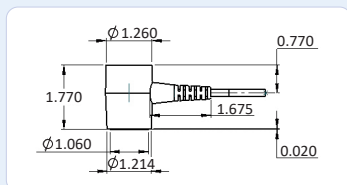


R.45I-LP Sensor Family

Low Power Integral Preamplifier Sensor



DESCRIPTION AND FEATURES

The family of R.45I-LP-AST sensor is a low frequency, resonant, acoustic emission sensor with an integral, ultra-low noise, low power, filtered, 26dB or 12dB preamplifier, which can drive up to 250 meters of cable. This new sensor family represents an improvement in both noise and low power consumption performance, with noise level below 3 μ V and power consumption of 25 mW. The sensors feature special polymer coatings making it 100% insulated and non-conductive. The integrated Auto Sensor Test (AST*) capability allows these sensors to pulse as well as receive. This feature lets you verify the sensor coupling and performance at any time before, during or after the test.

APPLICATIONS

The family of R.45I-LP sensor has been designed to be used with the Pocket AE, the Sensor Highway II, the Sensor Highway III, Express-8, USB Node, Wireless AE Nodes.

OPERATING SPECIFICATIONS

Dynamic

Peak Sensitivity, Ref 1V/(m/s) 108 dB / 94 dB
 Operating Frequency Range 1-60 kHz
 Resonant Frequency 20 kHz
 Directionality +/- 1.5 dB

Environmental

Temperature Range -35 to 80°C
 Shock Limit 500 g

Physical

Dimensions† 1.3" OD X 1.77" H
 33 mm OD X 45.00 mm H
 Case Material Stainless Steel
 Face Material Ceramic
 Connector BNC/SMB on integral cable
 Connector Locations Side

Electrical

Electrical Gain 26 dB / 12 dB
 Power Requirements 4.5-7 VDC
 Operating/Max Current 5 mA
 Noise Level (RMS RTI) < 3 μ V

ORDERING INFORMATION AND ACCESSORIES

R.45I-LP-BNC 2m cable, BNC connector, 26 dB Pre-amp
 R.45I-LP12-BNC 12 dB Pre-amp
 R.45I-LP-2 (or 5 or specified) 2m or 5m or specified length
 cable, SMB connector, 26 dB Pre-amp
 R.45I-LP12-2 (or 5 or specified) 12 dB Pre-amp
 Magnetic Hold-Down MHR.45I
 Amplifier Subsystem AE2A, AE5A

Sensors include

Characterization 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.

† Due to variances in coating process, the height of coated sensors may vary within a tolerance of +/- 0.015 inches (.381 mm)

