

BP4027

Stereo Shotgun Microphone



Features

- Innovative stereo shotgun engineered for professional broadcast and production applications
- Independent line-cardioid and figure-of-eight condenser elements
- Switch selection of non-matrixed M-S mode and two internally matrixed left/right stereo modes
- Rugged design and construction for reliable performance
- Switchable 80 Hz high-pass filter minimizes pickup of undesired low-frequency sounds

Description

The BP4027 is a fixed-charge stereo condenser microphone with independent line-cardioid and figure-of-eight elements configured in a Mid-Side arrangement with switch-selectable internal matrixing. The microphone allows sound recordists the choice of selecting a left-right stereo output (wide or narrow) via the microphone's internal matrixing system or choosing discrete Mid-Side signals for later manipulation.

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

The microphone includes a 0.61 m (24") dual output cable terminating in a 5-pin XLR-type to two standard 3-pin XLRM-type connectors. The output of the microphone is a 5-pin XLRM-type connector.

A switch permits choice of flat response or low-frequency roll-off (via integral 80 Hz high-pass filter) to help control undesired ambient noise.

The microphone is enclosed in a rugged housing. The included AT8405a stand clamp permits mounting on any microphone stand with $\frac{5}{8}$ "-27 threads. A windscreen, two o-rings and a protective carrying case are also included.

Operation and Maintenance

The BP4027 requires 11V to 52V phantom power on Pins 2 and 3 of both XLR3M-type connectors for operation. Wiring must be balanced throughout, and all mic cables in the system must be wired consistently: Pin 1-to-Pin 1, etc. If connecting to unbalanced inputs, good-quality balanced line transformers must be used.

Mid-side Operation: In M-S mode, the microphone provides independent Mid and Side signals. This allows the width of the stereo image to be adjusted in post production or in the field with a matrix mixer.

Matrixed Stereo: The microphone offers two internally matrixed modes which provide traditional "left-right" stereo without the need for external mixers. To accommodate varying acoustic environments, the user may select between a "wide" pattern (LR-W) with increased ambient pickup,

and a "narrow" pattern (LR-N) which offers more rejection and less ambience. Output phase is "Pin 2 hot."

For correct left-right stereo orientation, position the microphone so the word "UP" is on top, with the switches on the bottom. In all modes, locating the microphone nearer the sound source enhances the apparent width of the stereo image, while decreasing room ambience. Moving away from the sound source will result in a narrower stereo image and more "room sound."

M-S Output	Connector	Pin 1	Pin 2	Pin 3
Mid	XLR3M-Gray <i>XLR5M Mic Connector:</i>	Ground <i>Pin 1</i>	Mid + <i>Pin 2</i>	Mid - <i>Pin 3</i>
Side	XLR3M-Red <i>XLR5M Mic Connector:</i>	Ground <i>Pin 1</i>	Side + <i>Pin 4</i>	Side - <i>Pin 5</i>
Matrix Output	Connector	Pin 1	Pin 2	Pin 3
Left	XLR3M-Gray <i>XLR5M Mic Connector:</i>	Ground <i>Pin 1</i>	L + <i>Pin 2</i>	L - <i>Pin 3</i>
Right	XLR3M-Red <i>XLR5M Mic Connector:</i>	Ground <i>Pin 1</i>	R + <i>Pin 4</i>	R - <i>Pin 5</i>

An integral 80 Hz high-pass 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 high-pass filter, use the end tip of a paperclip or other small pointed instrument to slide the switch toward the "bent" line.

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: To use the microphone with a camera-mount microphone holder whose diameter is too large to secure the microphone, slide the two supplied o-rings onto the microphone handle, spaced so that one fits just in front of, and the other fits just behind, the rubber nubs inside the microphone holder. When the top of the microphone holder is closed and tightened down, the o-rings should hold the microphone securely in place.

