

MODAL 1000 Inertial Exciter



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MODAL 1000

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MODAL 1000 Specifications

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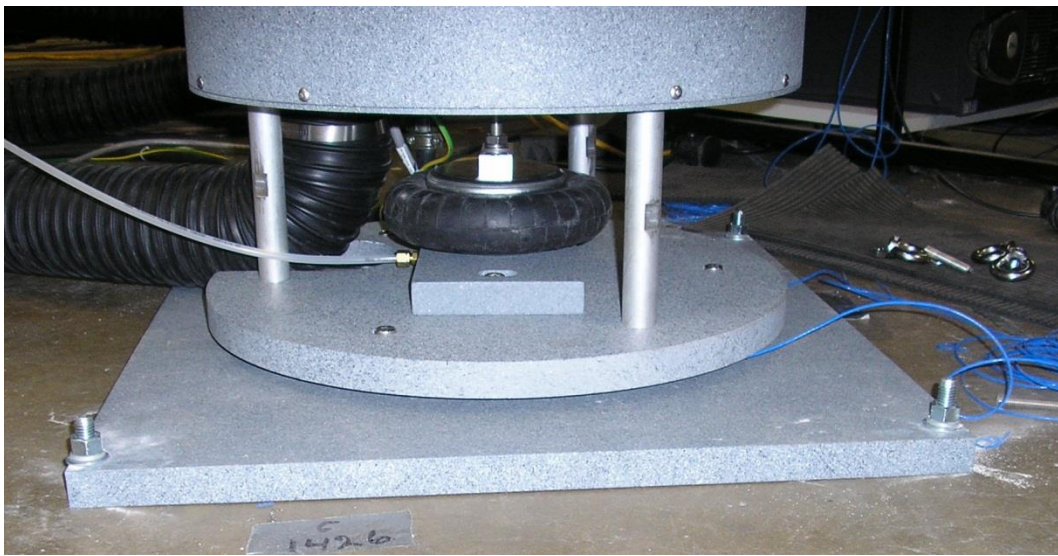
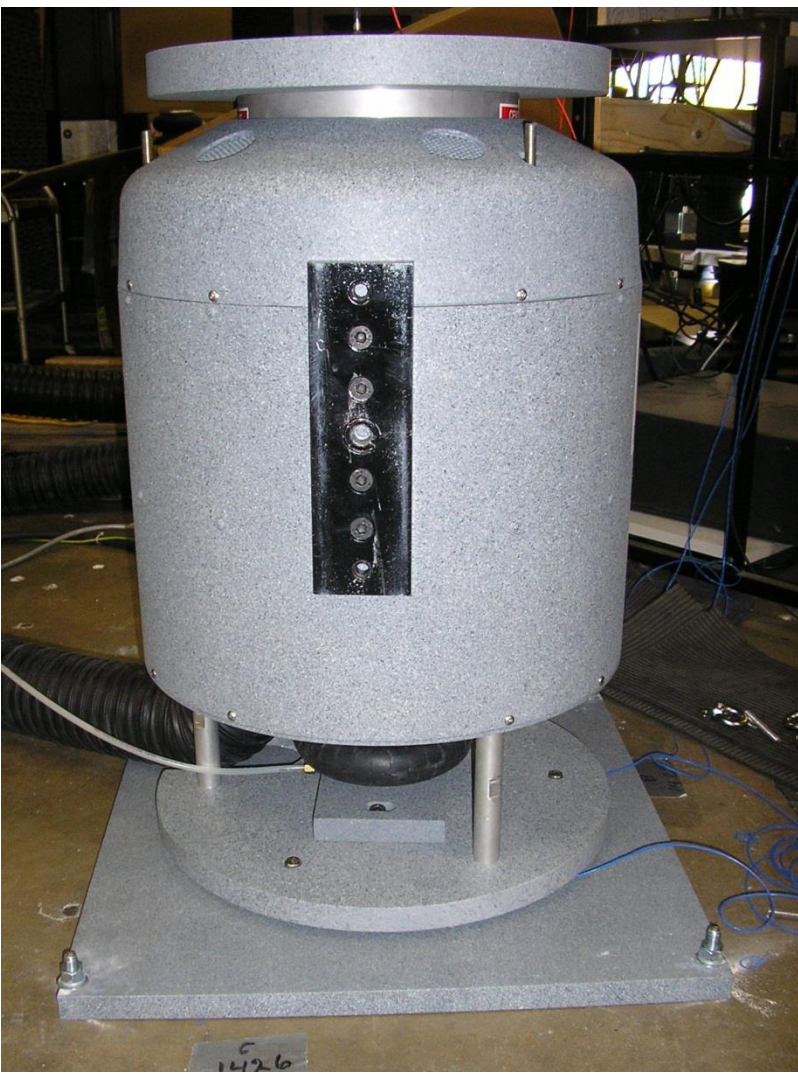


