

Linear Accelerometers

SA-102BHC, SA-302BHC

The Columbia Models SA-102BHC and SA-302BHC are compact, premium-performance force balance accelerometers, extremely rugged and well suited for demanding missile and airborne applications. Both the single-axis SA-102BHC and triaxial version SA-302BHC are designed to operate from +24 to +32 volt aircraft supply and deliver a bi-polar +/-5 volt output isolated from power ground.

The basic systems have been qualified and supplied in substantial volume on many small missile programs. These designs have also been selected by a number of aircraft instrument manufacturers as key components of their strap-down systems. *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).

Specifications

Operational	SA-102BHC	SA-302BHC
Ranges Available	± 0.5 G To ± 50 G	± 1 G To ± 35 G
Output Voltage	± 5 VDC into 100K Load	
Excitation	+24 To +32 VDC 50 mA Max.	
Output Impedance	<5000 Ohms	
Sensitive Axis Alignment	Better Than 0.25 Deg	Better Than 0.5 Deg
Scale Factor Tolerance	$\pm 1\%$	
Scale Factor Temp Coefficient	$\pm 0.02\%$ / Deg C	
Zero Bias	0 ± 0.01 VDC	
Null Temp Sensitivity	0.0006% F.R. / Deg C	
Natural Frequency	150 Hz Min.	100 Hz Min.
Damping	0.7 ± 0.1 @ 25 Deg C 0.5 To 1.0 Over Temperature	
Cross Axis Sensitivity	0.002 G/G Exclusive of Case Alignment	
Output Noise	15 mV P/P, DC To 10 KHz	
Non-Linearity	$\pm 0.05\%$ F.R.	
Hysteresis & Non-Repeatability	$\pm 0.05\%$ F.R.	
Threshold & Resolution	$\pm 0.001\%$ F.R.	

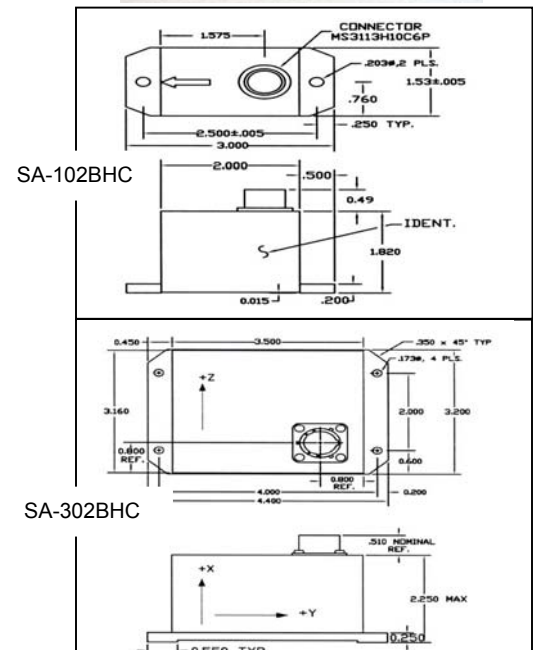
Environmental

Temperature, Operating	-55 To +85 Deg C
Temperature, Storage	-60 To +100 Deg C
Vibration Survival (2 To 2,000 Hz)	15 G RMS
Shock Survival	100 G, 11 mSec
Ambient Pressure	0 To 5 Atmospheres
Altitude	-1,000 To +88,000 Ft.
Humidity	95% R.H.

Physical

Weight	6 Oz (170 Gm)	22 Oz (624 Gm)
Size	3.00 In L x 1.53 In W x 1.82 In H (7.1 cm L x 3.9 cm W x 4.6 cm H)	4.40 In L x 3.16 W x 2.25 In H (11.3 cm L x 8.0 cm W x 5.7 cm H)
Case Material	Aluminum	
Finish	Corrosion Resistant Per MIL-C-5541E, Class 1A	Black Anodized Per MIL-A-8625, Type II, Class 2
Identification Label	Metal Photo Label Compatible with MIL-STD-130K	
Sealing	Environmental	
Electrical Connector	MS3113H-10C-6P	MS3112E12-10P or Equiv.
Optional Mating Connector	PT06A-10-6S(SR)	PT06A-12-10S(SR)

- * Premium Performance
- * +28 VDC Operation
- * Rugged Construction
- * 1 & 3 Axis Configurations



I / O Connector Pin Functions:

SA-102BHC		SA-302BHC	
Pin	Function	Pin	Function
A	Signal Output	A	+28 VDC
B	Signal Ground	B	Power Ground
C	Power Ground	C	Case Ground
D	+28 VDC	D	Signal Ground
E	Self Test (+)	E	Signal Output X
F	Self Test (-)	F	Test X
		G	Signal Output Y
		H	Test Y
		J	Signal Output Z
		K	Test Z

Ordering Information:

SA-102BHC (+/- X G)

SA-302BHC (+/- X G)

Standard Accelerometer
Range +/- X G (Required)

Optional Mating Connector

1G Counterbias Option (Specify Axis)

M
M
1G CB
- Axis



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