

Description

The AT891R is a wide-range condenser microphone with an hemi-cardioid (half-space cardioid) polar pattern. It was designed for surface-mount applications in high-quality sound reinforcement, conferencing and other demanding sound pickup situations. Its small size makes the AT891R suitable for use in applications where minimum visibility is required.

The AT891R features a touch-sensitive on/off switch offering three choices of switching modes: on/off, momentary on and momentary off. A switch located on the bottom of the microphone selects the desired mode. A red LED on the unit indicates when the microphone is "on."

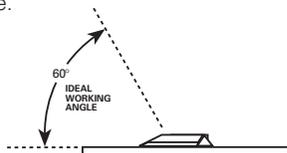
Positioning a properly designed miniature microphone centrally on a large, flat, unobstructed surface yields several distinct advantages. Directionality is increased by 3 dB, promoting enhanced gain before feedback and further suppression of ambient noise. Sensitivity is increased for improved signal-to-noise ratio. Phase distortion due to reflected sound energy from the boundary itself is eliminated.

The AT891R can be powered from any external 11V to 52V DC phantom power supply. A switch on the bottom of the unit permits choice of flat response or low-frequency roll-off to help control undesired ambient noise. A 25' (7.6 m) shielded cable with TA3F and XLRM-type connectors is provided for use between the microphone and electronics inputs.

The microphone is enclosed in a rugged case and protected by two layers of perforated steel. The rubber non-slip bottom pad minimizes mechanical coupling of surface vibrations to the microphone. The low-profile housing has a low-reflectance black finish.

Installation and Operation

The symmetry and area of the mounting surface directly affect the sensitivity of the boundary microphone at low frequencies. Ideally, the mounting surface should be circular; however, square or rectangular surfaces are most often used. If the mounting surface is rectangular, the smaller dimension tends to determine low-frequency cutoff. The microphone should be centered on the surface and positioned with the front of the microphone facing the sound source along the larger dimension of the mounting surface. The sound source should not be below, or higher than 60° above, the plane of the mounting surface.



The AT891R requires 11-52V phantom power which operates the microphone and switch circuitry. The electronics in the microphone take up to 30 seconds to stabilize after

power is applied; during this start-up period, some thumps or other sonic disturbances may be heard upon switching if the system is "live."

A touch-sensitive on/off switch on the AT891R offers three choices of switching modes. A switch located on the bottom of the microphone selects the desired mode. **TOUCH ON/OFF:** Touch the on/off switch once to turn mic on, touch again to turn off. **MOM. (Momentary) ON:** Mic is on only while the switch is being touched ("press to talk"). **MOM. OFF:** Mic is off only while the switch is being touched ("press to mute" function). The red LED on the top of the unit indicates when the microphone is "on."

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.

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.

Architects and Engineers Specifications

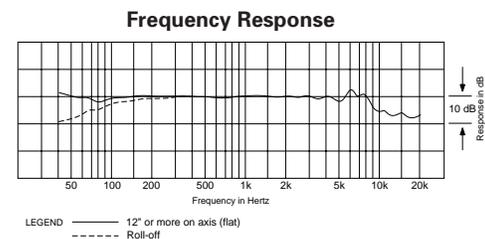
The microphone shall be a fixed-charge condenser with a unidirectional polar pattern designed for use in surface-mount boundary applications. The frequency response shall be 30 Hz to 10,000 Hz. The microphone shall operate from an external 11V to 52V DC phantom power source. Nominal open-circuit output voltage shall be 22.4 mV at 1 kHz, 1 Pascal. Output shall be low impedance balanced (200 ohms).

The microphone shall have a touch-sensitive switch that may be set for any of three switching modes: on/off, momentary on, momentary off. The microphone shall include a switch for low-frequency roll-off.

A 25' (7.6 m) cable with TA3F to XLRM-type connectors shall be supplied for connection between the microphone and electronics input. The microphone shall have a maximum width of 2.87" (73.0 mm) and a maximum length of 4.33" (110.0 mm). Weight shall be 2.6 oz (74 grams). The microphone shall be housed in a rugged case with a two-layer perforated steel grille. Finish shall be low-reflectance black.

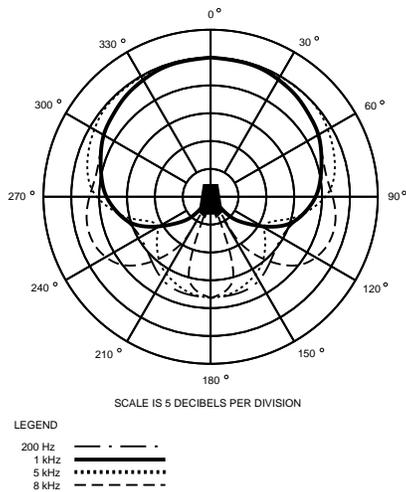
The Audio-Technica AT891R is specified.

AT891R UNIDIRECTIONAL CONDENSER BOUNDARY MICROPHONE WITH SWITCH

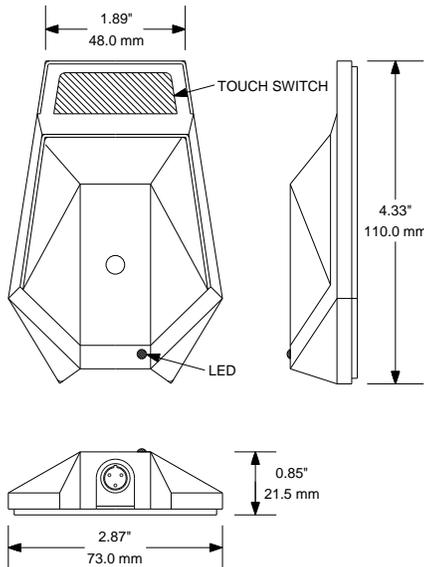


AT891R

Polar Pattern



Dimensions



AT891R SPECIFICATIONS†

ELEMENT	Fixed-charge back plate permanently polarized condenser
POLAR PATTERN	Half-cardioid (cardioid in hemisphere above mounting surface)
FREQUENCY RESPONSE	30-10,000 Hz
LOW-FREQUENCY ROLL-OFF	80 Hz, 12 dB/octave
OPEN CIRCUIT SENSITIVITY	-33 dB (22.4 mV) re 1V at 1 Pa*
IMPEDANCE	200 ohms
MAXIMUM INPUT SOUND LEVEL	123 dB SPL, 1 kHz at 1% T.H.D.
DYNAMIC RANGE (TYPICAL)	93 dB, 1 kHz at Max SPL
SIGNAL-TO-NOISE RATIO[†]	64 dB, 1 kHz at 1 Pa*
SWITCHES	Touch-sensitive control: on/off Mode selection: touch on/off, momentary on, momentary off Flat response, low-roll-off
PHANTOM POWER REQUIREMENTS	11-52V DC, 4 mA typical
WEIGHT	2.6 oz (74 grams)
DIMENSIONS	2.87" (73.0 mm) max width, 4.33" (110.0 mm) max length, 0.85" (21.5 mm) height
OUTPUT CONNECTOR	TB3M
CABLE	25' (7.6 m) long, 0.13" (3.2 mm) diameter, 2-conductor, shielded cable with TA3F and XLRM-type connectors

† 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

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

Optional Accessories:

- CP8201 line matching transformer (Lo-Z to 50,000 ohms).
- AT8202 adjustable in-line attenuator for use with balanced Lo-Z microphones.
- 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.
- CP8506 four-channel 48V phantom power supply (AC powered).
- AT8801 single-channel 48V phantom power supply (AC powered).

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.



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