

# QG series

## QG40N-series

QG40N-KDXYh-010-AV-CM-UL

### Inclination sensor

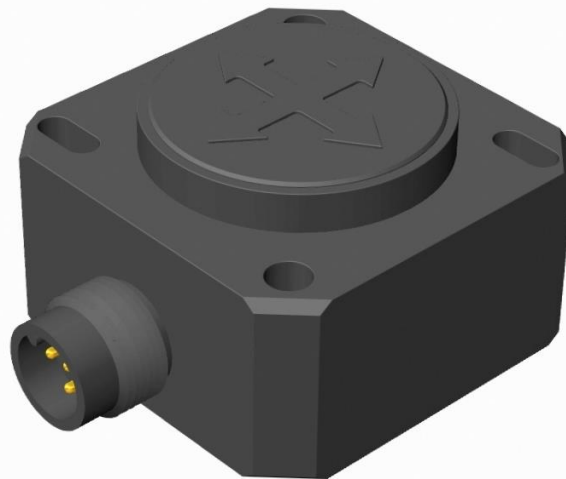
2 axis horizontal mounting

Programmable device

Output: 0,5 - 4,5 V

Measuring range programmable  
between  $\pm 1^\circ$  and  $\pm 10^\circ$

Measuring range  
Factory defaults:  $\pm 10^\circ$



### General specifications 11926, v20210611

Plastic injection molded housing (Arnite T06 202 PBT black)

40x40x25 mm

Included: 2x M3x25 mm zinc plated steel pozidrive pan head screws, self-tapping (PZ DIN 7500CZ)  
Mounting on flat surface only. Screw with maximum Torque 2 Nm

IP67, IP69K (with IP69K mating connector)

0 - 95% (non condensing, housing fully potted)

approx. 45 gram

6 - 30 V dc

Yes

$\leq 15$  mA

-40 .. +80 °C

-40 .. +85 °C

Factory defaults:  $\pm 10^\circ$

Yes (2,5 V = 0°), range:  $\pm 5^\circ$

0 - 10 Hz

0,5° typ.

$\pm 0,2^\circ$  typ. after centering

$\pm 0,4^\circ$  typ.

not applicable. Repeatability 0,2°

0,1°

$\pm 0,04^\circ/\text{K}$  typ.

10.000g

0,5 - 4,5 V

Rload  $\geq 20\text{k}\Omega$ , Cload  $\leq 20$  nF

Yes (max 10 s)

20 ms

by optional QG40N-configurator (measuring range, filtering)

