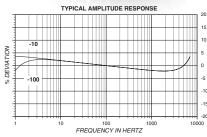
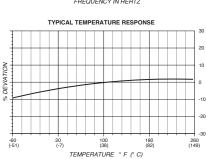
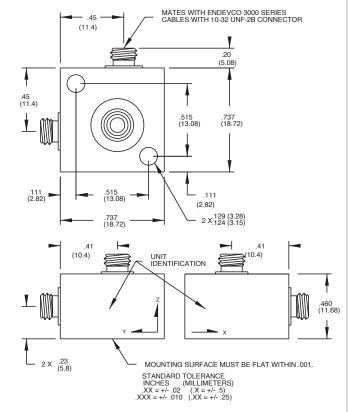
Isotron® accelerometer

Model 2258A









Key features

- NEW! 2258A-10-R available as replacement sensor
- Triaxial
- Light weight (15 gm)
- Hermetically sealed
- Milli-g's resolution
- Robotics, machine tools, aerospace structures

The Endevco® model 2258A is a small triaxial piezoelectric accelerometer with integral electronics, designed specifically for measuring vibration in three orthogonal axes on small structures. The transducer features three hermetically sealed 10-32 connectors for output connection, and can be screw or adhesive mounted. Its light weight (15 gm) effectively minimizes mass loading effects.

The model 2258A features Endevco's Piezite® type P-8 crystal elements, operating in annular shear mode, which exhibit excellent output sensitivity stability over time. This accelerometer incorporates three stand-alone, low noise internal hybrid signal conditioners, each operating in a two-wire system. Its low impedance voltage outputs are connected to the same cables that supply the required constant current power. Signal grounds are isolated from each other and the mounting surface. A model number suffix indicates acceleration sensitivity in mV/g; i.e., 2258A-10 features output sensitivity of 10 mV/g.

Endevco signal conditioner models 4416B, 133, 2792B, 2793, 2775B, 4999, 6634C or Oasis 2000 [4990-X with cards 428 and/or 433] computer-controlled system are recommended for use with this accelerometer.



Isotron® accelerometer

Model 2258A

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.

