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OPERATING GUIDE

MODEL 3197C HIGH TEMPERATURE CHARGE MODE

ACCELEROMETER

INTERNALLY GROUND ISOLATED

This manual includes:

- 1) Supplemental operating guide Model 3197C**
- 2) Outline/Installation Drawing Model 3197C**

SUPPLEMENTAL OPERATING GUIDE

MODEL 3197C HIGH TEMPERATURE CHARGE MODE ACCELEROMETER

INTRODUCTION

Model 3197C is a charge mode accelerometer designed to measure vibration of surfaces at temperatures up to +500 degrees F. This accelerometer uses an ultra stable piezoceramic crystal material in its self-generating seismic element. This material exhibits less than +9% increase in sensitivity from room temperature to +500 degrees F.

Model 3197C may be used with various charge amplifiers of the vibration type.(as opposed to the DC coupled electrostatic types.)

We especially recommend the Dytran in-line charge amplifier Model Series 4705A, for use with the 3197C. This inexpensive miniature charge amplifier adapts the 3197C for use with any LIVM (constant current type) power unit. Model 4705A features BNC input and output connectors and mounts in-line between the 3197C and the power unit.

DESCRIPTION

Refer to Outline/Installation drawing 127-3197C.

Model 3197C is packaged in an hermetically sealed 300 series stainless steel housing and features a transverse mounted ceramic-to-metal sealed TNC connector. The unit is installed by use of 3 8-32 x 1/2 inch long socket head cap screws, (supplied). The mounting screws thread into 3 matching threaded holes which must be provided in the mounting surface.

Model 3197C also features a connector housing design which will accept Dytran's "Submersion Proof" cable/boot assembly to protect the cable connection against moisture and other contaminants.

INSTALLATION

To mount Model 3197C, it is necessary to drill and tap 3 equally spaced 8-32 mounting ports on a 1.188 dia. bolt circle. For best high frequency response, the contact area of the accelerometer must be selected or prepared to be flat to .001 TIR. The holes must be drilled perpendicular to the mounting surface to within 2 degrees of angular error.

After drilling and tapping, clean the area to remove all traces of cutting oil and machining chips. Spread a thin layer of silicone grease on the three contact surfaces of the 3197C. Locate the accel. over the tapped holes and engage the three mounting screws through the holes in the flange and into the tapped holes. Thread the mounting screws into the tapped holes and torque to 15 pound inches.

Inspect the mating surfaces to ensure that the accelerometer is snugged down tightly in intimate contact with the test surface at all three contact points.

If the surfaces appear to be meeting squarely, the accelerometer is ready for connection of the cable.

INTERCONNECTION

The recommended cable assembly for the 3197C is the Dytran Model 6425A03. This cable is a 3 feet long low-noise coaxial with TNC connector on both ends.

Connect the cable to the 3197C and connect the other end of the cable to the charge amplifier. Apply lock wire if applicable. If you are using a fixed sensitivity charge amplifier such as the Model 4705A, the system sensitivity is the product of the charge sensitivity of the accel. (in pC/G) and the sensitivity of the charge amplifier (in mV/pC).

Example:

Accelerometer sensitivity: 8.0 pC/G.

Charge amplifier (Model 4705M2) sensitivity: 12.5 mV/pC.

System sensitivity is:

$$8.0 \text{ pC/G} \times 12.5 \text{ mV/pC} = 100 \text{ mV/g}$$

As previously stated, the in-line charge amplifier is powered by constant current type power units similar to LIVM sensors.

MAINTENANCE AND REPAIR

Should you experience a problem with your system, contact the Dytran factory for technical assistance in analyzing and trouble shooting the problem. If the product must be returned for evaluation and/or repair, you will be given an RMA (returned materials authorization) number and instructions for returning the instrument to the factory. Do not return the instrument without first obtaining this authorization to return.