

# MTR101

## OWNER'S MANUAL



***SAMSON®***

# Introduction

Thank you for purchasing the Samson MTR101 studio condenser microphone. Samson has a long history of developing high-quality microphones for live and recording applications. The MTR series is our latest and most advanced line of microphones featuring stunning sound reproduction and innovative design.

The MTR101 will quickly become your favorite tool in the studio, whether capturing vocals, acoustic or electric instruments. The microphone features an extended flat frequency response ensuring accurate, linear reproduction of your music. With its wide dynamic range and handling high sound pressure levels, the MTR101 excels at picking up everything from very soft, to loud thunderous sounds.

For additional isolation from unwanted noises, you can use the optional MSM1 shockmount (included with the MTR101A). The revolutionary new design also allows for the optional MPF1 pop filter to be mounted directly to the microphone (included with the MTR101A) making setup a breeze.

In these pages, you'll find a detailed description of the features of the MTR101, as well as instructions for its setup and use, and full specifications. If your microphone was purchased in the United States, you'll also find a warranty card enclosed—don't forget to fill it out and mail it in so that you can receive online technical support and so that we can send you updated information about this and other Samson products in the future. Also, be sure to check out our website ([www.samsontech.com](http://www.samsontech.com)) for complete information about our full product line.

We recommend you keep the following records for reference, as well as a copy of your sales receipt.

Serial number: \_\_\_\_\_

Date of purchase: \_\_\_\_\_

Dealer name: \_\_\_\_\_

With proper care and maintenance, your MTR101 will operate trouble-free for many years. Should your microphone ever require servicing, a Return Authorization (RA) number must be obtained before shipping the microphone to Samson. Without this number, the unit will not be accepted. Please call Samson at 1-800-3SAMSON (1-800-372-6766) for an RA number prior to shipping your unit. Please retain the original packing materials and, if possible, return the unit in its original carton. If your MTR101 was purchased outside of the United States, contact your local distributor for warranty details and service information.

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# Features



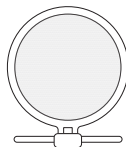
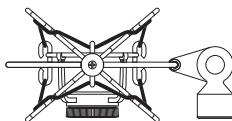
- Large diaphragm studio condenser
- 1" capsule with 3-micron diaphragm
- Smooth and transparent sound reproduction
- Cardioid pick-up pattern
- 48 volt phantom power operation
- Internal capsule shock mounting
- Extended smooth frequency response
- Durable die cast construction
- Gold-plated XLR connector

## Optional Accessories

- Swivel\*
- MSM1 shockmount†
- MPF1 Pop filter†

\* Included with MTR101 standard pack

† Included with MTR101A microphone pack



# Powering

The MTR101 is a condenser microphone and therefore requires 48V phantom power. Phantom power is provided by a mixer's preamplifier channel or if necessary, an external phantom power supply and sent to the microphone along a balanced microphone cable.

To ensure the longevity of your equipment, and is good mixing etiquette, always turn down the master fader and monitor controls to zero when switching the phantom power on or off.

Poor microphone performance can be attributed to phantom power issues. If you notice that the microphone is exhibiting reduced signal output, increased noise, or decreased headroom (distortion), there may be an issue with the phantom power supply or the microphone cables.

## Setting the Microphone Level

When connecting the MTR101 to a mixer, use a balanced cable and be sure that the input is balanced and connected to a channel that is set for microphone level. Also, be sure that the phantom power is engaged. Most mixers and recorders of reasonable quality will offer a microphone input with mic trim (usually called Trim or Gain) control. The purpose of the mic trim control is to optimize the amount of good signal over any noise that may be associated with the mixer's electronics. A good mic pre with trim will have a peak or clip indicator. To set an optimal level on the mic, place the MTR101 in front of the desired sound source and slowly raise the mic trim control until you see the PEAK LED light up. Then, turn the mix trim control down until the LED does not light any more. For most applications, the ideal setting is to set the trim control as high as possible without lighting the peak indicator.

