosure rating	IP 67 / IP 69 <sup>5</sup>
Output current, I <sub>e Q</sub>	≤ 100 mA	Material, housing	ABS
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>6</sup>
Switching output, Q	1x Auto-Detect (PNP/NPN) <sup>4</sup>	Ambient temperature: storage	-20 ... +80 °C
Output function	N.O./N.C.	Weight (metal plug device <sup>7</sup> )	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 <sub>A</sub>	1 ... 10V / max. 3 mA	IO-Link	
Response time, Q <sub>A</sub>	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

<sup>1</sup> Reference material: 6 ... 90 % reflectivity <sup>2</sup> Reference material grey, 18 % reflectivity <sup>3</sup> At constant ambient conditions <sup>4</sup> Auto-Detect, automatic PNP/NPN selection by the sensor, PNP or NPN fixed <sup>5</sup> With connected IP 67 / IP 69 plug <sup>6</sup> UL: -20 ... +50 °C <sup>7</sup> 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



**Default settings**

	FT 25-RA-60	FT 25-RA-170
Analogue output $Q_A$ (1 ... 10V)	20 ... 80 mm	30 ... 200 mm
Switching output Q (A1 ... A2), N.O.	20 ... 80 mm	30 ... 200 mm
<b>Accessories</b>		
Connection cables	<a href="http://www.sensopart.com/en/accessories">www.sensopart.com/en/accessories</a>	
Brackets		
Sensolo (901-01001)		