

# QG series

## QG40N-series

QG40N-KAXYh-1,5-AI-CM-UL

### Acceleration sensor

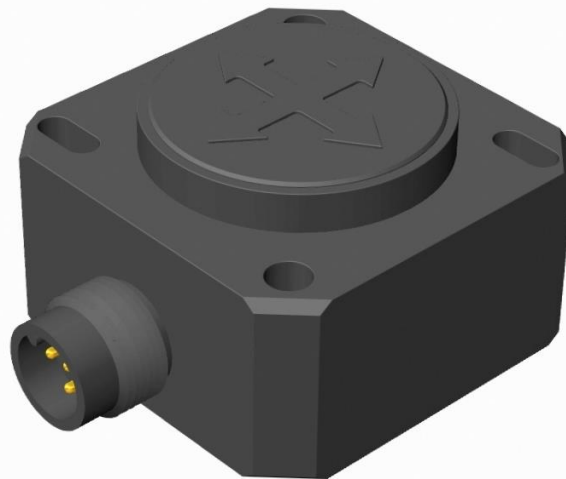
2 axis horizontal mounting

Programmable device

Output: 4 - 20 mA

Measuring range programmable  
between 0,1 g and 16 g

Measuring range  
Factory defaults:  $\pm 1,5$  g



### General specifications 12315, 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

10 - 30 V dc

Yes

$\leq 15$  mA ( excluding output signal )

-40 .. +80 °C

-40 .. +85 °C

Factory defaults:  $\pm 1,5$  g

Yes (12 mA = 0 G), range:  $\pm 5^\circ$

0 - 50 Hz

overall 0,04 g typ.

$\pm 1\%$  F.S. typ. ( $\pm 2\%$  F.S.  $2\sigma$ ) after zeroing

$\pm 1\%$  F.S. typ.

$\pm 1\%$  typ.

2 mg

$\pm 1$  mg/K typ.

10.000g

4 - 20 mA

Rload  $\leq (50 \cdot V_s - 300)$  ( $\Omega$ ) (Eg:  $V_s = 24$  V: Rload  $\leq 900$   $\Omega$ )

Yes ( $T < 55^\circ\text{C}$ ), Max 10 s ( $T > 55^\circ\text{C}$ )

3 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

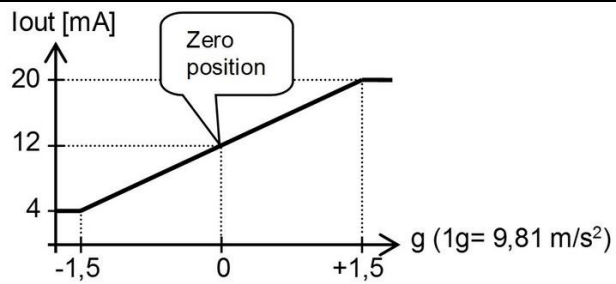
Short circuit protection

Output refresh rate

Programming options

## QG40N-KAXYh-1,5-AI-CM-UL

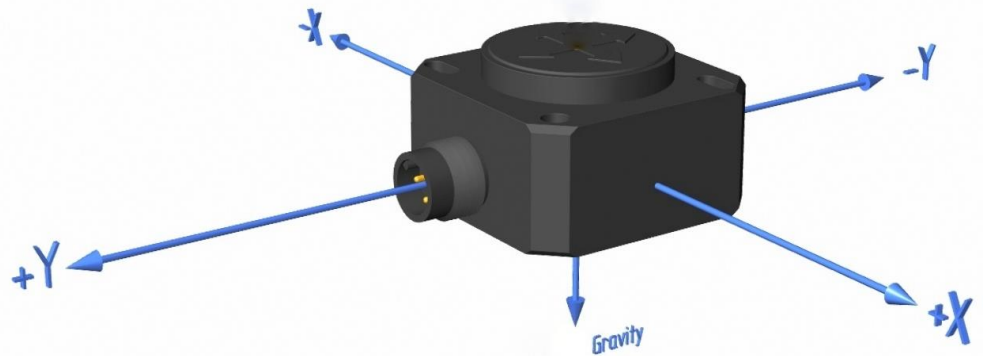
### Transfer characteristic



$I_{out} = 12 + 5,33 \cdot g$  [mA]  
clipping outside measuring range

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

### Measurement orientation



0 g when no acceleration applied

Horizontal mounting:  
1-axis or 2-axis usage

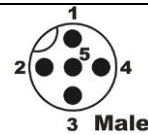
Connect output-X and/or output-Y according the plot at the right.

Upside down mounting possible (sensor-nose down)

### 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: output Y  
Pin 3: Gnd  
Pin 4: output X  
Pin 5: zeroing



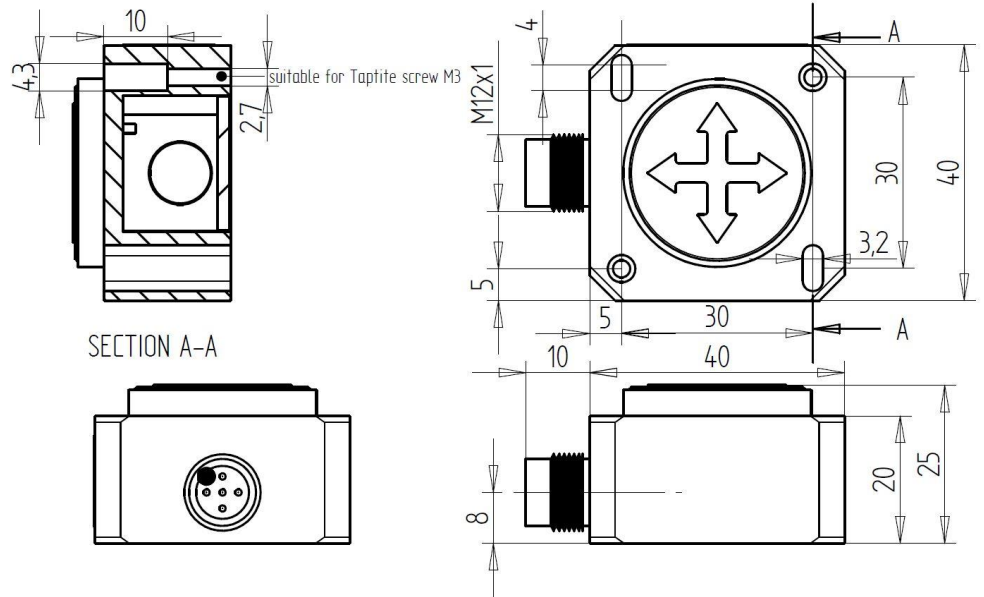
If connected with M12 F (accessory sold by DIS):

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

### Connection

Wire / pin coding

## 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.