



# AAA545 Multi Axis Series

DC-Operated,
Bi-axial & Tri-axial Linear Accelerometer

# Control of the contro

# $\epsilon$

# FEATURES

- Ranges  $\pm$  2g to  $\pm$  100g
- Integral overload protection
- Critical damping ratio 0.7 nominal for 2g, 5g, 10g & 20g versions (0.6 for 50g & 0.5 for 100g) with essentially zero temperature coefficent
- Integral temperature compensation
- DC input DC output
- Suitable for DC and AC acceleration applications
- Available in 2 and 3 axis versions

### INTRODUCTION

The Sensors AAA545 range of multi-axis accelerometers measure vector acceleration in three mutually perpendicular planes with high accuracy and incorporate piezoresistive strain gauge bridge sensors incorporating gas damping. Unlike fluid damped devices, the gas damping employed is essentially independent of temperature. The transducer also incorporates positive mechanical stops conferring excellent shock resistance.

The accelerometer is compensated for the effects of temperature on both sensitivity and zero.

Typical applications include biomechanical investigations, data acquisition systems, crash test, impact, shock and vibration analysis.

Designed for operation from a DC power source, the AAA545 is packaged in a robust light alloy housing with solder pin connections. The accelerometer has a wide-range useable frequency response from DC to several kHz.

In addition to the instruments offered in this bulletin Althen Sensors design and develop accelerometers for specific applications. These custom designed units can be manufactured and tested to conform to specific requirements and standards.



### GENERAL SPECIFICATION

Input

Ranges (±g) 2; 5; 10; 20; 50; 100

Excitation 5.00  $\pm$  0.01 Vdc. Regulated to

8ppm/V (Max)

Input Current ......5mA dc max per axis

Output at 25°C

Range (g)	Full Range Output (Min/Max) (mV)	Resonant Frequency (Hz)	Frequency Response (Hz ± 5%)
± 2	16/32	700	0 to 150
± 5	24/36	800	0 to 250
± 10	24/36	1000	0 to 350
± 20	24/36	1500	0 to 550
± 50	24/36	4000	0 to 1000
± 100	24/36	6000	0 to 1300

Note: The full range output is that obtained using 5volt excitation

### **Environmental**

Temp.	Operating	40°C to +105°C		
Temp.	Compensated	0°C to +50°C		
Temp.	Storage	55°C to +130°C		
Thermal Sensitivity Shift≤ ±0.02% FRO/°C				
Therma	al Zero Shift	≤ ±0.02% FRO/°C		

Acceleration limit 400g for 2 to 10 g versions, 20 x range or 2000g, whichever is lower

for other versions (any direction)

Humidity/Immersion .....IP65

Insulation Resistance ......≥ 20 MΩ at 50V dc

### **Physical**

Sensitive Axis Alignment	See diagram
Weight	40 grams max

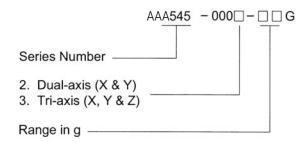
### **Electrical Connections**

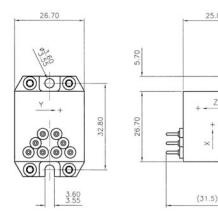
Solder Pin Connections ..... Pin A: + dc excitation

Pin B: 0V dc excitation Pin C: - Signal 'X' axis Pin D: + Signal 'X' axis Pin E: - Signal 'Y' axis Pin F: + Signal 'Y' axis

Pin G: – Signal 'Z' axis (option)
Pin H: + Signal 'Z' axis (option)

### **DESIGNATION & ORDERING CODE**







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The information provided herein is to the best of our knowledge true and accurate, it is provided for guidance only. All specifications are subject to change without prior notification.