

Two-axis (2D) acceleration and vibration sensor (MEMS)



- Based on bulk micro machined technology with the pendulum made in mono crystalline silicon
- Internal gas damping mechanism prevents overshooting and interfering (resonance) oscillation

Specification ¹ (typ. values)	Unit	Condition	mmF1kG122D	mmF1kG182D
Range	g		±12	±18
Repeatability at 0°C ²	mg	horizontal, 20°C	<4	<6
Resolution at 0°C/1g	mg	DC – 400Hz	2	3
Noise density	µg/√Hz		100	150
Offset temperature dependency	mg/°C	-13 ... 37°C	1.25	1.9
Stability ³	mg	10 years	7	11
Measurement axis			Two-axis: x, y	Two-axis: x, y
Filtering	Hz (-3 dB)	Hz	1000	1000
Max. cross-axis error ⁴	%		4	4
Operating temperature range ⁵	°C		-30 to +85	-30 to +85
Shock resistance	g		20000	20000
Output range	V	Vout	0.5 to 4.5	0.5 to 4.5
DC offset ⁶	V		2.5	2.5
Sensitivity ⁷	V/g	Vout at 0°/position	0.166	0.111
Supply voltage ⁸	VDC		7 to 30	7 to 30
Weight	Gramm		22	22
Max. Vout resistive load	Ω	Vout to Vdd or GND	10000	10000
Max. Vout capacitance load	nF		20	20

1 Mechmine reserves the right to modify this specification without prior notice.
 2 means max. offset occurring with position change after return to initial position (corresponds to achievable precision, including temperature hysteresis after temperature compensation and linearization).
 3 long-term stability: calculated values from HTB tests.
 4 max. error occurring with (additional) inclination or acceleration from another direction other than the measuring plane.
 5 without a cable attached.
 6 deviation should not be higher than approx. +/- 2% on zero-point.
 7 deviation should not be higher than approx. +/- 4% in sensitivity.
 8 assumes a stabilized power supply.

