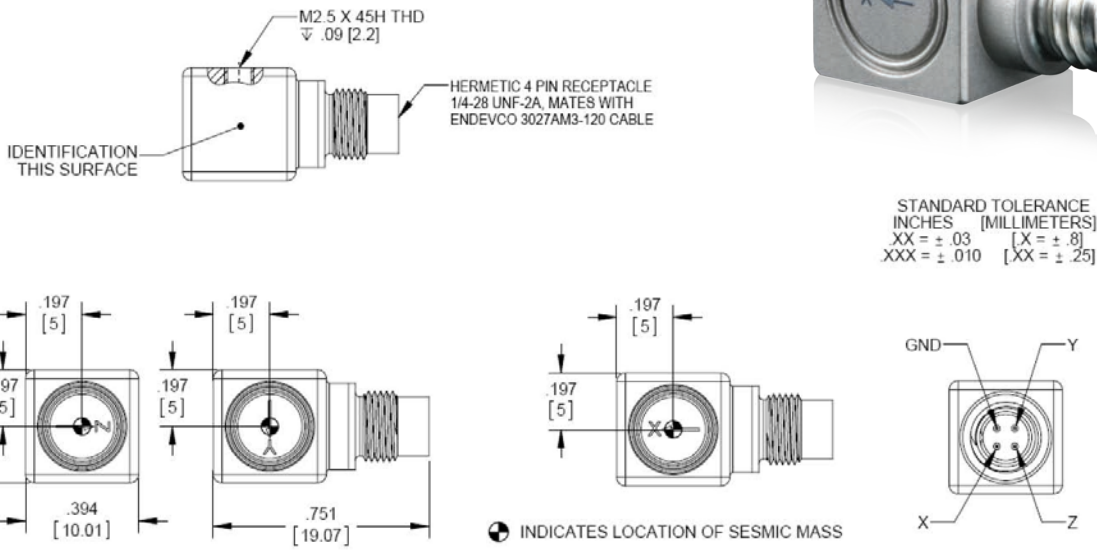
Endevco
AN MTS COMPANY

Isotron® accelerometer

Model 65



Key features

- 65-10-R and 65-100-R available as replacement sensors
- Triaxial, low-impedance output
- Small size (10-mm cube, 5 gram)
- Ideal for structural analysis, laboratory testing, and modal analysis Insert typical application
- Single connector, flexible cable

Description

The high sensitivity and high performance of model 65 distinguishes this triaxial accelerometer from comparable products. Model 65 is packaged in a 10-mm cube of welded titanium construction. Interface to the model 65 is via a Microtech 4-pin connector. Temporary petro-wax adhesive and a ten-foot cable assembly with BNC connectors are provided as standard accessories.

The Model 65 has excellent frequency response, both amplitude and phase, which provides the user with a triaxial accelerometer ideally suited for structural and component testing, drop tests and general laboratory vibration work. It also features a shear mode construction for low base strain sensitivity. The reduced size of this accelerometer enables the test engineer or technician to measure the accelerations of three orthogonal axes of vibration simultaneously on lightweight structures. Optional mounting block accessories are available for model 65.

Isotron® accelerometer | Model 65

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.

Specifications

Dynamic characteristics	Units	-10	-100
Range	g (m/s^2)	±500 (4900)	±50 (490)
Voltage sensitivity			
Typical	mV/g (mV / m/s^2)	10 (1.02)	100 (10.2)
Min	mV/g (mV / m/s^2)	8 (.82)	80 (8.2)
Max	mV/g (mV / m/s^2)	12 (1.22)	120 (12.2)
Amplitude response			
5%	Hz	0.8 to 10 000	3 to 6 000
±1 dB	Hz	0.4 to 10 000	1.5 to 6000
±3 dB	Hz	0.2 to 10 000	0.7 to 10 000
Phase response, ±5°	Hz	3 to 1500	10 to 1500
Resonance frequency, typ	Hz	60 000	45 000
Transverse sensitivity	%	< 5	
Sensitivity deviation vs. temperature			
At -67°F (-55°C)		-4	
At +257°F (+125°C)		7	5
Amplitude non-linearity	%	< 1	
Output characteristics			
Output polarity		See arrows on outline drawing	
DC output bias voltage [1]	Vdc	+12.3 to +13.5	
Output impedance			
2 mA to 3 mA	Ω	< 300	
3 mA to 20 mA	Ω	< 100	
Full scale output voltage	Vpk	±5	
Noise floor			
Broadband (2Hz to 10kHz)	µg rms	800	400
Spectral			
1Hz	µg/√Hz	500	300
10Hz	µg/√Hz	80	50
100Hz	µg/√Hz	15	10
1kHz	µg/√Hz	6	4
Grounding [2]		Signal ground connected to case	
Power requirement			
Compliance voltage	Vdc	+23 to +30	
Supply current	mA	+2 to +20	
Warm-up time (to reach 90% of final bias)	sec	< 20	
Environmental characteristics			
Temperature range		-67˚F to 257˚F (-55˚C to +125˚C)	
Humidity		Hermetically sealed	
Sinusoidal vibration limit	g pk	±500	±200
Shock limit [3]	g pk	10 000	
Base strain sensitivity at 250 µstrain	eq. g/µstrain	< 0.001	
Thermal transient sensitivity	eq. g/˚F	0.02	
Physical characteristics			
Dimensions		See outline drawing	
Weight	oz (gm)	0.17 (5)	
Case material		Titanium, commercially pure	
Connector [4]		4 pin Microtech style side mounted	
Mounting [5]		Adhesive or m2.5 thread	
Mounting torque	lbf-in	8	
Calibration data			
Supplied, each axis:			
Voltage sensitivity	mV/g		
Bias	Vdc		
Maximum transverse sensitivity	%		
Frequency Response			
X & Y Axis	%	20 to 6000 Hz	
Z Axis	%	20 to 10000 Hz	20 to 6000 Hz

