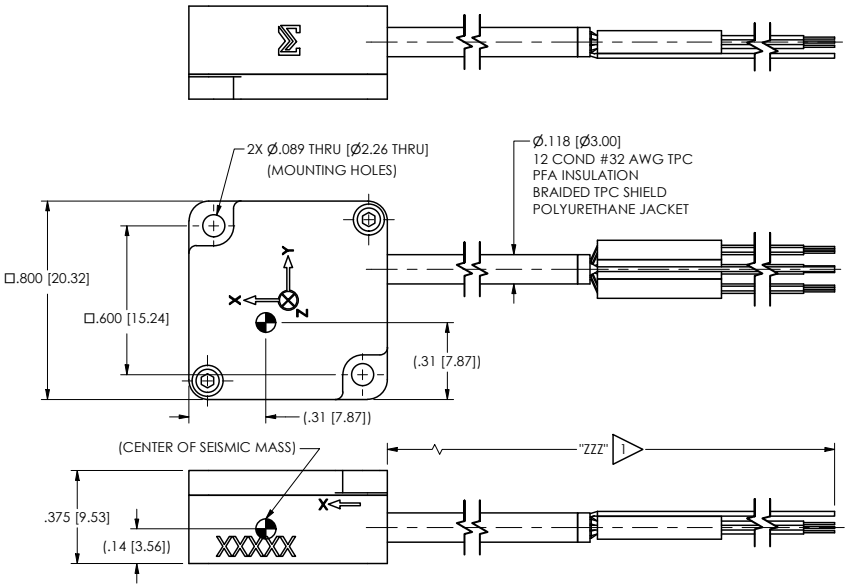
PCB PIEZOTRONICS
AN AMPHENOL COMPANY

ENDEVCO Triaxial Piezoresistive Accelerometer
Model 776



Key Features

- 2000 g range
- Stackable with Endevco Model 7330 to create a Modular 6DoF Sensor
- DC response and wide bandwidth
- Multi-mode damping
- Class 3B (>8000 Volts) ESD rating

Description

Endevco Model 776 is a rugged damped triaxial piezoresistive accelerometer designed for shock and impact applications. The 776 features minimal mass loading, broad frequency response and minimum zero shift during a shock event. Model 776 utilizes an advanced micro-machined piezoresistive sensor, which includes multi-mode damping for exceptional bandwidth with no significant resonance response in the usable range. This monolithic sensor incorporates the latest MEMS technology for ruggedness, stability and reliability. The 776 is designed to be stackable with Endevco Model 7330 to create a Modular 6DoF sensor.

776 has a full scale range of 2000 g, an Anozidized Aluminum housing and an integral cable. It weighs only 9 grams and can withstand shocks up to 10,000 g. 776 comes standard with calibration data for 5V and 10V excitation.

US patent 6,988,412 applies.

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All specifications are referenced at +75˚F (+24˚C) and 10 Vdc, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Specifications

Dynamic

	Units	-2K
Range	g	±2000
Sensitivity (at 100Hz and 10g)		
Minimum/Nominal/Maximum	mV/V/g	.015 / .030 / .060
Frequency response (Referenced to 100 Hz)		
776, all axes	Hz	5000 (±5%)
776 and 7330 Stack, Z axis	Hz	0 to 4000 (±5%)
776 and 7330 Stack, X and Y axes	mV	0 to 1800 (±5%)
Non-linearity [1]	%	±1 max to 1000g
Zero Measurand Output	mV	±30 maximum
Transverse sensitivity	% typ	3
Resonance Frequency [2]	Hz	25,000
Thermal zero shift		
-40° to +105°C	%FSO/°C	0.06
-40° to +221°F	%FSO/°F	0.033
Thermal sensitivity shift		
-40° to +105°C	%/°C	-0.20
-40° to +221°F	%/°F	-0.11

Electrical

Warm-up time	min	2
Excitation	Vdc	5 or 10
Input Resistance	ohms	6500 ±2000
Output Resistance	ohms	6500 ±2000
Insulation resistance	Mohms	100 min @ 50 Vdc
Residual Noise [3]	µV RMS	<10

Physical

Case material	Anodized Aluminum Alloy
Electrical connections	Integral 12 conductor, # 32 AWG PFA insulated leads, shielded polyurethane jacket, 0.118 inch OD
Mounting torque	6 in-lbf (0.7 N-m) recommended
Weight	9 grams without cable; cable 0.15 oz/ft (14 gm/m), typical

Environmental

Acceleration limits	
Shock (half-sine pulse duration)	10,000 g
Temperature	
Operating	-40 to +105ºC (-40 to +221ºF)
Storage	-40 to +105ºC (-40 to +221ºF)
Humidity	IP67

Calibration

Each sensor includes an ISO 17025 calibration with the below information:
Sensitivity (ref 10g, 100Hz) @ 5V and 10V
ZMO @ 5V and 10V
Frequency Response (20 to 5000Hz, ref 100Hz)
Input and Output Resistance

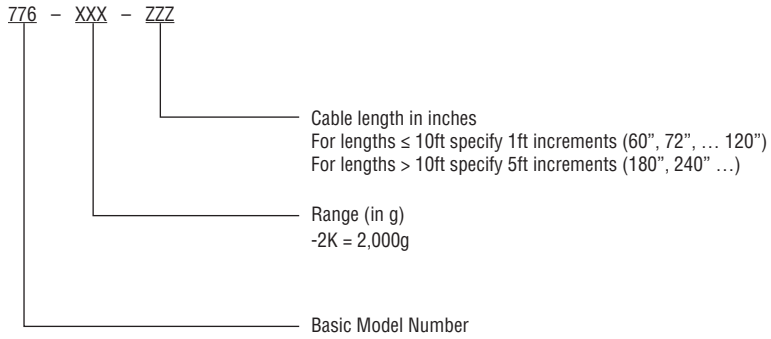
Accessories

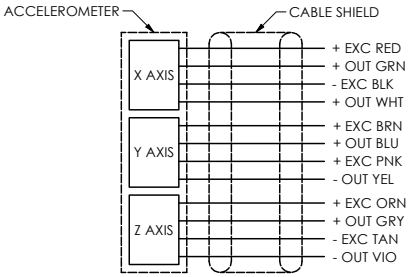
Product	Description	776
EDVEHM178	5/64” Allen wrench	Included
EDVEHW200	Size-2 flat washers (x2)	Included
EDVEH597	2-56 x 1/2” inch socket head cap screw (x2)	Included
7973	Adhesive Mounting Plate	Optional

Notes

1. Reported linearity was tested using pop shock calibration. Tested at low frequencies on a centrifuge, the sensor has 1% linearity to 2,000g. The sensitivity reported on the standard calibration certificate is performed at 10g’s. If the application calls for a shock measurement between 1,000g and 2,000g an alternate amplitude linearity calibration is recommended (EACS-109). For more information on damped sensors and calibration method, please refer to TP343.
2. The primary resonance (25kHz) and the secondary resonance (36kHz) are both heavily damped. Using our proprietary multi-mode damping technique, these resonance peaks are completely suppressed or minimized to a significant degree, leaving the sensor virtually resonance free in practice.
3. Theoretical noise floor measured using a low-noise Op-amp. In practice, noise performance is dominated by the characteristics of the interfacing bridge amplifier.
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.

Model number definition:





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