

PIEZORESISTIVE (PR) ACCELEROMETER

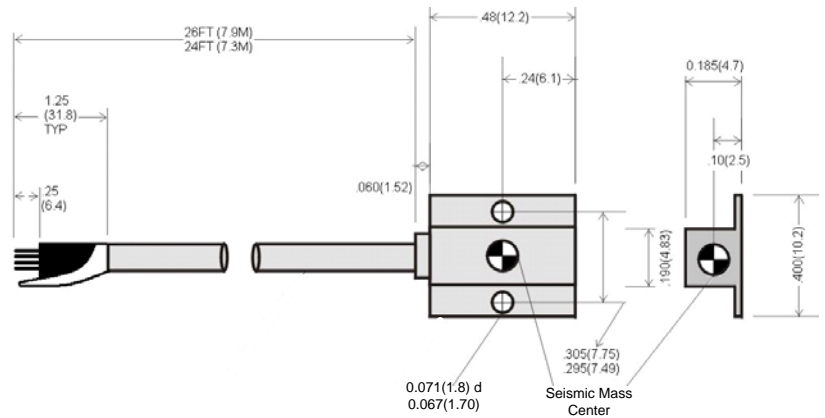
**MODEL
1500**

- Wide Frequency Response
DC to 30 kHz F
- 500 and 2000 g Ranges
- Undamped
- Small, Light Weight, Rugged



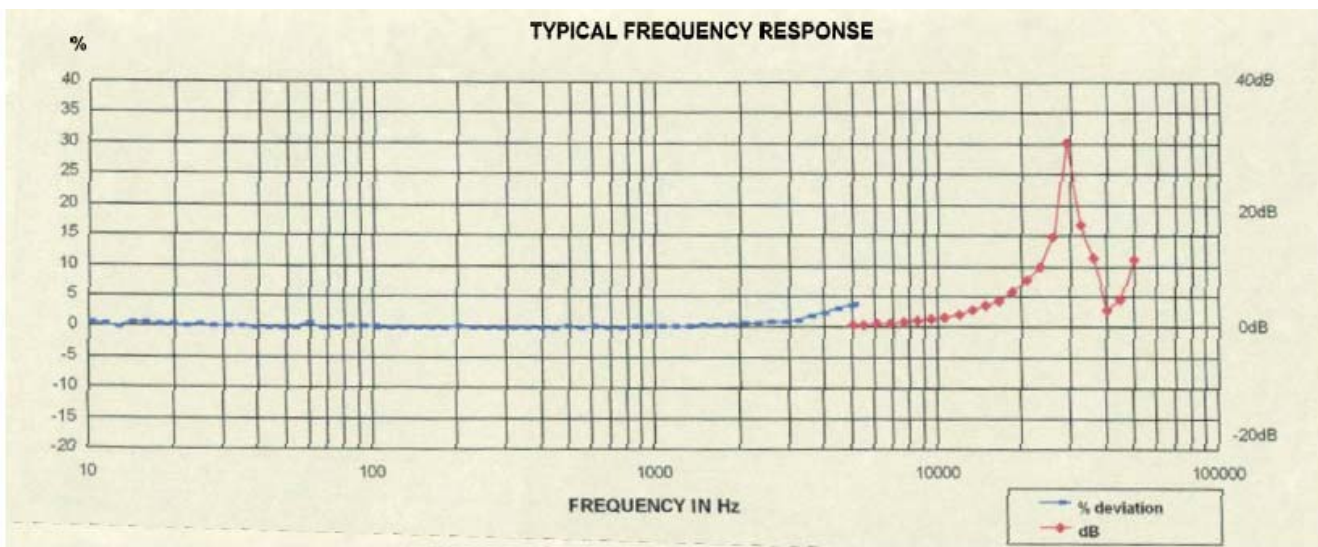
Description

The VIP Sensors Model 1500 is a MEMS Piezoresistive Accelerometer designed to measure short duration shocks as well as long duration transients. Its undamped design and wide frequency response (DC to $\geq 20\text{KHz}$) allows measurements of shock signals with excellent fidelity, without spurious effects such as zero shifts, amplitude distortion, and phase distortion typical of AC or damped DC accelerometers. Its low mass ($\leq 1\text{gram}$) minimizes mass loading effects, therefore it is ideal for testing lightweight structures and systems.



The Model 1500 monolithic rugged design includes mechanical stops to prevent damage when subject to over range excitation levels. It has excellent linearity and it features very low transverse sensitivity ($\leq 3\%$). It is stable after shock and over the operating temperature range. Electrically it is configured as full bridge allowing shunt calibration.

The VIP Sensors' Model 1500 accelerometer meets SAEJ211 specifications for anthropomorphic dummy instrumentation therefore is ideal for automotive crash testing, flutter testing, and vehicle road testing.



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MODEL 1500

SPECIFICATIONS

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C) and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

	Units	1500-500	1500-2000
DYNAMIC CHARACTERISTICS			
Full Scale Range	g	500	2000
Mechanical Stop -Typical	g	900	3500
Sensitivity	mV/g	0.4 to 0.8	0.15 to 0.2
Frequency Response F-5%	Hz	0 to 3,000	0 to 5,000
Resonant Frequency typical	KHz	17	28
Damping Ratio			0.05
Non-Linearity & Hysteresis	% Max		±1
Transverse Sensitivity	% Max		3
-K option	% Max		1
Zero Measurement Output	mV Max		±20
Thermal Zero Shift	mV Max (Typical)		±20 (±10)
Thermal Sensitivity Shift (-40 to 200 ⁰ F)	%/F typ		0.002
Base Strain Sensitivity	equivalent g Max		0.1
Warm Up Time	μ S Typ		2
ELECTRICAL CHARACTERISTICS			
Excitation	Vdc		10
Input Resistance	Ω		600 ± 300
Output Input Resistance	Ω		850 ± 150
Fixed Resistance	Ω		500±1%
Isolation Resistance	MΩ		100
ENVIRONMENTAL			
Acceleration	g	1,000	5,000
Sinusoidal Vibration	g	1000(below 3KHz)	1000(below 5KHz)
Shock –Half Sine (200μSec)	g	2,000 (1 mS)	5,000 (0.2 mS)
Operating Temp	°F (°C)		0 to 150 (-18 to 65)
Storage Temp	°F (°C)		-65 to 250 (-54 to 121)
PHYSICAL			
Weight	grams		1
Case isolated, Epoxy Sealed			

CONNECTIONS: 4 Conductors. 32 AWG Teflon Wires, Braided Shied, Silicon Jacket

CALIBRATION: Cal certificate provided

