SENSORS FOR UNDERWATER MEASUREMENT

PCB PIEZOTRONICS
AN AMPHENOL COMPANY

pcb.com | 1 800 828 8840

RAPIDLY FLUCTUATING PRESSURE, FLOW, SCREW CAVITATION, & WAVE SLAP

Piezoelectric pressure sensors are suited for dynamic pressure measurements including turbulence and cavitation.

Small footprint allows for mounting on models, or within limited size testing environments.

Measurements require a rapid response or rise time, durability, and high stiffness to achieve a high-frequency response.

HIGH FREQUENCY CVLD PRESSURE SENSOR

MODEL 113M231

Sensitivity: (±15%) 50 µA/psi

Measurement Range: 100 psi

Frequency Response: (-5%) 0.5 Hz

Integral waterproof cable hydrotested to 600 psi

HIGH RESOLUTION ICP® PRESSURE PROBE

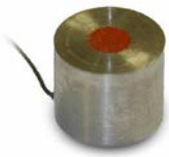
MODEL S112A22

Sensitivity: (±15%) 100 mV/psi

Measurement Range: 50 psi

Frequency Response: (-5%) 0.50 Hz

Stainless Steel, hermetic wetted diaphragm



ACOUSTIC ICP® PRESSURE SENSOR

MODEL 103M49A/003AW

Sensitivity: (±15%) 250 mV/psi

Measurement Range: 20 psi

Frequency Response: (-5%) 13 kHz

316L stainless steel diaphragm

SUBMINIATURE ICP® PRESSURE SENSOR

MODEL 105C

Sensitivity: (-40 to +20%) 50 mV/psi

Measurement Range: 100 psi

Frequency Response: (-5%) 0.5 Hz

Stainless steel hermetic wetted diaphragm

FORCE

Force sensors play a critical role in underwater applications, where precise measurement of forces is essential for a variety of industries, including marine research, offshore energy, and underwater robotics. These sensors are specifically designed to operate reliably in submerged environments.

ICP® QUARTZ FORCE RINGS

MODEL 202M44/FCS-6

- Sensitivity: (±15%) 50 mV/lb
- Measurement Range: (Compression) 100 lb
- Frequency Response: (-5%) 0.005 Hz
- Integral Waterproof cable hydrotested to 600 psi
- Measures dynamic excitation or reaction forces

UNDERWATER BLAST

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

Sensitivity: (±15%) 0.1 mV/ps to 1.0 mV/psi

Measurement Range: 1000 to 50 Kpsi

Frequency Response: (-5%) 1.7 Hz

Approximate max depth 1000 ft

Weight: 0.75 oz (21.0 gm)

VIBRATION

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.

TEARDROP ICP® ACCELEROMETER WITH FLEXIBLE, INTEGRAL CABLE

MODEL 352A74

- Sensitivity: (±10%) 100 mV/g
- Measurement Range: ±50 g pk
- Frequency Range: (±5%) 1.0 to 8000 Hz
- Hermetic Housing, short-term low-pressure immersion

