

FT 55-RL2AM-320-PNSUIDL-L5M

Ordering information

Designation for ordering FT 55-RL2AM-320-PNSUIDL-L5M

Part number 624-41012

Order text Laser distance sensor, working range 80...400 mm, 2xQ, QA 4...20 mA / 0.1...10 V, IO-Link, laser class 2, Auto-detect (PNP/NPN), metal housing, IP67 / IP69, display, metal connector M12, 5-pin

Components supplied Operating manual, Sensor, Laser warning signs



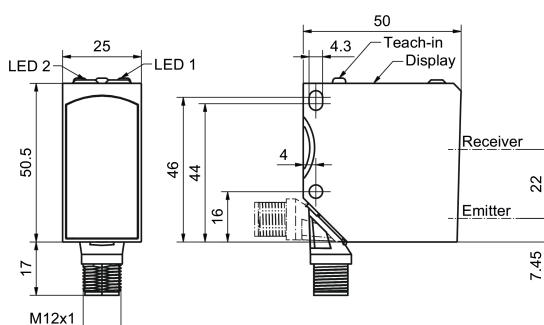
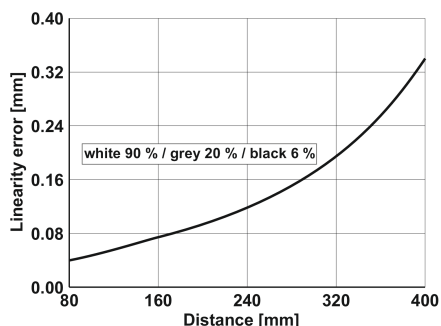
Optical data	
Setting range [mm]	80 ... 400
Resolution [mm]	0.020
Explanation of resolution	QA, 14 bit
Linearity [mm]	0.40
Explanation of linearity	Typical; output via IO-Link, deviation QA < 0.2 mm from digital value; 5...90%; homogeneous, stationary object
Repeatability [mm]	≤ 0.10
Explanation of repeatability	5...90%; homogeneous, stationary object, see graphic
Light source	Laser
Laser class	2 (IEC 60825-1)
Light color	Red
Wavelength [nm]	655
Light spot size [mm]	4 x 1
Switching frequency ≤ [Hz]	≤ 380
Explanation of switching frequency	Switching frequency in IO-Link operation lower, reliable object detection up to 500 Hz, reference material white, 90% remission
Switching hysteresis [mm]	0.6
Explanation of switching hysteresis	5...90%; homogeneous, stationary object
Measuring frequency [Hz]	2500.00
Sensitivity to ambient light [Lux]	≤ 3000

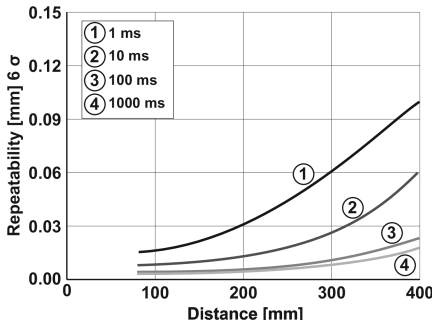
Functions	
Display, LED yellow	Status indicator Q1/Q2
Display, LED green	Operating voltage indicator
Setting options	Teach-in Q1, Q2, QA, Q as switching window or switching point Average value setting on QA Auto-Detect / NPN / PNP / Push-Pull Smart functions (on and off delay, counter, pulse, frequency)
Default settings	Analogue output QA: 4...20 mA, measurement range limits Switching output Q1: 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]	≤ 1,000
Response time QA [μs]	≤ 800.0
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]	0.01
Averaging times	0.4 ms, 1 ms, 10 ms, 100 ms, 1000 ms
Measured value refresh time	Response time QA + averaging rate
Explanation of thermal response	with digital output, QA 0.12 mm/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	 153-13725
Linearity (typ.)	 155-03595

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>0.015</td><td>0.010</td><td>0.008</td><td>0.006</td></tr><tr><td>200</td><td>0.030</td><td>0.020</td><td>0.015</td><td>0.010</td></tr><tr><td>300</td><td>0.055</td><td>0.035</td><td>0.025</td><td>0.015</td></tr><tr><td>400</td><td>0.090</td><td>0.060</td><td>0.035</td><td>0.020</td></tr></table> 155-03583	Distance [mm]	1 ms (6σ)	10 ms (6σ)	100 ms (6σ)	1000 ms (6σ)	100	0.015	0.010	0.008	0.006	200	0.030	0.020	0.015	0.010	300	0.055	0.035	0.025	0.015	400	0.090	0.060	0.035	0.020
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Connections	5-pin, Auto-detect <table><tr><th>Signal</th><th>Pin</th></tr><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></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 and 4 are connected to a common supply. Pin 5 is connected to a common ground. The circuit includes a 10kΩ pull-up resistor on pin 2 and a 10kΩ pull-down resistor on pin 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/624-41012>