



1/4" Pressure-Field Prepolarized Microphone and Preamplifier

Model 377C10 is recommended for extreme accuracy applications where high frequencies or high acoustic amplitude measurements are required.

Applications

- Precision sound level measurements
- Research and development
- Hearing preservation and safety
- Leak detection
- Gunshot analysis
- Sound absorption

Highlights

- Sensitivity: 1 mV/Pa
- Frequency: 4 Hz – 70 kHz
- Cartridge Noise: 35 dB
- Max Amplitude: 178 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, ILAC approved



Model 378C10



Sound Absorption Test With Impedance Tube

Use of model 378C10 Pressure Field microphones

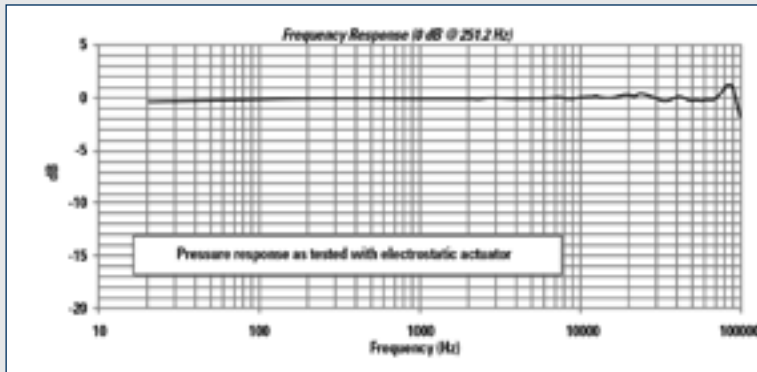
The PCB® model 378C10 is comprised of a 1/4" (6mm) 377C10 prepolarized microphone and a 426B03 preamplifier. This mated pair is designed for high frequency and high amplitude measurements. This Pressure Field response microphone is intended for use in small closed couplers, confined spaces or in areas where mounted flush to hard reflective surfaces.

Polarization Voltage

PCB® is the inventor of ICP® technology which is the very same technology on which all modern prepolarized microphones are based. Model 378C10 operates 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 include the ability to utilize coaxial cables, usage and interchangeability with other ICP® sensors (accelerometers, pressure sensors, strain gages, etc.) resulting in shorter set-up times and low channel costs.

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 (appliances) 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 alloy diaphragm and body are assembled in a clean room environment. All our 377 series microphones go through an extensive aging program to provide the best 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 are backed by our "Total Customer Satisfaction" (TCS) policy.



The curve above is the pressure generated by the electronic actuator.



Microphone Components



Model 378C10

Specifications - 1/4" Pressure Field Microphone Model 377C10

Acoustic	
Nominal Microphone Diameter	1/4" (6mm)
Polarization Voltage	0V (pre-polarized)
Open Circuit Sensitivity (at 250 Hz)	1 mV/Pa
Open Circuit Sensitivity (re 1 V/Pa)	-60 dB (+/- 3 dB)
Frequency Range (+/- 2 dB)	4 to 70,000 Hz
Frequency Range (+/- 3 dB)	3 to 100,000 Hz
Distortion Limit (3% distortion)	178 dB
Cartridge Thermal Noise	35 dB(A)
Cartridge Capacitance	5 pF
Pressure Equalization Vent	Rear Vented
Environmental	
Operating Temperature Range	-40 to 248 °F (-40 to 120 °C)
Physical	
Size (Diameter x Height (without grid))	0.25" x 0.36"
Size (Diameter x Height (with grid))	0.28" x 0.41"
Mounting Thread (to Pre-amplifier)	0.2244" (11.7mm) - 60 UNS

Model 378C10 shown above is comprised of the 377C10 microphone and the 426B03, 1/4" preamplifier



Model 377C10 1/4" Microphone



Model 426B03 1/4" ICP® Preamplifier

TEDS Microphone & Preamplifier Combination:

- 378C10 – TEDS programmed to the IEEE 1451.4 standard for SMART transducers, V 1.0 format

Optional Accessories:

- 426B03 – 1/4" preamplifier, low noise
- 079B03 – 1/4" microphone to 1/2" preamplifier adapter
- HT426E01 – 1/2" preamplifier, high temperature (120°C)
- 079A07 – windscreen for 1/4" microphones
- 079A10 – 1/4" microphone holder
- 079A15 – tripod microphone stand with boom arm
- 079A16 – miniature microphone stand
- 079A18 – clamp on flexible extension arm
- 079B20 – 1/4" Nose Cone for wind tunnel testing
- 079B23 – microphone holder with swivel mount
- CAL200 – handheld calibrator
- ADP024 – 1/4" Adapter for CAL200
- CAL250 – handheld calibrator
- ADP021 – 1/4" adaptor for CAL250
- ACS-20 – microphone calibration
- ACS-42 – microphone and preamplifier system calibration

A2LA, ILAC Accredited initial calibration chart included.

Specifications - 426B03 Preamplifier for 1/4" Pre-polarized 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)



MTS SYSTEMS CORPORATION

3425 Walden Avenue, Depew, NY 14043-2495 USA

Toll-Free in USA 800-828-8840

24-hour SensorLine™ 716-684-0001

Fax 716-684-0987 E-mail info@pcb.com

www.pcb.com

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

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