

SFMS

SENSORS AND FLUID MANAGEMENT SYSTEMS

AMETEK®

ACCELEROMETER & FATIGUE

Multi-Axial Accelerometers

Overview

Series 3001 Multi-Axial accelerometers are hermetically sealed instruments for simultaneous measurement of acceleration on one, two, or three axes: vertical, longitudinal, and lateral.

These accelerometers consist of up to three separate, rugged seismic sensors responding to forces along each axis. Each sensor consists of a bending beam, with strain-gages forming a full Wheatstone Bridge, and a mass. An advanced solid-state electronic signal conditioning package complements the mechanical configuration.

These units are designed for use in military and commercial aircraft which utilize digital flight data acquisition and recording systems. Each of the accelerometers meets the mandatory requirements of FAA and other worldwide regulatory agencies. They are designed to ARINC specifications 573 and 717, and tested to TSO C51a and RTCA DO-160. They are directly interchangeable with any accelerometer now in service and are compatible with any digital flight data recording system.

Options

- Multiple (1-3) axes
- Special Ranges
- Special Output

Approvals

- TSO C51a
- CAA Appliance Registration Reference AR-361

Applications

- Digital flight data recording per ARINC 542, 573, and 717



Features

- **Range:** Vertical: +6G to -3G
Longitudinal: +1G
Lateral: +1G
- **Tested To:** TSO C51a
RTCA DO-160 ENV CAT
D2AJER/XHXKXM/
XFXABBAB
- **Compliance:** ARINC 573
ARINC 717
ARINC 542A
- **Certification:** With flight data recorder system
or STC
- **Compact Sizes:** 4 in. x 2.5 in. x 3 in.
3.25 in. x 3.25 in. x 3.5 in.
4 in. x 2.5 in. x 2.55 in.
- **Light Weight:** 16-24 oz.

Multi-Axial Accelerometers

Specifications

Electrical Characteristics

Range:

Axis	Range	Output
Up	+6G	5000 mV
Down	-3G	200 mV
Forward	+1G	5000 mV
Aft	-1G	200 mV
Right	+1G	5000 mV
Left	-1G	200 mV

Axial Null: Vertical-1800 mV;
Longitudinal-2600 mV;
Lateral-2600 mV

Excitation: 21-32 VDC (28 VDC nominal)

Output: 6.5 VDC maximum

Accuracy: 0.75% FSO

Resolution: Infinite

Supply Current: Less than 75 mA 32 VDC excitation

Environmental Characteristics

Temperature Operating Range: -65° to 185°F (-54° to 85°C)

Compensated Range: -65° to 160°F (-54° to 71°C)

Thermal Effect on Zero: +0.01% FSO/OF

Thermal Effect on Sensitivity: +0.01% FSO/OF

Vibration: 5-2000 Hz, 10G maximum at one octave/minute sweep rate

Shock: Peak acceleration of 6G minimum for duration of 11 milliseconds at 1/2 sine wave

Insulation Resistance: 100 Mohms minimum at 50 VDC

Mechanical Characteristics

Hermetically Sealed Connector: MS 3113 H12C10P typical
MS 3113 H12C8P for single and dual axis
ARINC 542A mtg. base

Weight: 24 oz. maximum

PIN Configuration

MC 3113 H12C10P

+Excitation	A	B	-Excitation
+Vertical Up	C	D	-Vertical Down
+Lateral Right	E	F	-Lateral Left
+Longitudinal Forward	G	H	-Longitudinal Aft
Case Ground	J	K	-Spare

MC 3113 H12C8P

Vertical	A	B	Signal Ground
Longitudinal or Lateral (A/R)	C	D	+Excitation
-Excitation	E	F	Spare
Spare	G	H	Spare

Ordering Information

3001 - 01 - X X X -

Basic Model

Suffix: Used only for special applications. eg. 2=ARINC 542A Mounting Base

Longitudinal: 1 = +1G (Standard)
X=Special; O=Not Installed

Lateral: 1 = +1G (Standard)
X=Special; O=Not Installed

Vertical: 1 = +6G to -3G (Standard)
X=Special; O=Not Installed



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