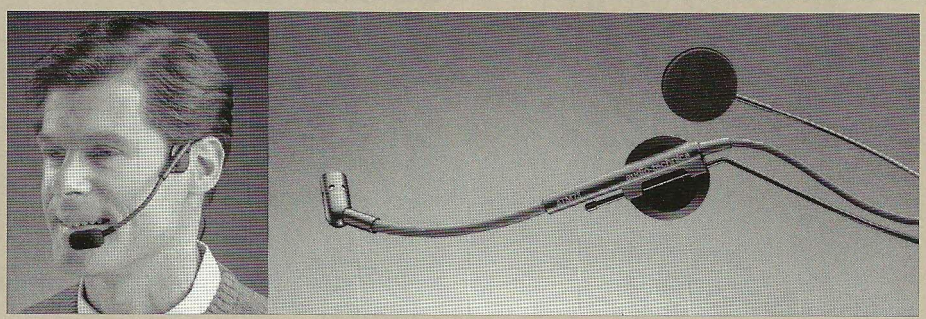
audio-technica®

ARTIST SERIES MICROPHONES

ATM73a
HEAD-WORN CARDIOID CONDENSER MICROPHONE



Description

The ATM73a head-worn microphone is a miniature condenser microphone with a cardioid polar pattern, mounted in a wearable support system. It has been designed for use by performing musicians and others who require professional-quality vocal pickup with hands-free operation. The ATM73a provides improved gain before feedback that normally cannot be achieved with miniature omnidirectional microphones. Close-up voice pickup is crisp and clean, while suppression of background noise is significantly improve d over that of full-size, stand-mounted cardioid microphones.

Audio-Technica design engineers have utilized the newest low-mass condenser 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, improving frequency response and transient response while reducing distortion, and eliminates the external power supply of earlier condenser designs. The ATM73a can be powered from an external 5V to 52V DC phantom supply or from a standard AA/UM3 1.5V battery (supplied). Current demands are low, and an alkaline battery should provide about 1000 hours of intermittent use.

The microphone element is enclosed in a rugged housing with low-reflectance finish. Internal construction is designed to minimize noise from motion and contact. A 3' (0.9 m) cable is provided between the microphone and power module. A built-in 3-position switch on the power module allows selection of battery off, battery on/flat response, or battery on/low-roll-off. In the phantom power mode the battery is bypassed, while selection of flat and roll-off is still available via the switch.

Operation and Maintenance

To install the battery, remove the cap from the top of the power module. Insert the battery, being certain to observe battery polarity as marked (+ end toward the cap release button). The switch controls both battery and microphone output (except in phantom power mode), and should remain off except when the microphone is in use for longest life. While standard carbon-zinc AA batteries will operate the microphone satisfactorily, alkaline or mercury cells are preferred for longer service life. Only "leakproof" batteries should be used. The battery does not have to be in place to use in phantom power mode. Phantom power requires 5V to 52V DC.

For minimum visibility, the headband is worn on the back of the head. The self-positioning cushioned support pads normally rest just above the user's ears (see photo), and are adjustable to fit any head size. The headset is designed so the microphone descends from the left support pad. The microphone is located at the end of a 2.64" flexible gooseneck. This gooseneck is covered by a moisture proof protective tubing to prevent deterioration, and to keep the gooseneck from catching on facial hair. An open-pore foam windscreen simply slips over the head of the microphone to reduce wind noise and "popping." The power module may be worn on the belt (utilizing the belt clip) or located in any convenient place.

Output is low impedance balanced. The output connector mates with XLRF-type 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 unbalanced low-impedance inputs, Model AT8312 Cable (or equal) is recommended. A 1/4" 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). Plug this cable into the Model CP8201 Line Matching Transformer, which has an integral 1/4" phone plug for connecting directly to the amplifier input. Locating the transformer at the equipment input minimizes pickup of noise and hum, typical problems experienced with long high-impedance lines.

While a modern condenser microphone is not unduly sensitive to humidity, 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 areas where the temperature exceeds 110° F (43° C) for appreciable periods of time. Extremely high humidity should also be avoided if possible.

Architects and Engineers Specifications

The microphone shall be a head-worn miniature fixed-charge condenser with a cardioid polar pattern and a frequency response of 60 Hz to 15,000 Hz. It shall be capable of operating from an external 5V to 52V DC phantom power source or, alternatively, from a 1.5V AA/UM3 battery. Output with power module shall be low impedance balanced (200 ohms). Nominal open-circuit output voltage shall be 1.6 mV at 1 kHz/1 Pascal.

The microphone shall have a 3' (0.9 m) cable permanently attached to a power module. The power module shall house the battery and contain an off/on/low-roll-off switch. The power module shall terminate in a 3-pin XLRM-type connector.

