

ATM41a CARDIOID DYNAMIC VOCAL MICROPHONE

Description

The Model ATM41a is a wide-range moving coil dynamic microphone with a cardioid pickup pattern. It was specifically designed for use in high quality sound reinforcement systems and to meet the needs of professional musicians. It is also excellent for studio and remote broadcasting and recording as well as serious amateur recording.

The ATM41a is particularly suited to applications requiring unusual dependability where quality sound reproduction cannot be sacrificed. Response is tailored to provide natural, full-range reproduction when used by vocal and instrumental performers at very short distances. The over-size windscreen and internal blast filters protect against excessive pickup of wind noises, breath, and sibilant sounds, as well as "P-popping". It also features balanced low-impedance output and professional-quality connectors.

Extensive laboratory testing and development of every facet of performance distinguishes the Model ATM41a. Rigid quality standards and precise manufacturing techniques insure performance levels equal to the finest microphones available.

A low-mass diaphragm and voice coil assembly are combined with a high-efficiency magnetic circuit to provide excellent fidelity and sensitivity to match most electronic circuits.

The cardioid (unidirectional or "heart-shaped") polar pattern of the ATM41a is more sensitive to sounds originating directly in front of the element than to sounds coming from the sides or rear. Unidirectional microphones are useful in controlling feedback, reducing pickup of unwanted sounds such as audience noise or excess reverberation. Or they can be used to allow greater microphone-to-performer distance with equal noise, compared to an omnidirectional microphone. They are widely used to provide isolation between artists during performances and while recording.

When used ultra-close the ATM41a provides extra bass emphasis (also called proximity effect) which can be used to achieve



a fuller sound or to further reduce feedback and unwanted noise in conjunction with equalization of the microphone input.

Its relatively high sensitivity assures useful output and an excellent match to most mixers, tape recorders, or amplifier inputs. It will provide undistorted output even in very intense sound fields. Sometimes, however, an attenuator such as the Audio-Technica Model AT8202 may be required between the microphone and amplifier to avoid overloading sensitive input stages.

The Model ATM41a is enclosed in a rugged housing with a low-reflectance matte finish. An improved internal shock mount provides effective isolation of the microphone capsule from handling and cable noise. A built-in cable connector mates with professional XLR-type connectors. The tapered slip-in microphone clamp permits mounting on any microphone stand with 5/8"-27 threads.

A compact, shock-absorbing carrying case is provided to hold and protect the microphone and stand clamp. A line of accessories is also available from your A-T dealer.

Operation and Maintenance

Output is balanced low impedance. The output connector mates with XLR cable 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.

For balanced low-impedance inputs, Model AT8314 cable (or equal) can be used. An accompanying drawing shows the wiring used at the equipment end of this cable. Note that other manufacturers may employ other color codes for cable conductors. Regardless of color code it is important that both ends of each cable are wired consistently, with the shield always connected to Pin 1, Pin 2 connected to Pin 2, and Pin 3 to Pin 3. This will assure that all microphones are electrically in phase and reduce problems of uneven response and sound cancellation when two micro-

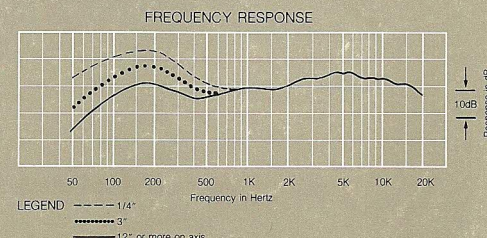
phones are used in close proximity to each other.

For unbalanced low-impedance inputs, Model AT8312 cable (or equal) is recommended. A 1/4-inch phone plug is prewired to the equipment end of this cable as shown in the drawing.

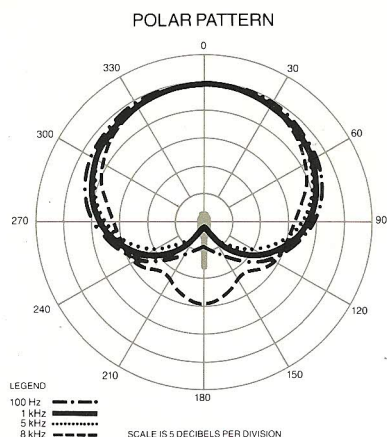
For use into a high impedance input, use Model AT8314 cable (or equal) with a Model AT8201 Line Matching Transformer which has an integral 1/4-inch phone plug output. Locating the transformer at the equipment input minimizes pickup of noise and hum, typical problems of long high-impedance lines. Use of the CP8305 Hi-Z transformer cable is also recommended.

To check for phasing of any two microphones, connect them both to the same input (using a "Y" connector) and speak into both while holding them close together. If output is reduced or distortion is higher than with a single microphone at the same volume setting, reverse the phase of one microphone by interchanging the signal wires of one cable.

