



BAM500 Acceleration Sensor

Bachmann offers industry-standard piezoelectric accelerometers. The proven acceleration sensors have an extremely robust housing, they are hermetically sealed and insulated. Thus they offer perfect function even under demanding environmental conditions.

Minimally-invasive mounting on the measurement object and small dimensions ensure that these acceleration sensors are also suitable for measuring points that are difficult to access. To optimize cable installation, for the 4-pin M12 connector we offer either molded straight or molded angled plug connectors.

The integrated electronics of the piezoelectric acceleration sensors offer sensitivity to frequencies under 0.5 Hz and a linear frequency response over a wide range. The signals are delivered in accordance with the IEPE constant current method and are connected on the IEPE inputs of the AIC2xx modules (and activated by these modules).

The BAM500 sensor with nominal sensitivity of 500 MV/g is ideally suited for detecting minimal acceleration vibration of slowly rotating components to 0.2 Hz.

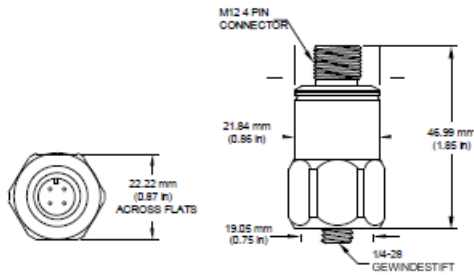
Part type designation	Part number
BAM500	00020456-00

Accessories

Part type designation	Part number
M8 Mounting stud	00020459-00
Mounting plate	00020458-00

Acceleration Sensor BAM500

Technical data



Dynamics

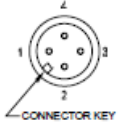
Sensitivity ($\pm 5\%$ at $25\text{ }^\circ\text{C}$)	500 mV/g
Acceleration range (V DC > 22 V)	10 g
Amplitude non-linearity	1 %
Frequency response	
$\pm 5\%$	0.7 Hz to 5000 Hz
$\pm 10\%$	0.5 Hz to 9000 Hz
$\pm 3\text{ dB}$	0.2 Hz to 14 000 Hz
Resonance frequency	30 kHz
Transverse sensitivity, max.	5 % of axial
Tripping temperature:	
$-50\text{ }^\circ\text{C}$	-5 %
$+120\text{ }^\circ\text{C}$	+5 %

Electrical properties

Power consumption:	
Supply voltage	18 V DC to 30 V DC
Constant current supply	2 mA to 10 mA
Electrical noise, equiv. g:	
Broadband 2.5 Hz to 25 kHz	250 μg
Spectral 10 Hz	2.5 $\mu\text{g}/\sqrt{\text{Hz}}$
100 Hz	1.5 $\mu\text{g}/\sqrt{\text{Hz}}$
1000 Hz	1.5 $\mu\text{g}/\sqrt{\text{Hz}}$
Output impedance, max.	100 Ω
Bias output voltage	12 V DC
Grounding	Insulated housing, shielded inside

Environmental conditions

Temperature range (operation)	$-50\text{ }^\circ\text{C}$ to $120\text{ }^\circ\text{C}$
Vibration limit	500 g peak
Overload limit (shock)	5000 g peak
Electromagnetic sensitivity, equiv. g, max.	70 $\mu\text{g}/\text{gauss}$
Seal	Hermetic (IP67)
Base strain sensitivity, max.	0.0002 g/ μ strain

Physical properties		
Design of the sensor element	PZT, shear	
Weight	90 g	
Housing material	316L stainless steel	
Output connector	4 pin M12	
Mating connector	M12	
Recommended cabling	Shielded, twisted pair	
Mounting	1/4-28 UNF tapped hole	
Connector		
	Connector pin	Function
	Housing	Ground
	1	Signal ground
	2	N/C
	3	Power / signal
4	N/C	

Note: Frequency response limits, spectral and noise values are typical

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