DESCRIPTION

The MC12 transducers resolve applied loads into orthogonal force and moment components. These precision sensors feature high stiffness, high sensitivity, low crosstalk, excellent repeatability and long-term stability. They exhibit the inherent ruggedness of bonded strain gage transducers and they incorporate special seals to prevent water and oil contamination.

The MC12 transducer is available with one to six outputs corresponding to Fx, Fy, Fz, Mx, My, and Mz. Standard vertical load capacities are 1000, 2000, and 4000 pounds. Horizontal load capacities are half of the vertical rating. Models with custom capacities and layouts are available for special applications.

The instrument has a twelve-inch square top mounting surface equipped with threaded inserts. A high-strength aluminum alloy (7075-T6) is used throughout to withstand harsh manufacturing and testing environments. A durable anodized finish protects the exterior from corrosion while elastomeric O-ring seals protect the strain gages and wiring. Internal potting of the strain gages further insures long life and consistent, reliable performance.

AMPLIFICATION

The MC12 transducer incorporates strain gages and four precision elements in a patented design* to isolate and measure applied forces and moments. As with all conventional strain gage transducers, bridge excitation and signal amplification are required. AMTI's MCA series amplifiers are high-gain devices which provide excitation and amplification for multiple channels in one convenient package. These amplifiers process the signals from a transducer and provide analog outputs suitable for an A/D converter and digital computer or other recording instrument.

APPLICATIONS

This instrument is particularly suitable for applications requiring simultaneous measurement of several forces and moments, or measurement of forces that change direction and position over time. Common applications for this transducer include research and development in machining, robotics, ergonomics, biomechanics, and dynamics. These sensors are also well suited for monitoring production processes.



SPECIFICATIONS

The accompanying specifications are for estimating purposes. Actual precision calibrations are furnished with each instrument. The manufacturer reserves the right to alter the specifications without notice.

MC12 SERIES SPECIFICATIONS (English Units)					
Model: MC12 – X	- 1000	- 2000	- 4000		
CAPACITY					
Fz Fx, Fy Mz Mx, My		2000 1000 6000 12000	12000	lb in-lb	
TYPICAL SENSITIVITY					
Fz Fx, Fy Mz Mx, My	0.76 3.00 0.66 0.28	0.38 1.50 0.33 0.14	0.75 0.16	μV **	
STIFFNESS					
Fz Fx, Fy	0.80 0.12	1.30 0.25	2.00 0.50	× 10 ⁶ lb/in	
NON-LINEARITY					
Fx, Fy, Fz	0.20	0.20	0.20	± %FSO * * *	
HYSTERESIS					
Fx, Fy, Fz	0.50	0.40	0.20	%FSO * * *	
RESONANT FREQUENCY					
Fz Fx, Fy	880 450	1100 580	1400 750	Hertz Hertz	



MC12 SERIES SPECIFICATIONS (Metric U	nits)					
	11110)					
Model: MC12-X -1000 -2000 -4000						
CAPACITY						
Fz 4500 9000 18000 N						
Fx, Fy 2250 4500 9000 N						
Mz 330 660 1320 N-m						
Mx, My 660 1320 2640 N-m						
TYPICAL SENSITIVITY						
Fz 0.17 0.08 0.04 μ\	/					
Fx, Fy 0.67 0.33 0.17 V-						
Mz 5.84 2.92 1.46 μ\						
Mx, My 2.48 1.24 0.62 V-N	the state of the s					
STIFFNESS						
Fz 14 23 35 ×10 ⁷	N/m					
Fx, Fy 2.1 4.4 8.8						
NON-LINEARITY						
Fx, Fy, Fz 0.20 0.20 0.20 ± %F	SO					
HYSTERESIS						
Fx, Fy, Fz 0.50 0.40 0.20 %FS0)					
RESONANT FREQUENCY						
Fz 880 1100 1400 Hertz						
Fx, Fy 450 580 750 Hertz						

GENERAL SPECIFICATIONS

Excitation: 10V

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

Sensitivity change with temperature:

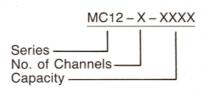
0.02%/°F (0.01%/°C)

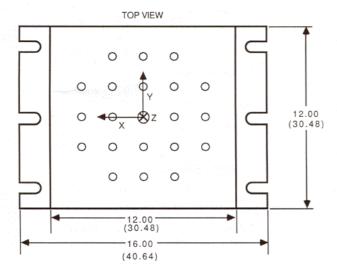
Crosstalk: Less than 2% on all channels

Weight: 50 lb (23 Kg)

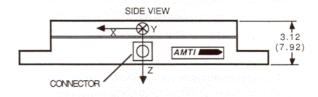
WIRING *EXCITATION PIN A PIN D PIN

Connector Type: Burndy BTO2E16-26P





Represented By:



- Hold-down inserts: ½-13 thread, 21 holes on two inch (5.08) centers.
- Metric threaded hold-down inserts available.
- Six 0.560 inch (1.42) mounting slots on 4.5 by 14 inch (11.4 by 35.6) centers.
- · All dimensions in inches (cm).

ISO 9001 CERTIFIED



ADVANCED MECHANICAL TECHNOLOGY, INC.

176 WALTHAM STREET WATERTOWN, MA 02472-4809
TEL: (617) 926-6700 • (800) 422-AMTI • FAX: (617) 926-5045
email: sales@amtimail.com • web: www.amtiweb.com