## Polar Pattern

An important characteristic of any microphone is its directionality or polar pattern. There are three basic classifications of polar patterns:

Omnidirectional - captures sound from all directions

Bidirectional (figure-8) - captures sound directly in front and back of the microphone while rejecting sound on the left and right sides

Unidirectional (cardioid) - captures sound in front of the microphone and rejects sound from the sides and back

The MTR101 is a unidirectional microphone which allows for better separation of instruments in the studio, and picks up more of the instrument sound in relation to the sound of the room. See the section on "Microphone Placement" on page 6 for some considerations when placing the microphone in different recording applications.

# Microphone Placement

In order to maximize the quality of the sound you are capturing, you must pay careful attention to the placement of your MTR101 and how it is positioned for the instrument or vocalist. The MTR101 is a unidirectional microphone, so it exhibits a phenomenon known as “proximity effect” which is a resulting change in the frequency response of a microphone based on the position of the microphone capsule relative to the sound source. In order to get the best frequency response, start by pointing the microphone directly on axis with the sound source. You can change the sound characteristics that the microphone picks up by changing the position of the microphone. Rotating the microphone away (off-axis) from the sound source will decrease the sensitivity to higher frequencies. Experimentation and experience is the best way to find out what sounds best for your recordings. Below are some tips for when setting up and using your MTR101 in typical applications.

## Vocals

Position the microphone directly in front of the artist so that the microphone grille is between 6 and 24 inches away. The closer the vocalist moves to the microphone, the more the bass or low response increases. As the vocalist moves away from the microphone, the tone becomes more natural as the low frequency rolls off. To achieve the fullest sound, the vocalist should aim the



microphone center line towards their mouth. If some consonants such as ‘P’ and ‘S’ seem to jump up in level, rotate the microphone a little bit away from the artist so that sound arrives at the microphone slightly off-center. If space allows, it is preferable to prevent these peaks through the use of an external pop filter like the MPF1 pop filter. If recording a group of singers, ensure that they position themselves around the front of the microphone close to one another.

## Acoustic Guitar

There are a variety of ways that the MTR101 can be used to mike an acoustic guitar. Optimal microphone placement will depend on the type of instrument, and what kind of sound you’re looking to capture. It may be necessary to experiment with various positions to achieve full and balanced tone. When miking a standard steel string acoustic, it is suggested that you begin with the microphone at a distance of 6–12 inches from the sound hole, positioned slightly off-axis, and pointing towards the edge of the fingerboard. From this position, moving the microphone towards the sound hole will cause the mic to capture more low frequencies. If, instead, you wish to capture more high-end, or to remove any unwanted booming sound, move the microphone toward the fingerboard. Unlike a steel string acoustic guitar, the sound of a nylon string acoustic guitar that is played by

# Microphone Placement

finger picking is usually naturally warmer. To record an even, full tone, it is suggested that you begin by positioning the microphone 3–6 inches above the center of the bridge. This will help emphasize the higher frequencies and pick up the attack sound of the finger picking. If the microphone is picking up too much low frequency from the sound hole, move the microphone so that it is slightly off-axis from the guitar. If you have a pair of MTR101 microphones, try one positioned at the fingerboard and the second over the bridge of the guitar, or have one microphone positioned close to the guitar and the second a few feet away to pick up the sound of the room, blending the two sources together.

## Piano

The piano is a very challenging instrument to capture, and there are numerous microphone techniques that can be used. For close-miking the piano, position the MTR101 just inside the piano, centered between the soundboard and the open lid. The closer you move the microphone toward the instrument the more low frequencies the microphone will pick up. For an ambient recording like that used in a classical performance, position the microphone outside the piano, facing into the open lid. For a more contemporary ensemble sound, place two MTR101 microphones in the piano, positioning one over the bass strings and one over the high strings at a distance of 6–12 inches apart. When miking an upright piano with a single microphone, position the microphone just above and in front of the piano with the top open, centered over the instrument. If you have a pair of MTR101 microphones, position the microphones over the open top of the piano with one microphone over the bass strings and one over the high strings. You can also position two mics in front of the kickboard area approximately 8 inches over the bass and high strings.

