

Linear Accelerometer

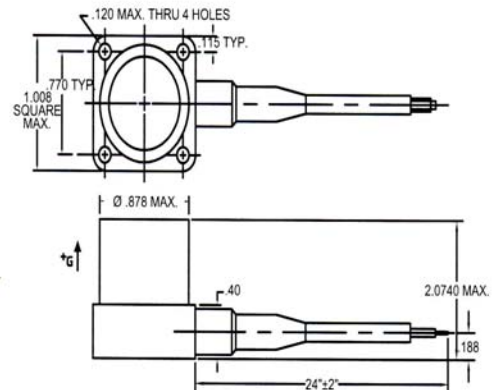
SA-122R

The Columbia Model SA-122R miniature force balance accelerometer is a lightweight sensor designed to survive severe mechanical environments without degradation to unit performance. Originally conceived as a replacement for a popular strain gage design frequently used by major aircraft manufacturers, this device has found widespread acceptance by major airframe producers.

The SA-122R eliminates the need for supplementary signal conditioners by providing a standard 0 to 5 volt low impedance output while operating from +28VDC aircraft power. The force balance design delivers accuracy and stability far superior to that which can be expected from a comparably priced strain gage system. *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).

- * **Miniature Sensor**
- * **+28 VDC Power**
- * **High Shock and Vibration Survival**



Specifications

	SA-122R
Operational	
Ranges Available	± 0.5 G To ± 50 G
Output Voltage	0.2 To 4.8 VDC into 100K Load
Excitation	+24 To +32 VDC 25 mA Nominal
Output Impedance	<1000 Ohms
Sensitive Axis Alignment	1 Deg Max.
Scale Factor Tolerance	$\pm 1\%$ for a given range
Scale Factor Temp Coefficient	0.02% / Deg C Max.
Zero Bias	2.5 ± 0.020 VDC
Null Temp Sensitivity	± 0.25 mV / Deg C
Natural Frequency	100 To 400 Hz Dependent Upon Range
Damping	0.7 ± 0.2
Cross Axis Sensitivity	0.002 G/G Exclusive of Case Alignment
Output Noise	0.02% F.R.
Non-Linearity	$\pm 0.1\%$ F.R.
Hysteresis & Non-Repeatability	$\pm 0.1\%$ F.R.
Threshold & Resolution	0.001% F.R.

Environmental

Temperature, Operating	-55 To +120 Deg C
Temperature, Storage	-60 To +125 Deg C
Vibration Survival (2 To 2,000 Hz)	10 G RMS
Shock Survival	100 G, 11 mSec 1,000 G, 1 mSec
Ambient Pressure	0 To 2 Atmospheres
Humidity	95% R.H.

Physical

Weight	2 Oz (56.3 Gm)
Size (Exclusive of 24 In Cable)	1.00 In Sq x 2.074 In H (2.54 cm Sq x 5.27 cm H)
Case Material	Nickel-Plated Aluminum
Sealing	Environmental
Electrical Interface	(3) #28 AWG Leads

I/O Wire Lead Functions:

Lead	Function
RED	+DC Input
BLACK	Pwr / Sig Ground
YELLOW	Sig Output

Ordering Information:

SA-122R(+/- X G)

Standard Accelerometer
Range +/- X G (Required)



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