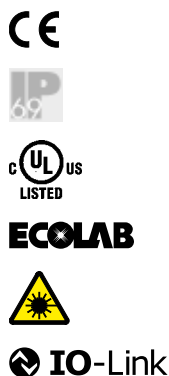


FT 55-RLAM-320 / FT 55-RL2AM-320

Distance sensor for a wide range of applications



PRODUCT HIGHLIGHTS

- Operating range up to 400 mm enables versatile applications
- Precise measurements thanks to repeatability up to $\leq 3 \dots 100 \mu\text{m}$
- Switching hysteresis of 0.6 mm enables precise smart part detection
- Variant with laser class 2 for measurements on very dark objects

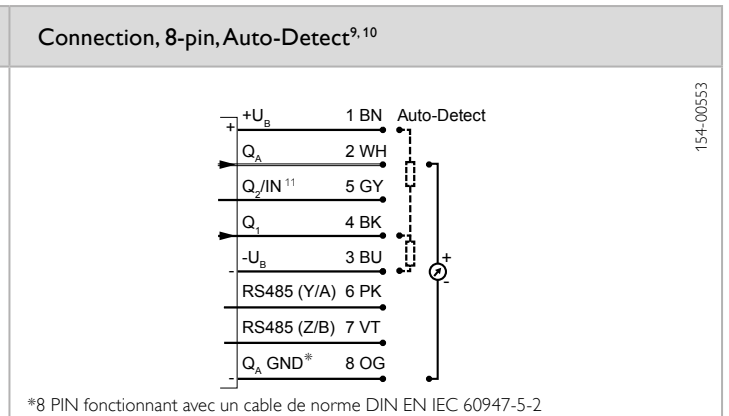
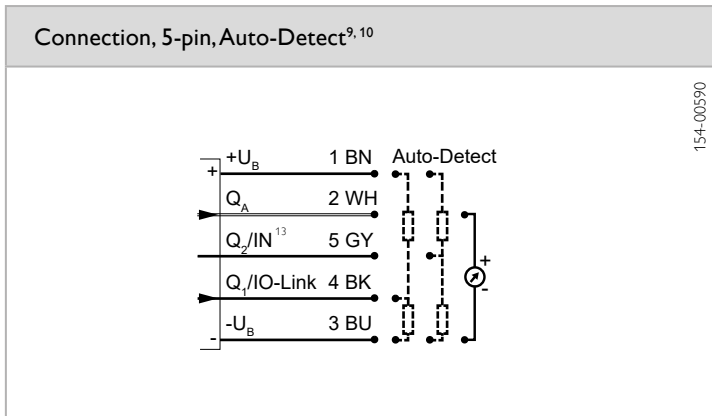
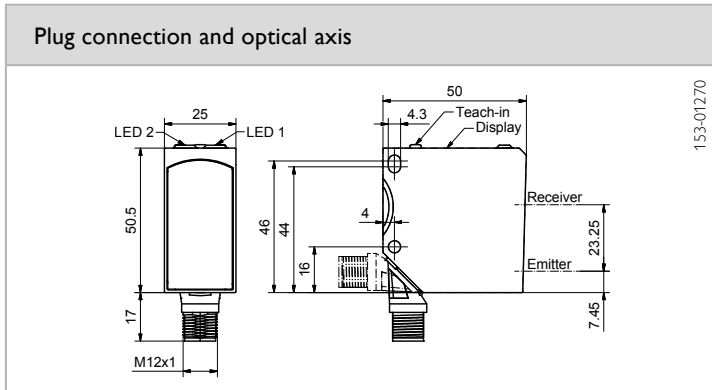
Optical data		Functions	
Operating range	80 ... 400 mm	Indicator LED 1, green	Operating voltage indicator
Resolution (14 Bit)	$\leq 20 \mu\text{m}$	Indicator LED 2, yellow	Status indicator Q_1 / Q_2
Linearity (typ.) ^{1,2}	$\pm 0.4 \text{ mm}$	Measurement range adjustment	Via display or IO-Link
Repeatability ²	$\leq 6 \dots 100 \mu\text{m}$, see illustration	Adjustment possibilities	Teach-in Q_1, Q_2, Q_A, Q as switching window or switching point
Hysteresis ²	$\leq 0.6 \text{ mm}$		Setting of mean value at Q_A
Type of light	Laser, red 655 nm		Auto-Detect / NPN / PNP / Push-Pull
Immunity to ambient light	$\leq 10,000 \text{ lux}$ (laser class 2: 3000 Lux)		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 (laser class 2: 2.5 kHz)		
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_Q	< 50 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^+	$\leq 1000 \text{ Hz}$ (laser class 2: 500 Hz)
Protection class	2	Response time Q	600 μs (laser class 2: 1 ms)
Power On Delay	< 300 ms	Response time Q_A	400 μs (laser class 2: 800 μs)
Switching output Q	Auto-Detect ³ / PNP / NPN / Push-Pull	Averaging time ⁵	0.2 ms, 1 ms, 10 ms, 100 ms, 1000 ms
Output function Q	N.O./N.C.	Update time measured value	Update time Q_A + averaging time
Thermal response Q_A / digital	$\pm 0.02 \text{ \%}/\text{K} \pm 0.01 \text{ \%}/\text{K}$	Analogue output Q_A	2 ... 10 mA / 4 ... 20 mA
Warm-up time	20 min.		0 ... 10V ⁶ / 2 ... 10V
Mechanical data			
Dimensions	50 x 50.5 x 25 mm	Ambient temperature: operation	-20 ... +50 °C ⁸
Enclosure rating	IP 67 & IP 69 ⁷	Ambient temperature: storage	-20 ... +60 °C
Material, housing	Zinc die-cast, matt chrome	Weight (plug device)	185 g
Material, front screen / Display	PMMA	Resistance to vibration and impacts	EN IEC 60947-5-2
Type of connection	See selection table	Display	LCD, with background illumination

