

SIL2 / PLd Certified sensor

QG76N-SAXYZ-8-CANS-C(F)M-2d

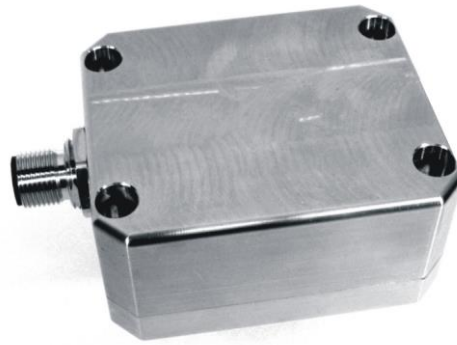
Safety acceleration sensor

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



Housing
Dimensions (indicative)
Mounting
Ingress Protection (IEC 60529)
Relative humidity
Weight
Supply voltage
Polarity protection
Current consumption
Operating temperature
Storage temperature
Measuring range
Centering function
Frequency response (-3dB)
Accuracy (typ. and/or 2σ)
Offset error
Non linearity
Sensitivity error
Resolution
Temperature coefficient
Max mechanical shock
CAN interface (hardware)
CANopen application layer and communication profile
Baud rate
Node Id
TPDO1 event time
Sync mode (TPDO's), Heartbeat
Output format
SRDO1 COB-ID1
SRDO1 COB-ID2
Safeguard cycle time (SCT)
Safety related validation time (SRVT)
Filtering
Reaction on error
Boot time
Programming options

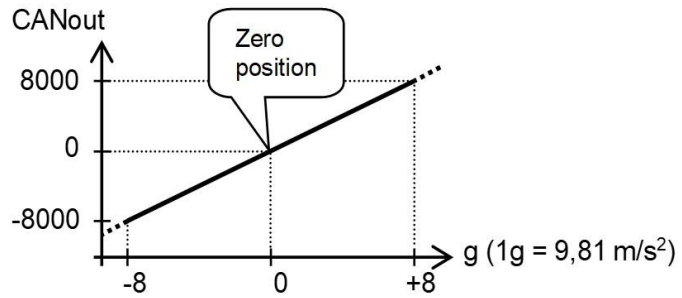
General specifications v20180125	
Stainless steel (AISI 316)	
70x60x33 mm	
Included: 4x M4x30 mm stainless steel (A4) Hexagon socket head screws	
IP67 (IP68 with optional cable gland)	
0 - 100%	
approx. 700 gram	
8 - 60 V dc SELV	
Yes	
≤ 75 mA	
-40 .. +85 °C	
-40 .. +85 °C	
± 8 g	
Yes, 2 horizontal axes only, (CANout 0 = 0 g), range: $\pm 5^\circ$	
1600 Hz	
Range $\pm 1/2/4/8$ g: overall 0,02/0,04/0,08/0,16 g typ.	
$< \pm 0,5$ mg typ. ($< \pm 1,5$ mg max.) after zeroing	
$< \pm 0,4\%$ full scale	
$< \pm 2\%$	
0,002 g	
$\pm 0,3$ mg/K typ.	
10.000 g	
According to ISO 11898-1 & ISO 11898-2 (also known as CAN 2.0 A/B)	
CANopen Safety protocol: EN 50325-5, CANopen protocol: EN 50325-4 (CiA 301 v4.0 & 4.2.0)	
125 kbit/s (default, range 10/20/50/100/125/250/500/800/1000 kbit/s)	
01h (default, range: 01h - 3Fh) (01h - 7Fh with adapted COB-ID's)	
50 ms (default, range 10-500 ms)	
off (default, range on/off)	
+AC945 Integer: -8000 to +8000 (SRDO:X=byte 2,1; Y=byte 4,3; Z=byte 6,5) (byte 7,8: integer 0)	
FFh + 2x node ID (for Node ID=01h: SRDO1 COB-ID1=101h) (range 101h - 180h)	
100h + 2x node ID (for Node ID=01h: SRDO1 COB-ID2=102h) (range 101h - 180h)	
80ms in CAN object dictionary, worst case 100ms	
20ms	
Output filter disabled	
Emergency message 080h+Node-ID followed by NMT stop state (no CAN communication)	
< 1 s	
by CANopen object dictionary (CAN parameters, filtering)	

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CANoutput = 1000*g

No clipping outside measuring range

Transfer characteristic



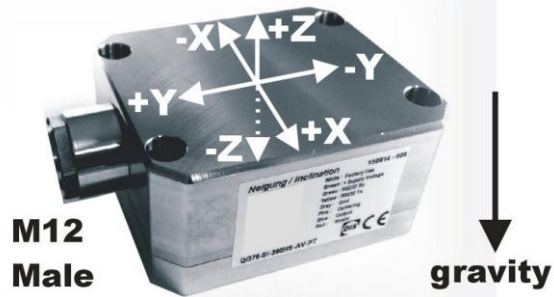
The default 0 g position is when the sensor is mounted horizontal or vertical and no acceleration is applied. The axis parallel to earth gravity will indicate 1 g, the two horizontal axes will indicate 0 g. The two horizontal axes can be zeroed within $\pm 5^\circ$ tilt (by the CAN object dictionary) 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: RMS (default) or Signed Peak (selectable by CAN object dict.)

Measurement orientation



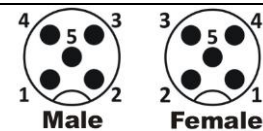
Connection

Connectivity (length $\pm 10\%$)

Male only or Male & Female (internal T-junction) M12 connector (5 pins, A-coding) (CiA303 V1.8.0) (stainless steel 1.4404 (316L), contacts copper alloy)

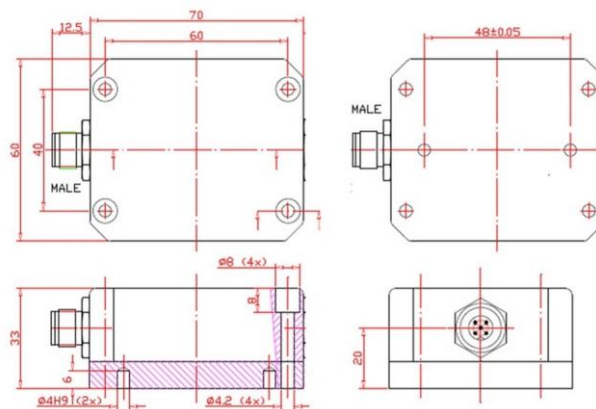
No bus termination inside. A CANbus always has to be terminated properly. For bus termination order separate M12 termination resistor (optional: T-connector)

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



Wire / pin coding

Mechanical dimensions (indicative only)



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

A CANopen-safety manual, 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: QG76N-SAXYZ-8,0-CANS-CM-2d

M12 Male & Female: QG76N-SAXYZ-8,0-CANS-CFM-2d