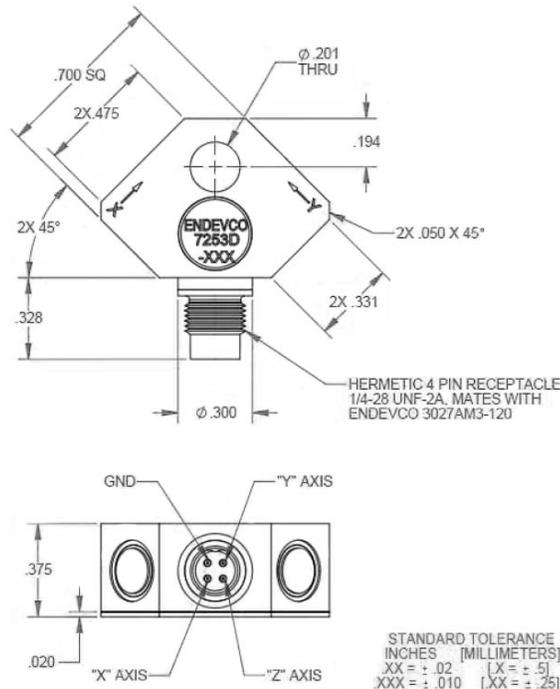


Isotron[®] accelerometer

Model 7253D



Key features

- Triaxial, low-impedance output
- 360° cable orientation
- Low profile
- Hermetically sealed
- Signal ground isolated from mounting surface
- 7253D-10-R and 7253D-100-R available as replacement sensors

The Endeveco[®] model 7253D is an Isotron triaxial accelerometer designed for applications requiring the measurement of shock and vibration simultaneously in three mutually perpendicular axes. The Endeveco[®] model 7253D is small and lightweight with a broad frequency response. The thru-hole mounting design allows for 360° cable orientation. The unit is hermetically sealed to protect against environmental contamination. The signal ground is isolated from the mounting surface by a hard anodized insulator. The accelerometer is available in two sensitivities, 10 mV/g (7253D-10) and 100 mV/g (7253D-100).

Each axis utilizes an Endeveco type P-8 shear piezoelectric sensing element in conjunction with a hybrid charge amplifier to provide a low impedance output of ± 5 volt full scale in a two wire system IEPE configuration. A constant current excitation of 2 to 20 mA is required for each axis. Electrical connection is made to each axis through a 4-pin connector.

The Endeveco[®] model 7253D is ideally suited for applications where the orientation of the connector and sensitive axes are critical. Testing environments include flight testing, aircraft engine testing, industrial engine testing, missile testing, aircraft component testing, spacecraft component testing, and industrial machinery testing.

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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	-10	-100
Range	g pk	±500	±50
Voltage sensitivity			
Typical	mV/g	10	100
Minimum	mV/g	9	90
Maximum	mV/g	11	110
Frequency response			
± 5%	Hz	10 to 6000	
± 10%	Hz	2 to 10 000	3 to 10 000
± 3 dB	Hz	1 to 15 000	1.5 to 15 000
Resonance frequency			
Typical	kHz	50	
Minimum	kHz	45	
Sensitivity deviation vs. temperature			
at +67°F (-55°C) max/min	%	0 / -15	
at +257°F (-125°C) max/min	%	+10 / -5	
Transverse sensitivity	%	≤ 5	
Amplitude linearity	%	< 2	
Output characteristics			
Output polarity		Acceleration directed into base produces positive output	
DC output bias voltage			
Room temp +75°F (+24°C)	Vdc	+12.3 to +13.5	
-67°F to +257°F (-55°C to +125°C)	Vdc	±7.5 to +16	
Output impedance	Ω	< 200	
Maximum full scale output voltage	V	±5	
Residual noise			
Broadband (1 Hz to 10 kHz)	Equiv.µg rms	2000	400
Spectral	Equiv.µg/√Hz		
1 Hz		1500	300
10 Hz		200	50
100 Hz		30	10
1000 Hz		10	4
Overload recovery (2X full scale)	µs	<10	
Grounding		Signal ground connected to case but isolated from mounting surface	
Sensitivity deviation vs. current (2 - 10 mA)	%	±1	
Power requirements			
Supply voltage [1]	Vdc	+23 to +30	
Supply current	mA	+2 to +10	
Supply noise	µA pk	< 10	
Warm-up time			
±10% of stabilized bias	sec	2	
Time constant	sec	0.5	
Environmental characteristics			
Temp range (operating)		-67°F to +257°F (-55°C to +125°C)	
Humidity		Hermetically sealed	
Sinusoidal vibration limit	g pk	1000	
Shock limit [2]	g pk	5000	
Base strain sensitivity at 250 µstrain	equiv g pk/µstrain	0.13	0.05
Thermal transient sensitivity	equiv g pk/°F	0.16	0.07
	equiv g pk/°C	0.29	0.12
Electromagnetic noise	equiv g/Gauss	0.0001	0.0006



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Specifications

Physical characteristics

	Units	-10	-100
Dimensions		See outline drawing	
Weight	grams (oz)	< 10 (0.352)	
Case material		Titanium alloy 6Al-4V	
Connector		4-pin standard male connector with each axis as identified per outline drawing	
Mounting	inches	Clearance hole for 10-32 x 5/8 long mounting screw and washer	
Torque (recommended)	in-lbs	18	

Calibration

Sensitivity	mV/g	
Maximum transverse sensitivity	%	
Frequency response	%	20 Hz to 10 kHz (all three axes)

Accessories

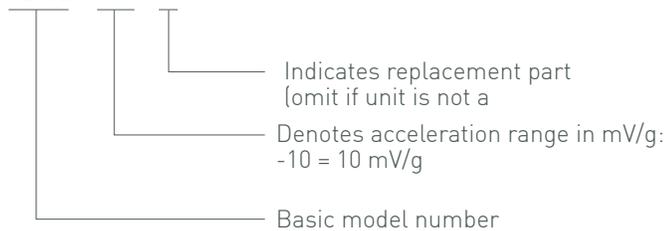
Product	Description	7253D	7253D-R
3027AM3-120	Triaxial cable, 85°C, 3 BNC's at instrumentation end	Included	Optional
42883	Mounting screw assembly	Included	Included
EHM488	Wrench, hex key 5/32	Included	Optional
3027AM13-XXX	Extension cable rated to +200°C (mates with 3027AM3)	Optional	Optional
32279	Mounting wax	Optional	Optional
123	Signal conditioner	Optional	Optional
133	Signal conditioner	Optional	Optional
2775B	Signal conditioner	Optional	Optional
2793	Signal conditioner, 16 channel	Optional	Optional

Notes

- +23Vdc must be available to the accelerometer to ensure full scale operation at temperature extremes
- Shock pulses of short duration may excite transducer resonance. Shock level above the sinusoidal vibration limit may produce temporary zero shift that will result in erroneous velocity or displacement data after integration.
- This product is fully compliant to European Union's Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC and is eligible to bear CE mark.
- Maintain high levels of precision and accuracy using Meggitt's factory calibration services. Call Meggitt's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these service as well as quotations for other products.

Model number definition

7253D - XXX - R



Continued product improvement necessitates that Meggitt reserve the right to modify these specifications without notice. Meggitt 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 Endeveco synonymous with reliability. 080513

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