

U851A

Cardioid Condenser Boundary Microphone



Features

- **PivotPoint® rotating output connector allows cable to exit from either the rear or the bottom of the microphone**
- **Small-diameter UniPoint® cardioid capsule near boundary eliminates phase distortion and delivers clear, high-output performance**
- **Offers the convenience of battery or phantom power operation**
- **Superior off-axis rejection for maximum gain before feedback**
- **UniGuard® RFI-shielding technology offers outstanding rejection of radio frequency interference (RFI)**
- **Self-contained electronics eliminate need for external power module**
- **UniSteep® filter provides a steep low-frequency attenuation to improve sound pickup without affecting voice quality**
- **Available interchangeable elements permit angle of acceptance from 100° to 360°**
- **Heavy die-cast case and non-slip silicon foam bottom pads minimize coupling of surface vibration to the microphone**
- **Low-profile design with low-reflectance finish for minimum visibility**

Description

The U851A is a wide-range condenser microphone with a cardioid polar pattern. It is designed for surface-mount applications such as high-quality sound reinforcement, conferencing, professional recording, television and other demanding sound pickup applications.

The microphone requires 11V to 52V phantom power or a 1.5V AA battery for operation. A battery need not be in place for phantom power operation.

The microphone is equipped with UniGuard® RFI-shielding technology, which offers outstanding rejection of radio frequency interference (RFI).

The microphone's cardioid polar pattern provides a 120° angle of acceptance (cardioid in hemisphere above mounting surface). Additional interchangeable elements with omnidirectional (360°) and hypercardioid (100°) pickup patterns are available.

The microphone includes a 7.6 m (25') permanently attached miniature cable. Its free end connects to the provided AT8531 power module via a special TA3F-type connector designed to optimize RFI immunity. The output of the power module is a 3-pin XLRM-type connector. The microphone is equipped with Audio-Technica's unique PivotPoint® rotating output connector.

A 3-position switch in the power module permits choice of off, on/flat

response, or on/low-roll-off (via integral 80 Hz high-pass UniSteep® filter). The roll-off position reduces the pickup of low-frequency ambient noise.

The microphone comes equipped with a power module, a battery and a soft protective pouch. The microphone's heavy die-cast case and non-slip silicon foam bottom pads minimize coupling of surface vibration to the microphone. The microphone features a low-reflectance black finish.

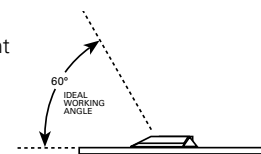
Installation and Operation

The U851A requires 11V to 52V phantom power or a 1.5V AA battery for operation. A battery need not be in place for phantom power operation.

To install the battery, remove the cap from the top of the power module. Insert a fresh 1.5V AA battery ("+" end toward the cap release button), then reassemble the power module. For longest battery life, the switch should remain off except when the microphone is in use. Alkaline batteries are recommended for longest life. Remove the battery during long-term storage.

Output is low impedance (Lo-Z) balanced. The signal appears across Pins 2 and 3; Pin 1 is ground (shield). Output phase is "Pin 2 hot"—positive acoustic pressure produces positive voltage at Pin 2.

The microphone should be placed on a flat, unobstructed mounting surface, with the front of the microphone facing the sound source. The sound source should not be below, or higher than 60° above, the plane of the mounting surface.



A 3-position switch in the power module permits choice of off, on/flat response, or on/low-roll-off (via integral 80 Hz high-pass UniSteep® filter). The roll-off position reduces the pickup of low-frequency ambient noise (such as traffic, air-handling systems, etc.), room reverberation and mechanically coupled vibrations. To engage the UniSteep® filter, slide the switch toward the "bent" line. To turn the microphone on without engaging the UniSteep® filter, slide the switch toward the flat line.

The microphone's PivotPoint® rotating output connector allows the cable to exit from either the rear or the bottom of the microphone without the need for tools or disassembly.

Avoid leaving the microphone in the open sun or in areas where temperatures exceed 110° F (43° C) for extended periods. Extremely high humidity should also be avoided.

Note: Audio-Technica has developed a special RFI-shielding mechanism, which is an integral part of the connectors in the UniPoint® line. If you remove or replace the connector, you may adversely affect the unit's RFI immunity. Audio-Technica offers a crimp tool (ATCT) and RFI shields that enable you to shorten the cable and correctly reinstall the connector while maintaining the highest level of RFI immunity.

Note: Placing any object on a surface (such as a conference table) before its finish is fully cured may result in damage to the finish.