While every effort has been made to provide an extremely rugged microphone, reasonable care should be taken to avoid abuse. The microphone can withstand a wide range of temperatures and humidity without damage. Care should be observed to keep foreign particles from entering the windscreen. If the microphone is exposed to an environment with small iron or steel filings (on a workbench, for example) these fine metal particles can accumulate on the diaphragm, reducing low frequency response. Excessive accumulation of dirt on the windscreen will reduce high frequency response.



ATM41a



ATM41a SPECIFICATIONS†

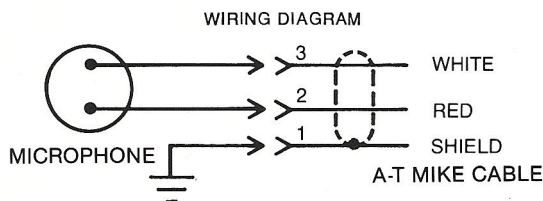
ELEMENT	Moving Coil Dynamic
POLAR PATTERN	Cardioid (Unidirectional)
FREQUENCY RESPONSE	50 - 16,000 Hz
SENSITIVITY	- 55.5 dBm (0 dB = 1mW/1 Pa*)
OPEN CIRCUIT SENSITIVITY	1.7 mV (- 55.5 dB re 1V/1 Pa*)
IMPEDANCE	250 ohms
WEIGHT (less cable and clamp)	10 ozs. (283 grams)
DIMENSIONS	7-5/32" (182mm) long, 2-1/8" (54.2mm) head diameter, 1-15/16" to 13/16" (33mm to 21mm) tapered body diameter.
OUTPUT CONNECTOR	Integral 3-pin XLRM
ACCESSORIES FURNISHED	Model AT8406 Tapered Clamp for standard 5/8"-27 threaded stands. Carrying case. Soft vinyl protective pouch.

OPTIONAL ACCESSORIES

- Model AT8114 Windscreen.
- Model AT8201 Line Matching Transformer (Lo-Z to 50,000 ohms.)
- Model AT8202 In-Line Attenuator for use with low-impedance microphones.
- Model CP8305 16½ ft. (5m) 2-conductor, shielded vinyl-jacketed, broadcast-type cable with XLRM connector at microphone end, Lo-Z to Hi-Z transformer with ¼" phone plug output at equipment end.
- Model AT8312 2-conductor, shielded, vinyl-jacketed, broadcast-type cable with XLRM connector at microphone end, ¼" phone plug at equipment end. Available in 10', 20' & 25' lengths.
- Model AT8314 2-conductor, shielded, vinyl-jacketed, broadcast-type cable with XLRM connector at microphone end, XLRM connector at equipment end. Available in 10', 20', 25', 30', 50', & 100' lengths.
- Model AT8407 Universal Clothes-pin Stand Clamp fits both tapered and cylindrical microphones.
- Model AT8410a Shock Mount for boom or stand operation. Universal "Clothes-pin" Stand Clamp.
- Model AT8415 Shock Mount for boom or stand operation.

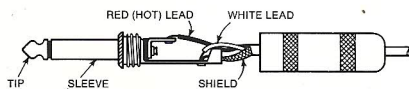
†In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

*1 Pascal = 10 dynes/cm² = 10 microbars

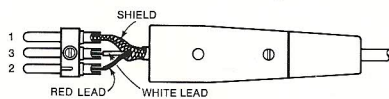


Positive (inward) pressure on diaphragm produces positive voltage at Pin #2.

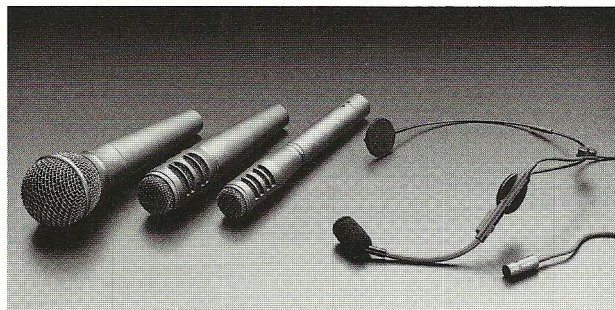
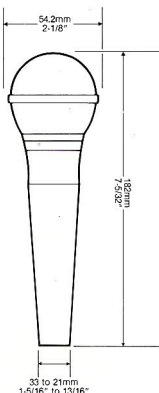
¼" PHONE PLUG WIRING LOW IMPEDANCE, UNBALANCED



XLRM PLUG WIRING LOW IMPEDANCE, BALANCED



DIMENSIONS



ARTIST SERIES MICROPHONES
Left to Right: ATM41a, ATM63, ATM33R, ATM73, ATM15



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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.

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