Acceleration applied in the direction of arrow on the unit produces positive output of 10 to	Dynamic characteristics	Units	-10	-100		
\$10% Frequency response See typical amplitude response Resonance frequency Sylicial MHz	Range	g	±500	±50		
See typical amplitude response Resonance frequency Figure Resonance frequency Figure Resonance frequency Figure	Voltage sensitivity		10	100		
Note	±10%					
Minimum	Frequency response	See typical amplitude response				
Amplitude response 10% Hz 1 to 7000 1 to 7000 2 10% 1 to 7000 1 to 7000 1 to 7000 2 10% 3 to 70% 1 to 7000 1 to 7000 1 10% 3 See typical curve 4.79 F1-55°C Imax % -15 -10 -10 -10 -10	Resonance frequency	••				
### Aprillude response ### 10% ### 10% ### 10	typical	kHz	20	20		
# 10%	minimum	kHz	18	18		
# 10% Temperature response	Amplitude response					
See typical curve	±10%	Hz	1 to 7000	1 to 7000		
- \$^PF [-158°C] max	±10%					
Transverse sensitivity	Temperature response	See typical curve				
Transverse sensitivity	-67°F (-55°C) max	%	-15	-15		
Output characteristics Acceleration applied in the direction of arrow on the unit produces positive output Do Loutput bias voltage Acceleration applied in the direction of arrow on the unit produces positive output DC output bias voltage Vdc +12.3 to +13.5 +7.0 to +16.0 47.0 to +16.0 +7.0 to +16.0 200 ±200 ≤200 ≤200 ≤200 ≤200 ≤200 ≤5 ±6 ±6 ±6 <th>257°F (125°C) max</th> <th>%</th> <th>+5</th> <th>+5</th>	257°F (125°C) max	%	+5	+5		
Output characteristics Output polarity DC output bias voltage	Transverse sensitivity	%	≤ 5	≤ 5		
Output ploarity Acceleration applied in the direction of arrow on the unit produces positive output DC output bias voltage Vdc +12.3 to +13.5 +12.3 to +13.5 +12.3 to +13.5 +12.3 to +13.5 +7.0 to +16.0 Output impedance 0 ≤ 200 ≤ 200 ≤ 200 Full scale output voltage V ±5 ±5 Residual noise typical equiv. g rms 0.001 0.0003 maximum equiv. g rms ≤ 0.0002 ≤ 0.0005 .0 Flz to 10 kHz, broadband Each sensor is isolated from the other signal grounds and the triaxial housing Overload recovery µsec ≤ 45 Load see load diagram Power requirement Supply voltage Vdc +23 to +30 +23 to +30 Supply current mA +2 to +20 2 to +20 Warm-up time (to within 10% of final bias) sec <8 <8 Environmental characteristics Temperature range Hermetically sealed Hermetically sealed Humidity Hermetically sealed Hermetically sealed Shock limit [1] g pk ±1000 ±1000 Base strain sensitivity <th>Amplitude linearity</th> <th>%</th> <th>≤ 1 to full scale</th> <th>≤ 1 to full scale</th>	Amplitude linearity	%	≤ 1 to full scale	≤ 1 to full scale		
Output ploarity Acceleration applied in the direction of arrow on the unit produces positive output DC output bias voltage Vdc +12.3 to +13.5 +12.3 to +13.5 +12.3 to +13.5 +12.3 to +13.5 +7.0 to +16.0 Output impedance 0 ≤ 200 ≤ 200 ≤ 200 Full scale output voltage V ±5 ±5 Residual noise typical equiv. g rms 0.001 0.0003 maximum equiv. g rms ≤ 0.0002 ≤ 0.0005 .0 Flz to 10 kHz, broadband Each sensor is isolated from the other signal grounds and the triaxial housing Overload recovery µsec ≤ 45 Load see load diagram Power requirement Supply voltage Vdc +23 to +30 +23 to +30 Supply current mA +2 to +20 2 to +20 Warm-up time (to within 10% of final bias) sec <8 <8 Environmental characteristics Temperature range Hermetically sealed Hermetically sealed Humidity Hermetically sealed Hermetically sealed Shock limit [1] g pk ±1000 ±1000 Base strain sensitivity <th></th> <th></th> <th></th> <th></th>						
DC output bias voltage	Output characteristics					
- 4.7°F to 257°F (-55°C to 125°C)	Output polarity		Acceleration applied in the direction of arrow on	the unit produces positive output		
Output impedance 0 ≤ 200 ≤ 200 Full scale output voltage V ±5 ±5 Residual noise typical equiv. g rms 0.001 0.0003 maximum equiv. g rms 0.001 0.0003 0.5 Hz to 10 kHz, broadband Cornuding Each sensor is isolated from the other signal grounds and the triaxial housing Overload recovery µsec < 45	DC output bias voltage	Vdc	+12.3 to +13.5	+12.3 to +13.5		
Full scale output voltage Residual noise typical maximum	-67°F to 257°F (-55°C to 125°C)	Vdc	+7.0 to +16.0	+7.0 to +16.0		
Residual noise typical equiv. g rms 0.001 0.0003 maximum equiv. g rms ≤ 0.002 ≤ 0.0005 0.5 Hz to 10 kHz, broadband Grounding Overload recovery µsec ≤ 45 see load diagram Power requirement Supply voltage Vdc +23 to +30 +23 to +30 Supply current mA +2 to +20 2 to +20 Warm-up time (to within 10% of final bias) sec < 8 <8 Environmental characteristics Temperature range Humidity Sinusoidal vibration limit g p k 2000 2000 Base strain sensitivity X and Y axis equiv. g pk/µstrain equiv	Output impedance		≤ 200	≤ 200		
typical maximum 0.5 Hz to 10 kHz, broadband Grounding Overload recovery Load Power requirement Supply voltage Vdc Warm-up time (to within 10% of final bias) Sec Environmental characteristics Temperature range Humidity Sinusoidal vibration limit Spak Sase a sequiv. g pk/µstrain And Y axis And	Full scale output voltage	V	±5	±5		
