

# QG series

## QG40N-series

QG40N-KAXYh-4,0-AI-CM-UL

### Acceleration sensor

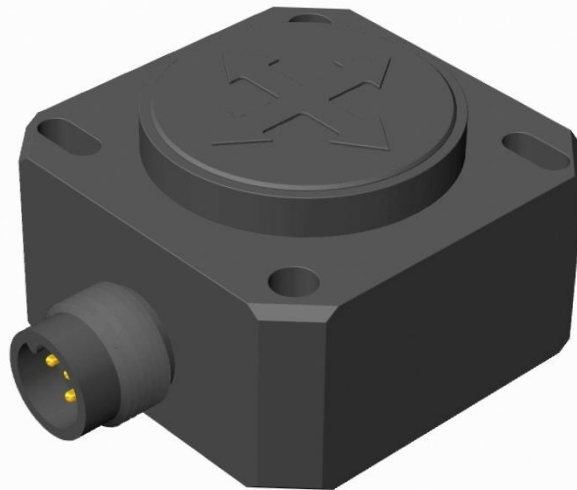
2 axis horizontal mounting

Programmable device

Output: 4 - 20 mA

Measuring range programmable  
between 0,1 g and 16 g

Measuring range  
Factory defaults:  $\pm 4$  g



### General specifications 12317, v20210611

Housing	Plastic injection molded housing (Arnite T06 202 PBT black)
Dimensions (indicative)	40x40x25 mm
Mounting	Included: 2x M3x25 mm zinc plated steel pozidrive pan head screws, self-tapping (PZ DIN 7500CZ)
Ingress Protection (IEC 60529)	IP67, IP69K (with IP69K mating connector)
Relative humidity	0 - 95% (non condensing, housing fully potted)
Weight	approx. 45 gram
Supply voltage	10 - 30 V dc
Polarity protection	Yes
Current consumption	$\leq 15$ mA ( excluding output signal )
Operating temperature	-40 .. +80 °C
Storage temperature	-40 .. +85 °C
Measuring range	Factory defaults: $\pm 4$ g
Centering function	Yes (12 mA = 0 G), range: $\pm 5^\circ$
Frequency response (-3dB)	0 - 50 Hz
Accuracy (overall @20°C)	overall 0,15 g typ.
Offset error	$\pm 1\%$ F.S. typ. ( $\pm 2\%$ F.S. $2\sigma$ ) after zeroing
Non linearity	$\pm 1\%$ F.S. typ.
Sensitivity error	$\pm 2\%$ typ.
Resolution	4 mg
Temperature coefficient	$\pm 1$ mg/K typ.
Max mechanical shock	10.000g
Output	4 - 20 mA
Output load	Rload $\leq (50 \cdot V_s - 300)$ ( $\Omega$ ) (Eg: $V_s = 24$ V: Rload $\leq 900 \Omega$ )
Short circuit protection	Yes (T<55°C), Max 10 s (T>55°C)
Output refresh rate	3 ms
Programming options	by optional QG40N-configurator (measuring range, filtering)

