

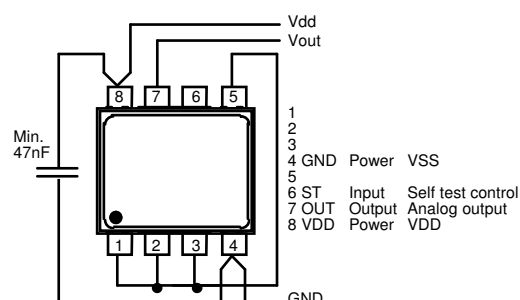
Acceleration and Vibration Sensors

SCA620 series

The sensing elements, working based on the capacitive principle, feature high precision and high shock resistance, resulting among others from the new 3D micro electro mechanical system (MEMS) technology using high purity silicon. Due to the especially appropriate structure, no drifts caused by deformation of the sensing mass are expected even after severe hits. The gas damping inside the sensing element prevents resonance oscillations or overshooting of the sensing mass.



- senses in positive and negative direction
- static and dynamic acceleration measured
- high repeatability up to 0,05% over range
- high resolution: up to 0,005% over range
- shock resistance of the pendulum min. 50'000g
- temperature range -40 .. +125°C
- passive temperature compensation
- 11x12x5 mm DIL 8- pin housing for SMD mounting
- wide wanted signal: 0.5... 4.5V output over measuring range



Other versions

- single and dual axis inclinations- and accelerations-sensor chips in DIL-housing for SMD mounting
- single and dual axis sensors in IP67 housing with fixing holes, cable or connector and standardized signal output (4... 20mA, 2... 10V, digital output)

Parameter	Conditions	SCA620 CF8H1A	SCA620 CHCV1A	Unit
Measuring range		+/- 1,7	12g	g
Repeatability at 0° (horizontal position) ¹⁾	0 ... 40°C	4	50	mg
Resolution at 0° / 1g	0 ... 50 Hz	0,2	2	mg
typ. Offset temperature depend.	per °C	0.6	1	mg
long term stability ⁶⁾	10 years ⁶⁾	approx. 1,5	approx. 7,5	mg
Measuring direction	vertical	Z-axis	Z-axis	
Cross axis sensitivity ²⁾	max.	5	5	%
typical damping ⁵⁾	-3 db	50	400	Hz
Operating temperature range		-40... +125	-40... 125	°C
Shock resistance		20'000	20'000	g
Output signal V _{out}		0,5 .. 4,5	0,5 .. 4,5	V
Offset = V _{out} in 0° / rest position		2,5 1,2	2,5 1,2	V V/g
Power supply ³⁾	max	4.75 ... 5.25	4.75 ... 5.25	
Power consumption max	on 5V on 3V ³⁾	2.0 approx. 0,3	2.0 approx. 0,3	mA mA

- 1) **Repeatability:** maximum offset occurring with position change after return to initial position (corresponds to achievable precision, including temperature hysteresis after temperature compensation and linearization).
- 2) **Cross axis sensitivity:** maximum error occurring with (additional) inclination or acceleration from another direction than the measuring plane
- 3) **Supply** must be 5V DC stabilized; variations affect the measurement; (alternatively 3V, precision and resolution will be affected: 1g <> 1.5V, output ≈ 0.3 ... 2.7V).
- 4)
- 5) Typical values;
- 6) **Long term stability:** calculated values from HTB tests. Test results available at request.