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Grounding Overload recovery µsec Each sensor is isolated from the other signal grounds and the triaxial housing 2 45 Each sensor is isolated from the other signal grounds and the triaxial housing 2 45 See load diagram Power requirement Supply voltage Supply current MA Pacific Power within 10% of final bias Supply current MA Pacific Power within 10% of final bias Sec Renvironmental characteristics Temperature range Humidity Sinusoidal vibration limit Sp pk Power requirement Power requirement Supply voltage Supply current MA Pacific Power Power Power requirement Power requirement Supply voltage Supply voltage Power requirement Supply voltage Power requirement Supply voltage Power requirement Supply voltage Power requirement Supply voltage Power requirement See load diagram Power requirement Power requirement Power requirement See load diagram Power requirement Power volument Power requirement See load diagram Power requirement Power requirement See load diagram Power requirement Power requirement See outline drawing Note of Power requirement See outline drawing Note of Power requirement See outline drawing Note of Power requirement Note of Power requirement Some out of Power requirement Some outline of Power requirement Power requirement Some outline of Power requirement Some outline of Power requirement Some outline of Power requirement Power requirement Some outline of Power requirement Power requirement Some outline of Power requirement	maximum	equiv. g rms	≤ 0.002	≤ 0.0005		
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Power requirement Supply voltage Vdc		Each sensor is isolated from the other signal grounds and the triaxial housing				
Power requirement Supply voltage Vdc +23 to +30 +23 to +30 Supply current mA +2 to +20 2 to +20 Warm-up time (to within 10% of final bias) sec <8 <8 Environmental characteristics Temperature range	Overload recovery	µsec	≤ 45	≤ 45		
Supply voltage Vdc +23 to +30 +23 to +30 Supply current mA +2 to +20 2 to +20 Warm-up time (to within 10% of final bias) sec <8	Load	see load diagram				
Supply voltage Vdc +23 to +30 +23 to +30 Supply current mA +2 to +20 2 to +20 Warm-up time (to within 10% of final bias) sec <8	Power requirement					
Supply current mA +2 to +20 2 to +20 Warm-up time (to within 10% of final bias) sec <8		Vdc	+23 to +30	+23 to +30		
Warm-up time (to within 10% of final bias) Environmental characteristics Temperature range Humidity Sinusoidal vibration limit Shock limit [1] Base strain sensitivity X and Y axis equiv. g pk/µstrain equiv. g pk/µstrain equiv. g pk/µstrain equiv. g pk/µstrain v equiv. g pk/µstrain equiv. g pk/µstrain equiv. g pk/pstrain equiv. g pk/pstrain v equiv. g pk/µstrain v equiv. g pk/µstrain v equiv. g pk/pstrain v equiv.						
Environmental characteristics Temperature range Humidity Hermetically sealed Sinusoidal vibration limit Shock limit [1] Base strain sensitivity X and Y axis equiv. g pk/µstrain equiv. g pk/µstrain equiv. g pk/ystrain vequiv. g pk/ystrain equiv. g pk/ystrain equiv. g pk/ystrain vequiv. g pk/ystrain equiv. g pk/ystrain vequiv. g pk/ystrain vequiv. g pk/ystrain vequiv. g pk/ystrain vequiv. g rms/gauss Veguiv. g rms/gauss Veguiv. g rms/gauss Veguiv. g rms/gauss Vegit Vequiv. g rms/gauss Vequiv. g rms/ga						
Temperature range -67°F to 257°F (-55°C to +125°C) Humidity Hermetically sealed Hermetically sealed Sinusoidal vibration limit g pk ±1000 ±1000 Shock limit [1] g pk 2000 2000 Base strain sensitivity equiv. g pk/µstrain 0.0004 0.0004 Z axis equiv. g pk/µstrain 0.0004 0.004 Thermal transient sensitivity equiv. g pk/°F [/°C) 0.1 [0.18] 0.1 [0.18] Electromagnetic sensitivity equiv. g rms/gauss 0.0001 0.0001 Physical characteristics Dimensions See outline drawing Weight oz (gm) 0.53 [15] 0.53 [15] Case material Hard anodized aluminum housing Connector Coaxial, 10-32 thread, mates with Endevco 3000 series cable	ap (10 10 / 0	500				
Humidity Hermetically sealed Hermetically sealed Sinusoidal vibration limit g pk ±1000 ±1000 Shock limit [1] g pk 2000 2000 Base strain sensitivity varia 0.0004 0.0004 Z axis equiv. g pk/µstrain 0.004 0.004 Thermal transient sensitivity equiv. g pk/°F (/°C) 0.1 (0.18) 0.1 (0.18) Electromagnetic sensitivity equiv. g rms/gauss 0.0001 0.0001 Physical characteristics Dimensions See outline drawing Weight oz (gm) 0.53 (15) 0.53 (15) Case material Hard anodized aluminum housing Coaxial, 10-32 thread, mates with Endevco 3000 series cable						
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Shock limit [1] g pk 2000 2000 Base strain sensitivity cquiv. g pk/µstrain equiv. g pk/µstrain 0.0004 0.0004 Z axis equiv. g pk/µstrain equiv. g pk/°F (/°C) 0.1 (0.18) 0.1 (0.18) Electromagnetic sensitivity equiv. g rms/gauss 0.0001 Physical characteristics See outline drawing Dimensions See outline drawing Weight oz (gm) 0.53 (15) 0.53 (15) Case material Hard anodized aluminum housing Coaxial, 10-32 thread, mates with Endevco 3000 series cable			*			
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Physical characteristics See outline drawing Dimensions 0.53 (15) Weight oz (gm) 0.53 (15) 0.53 (15) Case material Hard anodized aluminum housing Connector Coaxial, 10-32 thread, mates with Endevco 3000 series cable		1 91 1				
Physical characteristics Dimensions See outline drawing Weight oz (gm) 0.53 (15) Case material Connector See outline drawing Hard anodized aluminum housing Coaxial, 10-32 thread, mates with Endevco 3000 series cable						
Dimensions See outline drawing Weight oz (gm) 0.53 (15) 0.53 (15) Case material Hard anodized aluminum housing Connector Coaxial, 10-32 thread, mates with Endevco 3000 series cable	Electromagnetic sensitivity	equiv. g rms/gauss	0.0001	0.0001		
Weight oz (gm) 0.53 (15) 0.53 (15) Case material Hard anodized aluminum housing Connector Coaxial, 10-32 thread, mates with Endevco 3000 series cable	hysical characteristics					
Weight oz (gm) 0.53 (15) 0.53 (15) Case material Hard anodized aluminum housing Connector Coaxial, 10-32 thread, mates with Endevco 3000 series cable	Dimensions		See outline drawing			
Connector Coaxial, 10-32 thread, mates with Endevco 3000 series cable	Weight	oz (gm)		0.53 (15)		
	Case material	Hard anodized aluminum housing				
Mounting torque lbf-in (Nm) 8 (1) 8 (1)	Connector	Coaxial, 10-32 thread, mates with Endevco 3000 series cable				
	Mounting torque	lbf-in (Nm)	8 (1)	8 (1)		

