DOG1 MEMS SERIES VOLTAGE INCLINOMETER

SPECIFICATIONS

- **Single axis inclinometer**
- **Measurement range ±180°**
- **Voltage output**

FEATURES

- 8-30 VDC supply voltage
- Up to ±90 degree tolerance on 2nd axis
- Digital signal processing includes
  - filter (e.g. vibration damping)
  - temperature compensation
- 12 bit resolution
- 100 Hz refresh rate
- -40 ℃ to 85 ℃ temperature range
- Accuracy typically
  - 0.5° | - 40 ℃ to 85 ℃
  - 0.15°| 25 ℃

APPLICATIONS

- Mobile and stationary cranes
- Lift platforms
- Building control
- Weighing systems
- Truck chassis levelling
- Vehicle applications
- Road construction machines

The **DOG1 MEMS-Series inclinometer** single axis is mainly developed with focus on platform leveling, dynamic engine management, tip-over protection and tilt alarm.

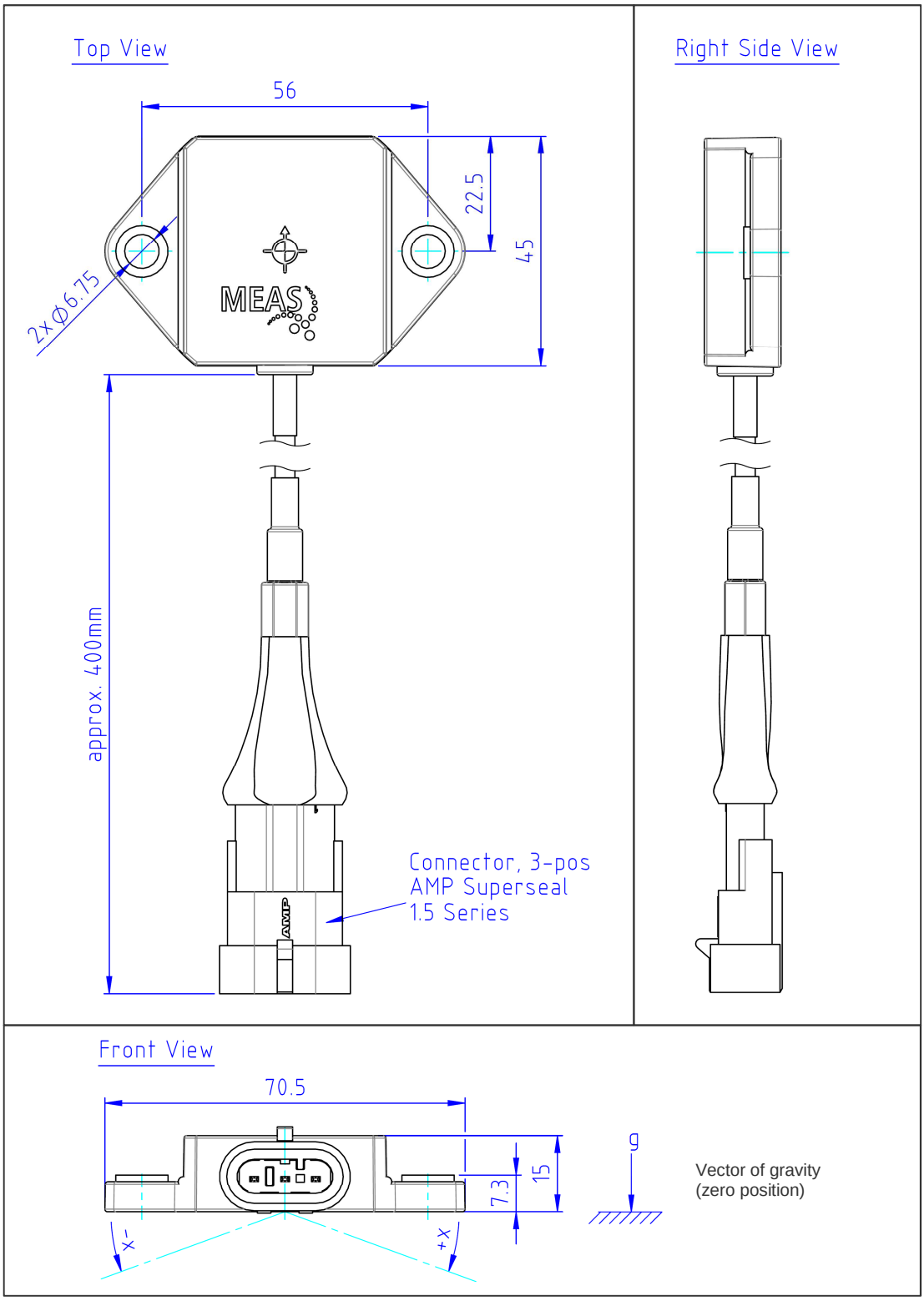
A fast response time and good accuracy makes this device the ideal choice for mobile leveling applications. It features digital signal processing including temperature compensation.

