

FT 55-RLAM-480-PNSUIDL-L5M

Ordering information

Designation for ordering FT 55-RLAM-480-PNSUIDL-L5M

Part number 624-41004

Order text Laser distance sensor, working range 120...600 mm, 2xQ, QA 4...20 mA / 0.1...10 V, IO-Link, laser class 1, Auto-detect (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]	120 ... 600
Resolution [mm]	0.030
Explanation of resolution	QA, 14 bit
Linearity [mm]	0.60
Explanation of linearity	Typical, 5...90%
Repeatability [mm]	≤ 0.20
Explanation of repeatability	0.02...0.2 mm, 5...90%, 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]	1.2
Explanation of switching hysteresis	5...90%; homogeneous, stationary object
Measuring frequency [Hz]	5000.00
Sensitivity to ambient light [Lux]	≤ 3000

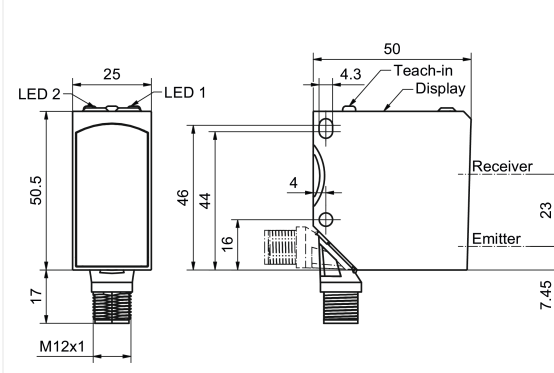
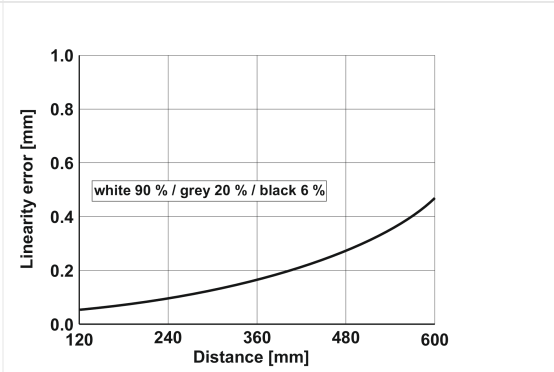
Functions	
Display, LED yellow	Status indicator Q1/Q2
Display, LED green	Operating voltage indicator
Setting options	Teach-in Q1, Q2, QA, Q as switching window or switching point Average value setting on QA Auto-Detect / NPN / PNP / Push-Pull Smart functions (on and off delay, counter, pulse, frequency)
Default settings	Analogue output QA: 4...20 mA, measurement range limits Switching output Q1: 280 mm, N.O. Switching output Q2: 440 mm, N.O.
Measuring range adjustment	Via display and IO-Link

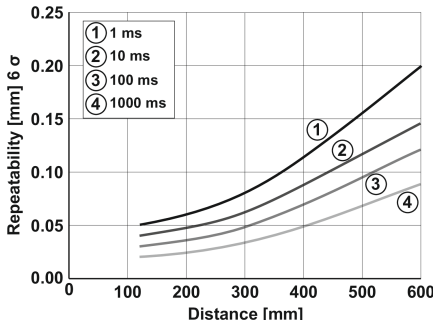
IO-Link	
Note on IO-Link availability	An 8-pin to 4-pin cable must be used in IO-link operation
Data storage	Yes
Communication mode	COM 2
Length of the process data [Bit]	32
Min. cycle time [ms]	3.0
SIO mode	is supported
IO-Link specification	1.1

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), IO Link
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]	0.01
Averaging times	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-pole
- Number of pins	5
- Thread	M12x1
Housing type	Cuboidal
Display	LCD, with background illumination

Technical drawings

Dimensional drawing	 153-01270
Linearity (typ.)	 155-03317

Repeatability (typ.)	<table><caption>Approximate data from Repeatability graph</caption><tr><th>Distance [mm]</th><th>1 ms (6σ)</th><th>10 ms (6σ)</th><th>100 ms (6σ)</th><th>1000 ms (6σ)</th></tr><tr><td>100</td><td>0.05</td><td>0.04</td><td>0.03</td><td>0.02</td></tr><tr><td>200</td><td>0.06</td><td>0.05</td><td>0.04</td><td>0.03</td></tr><tr><td>300</td><td>0.08</td><td>0.06</td><td>0.05</td><td>0.04</td></tr><tr><td>400</td><td>0.12</td><td>0.09</td><td>0.07</td><td>0.05</td></tr><tr><td>500</td><td>0.16</td><td>0.12</td><td>0.09</td><td>0.07</td></tr><tr><td>600</td><td>0.20</td><td>0.15</td><td>0.11</td><td>0.08</td></tr></table> 155-03461	Distance [mm]	1 ms (6σ)	10 ms (6σ)	100 ms (6σ)	1000 ms (6σ)	100	0.05	0.04	0.03	0.02	200	0.06	0.05	0.04	0.03	300	0.08	0.06	0.05	0.04	400	0.12	0.09	0.07	0.05	500	0.16	0.12	0.09	0.07	600	0.20	0.15	0.11	0.08
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Connections	5-pin, Auto-detect <table><tr><th>Pin</th><th>Signal</th><th>Color</th></tr><tr><td>1</td><td>+U_B</td><td>BN</td></tr><tr><td>2</td><td>Q_A</td><td>WH</td></tr><tr><td>3</td><td>-U_B</td><td>BU</td></tr><tr><td>4</td><td>Q₁/IO-Link</td><td>BK</td></tr><tr><td>5</td><td>Q₂/IN</td><td>GY</td></tr></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 power source (+U_B and -U_B). Pins 2 and 4 are connected to a load (Q_A and Q₁/IO-Link). Pin 5 is connected to a ground (Q₂/IN). The circuit includes a diode and a resistor. 154-00590	Pin	Signal	Color	1	+U _B	BN	2	Q _A	WH	3	-U _B	BU	4	Q ₁ /IO-Link	BK	5	Q ₂ /IN	GY																	
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Product link

<https://www.sensopart.com/en/products/details/624-41004>