ICP® UNDERWATER ACCELEROMETER

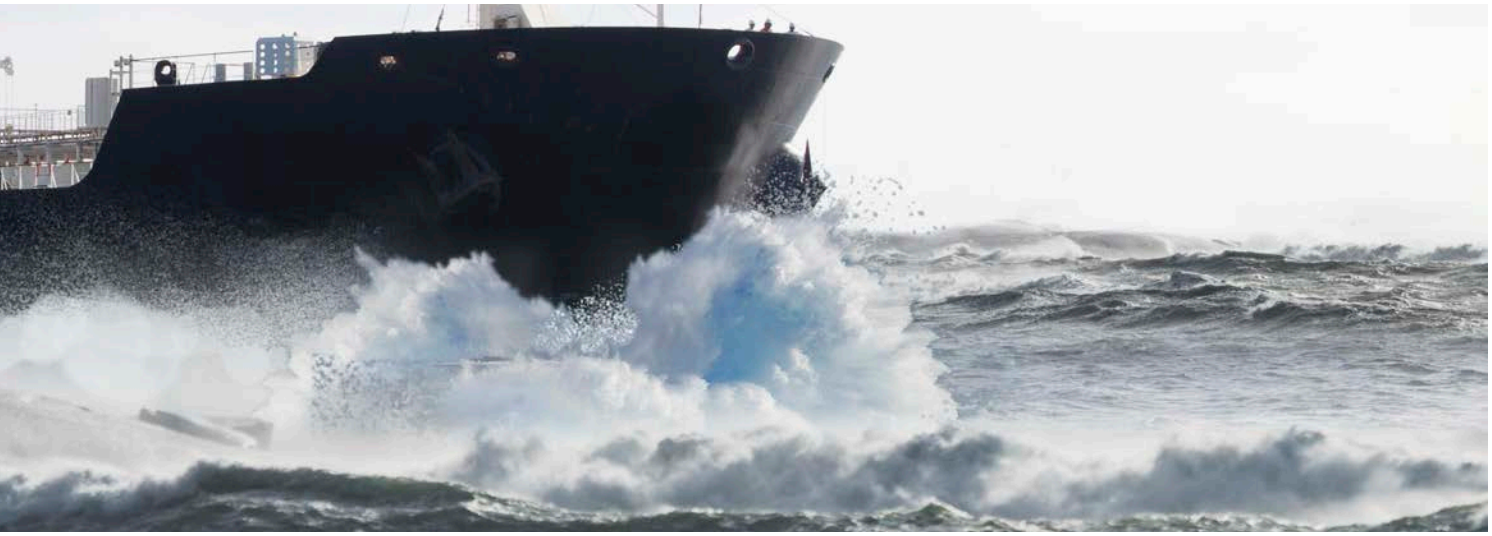
MODEL 352M221

- Sensitivity: (±15%) 10 mV/g
- Measurement Range: ±500 g pk
- Frequency Range: (±5%) 1 to 6000 Hz
- Integral waterproof cable, hydrotested to 600 psi

MINIATURE RING-STYLE, CERAMIC SHEAR CVLD ACCELEROMETER

MODEL 355M87A

- Sensitivity: (±15%) 10 mV/g
- Measurement Range: ±50 g pk
- Frequency Range: (±5%) 7 to 9000 Hz
- Integral waterproof cable, hydrotested to 600 psi



MINIATURE RING-STYLE, CERAMIC SHEAR ICP® ACCELEROMETER

MODEL 355M73

Sensitivity: (±10%) 100 mV/g

Measurement Range: ±50 g pk

Frequency Range: (±5%) 7 to 9000 Hz

Integral waterproof cable, hydrotested to 600 psi

Case isolated

ICP® UNDERWATER ACCELEROMETER

MODEL 337M22

Sensitivity: 100 mV/g

Measurement Range: ±50 g pk

Frequency Range: (±5%) 2.0 to 7500 Hz

Integral waterproof cable, hydrotested to 600 psi

Case isolated

RING-STYLE SEISMIC SHEAR CVLD ACCELEROMETER

MODEL 631M21

Sensitivity: (±10%) 1000 mV/g

Measurement Range: ±2.5 g pk

Frequency Range: (±5%) 1 to 4000 Hz

Integral waterproof cable, hydrotested to 600 psi

Case isolated

4-CONDUCTOR, SHIELDED, POLYURETHANE CABLE

MODEL 078WXX

Used with triaxial ICP® accelerometers

4-conductor, shielded, flexible polyurethane jacket

IP68 Rated 1/4-28, 4-socket plug to 3 BNC plugs

UHT-12TM TRIAXIAL ICP® ACCELEROMETER WITH TEDS

MODEL TLD339A37

Sensitivity: 100 mV/g

Measurement Range: ±50 g pk

Frequency Range: (±5%) 0.3 to 4000Hz

Low thermal coefficient with operating temperature -65 to +365 °F (-54 to +180 °C)

TEDS Compliant

4-CONDUCTOR, SHIELDED, LOW NOISE, FEP CABLE

MODEL 034W10

Used with triaxial ICP® accelerometers

4-conductor, twisted, shielded, low noise, lightweight FEP jacket

IP68 rated ¼-28, 4-socket plug to (3) BNC plugs

PCB PIEZOTRONICS
AN AMPHENOL COMPANY

3425 Walden Avenue, Depew, NY 14043 USA

pcb.com | info@pcb.com | 800 828 8840 | +1 716 684 0001

AD-Underwater-0325