



CH61 Sensor

Low Frequency & Low Noise

Integral Preamp Acoustic Emission Sensor

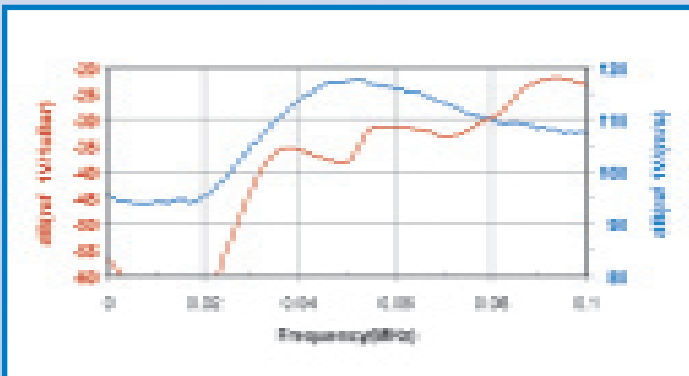
Description and Features

The CH61 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 CH61 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 R61 sensor. The EMI shielding ability of the CH61 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



Frequency response of the CH61. Calibration based on ASTM E1106; Calibration based on ASTM E976.

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
Grounding	..... Case grounded, isolated from sensing face

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	..... MHR61
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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