



ISR3 Sensor

Intrinsically Safe

Acoustic Emission Sensor

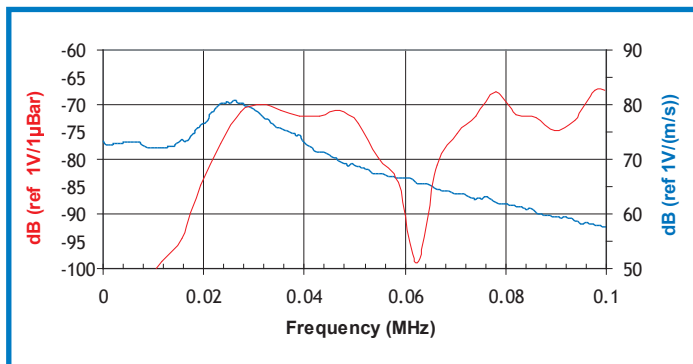
Description and Features

The ISR3 sensor 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 R3 sensor. Its maximum operating temperature is 125°C.

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) and where intrinsically safe sensors and instrumentation are required.



Frequency response of the ISR3. Calibration based on ASTM E1106; Calibration based on ASTM E976.

Operating Specifications

Dynamic

Peak Sensitivity, Ref V/(m/s)	8 dB
Peak Sensitivity, Ref V/μbar	-63 dB
Operating Frequency Range	10-50 kHz
Resonant Frequency, Ref V/(m/s).....	29 kHz
Directionality.....	+/-1.5 dB

Environmental

Temperature Range	-45 to 125°C
Shock Limit	1,000 g
Completely shielded crystal for maximum RFI/EMI immunity	

Physical

Dimensions.....	1.32" diameter x 1.42" h
(33 x 36 mm)
Weight.....	50 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

ISR3	ISR3
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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