

## Description

The AT853Rx is a wide-range miniature condenser microphone with a cardioid (unidirectional) polar pattern. It has been designed for use in high-quality sound reinforcement, professional recording, television and other demanding sound pickup applications. The AT853Rx is furnished with a vinyl-coated steel hanger that allows it to be positioned inconspicuously over a choir, orchestra, stage, etc., for very low-profile situations.

Supplied as a cardioid, the AT853Rx easily accepts interchangeable elements to permit selection of angle of acceptance from 100° to 360°. The following optional elements are available from an authorized Audio-Technica dealer or the A-T service department: AT853H-ELE hypercardioid, AT853O-ELE omnidirectional, AT853SC-ELE subcardioid.

The AT853Rx features a 25' (7.6 m) permanently-attached miniature cable. Its free end connects to the provided AT8533x power module via internal solderless screw terminals for simple length adjustment in the field. It can be powered from any external 9V to 52V DC phantom power supply. A recessed switch in the power module permits choice of flat response, or a low-frequency roll-off to help control undesired ambient noise.

The microphone element is enclosed in a rugged housing with a low-reflectance black finish. It is also available in white as the AT853RWx, with a white-finished microphone housing, windscreen, cable and steel hanger, for applications where the microphone must be hung against a light background.

## Installation and Operation

The combination of small size and excellent response makes the AT853Rx ideal for suspension over choirs, instrumental groups or theater stages. A uniform 120° 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 (Fig. 1). 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. Whenever possible, the distance from the mic 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 three times the distance to the closest performer. If additional mics are needed for wide sources, they should not be closer together laterally than three times the distance to the front source, 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; counterclockwise rotation moves it to the left). The foam windscreen slips over the head of the microphone, effectively reducing noise from wind or ventilation air currents.

## AT853Rx AT853RWx REMOTE- POWERED MINIATURE CARDIOID CONDENSER MICROPHONES

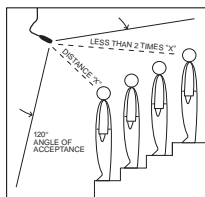
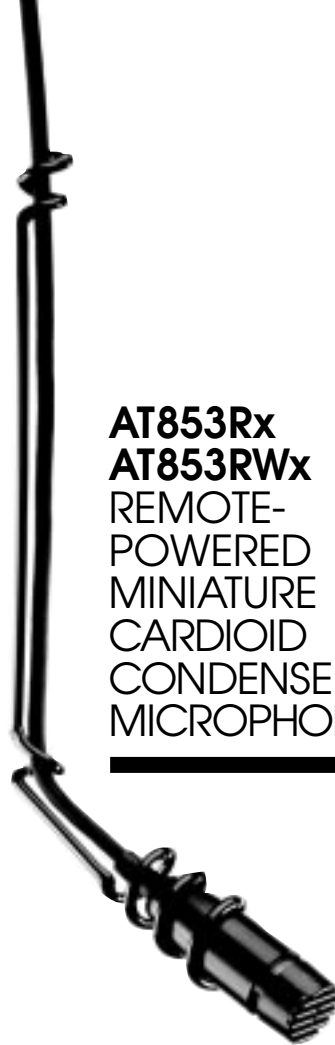


Figure 1.  
Vertical positioning.

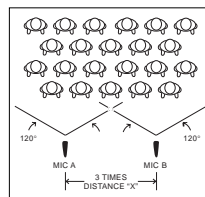


Figure 2.  
Horizontal spacing.

Output is low impedance balanced. The output connector of the power module mates with XLRF-type cable connectors. 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.

To shorten the cable, remove the three screws from the base of the power module and slide the outer case up the cable to reveal the circuit board and screw terminals. Loosen the three terminal screws and remove the cable from the module. Next, slide the case off the cable, cut the cable to the desired length (allowing a few extra inches) and slide the case back onto the cable. Tie a

single knot in the cable about two inches from the cut end. Following Figure 3 on the back of this page, cut the cable off 1" down from the top of the knot and carefully remove 1/2" of the outer jacket. Strip the mic cable wires and attach them to their respective terminals (Fig. 4). Make certain that the terminals are clamped on the conductors, not on the insulation, and that there are no loose strands of wire which might touch other terminals. Replace the case, being certain that it goes *over* the case grounding contact and that the roll-off switch is accessible. Finish by replacing the three base screws and testing for proper operation.

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

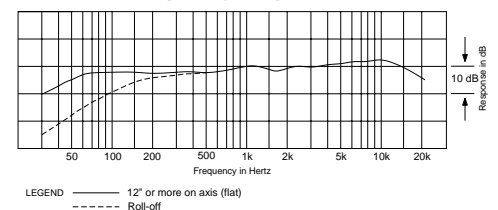
The microphone shall be a fixed-charge condenser with a cardioid polar pattern and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. It shall operate from an external 9V to 52V DC phantom power source. Nominal open-circuit output voltage with the included power module shall be 7.0 mV at 1 kHz, 1 Pascal. Output shall be low impedance balanced (200 ohms).

