

## AC-73 Triaxial Force Balance Accelerometer

### Features

- True Electro-mechanical Force Balance Accelerometer
- Dynamic Range 165 dB
- User selectable Full Scale range  $\pm 0.5, 1, 2, 3$  or  $4\text{ g}$
- Bandwidth from DC to 200 Hz
- Exemplary Offset stability
- Temperature and drift compensation
- Robust suspension system
- Single Bolt Mounted Enclosure with up to  $\pm 10^\circ$  of Leveling Adjustment
- Integrated Bubble Level

### Applications

- Broadband Seismic, Earthquake and Structural measuring and monitoring



### Outline

The AC-73 sensor package is a true electro-mechanical triaxial accelerometer designed for broadband earthquake monitoring and applications requiring highly sensitive and rugged sensors with minimum maintenance and a simple method for periodic testing.

The AC-73 accelerometer is based on a force balance servo accelerometer concept having a rugged mass suspension moving coil system.

The large mass improves the signal to noise ratio. The magnetic system and capacitive position sensors offer symmetrical controls for the accurate electronic centring of the mass. At rest the accelerometer servo mechanism is in balance and no electrical output is generated. Acceleration of the AC-73 will result in an electrical output proportional to the current used to keep the mass centred. This accelerometer output signal is calibrated to "g" gravity so that the current scale factor of the AC-73 is in units of milliamps per g. Because of the symmetrical positioning system incorporated with the force balance servo accelerometer principle, the accelerometer can not arbitrarily change its scaling or drift out of calibration.

The AC-73 is equipped with electronic offset adjustment features that make its installation very user friendly. This powerful feature allows the users to install the AC-73 without time consuming mechanical offset adjustment and fine instrument levelling.

An integrated bubble level is also supplied on the sensor housing to facilitate hassle-free installation and operation.

The DC response allows the sensor to be easily repaired, tilt tested or recalibrated in the field. With the help of the test line the AC-73 accelerometer can be completely tested assuring proper operation and accurate acceleration measurement. This test line is internally connected to the external world only when a given command is sent to the sensor to avoid any noise pick-up through the test input.

The sensor can be powered from 9.5 to 18 VDC source with the advantage that its power input is insulated from the sensor's electronic ground. This avoids ground loops and reduces noise induced through the power supply.



