

# QG series

## QG40N-series

QG40N-KAXYZh-1,5-AV-PT

### Acceleration sensor

3 axis

Programmable device

Output: 0,5 - 4,5 V

Measuring range programmable  
between 0,1 g and 16 g

Measuring range  
Factory defaults:  $\pm 1,5$  g



### General specifications v20170717

Housing	Plastic injection molded housing (Arnite T06 202 PBT black)
Dimensions (indicative)	40x40x25 mm
Mounting	Included: 2x M3x25 mm zinc plated steel pozidrive pan head screws, self-tapping (PZ DIN 7500C)
Ingress Protection (IEC 60529)	IP67
Relative humidity	0 - 100%
Weight	approx. 45 gram (cable excluded)
Supply voltage	6 - 30 V dc
Polarity protection	Yes
Current consumption	$\leq 15$ mA
Operating temperature	-40 .. +80 °C
Storage temperature	-40 .. +80 °C
Measuring range	Factory defaults: $\pm 1,5$ g
Centering function	Yes (2,5 V = 0 G), range $\pm 5^\circ$ (horizontal axes only)
Frequency response (-3dB)	0 - 50 Hz
Typ. Accuracy @20°C (2 $\sigma$ )	overall 0,04 g typ.
Offset error	$< \pm 2\%$ F.S. (after zeroing)
Non linearity	$< \pm 1\%$ F.S.
Sensitivity error	$< \pm 1\%$
Resolution	2 mg
Temperature coefficient	$\pm 1$ mg/K typ.
Max mechanical shock	10.000 g
Output	0,5 - 4,5 V
Output load	Rload $\geq 20k\Omega$ , Cload $\leq 20$ nF
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-KAXYZh-1,5-AV-PT

$U_{out} = 2,5 + 1.33 \cdot g$  [V]  
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 Z-axis is compensated for 1g earth gravity.

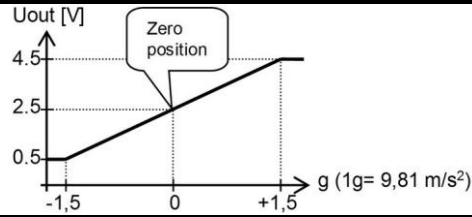
Connect output-X and/or output-Y and/or output-Z according to the plot at the right

Mounting horizontal position

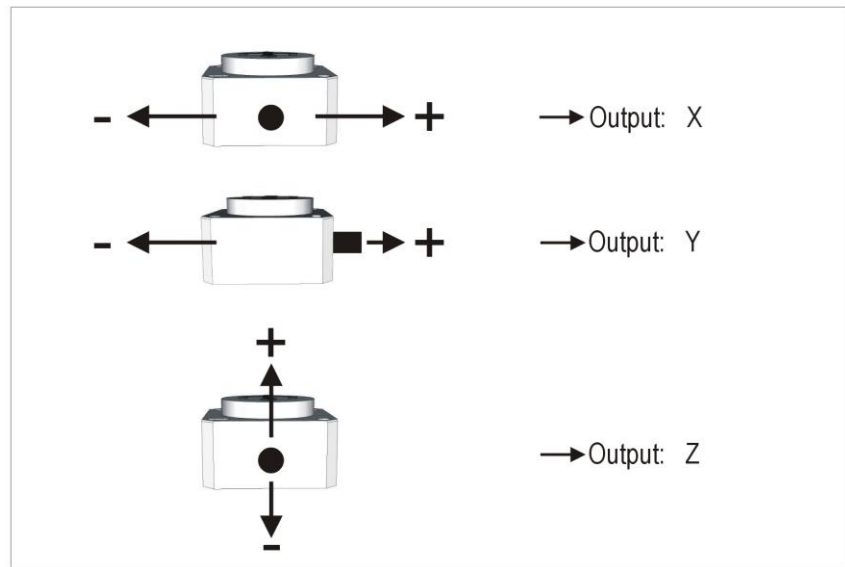
The two horizontal axes can be zero-ed within  $\pm 5^\circ$  tilt to eliminate mounting offsets.

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

### Transfer characteristic



### Measurement orientation



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

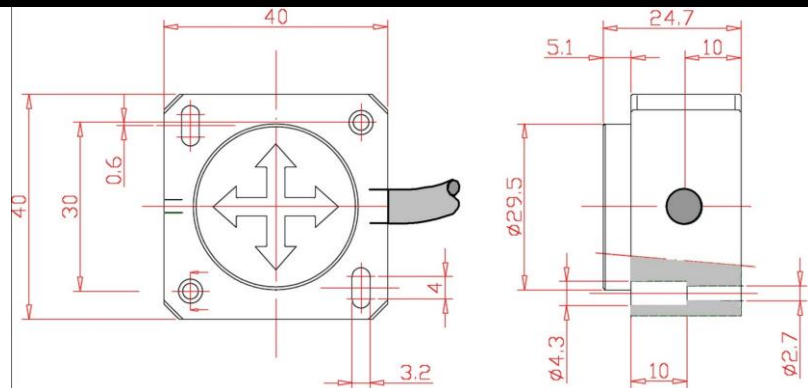
2 m PUR/TPE Li12y11y, black  $\varnothing$  5,4 mm, wires: 6x0,34 mm<sup>2</sup> DIN colors

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

Connection

Wire / pin coding

### Mechanical dimensions (indicative only)



### 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.