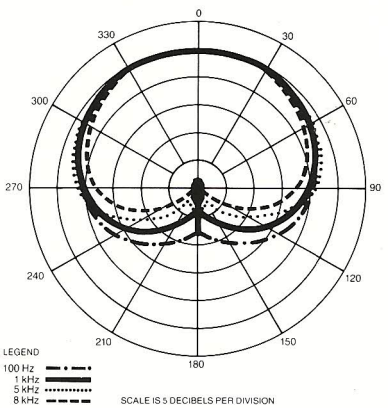
The microphone shall weigh 1.1 oz. (31.2 g) and shall be finished in low-reflectance matte black.

The Audio-Technica ATM73a is specified.

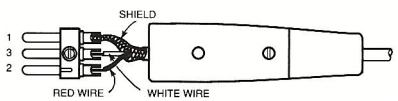
FREQUENCY RESPONSE

ATM73a

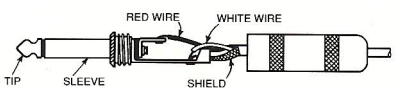
POLAR PATTERN



XLRM-TYPE PLUG WIRING
LOW IMPEDANCE BALANCED



1/4" PHONE PLUG WIRING
LOW IMPEDANCE UNBALANCED



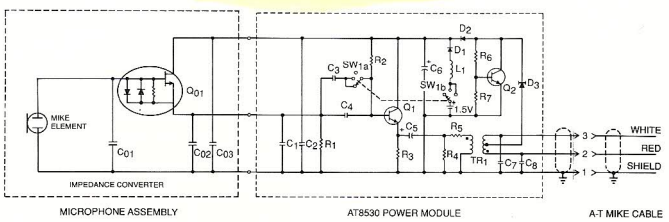
ATM73a SPECIFICATIONS†

ELEMENT	Miniature, fixed-charge back plate permanently polarized condenser
POLAR PATTERN	Cardioid (Unidirectional)
FREQUENCY RESPONSE	60-15,000 Hz
SENSITIVITY	–55 dB (0 dB = 1 mW/1 Pa*)
OPEN CIRCUIT SENSITIVITY	1.6 mV (–56 dB re 1V/1 Pa*)
IMPEDANCE	200 ohms
MAXIMUM INPUT SOUND LEVEL	135 dB SPL, 1 kHz at 1% T.H.D.
SIGNAL-TO-NOISE RATIO	Greater than 60 dB at 1 kHz/1 Pa*
BATTERY TYPE	Use only "leakproof" AA/UM3 1.5V battery
BATTERY CURRENT	1 mA typical
BATTERY LIFE	1000 hours (alkaline battery)
PHANTOM POWER REQUIREMENTS	5-52V DC, 2 mA typical
SWITCH	Off, on-flat, on-roll-off (battery) On-flat, on-roll-off (phantom power)
WEIGHT (LESS CABLE AND ACCESSORIES)	
HEADSET	1.1 oz (31.2 grams)
POWER MODULE	5.2 oz (147.4 grams)
DIMENSIONS	
HEADSET	6.49" (165.0 mm) nominal at widest point, 2.64" (67.0 mm) gooseneck
MICROPHONE	0.98" (25.0 mm) long, 0.39" (10.0 mm) dia.
POWER MODULE	3.27" (83.0 mm) H x 2.48" (63.0 mm) W x 0.87" (22.0 mm) D
OUTPUT CONNECTOR	Integral 3-Pin XLRM-type, phased
CABLE	Integral 3' (0.9 m) long, 0.10" (2.6 mm) diameter cable is permanently attached between microphone and power module.
ACCESSORIES FURNISHED	Windscreen; battery

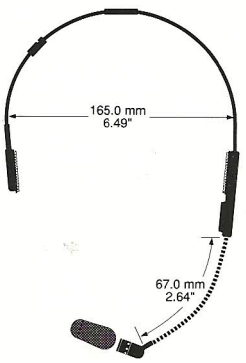
† In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

* 1 Pascal = 10 dynes/cm² = 10 microbars

ATM73a WIRING DIAGRAM

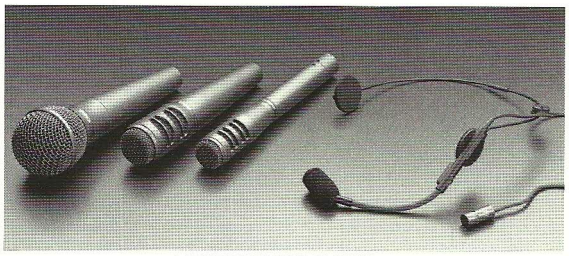


ATM73a DIMENSIONS



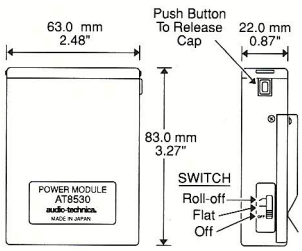
Optional Accessories:

- Model CP8201 line matching transformer (Lo-Z to 50,000 ohms).
- Model 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.
- Model CP8506 4-channel 48V phantom power supply. (AC powered)
- Model CP8508 single-channel 24V phantom power supply. (AC powered)



ARTIST SERIES MICROPHONES
ATM63, ATM33R, ATM61HE, ATM25, ATM41HE, ATM71, ATM15a

AT8530 POWER MODULE DIMENSIONS



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.

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