# DOG2 MEMS SERIES VOLTAGE INCLINOMETER

## SPECIFICATIONS

- **Dual axis inclinometer**
- **Measurement ranges ±25°, ±45° and ±90°**
- **Voltage output**

## FEATURES

- 8 to 30 VDC supply voltage
- Digital signal processing includes
  - filter (e.g. vibration damping)
  - temperature compensation
- 12 bit resolution
- 100 Hz refresh rate
- -40 °C to 85 °C temperature range
- Accuracy typically
  - 0.5° | -40 °C to 85 °C
  - 0.15° | 25 °C

## APPLICATIONS

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

The **DOG2 MEMS-Series inclinometer** dual axis is mainly developed with focus on platform leveling, dynamic engine management, tip-over protection and tilt alarm.

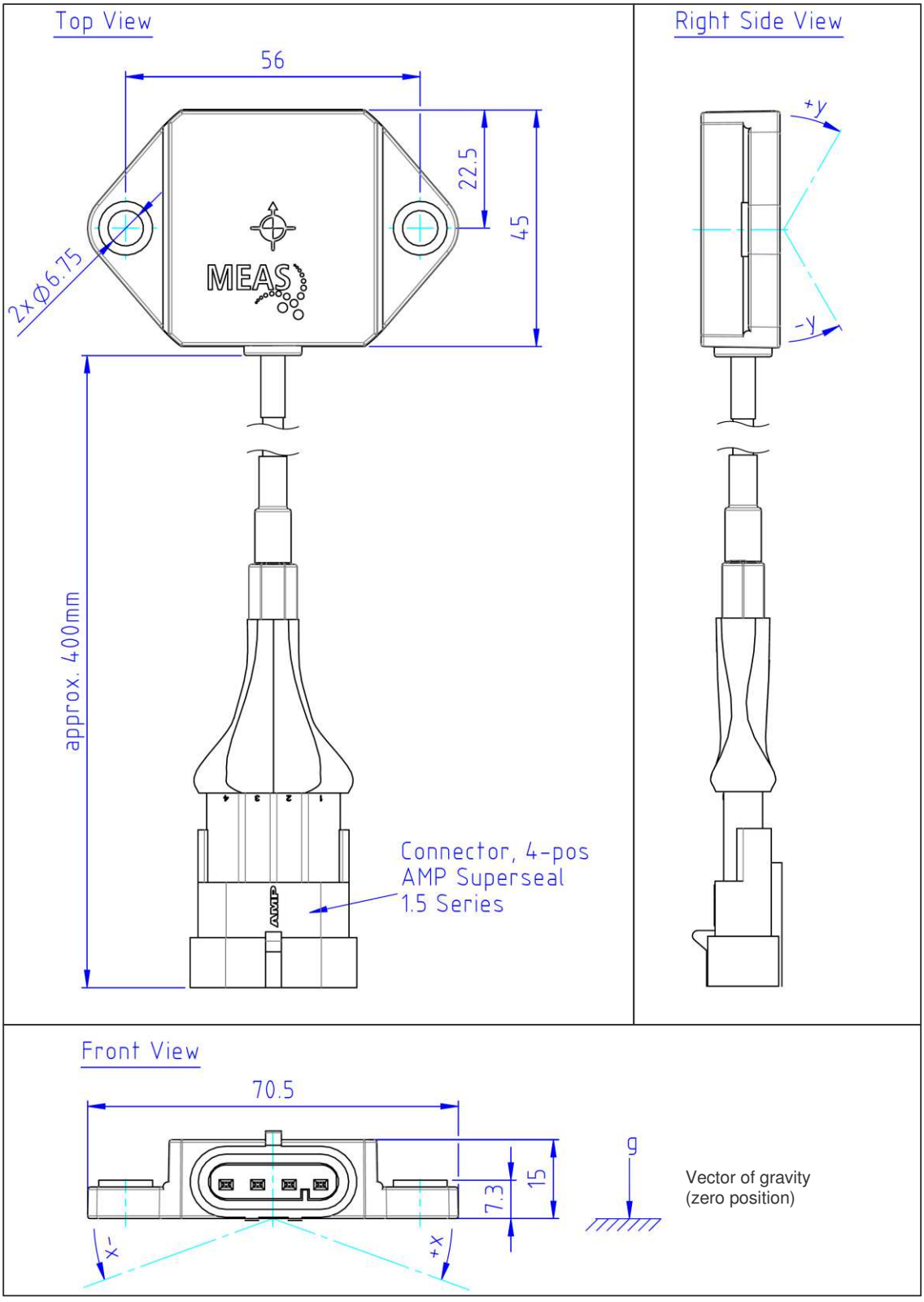
A fast response time and good accuracy makes this device the ideal choice for mobile leveling applications. It features digital signal processing including temperature compensation.

