

# OR6-7

Force Platform



## APPLICATIONS

The OR6-7 model Biomechanics Force Platform can be used for biomechanics, engineering, medical research, orthopedics, rehabilitation evaluation, prosthetics, and general industrial uses. Specific uses include gait analysis, “Romberg” testing or stability analysis, neurological analysis, prosthetics fitting, athletic performance, shoe design, and force, power, and work studies.

## DESCRIPTION

The AMTI Biomechanics Force Platform model OR6-7 was specifically designed for the precise measurement of ground reaction forces. The platform measures the three orthogonal force components along the X, Y, and Z axes, and the moments about the three axes, producing a total of six outputs. The high sensitivity, low crosstalk, excellent repeatability and long term stability of this platform makes it ideal for research and clinical studies. The OR6-7 is easy to use and is available in either 1000, 2000, or 4000 pound (4450, 8900, or 17,800 Newton) vertical capacity.

## AMPLIFICATION

The OR6-7 Biomechanics Force Platform uses strain gages mounted on four precision strain elements in a patented design\* to measure forces and moments. As with most conventional strain gage transducers, bridge excitation and signal amplification are required. AMTI's product line includes two strain gage amplifiers to suit different application needs. AMTI's amplifiers are high gain devices which provide excitation and amplification for multiple channels in one convenient package.

## CALIBRATION

Each platform is tested and calibrated in AMTI's facility. The calibration procedure provides a detailed sensitivity matrix and a complete test of all system components.

## SOFTWARE

Automated data collection and reduction requires a computer and software. AMTI's software package, BioAnalysis with NetForce, is specifically designed for biomechanics and clinical applications. NetForce provides a simple user interface and extensive database function for easy trial set-up and data acquisition. BioAnalysis performs a comprehensive analysis of the data and presents many summarizing parameters that can be averaged across numerous selectable trails. The BioAnalysis with NetForce software package is available separately or combined in one of AMTI's BIOVEC™ Systems.

## BIOVEC™ SYSTEMS

AMTI's BIOVEC™ Systems are complete gait and balance analysis force platform systems. Each system consists of force platforms (from 1 to 4), amplifiers, cables, mounting hardware, A/D converter, and BioAnalysis software, all sold at a special system price.

## CUSTOM

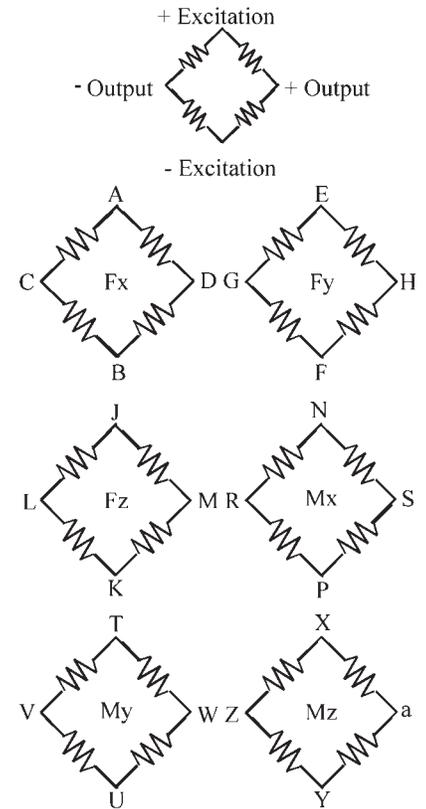
AMTI also offers special multi-axis transducers to meet your specific needs. Units are available that are waterproof, pressure compensated, non-magnetic, non-conductive, and transparent. A wide range of materials of construction have been used. Sizes from less than 0.75 inches (19 mm) in diameter to 48 inches (1219 mm) square have been built. Capacities from 1 pound (4.5 N) to 3 million lbs (13.3 MN) have been made. Contact AMTI for any custom requirements.

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Force Platform

OR6-7 SERIES SPECIFICATIONS	1000	2000	4000
Fx, Fy Capacity, lb, (N)	500 (2225)	1000 (4450)	2000 (8900)
Fz Capacity, lb, (N)	1000 (4450)	2000 (8900)	4000 (17800)
Mx, My Capacity, in*lb, (Nm)	10,000 (1100)	20,000 (2300)	40,000 (4500)
Mz Capacity, in*lb, (Nm)	5000 (600)	10,000 (1100)	20,000 (2300)
Fx, Fy Natural Frequency, Hz	300	370	470
Fz Natural Frequency, Hz	480	530	570
Fx, Fy Sensitivity, $\mu\text{V}/[\text{V}^*\text{lb}]$ , ( $\mu\text{V}/[\text{V}^*\text{N}]$ )	3.0 (0.67)	1.5 (0.34)	0.75 (0.17)
Fz Sensitivity, $\mu\text{V}/[\text{V}^*\text{lb}]$ , ( $\mu\text{V}/[\text{V}^*\text{N}]$ )	0.75 (0.17)	0.38 (0.08)	0.19 (0.04)
Mx, My Sensitivity, $\mu\text{V}/[\text{V}^*\text{in}^*\text{lb}]$ , ( $\mu\text{V}/[\text{V}^*\text{Nm}]$ )	0.18 (1.59)	0.09 (0.79)	0.05 (0.39)
Mz Sensitivity, $\mu\text{V}/[\text{V}^*\text{in}^*\text{lb}]$ , ( $\mu\text{V}/[\text{V}^*\text{Nm}]$ )	0.38 (3.38)	0.19 (1.69)	0.09 (0.84)
Height, in, (mm)	3.25 (82.5)	3.25 (82.5)	3.25 (82.5)
Weight, lb, (Kg)	70 (32)	70 (32)	70 (32)
Top Plate Material	aluminum	aluminum	aluminum

## WIRING FOR OR6-7



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

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

## GENERAL SPECIFICATIONS

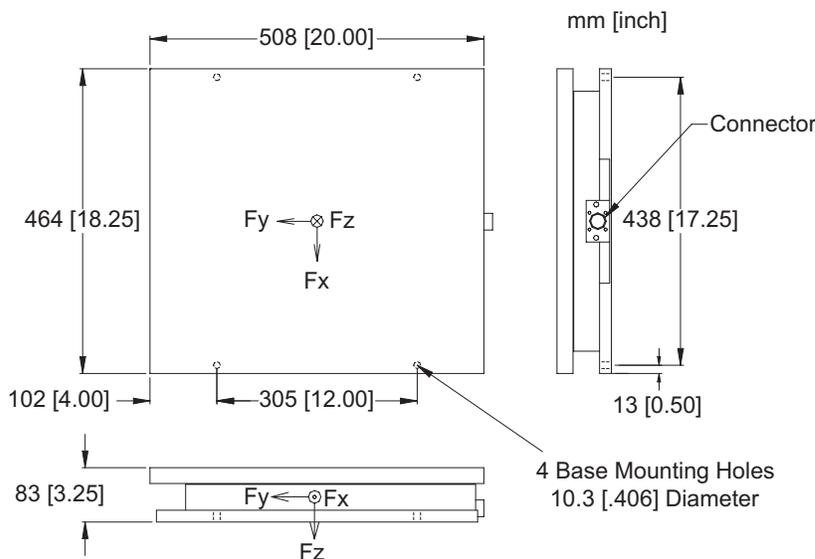
**Excitation:** 10V maximum

**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



ISO 9001:2000 CERTIFIED

# AMTI

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