

BP400600

Force Platform



APPLICATIONS

The BP400600* Biomechanics Force Platform can be used for biomechanics, engineering, medical research, orthopedics, rehabilitation evaluation, prosthetics, and general industrial uses. Specific uses include gait analysis, Posturography or stability analysis, neurological analysis, prosthetics fitting, athletic performance, shoe design, force, power, and work studies.

DESCRIPTION

AMTI's Biomechanics Force Platform model BP400600 is specifically designed for the precise measurement of ground reaction forces. The platform measures the three orthogonal force and moment components along the X, Y, and Z axes, producing a total of six outputs. The high sensitivity, low crosstalk, excellent repeatability and long term stability of this platform make it ideal for research and clinical studies. It is simple, easy to use, and is available in either 1000, 2000, or 4000 pound (4450, 8900, or 17,800 Newton) vertical capacities.

AMPLIFICATION

The BP400600 Biomechanics Force Platform incorporates 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 inspected and tested in AMTI's calibration facility. The calibration procedure provides a detailed sensitivity matrix and a complete test of all system components, including the amplifier and the connecting cable.

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 trials. The BioAnalysis with NetForce software package is available separately or combined in one of AMTI's BIOVEC™ Systems.

BIOVEC™ SYSTEMS

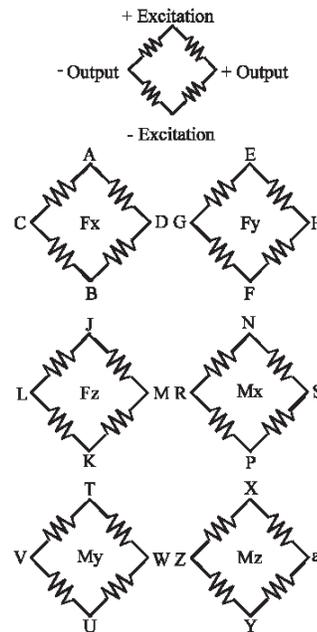
AMTI's BIOVEC™ Systems are complete gait and balance analysis force platform systems. Each system consists of force platforms (from 1 to 4), amplifiers, cables, mounting hardware, A/D converter, and BioAnalysis software.

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.

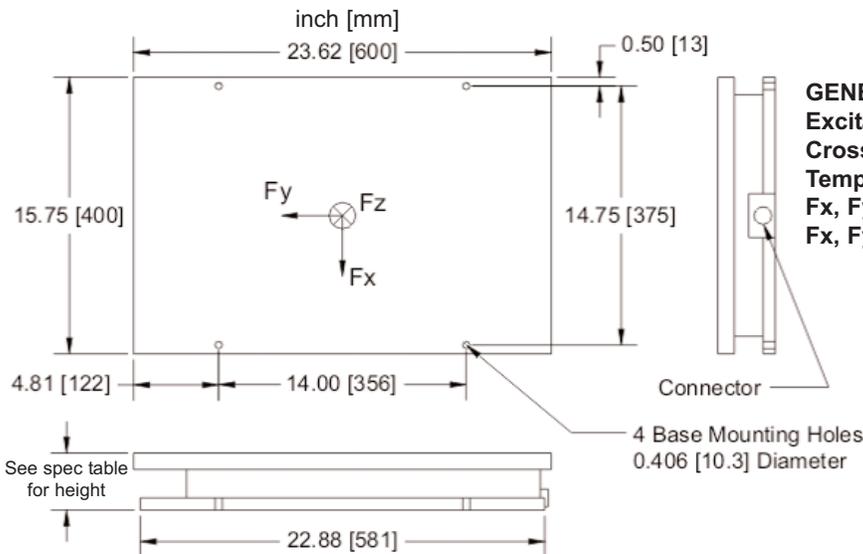
BP400600 SERIES SPECIFICATIONS	1000	2000	4000
Fz Capacity, lb (N)	1000 (4450)	2000 (8900)	4000 (17800)
Fx, Fy Capacity, lb (N)	500 (2225)	1000 (4450)	2000 (8900)
Mz Capacity, in-lb (Nm)	5900 (700)	11800 (1300)	23600 (2700)
Mx Capacity, in-lb (Nm)	11800 (1300)	23600 (2700)	47200 (5300)
My Capacity, in-lb (Nm)	7900 (900)	15700 (1800)	31500 (3600)
Fz Natural Frequency Hz	380	400	420
Fx, Fy Natural Frequency Hz	300	370	430
Fz Sensitivity $\mu\text{V}/[\text{V}\cdot\text{lb}]$ ($\mu\text{V}/[\text{V}\cdot\text{N}]$)	0.75 (0.17)	0.38 (0.08)	0.19 (0.04)
Fx, Fy Sensitivity $\mu\text{V}/[\text{V}\cdot\text{lb}]$ ($\mu\text{V}/[\text{V}\cdot\text{N}]$)	3.0 (0.67)	1.5 (0.34)	0.75 (0.17)
Mz Sensitivity $\mu\text{V}/[\text{V}\cdot\text{in}\cdot\text{lb}]$ ($\mu\text{V}/[\text{V}\cdot\text{Nm}]$)	0.369 (3.268)	0.185 (1.634)	0.092 (0.817)
Mx Sensitivity $\mu\text{V}/[\text{V}\cdot\text{in}\cdot\text{lb}]$ ($\mu\text{V}/[\text{V}\cdot\text{Nm}]$)	0.158 (1.394)	0.079 (0.697)	0.039 (0.349)
My Sensitivity $\mu\text{V}/[\text{V}\cdot\text{in}\cdot\text{lb}]$ ($\mu\text{V}/[\text{V}\cdot\text{Nm}]$)	0.201 (1.776)	0.100 (0.888)	0.185 (0.444)
Height, in (mm)	3.25 (82.5)	3.25 (82.5)	4 (102)
Weight, lb (kg)	70 (32)		
Top Plate Material	aluminum		

WIRING FOR BP400600



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



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