



# CH15I Sensor

## Medium Frequency & Low Noise

### Integral Preamp Acoustic Emission Sensor

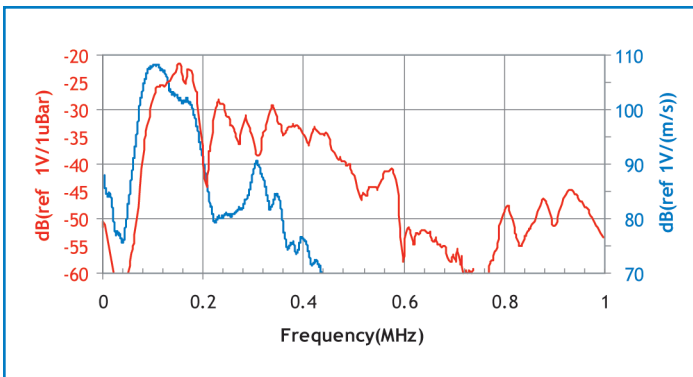
#### Description and Features

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/ $\mu$ bar] .....	109 [-22] dB
Operating Frequency Range.....	100 - 200 kHz
Resonant Frequency Ref V/(m/s); Ref [V/ $\mu$ bar] .....	75 [150] kHz
Directionality.....	$\pm 1.5$ 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 $\mu$ V
Output Drive Impedance.....	50 $\Omega$
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.