QG series

QG65 analog H-series

QG65-KD-090H-AI-CM

Inclination sensor

2 axis horizontal mounting

Programmable device
Output: 4 - 20 mA

Measuring range programmable between ±1° and ±90°

Measuring range
Factory defaults: ± 90°



CE

General specifications 11442, v20170825	
Housing	Reinforced plastic injection molded (Faradex DS, black, EMI shielded by stainless steel fiber in PC)
Dimensions (indicative)	60x50x27 mm
Mounting	4x M5x25 mm zinc plated pozidrive screws included (optional: 2x Ø4mm positioning pins)
Ingress Protection (IEC 60529)	IP67
Relative humidity	0 - 100%
Weight	approx. 110 gram
Supply voltage	10 - 30 V dc
Polarity protection	Yes
Current consumption	≤ 25 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 (typ. and/or 2σ)	overall 0,09° typ. (-60°…+60°)
Offset error	< ± 0,03° typ. (< ± 0,08° max.) after centering
Non linearity	< ± 0,08° typ. (< ± 0,15° max.) (-60°…+60°)
Sensitivity error	not applicable
Resolution	0,01°
Temperature coefficient	± 0,005°/K typ.
Max mechanical shock	20.000g
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 QG65-configurator (measuring range, filtering)

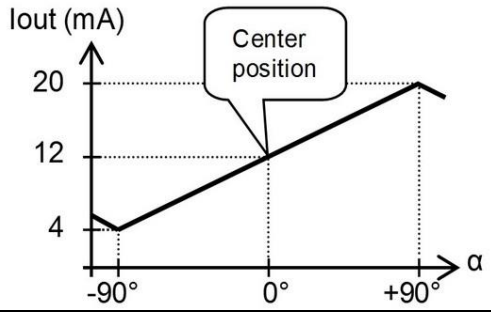
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Iout = 12 + 8*(α/90) [mA]

No clipping outside measuring range

Transfer characteristic

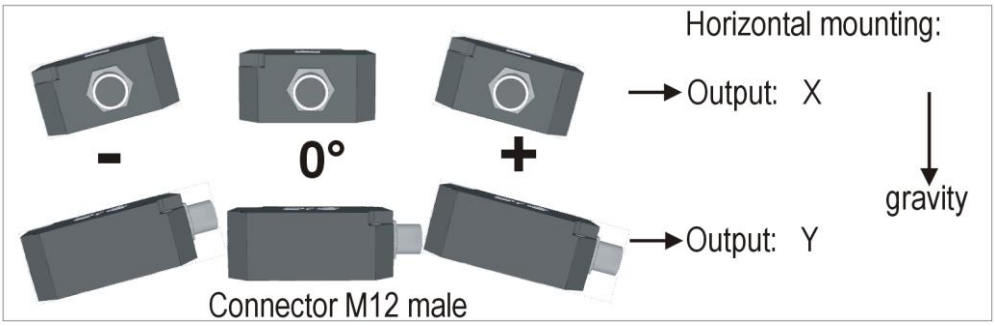


Default 0°: horizontal (label upwards), no acceleration applied.

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



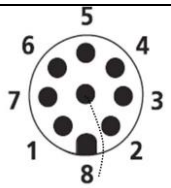
Connection

Wire / pin coding

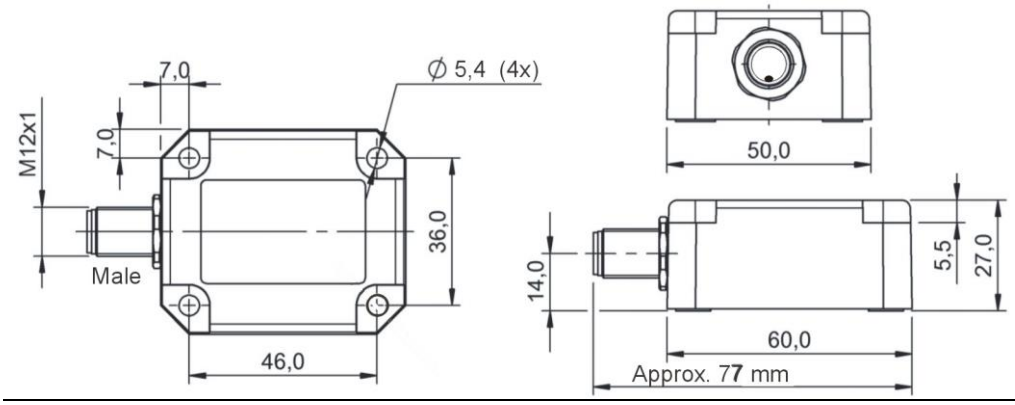
Connectivity (length ±10%)

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

Pin 1:	Output Y
Pin 2:	Supply voltage
Pin 3:	Programming interface RS232 Rx
Pin 4:	Programming interface RS232 Tx
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.