

# ES931PMML & ES931PMWML

MicroLine® Condenser Gooseneck Microphones

 audio-technica

engineered sound® microphones



## Features

- Wall/ceiling plate power module permits permanent installation in standard, single-gang electrical box
- MicroLine® polar pattern provides narrow 90° acceptance angle
- Low-profile design with low-reflectance finish for minimum visibility
- Superior off-axis rejection for maximum gain before feedback
- UniGuard® RFI-shielding technology offers outstanding rejection of radio frequency interference (RFI)
- UniSteep® filter provides a steep low-frequency attenuation to minimize pickup of undesired ambient noise
- Easy-to-adjust, rugged, small-diameter gooseneck with virtually no “memory” permits quick positioning into desired shape
- Available interchangeable elements permit angle of acceptance from 90° to 360°
- Ideal for boardrooms, school and government settings, teleconferencing, houses of worship and other installed applications
- Available in two colors: black (ES931PMML) and white (ES931PMWML)

## Description

The ES931PMML is a wide-range miniature condenser microphone with a MicroLine® (line cardioid) polar pattern. It is designed for quality sound reinforcement. The small-diameter gooseneck design permits highly flexible positioning while maintaining a smooth, well-contoured appearance. The combination of small size and excellent response makes the microphone ideal for boardrooms, school and government settings, teleconferencing, houses of worship and other installed applications.

The microphone requires 11V to 52V phantom power for operation.

The microphone is equipped with UniGuard® RFI-shielding technology, which offers outstanding rejection of radio frequency interference (RFI).

The microphone’s MicroLine® (line cardioid) polar pattern provides a 90° angle of acceptance. Additional interchangeable elements with omnidirectional (360°), cardioid (120°) and hypercardioid (100°) pickup patterns are available.

The microphone’s free end connects to the provided AT8534 wall/ceiling plate power module via a special TA3F-type connector designed to optimize RFI immunity. The power module features a white-finished standard electrical cover plate for easy, secure installation. Output connections on the power module are screw terminals.

Switches in the power module permit a +10 dB gain setting for extra sensitive pickup as well as a choice of flat response or low-frequency roll-off (via integral 80 Hz high-pass UniSteep® filter) to help control undesired ambient noise.

The microphone is enclosed in a rugged housing with a low-reflectance black finish and comes equipped with a wall/ceiling plate power module and a two-stage foam windscreen. The microphone is also available with white housing and windscreen as the ES931PMWML.

## Installation and Operation

The ES931PMML requires 11V to 52V phantom power for operation.

A uniform 90° angle of acceptance provides well-balanced audio pickup. The microphone should be located forward of the front-most source, above the rear-most source, and “aimed” between them. Increasing the height of the mic above the sources will tend to equalize sound levels between them, but may also increase background/reverberant sound pickup. When possible, the distance from the mic to the rear-most source should be no more than twice the distance to the front source, to maintain front-to-rear balance.

Width of pickup is approximately 1.5 times the distance to the closest source. If additional mics are needed for wide sources, they should be positioned apart laterally at least 1.5 times the distance to the front source, to avoid phase cancellation (Fig. 1).

The provided two-stage foam windscreen simply snaps over the head of the microphone, effectively reducing noise from wind or ventilation air currents.

An integral 80 Hz high-pass UniSteep® filter 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 UniSteep® filter, slide the switch toward the “bent” line. A 10 dB gain switch is provided for situations that demand extra sensitive pickup. The +10 position increases the microphone’s overall output by 10 dB. To engage the 10 dB gain, slide the switch toward the +10 position.

The AT8534 wall/ceiling plate power module is designed to be mounted in a standard metal U.S. single-gang electrical box. For safety and best performance, use the electrical box only for the AT8534; do not include any AC power conductors. (Also route the mic cable as far away from AC power cables as possible.)

Screw-terminal output connections of the AT8534 are the same as those of an XLR-type plug: shield to Terminal 1, balanced signal and phantom power to Terminals 2 and 3 (Fig. 2). Output is phased so that positive acoustic pressure produces positive voltage at Terminal 2, in accordance with industry convention. Do not connect the output cable shield to the box. Double-check to make certain that all input and output leads have no bare wires or loose strands that could touch each other, the circuit board or the electrical box. Then attach the power module plate to the electrical box.

Connect the TA3F-type connector on the microphone to the TB3M-type connector in the power module plate.

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.

**Note:** Audio-Technica has developed a special RFI-shielding mechanism, which is an integral part of the connectors in the Engineered Sound® line. If you remove or replace the connector, you may adversely affect the unit’s RFI immunity.

