

# QG series

## QG65 analog H-series

QG65-KD-025H-ASP-CM

### Tilt switch

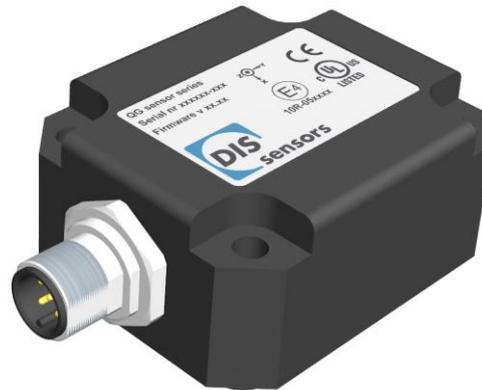
2 axis horizontal mounting

Factory programmable device

Output: PNP

Switch points programmable  
between  $\pm 1^\circ$  and  $\pm 25^\circ$

Measuring range  
Factory default:  $\pm 25^\circ$



### General specifications 12542, 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)<br>Mounting on flat surface only. Screw crosswise with maximum Torque 2.5 Nm |
| 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            | $\leq 50$ mA  |
| Operating temperature          | $-40 \dots +60$ °C  |
| Storage temperature            | $-40 \dots +85$ °C  |
| Measuring range                | Factory default: $\pm 25^\circ$   |
| Centering function             | Yes ( $0^\circ$ ), range: $\pm 5^\circ$   |
| Frequency response (-3dB)      | 0 - 0,5 Hz  |
| Accuracy (overall @20°C)       | 0,05° typ.  |
| Offset error                   | not applicable after zeroing  |
| Non linearity                  | not applicable  |
| 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                         | dual PNP  |
| Output load                    | 500 mA cont., protected against back EMF  |
| Short circuit protection       | Yes   |
| Boot time                      | < 100 ms  |
| Programming options            | Factory programmable (switch points, delay times, filtering)  |

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### PNP-output:

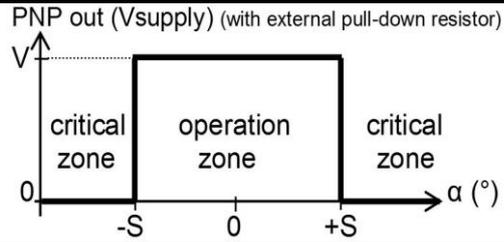
- Programmable switchpoints  $\pm S$  (opt. QG65 Configurator RS232)
- Factory default:  $S = \pm 25^\circ$
- operation zone: conducting
- critical zone: non-conducting
- Unpowered sensor: non-conducting
- hysteresis :  $0,2^\circ$
- operation ► critical delay : 0,5 s
- critical ► operation delay : 1 s

The default  $0^\circ$  position is when the sensor is mounted horizontally (label upwards) and no acceleration is applied.

### Connection

Wire / pin coding

### Transfer characteristic



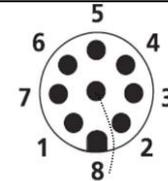
### Measurement orientation



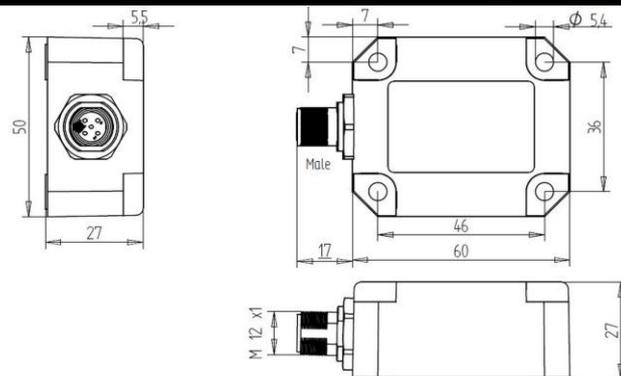
### Connectivity (cable length $\pm 10\%$ )

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

- Pin 1: Output Y
- Pin 2: Supply voltage
- Pin 3: RS232 DATA from sensor to PC
- Pin 4: RS232 DATA from PC to sensor
- Pin 5: Gnd
- Pin 6: Zero input
- Pin 7: Output X
- Pin 8: Not connected



### Mechanical dimensions (indicative only)



### Center function

QG series sensors are intended to measure inclination, acceleration or tilt angle after installing in machines, equipment and systems. Flawless function in accordance with the specifications is ensured only when the device is used within its specifications.

Zeroing should be done within 1 min. after power up. After zeroing you've 1 min. left for another centering. Normally the zero input should be left unconnected. Connect zero input to ground for more than 0,5s

Optional: for accurate mounting two factory mounted positioning pins can be mounted ( $\varnothing 4$ mm) 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.