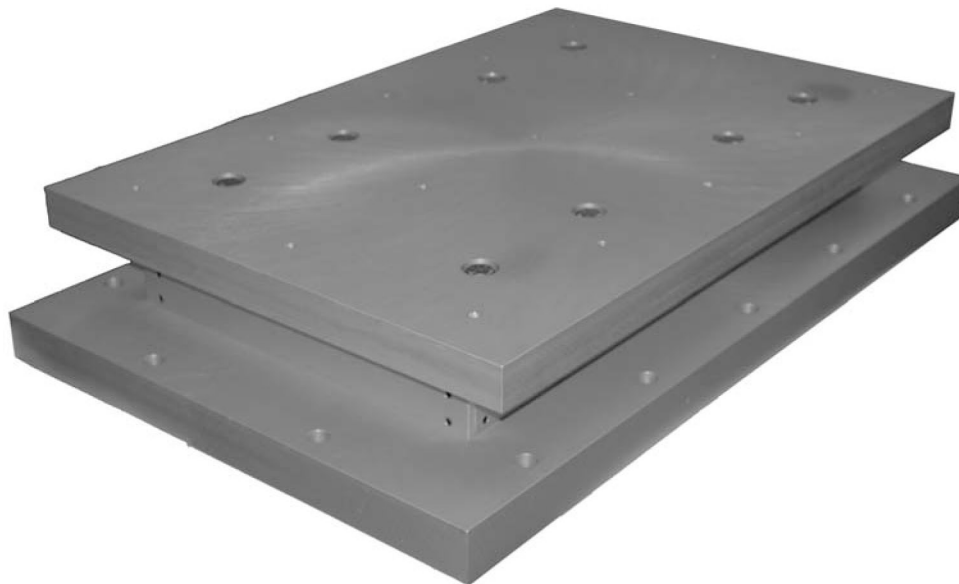


# MC3246

Landing Gear Sensor



## APPLICATIONS

The MC3246\* force sensor was designed for use in research, development, and drop testing of aircraft landing gear. It is a high capacity 3 axis sensor which is suitable for applications requiring triaxial force measurements. Although the MC3246 is not available with moment measurement capability, this feature can be provided in other AMTI sensors.

## DESCRIPTION

AMTI's MC3246 force sensor is available in 100,000, 150,000 or 200,000 pound (445,000, 672,000 or 890,000 N) vertical capacities. The top plate of the sensor is of relatively low mass which provides high vertical and horizontal natural frequencies. This is important for accurate quantitative high speed impact measurements. The contact pressure on the top plate should be 500 psi (3.45 MN/m<sup>2</sup>) or less.

The body of the load cell is manufactured from high strength aluminum with mounting provisions on the top and bottom surfaces. It is easy to use and ideal for research and testing environments. These strain gage sensors have high stiffness, high sensitivity, low cross-talk, excellent repeatability, and long term stability. The baseplate of the MC3246 is provided with an air bearing feature. This allows it to be easily moved laterally on a flat surface once the mounting bolts are removed.

## CALIBRATION

Each sensor is individually built and calibrated at AMTI's facility. Vertical loads up to 150,000 lbs and horizontal loads of up to 50,000 lbs are used. Ten point loading calibration runs are performed on each axis. The 200,000 lb sensor is calibrated vertically up to 150,000 lb.

## AMPLIFICATION

The MC3246 force sensor uses foil 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 amplifiers are high gain devices which provide excitation and amplification for multiple channels in one convenient package.

## CUSTOM

AMTI also offers many other multi-axis transducers to meet your specific needs. Units smaller than 1 inch (2.54 cm) in diameter and large transducers with 200,000 pound vertical capacities are available as standard products. Many of our sensors are waterproof and custom transducers are routinely designed and manufactured. Contact AMTI for additional information.