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]

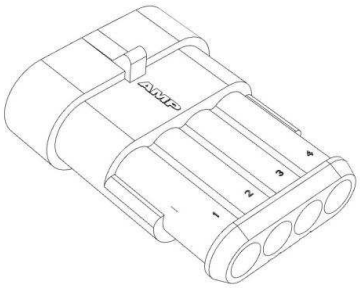


## PARAMETERS

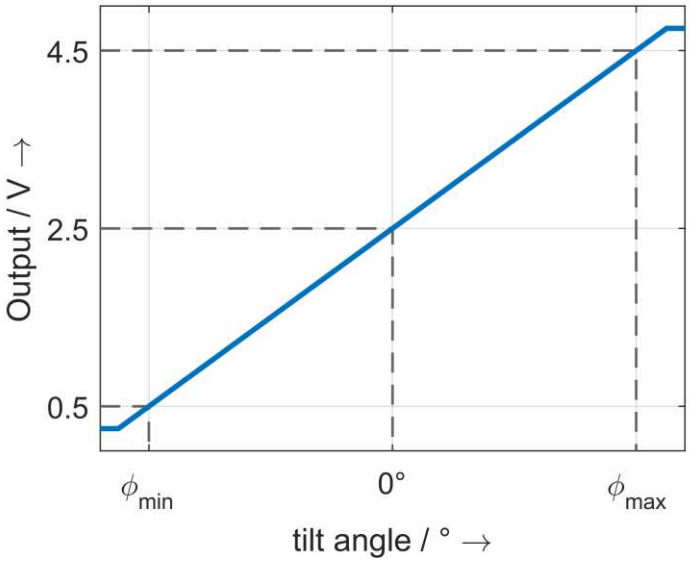
| Parameter | Value | Comment |
|---|---|---|
| Range | ±25°, ±45° or ±90° | Dual axis sensor |
| Accuracy, typ. | 0.5° | T= -40 °C to 85 °C |
| Accuracy, typ. | 0.15° | T= 25 °C |
| Resolution | 12 bit | |
| Refresh rate | 100 Hz | Internal processing |
| Startup time | <1 s | Valid output signal |
| 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 | -25° to 25°, -45° to 45° or -90° to 90° |
| Connector | AMP Superseal 1.5-Series,<br>4-pos. cap housing,<br>TE Connectivity part-no. 282106-1 | Requires 4-pos. plug housing,<br>AMP Superseal 1.5-Series at connecting harness,<br>TE Connectivity part-no. 282088-1 |
| Cable | 4 wire 0.25 mm$^2$,<br>outer diameter Ø3.9 mm | PUR, length incl. connector 400 mm, full temperature range, flexible |
| Operation temperature range | -40 °C to 85 °C | |
| Storage temperature range | -40 °C to 85 °C | |
| 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 VDC supply input (+) |
| 2 | GND | GND |
| 3 | Output X | 0.5 to 4.5 V, X axis output |
| 4 | Output Y | 0.5 to 4.5 V, Y axis output |



## TRANSFER CHARACTERISTIC




| Part-No. | $\Phi_{min}$ | $\Phi_{max}$ |
|---|---|---|
| G-NSDOG2-001 | -25° | 25° |
| G-NSDOG2-002 | -45° | 45° |
| G-NSDOG2-003 | -90° | 90° |

Linear transfer characteristic between $\Phi_{min}$ and $\Phi_{max}$