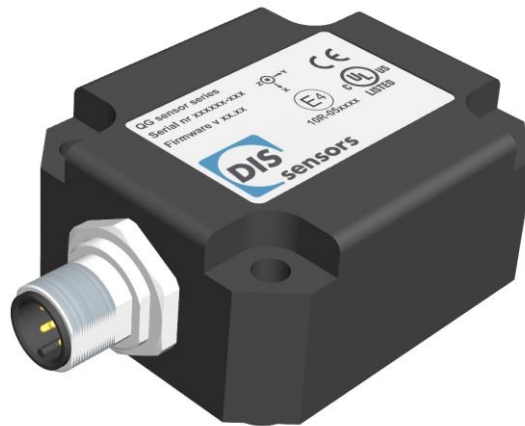


# QG series

**QG65N CAN series (discontinued, successor: QG65N2 Standard accuracy series)**

QG65N-KDXYh-090-CAN-C(F)M-UL
<p><b>Inclination sensor (discontinued)</b> 2 axis horizontal mounting</p> <p>Programmable device Interface: CANopen</p> <p>Parameters programmable by CANopen object dictionary</p> <p>Measuring range <math>\pm 90^\circ</math></p>



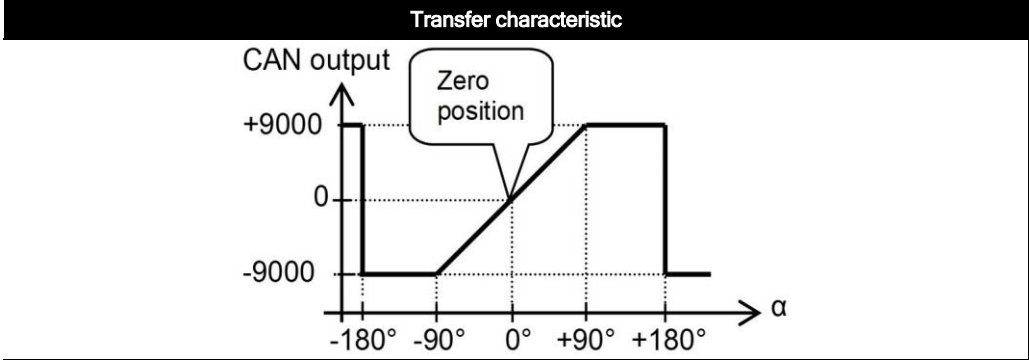
General specifications 11778A/11544A, v20221011	
Housing	Reinforced plastic injection molded (Faradex DS, black, EMI shielded by stainless steel fiber in PC)
Dimensions (indicative)	60x50x27 mm
Mounting	Included: 4x M5x25 mm zinc plated steel pozidrive pan head screws, self-tapping (PZ DIN7500CZ) Mounting on flat surface only. Screw crosswise with maximum Torque 2.5 Nm
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	$\leq 25$ 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	$\pm 90^\circ$
Centering function	Yes (CANout 0 = 0°), range: $\pm 5^\circ$
Frequency response (-3dB)	0 - 20 Hz
Accuracy (overall @20°C)	0,15° typ.
Offset error	$\pm 0,05^\circ$ typ. ( $\pm 0,1^\circ$ 2 $\sigma$ ) after centering
Non linearity	$\pm 0,1^\circ$ typ., $\pm 0,15^\circ$ 2 $\sigma$ , $\pm 0,2^\circ$ max.
Sensitivity error	not applicable. Repeatability 0,1°
Resolution	0,05°
Temperature coefficient	$\pm 0,01^\circ/\text{K}$ 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	125 kbit/s (default, range 50/125/250/500/1000 kbit/s)
Node Id	01h (range: 01h - 7Fh)
TPDO messages	TPDO1: 181h (for Node ID=01h)
TPDO1 event time	50 ms (default, range 10-32767 ms)
Sync mode	On/off (default: off)
Heartbeat	On/off (default: off)
Programming options	Baudrate, Node Id, Event time, Sync mode, Heartbeat, Output format
Output format	Integer: -9000 to +9000 (PDO1:X=byte2,1;Y=byte4,3)
Filtering	Output filter disabled
Boot time	< 1 s
Programming options	by CANopen object dictionary (CAN parameters, filtering)

