**CH6I Sensor**

*Low Frequency & Low Noise*

**Integral Preamp Acoustic Emission Sensor**

**Description and Features**

The CH6I sensor is a low frequency, resonant, acoustic emission sensor with an integral, low noise, filtered, 40 dB preamplifier, that can drive up to 3000 feet of cable. The sensor comes standard with PAC’s unique “Auto Sensor Test” (AST*) function.

The CH6I features a strong, insulated, lightweight, aluminum alloy, integrated body structure that is color-coded green to identify the sensor model. This sensor’s outside shell is anodized, providing a nonconductive finish to prevent any possible electric shorts from metal testing structures. It is the same size and has the same frequency response and sensitivity as the older R6I sensor. The EMI shielding ability of the CH6I has been improved by more than 300% compared with previous versions.

**Applications**

- Metal, concrete and composite structures that require an AE sensor response below 100 kHz
- Ideal for fiberglass structure tests (i.e. bucket trucks, storage tanks)
- Pipeline testing, where long distance sensor monitoring is a must
- Leak detection for large sensor spacing

**Operating Specifications**

**Dynamic**
- Peak Sensitivity, Ref V/(m/s); Ref [V/µbar] .................. 117 [-23] dB
- Operating Frequency Range .................. 40 - 100 kHz
- Resonant Frequency Ref V/(m/s); Ref [V/µbar] .................. 55 [98] kHz
- Directionality ............................................ ±1.5 dB

**Electrical**
- Gain ............................................................... 40 dB
- Power Requirements .................................. 16 - 30 Vdc @ 25 mA
- Dynamic Range .......................................... >80 dB
- Output Voltage ........................................... 20 V peak to peak
- Noise Level (RMS rti) .................................. <2.4 µV
- Output Drive Impedance .......................... 50 Ω
- Sensor Drive Capability .............................. up to 3000 ft (1000 m)
- AST Pulse ................................................... 24 V, 3 microseconds into crystal

**Environmental**
- Temperature Range .................................. -35 to 75°C
- Shock Limit ................................................. 500 g
- Completely enclosed crystal for RFI/EMI immunity

**Physical**
- Dimensions ........................................... 1.13” dia x 1.54” h (29 x 39.2 mm)
- Weight .......................................................... 56 grams
- Case Material .................................. Green color, anodized aluminum alloy
- Face Material .............................................. Ceramic
- Connector .................................................... BNC
- Connector Locations .................................. Side
- Seal .............................................................. Epoxy
- Matching Cable ........................................ 1234-X

**Ordering Information and Accessories**

Cable (specify cable length) ................................ 1234 - X
Magnetic Hold-Down ........................................ MHR6I
Amplifier ........................................................... AE2A

Sensors include
- NIST Calibration Certificate, Auto Sensor Test Function & Warranty

* AST – Auto Sensor Testing feature allows AE systems to control the sensor as a pulser and a receiver at the same time. It can therefore characterize its own condition as well as send out a simulated acoustic emission wave that other sensors can detect, so the condition of the nearby sensors also can be tested.

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**Frequency response of the CH6I.** Calibrated based on ASTM E1106; Calibration based on ASTM E976.