



## DOG2 MEMS SERIES CAN J1939 INCLINOMETER

### SPECIFICATIONS

- Dual axis inclinometer
- Measurement ranges  $\pm 90^\circ$
- CAN J1939 interface

### FEATURES

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

### APPLICATIONS

- Mobile and stationary cranes
- Lift platforms
- Building control
- Weighing systems
- Truck chassis levelling
- 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.

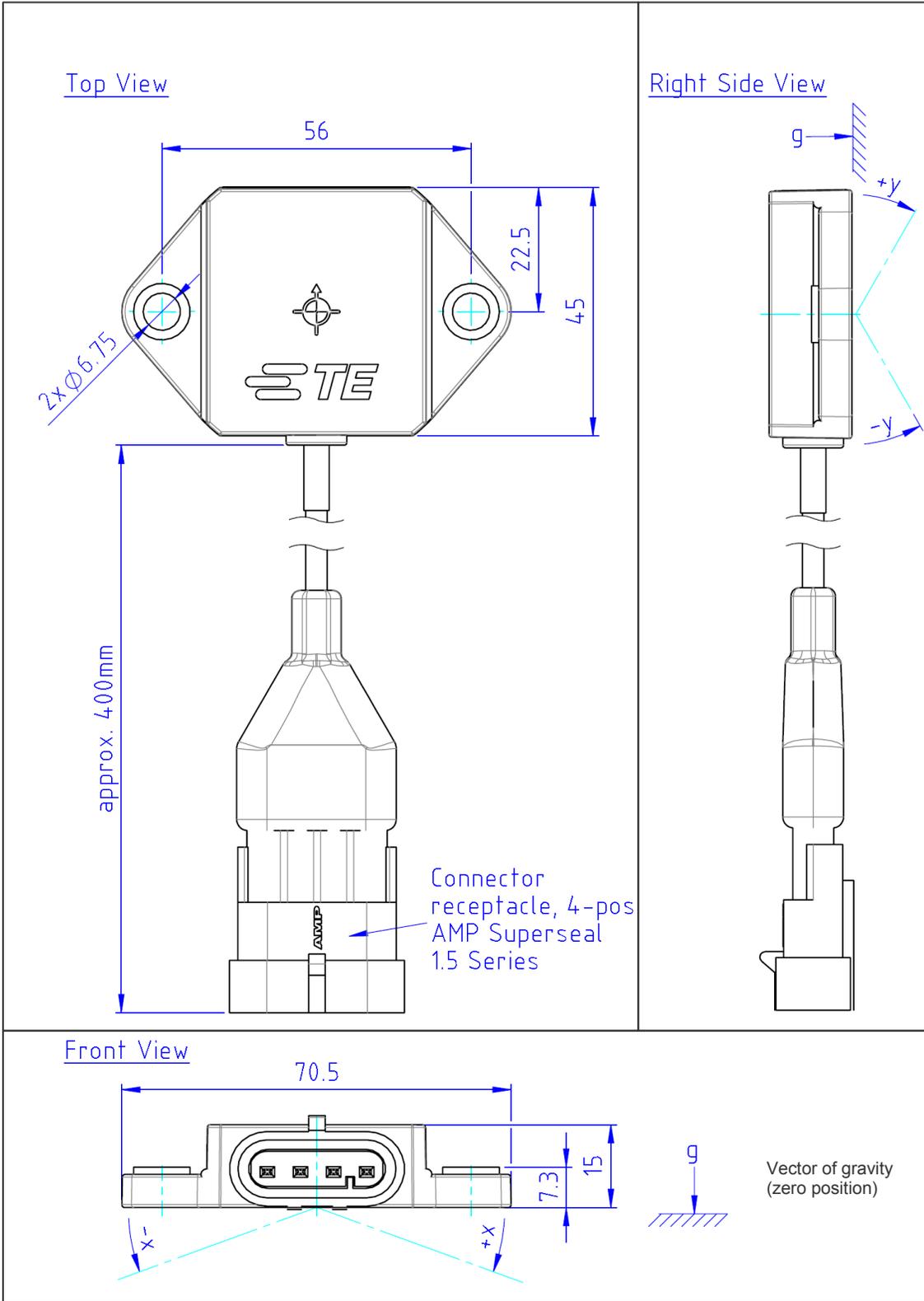
A fast response time and good accuracy makes this device the ideal choice for mobile leveling applications. It features digital signal processing including temperature compensation.

