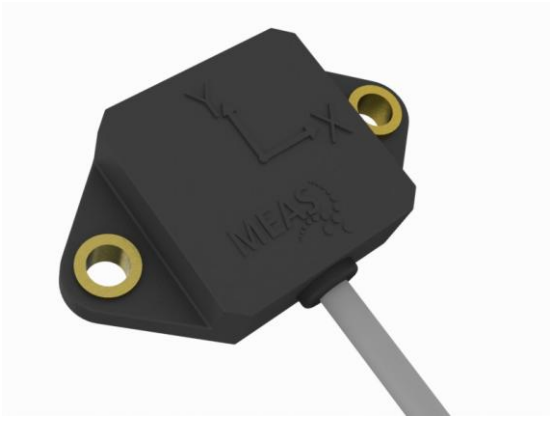
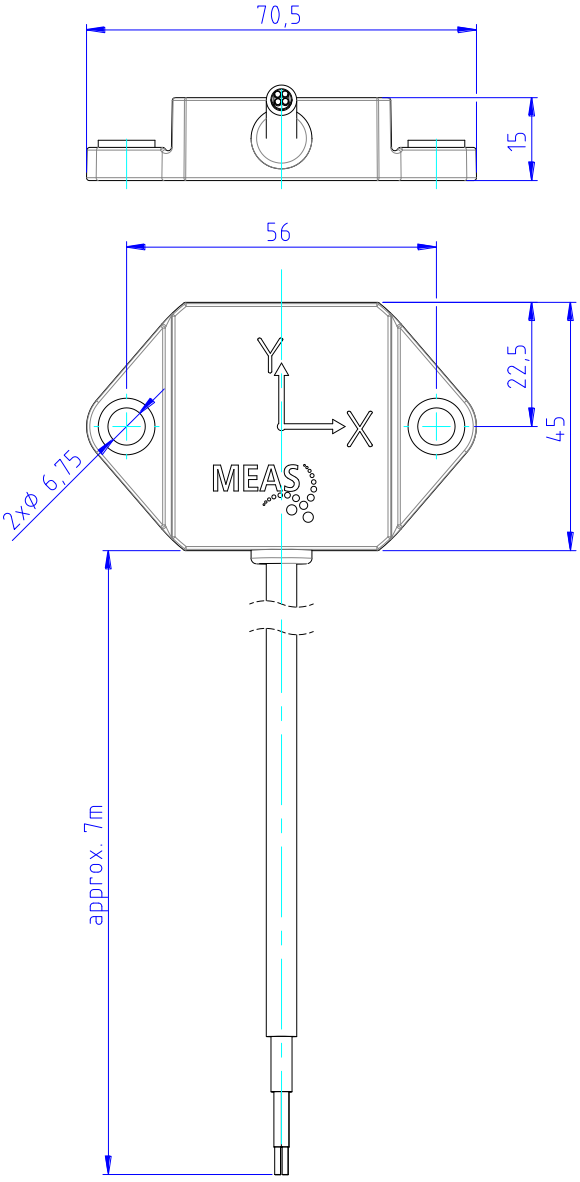
DOG2 MEMS-Series Inclinometer

Range ±180° single axis
Easy to use current output
Supply voltage 8-30V
High resolution



The single axis inclinometer is mainly developed for vehicle and tool position monitoring. A fast response time and good accuracy makes this device the ideal choice for mobile leveling applications. It features digital signal processing including temperature compensation.
The integrated filter improves performance and allows a use of the sensor in many noisy environments (e.g. vibrations).

dimensions



FEATURES

- 8-30V supply voltage (5V on request)
- Up to +/-90 degree tolerance on 2nd axis
- Digital signal processing includes
  - filter (e.g. vibration damping)
  - temperature compensation
- 12 bit resolution
- High refresh rate
- -40°C to +85°C temperature range
- Accuracy typically better than
  - 1.5° (-40°C to +85°C)
  - 1° at +25°C

APPLICATIONS

- Platform leveling
- Truck and off-road vehicle cabin or tool leve
- Crane boom leveling
- Tilt alarm, e.g. digger
- Antenna leveling
- Inclination dependent engine control

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PARAMETERS

Parameter	Value	Comment
Range	+/- 180°	Roll or Pitch
Accuracy, typ.	1.5°	T=-40°C ~ +85°C
Accuracy, typ.	1°	T=+25°C
Resolution	12 bit	
Refresh rate, intern	50~100 Hz	
Startup time	<1s	valid output angles
Supply/excitation voltage	8 ~ 30V, 24V nominal	
Supply current	<15mA typ.	outout current (2x25mA max.) not included
Output	4 ~ 20mA	for -180° ~ +180°, reference GND
Zero position	parallel to ground	
Connector	none – cable out version	
Cable	7m / 4 core, flexible	
Operation temperature range	-40°C ~ +85°C	
Storage temperature range	-40°C ~ +85°C	
Weight	<50g	
Dimensions	70.5 x 45 x 15 mm	W x D x H

USER INTERFACE

Wire color	Function	Description
white	V_{CC}	+24.0V nominal supply input
yellow	GND	GND
brown	Output X	4~20mA (to GND)
green	Output Y	4~20mA (to GND)

COMMENTS

The inclinometer includes a powerful digital signal processing that offers various filter algorithms and allows customer specific adaptions. It is possible to adjust the sensor to different environments to yield an optimized performance.Customization can also be made in terms of angular range and connectivity, i.e cable and connector.

The main axis gives unique output over +/-180 (0..360) degrees while the other axis has to be keept in a +/-90° range only (special feature).

The PA6.6 housing is very compact in size and has compression limiter bushings for safe installation of the sensor. In contrast to uncoated (casted) aluminum, PA6.6 is resistant to atmospheric attack. It is compatible with oil, grease and fuel also. Therefore it is frequently used for engine and vehicle applications.

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sample ordering information

PROTOTYPE PART NUMBERING

NS-180/DOG1-XIZ-I-ZOM
- I I I |____Temperature range (I=industrial)
- I I I_____ Output configuration (I=analog current output)
- I I
- I I_____Model identifier
- I_____ ____Range (+/-180°)