



CH30I Sensor

Medium Frequency & Low Noise

Integral Preamp Acoustic Emission Sensor

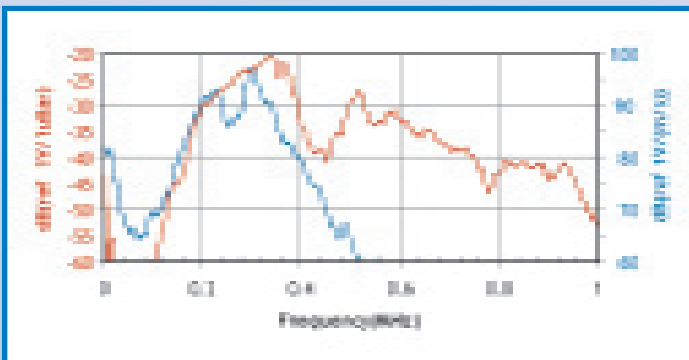
Description and Features

The CH30I sensor is a medium frequency, resonant, acoustic emission sensor with an integral, low noise, filtered, 40 dB preamplifier that can drive up to 500 feet of cable. The sensor comes standard with PAC's unique "Auto Sensor Test" (AST*) function.

The CH30I features a strong, insulated, lightweight, aluminum alloy, integrated body structure that is color-coded purple 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 R30I sensor, but the EMI shielding ability of the CH30I has been improved by more than 300% compared with previous versions.

Applications

- Normally chosen for use in noisy environments
- Pipeline tests with flow noise
- Steel structure highway bridges with low frequency road and wind noises



Frequency response of the CH30I. Calibration based on ASTM E1106; Calibration based on ASTM E976.

Operating Specifications

Dynamic

Peak Sensitivity, Ref V/(m/s); Ref [V/μbar]	97 [-22] dB
Operating Frequency Range.....	125 - 450 kHz
Resonant Frequency Ref V/(m/s); Ref [V/μbar]	300 [350] 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 500 ft (166 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 1.28" h (29 x 32.6 mm)
Weight	45 grams
Case Material	Purple 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	MHR30I
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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