

MC8

Multi Component Transducer

DESCRIPTION

The MC8 transducer has the highest capacity of AMTI's standard range of multi component force and moment sensors. These precision sensors feature high stiffness, low crosstalk, excellent repeatability and long term stability. They exhibit the inherent ruggedness of bonded strain gage transducers and they incorporate special seals to combat oil and water ingress. The MC8 transducer is available with one to six outputs corresponding to F_x , F_y , F_z , M_x , M_y and M_z . Standard vertical load capacities are 10,000, 20,000 and 30,000 pounds. Horizontal load capacities are half of the vertical rating. Models with custom capacities and layouts are available for special applications.

The instrument has eight inch square top and bottom plates manufactured from steel for heavy duty applications and nickel plating protects the transducer from corrosion. Elastomeric O-ring seals protect the strain gages and wiring, while internal potting of the strain gages further insures long life and consistent, reliable performance.



Applications

The MC8 is particularly suitable for applications requiring simultaneous measurement of several forces and moments or moments or forces that change direction and position over time. Common application for this transducer include research and development in machining and robotics or monitoring production processes

AMPLIFICATION

The MC8 transducer incorporates strain gauges and a precision strain element to isolate and measure applied forces and moments. As with conventional strain gage transducers, bridge excitation and signal amplification AMTI's product line includes one analogue strain gage amplifier, the MSA-6 and there is one digital signal amplifier, the Gen 5. Both these amplifiers are high gain devices which provide excitation and amplification for multiple channels in one convenient package

Calibration

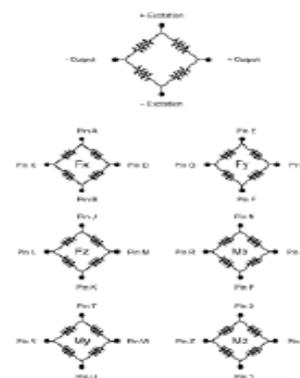
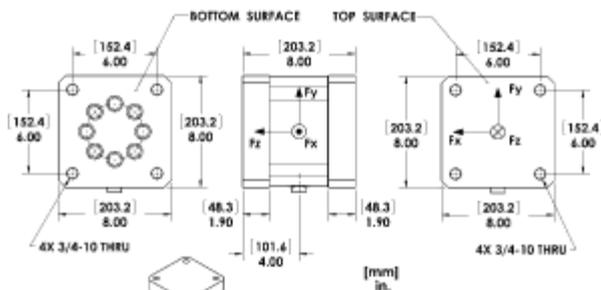
Each transducer is inspected and tested in AMTI's calibration facility. The calibration procedure provides a detailed sensitivity matrix and a complete test of all systems components, including the amplifier and connecting cable.

Custom

AMTI also offers special multi-axis transducers to meet your specific requirements. Units are available that are water proof, pressure compensated, non-magnetic, non-conductive and transparent. Capacities from 1lb (4.5N) to 3 million lbs (13.3Mn) can be made.

MC8 Multi Component Transducer Specifications

MC8 SERIES SPECIFICATIONS	10,000	20,000	30,000
Fx, Fy Capacity, lb, (N)	5,000 (22,241)	10,000 (44,482)	15,000 (66,724)
Fz Capacity, lb, (N)	10,000 (44,482)	20,000 (88,964)	30,000 (13,550)
Mx, My Capacity, in*lb, (Nm)	40,000 (4,517)	80,000 (9,033)	120,000 (13,550)
Mz Capacity, in*lb, (Nm)	20,000 (2,258)	40,000 (4,517)	60,000 (6,775)
Fx, Fy Resonant Frequency, Hz	800	1100	1300
Fz Resonant Frequency, Hz	1200	1700	2000
Fx, Fy Sensitivity, $\mu V/[V*lb]$, ($\mu V/[V*N]$)	0.66 (0.15)	0.33 (0.74)	0.22 (0.05)
Fz Sensitivity, $\mu V/[V*lb]$, ($\mu V/[V*N]$)	0.14 (0.03)	0.07 (0.157)	0.0467 (0.0105)
Mx, My Sensitivity, $\mu V/[V*in*lb]$, ($\mu V/[V*Nm]$)	0.14 (1.24)	0.07 (0.62)	0.0467 (0.413)
Mz Sensitivity, $\mu V/[V*in*lb]$, ($\mu V/[V*Nm]$)	0.14 (1.24)	0.07 (0.62)	0.0467 (0.413)
Hysteresis % Full Scale Output	0.20	0.20	0.20
Non – Linearity \pm % Full Scale Output	0.20	0.20	0.20



Bridges Fx, My = 700 ohms
Bridges Fz, Fy, Mx, My = 350 ohms
Connector Type:
Sockets 031-02E 16-25P00-44

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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.