

# QG series

## QG40N-series

QG40N-KIXv-360-AI-CM-UL

### Inclination sensor

1 axis vertical mounting

Programmable device

Output: 4 - 20 mA

Measuring range programmable  
between 1° and 360°

Measuring range  
Factory default: ±180°



### General specifications 11747, v20230828

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 care

IP67, IP69K (with IP69K mating connector)

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

approx. 45 gram

10 - 30 V dc

Yes

≤ 15 mA ( excluding output signal )

-40 .. +80 °C

-40 .. +85 °C

Factory default: ±180°

Yes (12 mA = 0°), range 360°

0 - 10 Hz

0,5° typ.

± 0,2° typ. after centering

± 0,4° typ.

not applicable. Repeatability 0,2°

0,1°

± 0,08°/K typ.

10.000g

4 - 20 mA

Rload ≤ (50\*Vs -300) (Ω) (Eg: Vs = 24 V: Rload ≤ 900 Ω)

Yes (T<55°C), Max 10 s (T>55°C)

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

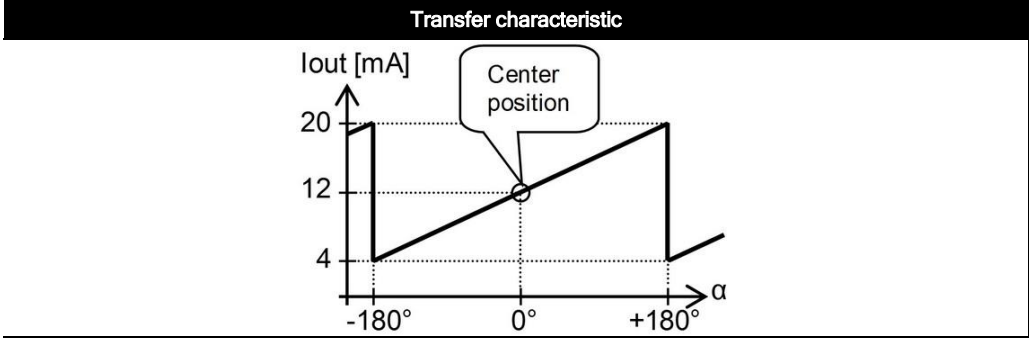
Programming options

# QG series

## QG40N-KIXv-360-AI-CM-UL

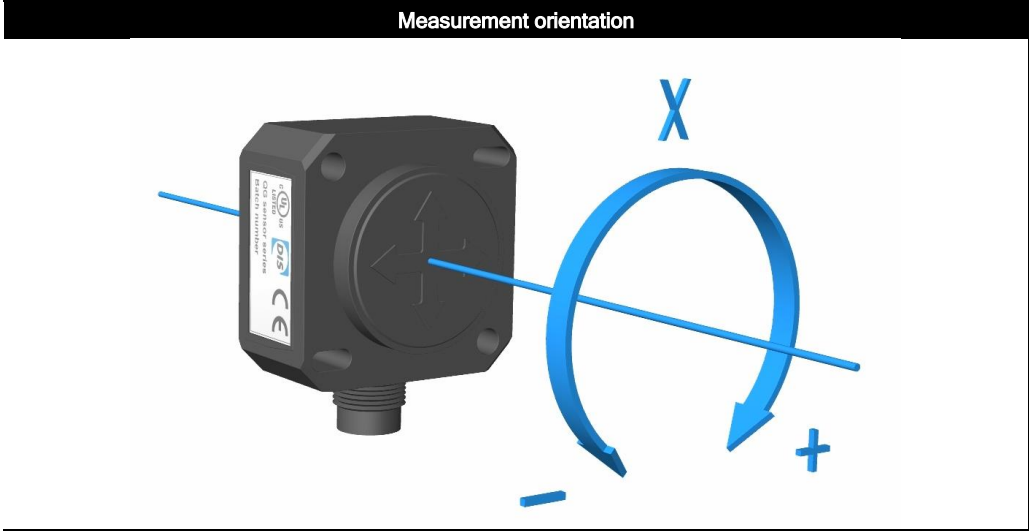
$I_{out} = 12 + 8 \cdot (\alpha / 180)$  [mA]

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



Rotation in vertical plane.

Lateral tilt sensitivity error:  
 $< \pm 0,03^\circ / ^\circ$  lateral tilt (typ.)  
 Max. lateral tilt:  $45^\circ$



**Connection**

Wire / pin coding

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

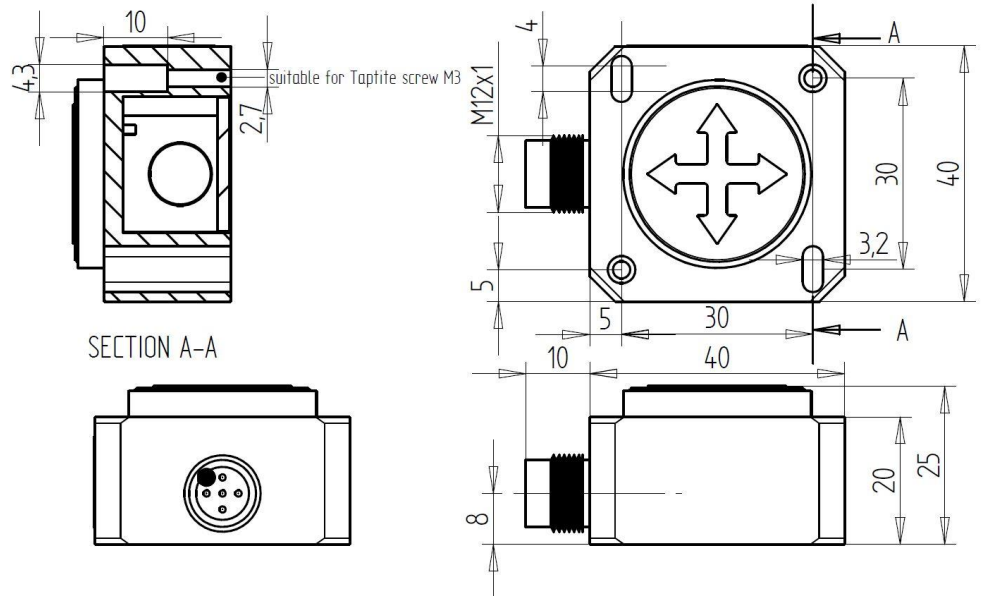
M12 5p male connector (Glass fibre reinforced grade, contacts CuZn pre-nickeled galv. Au)

Pin 1:	+ Supply Voltage	
Pin 2:	for factory use only	
Pin 3:	Gnd	
Pin 4:	output X	
Pin 5:	centering	

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

Brown:	+ Supply Voltage
White:	for factory use only
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.