

SIL2 / PLd Certified sensor

QG65N-KAXYZ-8,0-CANS-C(F)M-2d

Safety acceleration sensor

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

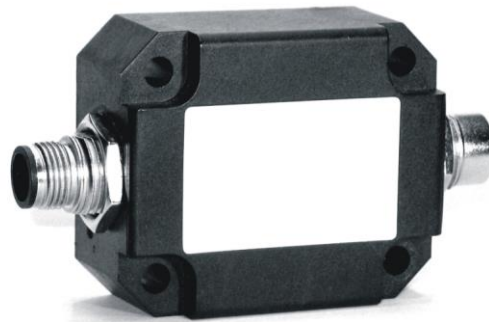
Programmable device

Interface: CANopen Safety

SIL CL 2 (acc. to IEC 62061)

PLd (acc. to EN ISO 13849)

Measuring range
 ± 8 g



CANopen
safety easy to use



General specifications /12205, v20200408

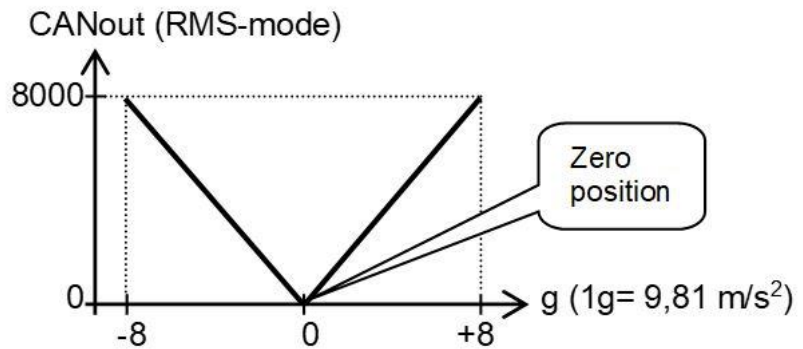
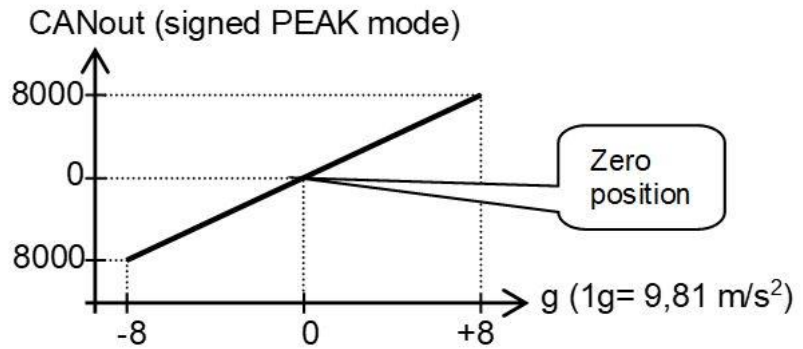
Housing	Reinforced plastic injection molded (Faradex DS, black, EMI shielded by stainless steel fiber in PC)
Dimensions (indicative)	60x50x27 mm
Mounting	Included: 4x M5x25 mm zinc plated steel pozidrive pan head screws, self-tapping (PZ DIN7500CZ) (optional: 2x Ø4mm positioning pins replacing 2x M5x25 mm)
Ingress Protection (IEC 60529)	IP67
Relative humidity	0 - 95% (non condensing, housing fully potted)
Weight	approx. 110 gram
Supply voltage	8 - 60 V dc SELV
Polarity protection	Yes
Current consumption	≤ 25 mA
Operating temperature	-40 .. +85 °C
Storage temperature	-40 .. +85 °C
Measuring range	± 8 g
Centering function	Yes, 2 horizontal axes only, (CANout 0 = 0 g), range: $\pm 5^\circ$
Frequency response (-3dB)	0 - 1600 Hz
Accuracy (overall @20°C)	$\pm 1.5/4/8$ g: overall 0,04/0,07/0,1 g typ.
Offset error	$< \pm 20$ mg after zeroing
Non linearity	$< \pm 1\%$ full scale
Sensitivity error	$< \pm 2\%$
Resolution	16 mg
Temperature coefficient	$\pm 0,3$ mg/K typ.
Max mechanical shock	10.000 g
CAN interface (physical layer)	According to ISO 11898-1 & ISO 11898-2 (also known as CAN 2.0 A/B)
CANopen application layer and communication profile	CANopen Safety protocol: EN 50325-5, CANopen protocol: EN 50325-4 (CiA 301 v4.0 and 4.2.0)
Baud rate	125 kbit/s (default, range 10/20/50/100/125/250/500/800/1000 kbit/s)
Node ID	01h (default, range: 01h - 7Fh)
TPDO1 event time	50 ms (default, range 10-5000 ms)
Sync mode (TPDO's)	off (default, range on/off)
Heartbeat	off (default, range on/off)
Output format	Integer: -8000 to +8000 (SRDO:X=byte 2,1; Y=byte 4,3; Z=byte 6,5) (byte 7,8: integer 0)
SRDO1 COB-ID1	101h (default, range: FFh + 2x node ID -> 101h-17Fh)
SRDO1 COB-ID2	102h (default, range: 100h + 2x node ID -> 102h-180h)
Safeguard cycle time (SCT)	80ms(default, worst case 100ms)
Safety related validation time (SRVT)	20ms
Filtering	Output filter disabled. Default output mode: Signed Peak
Reaction on error	Emergency message 080h+Node-ID followed by NMT stop state (no CAN communication)
Boot time	< 1 s
Programming options	by CANopen object dictionary (CAN parameters, filtering)

