



CH15I Sensor

Medium Frequency & Low Noise

Integral Preamp Acoustic Emission Sensor

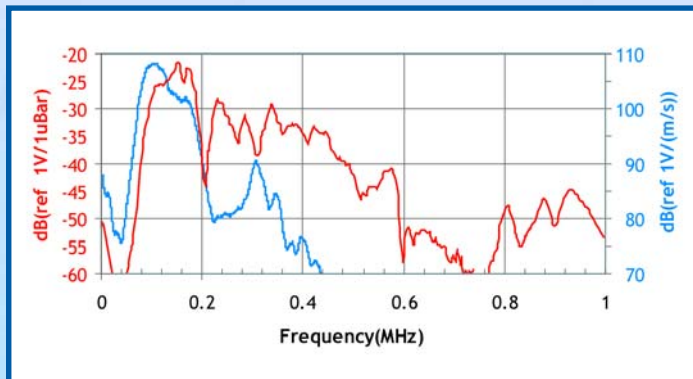
Description and Features

The CH15I sensor is a medium frequency, resonant, acoustic emission sensor with an integral, low noise, filtered, 40 dB preamplifier that can drive up to 1000 feet of cable. The sensor comes standard with PAC's unique "Auto Sensor Test" (AST*) function.

The CH15I features a strong, insulated, lightweight, aluminum alloy, integrated body structure that is color-coded blue 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 R15I sensor, but the EMI shielding ability of the CH15I has been improved by more than 300% compared with previous versions.

Applications

- Metals
- Pressure vessels
- Bucket trucks
- Cranes
- Compressed gas cylinders
- Structures



Frequency response of the CH15I. Calibration based on ASTM E1106; Calibration based on ASTM E976.

Operating Specifications

Dynamic

Peak Sensitivity, Ref V/(m/s); Ref [V/μbar]	109 [-22] dB
Operating Frequency Range	50 - 200 kHz
Resonant Frequency Ref V/(m/s); Ref [V/μbar]	75 [150] 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 1000 ft (300 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	51 grams
Case Material	Blue 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	MHR15I
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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