ADXL50/ADXL05 Evaluation Modules

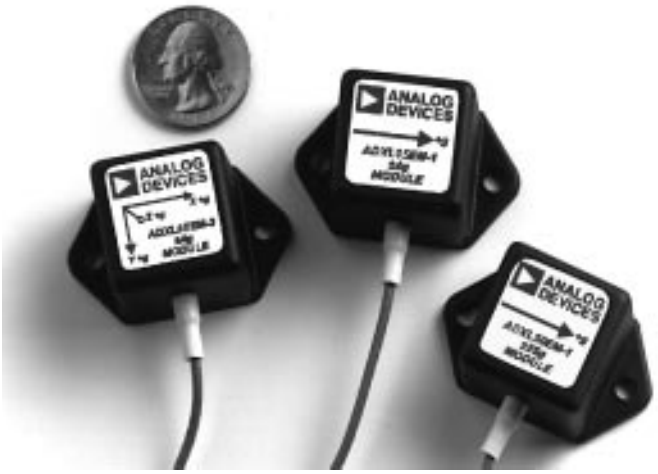
ADXL50EM-1, ADXL05EM-1/EM-3

FEATURES

High Performance Prepackaged Accelerometers
Complete Acceleration Measurement System
Single and Multiaxis Versions
Small, Low Cost, Ready-to-Use
Available in ±4 *g* or ±25 *g* Full-Scale Ranges
See ADXL150EM Data Sheet for ±10 *g* Modules
+5 V Single Supply Operation
Reliable Industrial Packaging With Screw-Down Mounting

APPLICATIONS

Vibration Analysis, Tilt Sensing, Position and Motion, Inertial Guidance, Virtual Reality Systems, Seismic and Earthquake Monitoring, Crash Sensing, Robotic Applications, Shipping and Transportation Shock Monitoring, Active Suspension Applications, Medical Analysis, Active Sound Cancellation, and Much More



DESCRIPTION

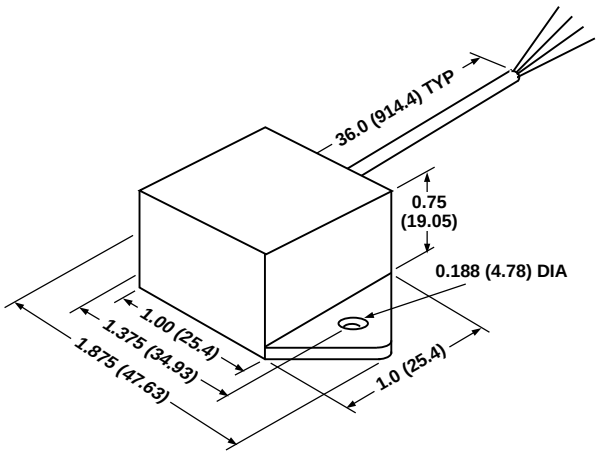
The ADXLEM Series of evaluation modules provides a complete acceleration measurement system in a low cost package. The modules simplify the evaluation and testing of our ADXL50 and ADXL05 monolithic accelerometer ICs. Each module contains one or more accelerometers precalibrated to a convenient output scale factor with onboard low-pass filtering.

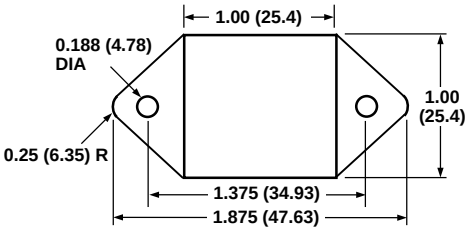
All that is required to use these modules is a +5 volt power supply. The module should be attached (i.e., screwed or glued down) securely to the object being measured, taking care that the axis of sensitivity, indicated by the large arrow on the top of the module, is aligned with the expected acceleration.

Modules are available in other package styles (such as ruggedized metallic box) and in other g ranges from NGT Technology, 3 Cross Road, LaGrangeville, NY 12540-5705, 914-223-3359, and from Crossbow Technology, 2880 North 1st Street, San Jose, CA 95134, 408-428-6204.

OUTLINE DIMENSIONS

Dimensions shown in inches and (mm).





CABLE SIGNAL COLOR CODE

FUNCTION	COLOR	MODEL
+5VDC	RED	
COM RTN	BLACK	
A1 (X) OUT	WHITE	UNI-AXIAL
A2 (Y) OUT	YELLOW	BI-AXIAL
A3 (Z) OUT	GREEN	TRI-AXIAL

REV. A

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Fax: 617/326-8703

ADXL50EM-1, ADXL05EM-1/EM-3–SPECIFICATIONS
ACCELEROMETER EVALUATION MODULES

Model Parameters	ADXL50 EM-1 Single Axis	ADXL05 EM-1 Single Axis	ADXL05 EM-3 Tri-Axial	Units	Remarks
Span	±25	±4	±4	*g*	±5%
Sensitivity	80	500	500	mV/*g*	±5%
Bandwidth	DC–400 Hz	DC–100 Hz	DC–100 Hz	Hz	±5%
Noise	130 mg	5 mg	5 mg	mg rms	Typical
Orientation	Horizontal	Horizontal	Triaxial		
Zero *g* Output	+2.5 ± 0.1	+2.5 ± 0.1	+2.5 ± 0.1	Volts	@ +25°C
Zero *g* Drift	±60	±60	±60	mV	0°C to 70°C
	±0.75	±0.12	±0.12	*g*	0°C to 70°C
	±145	±100	±100	mV	–40°C to +85°C
	±1.8	±0.2	±0.2	*g*	–40°C to +85°C
Span Output	±2.0 ± 0.1	±2.0 ± 0.1	±2.0 ± 0.1	Volts	@ +25°C
Nonlinearity	±0.2	±0.2	±0.2	% FS	Typical
Alignment	±2	±2	±2	Degrees	Typical
Transverse Sensitivity	±3.5	±3.5	±3.5	% FS	Typical
Temperature Range	–40 to +85	–40 to +85	–40 to +85	°C	
Shock	500	500	500	*g*	Powered
	2000	1000	1000	*g*	Unpowered
Output Loading	>10 kΩ < 1 nF	>10 kΩ < 1 nF	>10 kΩ < 1 nF		Max
Supply Voltage	+5 ± 0.25	+5 ± 0.25	+5 ± 0.25	Volts	Max
Supply Current	10	8	24	mA	Typical

NOTES
[1]All frequency break points are –3 dB, single pole, –6 dB per octave roll-off.
[2]Nonlinearity is the deviation from a best fit straight line at full scale.
[3]Transverse sensitivity is error measured in the primary axis output created by forces induced in the orthogonal axis.
[4]Zero *g* Drift is specified as the typical change in 0 *g* level from its initial value at +25°C to its worst case value at T_{MIN} or T_{MAX}.
[5]Consult factory for availability of higher bandwidth version of ADXL05EM modules.
[6]Transverse sensitivity error is primarily due to the effects of misalignment (i.e., much of it can be tuned out by adjusting the package orientation).
Specifications subject to change without notice.

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