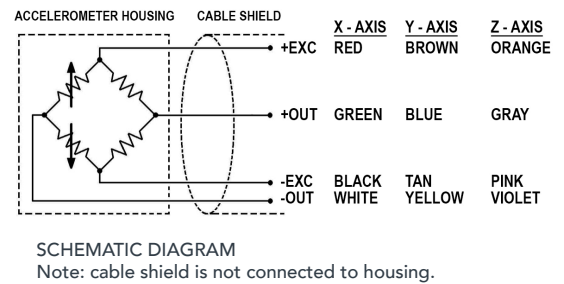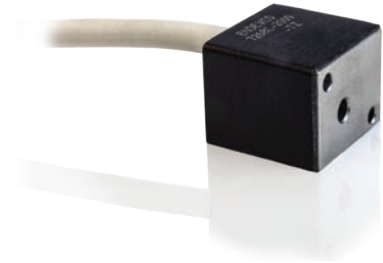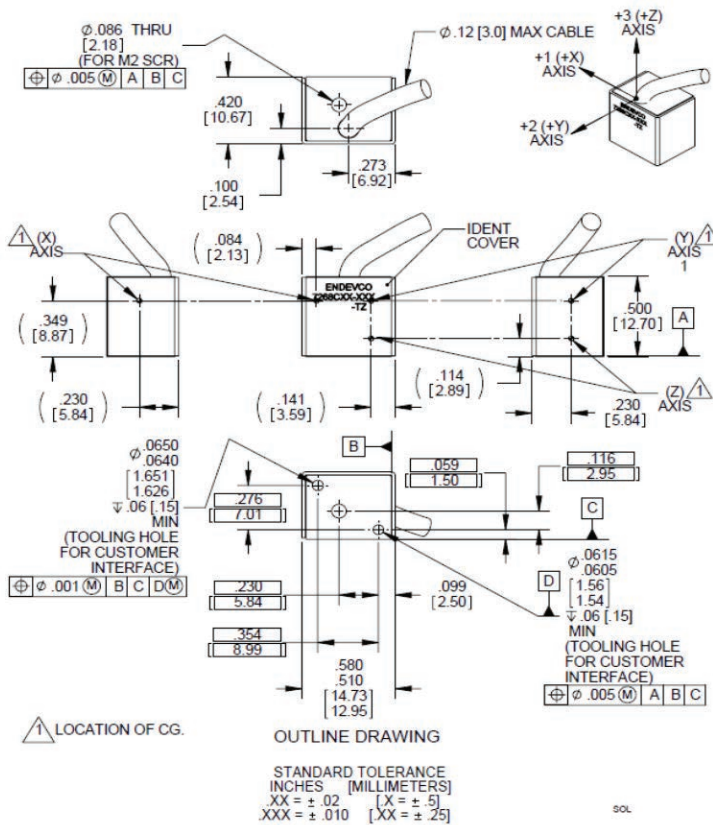# Piezoresistive triaxial accelerometer
Model 7268C

Key features

- Small size

- DC response

- 12 wire integral cable

- Mechanical overtravel stops

- Built-in bridge completion resistors

Description

The Endevco model 7268C is a miniature triaxial accelerometer designed for crash testing and other applications that require minimal mass loading and a broad frequency response. This accelerometer meets SAE J211 specifications for instrumentation for impact testing and SAE J2570 specification for anthromorphic test device transducers. It is available in two acceleration ranges, 500 g and 2000 g full scale.

The 7268C uses three advanced micromachined sensors with integral mechanical stops for ruggedness and years of reliable service. Endevco's proprietary sensor design features both high output and a high resonance frequency. Each axis has two active arms and two internal precision fixed resistors to provide for shunt calibration. A single integral cable carries the 12 wires to the sensor modules. Since the 7268C is undamped, negligible phase shift is present over the specified frequency range. With a frequency response extending down to DC (steady state) acceleration, this accelerometer is ideal for measuring short duration shocks.

