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OPERATING GUIDE

MODEL 3263AT MINIATURE TRIAXIAL IEPE ACCELEROMETER

WITH SINGLE 4-PIN CONNECTOR,

CASE GROUNDED

WITH IEEE 1451.4 COMPATIBLE

TRANSDUCER ELECTRONIC DATA SHEET (TEDS) FUNCTION



Models 3263AXT are low-noise, miniature IEPE triaxial accelerometers featuring a single, transverse mounted, 4-pin electrical connector. This feature allows the sensor to be used in situations where vertical space is limited. Model series 3263AT is case grounded and available with sensitivities of 10mV/g, 50mV/g, or 100mV/g.

This Guide contains:

- 1) Specifications, Model 3263AT
- 2) Outline/Installation Drawing 127-3263AT

NOTE: IEPE is an acronym for Integrated Electronics Piezoelectric types of low impedance voltage mode sensors with built-in amplifiers operating from constant current sources over two wires. **IEPE** instruments are compatible with other comparable systems labeled **LIVM™**.

OPERATING INSTRUCTIONS

MODEL 3263AT TRIAXIAL ACCELEROMETER WITH TEDS

INTRODUCTION

Model 3263AT is a series of miniature three-axis accelerometers using the latest in ceramic shear technology coupled with 2-wire internal IEPE electronics.

The “T” designation denotes the inclusion of the IEEE 1451.4 Transducer Electronic Data Sheet or “TEDS” function. This function allows the user to query each sensor in a large array of sensors, say, in a large field test, as to model number, serial number, sensitivity and other attributes using a TEDS compatible signal conditioner/data acquisition system.

These instruments each contain three miniature ceramic laminar shear mode accelerometer elements mounted to a single support and welded into a titanium housing. The three elements are mounted orthogonally to each other so that they can measure the complete motion of a point.

Model 3263AT has an internal 4-40 thread for stud mounting.

IEPE (Integrated Electronics Piezoelectric) design means that three miniature IC amplifiers are built into the instrument, one for each axis, to lower the impedance of the ceramic seismic elements by many orders of magnitude. This technique allows the driving of long cables without affecting sensitivity and the use of very simple constant current type power units.

DESCRIPTION

Refer to the outline/installation drawing 127-3263AT for the dimensions of Model 3263AT.

This novel accelerometer features three modular style ceramic elements mounted to a single vertical post. Each planar shear mode element is connected to a miniature IEPE amplifier. The element assembly is mounted in a titanium housing.

The electrical connections from the elements are brought out to the contacts of a four-pin connector mounted transversely to a vertical face of the housing. The three signal/power connections to the elements are connected to three separate pins while the three ground returns for the elements are tied together to one common pin of the four-pin connector. The case of this instrument is connected to electrical ground.

The performance specifications and criteria for Model 3263AT are delineated on the specification sheet included with this operating guide.

INSTALLATION

Select a smooth surface approx. .50 in. in diameter and clean off all debris that would preclude an intimate surface contact. Although the 3263AT's have an internal thread for mounting, they may also be adhesively mounted. Various adhesives may be used to mount Model 3263AT but the adhesives of choice for ease of use are any of the cyanoacrylate “instant” adhesives. They are tough and they set almost instantly. They also do not need a thick bond line which is good for high frequency response. 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.

Spread a light layer of adhesive on the mounting surface and apply the 3263AT to the mounting area in the desired orientation and press and hold firmly for several seconds.

If a fair amount of motion is expected during the test, it is good practice to tie the cable 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 3263AT to the power unit.

OPERATION

The 3263AT may be operated with standard IEPE signal conditioners, however TEDS compatible signal conditioners must be used for TEDS operation.

Be sure to check the orientation of each axis with the markings on the instrument upper surface and/or the outline/installation drawing supplied with the Operating Guide. The polarity of each axis is also define with arrows marked on the top surface of the 3263AT and again, on the outline/installation drawing 127-3263AT. The arrows indicate the direction and sense of motion of the accelerometer that will produce positive-going output signals. The vertical axis, axis 3, produces positive-going output voltage when the accelerometer is accelerated upward, i.e., away from the mounting surface.

REMOVAL (OR UNINSTALLATION)

It is very important when removing this instrument to remember that, although it is built to be very rugged, it is a sensitive measuring instrument and as such should be treated gently when being removed from its installation. Never strike the unit to break it free from its mounting surface. Simply grip two opposing flats with an adjustable or open-end wrench and gently twist the instrument until the mounting interface (stud or adhesive) is broken. This method avoids any trauma to the instrument and will help ensure a long life for the accelerometer.

MAINTENANCE AND REPAIR

This instrument is not field-repairable. No maintenance is required, or possible. If a problem occurs, contact the factory for help. You will be assigned a Returned Material Authorization (RMA) number should the instrument have 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.