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 filter algorithms 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]

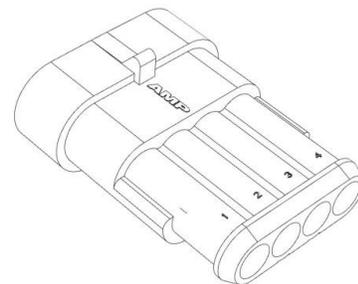


**PARAMETERS**

Parameter	Value	Comment
Range	±90°	Dual axis sensor
Accuracy, typ.	0.5°	T= -40 °C – 85 °C
Accuracy, typ.	0.15°	T= 25 °C
Resolution	0.01°	Limited by CAN protocol
Refresh rate	100 Hz	Internal processing
Startup time	<1 s	After power cycle
Supply/excitation voltage	8 – 30 V	Direct current (DC) stabilized
Supply current, typ.	<30 mA	Typ. 20mA, peak 30mA during transmit
Output	x-axis and y-axis	Linearized and temperature compensated angles in degree, reference is plane perpendicular to vector of gravity = earth surface
Interface	SAE J1939 CAN2.0B	250 kbps Source Address: - <b>G-NSDOG2-200</b> : 0xC2 (fix) - <b>G-NSDOG2-207</b> : 0xC0 (default); settable in the range of [0x80 – 0xF7]
Connector	AMP Superseal 1.5-Series, 4-pos. cap housing, TE Connectivity part-no. 282106-1	Requires 4-pos. plug housing, AMP Superseal 1.5-Series at connecting harness, TE Connectivity part-no. 282088-1
Cable	4 wire 0.25 mm <sup>2</sup> , outer diameter Ø3.9 mm	PUR, length incl. connector 400 mm, full temperature range, flexible
Operation temperature range	-40 °C – 85 °C	
Storage temperature range	-40 °C – 85 °C	
Operating humidity	Typical: ≤ 50 %RH Max: 90 %RH	>80 less than 40% of time
Storage humidity	Typical: ≤ 40 %RH Max: 60 %RH	
Weight, typ.	60 g	
Dimensions	70.5 mm x 45 mm x 15 mm	W x D x H

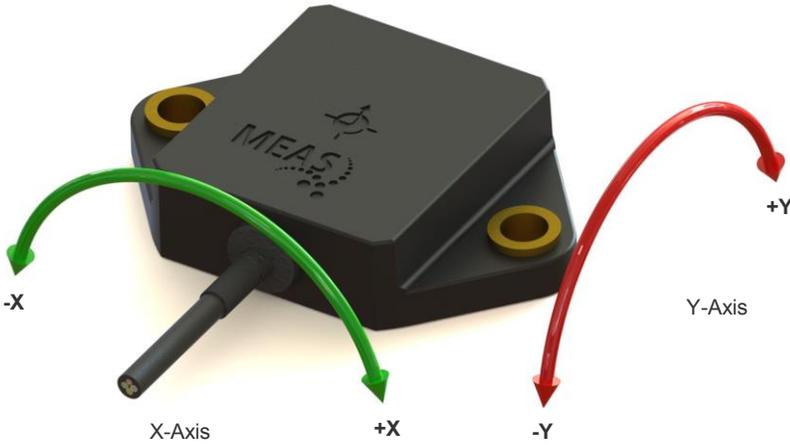
**CONNECTOR PINNING**

Pin	Function	Description
1	V <sub>CC</sub>	8 to 30 VDC supply input (+)
2	GND	GND
3	CAN H	CAN high line , in/out
4	CAN L	CAN low line , in/out



The CAN J1939 detailed description is included in the specification, which is available on request.

## FUNCTION VIEW



This DOG2 MEMS series CAN J1939 inclinometer is designed for floor mount application.

## ORDERING INFORMATION

PART NUMBER	SHORT DESCRIPTION
G-NSDOG2-200	Dual axis tilt sensor, range +/-90 deg, Vcc 8 – 30 VDC, CAN J1939 Interface
G-NSDOG2-207	Dual axis tilt sensor, range +/-90 deg, Vcc 8 – 30 VDC, CAN J1939 Interface (Source address range [0xC0, 0x80 – 0xF7]; see specification for details)

For other orientations, measurement ranges or supply voltages please contact TE Connectivity sales representatives.

### NORTH AMERICA

TE Connectivity Sensors, Inc.  
1000 Lucas Way  
Hampton, VA 23666  
United States  
Phone: +1-800-745-8008  
Fax: +1-757-766-4297  
Email: [customer-care.hmpt@te.com](mailto:customer-care.hmpt@te.com)  
Web: [www.te.com](http://www.te.com)

### EUROPE

TE Connectivity Sensors  
Germany GmbH  
Hauert 13  
D-44227 Dortmund  
Germany  
Phone: +49-(0)231-9740-0  
Fax: +49-(0)231-9740-200  
Email: [customer-care.dtmtd@te.com](mailto:customer-care.dtmtd@te.com)  
Web: [www.te.com](http://www.te.com)

### ASIA

TE Connectivity Sensors China Ltd.  
No. 26, Langshan Road  
High-tech Park (North)  
Nanshan District, Shenzhen 518057  
China  
Phone: +86-755-33305088  
Fax: +86-755-33305099  
Email: [customer-care.shzn@te.com](mailto:customer-care.shzn@te.com)

### [www.te.com](http://www.te.com)

TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2017 TE Connectivity Ltd. family of companies All Rights Reserved.