



## BAM500 Acceleration Sensor

Bachmann offers piezoelectric accelerometers. Our sensors follow the tried and tested industry standard design for acceleration sensors, including an extremely robust housing, hermetic sealing and an insulated housing. This means that they are suitable for demanding ambient conditions.

The small size and simple mounting arrangement, via a threaded stud, make them suitable for a wide variety of measurement points. Straight or angled cable connectors are available for the standard 4-pin M12 connector to ensure optimum cable runs.

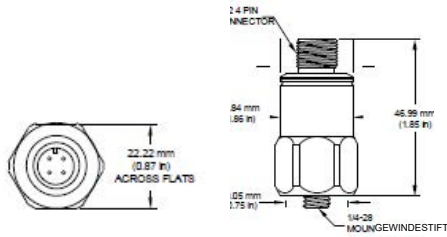
The built-in electronics of the piezoelectric acceleration sensors offer sensitivity down to frequencies below 0.5 Hz, and a flat response over a wide frequency range. Signals are delivered by the IEPE constant current method and are connected to (and driven from) the IEPE inputs of the AIC2xx modules.

The BAM500 sensor has a nominal sensitivity of 500 mV/g, which is useful to capture the small vibration acceleration seen from slowly rotating components, down to 0.2 Hz.

Item	Item-No.
BAM500	00020456-00
Accessories	
M8 Mounting Stud	00020459-00
Mounting plate	00020458-00

**Acceleration Sensor** **BAM500**

**Technical Data**



**Dynamic**

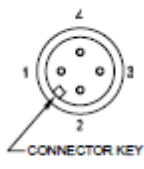
Sensitivity ( $\pm 5\%$ at 25 °C)	500 mV/g
Acceleration range (VDC > 22V)	10 g
Amplitude non-linearity	1 %
Frequency response:	
$\pm 5\%$	0.7 to 5,000 Hz
$\pm 10\%$	0.5 to 9,000 Hz
$\pm 3$ dB	0.2 to 14,000 Hz
Resonance frequency	30 kHz
Transverse sensitivity, max.	5 % of axial
Temperature response:	
-50 °C	-5 %
+120 °C	+5 %

**Electrical**

Power requirement:	
Voltage source	18 to 30 VDC
Current regulating diode	2 to 10 mA
Electrical noise, equiv g:	
Broadband 2.5 Hz to 25 kHz	250 $\mu$ g
Spectral 10 Hz	2.5 $\mu$ g/ $\sqrt$ Hz
100 Hz	1.5 $\mu$ g/ $\sqrt$ Hz
1000 Hz	1.5 $\mu$ g/ $\sqrt$ Hz
Output impedance, max.	100 $\Omega$
Bias output voltage	12 VDC
Grounding	Case isolated, internally shielded

**Environmental**

Temperature range	-50 to 120 °C
Vibration limit	500 g peak
Shock limit	5,000 g peak
Electromagnetic sensitivity, equiv g, max.	70 $\mu$ g/gauss
Sealing	Hermetic (IP67)
Base strain sensitivity, max.	0,0002 g/ $\mu$ strain

Acceleration Sensor		BAM100													
Physical															
Sensing element design	PZT, shear														
Weight	90 g														
Case material	316L stainless steel														
Output connector	4 pin, M12-style														
Mating connector	M12-style														
Recommended cabling	shielded, twisted pair														
Mounting	1/4-28 UNF tapped hole														
Connections	 <table border="1"> <thead> <tr> <th>Connector pin</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>shell</td> <td>Ground</td> </tr> <tr> <td>1</td> <td>Signal ground</td> </tr> <tr> <td>2</td> <td>N/C</td> </tr> <tr> <td>3</td> <td>Power / signal</td> </tr> <tr> <td>4</td> <td>N/C</td> </tr> </tbody> </table>			Connector pin	Function	shell	Ground	1	Signal ground	2	N/C	3	Power / signal	4	N/C
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Note: Frequency response limits, spectral and noise values are typical

Accessories supplied: 1/4-28 – M8 mounting stud