1/4” Prepolarized Pressure Field Microphone

Model 377A12 is recommended for high accuracy applications where extremely high acoustic amplitude measurements are required.

Applications

- Precision sound level measurements
- Research and development
- Hearing preservation and safety
- Airbag testing
- Gunshot analysis
- Blast detection

Highlights

- Sensitivity: 0.25 mV/Pa
- Frequency: 4 Hz – 20 kHz
- Cartridge Noise: 68 dBA
- Max Amplitude: 187 dB
- Temperature: -40 to +120°C
- Polarization: Prepolarized (0V)

Standards Compliance

- IEC 61672 class one compliant for premium sound level meter use
- IEC 60651 type one compliant
- Calibration reference microphone traceable through PTB, compliant with ISO 9001 & 17025, A2LA approved

Model 377A12

View our complete offering of Acoustic Sensors & Instrumentation at
www.pcb.com/Acoustics

Use of Model 377A12 Pressure Response Field Microphones

PCB® model 377A12 is designed for very high amplitude measurements. Being a Pressure Field response microphone, it is intended to be used in small closed couplers or confined spaces or in areas where mounted flush to hard reflective surfaces.

Polarization Voltage

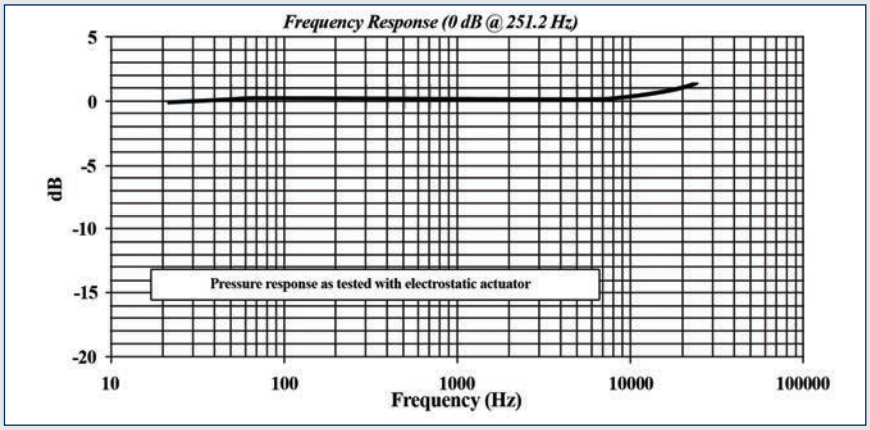
Model 377A12 is a prepolarized model that when combined with a preamplifier is designed to operate on ICP® sensor power, or any 2-20 mA constant current supply. This modern design is preferred for portable measurements or operation in high humidity applications. Design advantages are coaxial cables usage and interchangeability with other ICP® sensors (accelerometers, pressure sensors, stain gages, etc.) resulting in set-up time savings and low channel cost.

Calibration & Warranty

All PCB® acoustic products are made from the highest quality materials and are used in a variety of industries including: automotive, aerospace & defense, OEM's, universities, consultants, white goods (appliance) manufacturers and more. PCB's in-house manufacturing capabilities allows us to control all the factors that affect quality, and delivery. We know what it takes to manufacture the best products and do not out-source parts to machine shops that do not fully understand sensor manufacturing and the effects of contamination. This is why PCB® has invested in clean rooms and multiple machining facilities. We have full control over the quality of the components that are used in our acoustic products. The non-corrosive stainless steel diaphragm and body are assembled in a clean environment. All our 377 series microphones go through an extensive aging program to provide maximum stability even in tough applications where high humidity or wide temperatures are required.

Each unit comes with a traceable calibration certification showing its actuator pressure response. All PCB® acoustic products are backed by our “**Total Customer Satisfaction**” (**TCS**) policy, which is a no risk policy.

Typical pressure field response of the microphone with the grid cap at 0 degree incidence. The curve represents the actual pressure response generated by the electronic actuator.



Specifications - 1/4" Pressure Field Microphone Model 377A12	
Acoustic	
Nominal Microphone Diameter	1/4" (6mm)
Polarization Voltage	0V (prepolarized)
Open Circuit Sensitivity (at 250 Hz)	0.25 mV/Pa
Open Circuit Sensitivity (re 1 V/Pa)	-72 dB (+/- 3 dB)
Frequency range (+/- 2 dB)	4 to 20,000 Hz
Lower Limiting Frequency (-3 dB)	0.5 to 3 Hz
Distortion Limit (3% distortion)	187 dB
Cartridge Thermal Noise	68 dB(A)
Cartridge Capacitance	5 pF
Environmental	
Operating Temperature Range	-40 to 248 °F (-40 to 120 °C)
Influence of Axial Vibration (0.1g (1 m/s2)	72 dB re 20µPa
Physical	
Size (Diameter x Height (with grid))	0.25" x 0.6"
Mating Cable Connectors	0.22" x 0.64"
Mounting Thread (to Preamplifier)	0.4606" (11.7mm) - 60 UNS

Specifications - 426B03 Preamplifier for 1/4" Prepolarized Microphones	
Acoustic	
Nominal Preamplifier Diameter	1/4" (6mm)
Gain	-0.08 dB
Frequency Response (+/- 0.2 dB) (re 1 kHz)	3 to 126,000 Hz
Electric Noise (A-weight)	3.2 dB (1.9 dB Typ)
Electric Noise (Flat 20 Hz – 20 kHz)	5.6 dB (3.4 dB Typ)
Temperature Range (Operating)	-40 to 158 °F (-40 to 70 °C)

Model 378A12 shown above which contains the 377A12 microphone and the 426B03 ¼" preamplifier

TEDS Microphone & Preamplifier Combination:

- **378A12** – TEDS programmed to the IEEE 1451.4 standard for SMART transducers, V 1.0 format

Optional Accessories:

- **426B03** – ¼" preamplifier, low noise
- **079A02** – ¼" microphone to ½" preamplifier adapter
- **HT426E01** – ½" preamplifier, high temperature (120°C)
- **079A07** – windscreen for ¼" microphones
- **079A10** – microphone holder
- **079A15** – tripod microphone stand with boom arm
- **079A16** – miniature microphone stand
- **079A18** – clamp on flexible extension arm
- **079B20** – ¼" Nose Cone for wind tunnel testing
- **079B23** – microphone holder with swivel mount
- **CAL200** – handheld calibrator
- **ADP024** – ¼" Adapter for CAL200
- **CAL250** – handheld calibrator
- **ACS-20** – microphone calibration
- **ACS-42** – microphone and preamplifier system calibration

Accredited initial calibration chart included.

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AS9100 CERTIFIED ■ ISO 9001 CERTIFIED ■ A2LA ACCREDITED to ISO 17025

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