

QG series

QG40N-series

QG40N-KDXYOh-045-ASN-CM-UL

Tilt switch

Omnidirectional in horizontal plane (horizontal mounting)

Programmable device
Output: NPN

Switch points programmable between 1° and 45°

Measuring range
Factory defaults: 45°



General specifications 12978, v20230828

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 7500CZ)
Mounting on flat surface only. Screw with care

IP67, IP69K (with IP69K mating connector)

0 - 95% (non condensing, housing fully potted)

approx. 45 gram

6 - 30 V dc

Yes

≤ 25 mA

-40 .. +60 °C

-40 .. +85 °C

Factory defaults: 45°

Yes (0°), range: ±5°

0 - 0,7 Hz

0,3° typ. (0,5° max)

not applicable after zeroing

not applicable

not applicable, Repeatability 0,2°

0,1°

± 0,08°/K typ.

10.000g

dual NPN

2x 500 mA continuously, Temperature protected, protected against back EMF

Yes, continuously

< 100 ms

by optional QG40N-configurator (switch points, delay times, filtering)

Housing

Dimensions (indicative)

Mounting

Ingress Protection (IEC 60529)

Relative humidity

Weight

Supply voltage

Polarity protection

Current consumption

Operating temperature

Storage temperature

Measuring range

Centering function

Frequency response (-3dB)

Accuracy (overall @20°C)

Offset error

Non linearity

Sensitivity error

Resolution

Temperature coefficient

Max mechanical shock

Output

Output load

Short circuit protection

Boot time

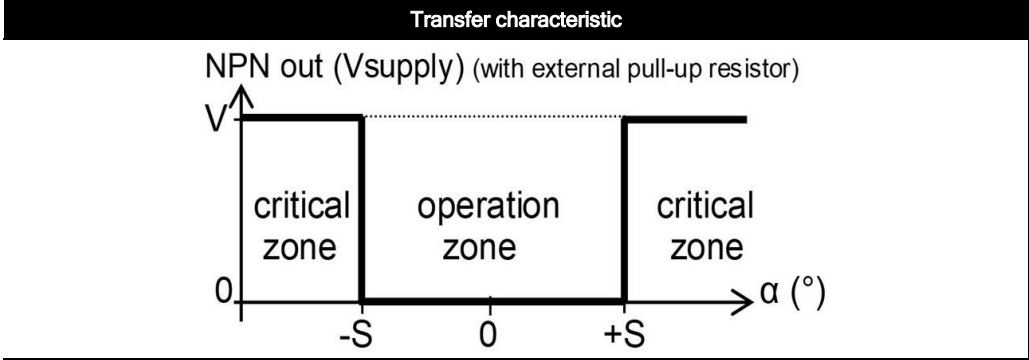
Programming options

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

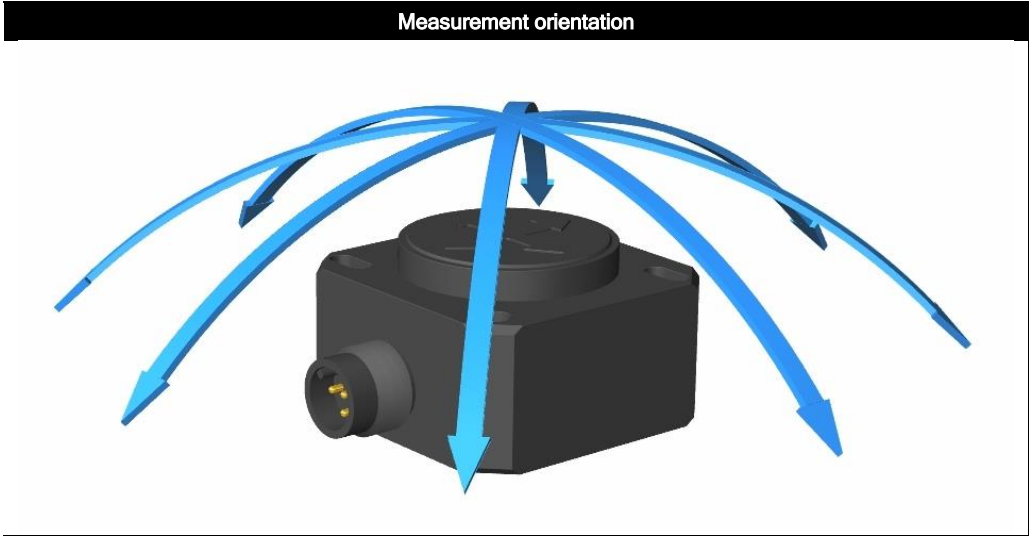
Factory defaults:
 - Switchpoint $\pm S$ output X: $\pm 45^\circ$
 - Switchpoint $\pm S$ output Y: $\pm 45^\circ$
 - hysteresis: $0,5^\circ$
 - operation \blacktriangleright critical delay : 0,5 s
 - critical \blacktriangleright operation delay : 1 s



