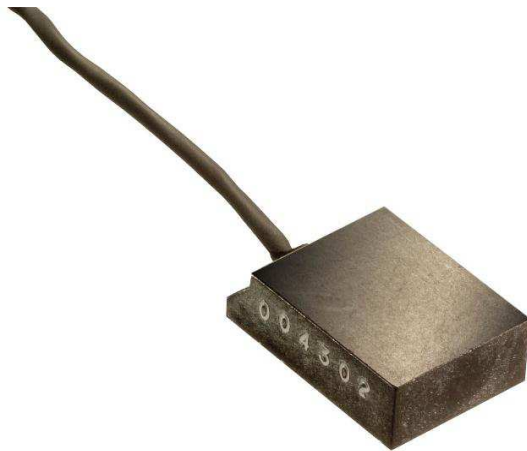
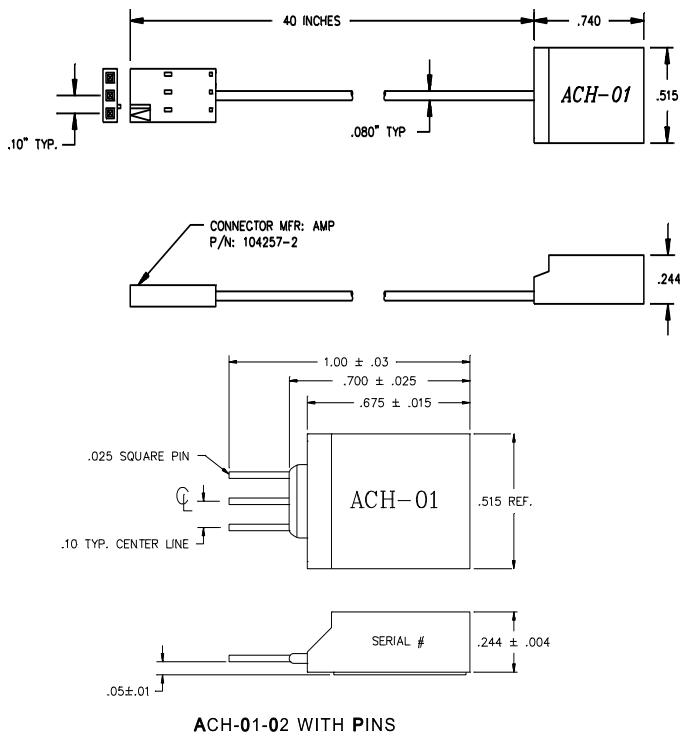


# ACCELEROMETER ACH-01



## dimensions



## SPECIFICATIONS

- ◆ Piezoelectric Accelerometer
- ◆ 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.

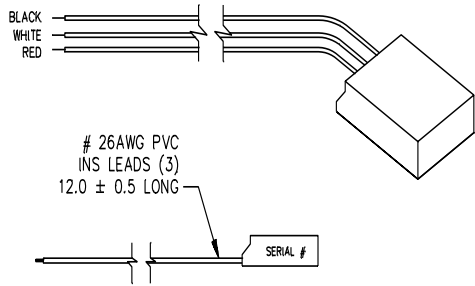
## FEATURES

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

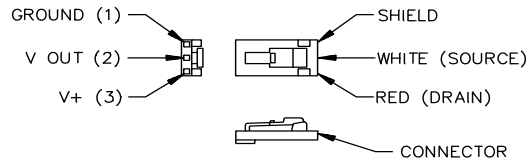
## APPLICATIONS

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

# ACCELEROMETER ACH-01



ACH-01-04 WITH WIRES



CONNECTOR DETAIL

## PERFORMANCE SPECIFICATIONS

PERFORMANCE (T=25°C)	Symbol	Min	Typ	Max	Units
Sensitivity	$M_o$	7	9	11	mV/g
Lower Frequency Limit (1)	$f_l$	--	2	5	Hz
Upper Frequency Limit(1)	$f_u$	10	20	--	kHz
Equivalent Noise Floor					$f/g/\sqrt{Hz}$
10Hz		--	130	--	
100Hz		--	20	--	
1kHz		--	6	--	
Dynamic Range	--	$\geq 150$	--	--	g
Linearity	--	--	0.1	1.0	%
Transverse Sensitivity	$M_t$	--	2.0	5	%
Resonant Frequency	$f_o$	--	35	--	kHz
Phase Deviation ( $\geq 5^\circ$ Limit)(6)	$\theta$	10	--	10	kHz
Drain Voltage (6)	V+	3	--	40	Volts
Supply Current (6)	$I_{dss}$	30	--	90	$\mu A$
Output Impedance (6)	--	--	20	--	k $\Omega$
<b>ENVIRONMENTAL CHARACTERISTICS</b>					
Operating Temperature (2)	$T_o$	-40	--	85	°C
Storage Temperature	$T_s$	-40	--	85	°C
Maximum Shock Level	$A_m$	1000	--	--	g
Base Strain Sensitivity (3)	--	--	0.3	--	g/ $\mu\epsilon$
Transient Temp Sensitivity (4)	--	--	0.35	--	g/°C
<b>PHYSICAL CHARACTERISTICS</b>					
Weight (5) Cable	W	--	8	--	grams

