

Miniature tri-axial IEPE accelerometer

Description

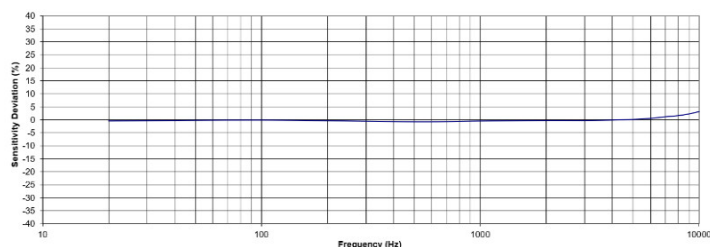
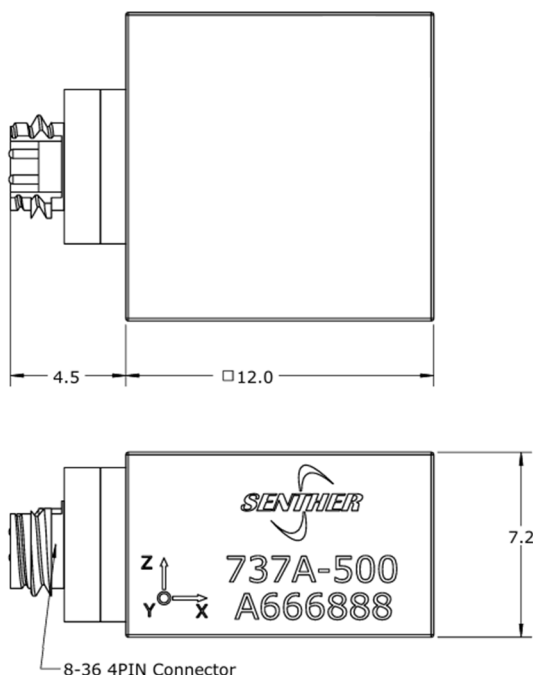
Model 737A is a mini IEPE tri-axial accelerometer designed for miniature applications. The accelerometer uses shear piezo electronical element which provides a wide operating frequency range. The IEPE sensor combines outstanding crystals and low noise integral microelectronics to achieve very low sensitivity variation over the operating temperature range, compared to other sensing element designs. The shear element technology also ensures high immunity to base strain errors. The accelerometer uses a welded titanium construction for low mass and a light weight 4 pin connector. Optional design is available for underwater application(class IP68), the water-proof design is work for application of underwater vibration testing at up to 1 Mpa. Excellent frequency response, both amplitude and phase, provide the user with a tri-axial accelerometer ideally suited for structural and component testing, drop tests and general laboratory vibration work. The miniature size of this accelerometer enables the test engineer or technician to measure the accelerations of three orthogonal axes of vibration simultaneously on lightweight structures. All variations provide reliable measurements and long-term stability.

Features

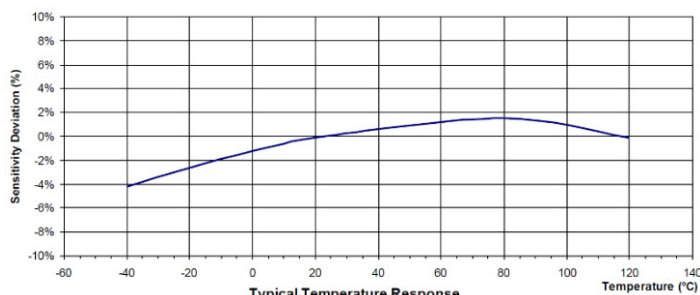
- Tri-axial measurement
- Flexible cable exit
- Miniature size/connector
- Hermetic sealed
- Annular shear mode
- Wide frequency response
- Reliable performance

Application

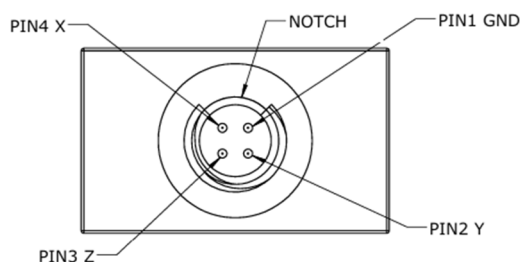
- Aircraft testing
- Shock testing
- Road testing
- Modal analysis
- Flight test



Typical Frequency Response



Typical Temperature Response



Specification

Typical at +24°C (+75°F), 24Vdc, 4 mA and 100Hz, unless otherwise stated.

Measurement range	±50	±100	±200	±500	±1000	±2000	g
Sensitivity, ±10%	100	50	25	10	5	2.5	mV/g
Frequency response, ±5%	0.7~10000	0.7~10000	0.7~10000	0.7~10000	0.7~10000	0.7~10000	Hz
Frequency response, ±10%	0.3~12000	0.3~12000	0.3~12000	0.3~12000	0.3~12000	0.3~12000	Hz
Resonant frequency	42	42	42	42	42	42	kHz
Transverse sensitivity	<5	<5	<5	<5	<5	<5	%
Temperature response	±10	±10	±10	±10	±10	±10	%
Non-linearity	±1	±1	±1	±1	±1	±1	%FSO
Residual noise (2 Hz to 20 KHz)	0.0005	0.0006	0.0007	0.0008	0.001	0.002	Equiv. g RMS
Operating temperature	-55 to +85	-55 to +100	-55 to +125	-55 to +125	-55 to +125	-55 to +125	°C
Shock limit	5000	5000	5000	5000	5000	5000	g

Parameters	Value	Units
Bias voltage (room temperature)	8 to 12	Vdc
Bias voltage (operating temperature)	6 to 13	Vdc
Output impedance	<100	Ω
Full scale output voltage	±5	V
Insulation resistance (@100Vdc)	>100	MΩ
Supply (compliance) voltage	18 to 30	Vdc
Supply current	2 to 10	mA
Humidity	Hermetically sealed	
Case material	Titanium alloy	
Sensing element	Piezo ceramic	
Weight	4.5	Grams

Accessories

Calibration certificate included.

Part Number	Description	Availability
13M7-3	3 meter mating cable with 4 pins mating connector to 3X BNC(male) connector	Optional
IN-03	3 channels IEPE signal conditioner	Optional
PF0095	Quick dry adhesive epoxy-Loctite® #401	Optional
IN-91	Portable vibration analyzer	Optional
IN-3062	8 channels data acquisition system	Optional

Measurement configuration

Sensor	Mating cable	Signal conditioner	BNC cable	Data acquisition	Computer
					

Ordering information

737	A	-	50
Model	Output signal	-	Range
737	A=IEPE output	-	50=50g 100=100g 200=200g 500=500g 1000=1000g 2000=2000g

