



ACCELEROMETER ACH-01

SPECIFICATIONS

- **Piezoelectric Accelerometer** ٠
- Wide Bandwidth; AC Coupled
- **Ultra Low Power** •
- **High G Ranges**

The ACH-01 is an inexpensive, general purpose accelerometer with outstanding performance characteristics. The use of piezoelectric polymer film in the ACH-01 provides many cost/performance advantages that allow it to be used in a wide range of applications where the use of traditional accelerometer technology is impractical. It is specifically designed for high volume applications which require the permanent installation of an accelerometer.

FFATURES

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- Wide Frequency Response
- **Excellent Phase Response**
- **Small Temperature Dependence**
- Wide Supply Voltage Range
- **Excellent Linearity**
- Very High Resonant Frequency ٠
- Wide Dynamic Range
- Low Transverse Sensitivity +
- Wide Temperature Range
- Low Impedance Output ٠
- + Ultra Low Power

APPLICATIONS

- **Machine Health Monitoring**
- Model Analysis
- **Automotive Sensors**
- **Appliances**
- **Feedback Control Systems**



40 INCHES

ACH-01-02 WITH PINS



ACH-01-04 WITH WIRES

PERFORMANCE SPECIFICATIONS

PERFORMANCE (T=25 [∞] C)	Symbol	Min	Тур	Мах	Units
Sensitivity	Mo	7	9	11	mV/g
Lower Frequency Limit (1)	fı		2	5	Hz
Upper Frequency Limit(1)	f _u	10	20		kHz
Equivalent Noise Floor 10Hz 100Hz 1kHz		 	130 20 6	 	ý g/ √Hz
Dynamic Range		≫150			g
Linearity			0.1	1.0	%
Transverse Sensitivity	M _t		2.0	5	%
Resonant Frequency	f _o		35		kHz
Phase Deviation (%5® Limit)(6)	θ	10		10	kHz
Drain Voltage (6)	V+	3		40	Volts
Supply Current (6)	I _{dss}	30		90	μΑ
Output Impedance (6)			20		kΩ
ENVIRONMENTAL CHARACTERI	STICS				
Operating Temperature (2)	To	-40		85	©©C
Storage Temperature	Ts	-40		85	©©C
Maximum Shock Level	Am	1000			g
Base Strain Sensitivity (3)			0.3		g/µɛ
Transient Temp Sensitivity (4)			0.35		g/∞C
PHYSICAL CHARACTERISTICS					
Weight (5) Cable	W		8		grams
(1) ≫3 dB limit (2) ≫2 dB from nominal M₀ at 1kHz	(3) @ 250 2 (4) @ 3Hz	0με in base plane LLF	(5) Includes 40" (6) Typical Value	cable and connect	or

Mounting methods play a critical role in determining the overall performance of any accelerometer. The ACH-01 is no exception. An improperly mounted accelerometer can give erroneous results. We recommend using an Adhesive Mounting Method.

The surface should be flat. The area where the ACH-01 is to be mounted should be thoroughly cleaned to remove any dirt or oil present on the surface. Use a quick setting, viscous methyl cyanoacrylate adhesive such as Loctite's Black MaxJ or any epoxy such as Devcon's 5-Minute epoxy. Apply the adhesive sparingly to one surface following the manufacturer's directions. Apply pressure and allow the adhesive to set. Soft adhesives, such as double-sided tape or pressure sensitive adhesives, should not be used since they can adversely affect the ACH-01's performance. Cable should be adhered to the surface.

There is an interface amplifier available to simplify connection to the ACH-01, the IB-ACH-01. Please see the appropriate data sheet.

In an effort to keep the product cost low, the ACH-01 uses a ceramic substrate as the mounting base. Because of this, the ACH-01 is susceptible to base strain and temperature transient effects. A mechanically rigid and thermally non-conductive mounting surface is highly recommended to limit these effects. MEAS application engineers are available to recommend various mounting arrangements for your specific application.



ELECTRICAL INTERFACE CIRCUITS

The accelerometer ACH-01 accommodates various electrical interface circuits. A typical example is provided in the following figure. The ACH-01 equivalent electrical schematic is also shown.



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ORDERING INFORMATION

Description	Interface	Model No.	Part No.
Accelerometer	Pins	ACH-01-02	0-1000985-0
	Shielded Cable	ACH-01-03	1-1001220-0
	Discrete Wires	ACH-01-04	1-1001497-0
Amplifier	Amplifier Box	IB-ACH-01	1003058

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