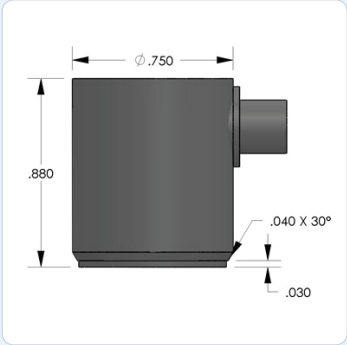


PRODUCT DATA SHEET

R3α Sensor

General Purpose Sensor



DESCRIPTION AND FEATURES

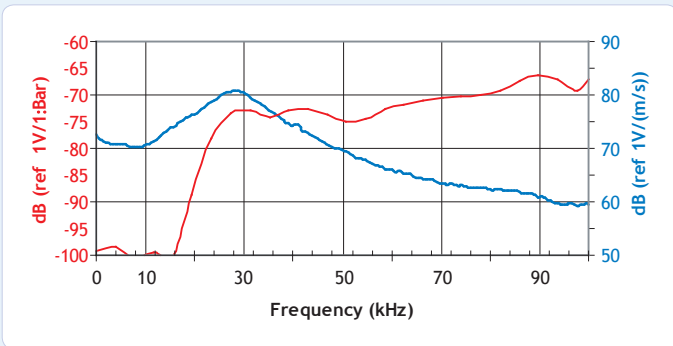
The R3α sensor cavity is machined from a solid stainless steel rod, making the sensor extremely rugged and reliable. The ceramic face electrically isolates the sensor from the structure to assure a low noise operation.

Most low frequency AE sensors are relatively large. However, the R3α sensor has the same compact size as our other Alpha series sensors and boasts a low frequency, 30 kHz resonant response. This feature makes it extremely useful in tight areas that require a low frequency sensor for testing.

The Alpha series family of sensors features SMA connectors versus the Microdot connectors found on MISTRAS' RXX series of passive sensors. The Alpha series includes R3α, R6α, R15α, R30α, R50α, R80α and WSα sensors.

APPLICATIONS

This sensor is normally selected for structural health monitoring of small to medium concrete and geologic structures and for concrete and metal pipeline leak detection applications where there needs to be high acoustic background noise rejection and distances between sensors can be relatively close (tens of feet).



OPERATING SPECIFICATIONS

Dynamic

Peak Sensitivity, Ref V/(m/s).....	80 dB
Peak Sensitivity, Ref V/μbar.....	-63 dB
Operating Frequency Range.....	25-70 kHz
Resonant Frequency, Ref V/(m/s).....	29 kHz
Resonant Frequency, Ref V/μbar.....	140 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"OD X 0.88"H
	19 mm OD X 22.4 mm H
Weight.....	41 grams
Case Material.....	Stainless steel
Face Material.....	Ceramic
Connector.....	SMA
Connector Locations.....	Side
Seal.....	Epoxy

ORDERING INFORMATION AND ACCESSORIES

R3α.....	R3α or R3a
Magnetic Hold-Down.....	MHR15A
Amplifier subsystems ... AE2A, AE5A or standard AE systems	
Preamplifier.....	0/2/4, 2/4/6
Preamp to System Cable (specify length in 'm').....	1234-X

Sensors include

NIST Calibration Certificate & Warranty



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