

# MC3232 LANDING GEAR SENSOR

## APPLICATIONS

The MC3232 force/torque sensor was designed for use in research, development, and testing of aircraft landing gear equipment. The MC3232 instrument is particularly suitable for applications requiring simultaneous multi-axis measurement of several large forces and moments, or measurements of large forces that change direction and position over time.

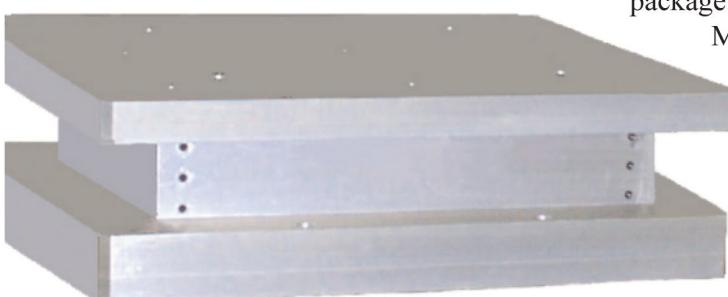
## DESCRIPTION

AMTI's MC3232 Force Platform is specifically designed for the precise measurement of forces and moments. This sensor measures the three orthogonal force components along the X, Y, and Z axes, as well as the moments about these axes, producing a total of six outputs. These strain gage sensors have high stiffness, high sensitivity, low cross-talk, excellent repeatability, and long term stability. The standard MC3232 is available in a 50,000 pound (224,000 N) vertical capacity. Other capacities are available on request.

The body of the load cell is manufactured from high strength aluminum with mounting provisions on the top and bottom surfaces. They are easy to use and ideal for research and testing environments.

## CALIBRATION

Each sensor is inspected and tested in AMTI's calibration facility. The calibration procedure provides individual channel sensitivities and a complete test of all system components, including the amplifier and the connecting cable if ordered together.



## AMPLIFICATION

The MC3232 Force Platform uses strain gages mounted on precision strain elements in a patented design\* to measure forces. As with most conventional strain gage transducers, bridge excitation and signal amplification are required. AMTI's SGA or MCA amplifiers are high gain devices which provide excitation and amplification for multiple channels in one convenient package. The rack mountable MCA-6, or the desktop

SGA6-4 provide six channels of amplification to accommodate the six channels required by the sensor. These amplifiers process

the sensor's low-level signals and provide outputs suitable for an A/D converter so that the data can be stored and processed by a computer.

## CUSTOM

AMTI also offers other transducers to meet your specific needs. Units with diameters as small as 1 inch (2.25 cm) are available, and sensors with capacities as high as 3,000,000 pounds (13,345,000 Newtons) have also been constructed. Units are available in waterproof versions and in various sizes, load capacities, sensitivities, and materials.

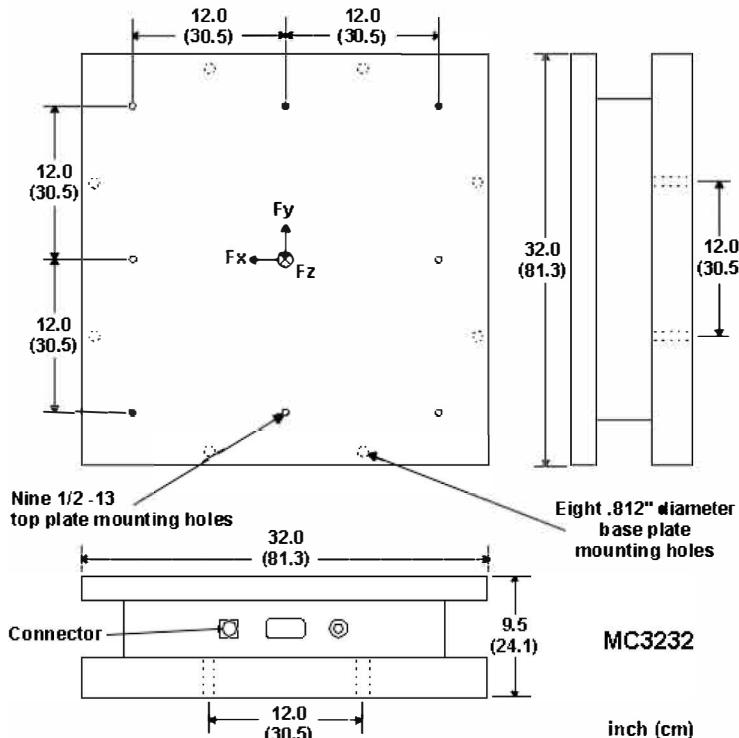
**AMTI**  
FORCE AND MOTION

\* U.S. Patent # 449322

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# MC3232 LANDING GEAR SENSOR

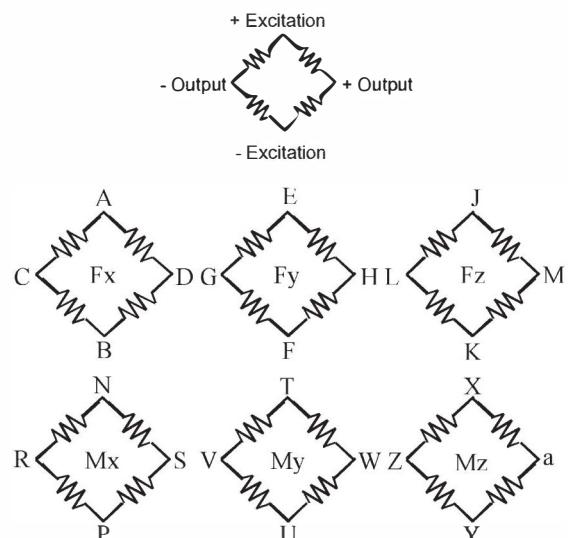
MC3232 SPECIFICATIONS	50,000
<b>Fx, Fy Capacity, lb, (N)</b>	25,000 (112,000)
<b>Fz Capacity, lb, (N)</b>	50,000 (224,000)
<b>Mx, My Capacity, ft*lb, (Nm)</b>	50,000 (224,000)
<b>Mz Capacity, ft*lb, (Nm)</b>	25,000 (33,900)
<b>Fx, Fy Sensitivity at Rated Load, mV/V</b>	2
<b>Fz Sensitivity at Rated Load, mV/V</b>	0.8
<b>Mx, My Sensitivity at Rated Load, mV/V</b>	1.6
<b>Mz Sensitivity at Rated Load, mV/V</b>	1.8
<b>Horizontal Natural Frequency, Hz</b>	500
<b>Vertical Natural Frequency, Hz</b>	600



MC3232

inch (cm)

## WIRING DIAGRAM FOR MC3232



Bridges Fz; Mz = 700 ohms  
Bridges Fx; Fy; Mx; My = 350 ohms

**CONNECTOR TYPE:**  
Souriau 851-02E16-26P50-44

## GENERAL SPECIFICATIONS

**Weight:** 560 lb (255 kg)

**Recommended Excitation:** 10V or less

**Crosstalk:** Less than 2% on all channels

**Fx, Fy, Fz hysteresis:**  $\pm 0.2\%$  Full Scale Output

**Fx, Fy, Fz non-linearity:**  $\pm 0.2\%$  Full Scale Output

**Output Temperature Range:** 0 to 125°F, (-17 to 52°C)

## MOUNTING

**Top Plate:** Nine 1/2 -13 mounting holes

**Base Plate:** Eight .812" diameter drilled mounting holes



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