

M50

Measurement Microphone

User's Guide



Electronic Calibration Files

All Earthworks Measurement Microphones purchased after July 1, 2012 will have ECFs available at no charge. Simply register your new measurement microphones within 30 days of purchase on our website at earthworksaudio.com/register.

Once your Measurement Microphone has been registered in our database, we will send you your ECF to the valid email address provided in your registration.

Warranty

All Earthworks microphones carry a fifteen-year limited warranty (parts and labor).

Product Registration

To help you get the most out of your Earthworks purchase, please take a moment and register your product with us online at earthworksaudio.com/register.

Service & Repair

If you have any problems with your Earthworks products, please contact our Service & Repair Department.

Email: returns@earthworksaudio.com

Telephone: (603) 654-2433, ext. 119

 CE Printed in USA

MADE IN USA • 15 YEAR WARRANTY

earthworksaudio.com

 **Earthworks**[®]
HIGH DEFINITION MICROPHONES™

Description

The Earthworks M50 is an omnidirectional (pressure) microphone designed and calibrated for measurement purposes. It is a pre-polarized condenser microphone directly coupled to a wideband, low output impedance preamplifier. The M50 requires a standard 48V phantom power supply. It features an extended linear free-field frequency response from 3Hz to 50kHz (please see the enclosed individual calibration chart), very low handling noise, uniform polar pattern, and high SPL handling capabilities. Its unique circuitry excludes the transconductance of the input FET from the overall gain structure. This means the sensitivity remains very stable when the microphone is subjected to variations in ambient temperature. The M50 meets or exceeds ANSI Type 1 requirements.

Each microphone is delivered with its own calibration chart providing its individually measured open-circuit sensitivity and the frequency response curve. A computer file containing the frequency response data for importing directly into measurement software is available from Earthworks, Inc. upon registering your new microphone. A mounting clip and a calibrator adapter are included with the microphone.

Applications

The Earthworks M50 is ideally suited for acoustical measurements that require extended frequency response, including high-end loudspeaker design and quality control, scientific research, measurements of ultrasonic or subsonic transducers, or any application where an extremely accurate free-field measurement microphone is required. The very wide linear minimum-phase response and exceptionally fast well-damped impulse response make the M50 the perfect microphone for high resolution time domain measurements.

The M50 is simple to operate. Connect the microphone to a microphone preamplifier supplying 48V phantom power using a standard XLR microphone cable. Please allow up to one minute for the microphone to settle. Plugging in the microphone "hot" (phantom power already present at the input) will not damage the microphone, and is actually preferred for faster settling. For optimum results we recommend pointing the M50 toward the sound source.

This microphone has no removable parts.

Calibration

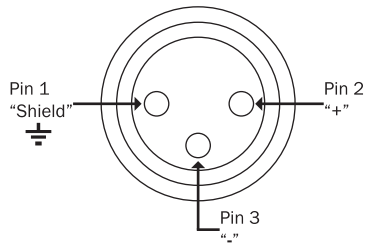
The microphone is calibrated at the factory at 1 kHz (independent of any frequency weighting). The sensitivity in mV/Pa is provided on the enclosed calibration chart. If on-site calibration is required, use the enclosed one-half inch standard calibration adapter.

NOTE: Earthworks recommends re-calibration every five (5) years.

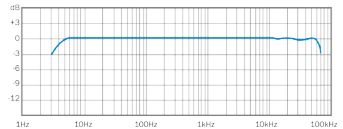
Specifications

- Frequency response: 3Hz to 50kHz +1/-3dB
- Polar Pattern: Omnidirectional
- Sensitivity: 36mV/Pa (Typical)
- Power Requirements: 48V Phantom, 10mA
- Peak Acoustic Input: 140dB SPL
- Output: XLR-3
- Minimum Load: 600Ω between pins 2 & 3
- Noise: 20dB, A equivalent
- Dimensions L x D: 229 x 22 mm (9 x .860 in.)
- Weight: 225g (.5lb)

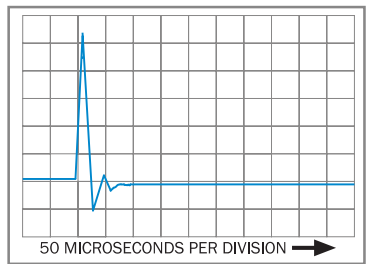
Specifications are subject to change without notice.



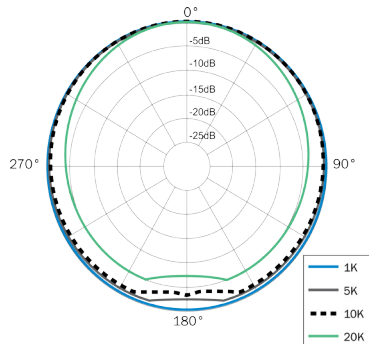
XLR Output Connector Assignment of M50



Frequency Response of M50 (typical)



Impulse Response of M50 (typical)



Polar Response of M50 (typical)