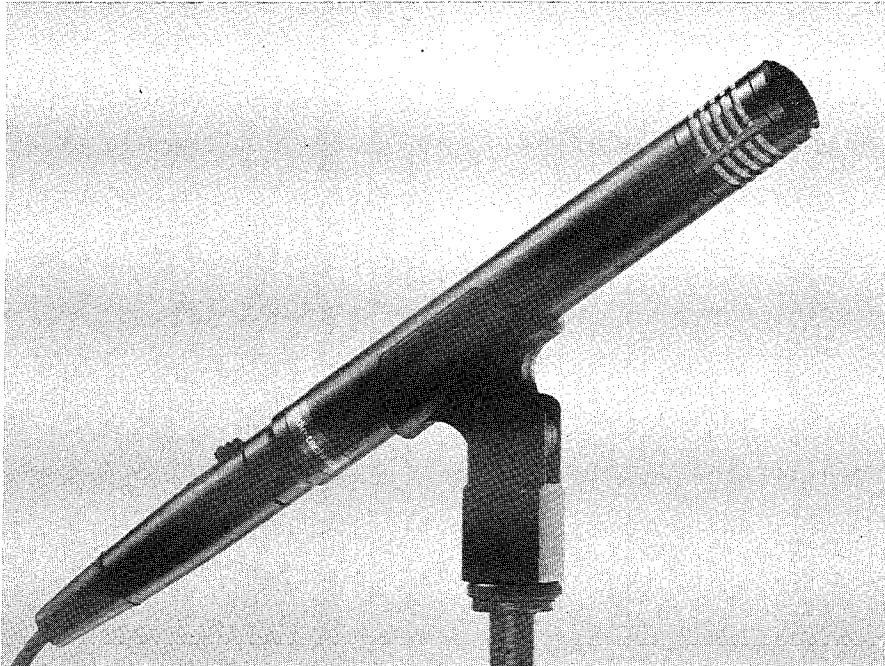




audio-technica®

AT4031 CARDIOID CAPACITOR MICROPHONE



Description

The AT4031 is a pressure-gradient capacitor microphone with a uniform cardioid polar pattern. The frequency response is smooth over the AT4031's extended 30-20,000 Hz range, with a slight rise occurring in the high-frequency region. It is recommended for professional recording and critical applications in broadcast.

The AT4031 features low self-noise, high output and a very high SPL (sound pressure level) handling capability. The microphone will accept as high as a 145 dB SPL before producing 1% T.H.D. Sounds which approach this intensity may require the use of an attenuator between the microphone and electronics to avoid overloading the input stage due to excess signal strength.

The back plate of the AT4031 element holds a fixed charge and has been aged to provide energy stabilization. The surface of the back plate has been precision-milled to insure maximum charge linearity. The result is a reduction in both frequency response peaks and diaphragm break-up distortion.

The Audio-Technica fixed-charge capacitor element design allows significant diaphragm weight reduction relative to earlier charged-diaphragm electret designs. The ultra-low-mass, 4 micron (about 0.00016") thick diaphragm improves transient response, increases response bandwidth and reduces handling and mechanical noise transfer.

An integral hi-pass filter provides easy switching from a flat frequency response to a low-end roll-off. The hi-pass switch is recessed to prevent accidental activation. The hi-pass position reduces the microphone's sensitivity to wind noise, "popping" in close vocal use, and handling noise. It reduces the pickup of low-frequency ambient noise (i.e. air-handling systems, traffic, etc.) and room reverberation. The hi-pass filter may also be used to compensate for proximity effect in close-miking situations. Use of the supplied foam windscreens will also help reduce wind and "popping" noise.

A rugged microphone, the AT4031 is housed in a case constructed of turned brass, not thin-wall aluminum. The surface is plated in black chrome for durability and low reflectivity.

Operation and Maintenance

The AT4031 is designed to be phantom powered and will operate with power sources supplying from 9-52V DC such as the AC-powered model CP8506, a 48 volt supply that can power up to four microphones.

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

Architects and Engineers Specifications

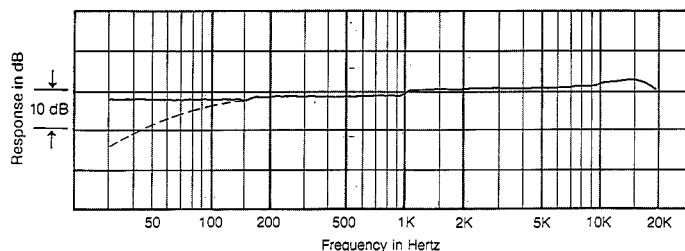
The microphone shall be a fixed-charge capacitor with a cardioid polar pattern and a frequency response of 30 to 20,000 Hz. It shall be capable of operating from an external 9V to 52V DC phantom power source.

