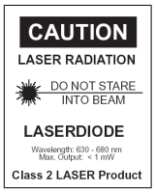
2D Debus & Diebold Meßsysteme GmbH, Alte Karlsruher Str. 8, D-76227 Karlsruhe
Tel.: +49(0)721 94485-0 Fax.: +49(0)721 94485-29

SA-Dist05b-000 Non contact ride height / displacement sensor

Laser Beam allignment



Key Features:

- *High quality sensor for contactless distance measurement*
- *Wide measuring range of 50 - 500mm*
- *Measurement range teachable in steps of 10mm*
- *High suppression of interfering light (100k Lux, sunlight)*
- *Short response time of < 2.5ms*
- *High environmental protection (IP 67)*
- *High operating temperature range 0-70°C*
- *High vibration resistant*

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2D Debus & Diebold Meßsysteme GmbH
http://www.2D-datarecording.com
http://www.2D-Kit-System.com
mail@2D-datarecording.com

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SA-Dist05b-000 Non contact ride height / displacement sensor

Technical specifications

Measurement ranges		
Total range standard type (factory default)	mm	50-500
Min. teach in range	mm	10
Measurement tolerances		
50-500mm		
Resolution (matt white ceramics).	mm	0.02….1.00
Linearity error (matt white ceramics)	mm	±0.08..±3.00
Offset tolerance *[1]	mm	±(0.15 + 1,00)
Repeatability *[3]	mm	±2.00
Temperature coefficient*[2]	%/°C	0.06
Response time (typ)		
black surface (30% reflection)	msec	<2.5
Slew rate (90% signal output)		
black surface (30% reflection)	msec	<10
Optical characteristics		
Light source: laser diode red pulsed		
Laserclass	class	2
Wavelength	nm	650
Laserbeam height	mm	3…10
Laserbeam width	mm	2
Sensor element		photodiode line
Suppression of interfering light		
50-450mm	kLux	100
450-500mm	kLux	85
Operational status indicator		
LED green/red/blinking		
Reference		
For further technical information refer to manual AC-DOC_Teaching_SA-DIST03-000		

Electrical characteristics		
Supply voltage	V	10-28
Current consumption	mA	<80
Reverse battery protection built in		
Short circuit protection built in		
Analog output	V	0.2-4,8
load resistance analog output	kΩ	>100
Mechanical characteristics		
Aluminum housing		
Dimensions	mm	50 x 40x 13
Weight	g	75
Cable		
Wire cross section		4 x AWG24
Type		Raychem DR25
Length	mm	1500
Connector type		
Standard		open wire
Other connectors		on request
Environmental data		
Protection class		IP67
Ambient operating range	°C	0 to +70
Calibration		
Use formulas on next page to calculate physical values		
Ordering information		
For ordering this product use 2D Article number SA-Dist05b-000		

*[1] If sensor is teached to other than factory default measurement range:± (0.15 + 1 resolution step full scale of teached measurement range)

*[2] %of measurement distance

*[3] If sensor is teached to other than factory default measurement range ± 2 resolution steps full scale of teached measurement range

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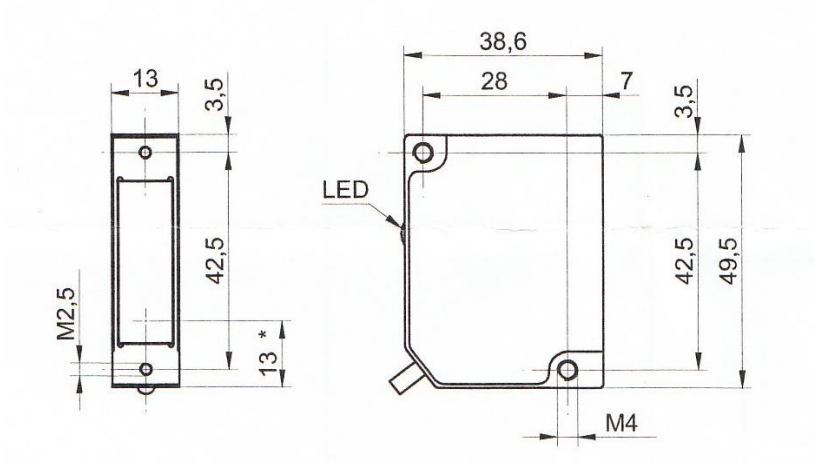
http://www.2D-datarecording.com
http://www.2D-Kit-System.com
mail@2D-datarecording.com

23.12.2009/ms

2D Debus & Diebold Meßsysteme GmbH, Alte Karlsruher Str. 8, D-76227 Karlsruhe
Tel.: +49(0)721 94485-0 Fax.: +49(0)721 94485-29

SA-Dist05x-000 Non contact ride height / displacement sensor

Dimensions

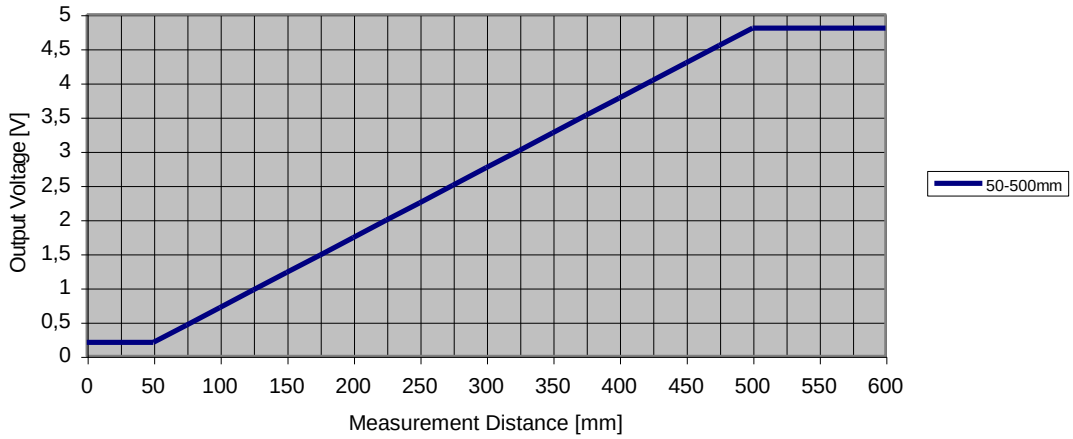


*optical axis of laserbeam

Formulas to calculate physical values

SA-Dist05			Multiplicator				Offset
12 Bit A/D	Measuring range [mm]	=	4500/37674	*	Digits	+	30,4348
16 Bit A/D	Measuring range [mm]	=	4500/602922	*	Digits	+	30,4348
Voltage	Measuring range [mm]	=	97 + 19/23	*	Volt	+	30,4348

Note:
Decreasing the measuring range by teaching causes a change of the formula. The Formula is needed to calculate the physical values.
Therefore do not forget to adapt the formula to the changed measuring range !!!



Connector layout

Connector type

Open wires

Name	Description	Color
Power	Power supply 10 – 28V	red
Teach IN	External teach input	blue
Signal	Analog Out 0.2-4.8V	white
GND	Ground	black

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