

FR 55-RLAP-70-PNSIL-L5

Ordering information

Designation for ordering	FR 55-RLAP-70-PNSIL-L5
Part number	621-11028
Order text	Distance sensor with time-of-flight measurement, reflector, 0.3...70 m, laser, analogue 4...20 mA, Auto-detect, N.O./N.C., teach-in, connector M12 5-pin, IP67 & IP69K, IO-Link COM2, min. cycle time 3 ms, SIO mode is supported
Components supplied	Operating manual, Sensor



Optical data	
Setting range [mm]	300 ... 70,000
Explanation of the setting range	Reference material reflective foil RF 250/V (904-51579)
Resolution [mm]	35.000
Explanation of resolution	35 mm = 8 μ A (11 bit), at max. operating range 70 m
Linearity [mm]	350.00
Explanation of linearity	Specification +/-, reference material reflective foil RF 250/V (904-51579), 0.5% of the set operating range, at load 500 Ω , min. linearity error 50 mm
Repeatability [mm]	≤ 6.00
Explanation of repeatability	Set measurement range < 10 m, for further values see diagram, constant ambient conditions, 6 σ stationary object, reflective foil RF 250/V (904-51579)
Light source	Laser
Laser class	1 (IEC 60825-1)
Light color	Red
Wavelength [nm]	655
Switching frequency $\leq$ [Hz]	≤ 50
Explanation of switching frequency	ti/tp 1:1
Switching hysteresis [mm]	60.0
IO-Link resolution [mm]	1.00

Functions	
Display, LED yellow	Switching output indicator
Display, LED green	Operating voltage indicator
Setting options	Adjustable analogue measurement range QA Analogue characteristic curve invertible Adjustable switching output Q (switching window) N.O./N.C. and auto-detect/NPN/PNP via teach-in button and control input Wide range of setting options for service and process data via IO-Link
Explanation of temperature drift	< 1 mm / K
Default settings	Analogue output QA: 4...20 mA, 2...6 m Switching output Q: 2...6 m, auto-detect, N.O., switching window Response time measured value (e.g. QA): 10 ms
Measuring range adjustment	via teach-in button, control input and IO-Link

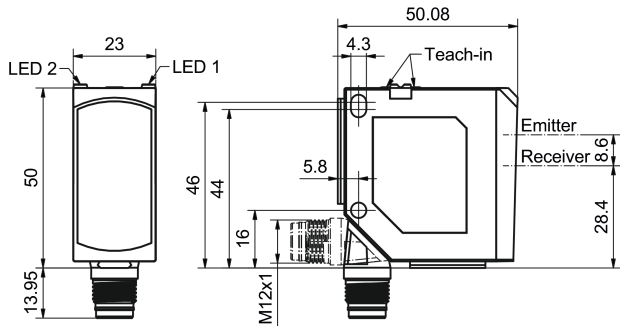
IO-Link	
Data storage	Yes
Communication mode	COM 2
Length of the process data [Bit]	32
Min. cycle time [ms]	3.0
SIO mode	is supported
IO-Link specification	1.1

Electrical data	
Operating voltage UB [V DC]	18 ... 30
No-load current [mA]	≤ 60
Output current [mA]	≤ 100
Readiness delay [ms]	≤ 100
Reverse polarity protection	Yes
Short circuit protection	Yes
Response time Q [μs]	≤ 10,000
Analog output QA	4 ... 20 mA / 0,1 ... 10 V
Control input	+UB = Teach-in -UB = Button locked Open = normal operation
Measured value output	Analog (voltage), Analog (current), IO Link
Protection class	2
Load [Ω]	500
Explanation of load	≤ 500 Ohm (4...20 mA) / ≥ 4 kOhm (0.1...10 V)
Output function	N.O./N.C.
Switching output Q	Auto-Detect/PNP/NPN
Explanation of switching output Q	Auto-detect: automatic selection of PNP or NPN by sensor, PNP or NPN can be configured permanently
Number of outputs	1
Warm-up time [Min.]	20
Temperature drift [mm/K]	1.000
Explanation of temperature drift	< 1 mm / K

