

Miniature tri-axial IEPE accelerometer

Description

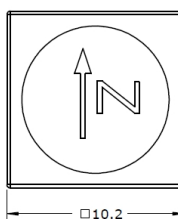
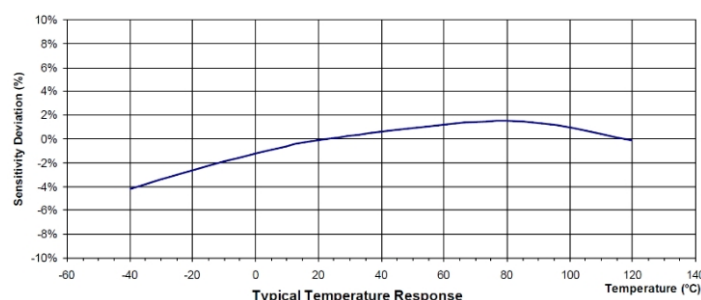
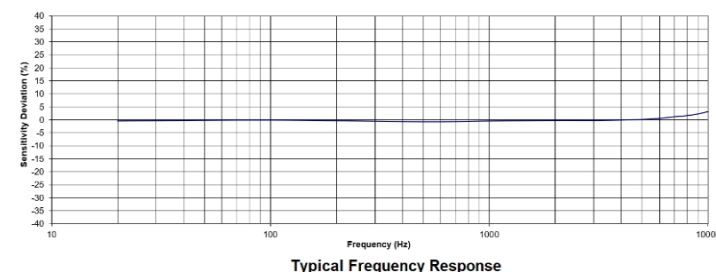
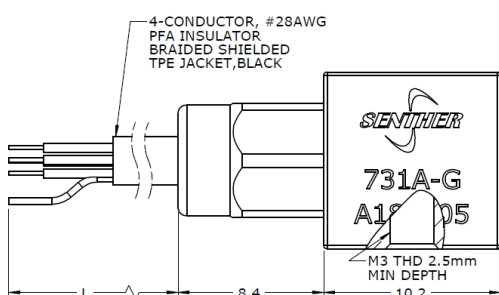
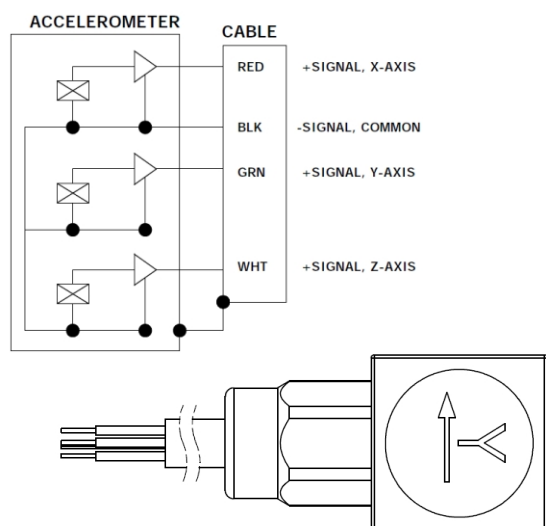
Model 731A is an IEPE triaxial accelerometer designed for under-water applications. The accelerometer uses shear piezo electronical element which provides a wide operating frequency range. The IEPE sensor combines outstanding crystals and low noise integral microelectronics to achieve very low sensitivity 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 integral cable assembly for under water operation. Excellent frequency response, both amplitude and phase, provide the user with a triaxial accelerometer ideally suited for structural and component testing, drop tests and hydraulic dynamic laboratory work. The miniature cube 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

- Waterproof design
- Tri-axial measurement
- Miniature cube
- Adhesive or stud mounting
- Hermetic seal
- Annular shear mode
- Shock duration

Application

- Hydraulic dynamic
- Shock testing
- Satellite testing
- Modal analysis
- Aircraft testing



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, ±15%	100	50	25	-	-	-	mV/g
Sensitivity, ±10%	-	-	-	10	5	2.5	mV/g
Frequency response, ±5%	1~10000	0.5~10000	2~10000	1~10000	1~10000	1~10000	Hz
Frequency response, ±3dB	0.5~15000	0.3~15000	1~15000	0.5~15000	0.5~15000	0.5~15000	Hz
Resonant frequency	42	42	42	42	42	42	kHz
Transverse sensitivity	<5	<5	<5	<5	<5	<5	%
Temperature response, -55 to +125°C	±10	±10	±10	±10	±10	±10	%
Non-linearity	±1	±1	±1	±1	±1	±1	%FSO
Residual noise (2 Hz to 20 KHz)	0.0016	0.002	0.002	0.002	0.006	0.006	Equiv. g RMS
Shock limit	5000	5000	5000	5000	5000	5000	g

