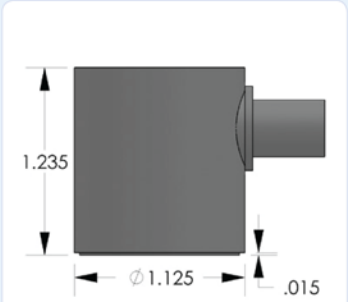
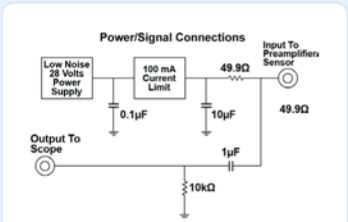
PRODUCT DATA SHEET

LNWDI Sensor

Very Low Noise Differential Sensor



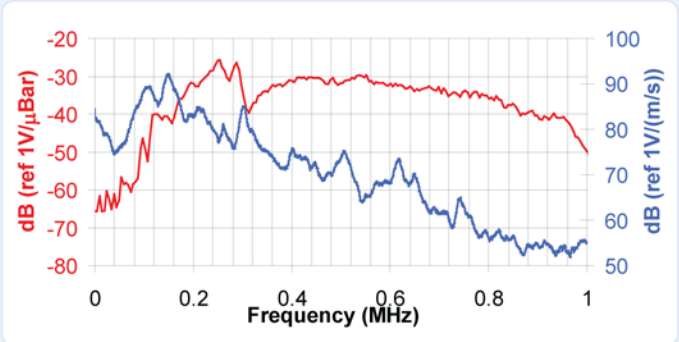


DESCRIPTION AND FEATURES

LNWDI is a true differential wideband sensor featuring an integrated ultra low noise differential preamplifier. The use of a true differential preamplifier increases the gain by approximately 6 dB relative to a single ended preamplifier and significantly reduces the noise level. The differential inputs give it an unparalleled noise performance with the noise levels being lower than 2 µV relative to the input. The sensor has a very high sensitivity and good frequency response over the bandwidth of 100 - 900 kHz. This sensor is an ideal candidate for applications requiring low noise and high bandwidth for frequency analysis of the AE signals, for noise discrimination and source identification. The LNWDI includes a high energy tone burst pulser for AST. This sensor features a rugged steel construction and a BNC connector exiting from the side of the sensor.

APPLICATIONS

This sensor is well suited for structural health monitoring of large structures like storage tanks, pipelines etc. Wideband sensors are particularly useful for research applications where a high fidelity AE response is required. It can be easily mounted using epoxy.



OPERATING SPECIFICATIONS

Dynamic

Peak Sensitivity, Ref V/(m/s) ..... 92 dB
Peak Sensitivity, Ref V/µbar ..... -25 dB
Operating Frequency Range ..... 125-900 KHz
Resonant Frequency, Ref V/(m/s) ..... 125 kHz
Resonant Frequency, Ref V/µbar ..... 450 KHz
Directionality ..... +/- 1.5 dB

Environmental

Temperature Range ..... -40 to 70ºC
Shock Limit ..... 500 g
Completely enclosed crystal for RFI/EMI immunity

Physical

Dimensions ..... 1.22"OD X 1.125"H
..... 31 mm OD X 28.575 mm H
Weight ..... 70 grams
Case Material ..... Stainless Steel
Face Material ..... Ceramic
Connector ..... BNC
Connector Locations ..... Side

Electrical

Gain ..... 34 dB Differential (40 dB Equivalent)
Power Requirements ..... 17-29 VDC @ 30 mA
Dynamic Range ..... > 87 dB
Output Drive Impedance ..... < 5 Ω
Grounding ..... Case Grounding
Noise Level (RMS RTI) ..... < 2.0 µV
AST High Energy 40 V Tone Burst

ORDERING INFORMATION AND ACCESSORIES

LNWDI ..... LNWDI
Cable (specify length in '-XX' m at end of PN) 1234-X
Magnetic Hold-Down ..... MHSTD
Amplifier Subsystems AE2A, AE5A,
..... or Standard AE systems

Sensors include

NIST Calibration Certificate & Warranty

CE ISO 9001

ДИАПАК
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