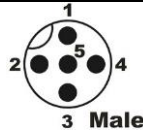
The default 0° position is when the sensor is mounted horizontally (round nose upwards) and no acceleration is applied.

Zeroing: eliminate mech. offsets
 Connect zeroing input to ground ($>0,5\text{sec}$) within 1 min. after power up. Normally the zeroing input should be left unconnected.

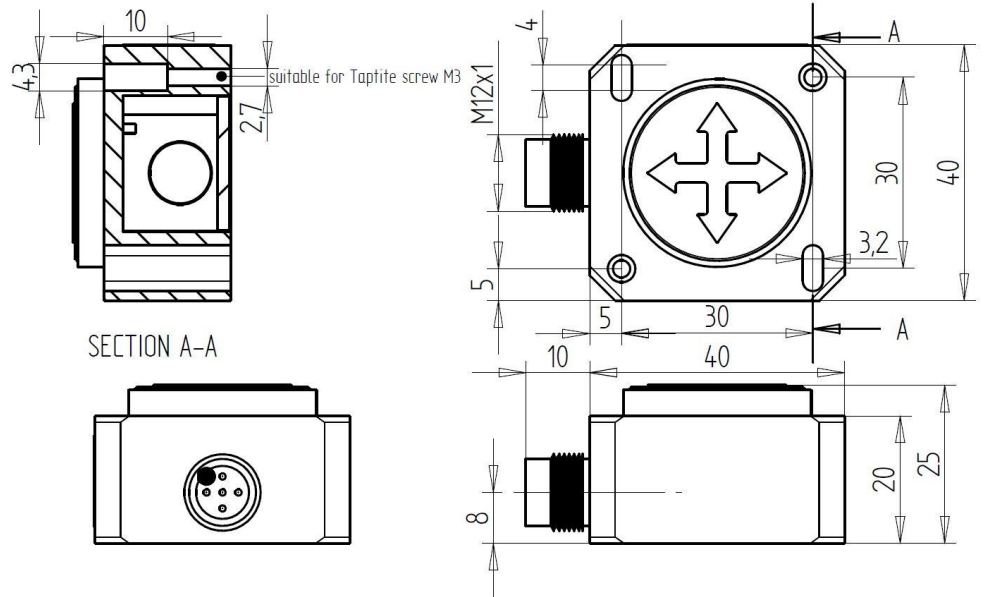
Zeroing is possible within $\pm 5^\circ$ tilt.



Connection
Wire / pin coding

Connectivity (cable length $\pm 10\%$)	
M12 5p male connector (Glass fibre reinforced grade, contacts CuZn pre-nickeled galv. Au)	
Pin 1:	+ Supply Voltage
Pin 2:	output Omni 2
Pin 3:	Gnd
Pin 4:	output Omni 1
Pin 5:	zeroing
	
If connected with M12 F (accessory sold by DIS):	
Brown:	+ Supply Voltage
White:	output Omni 2
Blue:	Gnd
Black:	output Omni 1
Green/yellow:	zeroing

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.