

FT 55-RLAM-800

Distance sensor for a wide range of applications



PRODUCT HIGHLIGHTS

- Operating range up to 1 m enables versatile applications in which precision at large distances is required
- Precise measurements thanks to repeatability up to $\leq 40 \mu\text{m}$
- Switching hysteresis of 2 mm enables smart part detection even at large distances up to 1000 mm
- Variant with laser class 2 for measurements on very dark objects

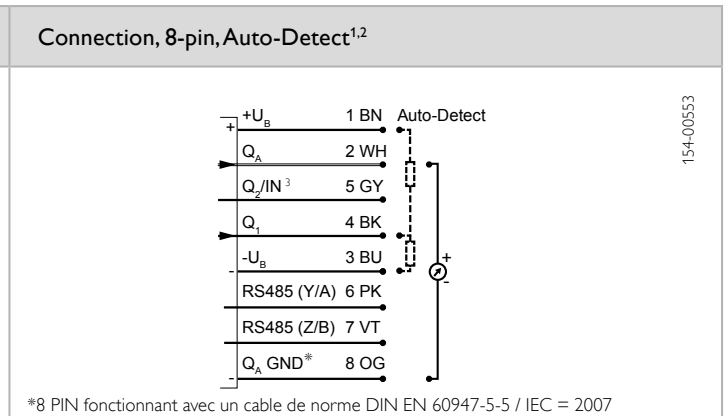
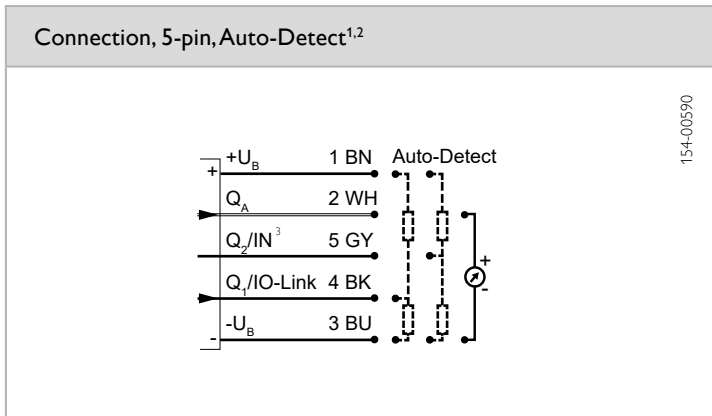
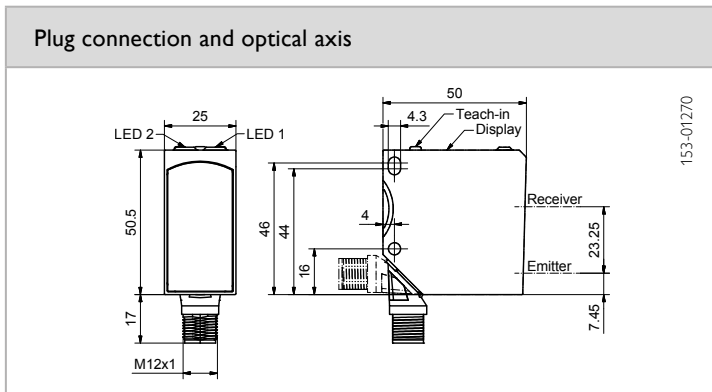
Optical data		Functions	
Operating range ¹	200 ... 1000 mm	Indicator LED 1, green	Operating voltage indicator
Resolution (14 Bit)	50 μm	Indicator LED 2, yellow	Status indicator Q_1 / Q_2
Linearity (typ.) ¹	$\pm 1.5 \text{ mm}$	Measurement range adjustment	Via display or IO-Link
Repeatability ¹	40 ... 820 μm , see illustration repeatability	Adjustment possibilities	Teach-in Q_1, Q_2, Q_A, Q as switching window or switching point
Hysteresis ¹	$\leq 2 \text{ mm}$		Setting of mean value at Q_A
Type of light	Laser, red 655 nm		Auto-Detect / NPN / PNP / Push-Pull
Immunity to ambient light	$\leq 20,000 \text{ lux}^2$		Smart Functions (On-delay and drop-out delay, counter, impulse, frequency)
Light spot size (w x h)	4 x 1 mm		
Measurement frequency	5 kHz ³		
Laser class (IEC 60825-1)	1 / 2, see selection table		
Electrical data			
Operating voltage $+U_B$	15 ... 30V DC	Load	$\leq 1 \text{ k}\Omega$ (2 ... 10 mA)
Power consumption	$\leq 1.5 \text{ W}$		$\leq 500 \text{ }\Omega$ (4 ... 20 mA)
Output current $I_e Q$	$< 50 \text{ mA}$		$\geq 2 \text{ k}\Omega$ (0 ... 10V, 2 ... 10V)
Protection circuits	Reverse polarity protection U_B / short-circuit protection (Q)	Switching frequency f (ti/tp 1:1) Q	$\leq 1000 \text{ Hz}^5$
Protection class	2	Response time Q	600 μs^6
Power On Delay	$< 300 \text{ ms}$	Update time Q_A	400 μs^7
Switching output Q	Auto-Detect ⁴ / PNP / NPN / Push-Pull	Averaging time Q_A^8	1 ms, 10 ms, 100 ms, 1000 ms
Output function Q	N.O./N.C.	Response time Q_A	Update time Q_A + averaging time Q_A
Temperature drift Q_A / digital	$< 0.02 \text{ \%}/\text{K} / 0.01 \text{ \%}/\text{K}$	Analogue output Q_A	2 ... 10 mA / 4 ... 20 mA
Warm-up time	20 min.		0 ... 10V / 2 ... 10V
Mechanical data			
Dimensions	50 x 50.5 x 25 mm	Ambient temperature: operation	-20 ... +50 $^\circ\text{C}^{10}$
Enclosure rating	IP 67 & IP 69 ⁹	Ambient temperature: storage	-20 ... +60 $^\circ\text{C}$
Material, housing	Zinc die-cast, matt chrome	Weight (plug device)	185 g
Material, front screen / Display	PMMA	Resistance to vibration and impacts	EN 60947-5-2
Type of connection	See selection table	Display	LCD, with background illumination