Mechanical data	
Height [mm]	50.0
Length [mm]	50.1
Width [mm]	23.0
Weight [g]	~ 42
Front panel material	PMMA
Housing material	ABS
Ambient temperature: operation [°C]	-30 ... 60
Explanation of operation at ambient air temperature	UL: max. +45 °C
Ambient temperature: storage [°C]	-40 ... 80
Protection class	IP 67, IP 69K
Explanation of protection class	With IP 67/ IP 69K 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

Technical drawings

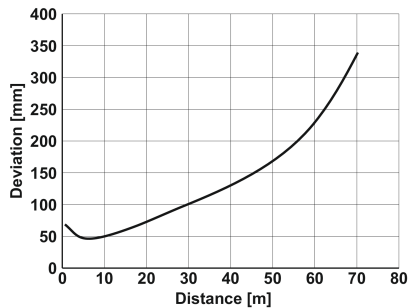
Dimensional drawing



153-01104

Linearity (typ.)

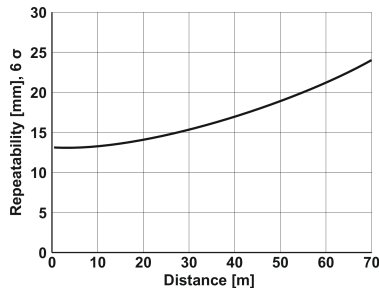
Linearity QA/digital (typ.)



Linearity deviations can be positive or negative.

155-03457

Repeatability (typ.)



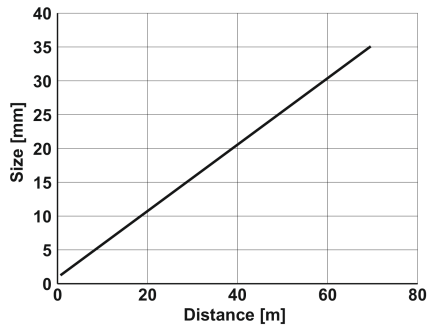
Constant ambient conditions, 6 σ stationary object, reflective foil
RF 250/V (904-51579)

155-01982

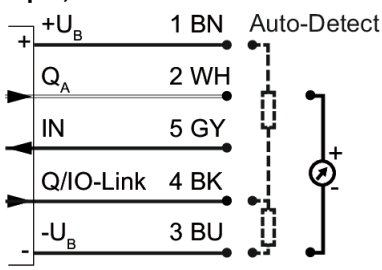
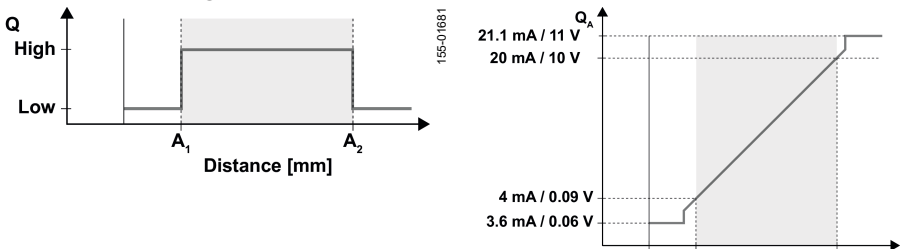
Mittelungszeit	Wiederholgenauigkeit [mm], typ.
10 ms	≤ 13
100 ms	≤ 12
200 ms	≤ 11
.	.
900 ms	≤ 7
1000 ms	≤ 6

155-01982

Light spot size



155-01963

Connections	5-pin, Auto-detect  154-00967
Characteristic curves	Output and analog characteristic curve  155-01681 155-01742

Product link

<https://www.sensopart.com/en/products/details/621-11028>