SENSORS FOR UNDERWATER MEASUREMENT
RAPIDLY FLUCTUATING PRESSURE, FLOW, SCREW CAVITATION, & WAVE SLAP

Piezoelectric pressure sensors are suited for dynamic pressure measurements including turbulence and cavitation. These measurements require a fast response or rise time, ruggedness, and high stiffness in order to obtain a high frequency response.

- Strict quality control inspection and standards
- Smaller footprint allows for mounting on models, or within limited size testing environments
HIGH RESOLUTION ICP® PRESSURE PROBE
MODEL S112A22
- 100 mV/psi, 50 psi
- Stainless steel

SUBMINIATURE ICP® PRESSURE SENSOR
MODEL 105C
- 100 psi, 50 mV/psi
- Integral twisted pair cable
- SS wetted parts
- Solid end cap diaphragm well suited for cavitation measurement

HIGH FREQUENCY CVLD PRESSURE SENSOR
SERIES 3741B
- 50 psi, 100 uA/psi
- Emralon coated
- Integral waterproof cable
- Acceleration compensated
- Ground isolated

ACOUSTIC ICP® PRESSURE SENSOR
103M49/003AW
- 200 psi, 250 mV/psi
- Integral twisted pair cable
- SS wetted parts
- RTV coated diaphragm for thermal stability
Piezoelectric pressure sensors measure shock waves and bubble energy associated with underwater explosion testing. Sensors structured with volumetrically sensitive, omnidirectional tourmaline crystal and ICP® microelectronics provide a high frequency, low impedance output in underwater test environments. Waterproof cables of customer requested lengths are factory installed.

TOURMALINE ICP® UNDERWATER BLAST SENSOR
SERIES 138A
- ICP® underwater blast pressure probe
- Ranges from 1000 to 50 kpsi (6894 to 344,740 kPa)
- Rise time 1.5 µ sec
- Resonant frequency ≥ 1 MHz
FORCE

ICP® QUARTZ FORCE RINGS
SERIES 200M
- ±100 or 2500 lbs. (0.4 or 11 kN)
- Measures dynamic excitation or reaction forces
- Integral waterproof cable

MODALLY TUNED® IMPULSE HAMMER
MODEL 086M99
- 500 lbf, 10 mV/lbf
- Hammer mass 0.34 lbs
- Integral waterproof cable
Shear mode accelerometers isolate the sensing crystals from the base and housing, lowering thermal transients and signal noise resulting from base bending effects. This is a very important feature when attaching them to relatively thin walled vessel hull models during wave slap applications.

**VIBRATION**

**ICP® UNDERWATER ACCELEROMETER**
MODEL 352M221
- 10 mV/g, ±500 g
- 2nd order LP filter
- Frequency response from 1 Hz to 10 kHz
- Integral waterproof cable

**MINIATURE RING-STYLE, CERAMIC SHEAR CVLD ACCELEROMETER**
MODEL 355M87A
- 100 µA/g, ±50 g
- Frequency response from 7 Hz to 9 kHz
- Integral waterproof cable
- Case isolated

**MINIATURE RING-STYLE, CERAMIC SHEAR ICP® ACCELEROMETER**
MODEL 355M73
- 100 mV/g, ±50 g range
- Frequency response 7 Hz to 10 kHz
- Stainless steel
- Case isolated
RING-STYLE SEISMIC SHEAR CVLD ACCELEROMETER
MODEL 631M21
- 1000 µA/g, ±2.5 g range
- Frequency response from 1 Hz to 4 kHz
- Integral waterproof cable
- Case isolated

RING-STYLE SEISMIC SHEAR CVLD ACCELEROMETER
MODEL 631M21
- 1000 µA/g, ±2.5 g range
- Frequency response from 1 Hz to 4 kHz
- Integral waterproof cable
- Case isolated

TEARDROP ICP® ACCELEROMETER WITH FLEXIBLE, INTEGRAL CABLE
MODEL 352A74
- 100 mV/g, ±50 g range
- Frequency response 1 Hz to 8 kHz
- Hermetic housing

TRIAXIAL, MINI, HIGH SENSITIVITY, ICP® ACCELEROMETER
MODEL 355M87A
- 100 µA/g, ±50 g
- (+/- 5%) 0.5 to 5000 Hz (+/-10%)
  0.4 to 6500 Hz
- Integral waterproof cable
- Case isolated

PRECISION QUARTZ INDUSTRIAL ICP® ACCELEROMETER
MODEL 624B11
- 100 mV/g, ±50 g range
- Frequency response 0.8 Hz to 10 kHz
- Integral waterproof cable
- Case isolated
- Stainless steel

THE SWIVELER® LOW COST INDUSTRIAL ICP® ACCELEROMETER
MODEL 607A11
- 100 mV/g, ±50 g range
- Frequency response from 0.5 Hz to 10 kHz
- Integral waterproof cable
- Patented 360º cable orientation
- Case isolated
MTS Sensors, a division of MTS Systems Corporation (NASDAQ: MTSC), vastly expanded its range of products and solutions after MTS acquired PCB Piezotronics, Inc. in July, 2016. PCB Piezotronics, Inc. is a wholly owned subsidiary of MTS Systems Corp.; IMI Sensors and Larson Davis are divisions of PCB Piezotronics, Inc.; Accumetrics, Inc. and The Modal Shop, Inc. are subsidiaries of PCB Piezotronics, Inc.