

FT 55-RLAM-480-PNSUID-S1L8M

Ordering information

Designation for ordering FT 55-RLAM-480-PNSUID-S1L8M

Part number 624-41005

Order text Laser distance sensor, operating range 120...600 mm, 2xQ, QA 4...20 mA / 0.1...10 V, RS-485, laser class 1, Auto-detect (PNP/NPN), metal housing, IP 67 / IP 69K, display, metal plug M12, 8-pin

Components supplied Operating manual, Sensor, Laser warning signs



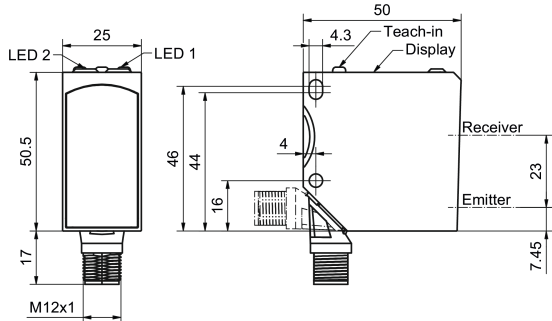
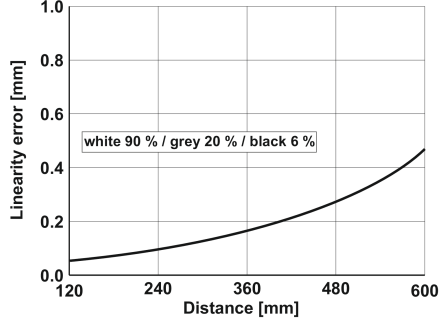
Optical data	
Setting range [mm]	120 ... 600
Resolution [mm]	0.030
Explanation of resolution	QA, 14 bit
Linearity [mm]	0.60
Explanation of linearity	Typical, 5...90%
Repeatability [mm]	≤ 0.20
Explanation of repeatability	0.02...0.2 mm, 5...90%, stationary object, see graphic
Light source	Laser
Laser 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

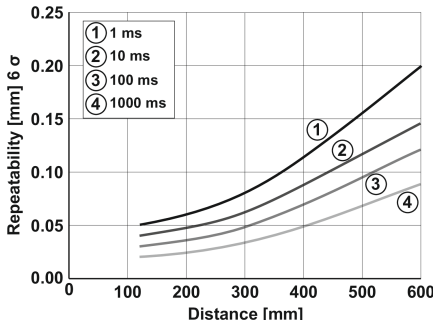
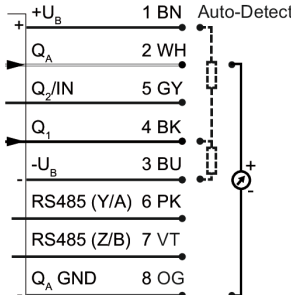
Functions	
Display, LED yellow	Statusanzeige Q1/Q2
Display, LED green	Betriebsspannungsanzeige
Setting options	Teach-in Q1, Q2, QA, Q als Schaltfenster oder Schaltpunkt Mittelwerteinstellung an QA Auto-Detect / NPN / PNP / Push-Pull Smart Functions (Anzugs- und Abfallverzögerung, Counter, Impuls, Frequenz)
Setting options	Teach-in Q1, Q2, QA, Q als Schaltfenster oder Schaltpunkt Mittelwerteinstellung an QA Auto-Detect / NPN / PNP / Push-Pull Smart Functions (Anzugs- und Abfallverzögerung, Counter, Impuls, Frequenz)
Default settings	Analogausgang QA: 4 ... 20 mA, Messbereichsgrenzen Schaltausgang Q1: 280 mm, N.O. Schaltausgang Q2: 440 mm, N.O.
Measuring range adjustment	per Display und 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), IO Link, RS-485
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]	0.06
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	mit angeschlossenem IP 67 / IP 69 Stecker
Vibration and shock resistance	EN IEC 60947-5-2
Connection name	Plug, M12x1, 8-pole
- Number of pins	8
- Thread	M12x1
Housing type	Cuboidal
Display	LCD, mit Hintergrundbeleuchtung

Technical drawings	
Dimensional drawing	
Linearity (typ.)	

Repeatability (typ.)	<table><caption>Approximate data from Repeatability graph</caption><thead><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></thead><tbody><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></tbody></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	8-pin, Auto-detect <table><thead><tr><th>Pin</th><th>Signal</th><th>Color</th></tr></thead><tbody><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>Q_I</td><td>BK</td></tr><tr><td>5</td><td>Q_Z/IN</td><td>GY</td></tr><tr><td>6</td><td>RS485 (Y/A)</td><td>PK</td></tr><tr><td>7</td><td>RS485 (Z/B)</td><td>VT</td></tr><tr><td>8</td><td>Q_A GND</td><td>OG</td></tr></tbody></table> PIN 8 deviates functionally from EN IEC 60947-5-2. 154-00553	Pin	Signal	Color	1	+U _B	BN	2	Q _A	WH	3	-U _B	BU	4	Q _I	BK	5	Q _Z /IN	GY	6	RS485 (Y/A)	PK	7	RS485 (Z/B)	VT	8	Q _A GND	OG								
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Product link

<https://www.sensopart.com/en/products/details/624-41005>