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 µA (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, 6σ 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 ≤ *[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

The information contained in this data sheet has been prepared with the utmost care. We reserve the right to make technical changes.

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

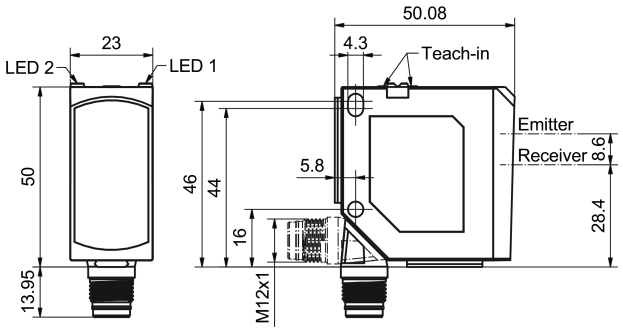
Electrical data	
Operating voltage UB *[V DC]*	18 ... 30
No-load current *[mA]*	≤ 60
Output current *[mA]*	≤ 100
Readiness delay *[ms]*	≤ 100
Reverse polarity protection	Yes
Short circuit protection	Yes
Response time Q *[µs]*	≤ 10,000
Analog output QA	4 … 20 mA / 0,1 … 10 V
Control input	+UB = Teach-in -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

The information contained in this data sheet has been prepared with the utmost care. We reserve the right to make technical changes.

Technical drawings

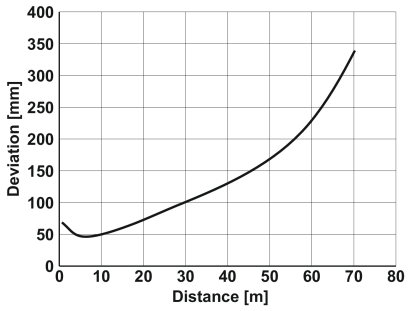
Dimensional drawing



153-01104

Linearity (typ.)

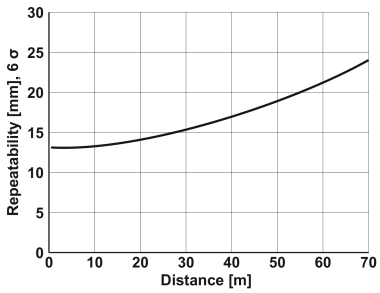
Linearity QA/digital (typ.)



155-03457

Linearity deviations can be positive or negative.

Repeatability (typ.)



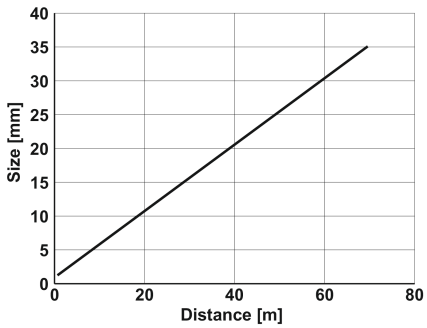
155-01962

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

155-01962

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

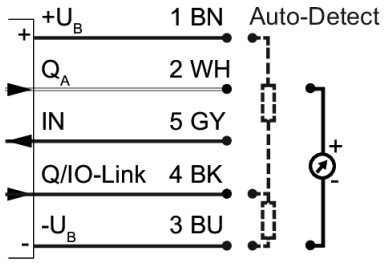
Light spot size



155-01963

Connections

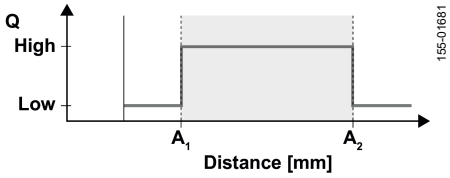
5-pin, Auto-detect



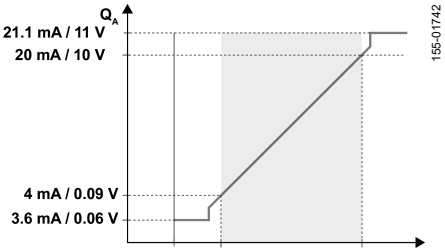
154-00567

Characteristic curves

Output and analog characteristic curve



155-01681



155-01742

Product link

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