**QG series**

**QG40N-KDXYh-030-AI-CM-UL**

**Inclination sensor**
2 axis horizontal mounting

Programmable device
Output: 4 - 20 mA

Measuring range programmable between ±1° and ±30°

Measuring range
Factory defaults: ±30°

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### General specifications v20170713

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 7500C)

- IP67, IP69K
- 0 - 100%
- approx. 45 gram
- 10 - 30 V dc
- Yes
- ≤ 15 mA (excluding output signal)
- -40 .. +85 °C
- -40 .. +85 °C
- Factory defaults: ±30°
- Yes (12 mA = 0°), range: ±5°
- 0 - 10 Hz
- overall 0.5° typ.
- < ± 0.3° (after centering)
- < ± 0.4° Typ.
- not applicable
- 0.1°
- ± 0.04°/K typ.
- 10,000 g
- 4 - 20 mA
- Rload ≤ (50*Vs-300) [Ω] (Eg: Vs = 24 V: Rload ≤ 900 Ω)
- Yes (max 10 s)
- 20 ms

by optional QG40N-configurator (measuring range, filtering)
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Transfer characteristic

\[ I_{\text{out}} = 12 + 8\left(\alpha/30\right) \quad [\text{mA}] \]

clipping outside measuring range

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.

Measurement orientation

Default 0°: horizontal (round nose upwards), no acceleration applied.

Cross tilt sensitivity error:
\(< (0.12 \times \text{cross tilt angle})^2 \% \text{typ.} \)

→ one axis <10° tilt for max. accuracy

Connectivity (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: | centering        |

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

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

Mechanical dimensions (indicative only)
<table>
<thead>
<tr>
<th>Intended use, UL, Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
<tr>
<td>UL File number: E312057. UL &amp; c-UL listed product (UL508 standards UL60947-5-2 &amp; CSA-C22.2 No.14)</td>
</tr>
<tr>
<td>Product Identity / Category Code Number (CCN): Industrial Control Equipment / NRKH &amp; NRKH7</td>
</tr>
<tr>
<td>Enclosure / Temperature rating: Enclosure type 1 / Temperature -40° . . +85 °C</td>
</tr>
<tr>
<td>Electrical rating: Intended to be used with a Class 2 power source in accordance with UL1310</td>
</tr>
<tr>
<td>Electrical ratings: max. input Voltage 30V dc, max. current 500mA</td>
</tr>
<tr>
<td>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)</td>
</tr>
</tbody>
</table>

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 fulfill your requirements.