Technical Specifications for MODAL 1000

Force Output with Forced Air Cooling	* 4,000N pk sine excitation (900 lbf); 2,600N RMS random (585 lbf)
Force Output with Ambient Air Cooling	* 2,000N pk sine excitation (450 lbf); 1,300N RMS random (290 lbf)
Stroke	* 45mm peak-to-peak (1.8 in. p-p)
Velocity	* 1.75m/s peak (70 inches/second)
Acceleration	* 25 g pk continuous sine (MODAL 1000 moving element only)
Frequency Range	* DC-2000 Hz
Moving Element Weight	* 16.4kg (36 lbs.)
Moving Element Axial Resonance	* > 2,000 Hz
Driven-Axis Stiffness	* 31 N/mm (180 pounds/inch)
Exciter Weight, incl. Trunnion Base	* 364kg (800 pounds)
Stinger Kit (Stainless Steel)	* ½” hex stingers: three 400mm long, three 200mm long; each has 3/8-16 UNC threads on one end and ¼-28 UNF-2B on the other
Stinger Attachment	* Chuck (1/2” drill size) and wrench key for tightening on stingers
Shaker Attachments	* Floor mount with trunnion base; with vertical-only base; suspension mount with optional turnbuckles & trunnion base
Dimensions in trunnion base	* 570mm X 485mm Footprint X 910mm High (to top of chuck)
Drive Cable Length	* 10m (32 ft.)
Power Amplifier	* MB Model PVL-S (see Data Sheet; amplifier only, no field supply)
Cooling (optional)	* Portable unit; optional Quiet Enclosure < 60dBA; or shop air
Accessory Kit & Inertial Mass (optional)	* Bolt-on-masses with nuts & bolts for mounting: 38kg and 50kg
Force Sensor (optional)	* 4,450N (1,000 lbs.) tension & compression; 5mV/lb (1124 mV/kN)

Inertial Exciter Option

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Model Number 1203V4	PERFORMANCE SPECIFICATION		Doc No PS1203V4
	Force Sensors, IEPE		REV. A, EDN 7748, 08/18/11

• RING STYLE FORCE SENSOR
• HERMETICALLY SEALED
• EXCELLENT LINEARITY

This family also includes:

Model	Sensitivity (mV/Lb)	Range (Lbs Force)	Max Force (Lbs Force)	Discharge T.C. (sec)
1203V1	50	100	200	90
1203V2	10	500	1,000	450
1203V3	5	1,000	5,000	850
1203V5	0.5	10,000	15,000	1800

Please refer to the performance specifications of the products in this family for detailed description

Supplied Accessories:
1) Accredited calibration certificate (ISO 17025)

Notes:
[1] Racially mounted with 10-32 receptacle micro coaxial connector.
[2] Percent of full scale or any lesser range. Zero based best-fit straight line method.
[3] Power these instruments only with constant current type power units. Do not connect to a source of voltage without current limiting. This will destroy the integral IC amplifier.

0.110 (27.9) 0.79 (20.1)

		ENGLISH		SI	
PHYSICAL	Weight, Max.	1.75	oz	50	grams
	Connector [1]	10-32		10-32	
Housing	Type	Stainless steel		Stainless steel	
	Material	Stainless steel		Stainless steel	
Sensing Element	Material	Case mounted		Case mounted	
	Mode	Quartz		Quartz	
PERFORMANCE	Sensitivity	1	mV/Lb	0.25	mV/N
	Compression Range	5,000	Lb Force	22.24	kN
	Maximum Compression	10,000	Lb Force	44.48	kN
	Discharge Time Constant	1.800	Seconds	1800	Seconds
	Bandwidth Resolution	0.00074	Lb, rms	6.23E-07	kN, rms
	Maximum Unloaded Shock	10,000	g's	98,000	m/s ²
	Maximum Unloaded Vibration	5,000	g's Peak	49,000	m/s ² Peak
	Linearity [2]	± 1	% Full Scale	± 1	% Full Scale
	Resonant Frequency	>75	kHz	>75	kHz
	Stiffness	20	Lb/in	3.45	kN/mm
ENVIRONMENTAL	Coefficient of Thermal Sensitivity	0.03	%/°F	0.05	%/°C
	Operating Temperature	-100 to +250	°F	-73 to +121	°C
ENVIRONMENTAL	Environmental Seal	Hermetic		Hermetic	
ELECTRICAL	Supply current	2 to 20	mA	2 to 20	mA
	Voltage Range [3]	18 to 30	VDC	18 to 30	VDC
	Full Scale Output Voltage	5	Volts	5	Volts
	Output Impedance	<100	Ω	<100	Ω
Electrical	Bias Voltage	12 to 24	VDC	12 to 24	VDC

Moving Mass	Frequency	Displacement	Payload Acceleration	Payload Force	Inertial Force	Volts	Current	Ratio, Inertial/Payload
(kg/lbs)	(Hz)	(mm/in) pp	(g's) pk	(N/lbf) pk	(N/lbf) pk	(RMS)	(RMS)	%
15.6/34.4	5	38/1.5	1.9	290/65	55.8	27	9.4	0.858
	10	38/1.5	7.6	1160/260	202	50	2.3	0.777
53.6/118	5	38/1.5	1.9	1000/225	189	26	4.5	0.840
	10	38/1.5	7.6	4000/900	752	43.5	33.3	0.836
104.5/230	5	38/1.5	1.9	1945/435	390	26	6.3	0.897
	10	19.4/0.76	3.9	4000/900	767	25	37.8	0.852

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