

Linear Accelerometers

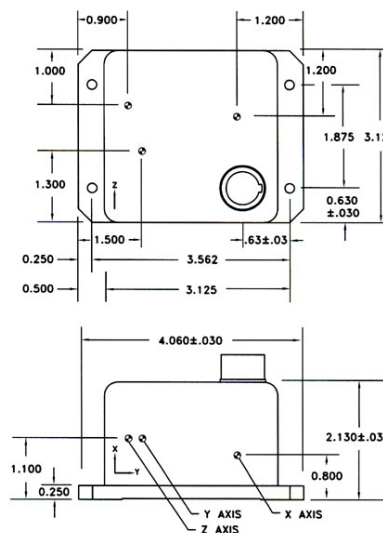
SA-307TX, SA-307HPTX

The Columbia Models SA-307TX and SA-307HPTX are force balance accelerometers capable of measuring DC and low frequency acceleration simultaneously in three axes. These sensors are self-contained and provide a high level, low impedance output. No additional signal conditioning is required in most applications.

The Model SA-307TX is a low cost design and is well suited for many OEM and general-purpose industrial applications. The Model SA-307HPTX incorporates Columbia's patented "HP" torquer design providing improved accuracy and repeatability in adverse shock and vibration environments. *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).

- * **Triaxial Sensors**
- * **+/-15 VDC Operation**
- * **Low Cost and High Performance**



Specifications

	SA-307TX	SA-307HPTX
Operational		
Ranges Available	± 1 G To ± 50 G	± 0.5 G To ± 50 G
Output Voltage	± 7.5 Volts into 100K Load	
Excitation	± 15 VDC <30 mA	
Output Impedance	<5000 Ohms	
Sensitive Axis Alignment	Better Than 0.5 Deg	
Scale Factor Tolerance	$\pm 1\%$	
Scale Factor Temp Coefficient	0.02% / Deg C Max.	
Zero Bias	$\pm 0.1\%$ F.R.	$\pm 0.05\%$ F.R. or 3×10^{-4} G
Null Temp Sensitivity	0.0005% F.R./ Deg C	
Natural Frequency	75 To 300 Hz Dependent Upon Range	
Damping	0.7 ± 0.2	
Cross Axis Sensitivity	0.002 G/G Exclusive of Sensitive Axis Alignment	
Output Noise	<0.02% F.R.	
Non-Linearity	$\pm 0.05\%$ F.R.	$\pm 0.03\%$ F.R.
Hysteresis & Non-Repeatability	$\pm 0.075\%$ F.R.	$\pm 0.05\%$ F.R.
Threshold & Resolution	0.001% F.R.	

Environmental

Temperature, Operating	-50 To +85 Deg C	
Temperature, Storage	-60 To +100 Deg C	
Vibration Survival (2 To 2,000 Hz)	5 G RMS, 0.5" Disp D.A.	15 G RMS, 0.5" Disp D.A.
Shock Survival	125 G, 5 mSec	1000 G, 0.5 mSec
Ambient Pressure	0 To 5 Atmospheres	
Humidity	95% R.H.	

Physical

Weight	12 Oz (340 Gms)	
Size	4.06 In L x 3.13 In W x 2.13 In H (10.3 cm L x 8.0 cm W x 5.4 cm H)	
Case Material	Anodized Aluminum	
Sealing	Environmental	
Electrical Interface	Connector MS3443412-10P or Equiv.	
Mating Connector (Optional)	PT06A-12-10S(SR) or Equiv.	

Output Connector Pin Functions:

SA-307TX and SA-307HPTX			
Pin	Function	Pin	Function
A	+15 VDC	F	E ₀ Y
B	Ground	G	Test Y
C	-15 VDC	H	E ₀ Z
D	E ₀ X	J	Test Z
E	Test X		

Ordering Information:

SA-307TX (+/- X G)	M	1G CB
SA-307HPTX (+/- X G)	M	1G CB
Standard Accelerometer Range +/- X G (Required)		— Axis
Optional Mating Connector		
1G Counterbias Option (Ranges ± 1 G & higher) Specify Axis (X, Y or Z)		



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