The microphone shall have a permanently-attached 25' (7.6 m) miniature cable with a pigtail output. The pigtail output shall be connected to a power module via internal solderless screw terminals. The power module shall include a switch for low-frequency roll-off and shall terminate in a 3-pin XLRM-type output connector.

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" (35.2 mm) long with a head diameter of 0.47" (12.0 mm). The microphone weight shall be 0.4 oz. (10 grams) without cable. The microphone case, cable and steel hanger shall be black [white].

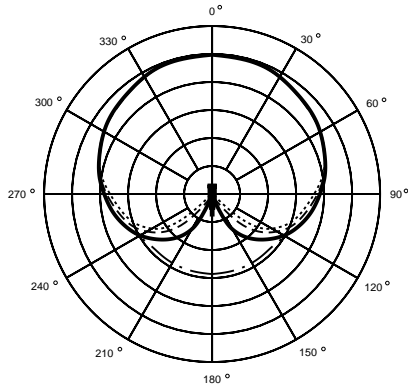
The Audio-Technica AT853Rx [AT853RWx] is specified.

## Frequency Response



# AT853Rx AT853RWx

Polar Pattern



SCALE IS 5 DECIBELS PER DIVISION

LEGEND  
200 Hz ———  
1 kHz - - - - -  
5 kHz ·····  
8 kHz - · - · -

## AT853Rx/AT853RWx SPECIFICATIONS†

<b>ELEMENT</b>	Fixed-charge back plate permanently polarized condenser
<b>POLAR PATTERN</b>	Cardioid (Unidirectional)
<b>FREQUENCY RESPONSE</b>	30-20,000 Hz
<b>LOW-FREQUENCY ROLL-OFF</b>	150 Hz, 6 dB/octave
<b>OPEN CIRCUIT SENSITIVITY</b>	-43 dB (7.0 mV) re 1V at 1 Pa*
<b>IMPEDANCE</b>	200 ohms (1000 ohms without power module)
<b>MAXIMUM INPUT SOUND LEVEL</b>	138 dB SPL, 1 kHz at 1% T.H.D.
<b>DYNAMIC RANGE (TYPICAL)</b>	111 dB, 1 kHz at Max SPL
<b>SIGNAL-TO-NOISE RATIO†</b>	67 dB, 1 kHz at 1 Pa*
<b>SWITCH</b>	Flat response, low-roll-off (recessed)
<b>PHANTOM POWER REQUIREMENTS</b>	9-52V DC, 2 mA typical
<b>WEIGHT</b>	
<b>MICROPHONE</b>	0.4 oz (10 grams)
<b>POWER MODULE</b>	2.1 oz (60 grams)
<b>DIMENSIONS</b>	
<b>MICROPHONE</b>	1.39" (35.2 mm) long, 0.47" (12.0 mm) head dia.
<b>POWER MODULE</b>	3.58" (91.0 mm) long, 0.83" (21.0 mm) diameter
<b>OUTPUT CONNECTOR (POWER MODULE)</b>	Integral 3-pin XLRM-type
<b>CABLE</b>	25' (7.6 m) long (permanently attached to microphone), 0.13" (3.2 mm) diameter, 2-conductor, shielded cable
<b>ACCESSORIES FURNISHED</b>	(AT853Rx) AT8102 two-stage foam windscreen; AT8451 steel hanger (AT853RWx) AT8102WH foam windscreen; AT8451WH steel hanger (BOTH) AT8533x power module
<b>OPTIONAL INTERCHANGEABLE ELEMENTS</b>	AT853H-ELE hypercardioid (100°) AT853O-ELE omnidirectional (360°) AT853SC-ELE subcardioid (170°)

† 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

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

Dimensions

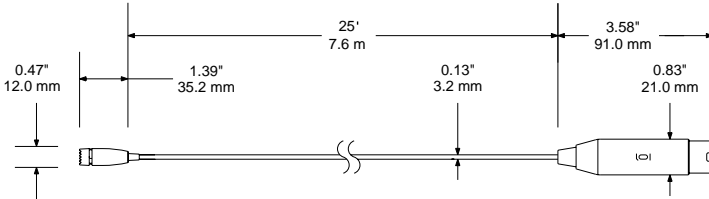


Figure 3

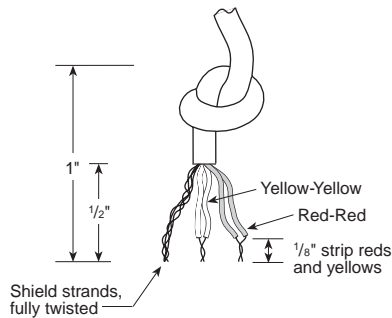
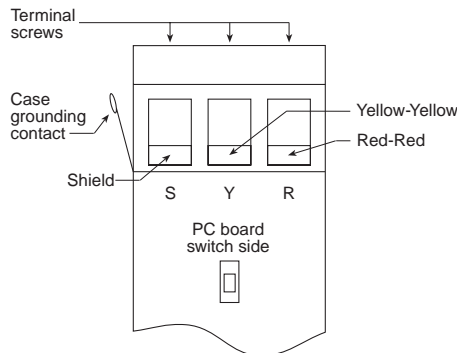


Figure 4



### 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 XLR-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.



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