



R15α Sensor

General Purpose, 150 kHz Resonant Frequency Acoustic Emission Sensor

Description and Features

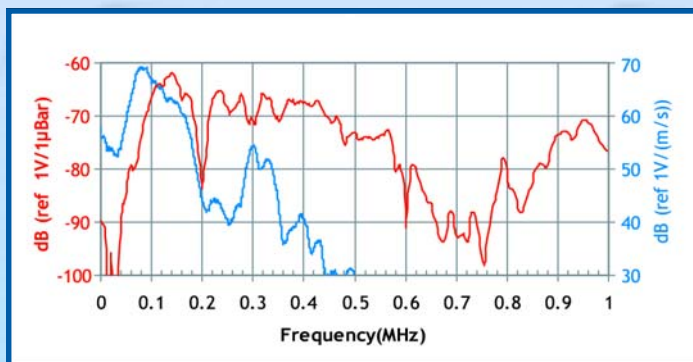
The Alpha series family of sensors features SMA connectors versus the Microdot connectors found on PAC's RXX series of passive sensors. The Alpha series includes R3α, R6α, R15α, R30α, R50α, R80α and WSα sensors. The major improvements in Alpha series over the RXX series include:

- Use of the more popular SMA type of connector.
- Cavity is machined from a solid stainless steel rod making for a simpler and more robust design.
- Dramatically increased thickness of the ceramic shoe for better mechanical stability.
- Distance from the bottom of the ceramic shoe to the bottom edge of sensor cavity increased for better insulation resistance and ground avoidance.
- Introduced a 30-degree angle at the bottom edge of the sensor cavity.

All these improvements make the Alpha series sensors more robust, reliable and greatly reduce the possible grounding of the cavity to the structure caused by wet environment.

Applications

This general purpose sensor provides a good combination of high sensitivity and low-frequency rejection. These properties make the sensor 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.



Frequency response of the R15α. Calibration based on ASTM E1106; Calibration based on ASTM E976.

Operating Specifications

Dynamic

Peak Sensitivity V/(m/s); [V/μbar].....	69 [-63] dB
Operating Frequency Range	50 - 200 kHz
Resonant Freq. V/(m/s); [V/μbar]	75 [150] kHz
Directionality	±1.5 dB

Environmental

Temperature Range	-65 to 175°C
Shock Limit	500 g
Completely enclosed crystal for RFI/EMI immunity	

Physical

Dimensions ..	0.75" diam. x 0.88" h (19 x 22.4 mm)
Weight	34 grams
Case Material	Stainless Steel
Face Material	Ceramic
Connector	SMA
Connector Locations	Side
Seal	Epoxy
Sensor to Preamp Cable (1 or 2 meters)	1232-X-SMA

Ordering Information and Accessories

R15α	R15α or R15a
Magnetic Hold-Down	MHR15A
Preamplifier	0/2/4, 2/4/6
Preamp to System Cable (specify length in meters)	1234 - X

Sensors include

NIST Calibration Certificate & Warranty



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