QG series

DIS sensors

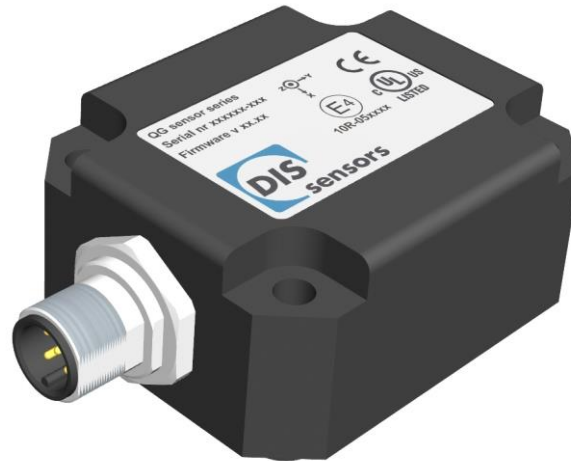QG65N-KAXYZ-8,0-CAN-C(F)M-UL

Acceleration sensor
3 axis horizontal/vertical mounting
(RMS or Signed Peak value)

Programmable device
Interface: CANopen

Parameters programmable
by CANopen object dictionary

Measuring range
± 8 g

CANopen
E4
cULus LISTED E312057
CE

General specifications 12190/12115A, v20210614	
Housing	Reinforced plastic injection molded (Faradex DS, black, EMI shielded by stainless steel fiber in PC)
Dimensions (indicative)	60x50x27 mm
Mounting	Included: 4x M5x25 mm zinc plated steel pozidrive pan head screws, self-tapping (PZ DIN7500CZ) (optional: Factory mounted 2x Ø4mm positioning pins replacing 2x M5x25 mm)
Ingress Protection (IEC 60529)	IP67, IP69K (with IP69K mating connector)
Relative humidity	0 - 95% (non condensing, housing fully potted)
Weight	approx. 110 gram
Supply voltage	8 - 30 V dc
Polarity protection	Yes
Current consumption	≤ 25 mA For CFM models (daisy-chained CANbus): max. current internal T-junction: 2.5A
Operating temperature	-40 .. +80 °C
Storage temperature	-40 .. +85 °C
Measuring range	± 8 g
Centering function	Yes, 2 horizontal axes only, (CANout 0 = 0 g), range: ±5°
Frequency response (-3dB)	0 - 1600 Hz
Accuracy (overall @20°C)	±1.5/4/8 g: overall 0,04/0,07/0,1 g typ.
Offset error	± 20 mg typ. (± 40 mg 2σ) after zeroing
Non linearity	± 1% typ. full scale
Sensitivity error	± 2% typ.
Resolution	16 mg
Temperature coefficient	± 0,3 mg/K typ.
Max mechanical shock	10.000g
CAN interface (physical layer)	According to ISO 11898-1 & ISO 11898-2 (CAN 2.0 A/B), Short circuit protected
CANopen application layer and communication profile	CANopen protocol: EN 50325-4 (CiA 301 v4.0 and v4.2.0)
Baud rate Node Id TPDO messages TPDO1 event time Sync mode Heartbeat Programming options Output format Filtering	125 kbit/s (default, range 50/125/250/500/1000 kbit/s) 01h (range: 01h - 7Fh) TPDO1: 181h (for Node ID=01h) 50 ms (default, range 10-32767 ms) On/off (default: off) On/off (default: off) Baudrate, Node Id, Event time, Sync mode, Heartbeat, Output format Integer: -8000 to +8000 (PDO1:X=byte2,1;Y=byte4,3; Z=byte6,5) High pass filter disabled. Default output mode: Signed Peak
Boot time	< 1 s
Programming options	by CANopen object dictionary (CAN parameters, filtering)

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CANoutput = 1000*g

No clipping outside measuring range

Transfer characteristic

CANout (signed PEAK mode)

CANout (RMS-mode)