Architect's and Engineer's Specifications

The microphone shall be a fixed-charge condenser designed for use in surface-mount applications. It shall have a cardioid polar pattern with a uniform 120° angle of acceptance (cardioid in hemisphere above mounting surface) and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. The microphone shall operate from an external 11V to 52V DC phantom power source or, alternatively, from a 1.5V AA/UM3 battery. It shall be capable of handling sound input levels up to

U851A

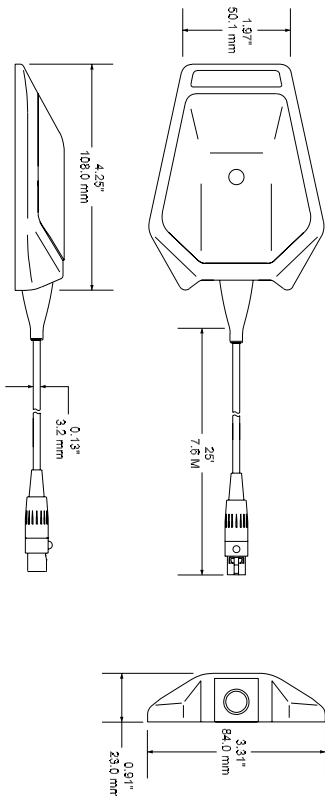
133 dB (phantom) or 123 dB (battery) with a dynamic range of 111 dB (phantom) or 101 dB (battery). Nominal open-circuit output voltage shall be 10.0 mV (phantom) or 8.9 mV (battery) at 1 V, 1 Pascal. Output shall be low impedance balanced (200 ohms – phantom, 270 ohms – battery). It shall offer outstanding rejection of radio frequency interference (RFI).

The microphone shall have a 7.6 m (25') permanently attached miniature cable terminating in a special TA3F-type output connector designed to optimize RFI immunity. The output connector shall connect to a TB3M-type jack on the included power module. The power module shall house the battery, and shall contain a switch that permits choice of off, on/flat response, or on/low-roll-off (80 Hz). The output of the power module shall be a 3-pin XLRM-type connector.

The microphone shall be equipped with an integral rotating output connector that allows the cable to exit from either the rear or the bottom of the microphone without the need to disassemble the microphone or use tools to change the cable exit location.

The microphone shall have a maximum width of 84.0 mm (3.31"), a maximum length of 108.0 mm (4.25") and a maximum height of 23.0 mm (0.91"). Weight shall be 244 grams (8.6 oz). The microphone shall be housed in a die-cast case with a perforated steel grille. Finish shall be low-reflectance black. The microphone shall include a power module, a battery and a soft protective pouch.

The Audio-Technica U851A is specified.



Specifications

Element	Fixed-charge back plate, permanently polarized condenser
Polar pattern	Half-cardioid (cardioid in hemisphere above mounting surface)
Frequency response	30-20,000 Hz
Low frequency roll-off	80 Hz, 18 dB/octave
Open circuit sensitivity	Phantom: -40 dB (10.0 mV) re 1V at 1 Pa Battery: -41 dB (8.9 mV) re 1V at 1 Pa
Impedance	Phantom: 200 ohms Battery: 270 ohms
Maximum input sound level	Phantom: 133 dB SPL, 1 kHz at 1% T.H.D. Battery: 123 dB SPL, 1 kHz at 1% T.H.D.
Dynamic range (typical)	Phantom: 111 dB, 1 kHz at Max SPL Battery: 101 dB, 1 kHz at Max SPL
Signal-to-noise ratio¹	72 dB, 1 kHz at 1 Pa
Phantom power requirements	11-52V DC, 2 mA typical
Battery type	1.5V AA/UM3
Battery current / life	0.4 mA / 1200 hours typical (alkaline)
Switch	Off, on-flat, on-roll-off
Weight	Microphone: 244 g (8.6 oz) Power module: 139 g (4.9 oz)
Dimensions	Microphone: 108.0 mm (4.25") maximum length, 84.0 mm (3.31") maximum width, 23.0 mm (0.91") maximum height, Power module: 84.0 mm (3.31") H x 63.0 mm (2.48") W x 22.0 mm (0.87") D
Output connector	Power module: Integral 3-pin XLRM-type
Cable	7.6 m (25.0') long (permanently attached to microphone), 3.2 mm (0.13") diameter, 2-conductor, shielded cable with TA3F-type connector
Optional interchangeable elements	UE-O omnidirectional (360°) UE-H hypercardioid (100°)
Accessories furnished	AT8531 power module; battery; soft protective pouch

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

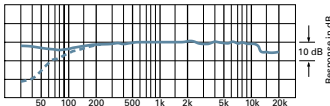
1 Pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL

¹ Typical, A-weighted, using Audio Precision System One.

Specifications are subject to change without notice.

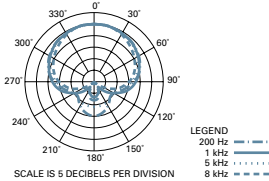


frequency response: 30–20,000 Hz



LEGEND — 12° or more on axis
--- Roll-off

polar pattern



LEGEND
200 Hz
1 kHz
5 kHz
8 kHz



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