

UniPoint[®]

Description

The Model AT853PMa is a wide-range miniature condenser microphone with a cardioid (unidirectional) polar pattern. It has been designed for use in high quality sound reinforcement and demanding sound pickup applications. The AT853PMa is furnished with a vinyl-coated steel hanger that allows it to be positioned over a choir, orchestra, stage, etc., for very low profile situations. The AT853PMa features a 25 foot (7.6 m) permanently attached miniature cable. The 3-pin TA3F cable connector mates with a 3-pin TB3M connector on the PM85 wall plate power module provided. The PM85 power module features a standard electrical wall plate for easy installation. Output is balanced, low impedance via a screw terminal block.

Audio-Technica design engineers have utilized the newest low-mass diaphragm technology in the quest for superior performance in a miniature condenser microphone. The permanent 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") is used. This reduces moving mass by one-third, improving frequency response and transient response while reducing distortion, and eliminates the external high-voltage power supply of earlier condenser designs. The AT853PMa requires power from an external 24-48V DC phantom power supply.

The microphone element is enclosed in a rugged housing with a low-reflectance black finish. The microphone is also available in white as the Model AT853PMWa, with a white finish microphone housing, cable and steel hanger, for applications where the microphone must be hung against a light background.

Installation and Operation

Its small size and excellent response make the AT853PMa ideal for suspension over choirs, instrumental groups or theatre stages. A uniform 120° angle of acceptance provides well-balanced pickup over a wide area. The microphone should be located forward of the front-most source, above the rear-most source, and "aimed" between them (Fig. 1). Increasing the height of the mike above the sources will tend to equalize sound levels between them, but may also increase background/reverberant sound pickup. Whenever possible, the distance from the mike to the rear-most pickup should be no more than twice the distance to the front source, to maintain front-to-rear balance (Fig. 1).

Width of pickup is approximately 3-3½ times the distance to the closest performer. If additional mikes are needed to cover wide sources, they should not be closer together than 3 times their distance to the group, to avoid phase cancellation (Fig. 2).

To orient in the proper direction, twist the microphone housing *slightly* in its wire holder (clockwise rotation moves the microphone to the right-counter-clockwise rotation moves it to the left).

The PM85 wall plate power module is designed to mount in a standard single-gang electrical box. For safety and best performance, use the box only for the PM85; do not include any AC power conductors. Mechanically secure the output cable to the electrical box and leave some slack to prevent pulling out or breaking the output wires at the circuit board. Do not connect the output cable shield to the box.

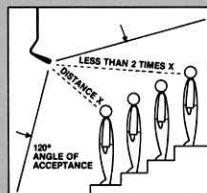


Figure 1.
Vertical positioning.

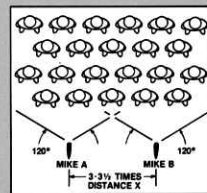


Figure 2.
Horizontal spacing.

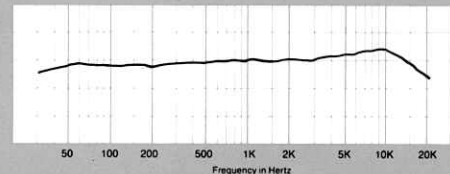
AT853PMa AT853PMWa CARDIOID CONDENSER MICROPHONES WITH WALL PLATE POWER MODULE



Screw-terminal output connections of the PM85 are the same as those of an XLR-type plug: shield to Terminal 1, balanced signal and phantom power to Terminals 2 and 3. Output is phased so that positive acoustic pressure produces positive voltage at Terminal 2, in accordance with industry convention. After attaching the power module to the electrical box, plug the microphone cable connector into the mating jack on the wall plate.

While a modern condenser microphone is not unduly sensitive to humidity, temperature extremes can be harmful. Exposure to high temperature can result in gradual and permanent reduction of the output level. Avoid leaving the microphone in the open sun or areas where temperatures exceed 110° F (43° C) for long periods of time. Extremely high humidity should also be avoided.

