

QG series

QG65 analog H-series

QG65-KD-030H-AV-CM

Inclination sensor

2 axis horizontal mounting

Factory programmable device

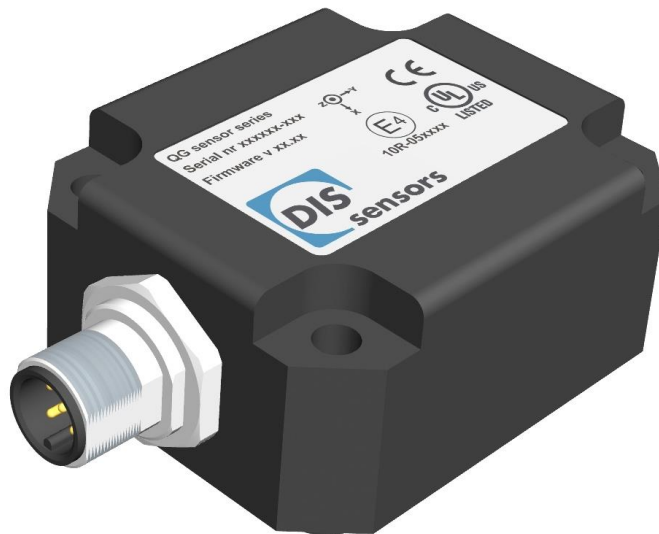
Output: 0,5 - 4,5 V

Measuring range programmable

between $\pm 1^\circ$ and $\pm 30^\circ$

Measuring range

Factory defaults: $\pm 30^\circ$



General specifications 11445, v20210921

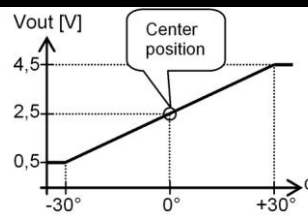
| | |
|--------------------------------|--|
| Housing | Reinforced plastic injection molded (Faradex DS, black, EMI shielded by stainless steel fiber in PC) |
| Dimensions (indicative) | 60x50x27 mm |
| Mounting | Included: 4x M5x25 mm zinc plated steel pozidrive pan head screws, self-tapping (PZ DIN7500CZ) (optional: Factory mounted 2x Ø4mm positioning pins replacing 2x M5x25 mm) |
| Ingress Protection (IEC 60529) | IP67, IP69K (with IP69K mating connector) |
| Relative humidity | 0 - 95% (non condensing, housing fully potted) |
| Weight | approx. 110 gram |
| Supply voltage | 8 - 30 V dc |
| Polarity protection | Yes |
| Current consumption | ≤ 25 mA |
| Operating temperature | -40 .. +85 °C |
| Storage temperature | -40 .. +85 °C |
| Measuring range | Factory defaults: $\pm 30^\circ$ |
| Centering function | Yes (2,5 V = 0°), range: $\pm 5^\circ$ |
| Frequency response (-3dB) | 0 - 10 Hz |
| Accuracy (overall @20°C) | 0,05° typ. |
| Offset error | $\pm 0,03^\circ$ typ. ($\pm 0,08^\circ$ 2 σ) after centering |
| Non linearity | $\pm 0,04^\circ$ typ., $\pm 0,07^\circ$ 2 σ , $\pm 0,09^\circ$ max. |
| Sensitivity error | not applicable. Repeatability 0,05° |
| Resolution | 0,01° |
| Temperature coefficient | $\pm 0,005^\circ/\text{K}$ typ. |
| Max mechanical shock | 20.000g |
| Output | 0,5 - 4,5 V |
| Output load | Rload $\geq 20\text{k}\Omega$, Cload ≤ 20 nF |
| Short circuit protection | Yes (max 10 s) |
| Output refresh rate | 20 ms |
| Programming options | Factory programmable (measuring range, filtering) |

QG65-KD-030H-AV-CM

$$U_{out} = 2,5 + 2 \cdot (\alpha/30) [V]$$

clipping outside measuring range

Transfer characteristic

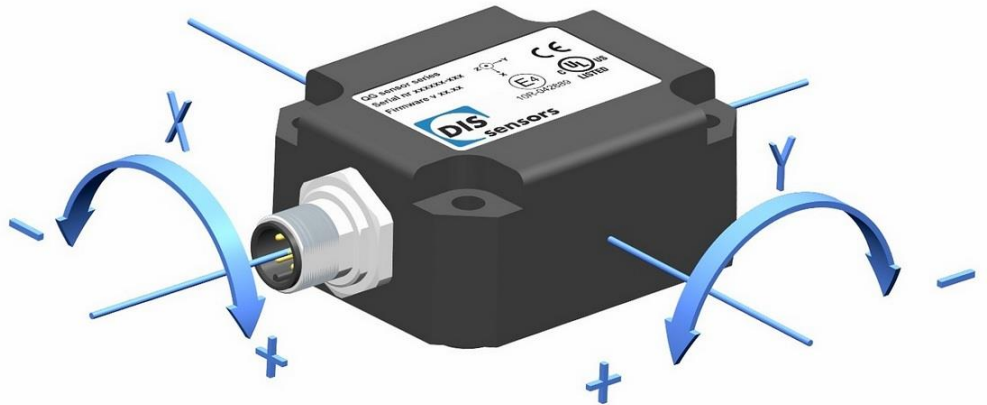


Default 0°: horizontal (label upwards), no acceleration applied.

Cross tilt sensitivity error:
 $< (0,12 \cdot \text{cross tilt angle})^2 \% \text{ typ.}$

→ one axis <10° tilt for max. accuracy

Measurement orientation



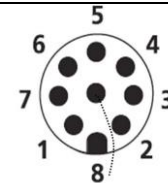
Connectivity (cable length ±10%)

Connection

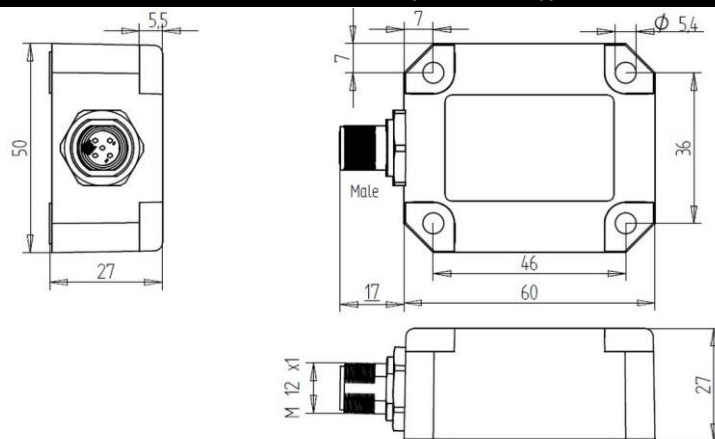
M12 male 8p A-coding connector (Brass Nickel coated, contacts copper alloy)

Wire / pin coding

- Pin 1: Output Y
- 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 X
- Pin 8: Not connected



Mechanical dimensions (indicative only)



Center function

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.

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.