QG series

QG40N-KIXv-360-SPI-PTS

Inclination sensor

1 axis vertical mounting

Non-programmable device

Interface: SPI

communication protocol
DIS-special

Measuring range
360°

General specifications v20170714	
Housing	Plastic injection molded housing (Arnite T06 202 PBT black)
Dimensions (indicative)	40x40x25 mm
Mounting	2x M3x25 mm zinc plated steel pozidrive screws included
Ingress Protection (IEC 60529)	IP67
Relative humidity	0 - 100%
Weight	approx. 45 gram (cable excluded)
Supply voltage	10 - 30 V dc
Polarity protection	Yes
Current consumption	≤ 15 mA
Operating temperature	-40 .. +80 °C
Storage temperature	-40 .. +80 °C
Measuring range	360°
Centering function	Yes (via SPI, 0 = 0°), range 360°
Frequency response (-3dB)	0 - 10 Hz
Accuracy (2σ)	overall 0,5° typ.
Offset error	< ± 0,3° (after centering)
Non linearity	< ± 0,4°
Sensitivity error	not applicable
Resolution	0,1°
Temperature coefficient	± 0,04°/K typ.
Max mechanical shock	10.000 g
Output	SPI (0 - 5 V)
Output load	Rload ≥20kΩ, Cload ≤20 nF
Short circuit protection	not applicable
Response time	< 16 ms
Programming options	not applicable

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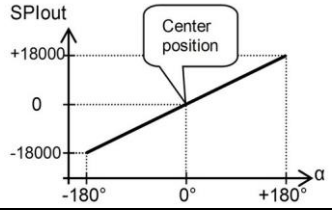
SPIout = 18000 * (α/180)

Centering: eliminate mech. Offsets
Centering by SPI command

Transfer characteristic

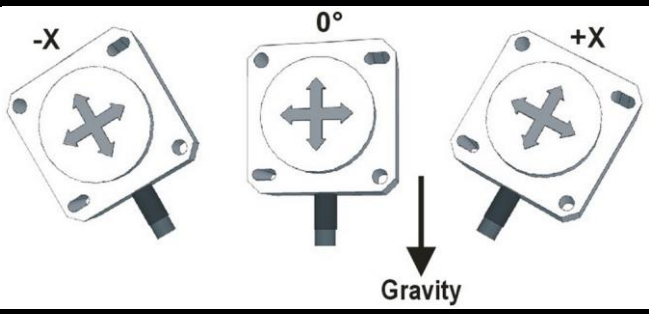


Rotation in vertical plane.

Lateral tilt sensitivity error:
< ± 0,03°/° lateral tilt (typ.)
Max. lateral tilt: 45°

Drawn in default 0° position.

Measurement orientation



Connectivity (length ±10%)

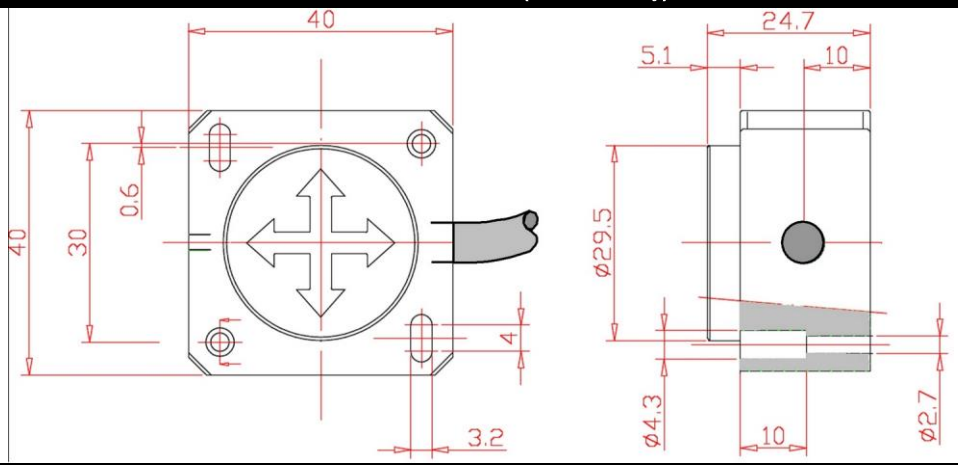
Connection

2 m PUR/TPE Shielded Li12yD11y, black Ø 5,7 mm, wires: 6x0,25 mm² DIN colors, UL, UV

Wire / pin coding

Brown	+ Supply Voltage
Grey	Gnd
White	SPI ChipSelect
Pink	SPI SCLK
Yellow	SPI MOSI
Green	SPI MISO
Shield	NC

Mechanical dimensions (indicative only)



Intended use, UL, SPI-Interface, Remarks

QG series sensors are intended to measure inclination/acceleration/tilt. Flawless function (acc. spec.) is ensured only when used within specifications. This device is not a safety component acc. to EU Machine Directive (ISO13849). For full redundancy two devices can be used. Modifications or non-approved use will result in loss of warranty and void any claims against the manufacturer.

SPI-protocol according to separate document [revision 2.3a]

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.