

ISR.45 Sensor

*Intrinsically Safe
Acoustic Emission Sensor*

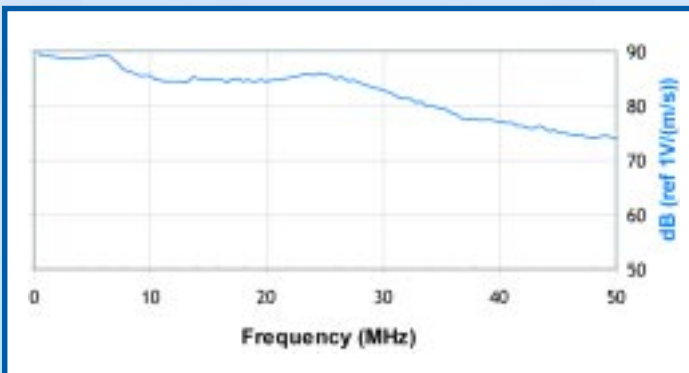
Description and Features

The ISR.45 is our lowest resonant frequency sensor 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 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 IS Preamplifier or Subsystem. The sensor has similar frequency response as the R.45 sensor. Its maximum operating temperature is 125°C.

Applications

This sensor is normally selected for structural health monitoring of large-scale concrete structures, geologic structures and for pipeline leak detection applications where large distances between sensors is required, where there is little acoustic background noise and where intrinsically safe sensors and instrumentation are required.



Frequency response of the ISR.45. Calibration based on ASTM E1106.

Operating Specifications

Dynamic

Peak Sensitivity, Ref V/(m/s)	87 dB
Operating Frequency Range	3 - 30 kHz
Resonant Frequency	7 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 1.68" h (33 x 43 mm)
Weight	155 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

ISR.45	ISR.45
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



195 Clarksville Road, Princeton Junction, NJ 08550 • Phone: 609-716-4000
Fax: 609-716-0706 • Email: sales@pacndt.com • Internet: www.pacndt.com



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