# QG series

## QG65N-KDXYh-090-CAN-C(F)M-UL

CANoutput =  $100 \cdot \alpha$

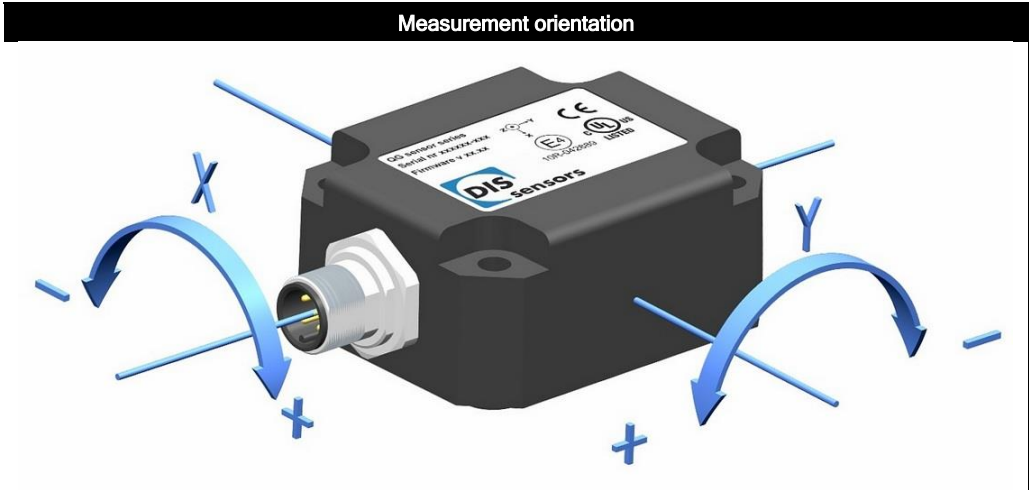
Clipping outside measuring range



Default 0°: horizontal (label upwards), no acceleration applied. To eliminate mounting offsets the sensor can be centered within  $\pm 5^\circ$  tilt (by the CAN object dictionary)

Cross tilt sensitivity error:  
 $< (0,12 \cdot \text{cross tilt angle})^2 \%$  typ.

→ one axis  $< 10^\circ$  tilt for max. accuracy  
 → only one axis may exceed  $45^\circ$  tilt



Connection

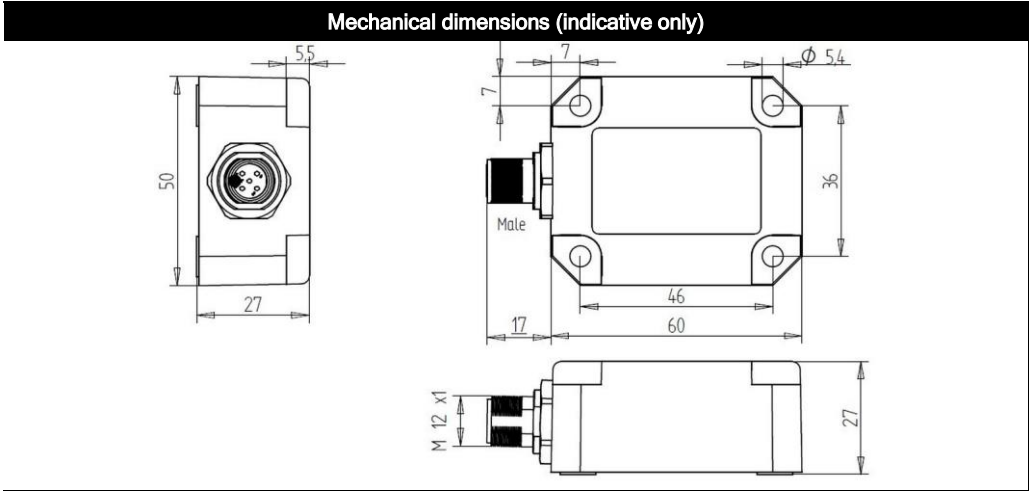
**Connectivity (cable length  $\pm 10\%$ )**

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)

Wire / pin coding

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

Mechanical dimensions (indicative only)



## E4ready, 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](http://dis-sensors.com))

This product is E4ready and meets Automotive EMC requirements

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 mm<sup>2</sup>), recommended ≤23 AWG (≥0,25 mm<sup>2</sup>)

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

Optional: for accurate mounting two factory mounted positioning pins can be mounted (Ø4mm) replacing 2x M5x25 mm.

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 fulfil your requirements.

Ordering codes:

M12 Male: QG65N-KDXYh-090-CAN-CM-UL, 11778A

M12 Male & Female: QG65N-KDXYh-090-CAN-CFM-UL, 11544A