BP6001200 FORCE PLATFORM

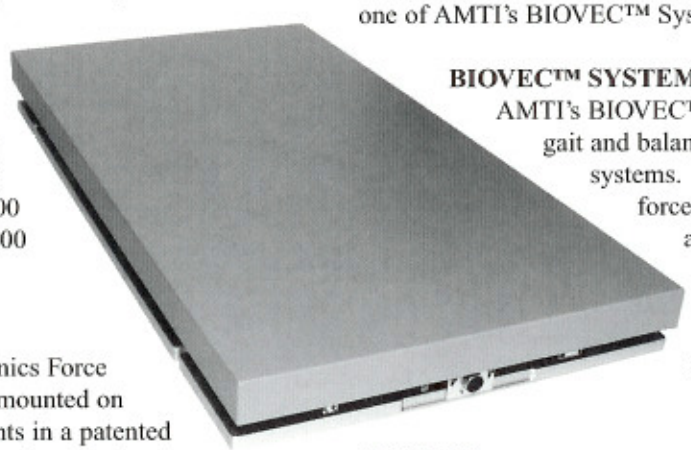
APPLICATIONS

The BP6001200 model Biomechanics Force Platform is ideal for applications which require a large size high frequency response sensor with a low mass top. The BP6001200 can be used for biomechanics, engineering, medical research, orthopedics, rehabilitation evaluation, prosthetics, and general industrial uses. Specific uses include gait analysis, stability analysis, neurological analysis, prosthetics fitting, athletic performance, shoe design, and force, power, and work studies.

DESCRIPTION

The AMTI Biomechanics Force Platform model BP6001200 features composite construction, which results in a low-mass instrument with excellent frequency response.

Specifically designed for the precise measurement of ground reaction forces, the BP6001200 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 BP6001200 is easy to use and is available in either 1000, 2000, or 4000 pound (4450, 8900, or 17,800 Newton) vertical capacity.



AMPLIFICATION

The BP6001200 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 suite different application needs. AMTI's MSA-6 and DSA-6 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, BioSoft 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 BioSoft 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 BioSoft analysis 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.

*U.S. Patent # 4493220

Contents of this publication are subject to change without notice.

Bulletin BP6001200-0104

ISO 9001 CERTIFIED

AMTI

ADVANCED MECHANICAL TECHNOLOGY, INC.

176 WALTHAM STREET WATERTOWN, MA 02472-4800

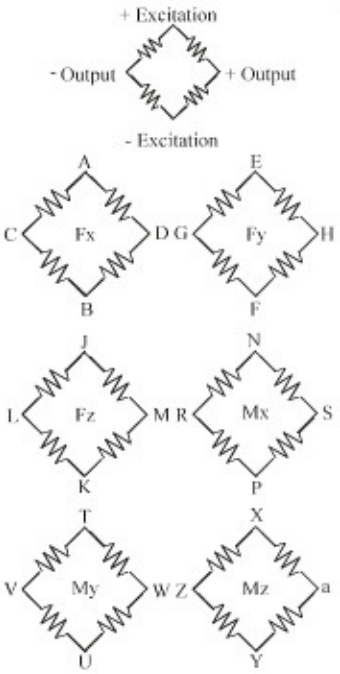
TEL: (617) 926-6700 • (800) 422-AMTI • FAX: (617) 926-5045

email: sales@amtimail.com • web: www.amtiweb.com

BP6001200 FORCE PLATFORM

BP6001200 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 Capacity, in*lb, (Nm)	24000 (2700)	48000 (5400)	96000 (10800)
My Capacity, in*lb, (Nm)	12000 (1350)	24000 (2700)	48000 (5400)
Mz Capacity, in*lb, (Nm)	9000 (1000)	18000 (2000)	36000 (4000)
Fx, Fy Natural Frequency, Hz	280	390	500
Fz Natural Frequency, Hz	390	410	500
Fx, Fy Sensitivity, µV/[V*lb], (µV/[V*N])	3.0 (0.67)	1.5 (0.34)	0.75 (0.17)
Fz Sensitivity, µV/[V*lb], (µV/[V*N])	0.75 (0.17)	0.38 (0.08)	0.19 (0.04)
Mx Sensitivity, µV/[V*in*lb], (µV/[V*Nm])	0.088 (0.779)	0.044 (0.389)	0.022 (0.195)
My Sensitivity, µV/[V*in*lb], (µV/[V*Nm])	0.130 (1.151)	0.065 (0.575)	0.032 (0.288)
Mz Sensitivity, µV/[V*in*lb], (µV/[V*Nm])	0.188 (1.664)	0.094 (0.832)	0.047 (0.416)
Height, in, (mm)	4.00 (102)	4.00 (102)	4.00 (102)
Weight, ib, (Kg)	78 (36)	78 (36)	85 (39)
Top Plate Material	composite	composite	composite

WIRING FOR BP6001200



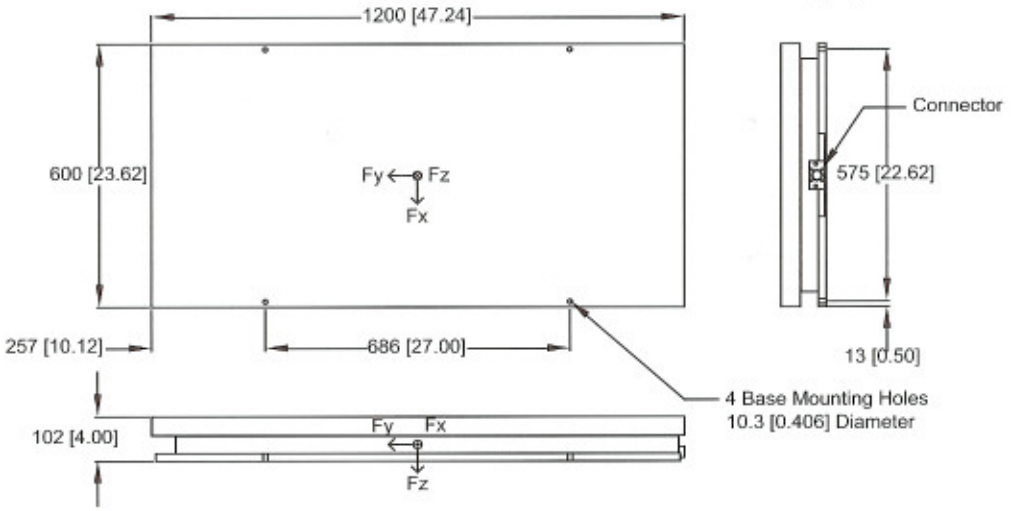
Bridge Fz = 350 ohms
Bridges Fx; Fy; Mx; My; Mz = 700 ohms

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

BP6001200

mm [inch]

mm[inch]



CE

GENERAL SPECIFICATIONS

Excitation: 10Vmaximum
Crosstalk: Less than 2% on all channels
Temperature Range: 0 to 125°F, (-17 to 52°C)
Fx, Fy, Fz hysteresis: ± 0.2 % Full Scale Output
Fx, Fy, Fz non-linearity: ± 0.2% Full Scale Output

ISO 9001 CERTIFIED

AMTI
ADVANCED MECHANICAL TECHNOLOGY, INC.
176 WALTHAM STREET WATERTOWN, MA 02472-4800
TEL: (617) 926-6700 • (800) 422-AMTI • FAX: (617) 926-5045
email: sales@amtimail.com • web: www.amtiweb.com