

# Linear Accelerometers

## SA-207LN, SA-307LN

Columbia Models SA-207LN and SA-307LN Servo Accelerometers are high-sensitivity, low noise sensors designed for use in seismic and low level, low frequency motion studies. The accelerometers are self-contained and provide high level, low impedance output. No signal conditioning is required in most applications.

Like the single-axis SA-107LN, these multi-axis sensors allow measurements in the low frequency micro-G range. Aside from the traditional DC-coupled zero output, the SA-207LN and SA-307LN Accelerometers provide AC-coupled zero output which eliminates tilt-induced or offset errors facilitating high amplification of the basic output. *Consult the factory for customized versions of this sensor.*

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).

- \* Seismic Event Sensors
- \* Ultra Low Noise
- \* High Level Output
- \* 2 or 3 Axes



### Specifications

	SA-207LN	SA-307LN
<b>Operational</b>		
Ranges Available	$\pm 0.1$ G To $\pm 2$ G	$\pm 0.5$ G To $\pm 2$ G
Output Voltage	$\pm 7.5$ Volts into 100K Load	
Excitation	$\pm 12$ To $\pm 15$ VDC <20 mA	$\pm 12$ To $\pm 15$ VDC <30 mA
Output Impedance	<1000 Ohms	
Sensitive Axis Alignment	Better Than 0.25 Deg	
Scale Factor Tolerance	$\pm 1\%$	
Scale Factor Temp Coefficient	0.01% / Deg C Max.	
Zero Output		
A.C. Coupled	<5 mV	
D.C. Coupled	<1 mG	
Null Temp Sensitivity	75 $\mu$ V./ Deg C	
Natural Frequency	100 To 200 Hz Dependent Upon Range	
Damping	0.7 $\pm$ 0.1	
Cross Axis Sensitivity	0.002 G/G Exclusive of Sensitive Axis Alignment	
Output Noise	<2.5 $\mu$ V RMS From 0 To 50 Hz	
Non-Linearity	< $\pm 0.1\%$ F.R.	
Hysteresis & Non-Repeatability	<0.5 mG	
Threshold & Resolution	Better Than 1 $\mu$ G	

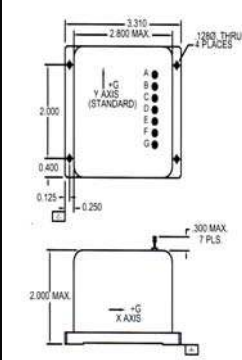
### Environmental

Temperature, Operating	-40 To +80 Deg C
Temperature, Storage	-50 To +90 Deg C
Vibration Survival (2 To 2,000 Hz)	5 G RMS, 0.5" Disp D.A.
Shock Survival	200 G, 5 mSec (1/2 Sine)
Ambient Pressure	0 To 5 Atmospheres
Humidity	95% R.H.

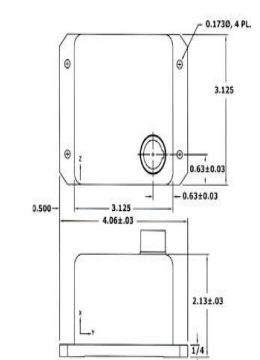
### Physical

Weight	8 Oz (227 Gm)	12 Oz (340 Gm)
Size	3.31 In L x 2.80 In W x 2.00 In H (8.4 cm L x 7.1 cm W x 5.1 cm H)	4.06 In L x 3.13 In W x 2.13 In H (10.3 cm L x 7.9 cm W x 5.4 cm H)
Case Material	Anodized Aluminum	
Sealing	Environmental	
Electrical Interface	7 Terminal Pins	MS3443412-10P or Equiv.
Optional Mating Connector	N/A	PT06A-12-10S(SR)

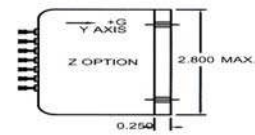
SA-207LN Outline



SA-307LN Outline



Z Option



### I/O Terminal Pin Functions:

SA-207LN		SA-307LN	
Pin	Function	Pin	Function
A	+15 VDC	A	+15 VDC
B	Ground	B	Ground
C	-15 VDC	C	-15 VDC
D	DC Output X	D	DC Output X
E	AC Output X	E	AC Output X
F	DC Output Y	F	DC Output Y
G	AC Output Y	G	AC Output Y
		H	DC Output Z
		J	AC Output Z

### Ordering Information:

SA-207LN (+/- X G)

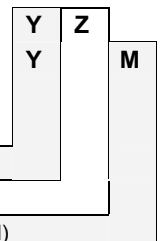
SA-307LN (+/- X G)

Standard Accelerometer  
Range +/- X G (Required)

1G Counterbias Option

Z Option (See Above)

Mating Connector Supplied (Optional)



Columbia Research Laboratories, Inc. 1925 Mac Dade Blvd. Woodlyn, PA 19094

Phone: 1.800.813.8471 / Fax: 610.872.3882 / email: sales@columbiaresearchlab.com