Isotron® accelerometer

Model 2258A

Calibration

Supplied: Sensitivity

Maximum transverse sensitivity

Frequency response

mV/g

20 Hz to 10 kHz dВ

10 kHz to 50 kHz (Z axis only)

20 Hz to 10 kHz

10 kHz to 50 kHz (Z axis only)

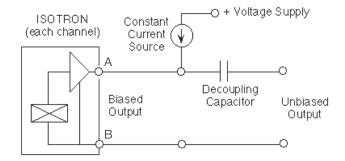
Contact

ENDEVCO

www.endevco.com Tel: +1 (866) ENDEVCO [+1 (866) 363-3826]

Accessories

Product	Description	2258A-10, 2258A-100	2258A-10-R
3061A-120	Cable assembly, three each [2]	Included	Optional
EH156	Screw, mach. #4-40 x 5/8, two each	Included	Included
EHW53	#4 washer LP, 18-8 cress, two each	Included	Included



Notes:

- 1. Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Send for TP290 for more details.
- 2. Flexible cable, such as the supplied 3060A, should be used to minimize cable-strain errors.
- 3. Adhesives such as petro-wax, hot-melt glue, and cyanoacrylate epoxy (super glue) may be used to mount the accelerometer temporarily to the test structure. An adhesive mounting kit (P/N 31849) is available as an option from Endevco. To remove an epoxy-mounted accelerometer, first soften the epoxy with an appropriate
- 4. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.