Architect's and Engineer's Specifications

The microphone shall be a shotgun design with two independent fixed-charge condenser elements. It shall have line-cardioid and figure-of-eight polar patterns and a frequency response of 30 Hz to 20,000 Hz. 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 (mid), 127 dB (side), 126 dB (left/right stereo) with a dynamic range of 101 dB (mid), 101 dB (side), 102 dB (left/right stereo). Nominal open circuit output voltage shall be 31.6 mV (mid), 19.9 mV (side), 15.8 mV (left/right stereo) at 1 V, 1 Pascal. Output shall be low impedance balanced (200 ohms).

The output of the microphone shall be a 5-pin XLRM-type connector. A 0.61 m (24") cable with a 5-pin XLR-type to two standard 3-pin XLRM-type connectors shall be included.

The microphone shall include a switch to permit choice of flat response or 80 Hz low-frequency roll-off. It shall also include switch selection of non-matrixed M-S mode and two internally matrixed left-right stereo modes. The M-S mode shall provide independent Mid and Side signals. The two internally matrixed modes shall provide traditional "left-right" stereo with the choice of wide and narrow pickup patterns.

The microphone shall be 380.0 mm (14.96") long and have a diameter of 21.0 mm (0.83"). Weight shall be 142 grams (5.0 oz). The microphone shall include a stand clamp, a windscreen, two o-rings and a protective

carrying case.

The Audio-Technica BP4027 is specified.

Specifications

Element	Fixed-charge back plate, permanently polarized condenser
Polar patterns	Line cardioid, Figure-of-eight
Frequency response	30-20,000 Hz
Low frequency roll-off	80 Hz, 12 dB/octave
Open circuit sensitivity	Mid: -30 dB (31.6 mV) re 1V at 1 Pa; Side: -34 dB (19.9 mV) re 1V at 1 Pa; LR stereo: -36 dB (15.8 mV) re 1V at 1 Pa
Impedance	200 ohms
Maximum input sound level	Mid: 123 dB SPL, 1 kHz at 1% T.H.D.; Side: 127 dB SPL, 1 kHz at 1% T.H.D.; LR stereo: 126 dB SPL, 1 kHz at 1% T.H.D.
Dynamic range (typical)	Mid: 101 dB, 1 kHz at Max SPL; Side: 101 dB, 1 kHz at Max SPL; LR stereo: 102 dB, 1 kHz at Max SPL
Signal-to-noise ratio¹	Mid: 72 dB SPL, 1 kHz at 1 Pa; Side: 68 dB SPL, 1 kHz at 1 Pa; LR stereo: 70 dB SPL, 1 kHz at 1 Pa
Phantom power requirements	11-52V DC, 4 mA typical at 48V, each channel
Switches	M-S, LR Stereo-Wide (LR-W), LR Stereo-Narrow (LR-N); Flat, roll-off
Weight	142 g (5.0 oz)
Dimensions	380.0 mm (14.96") long, 21.0 mm (0.83") diameter
Output connector	Integral 5-pin XLRM-type
Cable	Dual 0.61 m (24") shielded two-conductor, terminated in two 3-pin XLRM-type connectors
Audio-Technica case style	SG3
Accessories furnished	AT8405a stand clamp for $\frac{5}{8}$ "-27 threaded stands; $\frac{5}{8}$ "-27 to $\frac{3}{8}$ "-16 threaded adapter; AT8135 windscreen; two o-rings; protective carrying case

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

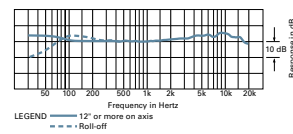
1 Pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL

¹ Typical, A-weighted, using Audio Precision System One.

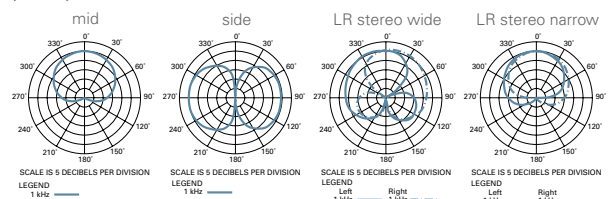
Specifications are subject to change without notice.



frequency response: 30–20,000 Hz



polar patterns



 **audio-technica**

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