

QG series

Discontinued: QG76 analog H-series. Successor: QG76N2 High accuracy series

QG76-SI-360H-AV-CM-UL

Inclination sensor

1 axis vertical mounting

Factory programmable device

Output: 0,5 - 4,5 V

Measuring range programmable
between 1° and 360°

Measuring range
Factory default: $\pm 180^\circ$



General specifications 11626A, v20241104

Stainless steel (AISI 316)

70x60x33 mm

Not Included: 4x M4x30 mm stainless steel (A4) Hexagon socket head screws

IP67, IP69K (with IP69K mating connector), (IP68 with optional cable gland)

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

approx. 700 gram

8 - 30 V dc

Yes

≤ 25 mA

-40 .. +80 °C

-40 .. +85 °C

Factory default: $\pm 180^\circ$

Yes (2,5 V = 0°), range 360°

0 - 10 Hz

0,07° typ.

$\pm 0,03^\circ$ typ. ($\pm 0,08^\circ$ 2 σ) after centering

$\pm 0,06^\circ$ typ., $\pm 0,1^\circ$ 2 σ , $\pm 0,15^\circ$ max.

not applicable. Repeatability 0,05°

0,01°

$\pm 0,005^\circ/\text{K}$ typ.

20.000g

0,5 - 4,5 V

Rload $\geq 20\text{k}\Omega$, Cload ≤ 20 nF

Yes (max 10 s)

20 ms

Factory programmable (measuring range, 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

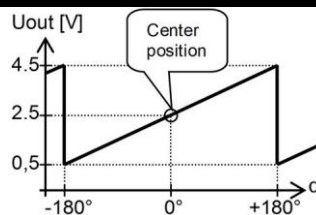
Short circuit protection

Output refresh rate

Programming options

$$U_{out} = 2,5 + 2 \cdot (\alpha / 180) [V]$$

Transfer characteristic



Rotation in vertical plane.

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

Drawn in default 0° position.

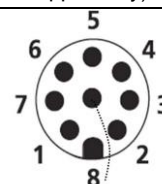
Measurement orientation



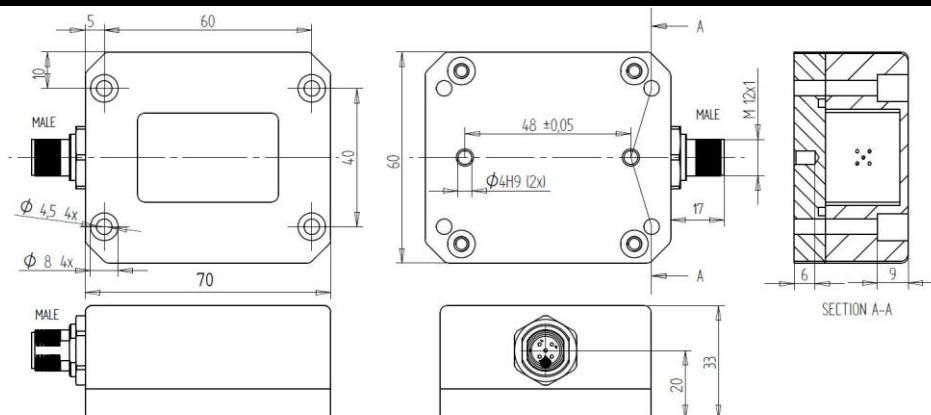
Connectivity (cable length $\pm 10\%$)

M12 male 8p connector (stainless steel 1.4404 (316L), contacts copper alloy)

- Pin 1: Output for factory use only
- Pin 2: Supply voltage
- Pin 3: for factory use only
- Pin 4: for factory use only
- Pin 5: Gnd
- Pin 6: Centering input
- Pin 7: Output
- Pin 8: not connected



Mechanical dimensions (indicative only)



Center function, intended use & UL

Centering can be done to eliminate mechanical offsets. To execute centering connect center input to ground (>0,5sec) within 1 min. after power up. After centering you have 1 min. left for another centering. Normally the center input should be left unconnected.

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.