

# QG series

## QG65 analog H-series

QG65-KI-360H-AV-CM

### Inclination sensor

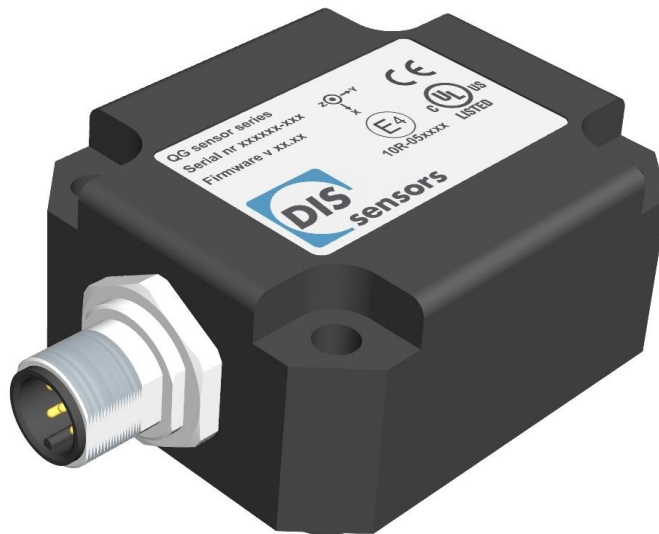
1 axis vertical mounting

Factory programmable device

Output: 0,5 - 4,5 V

Measuring range programmable  
between 1° and 360°

Measuring range  
Factory default: ±180°



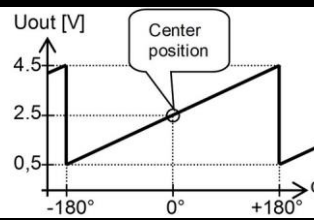
### General specifications 11625, v20210921

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 default: ±180°
Centering function	Yes (2,5 V = 0°), range 360°
Frequency response (-3dB)	0 - 10 Hz
Accuracy (overall @20°C)	0,07° typ.
Offset error	± 0,03° typ. (± 0,08° 2σ) after centering
Non linearity	± 0,06° typ., ± 0,1° 2σ, ± 0,15° max.
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)

## QG65-KI-360H-AV-CM

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

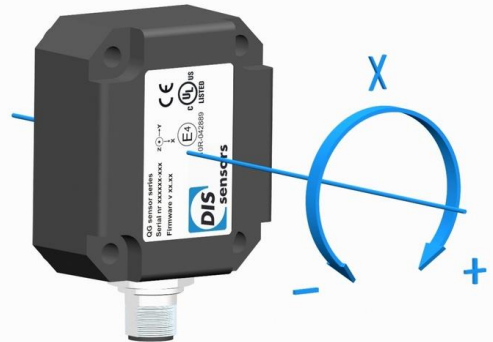
### Transfer characteristic



Rotation in vertical plane.

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

### Measurement orientation



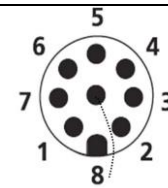
### Connection

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

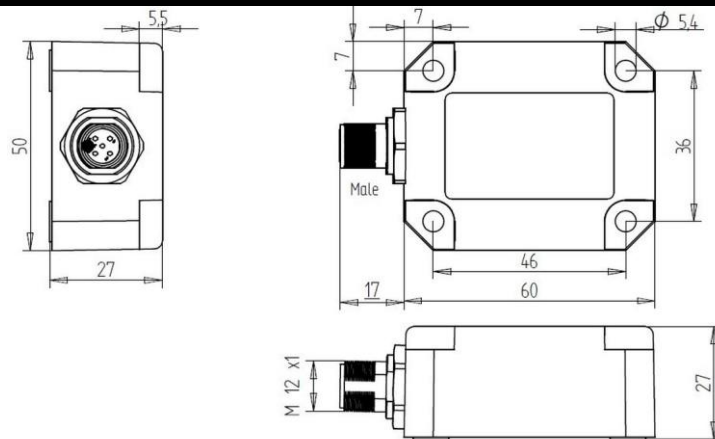
M12 male 8p A-coding connector (Brass Nickel coated, contacts copper alloy)

### Wire / pin coding

- 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

Centering can be done to eliminate mechanical offsets. To execute centering connect center input to ground ( $>0,5\text{sec}$ ) 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.