

Engineered Sound®

[Description]

The ES993 is a dual-element cardioid condenser microphone with a remote dual power module. It is designed especially for applications requiring separate miking for PA and broadcast. The circuit grounds for each channel are completely isolated, greatly reducing the potential for hum. The rigid-pipe design with ball-in-socket base permits flexible positioning.

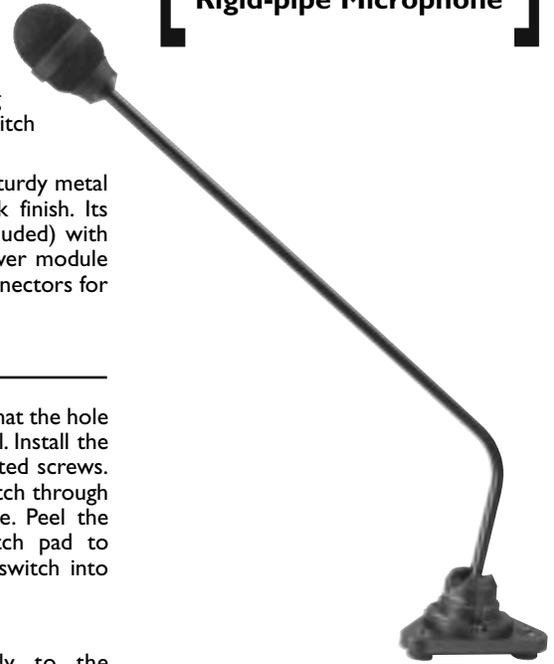
Each of the cardioid elements in the microphone is shock mounted. The cardioid polar pattern of the elements provides a 120° angle of acceptance. Additional user-interchangeable hypercardioid (100°) and omnidirectional (360°) elements are available. The ES993 is designed with dual integral wind-screens to ensure maximum security against wind noise and plosives.

The remote power module can be powered from any external 11V to 52V DC phantom

power supply. Low-frequency roll-off (120 Hz, 12 dB/octave) is integral to the microphone's design. The microphone also includes a remote mute switch with three modes (push-to-mute, toggle, and push-to-talk) and LED indicator light. Mute switching is made possible using optical coupling, which prevents the two elements' signal paths from contacting one another physically, alleviating conflicting grounds. A 15 dB pad switch is housed in the power module.

The microphone is enclosed in a sturdy metal housing with a low-reflectance black finish. Its base is a table mount (hardware included) with remote dual power module. The power module has two 3-pin XLRM-type output connectors for use with in-house and remote feeds.

ES993 Dual-element Cardioid Condenser Rigid-pipe Microphone



[Installation and Operation]

The ES993 requires a phantom power supply of 11–52V DC for each element. Output is low-impedance balanced. 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.

The ES993 microphone is intended for mounting to a hard surface such as a table, desk, or podium. The microphone is supplied with four #6 x 1/2" black oxide wood screws for mounting the AT8510 power module, three #8 x 1" black oxide wood screws for mounting the microphone, and two #6 x 1/2" zinc-plated wood screws for mounting the switch bezel.

To install the microphone:

Drill a 4 mm (5/32") hole centered in the area where the microphone mount is to be positioned. Pass the cable extending from the microphone mount through this hole, and then mount the microphone into position using the three #8 x 1" screws.

To install the power module:

1. Be certain to set internal switches SW1 and SW2 for desired output level and muting operation prior to installing the power module. To access the circuit board, remove the four side screws and the four top screws on the top cover. On the circuit board, set the switches (SW1 and SW2) to the desired settings. SW1 may be set to Normal or 15 dB Pad. SW2 may be set to Mute, Toggle, or Talk.

2. Find a convenient location on the underside of the mounting surface to install the power module, keeping in mind that the flex cable from the remote switch to the power module is eight inches long. Mount the power module into position using the four #6 x 1/2" black oxide screws.

To install the remote switch:

Install this switch if you plan to use the mute feature. You may install the microphone without the mute switch if muting is not needed.

Drill a 10 mm (3/8") hole centered in the area where the remote switch is to be installed.

Position the remote switch bezel so that the hole lines up with the oval cut in the bezel. Install the bezel using the two #6 x 1/2" zinc-plated screws. Pass the flex cable of the remote switch through the holes in the bezel and the table. Peel the backing from the rear of the switch pad to expose the adhesive, and press the switch into position on the bezel.

Final connection:

1. Attach the connector assembly to the microphone cable. A small, flat-blade screwdriver is required for this procedure.

- The braided shield wire connects to pin 1.
- The green, grey, red, blue, yellow, and white wires connect to pins 2–7, respectively.
- Tighten the binding screws securely and test mic wires to make certain they are secure.

2. Connect the remote switch flex cable to pins 1–3 on the power module. The flex cable is in the correct position if the printed "1" on the cable matches up with the #1 position on the connector. (For your convenience, the position numbers are also printed on the top cover of the power module.)

3. Connect the female 7-pin terminal of the mic cable to pins 4–10 on the power module. Observe the keying of the connector as it is inserted.

4. Connect the in-house and broadcast cables to the 3-pin XLRM outputs. It is highly recommended to connect the primary in-house feed to Mic Out A and the remote feed to Mic Out B.

ATTENTION! For muting to operate, Channel A must be connected. If only Channel B output is used, the microphone element will operate, but the mute function will not.