¹ 5 ... 90 %; homogenous object, not moving ² Laser class 2: 3000 Lux ³ Laser class 2: 2.5 kHz ⁴ Auto-Detect: Automatic selection of PNP or NPN by the sensor; PNP or NPN can be fixed ⁵ Laser class 2: 500 Hz ⁶ Laser class 2: 1 ms ⁷ Laser class 2: 800 μs ⁸ Scalable ⁹ With connected IP 67 / IP 69 plug ¹⁰ UL: max. +45 $^\circ\text{C}$

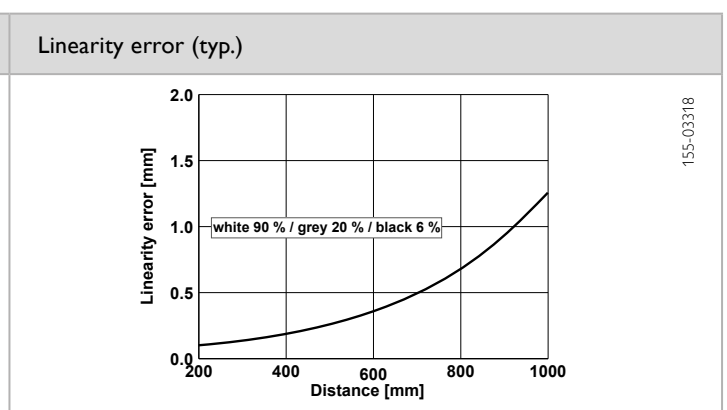
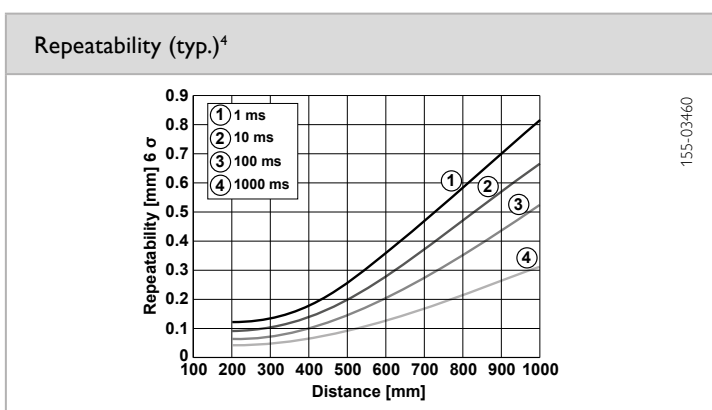
IO-Link

Communication modus	COM 2	Length process data	32 Bit
Min. cycletime	3 ms	Data Storage	compatible
SIO mode	Compatible	Specification	1.1

Interface	Type of connection	Part Number	Article number
IO-Link	Plug, M12x1, 5-pin, IO-Link	FT 55-RLAM-800-PNSUIDL-L5M	624-41006
RS485	Plug, M12x1, 8-pin	FT 55-RLAM-800-PNSUID-S1L8M	624-41007
IO-Link	Plug, M12x1, 5-pin, IO-Link	FT 55-RL2AM-800-PNSUIDL-L5M	624-41009



¹ In IO-Link mode, a 4-pin cable must be used ² For analogue transmission of measured values we recommend shielded cables ³ Can be used as output or input



⁴ Repeatability 6 σ , 5 ... 90 %, homogenous object, not moving

Default setting	Accessories
Analogue output Q_A	4 ... 20 mA, Measurement range limits
Switching output Q_1	450 mm, N.O.
Switching output Q_2	750 mm, N.O.
	Connection cable 8-pin to 4-pin for SensoIO (L8/L4-2m-PUR / 902-51857) ⁵
	Further connection cables
	Bracket SensoClip MBD F 55ST2 (579-50012)
	SensoIO (901-01000)
	From Page A-46
	From Page A-46
	From Page A-4
	From Page A-4
	From Page A-56

⁵ For 8-pin versions, use DIN EN 60947-5-2 / IEC = 2007 compliant cables, see From Page A-46