### 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 (overall @20°C)

Offset error

Non linearity

Sensitivity error

Resolution

Temperature coefficient

Max mechanical shock

Output

Output load

Short circuit protection

Output refresh rate

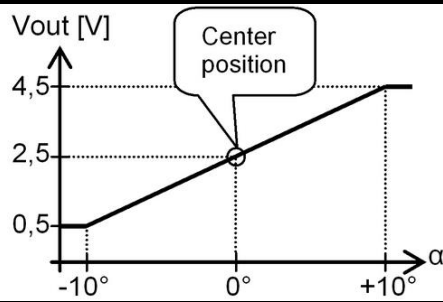
Programming options

## QG40N-KDXYh-010-AV-CM-UL

### Transfer characteristic

$V_{out} = 2,5 + 2 \cdot (\alpha/10)$  [V]  
clipping outside measuring range

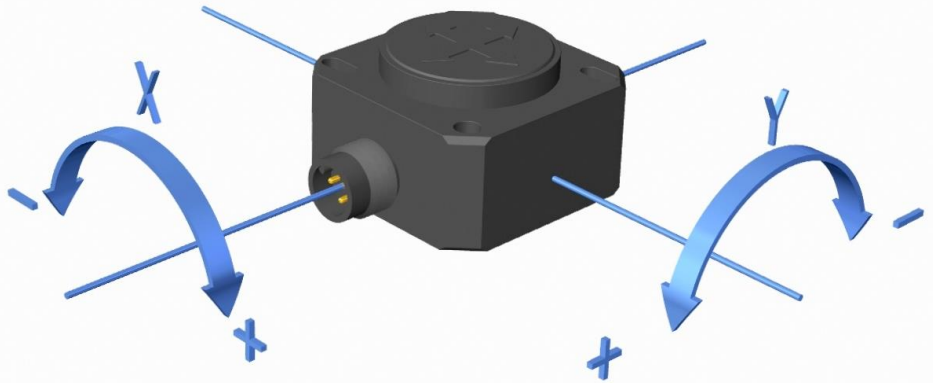
Centering: eliminate mech. offsets  
Connect center input to ground  
( $>0,5\text{sec}$ ) within 1 min. after power up. Normally the center input should be left unconnected.



Default  $0^\circ$ : horizontal (round nose upwards), no acceleration applied.

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

### Measurement orientation



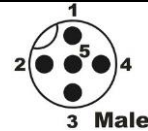
### Connectivity (cable length $\pm 10\%$ )

#### Connection

M12 5p male connector (Glass fibre reinforced grade, contacts CuZn pre-nickeled galv. Au)

#### Wire / pin coding

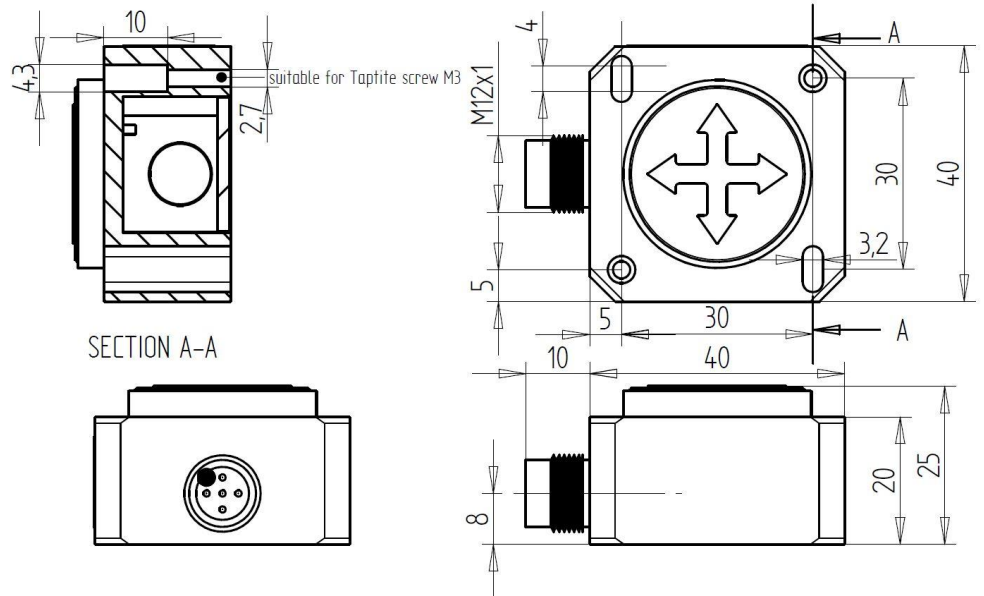
- Pin 1: + Supply Voltage
- Pin 2: output Y
- Pin 3: Gnd
- Pin 4: output X
- Pin 5: centering



If connected with M12 F (accessoire sold by DIS):

- Brown: + Supply Voltage
- White: output Y
- Blue: Gnd
- Black: output X
- Green/yellow: centering

### Mechanical dimensions (indicative only)



### Intended use, UL, Remarks

QG series sensors are intended to measure inclination/acceleration/tilt. Flawless function (acc. spec.) is ensured only when used within specifications. This device is not a safety component acc. to EU Machine Directive (ISO13849). For full redundancy two devices can be used. Modifications or non-approved use 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>)

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.