# QG series

QG40N-series

QG40N-KAXYh-16,0-AV-CM-UL

## Acceleration sensor

2 axis horizontal mounting

Programmable device
Output: 0,5 - 4,5 V

Measuring range programmable between 0,1 g and 16 g

Measuring range
Factory defaults: ± 16 g



| General specifications 12320, v20230725 | |
|---|---|
| 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) Mounting on flat surface only. Screw with care |
| 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 | 6 - 30 V dc |
| Polarity protection | Yes |
| Current consumption | ≤ 15 mA |
| Operating temperature | -40 .. +80 °C |
| Storage temperature | -40 .. +85 °C |
| Measuring range | Factory defaults: ± 16 g |
| Centering function | Yes (2,5 V = 0 G), range ±5° |
| Frequency response (-3dB) | 0 - 50 Hz |
| Accuracy (overall @20°C) | overall 0,5 g typ. |
| Offset error | ± 30 mg typ. (± 60 mg 2σ) after zero adjustment |
| Non linearity | ±0,04 g typ. |
| Sensitivity error | ± 2% typ. |
| Resolution | 10 mg |
| Temperature coefficient | ± 1 mg/K typ. |
| Max mechanical shock | 10.000g |
| Output | 0,5 - 4,5 V |
| Output load | Rload ≥20kΩ, Cload ≤20 nF |
| Short circuit protection | Yes (max 10 s) |
| Output refresh rate | 3 ms |
| Programming options | by optional QG40N-configurator (measuring range, filtering) |



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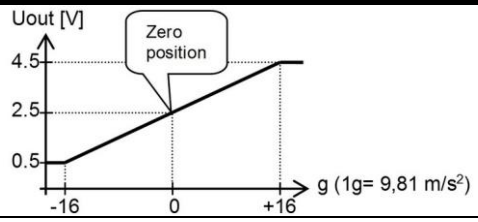
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## QG40N-KAXYh-16,0-AV-CM-UL

Uout = 2,5 + g/8 [V]
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.

### Transfer characteristic



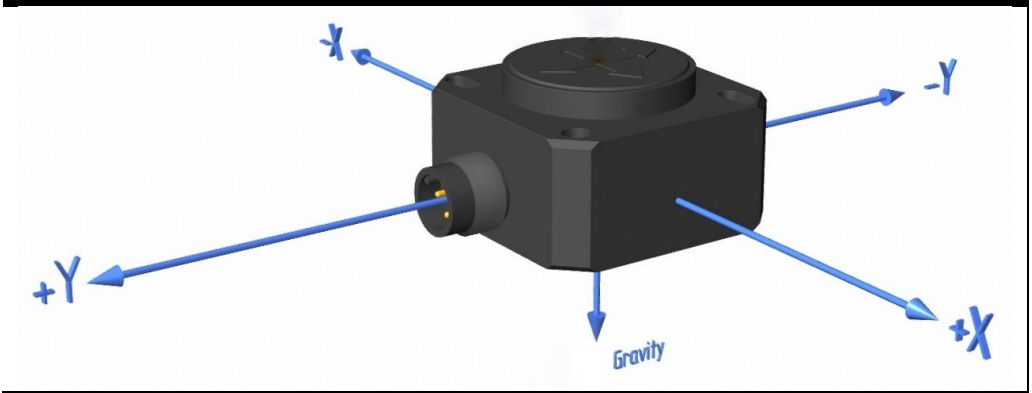

0 g when no acceleration applied

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)

### Measurement orientation



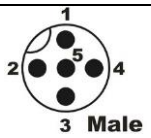

### Connectivity (cable length ±10%)

Connection

Wire / pin coding

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 |



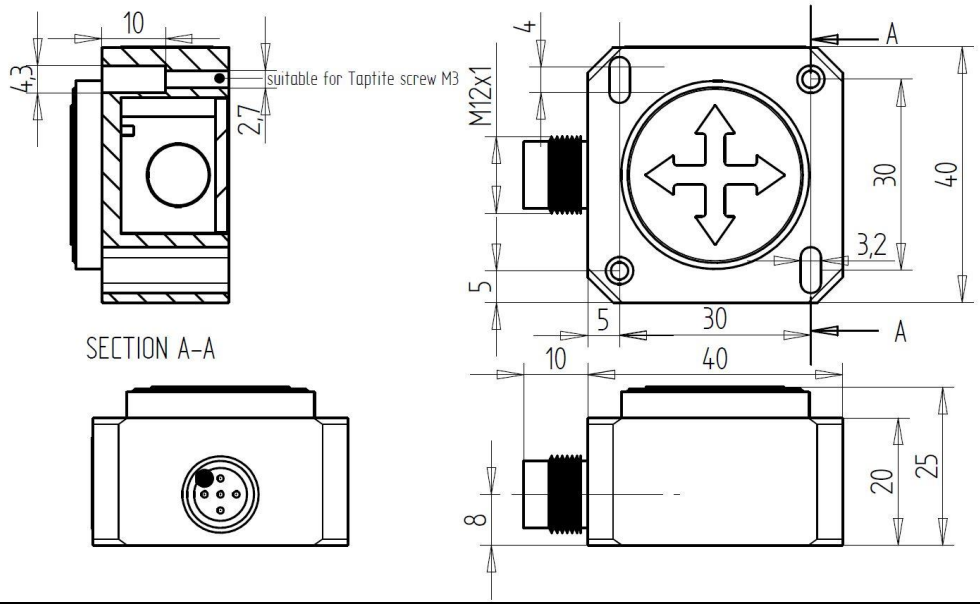

If connected with M12 F (accessory sold by DIS):

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



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## 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 mm²), recommended ≤23 AWG (≥0,25 mm²)

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.



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