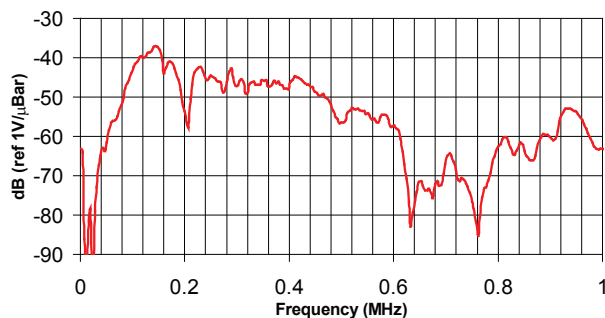
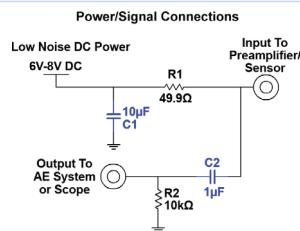
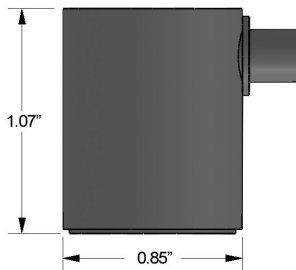


ISPK15I Sensor

Intrinsically Safe Sensor



DESCRIPTION AND FEATURES

ISPK15I is a medium frequency, resonant acoustic emission sensor with an integral ultra low noise and low power preamplifier. It is designed to meet the intrinsic safety (IS) standards (when used with our 1281-IS AE interface), and IP65 environmental requirements. The bandpass filtered preamplifier has a gain of 26 dB and can drive up to 200 meters of cable. This sensor represents an improvement in both noise and power consumption. With noise level below 3 μ V and power consumption as little as 25 mW, the sensor is ideal for use with battery powered portable equipment. The ISPK15I features an anodized aluminum cavity with an SMA connector exiting to the side. The preamplifier features an auto sensor testing (Tone Burst AST) feature through which the sensor can be used both as pulser and receiver.

APPLICATIONS

The sensor can be used in any application with a noisy environment and requiring a small, narrowband frequency response with intrinsic safe certification.

OPERATING SPECIFICATIONS

Dynamic

Peak Sensitivity, Ref 1V/(m/s)	109 dB
Peak Sensitivity, Ref 1V/ μ bar	-37 dB
Operating Frequency Range	80-200 kHz
Resonant Frequency, Ref 1V/ μ bar	150 kHz
Directionality	+/- 1.5 dB

Environmental

Temperature Range	-55° to 70°C
Shock Limit	500 g
Completely enclosed crystal for RFI/EMI immunity	

Physical

Dimensions	0.85" OD X 1.06" H 21 mm OD X 27 mm H
Weight	26 grams
Case Material	Anodized Aluminum
Face Material	Ceramic
Connector	SMA
Connector Locations	Side

Electrical

Gain	26 dB
Preamp DC power	5 V
Grounding	Case Grounding (isolated from mounting surface)
Noise level at input	<3 μ V
Preamplifier Dynamic Range	>87 dB
Preamplifier Impedance	50 Ω

Certifications

Ex ia IIC T6, -55°C $\leq$ Ta $\leq$ 70°C
Ex ia IIIC T85°C, -55°C $\leq$ Ta $\leq$ 70°C

ORDERING INFORMATION AND ACCESSORIES

ISPK15I	ISPK15I
Magnetic Hold-Down	MHPK15I
IS Barrier/Preamplifier Interface	1281
Cable (specify length in 'XX' m)	1281 IS cable-XX
	(SMA/BNC)
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.