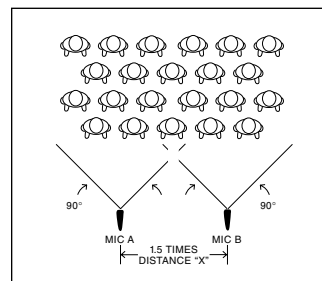


Figure 1

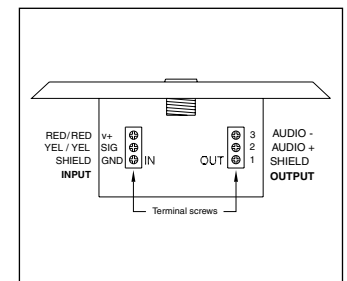


Figure 2

# ES931PMML & ES931PMWML

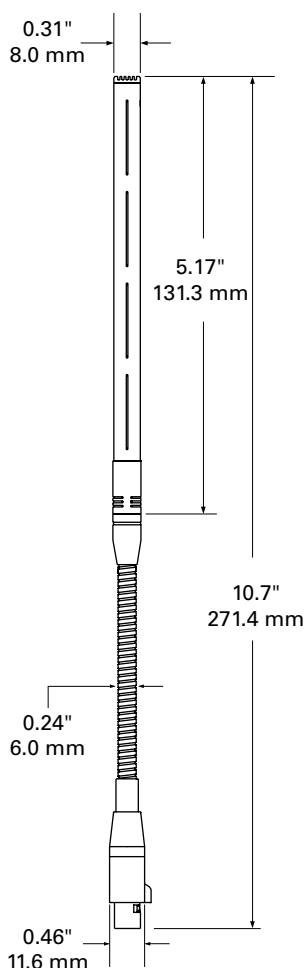
## Architect's and Engineer's Specifications

The microphone shall be a fixed-charge condenser designed for permanent installation. It shall have a MicroLine® (line cardioid) polar pattern with a uniform 90° angle of acceptance and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. The microphone shall operate from an external 11V to 52V DC phantom power source. It shall be capable of handling sound input levels up to 123 dB with a dynamic range of 102 dB. Nominal open-circuit output voltage shall be 17.7 mV at 1V, 1 Pascal. Output shall be low impedance balanced (200 ohms). It shall offer outstanding rejection of radio frequency interference (RFI).

The microphone shall incorporate a special TA3F-type output connector designed to optimize RFI immunity. The output connector shall connect to a TB3M-type jack on the included power module. Output connections on the power module shall be screw terminals. The plate power module shall be designed to mount over a standard single-gang metal electrical box for ceiling or wall mounting. The power module shall contain a switch to permit choice of flat response or 80 Hz low-frequency roll-off. In addition, the power module shall incorporate a switchable +10 dB gain setting. The power module face plate shall be semi-gloss white and mounting screws shall be included. A two-stage foam windscreens shall be included.

The microphone shall be a small-diameter gooseneck design, with an overall length of 271.4 mm (10.7") and a head diameter of 8.0 mm (0.31"). Weight shall be 43 grams (1.5 oz). The microphone shall be black [white].

The Audio-Technica ES931PMML [ES931PMWML] is specified.



## Specifications

<b>Element</b>	Fixed-charge back plate, permanently polarized condenser
<b>Polar pattern</b>	MicroLine® (line cardioid)
<b>Frequency response</b>	30-20,000 Hz
<b>Low frequency roll-off</b>	80 Hz, 18 dB/octave
<b>Open circuit sensitivity</b>	-35 dB (17.7 mV) re 1V at 1 Pa
<b>Impedance</b>	200 ohms
<b>Maximum input sound level</b>	123 dB SPL, 1 kHz at 1% T.H.D.
<b>Dynamic range (typical)</b>	102 dB, 1 kHz at Max SPL
<b>Signal-to-noise ratio<sup>1</sup></b>	73 dB, 1 kHz at 1 Pa
<b>Phantom power requirements</b>	11-52V DC, 4 mA typical
<b>Switches</b>	Flat, roll-off; 0 dB, +10 dB gain setting
<b>Weight</b>	Microphone: 43 g (1.5 oz) Power module: 97 g (3.4 oz)
<b>Dimensions</b>	Microphone: 271.4 mm (10.7") long, 8.0 mm (0.31") head diameter, 11.6 mm (0.46") base diameter Power module: 71.0 mm (2.80") W x 115.5 mm (4.55") H x 36.0 mm (1.42") D
<b>Output connector</b>	Power module: Screw-terminals
<b>Optional interchangeable elements</b>	ESE-O omnidirectional (360°) ESE-C cardioid (120°) ESE-H hypercardioid (100°)
<b>Audio-Technica case style</b>	M42
<b>Accessories furnished</b>	<b>ES931PMML</b> AT8534 wall/ceiling plate power module; AT8138 two-stage foam windscreens <b>ES931PMWML</b> AT8534 wall/ceiling plate power module; AT8138(WH) two-stage foam

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

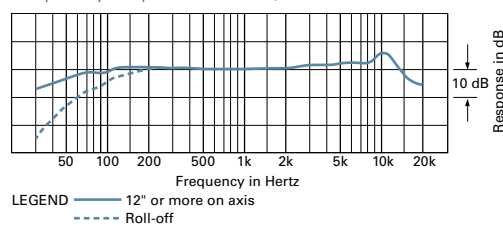
1 Pascal = 10 dynes/cm<sup>2</sup> = 10 microbars = 94 dB SPL

<sup>1</sup> Typical, A-weighted, using Audio Precision System One.

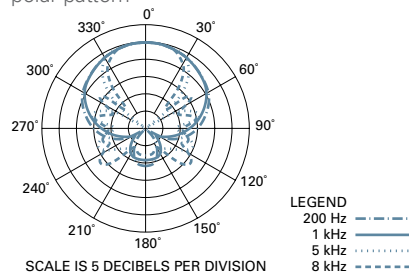
Specifications are subject to change without notice.



frequency response: 30–20,000 Hz



polar pattern



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