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Accessories			
Options	**Description**	**7284A**	
3027AM3-120	Triaxial cable 85°C, 3 BNC's at instrumentation end	Included	Optional
EH755	Screw cap M2.5 x .45 x 6 mm	Included	Included
EH761	Screw set M2.5 x .45 x 6 mm	Included	Included
32279	Mounting wax	Included	Optional
3027A-120	Cable assembly, silicone jacket, 125°C [6]	Optional	Optional
3027AVM13-120	Triaxial cable, 200°C (transducer extension cable mates with model 3027AM3) [7]	Optional	Optional
40965	Mounting block, adhesive mount	Optional	Optional
EH769	Screw for 40965 mounting block	Optional	Optional
41013	Mounting clip	Optional	Optional
2981-14	Mounting stud, M2.5 to 6-32	Optional	Optional
133	Signal conditioner	Optional	Optional
4416C	Battery powered Isotron conditioner	Optional	Optional
65M1	Electrical isolation, case [2]	Optional	Optional

Notes

1. +22 Vdc minimum must be available to the accelerometer to ensure full-scale operation at the temperature extremes.

2. Case isolation available as model 65M1-10 (10 mV/g unit) and 65M1- 100 (100 mV/g unit). For these models, signal ground is connected to the case and isolated from the mounting surface.

3. Shock pulses of short duration may excite transducer resonance.

4. Microtech DR-4S-4 receptacle mates with Endevco model 3027AM3 cables.

5 Be careful not to apply abusive forces when removing the accelerometer from a structure..

6 The 3027A cable assembly should be used in applications where the accelerometer is used near its upper temperature range extreme, 257°F (125°C). The included cable assembly, 3027AM3-120, is only rated for use up to only 185°F (85°C).

7. The 3027AVM13-XXX cable assembly should be used as a 257°F (125°C) extension cable for model 3027AM3-120. Cable length, in inches, is specified by the model number suffix.

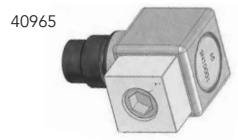
Ordering information

1. 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.

65 - XXX - R

- R: Indicates replacement unit (omit if units are not replacements)
- XXX: Denotes typical sensitivity in mV/g
  - 10
  - 100
- 65: Basic Model Number

40965



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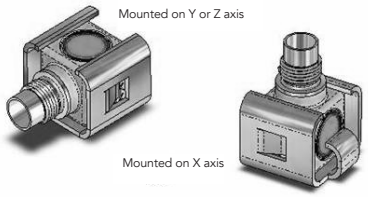
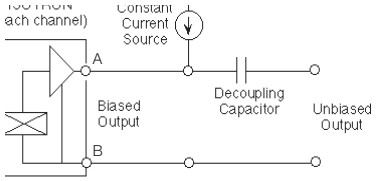


Model 133
3-channel
signal conditioner



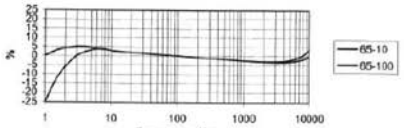


FIGURE 1
Typical Frequency Response [amplitude]
Model 65-10, Model 65-100

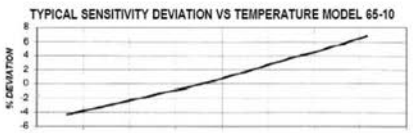


FIGURE 2

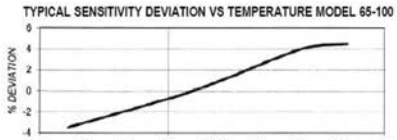


FIGURE 3

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