

ISWD Sensor

Wideband Frequency, Intrinsically Safe Acoustic Emission Sensor

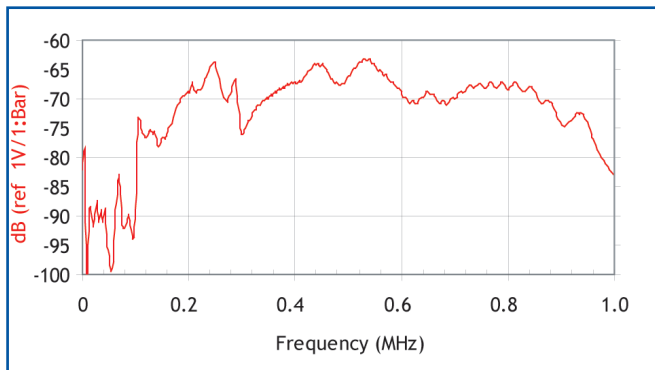
Description and Features

The ISWD is a wideband frequency sensor that was designed specially to meet Intrinsic Safety (IS) and IP65 environmental requirements. Certified as Intrinsically Safe (IS) for use with our 1276-2 IS preamplifier and 1276-1 and 1278 IS ASL-C subsystem, this sensor has a thicker ceramic wear-plate and an epoxy coating completely covering the sensor and cable exit. An IS voltage protection circuit is built into the sensor.

It has an integrated one-meter long differential cable with extruded TPE jacket and a pigtail for connecting into a 1276 or 1278 IS Preamplifier or Subsystem. The sensor has similar frequency response as the the WD sensor. Its maximum operating temperature is 125°C.

Applications

Wideband sensors are typically used in research applications or other applications where a high fidelity AE response is required. In research applications, wideband AE sensors are useful where frequency analysis of the AE signal is required and in helping determine the predominant frequency band of AE sources for noise discrimination and selection of a suitable lower cost, general purpose AE sensor. In high fidelity applications, various AE wavemodes can be detected using wideband sensors, providing more information about the AE source and distance of the AE event.



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

Operating Specifications

Dynamic

Peak Sensitivity, Ref V/(m/s)	55 dB
Peak Sensitivity, Ref V/ μ bar	-63 dB
Operating Frequency Range	150 - 850kHz
Resonant Frequency, Ref V/(m/s).....	125 kHz
Resonant Frequency, Ref V/ μ bar	530 kHz
Directionality.....	+/-1.5

Environmental

Temperature Range	-45 to 125°C
Shock Limit	500 g
Completely shielded crystal for maximum RFI/EMI immunity	

Physical

Dimensions.....	0.89" diameter x 0.755" h (22.6 x 19.2 mm)
Weight.....	27 grams with 1 meter cable
Case Material.....	Stainless Steel/Epoxy
Face Material.....	Ceramic
Connector.....	Pigtail
Connector Locations	Side
Seal	Epoxy
Sensor to Preamp Cable (1 meter)	Integral

Ordering Information and Accessories

ISWD	ISWD
Preamplifier.....	1276-2
ASL-4-20 ma Subsystem	1276-1
Preamp to System Cable	1276C
IS Zener Barrier	1276B
Other IS Sensors are available with various resonant frequencies.	

Sensors include

NIST Calibration Certificate & Warranty



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