Measurement orientation
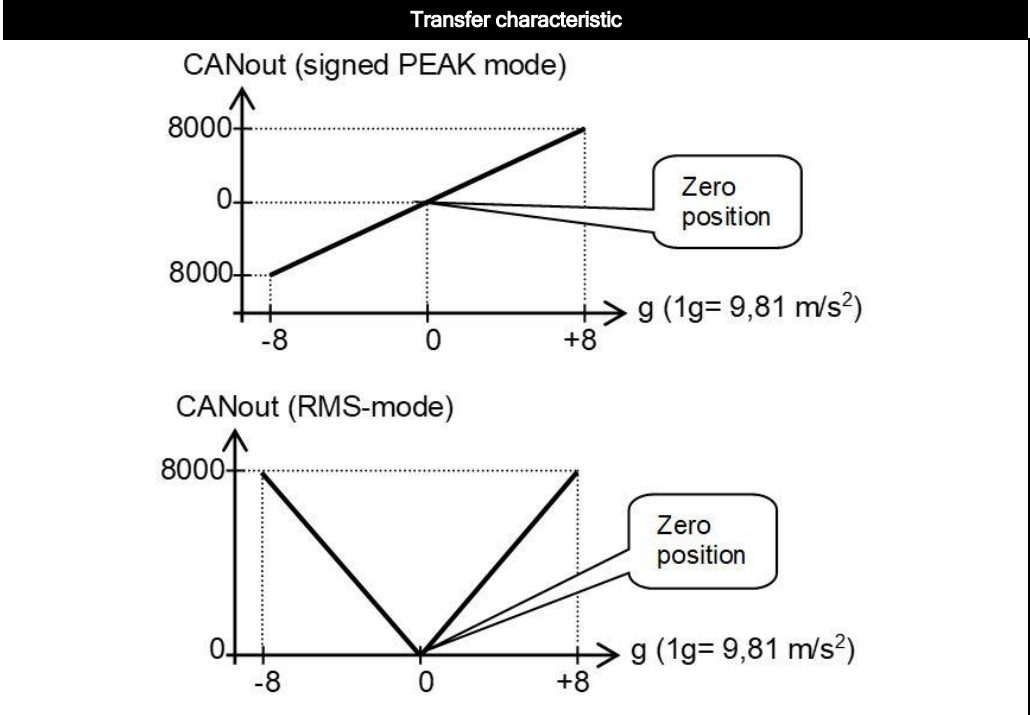
The default 0 g position is when the sensor is mounted horizontal or vertical and no acceleration is applied. The axis parallel to earth gravity will indicate 1 g, the two horizontal axes will indicate 0 g.
The two horizontal axes can be zero-ed within ±5° tilt (by the CAN object dictionary) to eliminate mounting offsets.
The axis parallel to earth gravity cannot be zero-ed.
Optional the axis parallel to earth gravity can be compensated for 1 g gravity by the CAN object dictionary

Output value: Signed Peak (default) or RMS (selectable by CAN object dictionary)
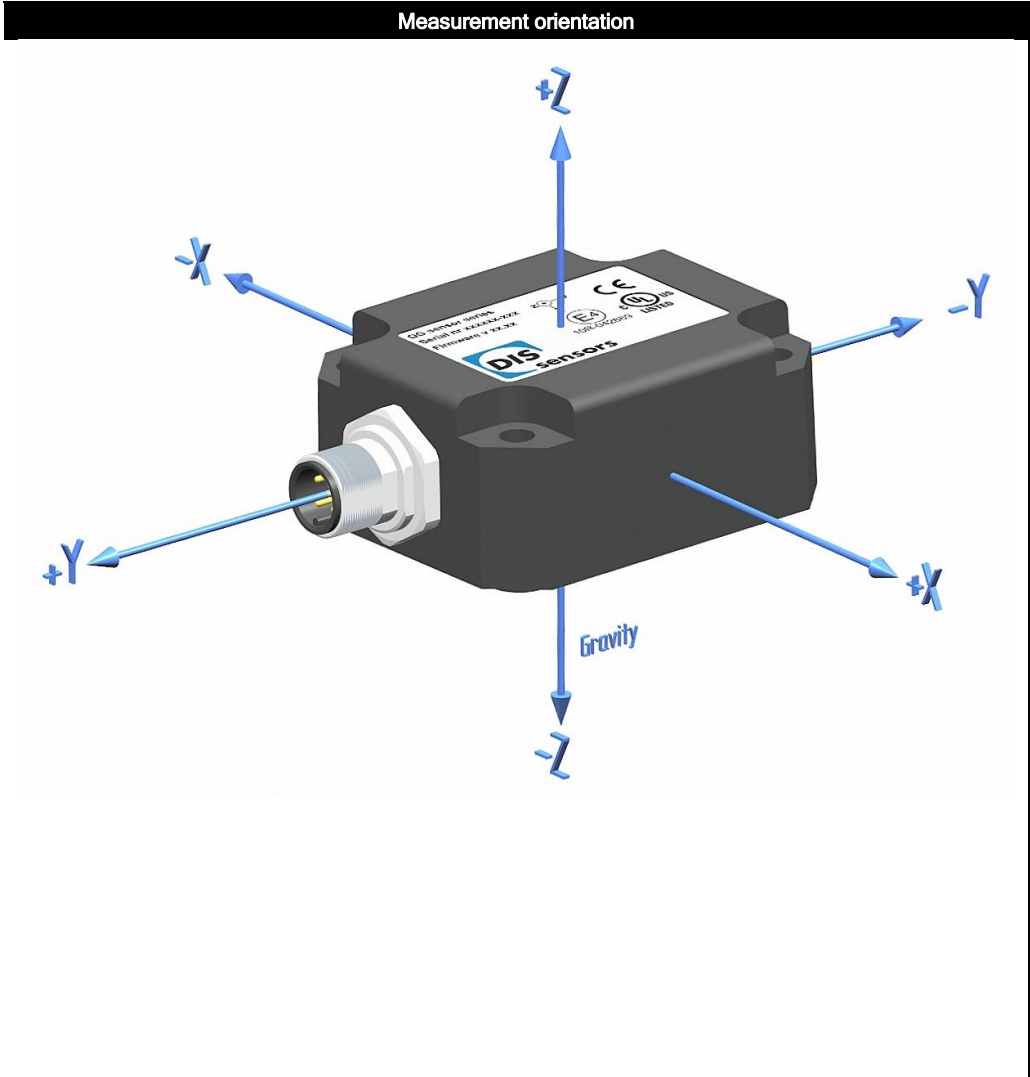
QG series