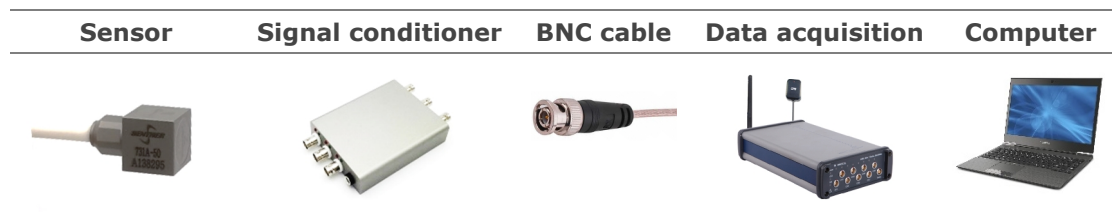
Parameters	Value	Units
Bias voltage (room temperature)	8 to 12	Vdc
Bias voltage (-55°C to 125°C)	6 to 13	Vdc
Output impedance	<100	Ω
Full scale output voltage	±5	V
Insulation resistance (@100Vdc)	>100	MΩ
Supply (compliance) voltage	18 to 30	Vdc
Supply current	2 to 10	mA
Operating & storage temperature	-55 to +125°C	°C
Humidity	Hermetically sealed	
Case material	Titanium alloy	
Sensing element	Piezo ceramic	
Weight(W/O cable)	4.3	Grams
Mounting torque	16 (1.8)	lb-in (N-m)

Accessories

Calibration certificate included.

Part Number	Description	Availability
PM0117	M3X8.0 cup point set screw	Included
IN-03	3 channels IEPE signal conditioner	Optional
IN-91	Portable vibration analyzer	Optional
IN-3062	8 channels data acquisition system	Optional

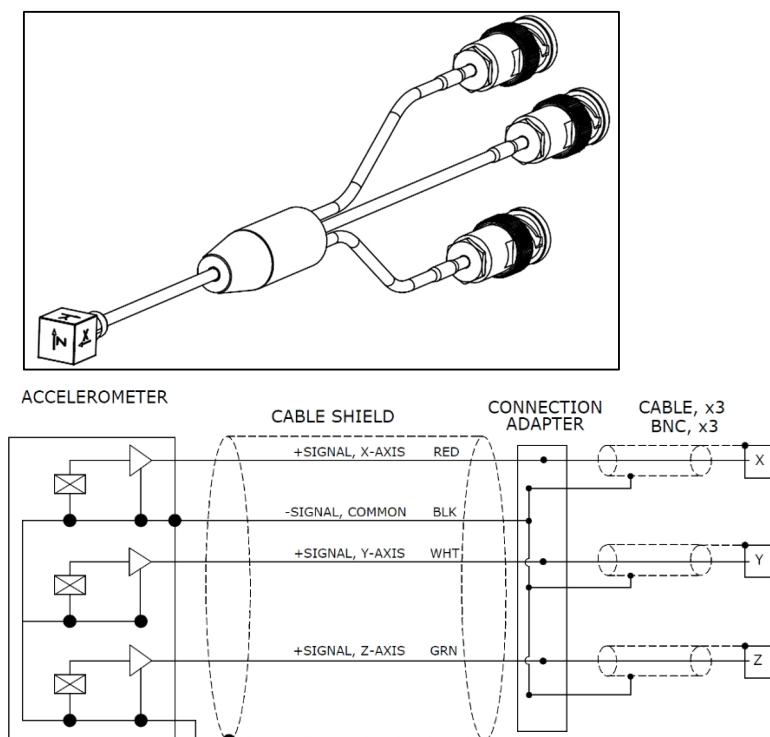
Measurement configuration



Ordering information

731	A	-	50	8
Model	Output signal	-	Range	Cable length
731	A=IEPE output E=IEPE output with TEDS	-	50=50g 100=100g 200=200g 500=500g 1000=1000g 2000=2000g	6=6 meters 8=8 meters

Appendix: (731A-G-M1-L specialty)



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