

Robust inclinometers with CANopen interface

- With the QG65, DIS Sensors offers a highly robust inclinometer that measures up to a full 360° rotation single axis or up to ±90° dual axis with respect to the earth gravity (without reference parts). The QG65 has a CANopen interface for easy communication.

SIL2/PLd certified

DIS Sensors has extended the QG series of sensors with CANopen safety sensors with built-in redundancy for safety-critical applications. The safety is provided by features such as the redundant (dual) functionality, communication via the CANopen Safety Protocol EN50325-5 (CiA 304), and continuous verification of correct operation of all components. The sensor is certified for usage in SIL2 /PLd safety applications by DEKRA.

Full 360° angle

The QG65 measures a full 360° angle in the vertical plane. This is especially demanded for electronic control of the arms of e.g. mobile cranes, where angular movements greater than 180° occur. The complete covering of the 360° angle provides an easy mounting of the QG65. The QG65 is also available for measuring dual axis tilt in the horizontal plane (±90° or ±30°).

Robust construction

The QG65 inclinometer is highly shock resistant. The micro-electronics is potted in a compact reinforced plastic or stainless steel housing (IP67). Two M12 connectors (male and female) provide an easy 'loop-through' cabling of the CANopen interface. The operating temperature range is -40 to +85 °C.

The device is easy to mount anywhere on a tilting object as it does not need another object as a reference.

Accuracy

Each QG65 is individually calibrated and the calibration values are stored into the internal EEPROM. The resolution is 0,01° and the accuracy is up to 0.05° typical. Mechanical offset-errors due to mounting can be easily eliminated by a centering-feature via a CANopen command.

UL

Optional available

QG65 main types

1. QG65N-CANS → SIL2/PLd certified family of sensors (inclination: single axis 360°, dual axis ±30° or ±90°; acceleration: ±8g, CANopen Safety interface)
2. QG65N-CAN → Standard model inclination (inclination: single axis 360°, dual axis ±30° or ±90°, CANopen interface)
3. QG65N-CAN → Standard model acceleration (acceleration: up to 3-axis ±8g, CANopen interface)

Available in compact reinforced plastic or stainless steel housing. Also available in analogue voltage, current and NPN/PNP switching outputs. QG65 main features

- Compact, reinforced plastic or stainless steel housing
- Dimensions plastic: 60 x 50 x 27 mm, stainless steel: 70 x 60 x 33 mm
- Potted electronics, high shock resistance
- High protection rating: IP67 / IP68 / IP69K
- Operating temperature: -40 to +85 °C
- Single M2 or dual M12 connector (male and female) for easy loop-through (internal T-junction)
- Operating voltage: 10 - 30 V_{DC}
- Resolution: up to 0,01°
- Typ. accuracy: 0,05°

QG65 CANopen specifications

- Hardware interface: CAN 2.0 A and B. ISO 11898-1/2
- Communication profile: CANopen, CiA 301 V 4.2.0, CANopen Safety EN50325-4
- EDS-files and CAN manual available

QG65

CANopen parameters can be factory set in the internal EEPROM (e.g. the default node-id), but can also be changed in the field via specific CANopen commands.

- Baud rate
- Node ID
- Event time
- Sync mode on/off
- Heartbeat on/off
- Output format by TPDO-mapping
- Centering
- Filtering

Certification QG65

All models are EMC tested by a Notified Body, from basic EMC standards up to Automotive, Agriculture, Industrial Trucks etc. Visit www.dis-sensors.com/downloads and select 'declarations of conformity' for details.

UL/CSA is optional available on all models. Further we also provide some models with E4 Type approval.

Coming soon: Dynamic Inclinometer

Vibration and dynamic movement causes an inclinometer to transmit 'dirty' angle measurements. Filtering or gyro-compensating to obtain a 'clean' signal increases system response time, cost and complexity. Now there's a solution: based on MEMS technology, the new dynamic inclinometers from DIS Sensors combine both accelerometer and inertial angle measurement on three axes simultaneously in a smart, all-in-one sensor. Customisable built-in algorithms filter out signal noise, so that only clean, gyro-compensated angle data is transmitted, as a separate CANopen object per axis.

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Further distributors: Please [contact us](#) or visit <http://www.dis-sensors.com/en/our-distributors>.

Features

NMT	NMT slave
Error control	Node guarding Heartbeat producer
Boot-up	Yes
Node ID range	-
Node ID	Software switch LSS-services
CANopen bit-rates	125 kbit/s 250 kbit/s 500 kbit/s 1 000 kbit/s
Type of bit-rate adjustment	-
RPDOs	No
TPDOs	2
PDO modes	Synchronous (cyclic)
PDO linking	No
PDO mapping	Dynamic
SDO server	2
SDO client	-
Emergency producer	Yes
Emergency consumer	No
Sync producer	No
Sync counter	No

Time stamp	No
Additional functions Self-starting device	
CANopen version CiA 301 V 4.02	
Frameworks	None
Device profiles	None
Certified	No
Availability	In stock