

QG series

QG40N-series

QG40N-KIXv-090-AI-CM-UL

Inclination sensor

1 axis vertical mounting

Programmable device

Output: 4 - 20 mA

Measuring range programmable
between 1° and 360°

Measuring range
Factory default: ±90°



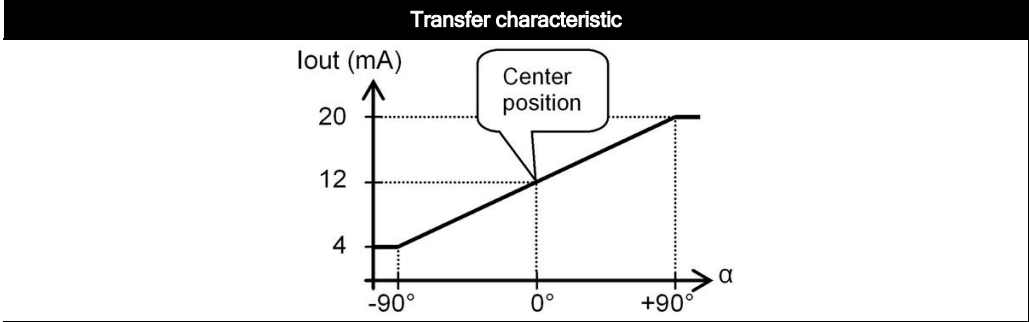
General specifications 12100, v20230828

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	10 - 30 V dc
Polarity protection	Yes
Current consumption	≤ 15 mA (excluding output signal)
Operating temperature	-40 .. +80 °C
Storage temperature	-40 .. +85 °C
Measuring range	Factory default: ±90°
Centering function	Yes (12 mA = 0°), range 360°
Frequency response (-3dB)	0 - 10 Hz
Accuracy (overall @20°C)	0,5° typ.
Offset error	± 0,2° typ. after centering
Non linearity	± 0,4° typ.
Sensitivity error	not applicable. Repeatability 0,2°
Resolution	0,1°
Temperature coefficient	± 0,08°/K typ.
Max mechanical shock	10.000 g
Output	4 - 20 mA
Output load	Rload ≤ (50*Vs-300) [Ω] (Eg: Vs = 24 V: Rload ≤ 900 Ω)
Short circuit protection	Yes (T<55°C), Max 10 s (T>55°C)
Output refresh rate	20 ms
Programming options	by optional QG40N-configurator (measuring range, filtering)

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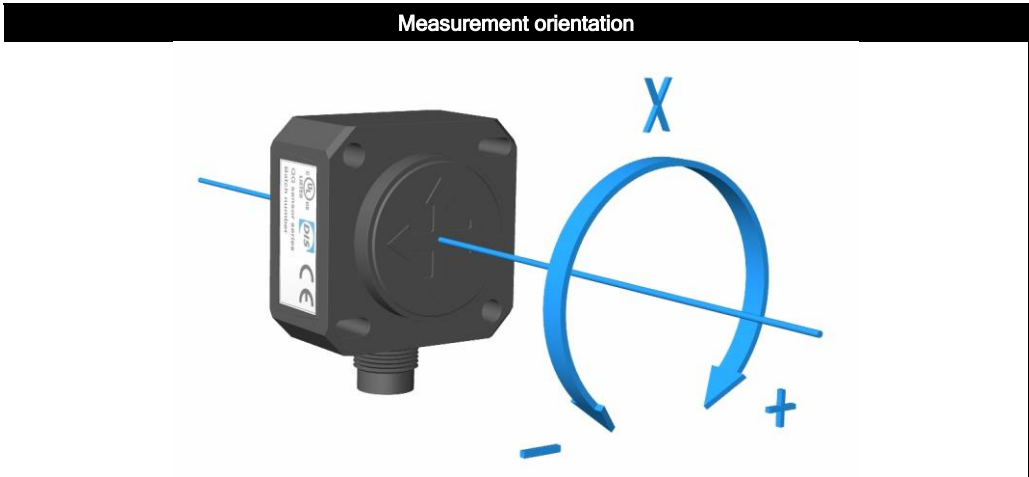
QG40N-KIXv-090-AI-CM-UL

$I_{out} = 12 + 8(\alpha/90)$ [mA]
 clipping outside measuring range



Rotation in vertical plane.

 Lateral tilt sensitivity error:
 $< \pm 0,03^\circ$ lateral tilt (typ.)
 Max. lateral tilt: 45°

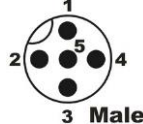


Connection

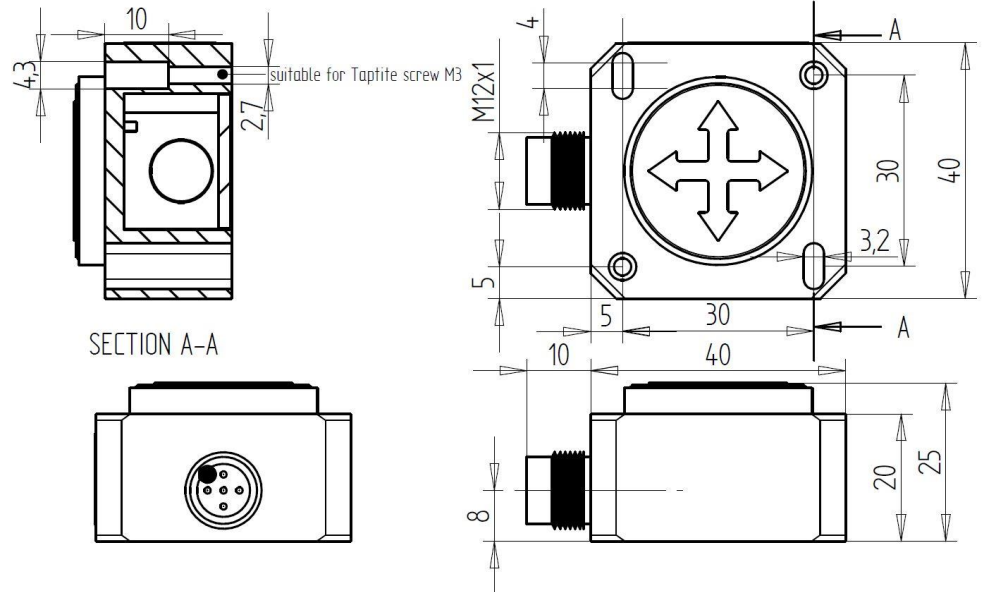
Connectivity (cable length $\pm 10\%$)

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

Wire / pin coding

Pin 1: + Supply Voltage Pin 2: for factory use only Pin 3: Gnd Pin 4: output X Pin 5: centering	
If connected with M12 F (accessoire sold by DIS): Brown: + Supply Voltage White: for factory use only Blue: Gnd Black: output X Green/yellow: centering	

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.