

# Linear Accelerometers

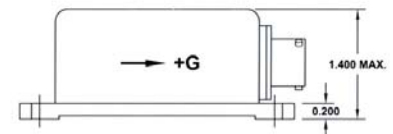
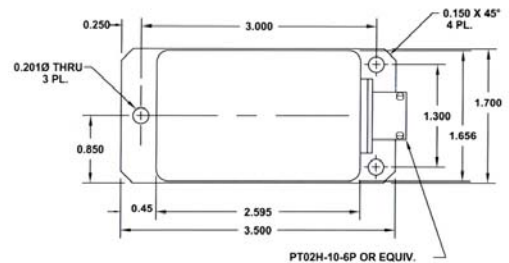
## SA-107AIC, SA-107AIHPC

Columbia Models SA-107AIC and SA-107AIHPC Force Balance Accelerometers are designed with an output circuit configuration made for use in 4-20mA data transmission systems. The 4-20 mA system is used extensively in industrial installations in order to transmit data over long distances in environments where interference from nearby electrical power lines could be a problem. A single +15 volt supply powers both the sensor and 4-20 mA line driver.

Model SA-107AIC is a low cost device, while the SA-107AIHPC incorporates Columbia's patented HP torquer design providing improved accuracy and repeatability in adverse shock environments. Both configurations provide a convenient 6-pin electrical interface. Models SA-107BIC and SA-107BIHPC Accelerometers are similar configurations that provide voltage output in addition to current output. *Consult the factory for customized versions of these sensors.*

Note: Exports of accelerometers from the United States are subject to the licensing requirements of the Export Administration Regulations (EAR) and/or the International Traffic in Arms Regulations (ITAR).

- \* 4-20 mA Output
- \* +15 VDC Operation
- \* Low Cost and High Performance



### Specifications

	SA-107AIC	SA-107AIHPC
<b>Operational</b>		
Ranges Available	$\pm 1$ G To $\pm 10$ G	$\pm 0.25$ G To $\pm 10$ G
Current Output	4-20 mA Corresponding to F.S. Range into a Maximum Load of 600 Ohms	
Excitation	+15 $\pm 1$ VDC <50 mA	
Output Impedance	50 Megohm Typical	
Sensitive Axis Alignment	<0.5 Deg.	
Scale Factor Tolerance	$\pm 1\%$	
Scale Factor Temp Coefficient	$\pm 0.02\%$ / Deg C	
Zero Bias	12 $\pm 0.05$ mA	
Null Temp Sensitivity	$\pm 0.002\%$ F.R. / Deg C	$\pm 0.001\%$ F.R. / Deg C
Frequency Response	DC To 50 Hz, $\pm 5\%$ Smooth Rolloff above 50 Hz	
Damping	0.7 $\pm 0.2$	
Cross Axis Sensitivity	0.002 G/G	
Non-Linearity	$\pm 0.1\%$ F.R.	$\pm 0.05\%$ F.R.
Hysteresis & Non-Repeatability	$\pm 0.1\%$ F.R.	$\pm 0.05\%$ F.R.
Threshold & Resolution	$\pm 0.01\%$ F.R.	$\pm 0.001\%$ F.R.

### Environmental

Temperature, Operating	-40 To +85 Deg C	
Temperature, Storage	-40 To +85 Deg C	
Random Vibration (2 To 2,000 Hz)	5 G RMS, 0.25" Disp. D.A.	15 G RMS, 0.25" Disp. D.A.
Shock Survival	125 G, 5 mSec	1000 G, 1 mSec
Humidity	95% R.H.	

### Physical

Weight	6 Oz (141.8 Gm)
Size	3.50 In L x 1.70 In W x 1.40 In H (88.9 cm L x 43.2 cm W x 35.6 cm H)
Case Material	Anodized Aluminum
Sealing	Environmental
Electrical Interface	Connector PT02H-10-6P of Equivalent
Mating Connector (Optional)	PT06A-10-6S(SR)

Cable Options: AFB04437

### I/O Connector Pin Functions:

SA-107AIC and SA-107AIHPC			
Pin	Function	Pin	Function
A	+15 VDC	D	Current Return
B	Power Ground	E	Spare
C	Current Output	F	Spare

### Ordering Information:

SA-107AIC (+/- X G )  
SA-107AIHPC (+/- X G )  
Standard Accelerometer  
Range +/- X G (Required)

Optional Mating Connector

M  
M



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