FREQUENCY RESPONSE



LEGEND — 12° or more on axis

Architects and Engineers Specifications

The microphone shall be a fixed-charge condenser with a cardioid polar pattern and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of operating from an external 24V to 48V DC phantom power source. Output with the wall plate power module shall be low impedance balanced (120 ohms). Nominal open-circuit output shall be 19 mV at 1 kHz/1 Pascal.

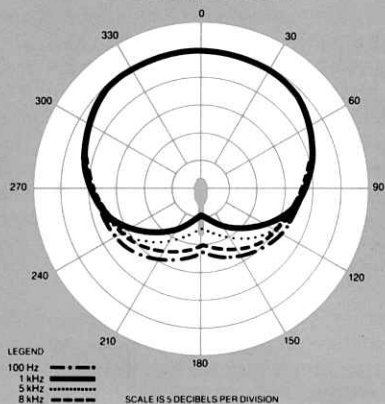
The microphone shall have a permanently attached 25-foot miniature cable with a TA3F output connector. The output connector shall connect to a TB3M jack on the wall plate power module. Output connections on the power module shall be three screw terminals.

The microphone shall be mountable in an included steel hanger that allows permanent overhead installation for pickup of dialogue, orchestras, choirs, and other large groups. The microphone shall be 1.39" long with a head diameter of 0.47." The microphone weight shall be 3.6 ounces with cable. The microphone case, cable and steel hanger shall be black [white].

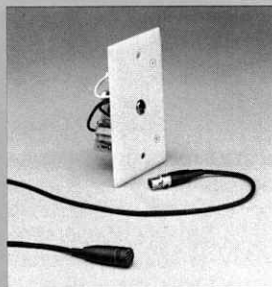
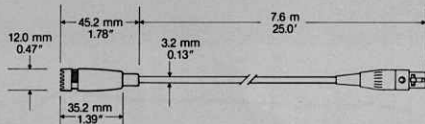
The Audio-Technica Model AT853PMa [AT853PMWa] is specified.

AT853PMa AT853PMWa

POLAR PATTERN



AT853PMa/AT853PMWa DIMENSIONS



Model PM85 wall plate power module for wall or ceiling installation



UniPoint® Microphone Series
AT853a, AT857AMa, AT857AMLa, AT857QMLa,
AT837QML, AT857QMa, AT871R, AT859a, AT841a, AT851a.

AT853PMa/AT853PMWa SPECIFICATIONS†

ELEMENT	Fixed-charge back plate permanently polarized condenser
POLAR PATTERN	Cardioid (Unidirectional)
FREQUENCY RESPONSE	30-20,000 Hz
SENSITIVITY	-31.2 dBm (0 dB = 1 mW/1 Pa*)
OPEN CIRCUIT SENSITIVITY	19 mV (-34.4 dB re 1V/1 Pa*)
IMPEDANCE	120 ohms
MAXIMUM INPUT SOUND LEVEL	120 dB, 1 kHz at 1% T.H.D.
SIGNAL TO NOISE RATIO	Greater than 67 dB at 1 kHz/1 Pa*
PHANTOM POWER REQUIREMENTS	24-48V DC, 6-14 mA
WEIGHT	
MICROPHONE	0.3 oz. (8.5 grams) less cable 3.6 oz. (102.6 grams) with cable
POWER MODULE	3.4 oz. (96.4 grams)
DIMENSIONS	
MICROPHONE	1.39" (35.2 mm) long, 0.47" (12.0 mm) head diameter
POWER MODULE WALL PLATE	2.80" (71.0 mm) W x 4.55" (115.5 mm) H
OUTPUT CONNECTOR	
POWER MODULE	3-position terminal strip
CABLE	25' (7.6 m) long (permanently attached to microphone), 0.13" (3.2 mm) diameter 2-conductor, shielded cable with TA3F output connector that mates with TB3M jack on wall plate power module.
ACCESSORIES FURNISHED (AT853PMa)	P/N 3780157 steel hanger; AT8102 foam windscreen
(AT853PMWa)	P/N 3780221 steel hanger; P/N 3760068 foam windscreen.
(BOTH)	PM85 wall plate power module.

†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

Optional Accessories

- P/N 3760067 stand adapter.
- Model CP8506 48V 4-channel microphone power supply.

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.