## Connectivity (cable length ±10%)

Connection

Male only or Male & Female (internal T-junction) M12 connector (5 pins, A-coding)
(CiA303 V1.8.0) (Brass Nickel coated, contacts copper alloy)
No bus termination inside. A CANbus always has to be terminated properly. For bus termination order
seperate M12 termination resistor (optional: T-connector)

Wire / pin coding

Pin 1:	Shield
Pin 2:	Vcc
Pin 3:	Gnd & CAN_GND
Pin 4:	CAN_H
Pin 5:	CAN_L

Male   **Female**
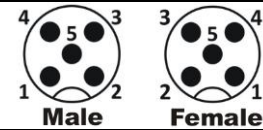
Mechanical dimensions (indicative only)
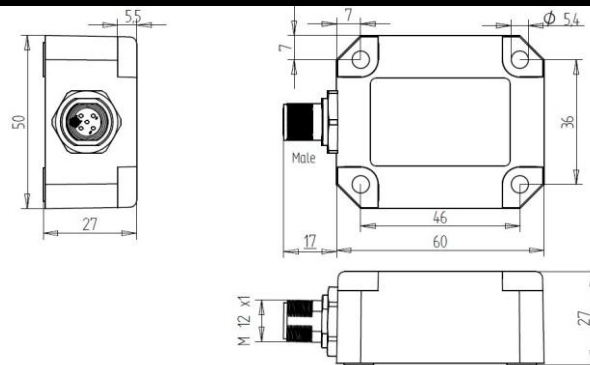
E4, UL, CAN-manual, EDS-file, Ordering codes

Before using this device, please read this datasheet, the Manual and the Declaration of Conformity
carefully (download from dis-sensors.com)

This product is approved for automotive use, approval number: E4-10R-04-2889

QG series sensors are intended to measure inclination, acceleration or tilt angle after installing in
machines, equipment and systems. Flawless function in accordance with the specifications is ensured
only when the device is used within its specifications. This device is not a safety component according to
the EU Machine Directive (ISO13849). For full redundancy two devices can be used in the application.
Modifications or non-approved use are not permitted and will result in loss of warranty and void any
claims against the manufacturer.

UL & c-UL listed product (File number E312057, UL508 standards UL60947-5-2 & CSA-C22,2 No. 14)
Product Identity / Category Code Number (CCN): Industrial Control Equipment / NRKH & NRKH7
Enclosure rating: type 1, Ambient temperature: max 80 °C (see also datasheet, lowest value applies)
Electrical ratings: Intended to be used with a Class 2 power source in accordance with UL1310,
max. input Voltage 32V dc (see also datasheet, lowest value applies), max. current 200mA
Accessory Cable Assembly: Any UL-listed (CYJV/7) mating connector with mechanical locking, wire
thickness of at least 30 AWG (0,05 mm²), recommended ≤23 AWG (≥0,25 mm²)

A CAN-manual (Ftype), an EDS-file (Ftype) and a declaration of conformity are available at www.dis-
sensors.com, see 'downloads'

This sensor is inherent sensitive to accelerations/vibrations. Application specific testing must be carried
out to check whether this sensor will fulfil your requirements.

Ordering codes:
M12 Male: QG65N-KAXYZ-8,0-CAN-CM-UL, 12190
M12 Male & Female: QG65N-KAXYZ-8,0-CAN-CFM-UL, 12115A