



Dynamic Transducers and Systems

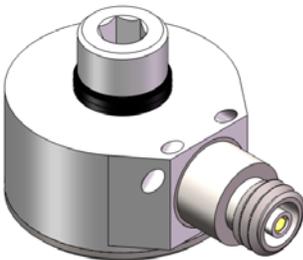
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OG3221C
REV A, ECN 6816, 05/21/10
REV B, ECN 10805, 03/14/14

OPERATING GUIDE

MODEL 3221C

CHARGE MODE ACCELEROMETER



NOTE: Model 3221C is a charge mode high temp accelerometer featuring a charge-mode elements with 10-32 connectors mounted in a titanium housing. It has low mass and high sensitivity (5 or 10pC/g). Annular shear design is employed for high resonant frequency.

OPERATING GUIDE

MODEL 3221C ACCELEROMETER

INTRODUCTION

Model 3221C is a miniature accelerometer using the latest in piezoceramic annular shear technology. The output is charge mode with sensitivities of, 10 or 5 pC/g. The exact sensitivities are provided on the calibration sheet supplied with each instrument.

This instrument contains a piezoceramic annular shear mode accelerometer element mounted in the housing. Model 3221C is hermetically sealed using laser welds and glass-to-metal sealed connector.

Model 3221C mounts with a Model 6297 mounting screw, (supplied).

Element is electrically grounded to the titanium outer housing for best noise immunity, but isolated from the mounting surface with anodized aluminum washer.

DESCRIPTION

Refer to the outline/installation drawing 127-3221C for the dimensions of Model 3221C.

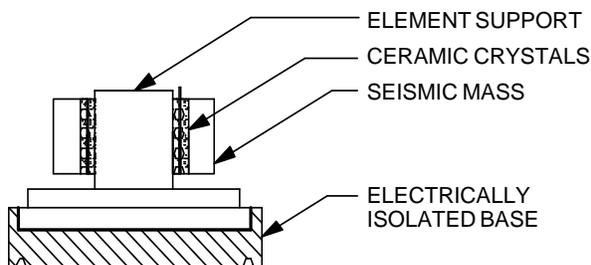


Figure 1 Representative cross section, 3221C element assembly. (Refer to outline/Installation drawing 127-3221C provided with this operating guide for a detailed outline representation of Model 3221C).

The electrical connection from the element is brought out to a 10-32 hermetic coaxial connector.

The performance specifications and criteria for Model 3221C are delineated on the specification sheet included with this operating guide.

INSTALLATION

This accelerometer is designed to be mounted using a 6-32 mounting screw, Model 6297, provided with each accelerometer.

Select a smooth surface at least 3/4 in. ($\varnothing.70$) in diameter and clean off all oil, debris and any contaminants or foreign matter that would preclude good contact between mating surfaces. This is important for best frequency response. Drill and tap a 6-32 mounting port at the center of the .70 diameter surface in accordance with instructions on drawing 127-3221C, provided.

The selected (or prepared) mounting area should be flat to within .001 in TIR for best high frequency response.

NOTE: Before mounting, be sure to clean the mounting surface thoroughly to avoid inclusion of machining chips and other debris between mating surfaces. Intimate contact between mating surfaces is important for best performance.

Connect the connector to the charge amplifier using only low noise miniature coaxial cable such as Dytran's Model 6013A (10-32 to 10-32) or Model 6019A (10-32 to BNC).

If a fair amount of motion is expected during the test, it is good practice to tie the cables down to a stationary point as close as possible to the accelerometer (but not closer than 1 inch) to avoid potentially damaging cable whip.

You are now ready to connect the 3221C to the power charge amplifier.

OPERATION

Model 3221C is intended for use with charge amplifiers to condition the charge mode outputs to voltage mode signals which can then utilize normal coaxial cable to transport the signal to the readout instrumentation with minimal line loss. Contact Dytran for suggestions pertaining to specific charge amplifiers available for this accelerometer.

Apply power to the charge amplifiers and allow several seconds for coupling capacitors to fully charge. You are now ready to take data.

The polarity of 3221C is shown on the outline/installation drawing 127-3221C. The arrow indicates the direction and sense of motion of the accelerometer that will produce positive-going output signal.

MAINTENANCE AND REPAIR

This instrument is not field repairable. The only field maintenance required, or possible is the cleaning of contaminated connectors should this become necessary.

If a problem occurs, contact the factory for help. You will be assigned a Returned Material Authorization (RMA) number should the instrument need to be returned to the factory for evaluation. A short note describing the problem will facilitate the repair procedure.

There is no charge for evaluation of the instrument and we will perform no repair work until you are notified of any charges.

It is good practice to return the instrument to the factory for recalibration from time to time with frequency of recalibration dependent on usage intensity and frequency.