

# Schaevitz® A215/A220 DC-Operated, Accelerometer

## Features

- Ranges  $\pm 0.25g$  to  $\pm 30g$
- Closed loop force balance system
- Self test facility
- DC input - DC output
- High reliability
- Manufactured to ISO 9001 standards
- Flight qualified versions available



## Introduction

The Sherborne Sensors' range of Servo Accelerometers measure vector acceleration with high accuracy using a closed loop force balance torquer mechanism.

Typical applications include data acquisition systems, crash recorders, fatigue life monitoring and prediction; for stabilising platforms on space and ship borne satellite tracking systems; 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 accelerometers for specific applications. These custom designed units can be manufactured and tested to conform to military standards.

All A200 Series Accelerometers operate as a closed-loop torque balance servo system. With reference to the illustration below the pendulous mass 'A' develops a torque proportional to the product of its mass unbalance and the applied acceleration.

The movement of mass 'A' is detected by position sensor 'B' whose output signal is connected to an amplifier. The resulting current is fed into the torquer motor 'C' which then develops a torque exactly equal to, but directly opposed to the initial torque from the pendulous mass 'A'. Mass 'A' stops moving, assuming a position minutely differing from its zero 'g' position. Simultaneously, the current to the torquer motor is fed through a stable resistor to provide an output voltage proportional to the applied acceleration.

The system is damped by means of a phase advancing network within the integrated thick film module. The A200 series servo operation can be checked (self test) after installation by applying an independent current input to the torquer motor.

By adjusting the parameters of the servo amplifier and related electronic networks, the operating characteristics of a servo accelerometer can be changed or modified to suit a particular application.