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The following performance specifications are 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.
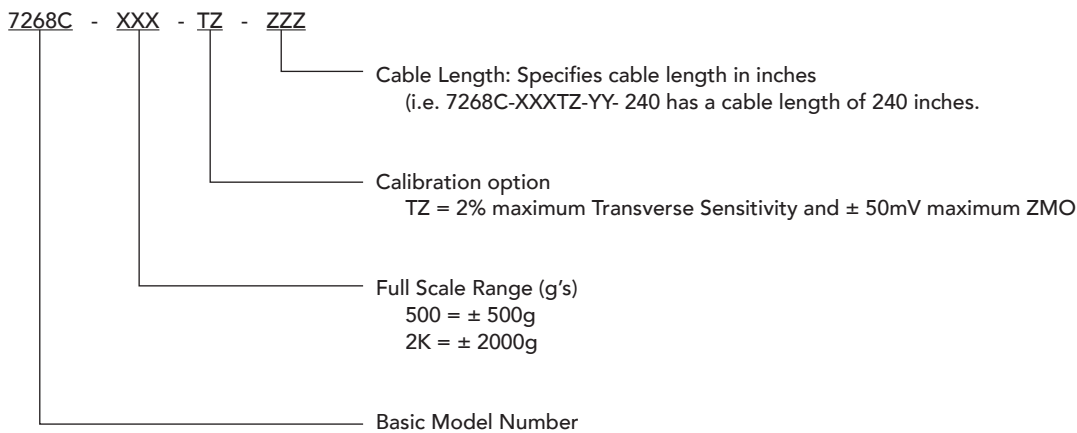
Specifications

Dynamic characteristics

		7268C-500	7268C-2000
Range	g	±500	±2000
Sensitivity (at 100 Hz & 10 g) [1]	mV/g (typ)	0.80	0.20
	mV/g (min)	0.50	0.15
Frequency response (±5% max)			
Z axis	Hz	0-3000	0-3000
X, Y axes	Hz	0-1500	0-1500
Mounted resonance frequency	Hz	17000	26000
Damping ratio	%	0.005	0.005
Non-linearity and hysteresis	%FSO	±1	±1
Zero repeatability (after full scale shock)		±0.2	±0.2
Transverse sensitivity [T option for 2%]	%	3	3
Zero measurand output [Z option for 50mV]		±100	±100
Thermal zero shift			
0 to 150°F (-18°C to +66°C)	mV	±10 typical (±25 max)	±10 typical (±25 max)
Thermal sensitivity shift (typical)			
0 to 150°F (-18°C to +66°C)	% / °F (% / °C)	-0.06 (-0.1)	-0.06 (-0.1)
Base strain sensitivity	equiv. g	0.1	0.1
Mechanical overtravel stops	g	1500 typ, 750 min	5000 typ, 2500 min

Electrical characteristics

		7268C-500	7268C-2000
Excitation voltage	Vdc	5 and 10	5 and 10
Input Resistance	Ω	450 to 960	450 to 960
Output Resistance	Ω	450 to 960	450 to 960
Insulation resistance (cable shield to housing)	MΩ	100 minimum	100 minimum

Physical characteristics

Base material	Stainless steel
Cover material	Black anodized 6061-T6 aluminum alloy
Cable	Integral 12 conductor, 32 AWG Teflon® insulated leads, braided shield, white polyurethatne jacket
Mounting	One M2 screw supplied for alignment of axes, mounting surface should have two alignment pins as shown in outline drawing to ensure accurate alignment of the 1(X) and 2(Y) axes.
Weight	8 gm (cable weighs 14 gm/meter)

Environmental characteristics

		7268C-500	7268C-2000
Acceleration limits (any direction)	g	5000	10000
Static	g	5000 (300 µ sec)	10000 (200 µ sec)
Shock (half-sine shock pulse duration)			
Temperature			
Operating	0°F to 150°F (-18°C to +66°C)		
Storage	-65°F to +250°F (-54°C to +121°C)		
Humidity	Unit is epoxy sealed, IP60		
Altitude	Unaffected		

Calibration data

Sensitivity (at 100 Hz and 10 g pk)	mV/g at 5V and 10V
Frequency response	20 Hz to 3000 Hz, dB plot continued to 40kHz (z axis)
	20 Hz to 1500 Hz, dB plot continued to 40kHz (X Y axis)
Zero measurand output	mV/g at 5V and 10V
Maximum transverse sensitivity	% of sensitivity

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Accessories		
Options	**Description**	**7268C**
EH750	Screw, pan head, M2 x 16mm	Included
EHW200	Flat washer, #2 CRES	Included

Notes

1. Positive acceleration along 1, 2 and 3 axes (x,y,z) (in the directions engraved on the cover) will cause positive change in output voltage for each sensor.

2. Busing the (3) black wires is recommended before making resistance or voltage measurements. An alternative is to use a continuity check to determine which black lead goes to which axis.

3. Excitation voltage other than 5 or 10V should be specified at time of order to obtain best calibration.

2. 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.

3. Model number definition:

7268C - XXX - TZ - ZZZ

Cable Length: Specifies cable length in inches
(i.e. 7268C-XXXTZ-YY- 240 has a cable length of 240 inches.

Calibration option
TZ = 2% maximum Transverse Sensitivity and ± 50mV maximum ZMO

Full Scale Range (g's)
500 = ± 500g
2K = ± 2000g

Basic Model Number

031922