



# R15I-AST Sensor

## Integral Preamplifier

## Acoustic Emission Sensor

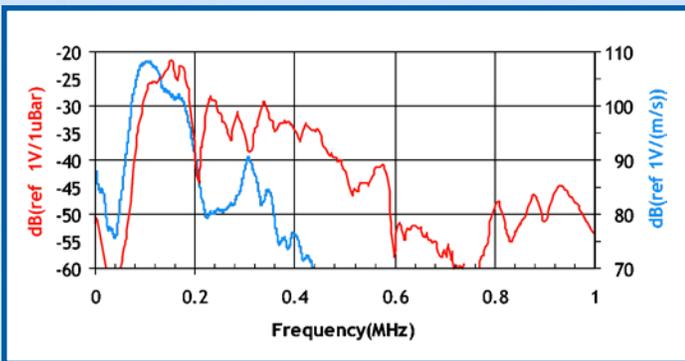
### Description and Features

PAC's integral preamp sensors were specifically engineered to attain high sensitivity and have the capability to drive long cables without the need for a separate preamplifier. Incorporating a low-noise input, 40 dB preamplifier and a filter all inside the sensor housing, these transducers are completely enclosed in metal stainless steel (or aluminum) housings that are treated to minimize RFI/EMI interference. Care has also been taken to thermally isolate the critical input stage of the preamplifier in order to provide excellent temperature stability over the range of -35° to 75° C.

Their integrated Auto Sensor Test (AST\*) capability allows these sensors to pulse as well as receive. This feature lets you verify the sensor coupling and performance at any time throughout the test.

### Applications

This general purpose sensor provides a good mix of high sensitivity and high low frequency rejection. These properties make it very useful for monitoring common structures such as pipelines, vessels, bridges, and storage tanks in petroleum, refineries, chemical plants, offshore platforms, as well as factory and process monitoring applications. It is PAC's most popular and highest volume selling sensor.



Frequency response of the R15I-AST. Calibration based on ASTM E1106; Calibration based on ASTM E976.

### Operating Specifications

#### Dynamic

Peak Sensitivity, Ref V/(m/s) .....	109 dB
Peak Sensitivity, Ref V/ $\mu$ bar .....	-22 dB
Operating Frequency Range .....	50-200 kHz
Resonant Frequency, Ref V/(m/s) .....	75 kHz
Resonant Frequency, Ref V/ $\mu$ bar .....	150 kHz
Directionality .....	+/-1.5 dB

#### Environmental

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

#### Physical

Dimensions .....	1.13" diameter x 1.23" h
.....	(29 x 31 mm)
Weight .....	70
Case Material .....	Stainless Steel (304)
Face Material .....	Ceramic
Connector .....	BNC
Connector Locations .....	Side

### Ordering Information and Accessories

R15I .....	R15I-AST
Cable (specify cable length) .....	1234 - X
Magnetic Hold-Down .....	MHR15I
Amplifier .....	AE2A

#### Sensors include

NIST Calibration Certificate & 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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