QG65N-KXYZ-8,0-CANS-C(F)M-2d

CANoutput = 1000*g

No clipping outside measuring range

Transfer characteristic



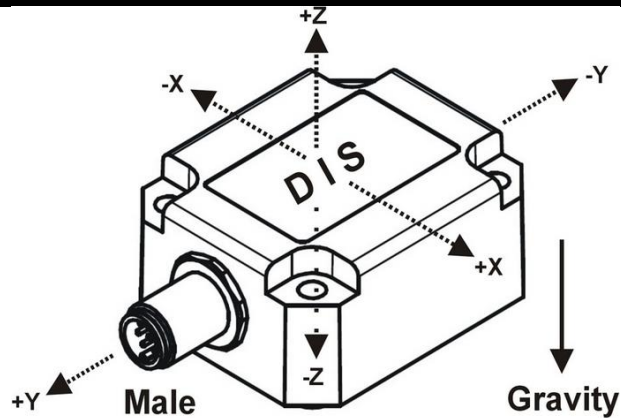
The default 0 g position is when the sensor is mounted horizontal or vertical and no acceleration is applied. The axis parallel to earth gravity will indicate 1 g, the two horizontal axes will indicate 0 g. The two horizontal axes can be zero-ed within ±5° tilt (by the CAN object dictionary) to eliminate 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)

Measurement orientation

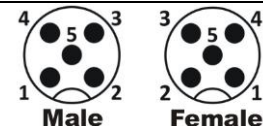


Connectivity (cable length ±10%)

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 separate M12 termination resistor (optional: T-connector)

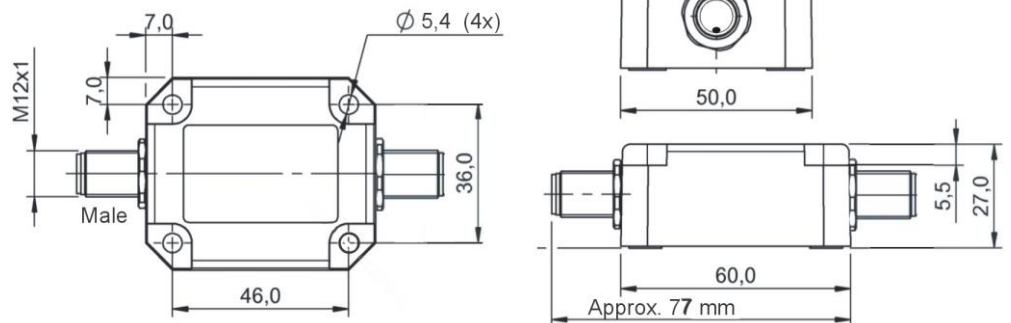
- Pin 1: Shield
- Pin 2: Vcc
- Pin 3: Gnd & CAN_GND
- Pin 4: CAN_H
- Pin 5: CAN_L



Connection

Wire / pin coding

Mechanical dimensions (indicative only)



CAN-manual, EDS-file, Safety information, Ordering codes

A CANopen-safety manual (Dtype), EDS-files (CiA306 V1.3.0) and a Declaration of Conformity are available on www.dis-sensors.com/downloads

Safety information:

- this datasheet + relevant manual must be read and understood before using this safety device
- certified level: SIL CL 2 (acc. to IEC 62061), PLd (acc. to EN ISO 13849)
- EC type examination by DEKRA EXAM GmbH Reg. no.: ZP/C015/16
- hardware architecture: HFT=0 (according IEC 62061, CAT.2 (according to EN ISO 13849)
- Standard (-40°C to +45°C): MTTFd: 447 year, DC: 93%, CCF: 70 pt, SFF: 98%, PFHd: 14E-09
- High Temp. (up to +85 °C): MTTFd: 73 year, DC: 93%, CCF: 70 pt, SFF: 98%, PFHd: 91E-09
- only a SELV power supply should be used
- Redundancy Compare Time (error if this time is expired): customer adjustable (default 2000ms)
- Redundancy Compare Acceleration (error if acceleration-difference > this value): customer adjustable (default 580mg)
- Redundancy error: Redundancy Compare Angle & Redundancy Compare Time exceeded
- Error: any detected error or a redundancy error
- Safety Related Fault Respons Time (SRFRT): 100ms + Redundancy Compare Time (default 2000ms)

This sensor is inherent sensitive for 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-CANS-CM-2d

M12 Male & Female: QG65N-KAXYZ-8,0-CANS-CFM-2d, 12205