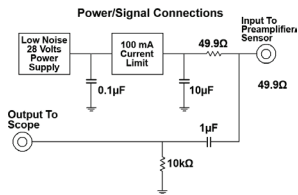
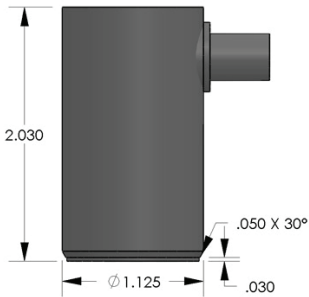


PRODUCT DATA SHEET

R.45I Sensor

Very Low Frequency Sensor



DESCRIPTION AND FEATURES

The R.45I is a very low frequency and High sensitivity, internally amplified AE sensor with a 20 kHz resonance frequency, 124 dB peak sensitivity and useful bandwidth from 1 to 30 kHz. The sensor has a standard BNC connector on the side of the sensor. The cavity is made from Stainless steel. It is approximately 2.0" (50 mm) high.

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, 40dB 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 before, during or after an AE test.

APPLICATIONS

This sensor is normally selected for structural health monitoring of concrete and geologic structures. It is also a good choice for pipeline leak detection.

OPERATING SPECIFICATIONS

Dynamic

Peak Sensitivity, Ref V/(m/s)..... 124 dB
 Operating Frequency Range..... 1-30 kHz
 Resonant Frequency, Ref V/(m/s).....20 kHz
 Directionality..... +/-1.5 dB

Environmental

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

Physical

Dimensions..... 1.125"OD X 2.0"H
 28.6 mm OD X 50 mm H
 Weight.....121 grams
 Case Material..... Stainless Steel
 Face Material..... Ceramic
 Connector..... BNC
 Connector Locations.....Side

Electrical

Gain..... 40 dB
 Power Requirements.....20-30 VDC @ 25 mA
 Dynamic Range..... > 87 dB
 Noise Level (RMS RTI)..... < 3 µV
 Output Drive Impedance..... 50 Ω
 Grounding..... Case Grounding,
 Isolated from mounting surface

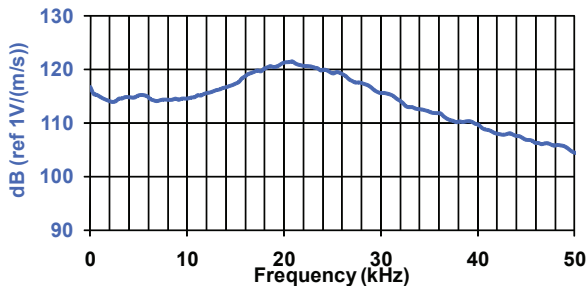
ORDERING INFORMATION AND ACCESSORIES

R.45I R.45I
 Cable (specify length in '-XX' m at end of PN) 1234-X
 Magnetic Hold-Down MHR.45I
 Amplifier Subsystems AE2A, AE5A

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.



WORLDWIDE HEADQUARTERS:
 195 Clarksville Rd •
 Princeton Jct, NJ 08550 • USA
 T: +1.609.716.4000 • F: +1.609.716.0706
 E-MAIL: sales.systems@mistrasgroup.com

CANADA T: +1.403.556.1350
CHINA T: +86.10.5877.3631
FRANCE T: +331.498.26040
GERMANY T: +49.040.2000.4025
GREECE T: +30.210.2846.801-4

HOLLAND T: +31.010.245.0325
INDIA T: +91.22.2586.2444
JAPAN T: +81.33.498.3570
MALAYSIA T: +60.9.517.3788
MIDDLE EAST T: +973.17.729.356

RUSSIA T: +7495.789.4549
SCANDINAVIA T: +46(0)31.252040
S. AMERICA T: +55.11.3082.5111
UK T: +44(0)1954.231.612