While a modern condenser microphone is not unduly sensitive to the environment, temperature extremes can be harmful. 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.



audio-technica®

[ES993 Specifications†]

| | |
|--|---|
| Elements | Two fixed-charge back plate permanently polarized condensers |
| Polar Pattern | Cardioid |
| Frequency Response | 90–15,000 Hz |
| Low-frequency Roll-off | Fixed 120 Hz, 12 dB/octave |
| Open Circuit Sensitivity | –41 dB (8.9 mV) re 1V at 1 Pa ¹ |
| Impedance | 250 ohms |
| Maximum Input Sound Level | 138 dB SPL, 1 kHz at 1% T.H.D. |
| Dynamic Range (Typical) | 109 dB, 1 kHz at Max SPL |
| Signal-to-noise Ratio¹ | 65 dB, 1 kHz at 1 Pa ¹ |
| Switches | SW1: Normal /– 15 dB; SW2: Mute/ Toggle/Talk (on circuit board) |
| Phantom Power Requirements | 11–52V DC, 3 mA typical |
| Weight | |
| Microphone (less cable) | 12.0 oz (340 g) |
| Power Module | 7.5 oz (214 g) |
| Dimensions | |
| Microphone | 18.50" (469.9 mm) maximum length, 1.51" (38.4 mm) head diameter |
| Power Module | 5.12" (130.0 mm) long, 1.73" (44.0 mm) high, 2.36" (60.0 mm) wide |
| Output Connectors (Power Module) | Two 3-pin XLRM-type |

Cables 18" (457.2 mm) long (permanently attached to microphone), 6-conductor shielded cable, attaches to power module. 8" (203.2 mm) long, 3-conductor remote switch flex cable, attaches to power module

Accessories Furnished AT8510 power module, membrane switch, membrane switch bezel, four #6 x 1/2" black oxide wood screws for AT8510, three #8 x 1" black oxide wood screws for microphone mount, two #6 x 1/2" zinc-plated wood screws for switch bezel mount

Optional Interchangeable Elements ESE-H hypercardioid (100°)
ESE-O omnidirectional (360°)

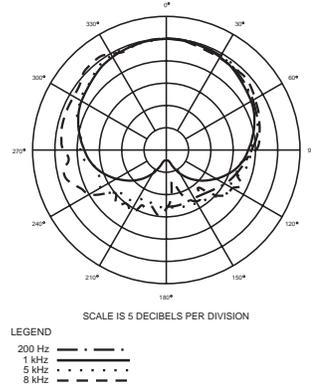
[†] In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

^{*} 1 Pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL

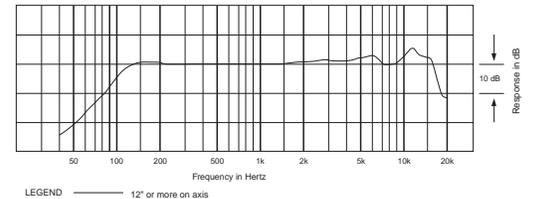
¹ Typical, A-weighted, using Audio Precision System One.

Specifications are subject to change without notice.

[Polar Pattern]



[Frequency Response]



[Architects and Engineers Specifications]

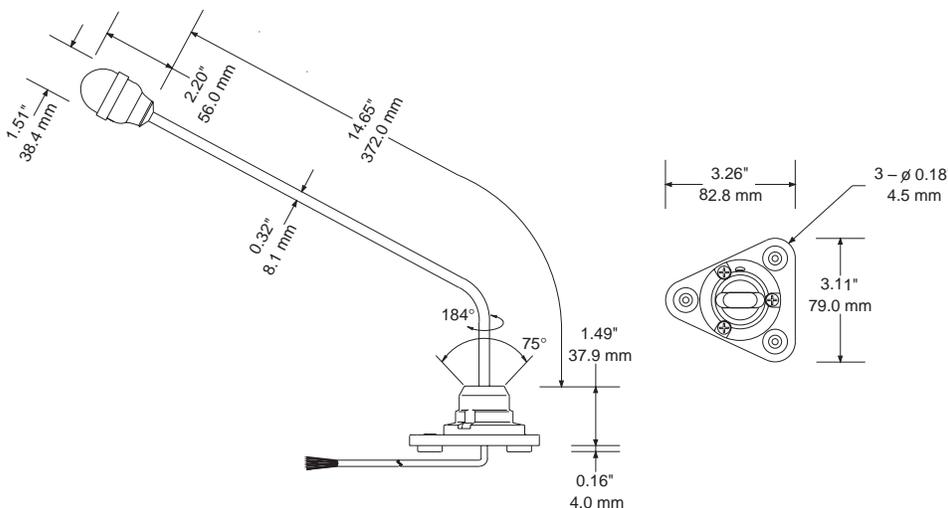
The microphone shall be a dual-element, fixed-charge condenser with a frequency response of 90 Hz to 15,000 Hz and a cardioid polar pattern with uniform 120° angle of acceptance. It shall contain two shock-mounted cardioid elements with optically coupled isolated grounds. It shall operate from an external 11V to 52V DC phantom power source. It shall be capable of handling sound input levels up to 138 dB with a dynamic range of 109 dB. It shall have a fixed low-frequency roll-off of 120 Hz, 12 dB/octave. Output shall be low-impedance balanced (250 ohms).

The microphone shall be a small-diameter, rigid-pipe design. The microphone shall have a separate dual power module with two 3-pin XLRM-type connectors for direct connection to 3-pin XLRF-type cables. The circuit board shall include a switch for 15 dB pad, as well as a three-mode mute switch.

The microphone's overall length shall be 18.50" (469.9 mm). Head diameter shall be 1.51" (38.4 mm). The microphone assembly (less cable) shall weigh 12.0 oz (340 g). The power module dimensions shall be 5.12" (130.0 mm) W x 1.73" (44.0 mm) H x 2.36" (60.0 mm) D. The power module shall weigh 7.5 oz (214 g). Finish shall be low-reflectance black.

The Audio-Technica ES993 is specified.

[Dimensions]



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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.

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.



Audio-Technica U.S., Inc.

1221 Commerce Drive, Stow, Ohio 44224