

## Model: 3991A1060KG

### HIGH AMPLITUDE MEMS SHOCK ACCELEROMETER

MEMS Shock Accelerometer, 60 Kg, thru hole mount, 094 integral Aramid cable (ITAR Controlled)

	ENGLISH	SI	
<b>Performance</b>			
Sensitivity ( $\pm 50\%$ ) (at 10 VDC excitation)	0.003 mV/g	0.0003 mV/(m/s <sup>2</sup> )	[1]
Sensitivity	0.0003 mV/V/g	0.00003 mV/V/(m/s <sup>2</sup> )	[3]
Measurement Range	$\pm 0$ to 60000 g	$\pm 0$ to 588400 m/s <sup>2</sup> pk	
Frequency Range ( $\pm 1$ dB)	0 to 20000 Hz	0 to 20000 Hz	
Resonant Frequency	>120 kHz	>120 kHz	
Damping Ratio	2 % Critical	2 % Critical	[2]
Non-Linearity	$\pm 1\%$	$\pm 1\%$	
Transverse Sensitivity	$\leq 3\%$	$\leq 3\%$	
<b>Environmental</b>			
Overload Limit (Shock)	$\pm 100000$ g pk	$\pm 980665$ m/s <sup>2</sup> pk	[4]
Overload Limit (Mechanical Stops)	$\geq 80$ kg	$\geq 782534$ m/s <sup>2</sup> pk	
Temperature Range (Storage)	-65 to 250 °F	-54 to 121 °C	
Temperature Range (Operating)	-65 to 250 °F	-54 to 121 °C	
Temperature Coefficient of Sensitivity	-0.11 %/°F	-0.20 %/°C	[2]
Zero g Offset Temperature Shift	$\pm 10$ mV	$\pm 10$ mV	[5]
Base Strain Sensitivity	.3 g/ $\mu\epsilon$	2.94 (m/s <sup>2</sup> )/ $\mu\epsilon$	[2]
Magnetic Sensitivity	30 $\mu\text{g/gauss}$	2.94 (m/s <sup>2</sup> )/Tesla	
<b>Electrical</b>			
Excitation Voltage (Maximum)	15 VDC	15 VDC	
Current Consumption	<3 mA	<3 mA	
Input Resistance ( $\pm 2000$ Ohm)	6000 Ohm	6000 Ohm	[2][1]
Output Resistance ( $\pm 2000$ Ohm)	6000 Ohm	6000 Ohm	[2][1]
Offset Voltage	-40 to +40 mVDC	-40 to +40 mVDC	[1]
Settling Time	0.01 sec	0.01 sec	[6]
Electrical Isolation (Base)	$\geq 100000000$ Ohm	$\geq 100000000$ Ohm	[7]
<b>Physical</b>			
Sensing Element	Piezoresistive MEMS	Piezoresistive MEMS	
Sensing Geometry	Full Active	Full Active	
Housing Material	Titanium	Titanium	
Sealing	Epoxy	Epoxy	
Size - Height	0.12 in	3.05 mm	
Size - Length	0.56 in	14.22 mm	
Size - Width	0.28 in	7.11 mm	
Weight (without cable)	.045 oz	1.28 gm	[2]
Electrical Connector	Integral Cable	Integral Cable	
Electrical Connection Position	Side	Side	
Cable Type	094 4-cond, Aramid reinforced, PFA jacket	094 4-cond, Aramid reinforced, PFA jacket	
Cable Termination	Pigtail Ends	Pigtail Ends	
Cable Length	3 ft	0.91 m	
Mounting	Through Holes (2)	Through Holes (2)	

All specifications are at room temperature unless otherwise specified.

### Product Notes

[1] Verified with test data provided on supplied calibration certificate.

[2] Typical.

[3] 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.

[4] Half-sine pulse duration,  $\geq 20$   $\mu\text{sec}$ .

[5] -65 to +250 °F, ref. 75 °F (-54 to +121 °C, ref. 24 °C)

[6] Settling Time is the maximum time after power-up for the Offset Voltage to be within  $\pm 2\%$  of Measurement Range output of the final offset value. Mounting surface must be at thermal equilibrium.

[7] Individually tested to ensure compliance with specified value.

### Accessories:

#### Supplied

081A110	Mounting Screw (4-40 x 1/4" SHCS)	(2)
ACS-62	Shock Calibration of Piezoresistive High Amplitude Accelerometers	(1)