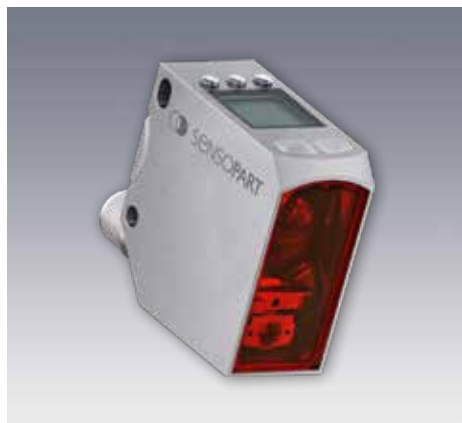


FT 55-RLAM-800 / FT 55-RL2AM-800

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	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	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	$\leq 20,000 \text{ lux}$ (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	$\leq 1.5 \text{ W}$		$\leq 500 \Omega$ (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^3	$\leq 1000 \text{ Hz}$ (laser class 2: 500 Hz)
Protection class	2	Response time Q	600 μs (laser class 2: 1 ms)
Power On Delay	$< 300 \text{ ms}$	Response time Q_A	400 μs (laser class 2: 800 μs)
Switching output Q	Auto-Detect ² / PNP / NPN / Push-Pull	Averaging time ⁴	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	$< 0.02 \text{ \%}/\text{K}$ / 0.01 $\text{\%/K}$	Analogue output Q_A	2 ... 10 mA / 4 ... 20 mA
Warm-up time	20 min.		0 ... 10V ⁵ / 2 ... 10V
Mechanical data			
Dimensions	50 x 50.5 x 25 mm	Ambient temperature: operation	-20 ... +50 $^{\circ}\text{C}$ ⁷
Enclosure rating	IP 67 & IP 69 ⁶	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 IEC 60947-5-2
Type of connection	See selection table	Display	LCD, with background illumination

¹ 5 ... 90 %; homogenous object, not moving

² Auto-Detect: Automatic selection of PNP or NPN by the sensor; PNP or NPN can be fixed operation lower

⁴ Scalable

⁵ up to 0.1 V undefined accuracy

⁶ With connected IP 67 / IP 69 plug

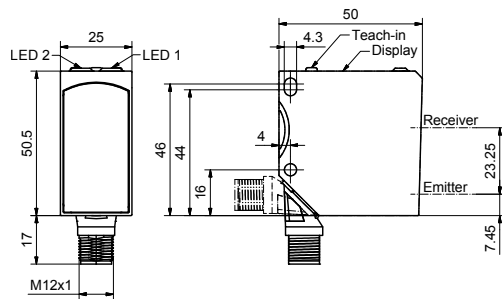
⁷ UL: max. +45 $^{\circ}\text{C}$

³ all RL(2)AM: Switching frequency in IO-Link

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-800-PNSUIDL-L5M	624-41006
RS485	Plug, M12x1, 8-pin	1	FT 55-RLAM-800-PNSUID-S1L8M	624-41007
IO-Link	Plug, M12x1, 5-pin, IO-Link	2	FT 55-RL2AM-800-PNSUIDL-L5M	624-41009

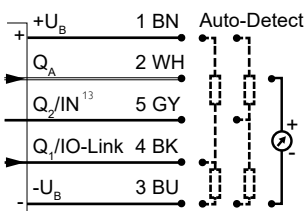
Plug connection and optical axis



153-01270

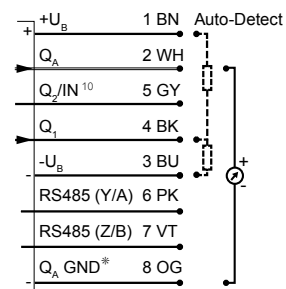
5

Connection, 5-pin, Auto-Detect^{8,9}



154-00590

Connection, 8-pin, Auto-Detect^{8,9}

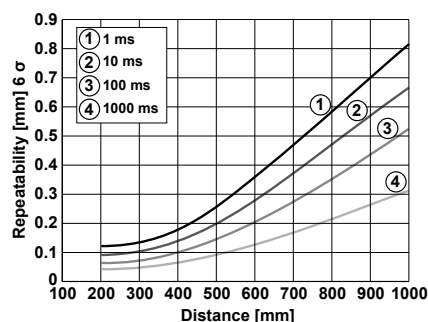


154-00553

*8 PIN fonctionnant avec un cable de norme DIN EN IEC 60947-5-2

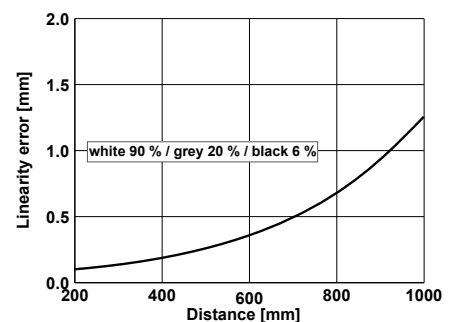
⁸ In IO-Link mode, a 4-pin cable must be used ⁹ For analogue transmission of measured values we recommend shielded cables ¹⁰ Can be used as output or input

Repeatability (typ.)¹¹



155-03460

Linearity error (typ.)



155-03318

¹¹ Repeatability 6 σ , 5 ... 90 %, homogenous object, not moving

Default setting		Accessories	
Analogue output Q_A	4 ... 20 mA, Measurement range limits	Connection cables ¹²	www.sensopart.com/en/accessories
Switching output Q_1	450 mm, N.O.	Bracket SensoClip MBD F 55ST2 (579-50012)	
Switching output Q_2	750 mm, N.O.	SensIO (901-01001)	

¹² For 8-pin versions, use DIN EN IEC 60947-5-2 compliant cables, see From Page A-44