QG series

QG40N-series

QG40N-KDXYh-090-AI-CM-UL

Inclination sensor

2 axis horizontal mounting

Programmable device
Output: 4 - 20 mA

Measuring range programmable between ±1° and ±90°

Measuring range
Factory defaults: ±90°

c UL us LISTED E312057

CE

	General specifications 11746, v20170713
Housing	Plastic injection molded housing (Arnite T06 202 PBT black)
Dimensions (indicative)	40x40x25 mm
Mounting	2x M3x25 mm zinc plated steel pozidrive screws included
Ingress Protection (IEC 60529)	IP67
Relative humidity	0 - 100%
Weight	approx. 45 gram
Supply voltage	10 - 30 V dc
Polarity protection	Yes
Current consumption	≤ 15 mA (excluding output signal)
Operating temperature	-40 .. +85 °C
Storage temperature	-40 .. +85 °C
Measuring range	Factory defaults: ±90°
Centering function	Yes (12 mA = 0°), range: ±5°
Frequency response (-3dB)	0 - 10 Hz
Accuracy (2σ)	overall 0,4° typ.
Offset error	< ± 0,2° (after centering)
Non linearity	< ± 0,4°
Sensitivity error	not applicable
Resolution	0,1°
Temperature coefficient	± 0,04°/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 (max 10 s)
Output refresh rate	20 ms
Programming options	by optional QG40N-configurator (measuring range, filtering)

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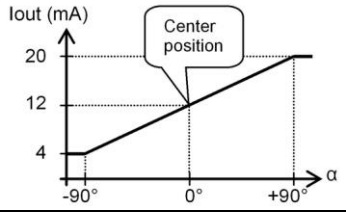
Iout = 12 + 8(α/90) [mA]
clipping outside measuring range

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.

Transfer characteristic

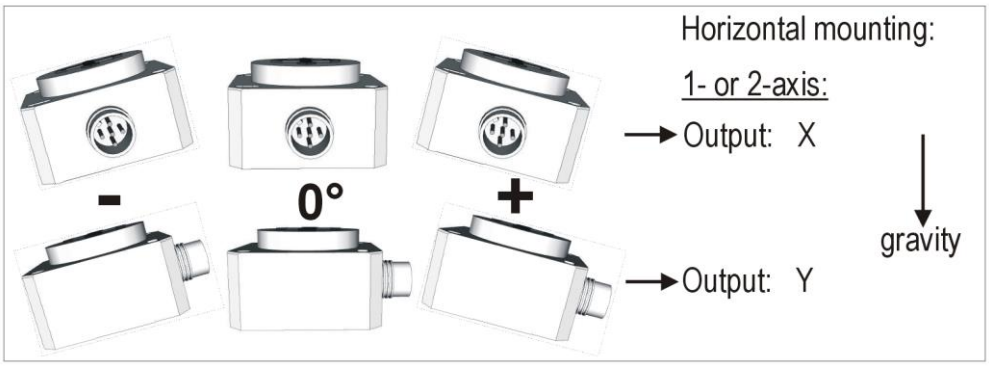


Default 0°: horizontal (round nose upwards), no acceleration applied.

Cross tilt sensitivity error:
< (0,12 * cross tilt angle)² % typ.

→ one axis <10° tilt for max. accuracy
→ only one axis may exceed 45° tilt

Measurement orientation



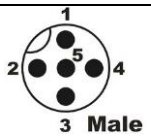
Connectivity (length ±10%)

Connection

Wire / pin coding

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

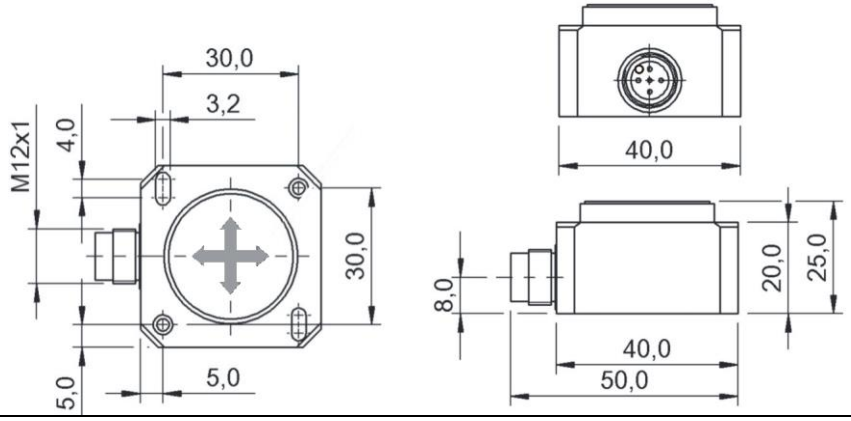
Pin 1:	+ Supply Voltage
Pin 2:	output Y
Pin 3:	Gnd
Pin 4:	output X
Pin 5:	centering



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

Brown:	'+ Supply Voltage
White:	output Y
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 File number: E312057. UL & c-UL listed product (UL508 standards UL60947-5-2 & CSA-C22,2 No.14) Product Identity / Category Code Number (CCN): Industrial Control Equipment / NRKH & NRKH7 Enclosure / Temperature rating: Enclosure type 1 / Temperature -40° . .+85 °C Electrical rating: Intended to be used with a Class 2 power source in accordance with UL1310 Electrical ratings: max. input Voltage 30V dc, max. current 500mA Accessory Cable Assembly: Any UL-listed (CYJV/7) mating connector with mechanical locking, wire thickness of at least 30 AWG (0,05 mm²), recommenced ≤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.