

# QG series

## QG40N-series

QG40N-KAXYZ-16,0-AI-PT

### Acceleration sensor

3 axis

Programmable device

Output: 4 - 20 mA

Measuring range programmable  
between 0,1 g and 16 g

Measuring range  
Factory defaults:  $\pm 16$  g



### General specifications v20170717

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	$\leq 15$ mA ( excluding output signal )
Operating temperature	-40 .. +85 °C
Storage temperature	-40 .. +85 °C
Measuring range	Factory defaults: $\pm 16$ g
Centering function	Yes (12 mA = 0 G), range: $\pm 5^\circ$ (horizontal axes only)
Frequency response (-3dB)	0 - 50 Hz
Accuracy (2 $\sigma$ )	overall 0,5 g typ.
Offset error	$< \pm 0,3\%$ F.S. (after zeroing)
Non linearity	$< \pm 0,8\%$ F.S.
Sensitivity error	$< \pm 2,5\%$
Resolution	0,016 g
Temperature coefficient	$\pm 1$ mg/K typ.
Max mechanical shock	10.000 g
Output	4 - 20 mA
Output load	Rload $\leq (50 \cdot V_s - 300)$ [ $\Omega$ ] (Eg: $V_s = 24$ V: Rload $\leq 900$ $\Omega$ )
Short circuit protection	Yes (max 10 s)
Output refresh rate	3 ms
Programming options	by optional QG40N-configurator + optional QG40N breakout-cable (measuring range, filtering)

## QG40N-KAXYZ-16,0-AI-PT

$I_{out} = 12 + g/2$  [mA]  
clipping outside measuring range

Zeroing: eliminate mech. offsets  
Connect zeroing input to ground  
(>0,5sec) within 1 min. after power  
up. Normally the zeroing input  
should be left unconnected.

The default 0 g position is when the  
sensor is mounted horizontal or  
vertical and no acceleration is  
applied. The axis parallel to earth  
gravity will indicate 1 g, the two  
horizontal axes will indicate 0 g.

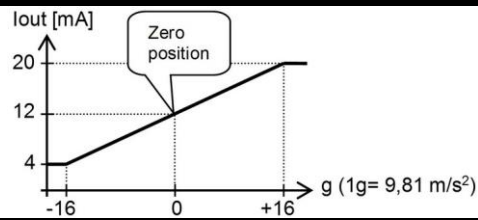
Connect output-X and/or  
output-Y and/or output-Z  
according to the plot at the right

Mounting in all horizontal  
or vertical positions possible

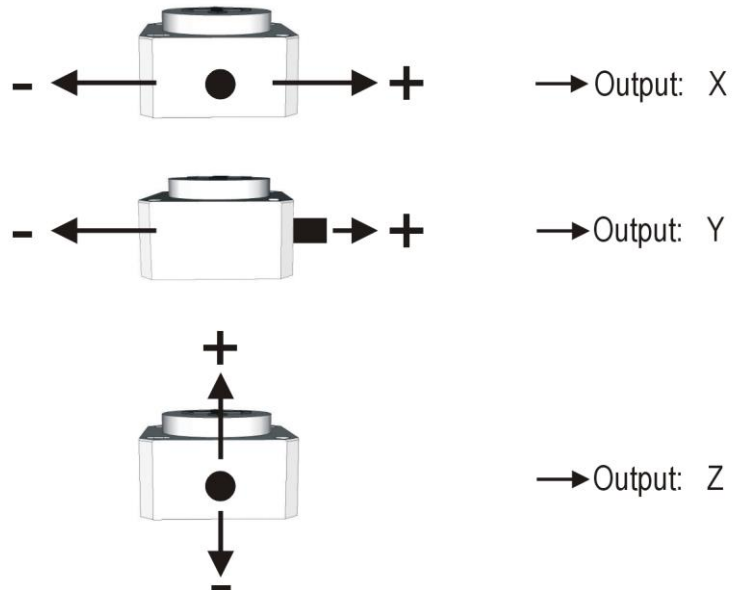
The two horizontal axes can be  
zero-ed within  $\pm 5^\circ$  tilt to eliminate  
mounting offsets.

The axis parallel to earth gravity  
cannot be zero-ed.

### Transfer characteristic



### Measurement orientation



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

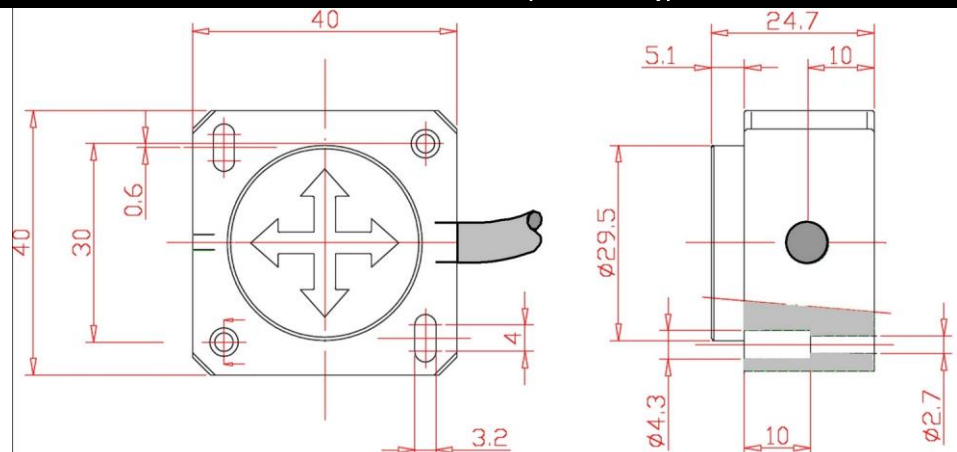
2 m PUR/TPE Li12y11y, black  $\varnothing$  5,4 mm, wires: 6x0,34 mm<sup>2</sup> DIN colors

White	Zeroing
Brown	+ Supply Voltage
Green	GND
Yellow	Output X
Grey	Output Y
Pink	Output Z

### Connection

Wire / pin coding

### Mechanical dimensions (indicative only)



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## Intended use, 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.

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.