

Model Number <b>3991B1120KG</b>	<b>HIGH AMPLITUDE MEMS SHOCK ACCELEROMETER</b>	Revision: D ECN #: 48068
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	<b>ENGLISH</b>	<b>SI</b>	
<b>Performance</b>			
Sensitivity(± 50 %)(at 10 VDC excitation)	0.010 mV/g	0.001 mV/(m/s <sup>2</sup> )	[2]
Sensitivity	0.001 mV/V/g	0.0001 mV/V/(m/s <sup>2</sup> )	[7]
Measurement Range	± 0 to 20,000 g	± 0 to 196,100 m/s <sup>2</sup> pk	
Frequency Range(± 1 dB)	0 to 10,000 Hz	0 to 10,000 Hz	
Resonant Frequency	>60 kHz	>60 kHz	
Damping Ratio	5 % Critical	5 % Critical	[1]
Non-Linearity(per 10,000 g (98,100 m/s <sup>2</sup> ))	≤ 1 %	≤ 1 %	
Transverse Sensitivity	≤ 3 %	≤ 3 %	
<b>Environmental</b>			
Overload Limit(Shock)	± 60,000 g pk	± 588,400 m/s <sup>2</sup> pk	[5]
Overload Limit(Mechanical Stops)	≥ 30 kg	≥ 294,200 m/s <sup>2</sup> pk	
Temperature Range(Operating)	-65 to 250 °F	-54 to 121 °C	
Temperature Coefficient of Sensitivity	-0.11 %/°F	-0.20 %/°C	[1]
Zero g Offset Temperature Shift	± 10 mV	± 10 mV	[6]
Base Strain Sensitivity	0.10 g/µε	0.98 (m/s <sup>2</sup> )/µε	[1]
<b>Electrical</b>			
Excitation Voltage(Maximum)	15.0 VDC	15.0 VDC	
Current Consumption	<3 mA	<3 mA	
Input Resistance(± 2000 Ohm)	6000 Ohm	6000 Ohm	[1][2]
Output Resistance(± 2000 Ohm)	6000 Ohm	6000 Ohm	[1][2]
Offset Voltage	± 40 mVDC	± 40 mVDC	[2]
Settling Time	0.01 sec	0.01 sec	[3]
Electrical Isolation(Case)	≥ 10 <sup>7</sup> Ohm	≥ 10 <sup>7</sup> Ohm	[4]
<b>Physical</b>			
Sensing Element	Piezoresistive MEMS	Piezoresistive MEMS	
Sensing Geometry	Full Active	Full Active	
Housing Material	Titanium	Titanium	
Sealing	Epoxy	Epoxy	
Size (Height x Length x Width)	0.12 in x 0.56 in x 0.28 in	3.05 mm x 14.22 mm x 7.11 mm	
Weight(without cable)	0.045 oz	1.28 gm	[1]
Electrical Connector	Integral Cable	Integral Cable	
Electrical Connection Position	Side	Side	
Cable Type	096 4-cond silicone jacket	096 4-cond silicone jacket	
Cable Termination	Pigtail Ends	Pigtail Ends	
Cable Length	10 ft	3.05 m	
Mounting	Through Holes (2)	Through Holes (2)	

**OPTIONAL VERSIONS**

Optional versions have identical specifications and accessories as listed for the standard model except where noted below. More than one option may be used.

**NOTES:**

[1] Typical.  
 [2] Verified with test data provided on supplied calibration certificate.  
 [3] Settling Time is the maximum time after power-up for the Offset Voltage to be within +/-2% of Measurement Range output of the final offset value. Mounting surface must be at thermal equilibrium.  
 [4] Individually tested to ensure compliance with specified value.  
 [5] Half-sine pulse duration, ≥ 20 µsec.  
 [6] -65 to +250 °F, ref. 75 °F (-54 to +121 °C, ref. 24 °C)  
 [7] Sensitivity is proportional to excitation voltage, and at other excitation values, sensitivity can be predicted from the 10VDC calibrated value with a small (<~.5%) increase in uncertainty.  
 [8] See PCB Declaration of Conformance PS165 for details.

**SUPPLIED ACCESSORIES:**

Model 081A110 Mounting Screw (4-40 x 1/4" SHCS) (2)  
 Model ACS-62 Shock Pulse Calibration of single axis piezoresistive shock accelerometer to maximum amplitude of 5k g, 10.0 VDC excitation

Entered: LK	Engineer: GD	Sales: RWM	Approved: BAM	Spec Number:
Date: 4/10/2018	Date: 4/10/2018	Date: 4/10/2018	Date: 4/10/2018	<b>65881</b>



All specifications are at room temperature unless otherwise specified.  
 In the interest of constant product improvement, we reserve the right to change specifications without notice.  
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