

Piezoelectric Charge Accelerometer Type 4521-C

Uses

- Measurements in confined spaces
- Measurements in high-temperature environments
- Flight-test applications

Features

- Hermetically sealed
- Insulated case
- Low weight (2.7 g)
- Centre-bolt mounting
- High operating temperature
- High resonance frequency



Description

Type 4521-C is a miniature piezoelectric charge accelerometer. It features an M3 side connector and an M2 centre-bolt mounting that gives 360° freedom in cable orientation. It is hermetically sealed so it is well suited for use in harsh environmental conditions, and its low weight makes it ideal for measurements on delicate structures and small objects.

Type 4521-C has a hard-anodized mounting surface that provides electrical isolation from the test object. The piezoelectrical element used in Type 4521-C is ceramic, and the housing material is a titanium alloy.

Characteristics

This piezoelectric accelerometer may be treated as a charge source. Its sensitivity is expressed in terms of charge per unit acceleration (pC/ms^{-2} , pC/g).

Calibration

Each accelerometer is calibrated using random excitation and 1600-line FFT transformation to provide a high-resolution (amplitude and phase) frequency response. This yields a unique characterization and secures the integrity of your vibration measurements.

The sensitivity given on the calibration chart is measured at 159.2 Hz with 95% confidence level using coverage factor $k = 2$.

The upper frequency limits given on the calibration chart are frequencies where the deviation from the reference sensitivity at 159.2 Hz is within $\pm 10\%$. The upper frequency limit is approximately 30% of the mounted resonance frequency. This assumes that the accelerometer is correctly mounted on the test structure – poor mounting can have a marked effect on the mounted resonance frequency.

Fig. 1 Individual frequency response curve for Type 4521-C, as from a calibration chart



