ATM250DE

audio-technica

Dual-Element Instrument Microphone

artist series live sound microphones

Features

- **Dual-element design features two elements (condenser and dynamic) enclosed in a single housing**
- **Perfect for kick drum, guitar amps, percussion and other instruments**
- **Dynamic element with rare-earth magnet provides punch and attack, while the condenser element captures full audio spectrum**
- **Elements are positioned in a perfect phase relationship, something practically unachievable with two separate microphones**
- **Includes a 5 m (16.5') cable (5-pin XLRF-type to two standard 3-pin XLRM-type connectors) for separate control over each element**
- **Robust all-metal design for enduring dependability on the road**
- **Isolation clamp provides secure mounting, versatile positioning, and effective dampening of unwanted mechanical noise**
- **Integral 80 Hz high-pass filter switch and 10 dB pad switch (condenser element)**

Description

The ATM250DE dual-element instrument microphone features cardioid condenser and hypercardioid dynamic capsules enclosed in a single housing. Audio-Technica developed the revolutionary dual-element design to offer the distinct advantages of two different capsule types (condenser and dynamic) positioned in a perfect phase relationship, something practically unachievable with two separate microphones. Designed especially for kick-drum pickup, the ATM250DE also provides exceptional audio reproduction for a wide range of musical instruments.

The microphone requires 11V to 52V phantom power only to the condenser output of the supplied cable.

The microphone includes a 5 m (16.5') output cable terminating in a 5-pin XLRF-type to two standard 3-pin XLRM-type connectors for separate control over each element. The output of the microphone is a 5-pin XLRM-type connector.

The microphone's condenser element is equipped with a switchable 10 dB pad and a switch that permits choice of flat response or low-frequency roll-off (via integral 80 Hz high-pass filter).

The microphone is enclosed in a rugged housing with a multi-stage grille design. The included AT8471 isolation clamp permits mounting on any microphone stand with $^{5}/_{8}$"-27 threads. A soft protective pouch is also included.

Operation and Maintenance

The ATM250DE requires 11V to 52V phantom power only to the condenser output of the supplied cable.

Output is low-impedance (Lo-Z) balanced. The included 5 m (16.5') shielded cable features a 5-pin XLRF-type input connector and two standard 3-pin XLRM-type output connectors. The balanced signals appear across Pins 2 and 3 (condenser) and Pins 4 and 5 (dynamic). Pin 1 is ground (shield). Output is phased so that positive acoustic pressure produces positive voltage at Pins 2 and 4.

To avoid phase cancellation and poor sound, all mic cables must be wired consistently: Pin 1-to-Pin 1, etc.

An integral 80 Hz hi-pass filter on the condenser element provides easy switching from a flat frequency response to a low-end roll-off. 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 high-pass filter, use the end tip of a paperclip or other small pointed instrument to slide the switch toward the "bent" line.

The microphone is also equipped with a switchable 10 dB pad on the condenser element that lowers the microphone's sensitivity, thus providing higher SPL capability for flexible use with a wide range of users and system configurations. To engage the 10 dB pad, use the end tip of a paperclip or other small pointed instrument to slide the switch toward the -10 position.

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. Take care to keep foreign particles from entering the windscreen. An accumulation of iron or steel filings on the diaphragm, and/or foreign material in the windscreen's mesh surface, can degrade performance.

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Specifications

Elements	Condenser, dynamic
Polar patterns	Cardioid (condenser) Hypercardioid (dynamic)
Frequency response	40-20,000 Hz (condenser) 40-15,000 Hz (dynamic)
Low frequency roll-off	80 Hz, 12 dB/octave (condenser)
Open circuit sensitivity	–49 dB (3.5 mV) re 1V at 1 Pa (condenser) –53 dB (2.2 mV) re 1V at 1 Pa (dynamic)
Impedance	50 ohms (condenser) 600 ohms (dynamic)
Maximum input sound level	148 dB SPL, 1 kHz at 1% T.H.D. (condenser); 158 dB SPL, with 10 dB pad (nominal)
Dynamic range (typical)	122 dB, 1 kHz at Max SPL (condenser)
Signal-to-noise ratio[1]	68 dB, 1 kHz at 1 Pa (condenser)
Phantom power requirements	11-52V DC, 3.5 mA typical (condenser)
Switches	Flat, roll-off; 10 dB pad (condenser only)
Weight	320 g (11.3 oz)
Dimensions	143.6 mm (5.65") long, 55.0 mm (2.17") diameter
Output connector	Integral 5-pin XLRM-type
Cable	5.0 m (16.5') dual shielded, 8-conductor cable, 5-pin XLRF-type connector at microphone, two 3-pin XLRM-type output connectors
Audio-Technica case style	R9
Accessories furnished	AT8471 isolation clamp for $^5/_8$"-27 threaded stands; $^5/_8$"-27 to $^3/_8$"-16 threaded adapter; soft protective pouch

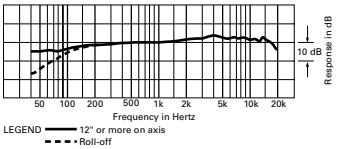
In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

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

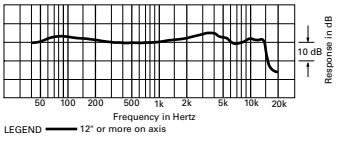
[1] Typical, A-weighted, using Audio Precision System One.

Specifications are subject to change without notice.

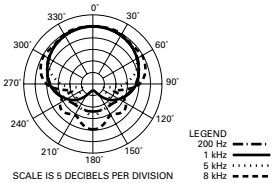
condenser frequency response:
40–20,000 Hz



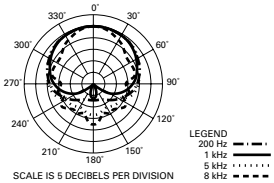
dynamic frequency response:
40–15,000 Hz



condenser polar pattern



dynamic polar pattern



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