¹ Output via IO-Link, deviation $Q_A < 0.2 \text{ mm}$ from digital value ² 5 ... 90 %; homogenous object, not moving ³ Auto-Detect: Automatic selection of PNP or NPN by the sensor; PNP or NPN can be fixed ⁴ all RL(2)AM: Switching frequency in IO-Link operation lower ⁵ Scalable ⁶ up to 0.1 V undefined accuracy ⁷ With connected IP 67 / IP 69 plug

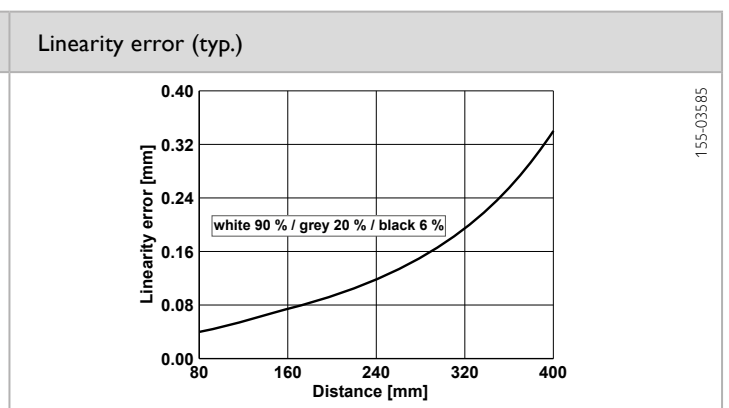
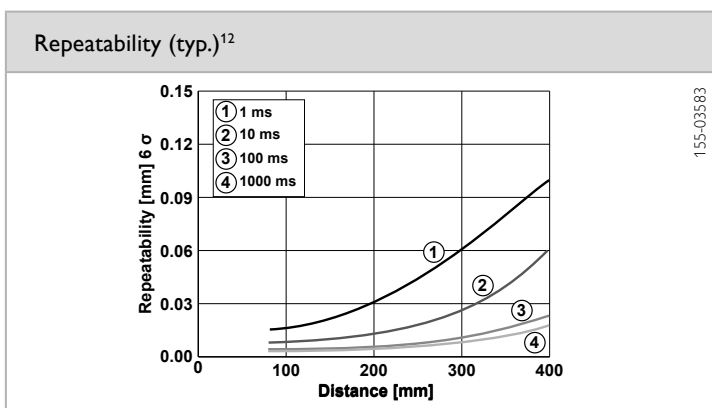
⁸ UL: max. +45 °C

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

Interface	Type of connection	Laser class	Part Number	Article number
IO-Link	Plug, M12x1, 5-pin, IO-Link	1	FT 55-RLAM-320-PNSUIDL-L5M	624-41002
RS485	Plug, M12x1, 8-pin	1	FT 55-RLAM-320-PNSUID-S1L8M	624-41003
IO-Link	Plug, M12x1, 5-pin, IO-Link	2	FT 55-RL2AM-320-PNSUIDL-L5M	624-41012



⁹ In IO-Link mode, a 4-pin cable must be used ¹⁰ For analogue transmission of measured values we recommend shielded cables ¹¹ Can be used as output or input



¹² 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	190 mm, N.O.
Switching output Q_2	300 mm, N.O.
	Connection cables ¹³ Bracket SensoClip MBD F 55ST2 (579-50012) SensoIO (901-01001)
	www.sensopart.com/en/accessories

¹³ For 8-pin versions, use DIN EN IEC 60947-5-2 compliant cables, see From Page A-44