The DOG2 MEMS CAN J1939 inclinometer is a perfect solution for automatic tip-over protection.

**MEMS SENSORS**
- Accelerometer
- Micromachined
- Signal Conditioning

**SIGNAL PROCESSING**
- Microprocessor
- Algorithms
- Temperature Compensation
- Calibration
- Calculation of Angles
- Customer Interface

**HOUSING & CONNECTOR**
- PA6.6 GF 30 Housing
- Cable Assembly
- Robustness
- Reliability
- Compression Limiters

Sensors > Position Sensors > Tilt Sensors & Inclinometers

The DOG2 MEMS-Series inclinometer with CAN J1939 output signal is a dual axis tilt sensor with a focus on platform leveling, dynamic engine management, tip-over protection, and tilt alarm.

Measurement Principle: MEMS

Package: Plastic Housing

Mounting: Horizontal

Measurement Axes: Dual Axis

Operating Temperature Range: -40 - 85 °C

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 also compatible with oil, grease and fuel. Therefore it is frequently used for engine and vehicle applications.
± 90°  0.5°

Measurement range  -40 °C to +85 °C Operating temperature

Applications

- Load & unload tilt monitoring
- Man lift
- Mast angle
- Chassis, boom
- Road grade monitoring
- Bucket angle
- Cabin leveling
- Depth control
- Paving equipment tool leveling
- Crane chassis leveling
- Mobile home automatic leveling

Benefits

- Dual axis inclinometer
- Measurement ranges ±90°
- CAN J1939 interface
- 8 - 30 VDC supply voltage
- 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)
- Digital signal processing includes: filter (e.g. vibration damping), temperature compensation

Infographic

Download Now

View and download the complete MEMS tilt sensors and inclinometers infographic.

Other CAN Output Sensors
## Features

### Configuration Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>Digital</td>
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</table>

### Electrical Characteristics

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Voltage Supply (VDC)</td>
<td>8 - 30</td>
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### Termination Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Mounting</td>
<td>Horizontal</td>
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### Dimensions

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Ranges (°)</td>
<td>up to +/- 90</td>
</tr>
<tr>
<td>Dimension (mm)</td>
<td>up to 70</td>
</tr>
<tr>
<td>Accuracy (°)</td>
<td>up to +/- .3, up to +/- .5</td>
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<tr>
<td>Resolution (°)</td>
<td>up to +/- .01</td>
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</table>

### Usage Conditions

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Principle</td>
<td>MEMS</td>
</tr>
<tr>
<td>Operating Temperature Range (°C)</td>
<td>-40 - 85</td>
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### Packaging Features

<table>
<thead>
<tr>
<th>Feature</th>
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<tbody>
<tr>
<td>Package</td>
<td>Plastic Housing</td>
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### Other

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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<tbody>
<tr>
<td>Measurement Axes</td>
<td>Dual Axis</td>
</tr>
<tr>
<td>Protection Class</td>
<td>IP 67</td>
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<tr>
<td>Interface Digital</td>
<td>CAN J1939</td>
</tr>
<tr>
<td>Connection</td>
<td>Connector TE/AMP</td>
</tr>
</tbody>
</table>

SEE PRODUCTS ON NEXT PAGE
**DUAL AXIS CAN J1939 MEMS TILT SENSOR**

TE Model #: DOG2 MEMS SERIES CAN J1939  
TE Internal #: CAT-TSI0020

## Products (1 of 1)

![DUAL AXIS MEMS CAN J1939 TILT SENSOR](image1)  ![DUAL AXIS CAN J1939 ADDRESSABLE SENSOR](image2)

<table>
<thead>
<tr>
<th></th>
<th>DUAL AXIS MEMS CAN J1939 TILT SENSOR</th>
<th>DUAL AXIS CAN J1939 ADDRESSABLE SENSOR</th>
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<tbody>
<tr>
<td>TE Part #</td>
<td>G-NSDOG2-200</td>
<td>10202069-00</td>
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<tr>
<td>Accuracy</td>
<td>up to +/- .3 °</td>
<td>up to +/- .5 °</td>
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<tr>
<td>EU RoHS Directive 2011/65/EU</td>
<td>EU RoHS Compliant</td>
<td>EU RoHS Compliant</td>
</tr>
<tr>
<td>EU ELV Directive 2000/53/EC</td>
<td>EU ELV Compliant</td>
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<td>Product Families</td>
<td>MEAS</td>
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</tr>
<tr>
<td>Series</td>
<td>MEAS DOG2</td>
<td>MEAS DOG2</td>
</tr>
</tbody>
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*EU RoHS Directive 2011/65/EU*

These products comply with the substance restrictions of the Restriction on Hazardous Substances Directive 2011/65/EU (RoHS2). The RoHS2 Directive requires that certain electrical and electronic equipment products do not contain mercury, cadmium, hexavalent chromium, PBB, PBDE, lead, DEHP, BBP, DBP and DIBP above defined thresholds. Products indicated as ‘Compliant’ do not contain any of these substances above the prohibition thresholds. Finished electrical and electronic equipment products will be CE marked as required by the Directive. Components may not be CE marked.

**EU ELV Directive 2000/53/EC**

These products comply with the substance restrictions of the End of Life Vehicles Directive 2000/53/EC (ELV). The ELV Directive requires that materials and components of vehicles do not contain mercury, cadmium, hexavalent chromium, and lead above defined thresholds. Products indicated as ‘Compliant’ do not contain any of these substances above the prohibition thresholds.
DUAL AXIS CAN J1939 MEMS TILT SENSOR
TE Model #: DOG2 MEMS SERIES CAN J1939
TE Internal #: CAT-TS10020

Related Materials

Data Sheet
DOG2_MEMS_Series_CAN_J1939
English

Specification Or Standard
Specification G-NSDOG2-200 and 207 Inclinometer
English

Sell Sheet
Tilt Sensors & Inclinometers for Safety Systems
English

Brochure
Industrial and Commercial Transportation Sensor Solutions (English)
Learn more about our sensor solutions for industrial and commercial transportation applications.
English

Also in the Series | MEAS DOG2

Tilt Sensors &
Inclinometers(4)