

FT 55-RLAM-320-PNSUIDL-L5M

Ordering information

Designation for ordering	FT 55-RLAM-320-PNSUIDL-L5M
Part number	624-41002
Order text	Laser distance sensor, working range 80...400 mm, 2xQ, QA 4...20 mA / 0.1...10 V, IO-Link, laser class 1, Auto-de- tect (PNP/NPN), metal housing, IP67 / IP69, display, metal connector M12, 5-pin
Components supplied	Operating manual, Sensor, Laser warning signs



Optical data	
Setting range [mm]	80 ... 400
Resolution [mm]	0.020
Explanation of resolution	QA, 14 bit
Linearity [mm]	0.40
Explanation of linearity	Typical value; output via IO-Link, deviation QA < 0.2 mm from digital value; 5... 90%; homogeneous, stationary object
Repeatability [mm]	≤ 0.10
Explanation of repeatability	5...90%; homogeneous, stationary object, see graphic
Light source	Laser
Laser class	1 (IEC 60825-1)
Light color	Red
Wavelength [nm]	655
Light spot size [mm]	4 x 1
Switching frequency ≤ [Hz]	≤ 600
Explanation of switching frequency	Switching frequency in IO-Link operation lower, reliable object detection up to 1 kHz
Switching hysteresis [mm]	0.6
Explanation of switching hysteresis	5...90%; homogeneous, stationary object
Measuring frequency [Hz]	5000.00
Sensitivity to ambient light [Lux]	≤ 10000

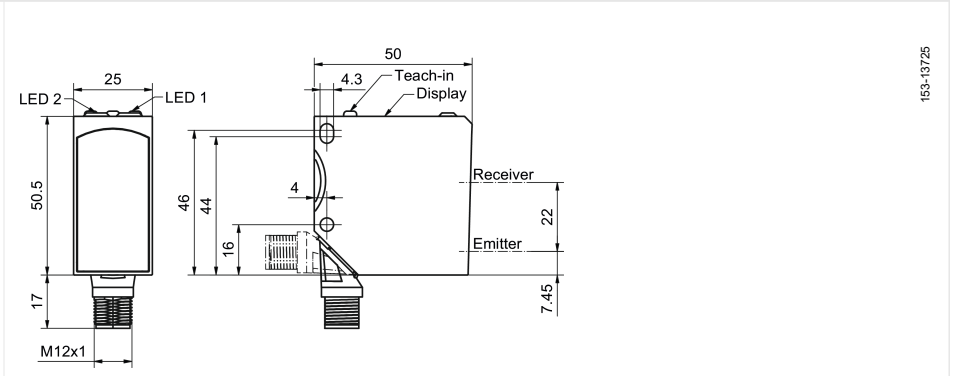
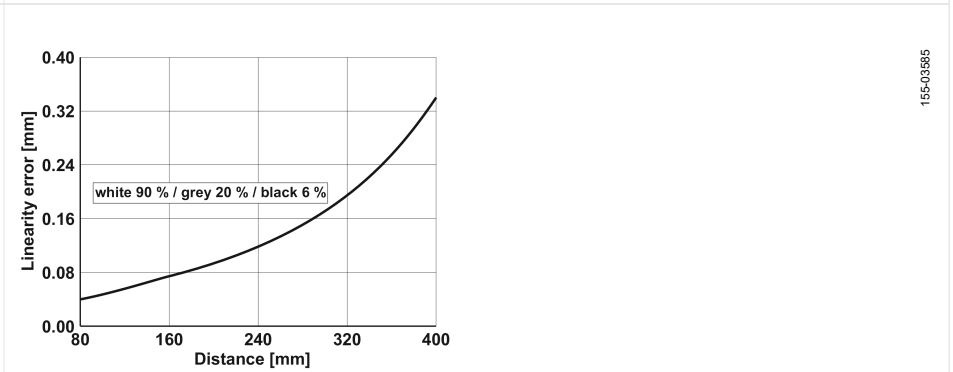
Functions	
Display, LED yellow	Status indicator Q1/Q2
Display, LED green	Operating voltage indicator
Setting options	Teach-in Q1, Q2, QA, Q as switching window or switching point Average value setting on QA Auto-Detect / NPN / PNP / Push-Pull Smart functions (on and off delay, counter, pulse, frequency)
Default settings	Analogue output QA: 4...20 mA, measurement range limits Switching output Q1: 190 mm, N.O. Switching output Q2: 300 mm, N.O.
Measuring range adjustment	Via display and IO-Link