Nominal open-circuit output voltage shall be 4.5mV at 1 kHz/1 Pascal. The microphone shall have an output impedance of 200 ohms and output shall be balanced. The microphone shall accept a 145 dB SPL at 1 kHz while producing no greater than 1% T.H.D.

The case shall be turned brass and have a diameter of 21.0 mm (0.83"), a length of 159.5 mm (6.28"), and a weight of 140 g (4.9 oz). Finish shall be black chrome.

The Audio-Technica AT4031 is specified.

FREQUENCY RESPONSE



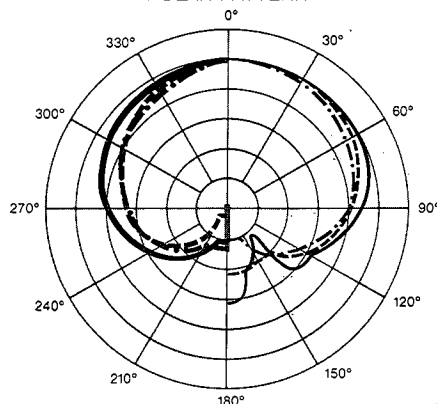
LEGEND

— flat
- - - hi-pass position

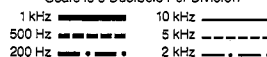
AT4031

CARDIOID CAPACITOR MICROPHONE

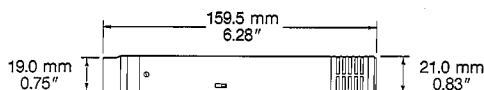
POLAR PATTERN



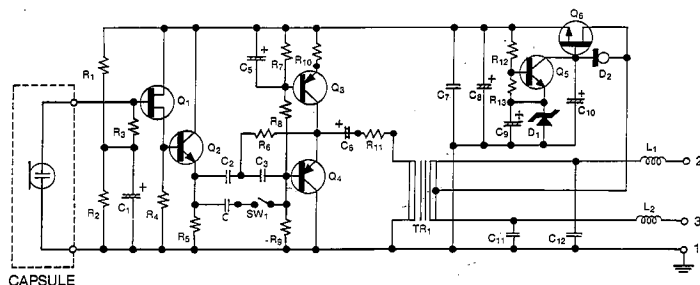
Scale is 5 Decibels Per Division



AT4031 DIMENSIONS



AT4031 WIRING DIAGRAM



AT4031 Specifications†

ELEMENT	Fixed-charge, permanently polarized capacitor
POLAR PATTERN	Cardioid (unidirectional)
FREQUENCY RESPONSE	30-20,000 Hz
OPEN CIRCUIT OUTPUT VOLTAGE (1 kHz)†	4.5mV/1 Pa* ± 2 dB
SENSITIVITY	-46 dBm (0 dB = 1 mW/1 Pa*)
SIGNAL-TO-NOISE RATIO	Greater than 70 dB at 1 kHz, 1 Pa*
IMPEDANCE	200 ohms balanced
MAXIMUM INPUT SOUND LEVEL	145 dB, 1 kHz at 1% T.H.D.
HI-PASS FILTER (LOW-END ROLL-OFF)	3 dB down at 80 Hz, 12 dB/octave
POWER REQUIREMENTS	9-52V DC
CURRENT CONSUMPTION	3 mA
WEIGHT (LESS CABLE AND CLAMP)	4.9 oz (140 g)
DIMENSIONS	6.28" (159.5 mm) long, 0.83" (21.0 mm) body diameter
ACCESSORIES FURNISHED	Model AT8405 snap-in clamp for standard 5/8"-27 threaded stands; protective carrying case; foam windscreen.

† 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

† Measured at diaphragm

Optional Accessories:

- Model AT8106 metal-frame pop filter.
- Model AT8202 adjustable in-line attenuator for use with low-impedance microphones.
- Model 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.
- Model AT8407 universal "clothes-pin" stand clamp fits both tapered and cylindrical microphones.
- Model AT8415 shock mount for boom or stand operation.
- Model CP8506 4-channel 48V phantom 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.



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