

SP1D

DESCRIPTION

AMTI's SP1D force/ torque sensor is specifically designed for the precise measurement of underwater forces and moments. The sensor measures three orthogonal force components along with X, Y and Z axes, the moments about those axis, producing a total of six axes. The SP1D has high stiffness, high sensitivity, low cross talk, excellent repeatability and long term stability. It is simple to use and available in either 250 (1112N) or 500lb, (2,224N) vertical capacity

Applications

AMTI's SP1D Force and torque sensor is AMTI's smallest multi-component sensor and is particularly suitable for underwater applications requiring simultaneous measurement of several forces and moments. Common applications for this transducer include research and development with underwater models, tow tanks, robotics, testing machines and biomechanics



AMPLIFICATION

The SP1D strain gauges mounted on four precision strain elements in a patented design to measure forces and moments. As with most conventional strain gauge transducers, bridge excitation and signal amplification is required.

AMTI's product line includes two strain gauge amplifiers, the analogue MSA-6 and 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.

AMTI ADVANCED MECHANICAL TECHNOLOGY, INC.

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SP1D

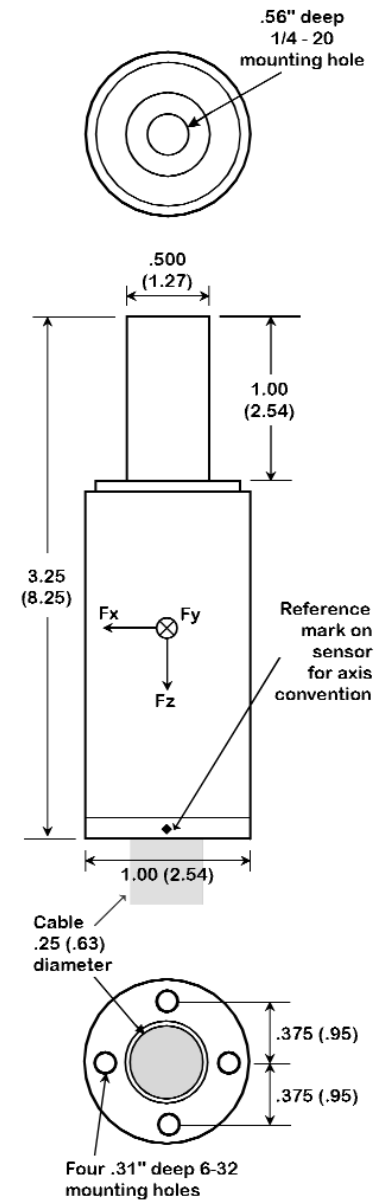
Specifications

MC1 SPECIFICATIONS	250	500
Fz Capacity, lb, (N)	250 (1,112)	500 (2,224)
Fx, Fy Capacity, lb, (N)	125 (556)	250 (1,112)
Mx Capacity, in*lb, (Nm)	50 (5.6)	100 (11)
My Capacity, in*lb, (Nm)	50 (5.6)	100 (11)
Mz Capacity, in*lb, (Nm)	50 (5.6)	100 (11)
Fx, Fy Sensitivity (µv/v-lb (Nm))	1.75 (0.393)	0.875 (0.197)
Fz Sensitivity (µv/v-lb (Nm))	0.45 (0.101)	0.225 (0.05)
Mx, My Sensitivity (µv/v-lb (Nm))	3.5 (31)	1.75 (15.5)
Mz Sensitivity (µv/v-lb (Nm))	3.5 (31)	1.75 (15.5)
Weight, lb (kgs)	0.2 (0.9)	0.2 (0.9)

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:
± 0.2 % Full: Scale Output: Fx, Fy, Fz non-linearity: ± 0.2% Full Scale Output.

Dimensions



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ISO 9001:2000 CERTIFIED



Force and Motion

AMTI

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