**AMTI**  
FORCE AND MOTION

ISO 9001:2000 certified

Bulletin MC3246-0306

\*U.S. Patent # 4493220

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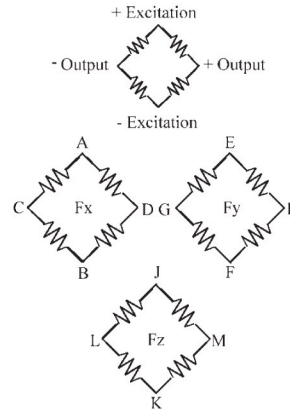
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Toronto: 416 754 3168, Montreal: 514 695 5147, Toll Free: 1 888 754 7008

MC3246 Specifications	100,000	150,000	200,000
Fz Capacity, lb (N)	100,000 (445,000)	150,000 (672,000)	200,000 (890,000)
Fx, Fy Capacity, lb (N)	50,000 (224,000)	50,000 (224,000)	50,000 (224,000)
Fz Output at Rated Load, mV/V	1.2	1.2	1.2
Fx, Fy Output at Rated Load, mV/V	3.0	2.0	1.5
Fz Resonant Frequency, Hz	600	600	600
Fx, Fy Resonant Frequency, Hz	400	500	580

## WIRING FOR MC3246



Bridge Fx; Fy = 700 ohms  
Bridge Fz = 350 ohms

## GENERAL SPECIFICATIONS

**Weight:** 830 lb (376 Kg)

**Recommended Excitation:** 10V or less

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

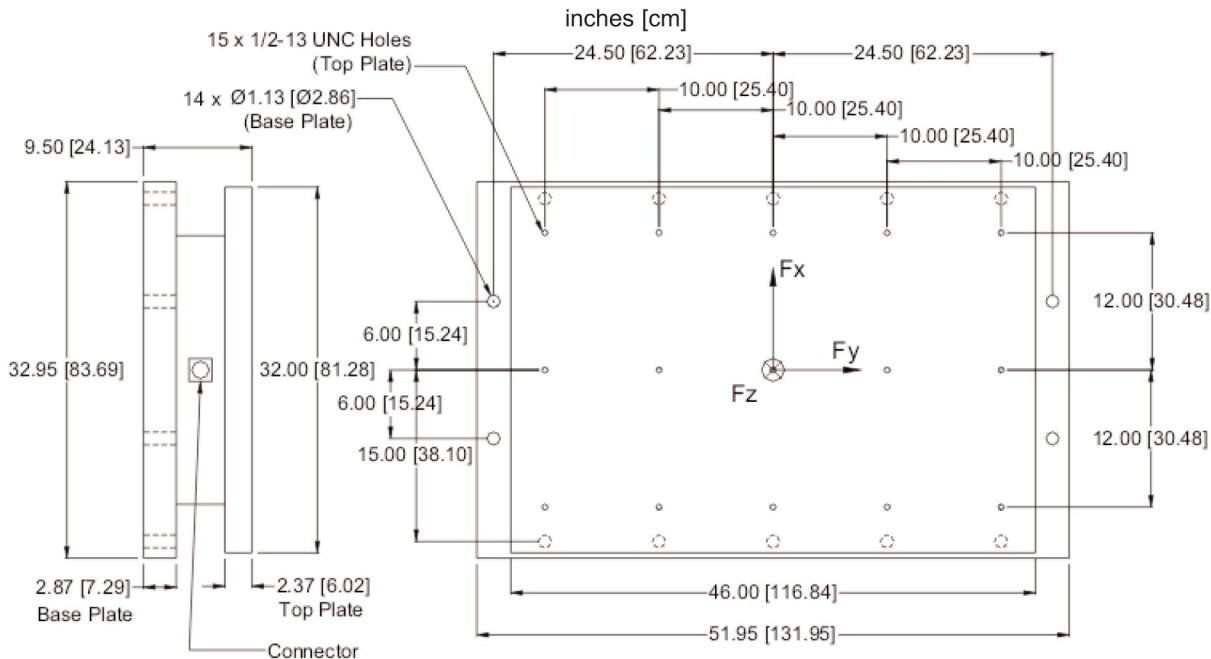
**Temperature Range:** 0 to 125°F (-17 to 52°C)

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

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

## CONNECTOR TYPE:

Souriau 851-02E16-26P50-44



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