

Isotron® accelerometer

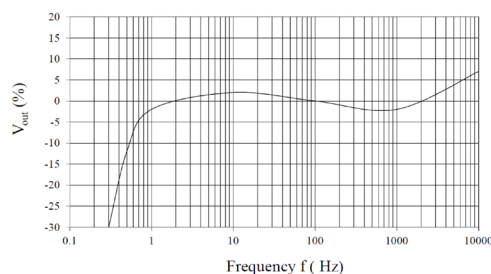
Model 65L and 65LM1



The high sensitivity and low frequency performance of Endevco® models 65L and 65LM1 distinguishes these triaxial accelerometers from comparable products. Model 65L is packaged in a 10-mm cube of welded titanium construction. Model 65LM1 is a 11.05-mm cube of welded titanium encapsulated in an anodized aluminium isolated jacket that provides electrical isolation from the mounting surface. Interface to these accelerometers 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.

Excellent frequency response, in both amplitude and phase, provide the user with a triaxial accelerometer ideally suited for structural and component testing, drop tests and general laboratory vibration work. The reduced size of these accelerometers enable 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 65L.

Endevco signal conditioners 133, 2793, 4416B or Oasis 2000 are recommended for use with this accelerometer.



Key features

- 65L-100-R and 65LM1-100-R available as replacement sensors
- Triaxial, low-impedance output
- Small size (10-mm cube, 5 gram for 65L)
- Ideal for structural analysis, laboratory testing, and modal analysis
- Single connector, flexible cable
- Low frequency response down to 1 Hz

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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) and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Dynamic characteristics	Units	65L-100		65LM1-100
Range	g (m/s ²)		±50 (490)	
Voltage sensitivity	mV/g (mV / m/s ²)		100 (10.2)	
Amplitude response				
±5%	Hz		1 to 6000	
±1 dB	Hz		0.5 to 8000	
±3 dB	Hz		0.3 to 10 000	
Phase response, ±5°	Hz		10 to 1500	
Resonance frequency	Hz	45 000		42 000
Transverse sensitivity	%		< 5	
Temperature response				
Sensitivity deviation, ±5%			+32°F to +104°F (0°C to +40°C)	
Sensitivity deviation, ±10%			-4°F to +185°F (-20°C to +85°C)	
Amplitude non-linearity	%		< 1	
Output characteristics				
Output polarity			See arrows on outline drawing	
DC output bias voltage [1]				
Room temperature +75°F (+24°C)	Vdc		+11.0 to 13.5	
-67°F to +257°F (-55°C to +125°C)	Vdc		+7.5 to +16	
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		400	
Spectral				
1Hz	μg/√Hz		300	
10Hz	μg/√Hz		50	
100Hz	μg/√Hz		10	
1kHz	μg/√Hz		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			-65°F to 257°F (-55°C to +125°C)	
Humidity			Welded construction	
Sinusoidal vibration limit	g pk		±200	
Shock limit [3]	g pk		10 000	
Base strain sensitivity at 250 μstrain	eq. g/μstrain	< 0.001		< 0.0006
Thermal transient sensitivity	eq. g/°F	0.02		0.004
Physical characteristics				
Dimensions			See outline drawing	
Weight	oz (gm)	0.17 (5)		0.17 (5)
Case material		Titanium		Titanium (Inner case), Anodized aluminum (Outer case)
Connector [4]			4 pin Microtech style side mounted	
Mounting [5]		Adhesive or M2.5 thread		Adhesive
Mounting torque	lbf-in	8		NA
Calibration				
Supplied, each axis:				
Voltage sensitivity	mV/g			
Maximum transverse sensitivity	%			
Frequency response	%		1 to 6000	

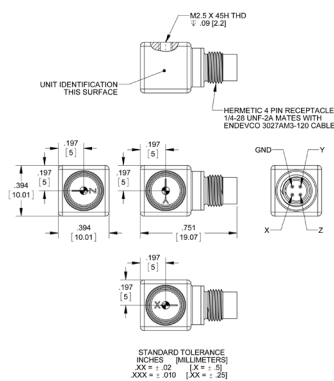
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Accessories

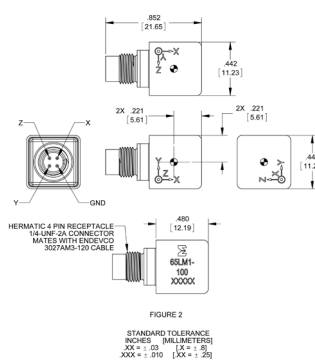
Product	Description	65L	65LM1	65L-R	65LM1-R
3027AM3-120	Triaxial cable 85°C, 3 BNC's at instrumentation end	Included	Included	Optional	Optional
EH755	Socket head cap screw M2.5 x .45 x 6 mm	Included	NA	Included	NA
EH761	Socket head set screw M2.5 x .45 x 6 mm	Included	NA	Included	NA
32279	Mounting wax	Included	Included	Optional	Optional
3027A-120	Cable assembly, silicone jacket, 125°C [6]	Optional	Optional	Optional	Optional
3027AVM13-120	Triaxial cable, 200°C (transducer extension cable mates with model 3027AM3) [7]	Optional	Optional	Optional	Optional
40965	Mounting block, adhesive mount	Optional	NA	Optional	NA
EH769	Screw for 40965 mounting block	Optional	NA	Optional	NA
41013	Mounting clip	Optional	NA	Optional	NA
2981-14	Mounting stud, M2.5 to 6-32	Optional	NA	Optional	NA
133	Signal conditioner	Optional	Optional	Optional	Optional
2793	Isotron signal conditioner	Optional	Optional	Optional	Optional
4416B	Battery powered Isotron conditioner	Optional	Optional	Optional	Optional
4990A-1	OASIS 2000 computer controlled system	Optional	Optional	Optional	Optional

Notes

- +22 Vdc minimum must be available to the accelerometer to ensure full-scale operation at the temperature extremes.
- For model 65LM1 signal ground is connected to the case but isolated from the mounting surface.
- Shock pulses of short duration may excite transducer resonance.
- Microtech DR-4S-4 receptacle mates with Endevco model 3027AM3 cables.
- Be careful not to apply abusive forces when removing the accelerometer from a structure.
- 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).
- 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.
- 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.



65L outline drawing



65LM1 outline drawing

Contact

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