



MODEL 2100E21-400

SMARTAMP™ POWER AMPLIFIER

- Revolutionary green design provides 92% efficient, environmentally-friendly operation
- Silent operation provides for a noise-free test environment
- Supplies 400 W output power at 4 Ω load impedance
- Front panel, continuous gain adjustment up to 26 dB
- Flat frequency response to 40 kHz
- Lightweight—just 8.5 lb (3.8 kg)
- Interlock switch for overtravel protection of shaker armature
- Clipping detection provides real-time warning of signal distortion
- DC fault detection provides automatic shutdown of supply signal
- Over-current and over-temperature protection

POWERING ELECTRODYNAMIC EXCITERS

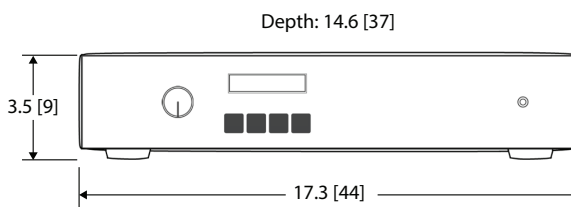
The SmartAmp™ Model 2100E21-400 offers a revolutionary green design, providing cool running, power thrifty, 92% efficient operation. The high performance, ultra-low noise digital amplifier also includes intelligent capabilities. In addition to an interlock switch for over-travel protection of the shaker armature and a safe start-up with the signal output in a mute mode, the SmartAmp includes intelligent clipping detection and DC fault recognition algorithms that provide real-time feedback of the signal output integrity with an automatic shutdown to protect the shaker and test article. Additional digital and analog auxiliary input ports on the SmartAmp allow for on-line shaker temperature and air flow monitoring, protecting the shakers in case of an abnormal condition. Including these smart features as standard in every SmartAmp model provides safety, performance, and value for electrodynamic shaker users.

The SmartAmp design also includes silent operation, as the unit does not require fans, for a noise-free test environment. The 2100E21-400 is extremely lightweight - just 3.8 kg (8.5 lb), which is approximately one third of the weight of traditional shaker amplifiers.

SPECIFICATIONS	
Performance	
Efficiency ^[1]	92%
Output Voltage ^[2] , max	38 V RMS
Current Limit ^[3]	18 A peak
Output Power ^[4]	400 W
Distortion ^[5]	< 0.1%
Frequency Response, +0 / -3 dB, 4 Ω load	0.4 to 40 000 Hz
Max. Voltage Gain	26 dB
Input Impedance	10 kΩ
Output Impedance ^[6]	30 mΩ
Cooling ^[7]	Convection
Protection Features	Interlock Switch
	DC Fault Detection
	Clip Detection
	Over-Current / Over-Temperature Detection
	Safe Start in Mute Mode
Electrical	
Input Power	
Voltage	100-120 V AC or 220-240 V AC
Frequency	48 to 62 Hz
Physical	
Front Panel Display	Two row, four function keys LCD
Dimensions (H x W x D)	3.5 x 17.3 x 14.6 in 9 x 44 x 37 cm
Weight	8.5 lb 3.8 kg
Input Connector	BNC Jack
Output Connectors	Screw Terminals
Interlock Connectors	Screw Terminals
Supplied Accessories	
Power Cable	
Rack Mounting Brackets	
Rubber Feet	
Spare Fuses	

- [1] at full power output
 [2] at 4 Ω load impedance, 1 kHz, THD 0.1%
 [3] typical, over-current protection limited
 [4] at 4 Ω load impedance, 1 kHz, THD 0.04%
 [5] typical, THD + noise 10 Hz - 20 kHz, 2 Ω load, 50 W
 [6] at frequencies less than 1 kHz
 [7] 40 mm silent fan, automatically controlled

Related Products	
2025E	Modal Shaker, 58 N (13 lbf) pk sine force, 18 mm (.75 in) pk-pk stroke, through-hole armature design
2060E	Modal Shaker, 267 N (60 lbf) pk sine force, 36 mm (1.4 in) pk-pk stroke, through-hole armature design
2075E	Shaker, 334 N (75 lbf) pk sine force, 25.4 mm (1 in) pk-pk stroke, through-hole armature, 83 mm (3.25 in) table
2100E11	Modal Shaker, 440 N (100 lbf) pk sine force, 25.4 mm (1 in) stroke, through-hole armature design



Outline Drawing

Dimensions are in inches [cm]



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The Modal Shop, Inc. offers structural vibration and acoustic sensing systems and services for various applications in design and test laboratories as well as manufacturing plants. An extensive sound and vibration rental program, precision calibration systems, and both modal and vibration shakers are designed to simplify test phases. Non Destructive Testing Systems help manufacturers provide 100% quality inspection of metal components. The Modal Shop, Inc. is a subsidiary of PCB Piezotronics, Inc., and PCB® is a wholly owned subsidiary of MTS Systems Corporation.

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