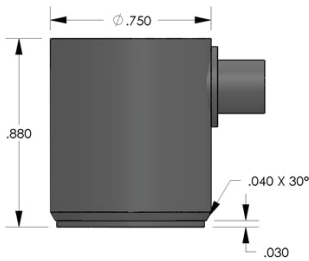


R3α Sensor

General Purpose Sensor



DESCRIPTION AND FEATURES

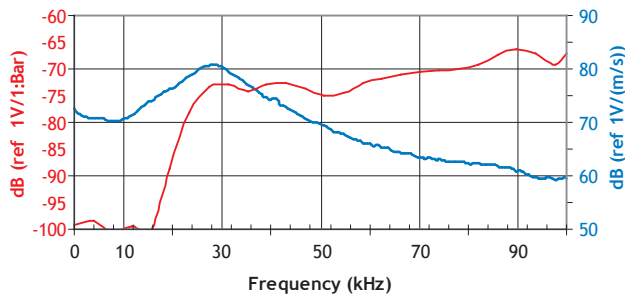
The R3α sensor cavity is machined from a solid stainless steel rod, making the sensor extremely rugged and reliable. The ceramic face electrically isolates the sensor from the structure to assure a low noise operation.

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 R3α
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