(1)  $\geq 3$  dB limit  
 (2)  $\geq 2$  dB from nominal  $M_o$  at 1kHz  
 (3) @ 250 $\mu\epsilon$  in base plane  
 (4) @ 3Hz LLF  
 (5) Includes 40" cable and connector  
 (6) Typical Value

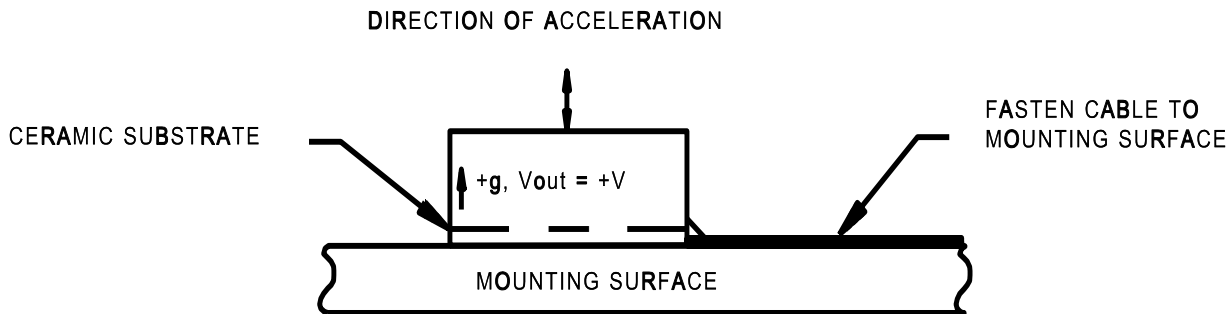
## ACCELEROMETER ACH-01

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 Max<sup>™</sup> 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.

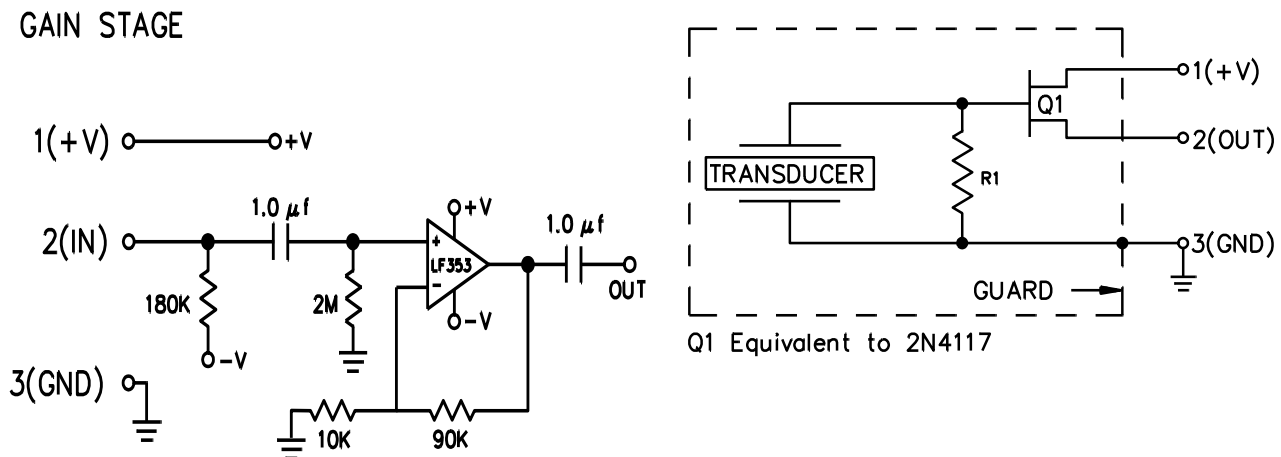
There is an interface amplifier available to simplify connection to the ACH-01, the IB-ACH-01. Please see the appropriate data sheet.

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.



## ACCELEROMETER ACH-01

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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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