

# PRO42

## MINIATURE UNIDIRECTIONAL CONDENSER BOUNDARY MICROPHONE

**ProPoint**<sup>®</sup>  
M I C R O P H O N E S



### Description

The PRO42 is a wide-range miniature condenser microphone with a hemi-cardioid (half-space cardioid) polar pattern. It was designed for surface-mounted applications in high-quality sound reinforcement and other demanding sound pickup situations. Its small size makes the PRO42 ideal for use in applications where minimum visibility is required.

The PRO42 features a 25' (7.6 m) permanently-attached miniature cable with an XLRM-type connector, which allows it to be plugged directly into an XLRF-type jack or cable connector. The unit's integral electronics can be powered from any external 9V to 52V DC phantom power source.

Audio-Technica design engineers have utilized the newest low-mass technology in the quest for superior performance. The charge is now on the fixed back plate, rather than the moving element. With the A-T fixed-charge "back plate" construction, a gold-vaporized diaphragm just 2 microns thick (about 0.000079") can be used. This reduces moving mass substantially, improving frequency response and transient response while reducing distortion.

Positioning a properly designed miniature unidirectional microphone centrally on a large, flat, unobstructed surface yields several distinct advantages. Directionality is increased by 3 dB, promoting enhanced gain before feedback and further suppression of ambient noise. Sensitivity is increased for improved signal-to-noise ratio. Phase distortion due to reflected sound energy from the boundary itself is eliminated.

The microphone element is enclosed in a rugged case and protected by heavy perforated steel. The rubber non-slip bottom

pad minimizes mechanical coupling of surface vibrations to the microphone. The low-profile housing has a low-reflectance black finish.

### Operation and Maintenance

The symmetry and area of the mounting surface directly affect the sensitivity of the boundary microphone at low frequencies. Ideally, the mounting surface should be circular; however, square or rectangular surfaces are most often used. If the mounting surface is rectangular, the smaller dimension tends to determine low-frequency cutoff. The microphone should be centered on the surface and positioned with the front of the microphone facing the sound source along the longer dimension of the mounting surface. The sound source should not be below, or higher than 60° above, the plane of the mounting surface.

Output is low impedance balanced. The output connector mates with XLRF-type connectors. The balanced signal appears across Pins 2 and 3, while the ground (shield) connection is Pin 1. Output is phased so that positive acoustic pressure produces positive voltage at Pin 2 in accordance with industry convention.

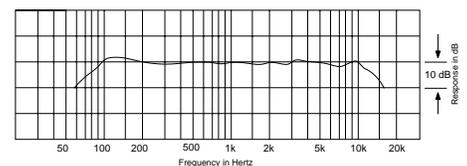
DC phantom power (9-52 volts) must be applied equally to Pins 2 and 3, with the ground for the power supply connected to Pin 1. This can be provided by a console or mixer with built-in phantom voltage or with the addition of an in-line phantom power supply, such as the recommended Audio-Technica CP8506 and AT8801 power supplies.

The high sensitivity of the PRO42 ensures useful output and an excellent match to most mixer, tape recorder and amplifier inputs. It will provide undistorted output even in sound

fields as loud as 134 dB SPL. However, due to the high sensitivity, in some instances it may be possible to overload sensitive input stages. If distortion occurs, *first* check for *input* overload. In such cases, an attenuator such as the Audio-Technica AT8202 may be required between the mic and the electronics input. (Also, many mixers provide "input pad" switches to reduce mic-input signal levels.)

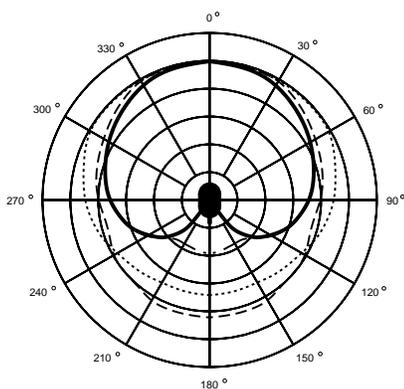
While a modern condenser microphone is not unduly sensitive to the environment, temperature extremes can be harmful. Exposure to high temperatures can result in gradual and permanent reduction of the output level. Avoid leaving the microphone in the open sun or in areas where temperatures exceed 110° F (43° C) for long periods of time. Extremely high humidity should also be avoided.

