

# ISOTRON® Accelerometer

**ENDEVCO  
MODEL  
5253A-100**

## Model 5253A-100

- Triaxial
- Low Impedance Output
- 10 kHz Bandwidth
- Milli-g's Resolution
- Hermetically Sealed
- Ground Isolated
- Single Cable, NEMA 4 Rating
- Industrial, General Purpose Applications



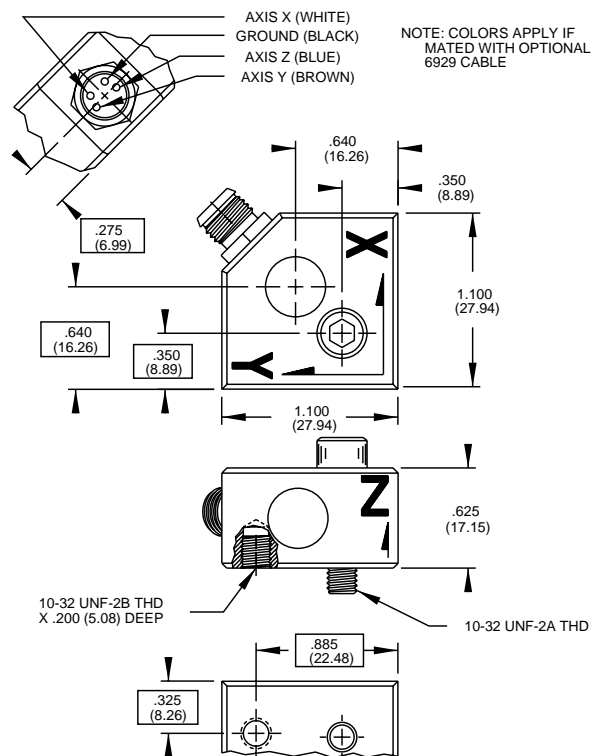
Actual size

### DESCRIPTION

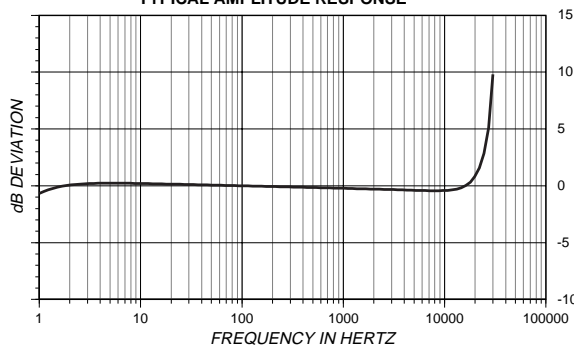
The ENDEVCO® Model 5253A is a rugged triaxial piezoelectric accelerometer with integral electronics, designed specifically for measuring vibration in three orthogonal axes in industrial environments. The transducer features a NEMA 4 rated 4-pin connector for output connection, and can be screw or adhesive mounted. A centrally located captive screw is provided for 360° mounting convenience.

The Model 5253A 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 connected to each other but isolated from the mounting surface. ENDEVCO Model 6929 industrial cable is supplied with this accelerometer as standard accessory.

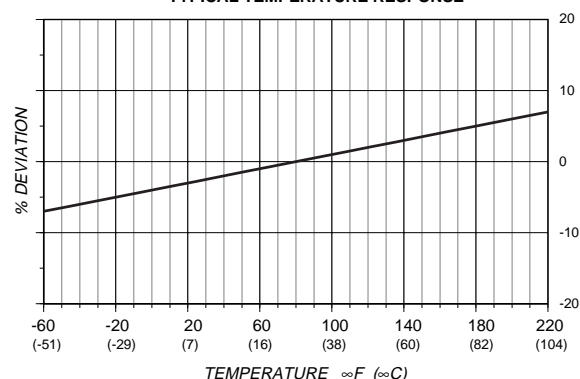
ENDEVCO Signal Conditioner Models 133, 2792B, 2793, 2775A or OASIS 2000 Computer-Controlled System are recommended for use with this accelerometer.



TYPICAL AMPLITUDE RESPONSE



TYPICAL TEMPERATURE RESPONSE



# ISOTRON® Accelerometer

## SPECIFICATIONS

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C), 4 mA, and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

DYNAMIC CHARACTERISTICS	Units	
RANGE	g	±50
VOLTAGE SENSITIVITY	mV/g	100
±10%		
FREQUENCY RESPONSE		See Typical Amplitude Response
RESONANCE FREQUENCY	kHz	35
AMPLITUDE RESPONSE [1]		
±5% (x,y)	Hz	1 to 7000
±5% (z)	Hz	1 to 8000
±1dB (x,y)	Hz	.5 to 9000
±1dB (z)	Hz	.5 to 10 000
TEMPERATURE RESPONSE		See Typical Curve
TRANSVERSE SENSITIVITY	%	≤ 5
AMPLITUDE LINEARITY [2]	%	≤1 to full scale

## OUTPUT CHARACTERISTICS

OUTPUT POLARITY		Acceleration applied in the direction of the arrow on the unit produces positive output
DC OUTPUT BIAS VOLTAGE	Vdc	+11.3 to +12.7
OUTPUT IMPEDANCE	Ω	≤ 200
FULL SCALE OUTPUT VOLTAGE	V	±5
RESOLUTION	equiv. g rms	0.0003
.5 Hz to 10 kHz, broadband		
GROUNDING		Each sensor (axis) is shielded by its inner case which is connected to common signal ground, but isolated from the external housing

## POWER REQUIREMENT

SUPPLY VOLTAGE	Vdc	+18 to +24
SUPPLY CURRENT	mA	+2 to +10
WARM-UP TIME	sec	< 3
To within 10% of final bias		

## ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE		-67°F to +221°F (-55°C to +105°C)
HUMIDITY		Hermetically sealed sensor assemblies
SINUSOIDAL VIBRATION LIMIT	g pk	200
SHOCK LIMIT	g pk	1000
BASE STRAIN SENSITIVITY		
X and Y Axis	equiv. g pk/μstrain	0.0004
Z Axis	equiv. g pk/μstrain	0.004
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (°C)	0.1 (0.18)
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.0001

## PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	37 (1.28)
CASE MATERIAL		Nickle iron alloy inner case, anodized aluminum housing
CONNECTOR [3]		4-pin, mates with Endevco 6929 industrial cable.
MOUNTING TORQUE	lbf-in (Nm)	18 (2)

## CALIBRATION

SUPPLIED:		
SENSITIVITY	mV/g	
MAXIMUM TRANSVERSE SENSITIVITY	%	
FREQUENCY RESPONSE	dB	20 Hz to 10 kHz (X,Y axes)
	dB	20 Hz through resonance (Z axis only)

## ACCESSORIES

Model 6929 [4] CABLE ASSEMBLY, 5 METER  
P/N 32150 MODIFIED CAP SCREW, 10-32x3/4"

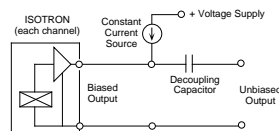
## OPTIONAL ACCESSORIES

Model 3027AM5 EXTENSION CABLE, 3 BNC's

## NOTES

- Frequency response calibration on Axis X and Y are limited by the mounting mechanism of the calibration shaker. Actual frequency responses of Axis X & Y are similar to Axis Z.
- 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.

- Color codes with 6929 cable: Brown -Y, White - X, Blue - Z, Black - Common.
- 4-wire PVC-jacketed cable with NEMA 4; IP65 rating.
- Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.



Continued product improvement necessitates that Endevco reserve the right to modify these specifications without notice. Endevco maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco synonymous with reliability.