# A545 Series

DC-Operated. Single Axis Linear Accelerometer



.... the first choice in precision

## **Features**

- Ranges  $\pm 2g$  to  $\pm 100g$
- Essentially zero temperature coefficent of damping ratio
- Integral temperature compensation
- DC input DC output
- High reliability



### Introduction

The Sherborne Sensors' range of Solid State Accelerometers measure vector acceleration with high accuracy and incorporate a micromachined piezo-resistive strain gauge bridge silicon sensor incorporating an gas damping feature. Unlike fluid damped devices the gas damping employed is essentially independent of The transducer also incorporates positive mechanical stops confering excellent shock temperature. resistance.

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

Typical applications include data acquisition systems, crash recorders, fatigue life monitoring and prediction; monitoring and controlling deceleration in mass transit systems; road bed analysis and fault detection equipment for high speed railways; military and civil flight simulators; autopilots and low frequency vibration monitoring.

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

Designed for operation from an unregulated DC power source, the A545 is packaged in a robust aluminium alloy housing with solder pin connections. The accelerometer has a wide-range useable frequency response from DC to several kHz.





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# Sherborne Sensors

## **General Specification**

#### Input

Ranges (±g)	2; 5; 10; 2	20; 50; 100
Input Voltage	. 14.5 to 27	7Vdc
Input Current	. 5mA dc n	nax.

#### Output at 25°C

≤ ± 2 mV
≤ ±0.5% FRO
≤ 0.02% FRO
≤ 0.0005% FRO
≤ ±1% FRO
10µV (rms) max
0.7 (±0.2) @ 25°C
1.2 to 6.5 kΩ

Range (g)	Sensitivity (Min/Max) (mV/g)	Resonant Frequency (Hz)	Frequency Response (Hz ± 5%)
± 2	8.0/16.0	700	0 to 150
± 5	4.8/7.2	800	0 to 250
± 10	2.4/3.6	1000	0 to 350
± 20	1.2/1.8	1500	0 to 550
± 50	0.48/0.72	4000	0 to 1000
± 100	0.24/0.36	6000	0 to 1300

#### Environmental

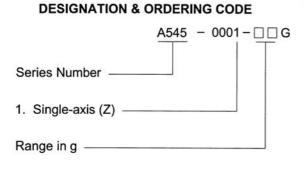
Temp. Operating	40°C to +105°C
Temp. Compensated	0°C to +50°C
Temp. Storage	55°C to +130°C
Thermal Sensitivity Shift	≤ ±0.02% FRO/°C
Thermal Zero Shift	≤ ±0.02% FRO/°C
Acceleration limit	400g for 2 to 10 g versions, 20 x
	range or 2000g, whichever is lower
	for other versions (any direction)
Humidity/Immersion	IP65
Insulation Resistance	≥ 20 MΩ at 50V dc

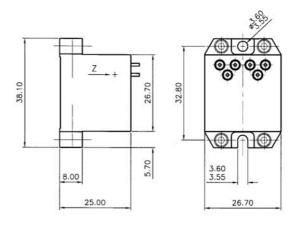
#### Physical

Sensitive Axis Alignment Vertical to mounting face Weight ......40 grams max

#### **Electrical Connections**

Solder Pin Connections Pin /	A - + dc excitation
Pin I	B - 0V dc excitation
Pin	C - Signal
Pin I	D + Signal
Pin I	E – not connected
Pin I	F – not connected









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