### Frequency Response



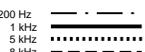
# PRO42

## Polar Pattern



SCALE IS 5 DECIBELS PER DIVISION

### LEGEND



## PRO 42 SPECIFICATIONS†

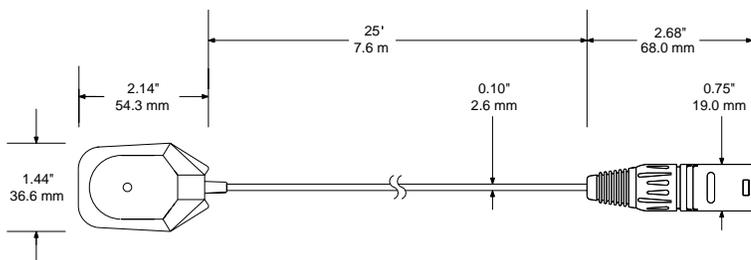
<b>Element</b> .....	Fixed-charge back plate permanently polarized condenser
<b>Polar Pattern</b> .....	Half-cardioid (cardioid in hemisphere above mounting surface)
<b>Frequency Response</b> .....	70-14,000 Hz
<b>Open Circuit Sensitivity</b> .....	-38 dB (12.5 mV) re 1V at 1 Pa*
<b>Impedance</b> .....	100 ohms
<b>Maximum Input Sound Level</b> .....	134 dB SPL, 1 kHz at 1% T.H.D.
<b>Signal-to-noise Ratio</b> † .....	65 dB, 1 kHz at 1 Pa*
<b>Dynamic Range (Typical)</b> .....	105 dB, 1 kHz at Max SPL
<b>Phantom Power Requirements</b> .....	9-52V DC, 2 mA typical
<b>Weight (less cable)</b> .....	1.2 oz (35 grams)
<b>Dimensions</b> .....	1.44" (36.6 mm) max width, 2.14" (54.3 mm) max length, 0.61" (15.5 mm) height
<b>Output Connector</b> .....	3-pin XLRM-type
<b>Cable</b> .....	25' (7.6 m) long (permanently attached to microphone), 0.10" (2.6 mm) diameter, 2-conductor, shielded cable

† In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

\* 1 Pascal = 10 dynes/cm<sup>2</sup> = 10 microbars = 94 dB SPL

† Typical, A-weighted, using Audio Precision System One

## Dimensions



## Optional Accessories:

CP8201 line matching transformer (Lo-Z to 50,000 ohms).

AT8202 adjustable in-line attenuator for use with balanced Lo-Z microphones.

AT8314 2-conductor, shielded, vinyl-jacketed, broadcast-type cable with XLRF-type connector at microphone end, XLRM-type connector at equipment end. Available in 10', 20', 25', 30', 50' & 100' lengths.

CP8506 four-channel 48V phantom power supply (AC powered).

AT8801 single-channel 48V phantom power supply (AC powered).

## One-Year Limited Warranty

Audio-Technica microphones and accessories purchased in the U.S.A. are warranted for one year from date of purchase by Audio-Technica U.S., Inc. (A.T.U.S.) to be free of defects in materials and workmanship. In event of such defect, product will be repaired promptly without charge or, at our option, replaced with a new product of equal or superior value if delivered to A.T.U.S. or an Authorized Service Center, prepaid, together with the sales slip or other proof of purchase date. **Prior approval from A.T.U.S. is required for return.** This warranty excludes defects due to normal wear, abuse, shipping damage, or failure to use product in accordance with instructions. This warranty is void in the event of unauthorized repair or modification.

**For return approval and shipping information,** contact the Service Department, Audio-Technica U.S., Inc., 1221 Commerce Drive, Stow, Ohio 44224.

Except to the extent precluded by applicable state law, **A.T.U.S. will have no liability for any consequential, incidental, or special damages; any warranty of merchantability or fitness for particular purpose expires when this warranty expires.**

This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Outside the U.S.A., please contact your local dealer for warranty details.



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