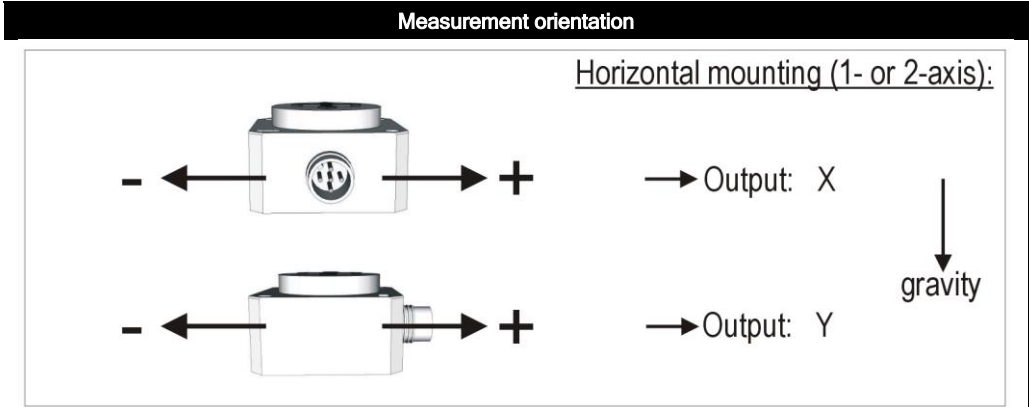
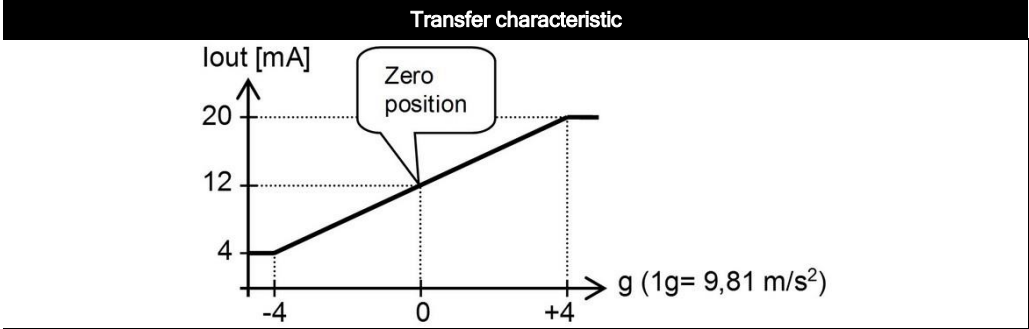
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$I_{out} = 12 + 2 \cdot g$  [mA]  
 clipping outside measuring range  
  
 Zeroing: eliminate mech. offsets  
 Connect zeroing input to ground (>0,5sec) within 1 min. after power up. Normally the zeroing input should be left unconnected.

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)

Connection  
  
 Wire / pin coding



### Connectivity (cable length ±10%)

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

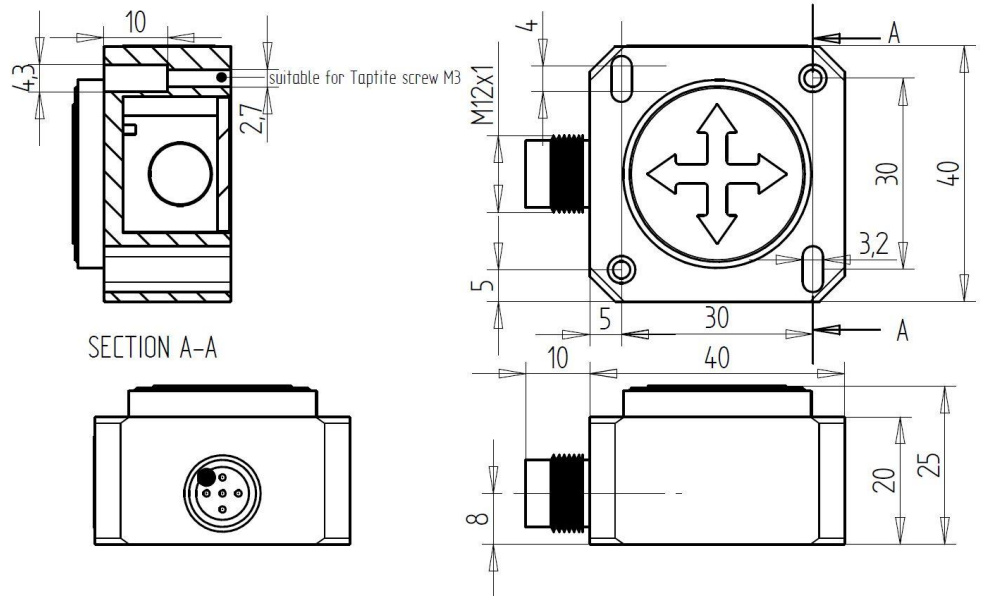
Pin 1:	+ Supply Voltage
Pin 2:	output Y
Pin 3:	Gnd
Pin 4:	output X
Pin 5:	zeroing

3 Male

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

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

## 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.