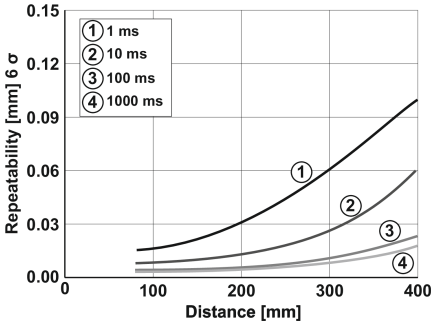
IO-Link	
Data storage	Yes
Communication mode	COM 2
Length of the process data [Bit]	32
Min. cycle time [ms]	3.0
SIO mode	is supported
IO-Link specification	1.1

Electrical data	
Operating voltage UB [V DC]	15 ... 30
Output current [mA]	≤ 50
Readiness delay [ms]	≤ 300
Reverse polarity protection	Yes
Short circuit protection	Yes
Response time Q [μs]	≤ 600
Response time QA [μs]	≤ 400.0
Explanation of response time	at 0...10 V to 0.1 V undefined accuracy
Analog output QA	2 ... 10 mA / 4 ... 20 mA; 0 ... 10 V / 2 ... 10 V
Measured value output	Analog (voltage), Analog (current)
Protection class	2
Output function	N.O./N.C.
Power consumption [W]	1.50
Switching output Q	Auto-Detect/PNP/NPN/Push-Pull
Explanation of switching output Q	Auto-Detect: Automatic selection of PNP or NPN by the sensor
Number of outputs	2
Warm-up time [Min.]	20
Temperature profile [mm/K]	0.02
Averaging times	0.2 ms, 1 ms, 10 ms, 100 ms, 1000 ms
Measured value refresh time	Response time QA + averaging rate
Explanation of thermal response	QA < 0,02%/K, digital < 0,01%/K
Load [Ω]	1000
Explanation of load	≤ 1 kOhm (2...10 mA) / ≤ 500 Ohm (4...20 mA) ≥ 2 kOhm (0...10 V, 2...10 V)

Mechanical data	
Height [mm]	50.5
Length [mm]	50.0
Width [mm]	25.0
Weight [g]	~ 185
Front panel material	PMMA
Housing material	Die-cast zinc, matte chrome
Display material	PMMA
Ambient temperature: operation [°C]	-20 ... 50
Ambient temperature: storage [°C]	-20 ... 60
Protection class	IP 67, IP 69
Explanation of protection class	with IP 67 / IP 69 plug connected
Vibration and shock resistance	EN IEC 60947-5-2
Connection name	Plug, M12x1, 5-pin, IO-Link
- Number of pins	5
- Thread	M12x1
Housing type	Cuboidal
Display	LCD, with background illumination

Technical drawings

Dimensional drawing	
Linearity (typ.)	

Repeatability (typ.)	 Graph showing Repeatability [mm] 6σ versus Distance [mm]. The Y-axis ranges from 0.00 to 0.15 mm, and the X-axis ranges from 0 to 400 mm. Four curves are plotted for different time intervals: ① 1 ms ② 10 ms ③ 100 ms ④ 1000 ms Repeatability increases with distance and decreases with increasing time interval. 155-03983												
Connections	5-pin, Auto-detect <table border="1"><thead><tr><th>Signal</th><th>Pin</th></tr></thead><tbody><tr><td>+U_B</td><td>1 BN</td></tr><tr><td>Q_A</td><td>2 WH</td></tr><tr><td>Q₂/IN</td><td>5 GY</td></tr><tr><td>Q₁/IO-Link</td><td>4 BK</td></tr><tr><td>-U_B</td><td>3 BU</td></tr></tbody></table> Auto-Detect circuit diagram showing a 5-pin connector with pins 1, 2, 3, 4, and 5. Pins 1 and 3 are connected to a common ground. Pins 2, 4, and 5 are connected to a common supply voltage. A resistor is connected between pins 2 and 4. 154-00590	Signal	Pin	+U _B	1 BN	Q _A	2 WH	Q ₂ /IN	5 GY	Q ₁ /IO-Link	4 BK	-U _B	3 BU
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Product link

<https://www.sensopart.com/en/products/details/624-41002>