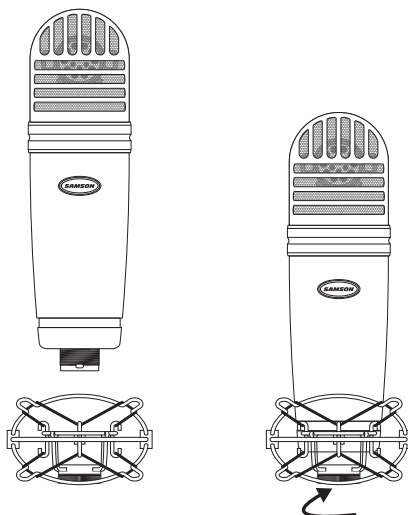
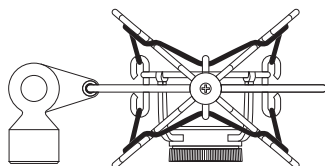
## Overhead Drum Kit

Thanks to its extended high frequency response and fast transient response, the MTR101 performs outstandingly when used as an overhead cymbal microphone. You can position one MTR101 on a boom mic stand directly above the kit pointing from front to back. For stereo miking, use two MTR101 microphones placed over the drum set at a distance of three to five feet. You can experiment with the exact placement depending on the size of the room and whether you're looking for an ambient or close-miked sound. In general, when miking a drum kit, it's a good idea to start with the overhead mics. Even though you use the overhead mics mostly for the cymbals, you can get the entire kit to sound great with just one overhead. Using overhead mics, it is easier to simply turn up your individual mics for more attack and thickness in the overall sound.

## Shockmount (optional)

To isolate the MTR101 from external vibrations and prevent unwanted noises that are transmitted through the stand, the microphone can be fitted on the custom-designed MSM1 spider shockmount. Follow the steps below to install the microphone into the shockmount.

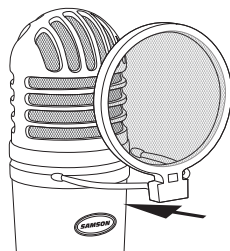
- Affix the shockmount onto a microphone stand or boom arm. The shockmount angle can be adjusted by loosening the thumb screw near the stand connection.  
Note: Do not adjust the angle of the shockmount without loosening the thumb screw. If you do this, the shockmount may be damaged and you may void your warranty.
- Install the MTR101 into the MSM1 by fitting the microphone into the center of the web, positioning the MTR101 onto the bottom mounting plate with the Samson logo facing forward.
- Secure the MSM1 by rotating the threaded collar clockwise until tight.
- Loosen the thumb screw to adjust the angle of the microphone and position the MTR101 to the desired location. Once set, tighten the thumbscrew to secure the microphone in place.  
Note: Be careful not to cross-thread or over-tighten the threaded collar or thumb screw.



## Pop Filter (optional)

Sometimes when recording vocals certain plosive consonants (like hard “P” and “B” sounds) overload the input of the microphone which causes clipping and adds distortion to your recording. It is advisable to use a pop filter to reduce the effect of the blasts of air from vocalists when pronouncing words that include these hard consonant sounds. The pop filter also helps to protect the microphone element from moisture. The MTR101 features a unique design that enables the MPF1 pop filter to be mounted directly to the microphone.

To attach the MPF1 pop filter to the microphone line up the pop filter with the groove underneath the grill and press on until the legs snap onto the microphone body.



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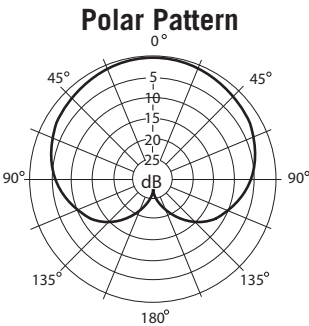
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# Technical Specifications

Transducer Type . . . . .	Condenser
Polar Pattern . . . . .	Cardioid
Frequency Response . . . . .	20Hz–20kHz
Sensitivity . . . . .	-33dB ±3dB (0dB=1V/Pa 1kHz)
Equivalent self noise . . . . .	16dB
Dynamic Range . . . . .	121dB
Signal-to-noise . . . . .	78dB
Output Impedance . . . . .	50Ω ±30% (at 1kHz)
Maximum SPL . . . . .	137dB
Powering. . . . .	48V phantom power
Connector . . . . .	3-pin, gold plated XLR
Dimensions . . . . .	ø54mm x 189.9mm
Weight. . . . .	460g

*At Samson, we are continually improving our products, therefore specifications and images are subject to change without notice.*



## Frequency Response

