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SA-Dist03b-001 Non-contact ride height / distance sensor

Key Features

- High quality sensor for contactless distance measurement
- Wide measuring range of 12 - 145mm
- Measurement range teachable in steps of 2mm
- High suppression of interfering light (50000 Lux, sunlight)
- High sampling rate of 1000Hz possible
- Designed for harsh environments IP67 / operating temperature -10 to +80°C
- High vibration resistance

Options:

- Connector and cable length can be modified on customer request

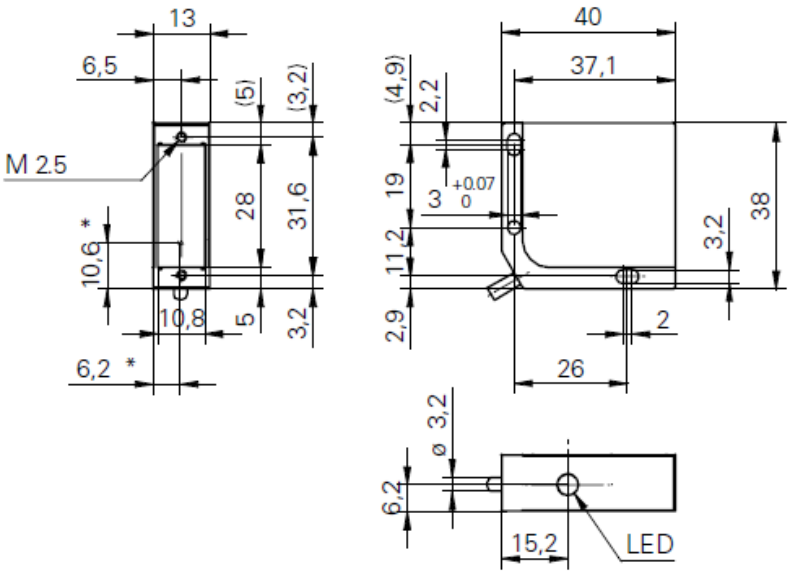
Technical specifications

Measurement ranges		
Total range std. type (factory default)	mm	12 to 145
Min. teach in range	mm	2
Measurement tolerances		
Resolution (matt white ceramics).	mm	0.04 to 0.2
Linearity error (matt white ceramics)	mm	±0.1 to ±0.5
Offset tolerance *1	mm	±0.15 + 0.2
Response time (typ.)		
Black surface (30% reflection)	µsec	< 900
Optical characteristics		
Light source: pulsed red laser diode		
Laser class	class	2
Wavelength	nm	650
Laser beam height	mm	1.5 to 4
Laser beam width	mm	1
Sensor element		Photodiode line
Suppression of interfering light	Lux	50000
Operational status indicator		
LED green/red/blinking		

Electrical characteristics		
Supply voltage	V	10 to 28
Current consumption	mA	< 100
Reverse battery protection		Built in
Short circuit protection		Built in
Analog output	V	0 to 5
Mechanical characteristics		
Housing material		Aluminum
Dimensions	mm	40x38x13
Weight (cable included)	g	41
Cable		
Wire cross section		4 x AWG26
Type		Raychem DR25
Length	mm	1000
Connector type		open wire
Environmental data		
Protection class	IP	67
Operating range	°C	-10 to +80
Vibration resistance		
Shock	G	100
During time period of	ms	11
Vibration tested at	G	12
Measured with	Hz	1000
Ordering information		
Art. No. SA-Dist03b-001		

*1 If sensor is calibrated to other than factory default measurement range: ± (0.15 + 0.2 resolution step full scale of the measurement range)

Dimensions



*optical axis of laser beam

laser beam alignment

Calibration

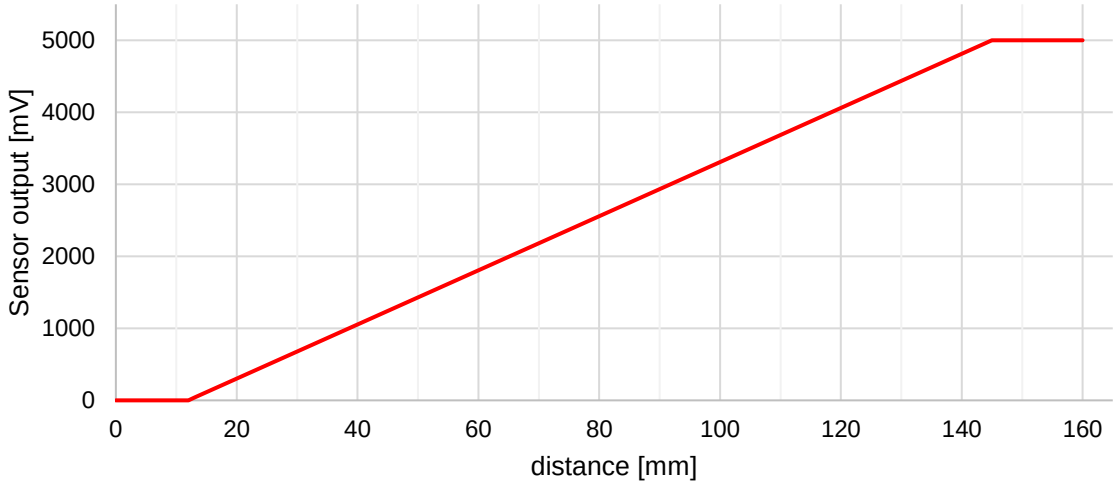
	SA-Dist03b-xxx		Multiplicator				Offset
12 Bit A/D	Measuring range [mm]	=	133 / 4095	*	Digits	+	12
16 Bit A/D	Measuring range [mm]	=	133 / 65535	*	Digits	+	12
Voltage	Measuring range [mm]	=	26.6	*	Volt	+	12

Recalibration

Changing the measuring range causes a change of the formula. The Formula is needed to calculate the physical values.

Adapt the formula to the change measuring range!

SA-Dist03b-xxx



Connector layout

Connector type

Analog line, open wires

Name	Description	Color
Power	Power supply 12 – 28V	red
Teach IN	External teach input	blue
Signal	Analog Out 0.5-5.0V	white
GND	Ground	black

no connector
open wires

Laser Warning