QG series

Discontinued: QG65 analog H-series. Successor: QG65N2 High accuracy series

QG65-KD-090H-AV-CM

Inclination sensor

2 axis horizontal mounting

Factory programmable device
Output: 0,5 - 4,5 V

Measuring range programmable between ±1° and ±90°

Measuring range
Factory defaults: ± 90°



	General specifications 11443, v20241021
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) 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. 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: ± 90°
Centering function	Yes (2,5 V = 0°), range: ±5°
Frequency response (-3dB)	0 - 10 Hz
Accuracy (overall @20°C)	0,09° typ. (-60°…+60°)
Offset error	± 0,03° typ. (± 0,08° max) after zero adjustment
Non linearity	± 0,07° typ., ± 0,1° 2σ ± 0,15° max. (-60°…+60°)
Sensitivity error	not applicable. Repeatability 0,05°
Resolution	0,01°
Temperature coefficient	± 0,005°/K typ.
Max mechanical shock	20.000g
Output	0,5 - 4,5 V
Output load	Rload ≥20kΩ, Cload ≤20 nF
Short circuit protection	Yes (max 10 s)
Output refresh rate	20 ms
Programming options	Factory programmable (measuring range, filtering)

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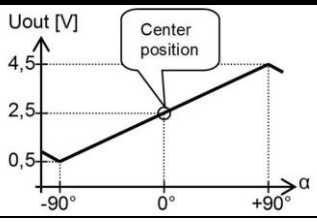
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Uout = 2,5 + 2*(α/90) [V]

No clipping outside measuring range

Transfer characteristic



Default 0°: horizontal (label 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



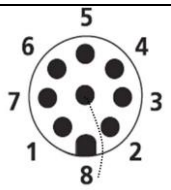
Connectivity (cable length ±10%)

Connection

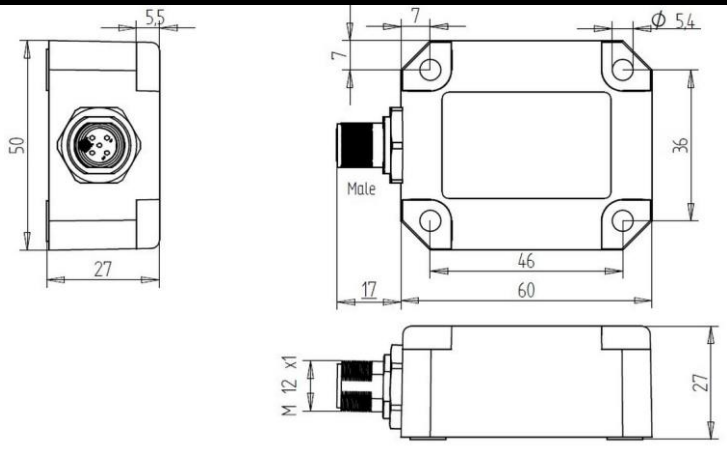
Wire / pin coding

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

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.

Optional: for accurate mounting two factory mounted positioning pins can be mounted (Ø4mm) replacing 2x M5x25 mm.

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.

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