

MODELS  
K2004E01 / K2007E01

## SMARTSHAKER™

- Integrated power amplifier eliminates the need for a separate, cumbersome power amplifier
- SmartShaker™ provides up to 7 lbf (31N) pk sine force with up to 1/2 in (13 mm) stroke
- 10-32 threaded mounting insert supports payloads up to 2 lb (0.907 kg)
- Trunnion mounting base with EasyTurn™ handles

### TYPICAL APPLICATIONS

- General vibration testing for small components, sub-assemblies, and biomedical
- Experimental modal analysis
- Educational laboratory research
- Mechanical impedance measurements

## MINI SHAKER WITH INTEGRATED POWER AMPLIFIER

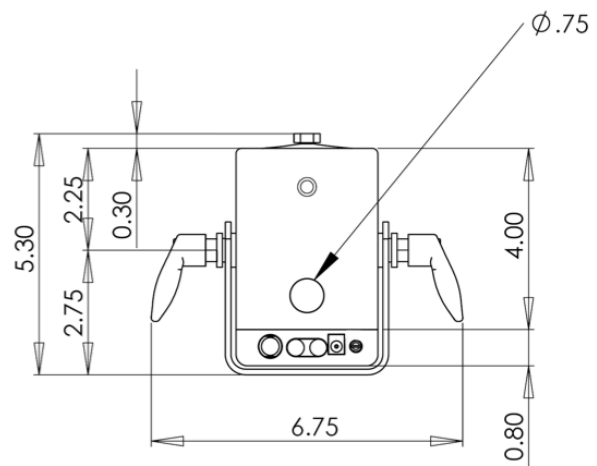
This electrodynamic exciter is a small, portable permanent magnet shaker with a new generation of ultra compact precision power amplifier integrated in its base. The revolutionary SmartShaker™ design eliminates the need for a separate, cumbersome power amplifier - just plug the excitation signal from a dynamic signal analyzer or function generator directly into the BNC on the base of the shaker. The unit is supplied with a DC power supply but can be run directly from any 12-21 VDC supply.

The SmartShaker™ features an extremely rugged suspension systems using carbon fiber composite leaf armature flexures, avoiding the suspension damage common with some other small shakers. Isolated linear bearings provide low distortion and eliminate the need for reaction wrenches when mounting loads to the armature. A trunnion base with EasyTurn™ handle allows for convenient mounting and positioning. The exciter is delivered with a variety of 10-32 nylon stingers which provide electrical isolation from and flexible attachments to test articles.

SPECIFICATIONS		
Performance	K2004E01	K2007E01
Shaker Performance		
Output Force, sine pk		
Natural Air Cooling	4.5 lbf (20 N)	7 lbf (31 N)
Output Force, random RMS		
Natural Air Cooling	3 lbf (13.3 N)	5 lbf (22 N)
Output Force, shock pk	9 lbf (40 N)	15 lbf (67 N)
Stroke Length		
Continuous pk-pk	0.2 in (5 mm)	0.5 in (13 mm)
Between Stops	0.35 in (9 mm)	0.55 in (14 mm)
Frequency Range <sup>[1]</sup>	DC-11 kHz	DC-9 kHz
Acceleration <sup>[1, 2]</sup>		
No load	64 g pk	70 g pk
0.1 lb (0.045 kg) load	26 g pk	35 g pk
1 lb (0.454 kg) load	4.2 g pk	6.4 g pk
2 lb (0.907 kg) load [max payload]	2.2 g pk	3.3 g pk
Maximum Current	5 A	8 A
DC Resistance, armature nominal	1.5 Ω	0.37 Ω
Amplifier Performance		
Efficiency	92%	
Input Voltage, RMS	0-1 VAC <sup>[3]</sup>	
Input Voltage (absolute maximum), RMS	1.9 VAC	
Input Power <sup>[4]</sup>	12-21 VDC	
Output Power <sup>[5]</sup>	55 W	
Distortion, typical <sup>[6]</sup>	< 0.02%	
Cooling	Convection	
Discrete Gain Stages, nominal <sup>[7]</sup>	Muted, 10 dB, 18 dB, 24 dB	
Warning Indication <sup>[7]</sup>	Clipping and over temperature	
Shutdown Protection <sup>[7]</sup>	Over temperature and over current	
Physical		
Armature Mass, nominal	0.07 lb (0.032 kg)	0.1 lb (0.045 kg)
Suspension Stiffness, nominal	15 lbf/in (2.63 N/mm)	
Input Connector	BNC jack	
Output Connector	Mini binding post	
Table Mounting	10-32 thread	
Dimensions (H x W x D), nominal	5.3 x 6.75 x 3.5 in (135 x 171 x 89 mm)	
Weight	7 lb (3.10 kg)	

Supplied Accessories	
K2007E01-PS	Power supply, 60 W, 19 V DC output, 100-240 V AC input
2110G06	Nylon Stinger kit, 10-32 thread, pack of three
Related Products	
288D01	PCB ICP® impedance head driving point sensor, PCB 208 series ICP® force sensors
2025E	Modal Shaker, 25 lbf pk sine force, 0.75 in stroke, through-hole armature design
2060E	Modal Shaker, 60 lbf pk sine force, 1.4 in stroke, with through-hole armature design
2100E11	Modal Shaker, 100 lbf pk sine force, 1 in stroke, through-hole armature design
2075E	Shaker, 75 lbf pk sine force, 1 in stroke, 3.25 in mounting platform with through-hole armature for stinger attachment

- [1] Load dependent  
 [2] Please see systems ratings for additional specifications  
 [3] Typical, full output, gain dependent  
 [4] Supplied with universal power supply, 60 W (19 V DC - 3.15 A output)  
 [5] Based upon supplied universal power supply, 92 % efficiency  
 [6] THD + noise at 1 kHz, 1 W  
 [7] Indicated via LEDs



**Model K200xE01**  
 Technical Drawing  
 Dimensions in inches

## THE MODAL SHOP

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DS-0079 revD



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