



# 1" Pressure Response Prepolarized Microphone

For low frequency and low noise measurements



377A15 embedded in acoustic coupler for audiometry.

**Uses of model 377A15 pressure response microphone** A pressure microphone is designed to measure the pressure response. A pressure response occurs when the microphone is flush mounted at the boundary of a sound field. Pressure microphones accurately measure the sound pressure in ducts, cavities, impedance tubes, wind tunnels, and couplers. They are ideal for audiometer calibration, sound level meter measurements, ear simulators, calibration transfer standards, and testing of sound booth noise levels.



Low sound pressure level measurements are possible due to the large surface area and high sensitivity of the Model 377A15 microphone. This microphone offers a cost effective alternative vs. specialty low noise microphones for making low noise measurements.

## Applications

- Precise sound level meter measurements
- Low sound pressure measurements
- For use with IEC 60318-3 couplers
- Audiometer calibration
- Testing sound booths
- Calibration transfer standards

## Highlights

- Prepolarized (0V) design
- Low noise floor, 10 dBA typical
- IEC 61094-4 WS1P compliant
- For use with Class 1 sound level meter for low noise measurements

## Polarization

The 377A15 is a prepolarized (0V) microphone. Prepolarized microphones, when combined with ICP® preamplifiers, are interchangeable with many other styles of ICP® sensors (accelerometers, strain gages, force sensors, piezoelectric pressure sensors). ICP® sensors work with a wide variety of data acquisition systems which utilize 2-20mA constant current, low cost cabling, and cost effective signal conditioning/power supplies.

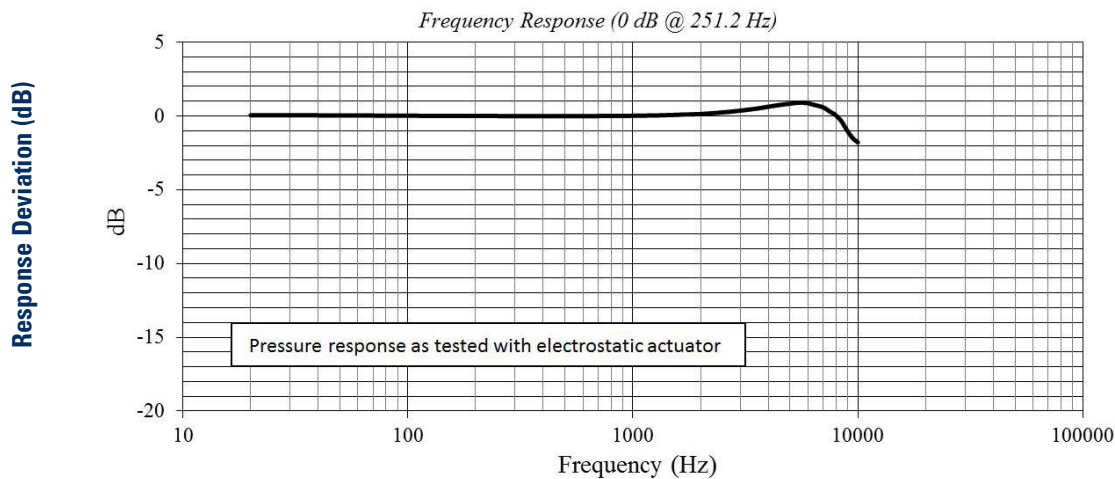
Multi-mode preamplifiers typically require expensive power supplies and multi-conductor cabling and are used in calibration and various sound level meters. Prepolarized microphones may also be used with multi-mode preamplifiers. The 377A15 microphone is designed to be used in prepolarized set-ups but can also be used as a drop in replacement for externally polarized (200V) microphones, by turning off the polarization voltage. This makes the 377A15 an excellent choice for sound level meters and data acquisition systems that use multi-mode preamplifiers and have the ability to adapt to ICP® compatible sensors.

## PCB® Quality Commitment

PCB® acoustic products are used by some of the world's largest automotive, aerospace & defense, electronic, and consumer goods manufacturers. PCB® uses the highest quality materials for its microphones. While other manufacturers outsource their manufacturing, PCB® has invested in a state of the art, in-house CNC machining facility, allowing greater control over quality and delivery. PCB® has also invested in a clean room, anechoic chamber, and environmental test chambers to provide quality products. Our rigorous environmental testing and aging process ensures that our products will survive in demanding temperature or humidity conditions. PCB® microphones are backed by a best in class 5-year warranty and our "Total Customer Satisfaction" (TCS) policy. Application support is available through our 24-Hour SensorLine<sup>SM</sup> at 716-684-0001.



## Response Plot



### Specifications - 1" Pressure Microphone

Acoustic	
Sensitivity at 250 Hz	50 mV/Pa -26 (± 2 dB) re 1 V/Pa
Frequency Range ± 2 dB	5 - 8,000 Hz
Lower Limiting Frequency	1 - 3 Hz
Harmonic Distortion Limit: 3%	> 150 dB re 20 µPa
Inherent Noise	< 11.5 (<10 typical) dB[A] re 20 µPa
Environmental	
Operating Temperature Range	-40 to 120 °C -40 to 248 °F
Temperature Coefficient	0.01 dB / °C
Static Pressure Coefficient	-0.012 dB / kPa
Humidity Coefficient	± 0.001 dB / %RH
Electrical	
Polarization Voltage	0 V
Maximum Output Voltage*	± 7 V <sub>pk</sub>
Physical	
Diameter with Grid	0.94 in 23.8 mm
Height with Grid	0.75 in 19 mm
Pressure Equalization Vent	Rear
Mounting Thread (Connector)	0.9098 - 60 UNS, BNC*

\* with 426E01 preamplifier



Model 377A15 microphone shown with the 079B25 adapter and 426E01 preamplifier.

#### Additional components:

- 426E01 – 1/2" ICP® preamplifier
- 079B25 – 1" microphone to 1/2" preamplifier adapter
- CAL250 – handheld calibrator

#### Calibration:

- ACS-20 – microphone calibration
- ACS-42 – microphone and preamplifier system calibration



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