QG series

QG65N-KIXv-360-CANS-CM

Inclination sensor
for SIL2 / PLd applications
1 axis vertical mounting

Output
CANopen Safety

Supply voltage
8 - 60 Vdc

Measuring range
360°

QG65N-KIXv-360-CANS-CM	General specifications v20150916
Housing	Plastic injection molded housing (Faradex DS, black, EMI shielded by stainless steel fiber in PC)
Dimensions (indicative)	60x50x27 mm
Mounting	4x M5x25 mm zinc plated pozidrive screws included (optional: 2x Ø4mm positioning pins)
Ingress Protection (IEC 60529)	IP67
Relative humidity	0 - 100%
Weight	ca 110 gr
Supply voltage	8 - 60 Vdc
Polarity protection	Yes
Current consumption	≤ 75 mA
Operating temperature	-40 .. +85°C
Storage temperature	-40 .. +85°C
Measuring range	360°
Centering function	Yes (CANout 0 = 0°), range: 360°
Frequency response (-3dB)	10 Hz
Accuracy (2σ)	overall 0,15° typ.
Offset error	< ± 0,03° typ. (< ± 0,08° max.) after centering
Non linearity	< ± 0,15° typ. (< ± 0,24° max.)
Sensitivity error	not applicable
Resolution	0,01°
Temperature coefficient	± 0,009°/K typ.
Max mechanical shock	10.000g
CAN interface (hardware)	CAN 2.0 A and B according to ISO 11898-1 & ISO 11898-2
CAN communication profile	CANopen Safety according to EN50325-5 & CANopen according to EN50325-4 (CiA301 4.2.0)
Baud rate	125 kbit/s (default, range 125/250/500/1000 kbit/s)
Node Id	01h (default, range: 01h - 3Fh)
TPDO1 event time	50 ms (default, range 10-500 ms)
Sync mode (TPDO's), Heartbeat	off (default, range on/off)
Output format	Integer: -17999 to 18000 (SRDO:byte2,1) (byte 3,4,5,6,7,8: integer 0)
SRDO1	FFh + 2x node ID (for Node ID=01h: SRDO1=101h)
SRDO2	100h + 2x node ID (for Node ID=01h: SRDO2=102h)
Safeguard cycle time (SCT)	40ms
Safety related validation time (SRVT)	20ms
Filtering	Input filter enabled, output filter disabled
Reaction on error	Emergency message 080h+Node-ID folowed by NMT stop state (no CAN communication)
Boot time	< 1s

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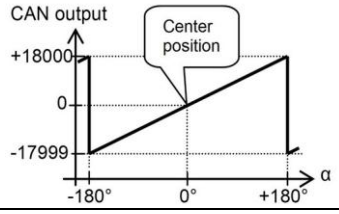
CANoutput = 100*α

Transfer characteristic



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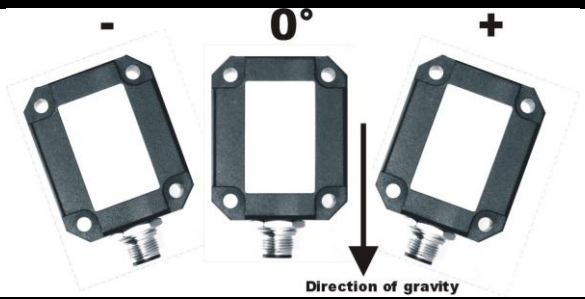
Rotation in vertical plane.

Lateral tilt sensitivity error:
< ± 0,03°/° lateral tilt (typ.)
Max. lateral tilt: 45°

Measurement orientation



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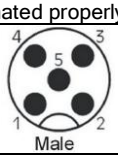
Connection

Wire / pin coding

Connectivity (length ±10%)

M12 connector: 1x male (5 pins, A-coding) (CiA303 V1.8.0)
No bus termination inside. A CANbus always has to be terminated properly.

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



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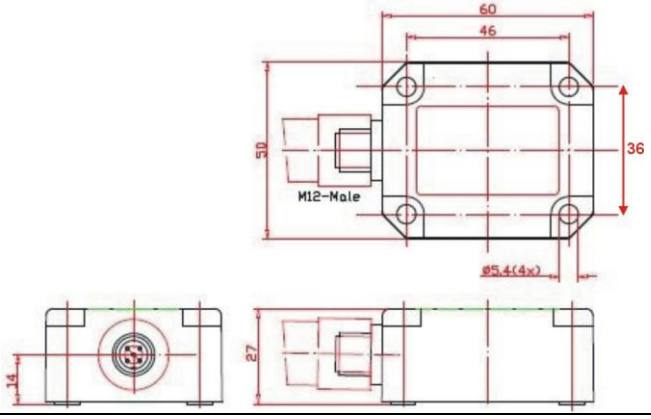
Mechanical dimensions (indicative only)



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CAN-manual, EDS-file, Safety information

A preliminary CANopen-safety manual is available at www.dis-sensors.com, see 'downloads'
A preliminary EDS-file (CiA306 V1.3.0) is available at www.dis-sensors.com, see 'downloads'
A Declaration of Conformity is not yet available

Safety information:
- Read this datasheet and the relevant manual before using this device as safety device
- This device is partial redundant and can be used in SIL2/PLd applications ONLY if the supplied safety information on this datasheet fulfills customer demand for the desired safety level.
- architecture: HFT=0 (according IEC 62061, CAT.2 (according to EN ISO 13849)
- MTTFd: 598 year, DC: 91%, CCF: 70 pt, SFF: tbd%, PFHd: tbd
- EC type examination Pending
- only a SELV power supply should be used
- error: any detected error or a difference of > 3° > 2 sec. between the two redundant sensor paths (parameters adjustable via CANbus to fit the application)

As this device is accelerometer-based the sensor is inherent sensitive for accelerations/vibrations.
Application specific testing must be carried out to check whether this sensor will fulfill your requirements.