# QG series

QG40N-series

QG40N-KDXYh-080-ASN-CM-UL

## Tilt switch

2 axis horizontal mounting

Programmable device
Output: NPN

Switch points programmable
between ±1° and ±80°

Measuring range
Factory defaults: ±80°



| General specifications 11748B, v20241216 | |
|---|---|
| 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)<br>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 | ≤ 25 mA |
| Operating temperature | -40 .. +60 °C |
| Storage temperature | -40 .. +85 °C |
| Measuring range | Factory defaults: ±80° |
| Centering function | Yes (0°), range: ±5° |
| Frequency response (-3dB) | 0 - 0,7 Hz |
| Accuracy (overall @20°C) | 0,3° typ. (0,5° max) |
| Offset error | not applicable after zeroing |
| Non linearity | not applicable |
| Sensitivity error | not applicable, Repeatability 0,2° |
| Resolution | 0,1° |
| Temperature coefficient | ± 0,04°/K typ. |
| Max mechanical shock | 10.000g |
| Output | dual NPN |
| Output load | 2x 500 mA continuously, Temperature protected, protected against back EMF |
| Short circuit protection | Yes, continously |
| Boot time | < 100 ms |
| Programming options | by optional QG40N-configurator (switch points, delay times, filtering) |



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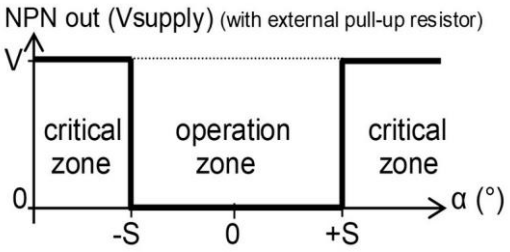
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## QG40N-KDXYh-080-ASN-CM-UL

2 independent NPN outputs:
- Programmable switchpoints ±S (optional QG40N Configurator)
- Operation zone: conducting
- Critical zone: non-conducting
- Unpowered sensor: non-conducting

Factory defaults:
- Switchpoint ±S output X: ±80°
- Switchpoint ±S output Y: ±80°
- hysteresis: 0,5°
- operation ► critical delay : 0,5 s
- critical ► operation delay : 1 s

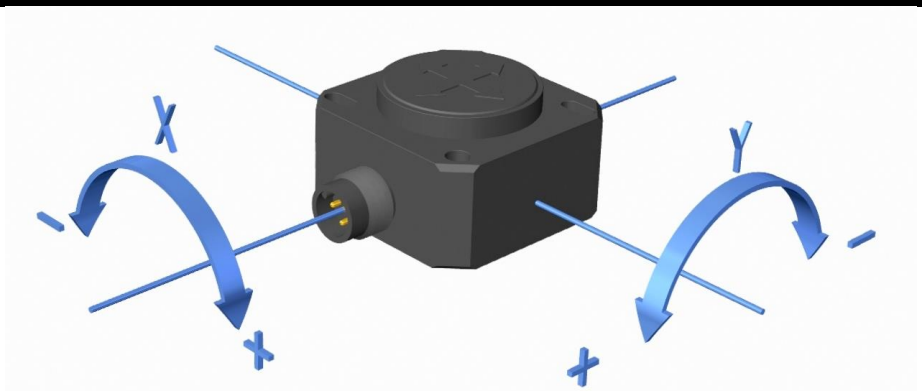
### Transfer characteristic




The default 0° position is when the sensor is mounted horizontally (round nose upwards) and no acceleration is applied.

Only one axis may exceed 45° tilt.
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.
Zeroing is possible within ±5° tilt.

### Measurement orientation



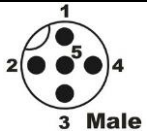

### Connectivity (cable length ±10%)

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: | zeroing |



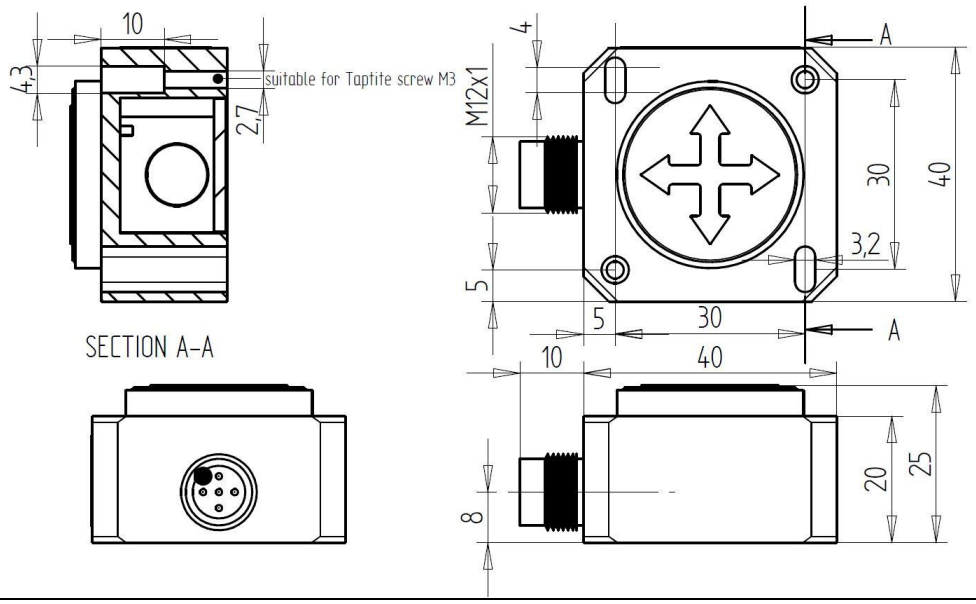

If connected with M12 F (accessory sold by DIS):

| | |
|---|---|
| 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 or tilt angle after installing in machines, equipment and systems. Flawless function in accordance with the specifications is ensured only when the device is used within its specifications.
This device is not a safety component according to the EU Machine Directive (ISO13849). For full redundancy two devices can be used in the application.
Modifications or non-approved use are not permitted and 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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