

Multiway wire outlet IEPE accelerometer



Features

- Through hole mount
- Side connector output
- Adhesive or screw mounting
- Annular shear mode
- Wide temperature range
- Wide frequency response
- Light weight

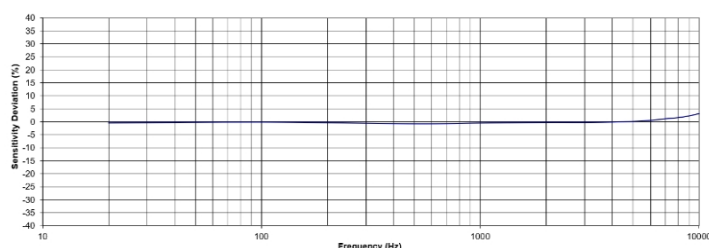
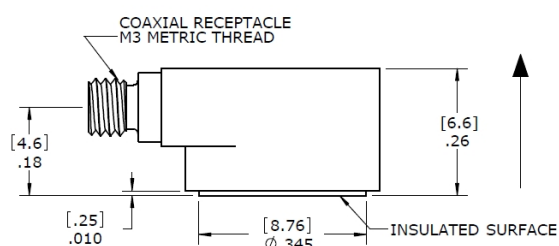
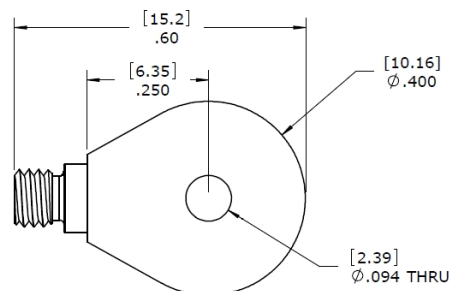
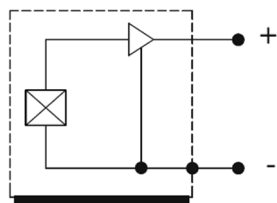
Application

- Vibration monitoring
- Shock testing
- Road testing
- Modal analysis
- Aircraft testing

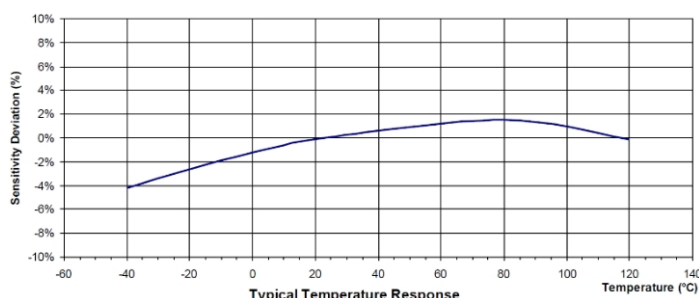
Description

Model 578A is an IEPE light-weight accelerometer permitting simultaneous shock and vibration measurements. 578A features an annular shear ceramic crystal which exhibits excellent output stability over time. The accelerometer incorporates an internal circuit in a two-wire IEPE system which transmits its low impedance voltage output through the same cable that supplies the constant current power. Signal ground is connected to the outer case of the unit. Isolated mounting screw or washer are available. Polarity inversion protection for the amplify circuit is inherent in the circuit design. The welded Titanium Alloy construction provides a lightweight hermetic housing. The miniature M3 glass insulated connector provides long-term stability over the operating temperature range. In addition to adhesive mounting, 578A has a through holes for screw mounting on the test object. The cable outgoing direction can be discretionary for install convenience. 578A provides wide frequency response, which is ideal for dynamic vibration and shock measurement especially for lightweight structures and drop testing for the packaging industry. Senter's model 12-L is a M3 to BNC breakout cable for the sensor.

ACCELEROMETER



Typical Frequency Response



Typical Temperature Response

Specification

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

Part Number	-10	-50	-100	-250	-500	-1000	-5000	
Measurement Range	10	50	100	250	500	1000	5000	g
Sensitivity $\pm 10\%$	500	100	50	20	10	5	1	mV/g
Frequency Range $\pm 5\%$	2-4000	1-7000	1-7000	1-7000	1-7000	1-7000	1-7000	Hz
Frequency Range $\pm 10\%$	1.5-10000	1-10000	1-10000	1-10000	1-10000	1-10000	1-10000	Hz
Frequency Range $\pm 3\text{dB}$	0.6-12000	0.5-15000	0.5-15000	0.5-15000	0.5-15000	0.5-15000	0.5-15000	Hz
Resonant Frequency	38	38	38	38	38	38	38	kHz
Transverse Sensitivity	<5	<5	<5	<5	<5	<5	<5	%
Temperature response -55 to +125°C	± 10	± 10	± 10	± 10	± 10	± 10	± 10	% max.
Broadband Resolution	0.0002	0.0005	0.0005	0.0012	0.0012	0.0012	0.002	Equiv. g RMS
Non-Linearity	± 1	± 1	± 1	± 1	± 1	± 1	± 1	% FSO
Shock Limit	± 10000	± 10000	± 10000	± 10000	± 10000	± 10000	± 10000	g pk
Weight (Excluding Cable)	2.4	2.4	2.4	2.4	2.4	2.4	2.4	Grams

Parmeters	Value	Units
Bias Voltage (Room Temp.)	8-12	Vdc
Bias Voltage (-50~125) °C	6-13	Vdc
Output Impedance	<100	Ω
Full Scale Output Voltage	± 5	V
Insulation Resistance	>100	M Ω
Supply Voltage	18-30	VDC
Supply Current	2 to 10	mA
Operating and Storage Temperature	-50~+125	°C
Sensing Element	Piezo Ceramic	
Sensing Geometry	Shear	
Housing Material	Titanium Alloy	
Sealing	Welded Hermetic	
Grounding	Signal return connected to case	

Accessories

Calibration certificate included.

Part Number	Description	Availability
PM0508	M2x10 socket head cap mounting screw	Included
12-3	3 meter mating cable with M3(male) to BNC(male) connector	Optional
14-3	3 meter mating cable with M3(male) to 10-32(male) connector	Optional
IN-03	3 channels IEPE signal conditioner	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

578	A	-	50
Model	Output signal	-	Range
578	A=IEPE output	-	10=10g 50=50g 100=100g 250=250g 500=500g 1000=1000g 5000=5000g



Senter reserves the right to make changes to any products or technology herein to improve reliability, function or design. Senter does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights nor the rights of others.