The integrated filter improves performance and allows using the sensor in many noisy environments (e.g. vibrations).

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

The PA6.6 housing is very compact in size and has compression limiter bushings for safe installation of the sensor. It is compatible with oil, grease and fuel also. Therefore it is frequently used for engine and vehicle applications.

Dimensions [mm]

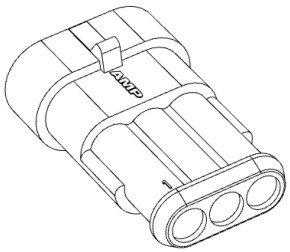


PARAMETERS

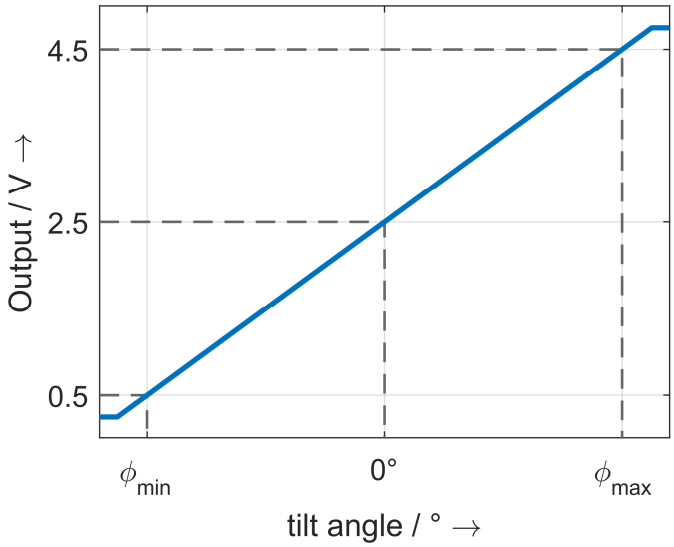
Parameter	Value	Comment
Range	±180°	Single axis sensor; other axis has to be kept in a ±90° range
Accuracy, typ.	0.6°	T= -40 ℃ to +85 ℃
Accuracy, typ.	0.2°	T= 25 ℃
Resolution	12 bit	
Refresh rate, intern	100 Hz	
Startup time	<1 s	Valid output signal
Supply/excitation voltage	8 to 30 V	Direct current (DC) stabilized
Supply current, typ.	15 mA	No load
Output	0.5 to 4.5 V	-180° to 180°, x-direction only
Connector	AMP Superseal 1.5-Series, 3-pos. cap housing TE Connectivity part-no. 282105-1	Requires 3-pos. plug housing AMP Superseal 1.5-Series at connecting harness, TE Connectivity part-no. 282087-1
Cable	3 wire 0.25 mm², outer diameter Ø3.9mm	PUR, length incl. connector 400 mm, full temperature range, flexible
Operation temperature range	-40 ℃ to +85 ℃	
Storage temperature range	-40 ℃ to +85 ℃	
Weight, typ.	60 g	
Dimensions	70.5 mm x 45 mm x 15 mm	W x D x H

CONNECTOR PINNING

Pin	Function	Description
1	V_{CC}	8 to 30 V supply input (+)
2	GND	GND
3	Output	0.5 to 4.5 V, X axis output



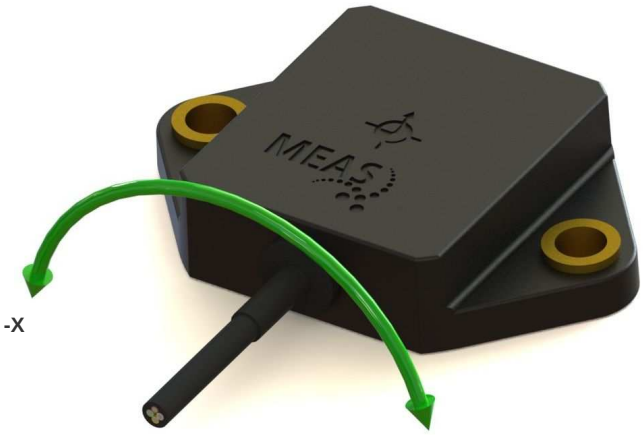
TRANSFER CHARACTERISTIC



Part-No.	Φ_{min}	Φ_{max}
G-NSDOG-006	-180°	180°

Linear transfer characteristic between Φ_{min} and Φ_{max}

FUNCTION VIEW



This DOG1 MEMS series voltage inclinometer is designed for floor mount application.

COMMENTS

The main axis gives unique output over ±180° (0 to 360°) while the other axis has to be kept in a ±90° range.

ORDERING INFORMATION

PART NUMBER	NAME	DESCRIPTION
G-NSDOG1-006	180DOG1 MEMS SERIES VOLTAGE	Single axis inclinometer, floor mount, range ±180°, supply 8 to 30 VDC, output voltage 0.5 to 4.5 V

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