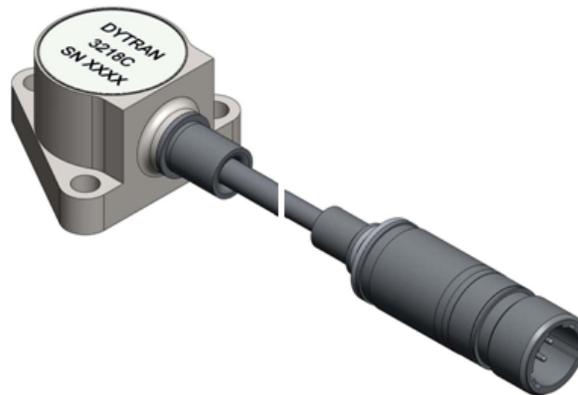




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OPERATING GUIDE
MODEL 3218C HIGH TEMPERATURE CHARGE MODE
ACCELEROMETER
INTERNALLY GROUND ISOLATED



This manual includes:

- 1) Specifications, Model 3218C**
- 2) Supplemental operating guide Model 3218C**
- 3) Outline/Installation Drawing Model 3218C**



SPECIFICATIONS, MODEL 3218C CHARGE MODE ACCELEROMETER

SPECIFICATION	VALUE	UNITS
PHYSICAL		
WEIGHT, accelerometer	157	GRAMS
WEIGHT, accelerometer and cable	195	GRAMS
SIZE , MOUNTING DIA X HEIGHT X LENGTH	1.19 MOUNTING.DIA x .765 x 18.1-18.6	INCHES
MOUNTING PROVISION	3-BOLT PATTERN,8-32	
CONNECTOR, TYPE	[1]	
HOUSING/CONNECTOR MATERIAL	304 L	
ISOLATION	10GΩ MIN	
SENSING ELEMENT/ MODE	LGT / COMPRESSION	
PERFORMANCE		
SENSITIVITY [2]	1.6	pC/g
ACCELERATION RANGE	[3]	
FREQUENCY RANGE, +/- 10%	[4] to 10000	Hz
RESONANT FREQUENCY	35	kHz
TRANSVERSE SENSITIVITY	5	%
INSULATION RESISTANCE (75°F)	10	GΩ
INSULATION RESISTANCE (400°F)	10	GΩ
INSULATION RESISTANCE (700°F)	3.5	MΩ
INSULATION RESISTANCE (900°F)	485	kΩ
OPERATING TEMPERATURE	-60 TO 900	°F
CAPACITANCE, PIN TO PIN	80	pF
UNBALANCE BETWEEN PINS	<2	pF
LINEARITY	1	%
ENVIRONMENTAL		
MAXIMUM VIBRATION	1000	g peak
MAXIMUM SHOCK	2000	g peak
MAGNETIC SENSITIVITY AT 100 GAUSS	0.00007	g/Gauss
BASE STRAIN SENSITIVITY	0.05	g/με
SEAL	HERMETIC	

NOTES:

- [1] D38999/25YA98PA Series III connector. Mates With D38999/26WA98SA Connector.
- [2] Actual Sensitivity Is Given On A Calibration Certificate.
- [3] Depends On the Gain Setting Of The Charge Amplifier Used.
- [4] LOW FREQUENCY RESPONSE IS A FUNCTION OF THE CHARGE AMPLIFIER DISCHARGE TIME CONSTANT.

SUPPLIED ACCESSORIES:

- 1) Model 6535 Mounting Screw (3)
- 2) Accredited Calibration Certificate (ISO 17025)



SUPPLEMENTAL OPERATING GUIDE

MODEL 3218C HIGH TEMPERATURE CHARGE MODE ACCELEROMETER

INTRODUCTION

Model 3218C is a charge mode accelerometer designed to measure vibration of surfaces at temperatures up to +900 degrees F. This accelerometer uses an ultra stable crystal material in its self-generating seismic element.

Model 3218C may be used with various differential 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 4707, for use with the 3218C. This inexpensive charge amplifier adapts the 3218C for use with any IEPE (constant current type) power unit.

DESCRIPTION

Refer to Outline/Installation drawing 127-3218C.

Model 3218C is packaged in an hermetically sealed stainless steel housing and features a two-foot integral hardline cable with a ceramic-to-metal sealed D38999 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.

INSTALLATION

To mount Model 3218C, 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 3218C. 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

Connect the cable to the 3218C 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 4707, 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 IEPE 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.