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Amprobe SM-CAL1

Amprobe SM-CAL1 Sound Meter Calibrator User Manual

Model: SM-CAL1

1. INTRODUCTION

The Amprobe SM-CAL1 is a precision sound meter calibrator designed to ensure the accuracy and reliability of your sound level measurements. This device generates two fixed sound pressure levels, 94 decibels (dB) and 114 dB, at a frequency of 1,000 hertz (Hz), allowing for precise calibration of sound meters with microphones up to 1/2 inch in diameter. Regular calibration is crucial for maintaining measurement integrity and compliance with relevant standards.

This manual provides detailed instructions for the proper use, maintenance, and troubleshooting of your SM-CAL1 Sound Meter Calibrator.

2. SAFETY INFORMATION

Please read and understand all safety instructions before operating the SM-CAL1. Failure to follow these guidelines may result in injury or damage to the device.

- Do not expose the calibrator to extreme temperatures, humidity, or direct sunlight.
- Avoid dropping or subjecting the device to strong impacts.
- Do not attempt to open or modify the calibrator. Refer all servicing to qualified personnel.
- Ensure the battery compartment is securely closed during operation.
- Dispose of batteries according to local regulations.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- Amprobe SM-CAL1 Sound Meter Calibrator
- One (1) 9V battery (installed)
- User Instructions (this manual)

4. SETUP

4.1 Battery Installation

The SM-CAL1 comes with a 9V battery pre-installed. If replacement is needed:

1. Locate the battery compartment cover on the bottom of the unit.
2. Remove the cover.
3. Connect a new 9V battery, observing correct polarity.
4. Replace the battery compartment cover securely.

4.2 Preparing for Calibration

Before calibrating your sound meter, ensure its microphone is clean and free of debris. The SM-CAL1 is designed to fit microphones with a diameter of up to 1/2 inch.



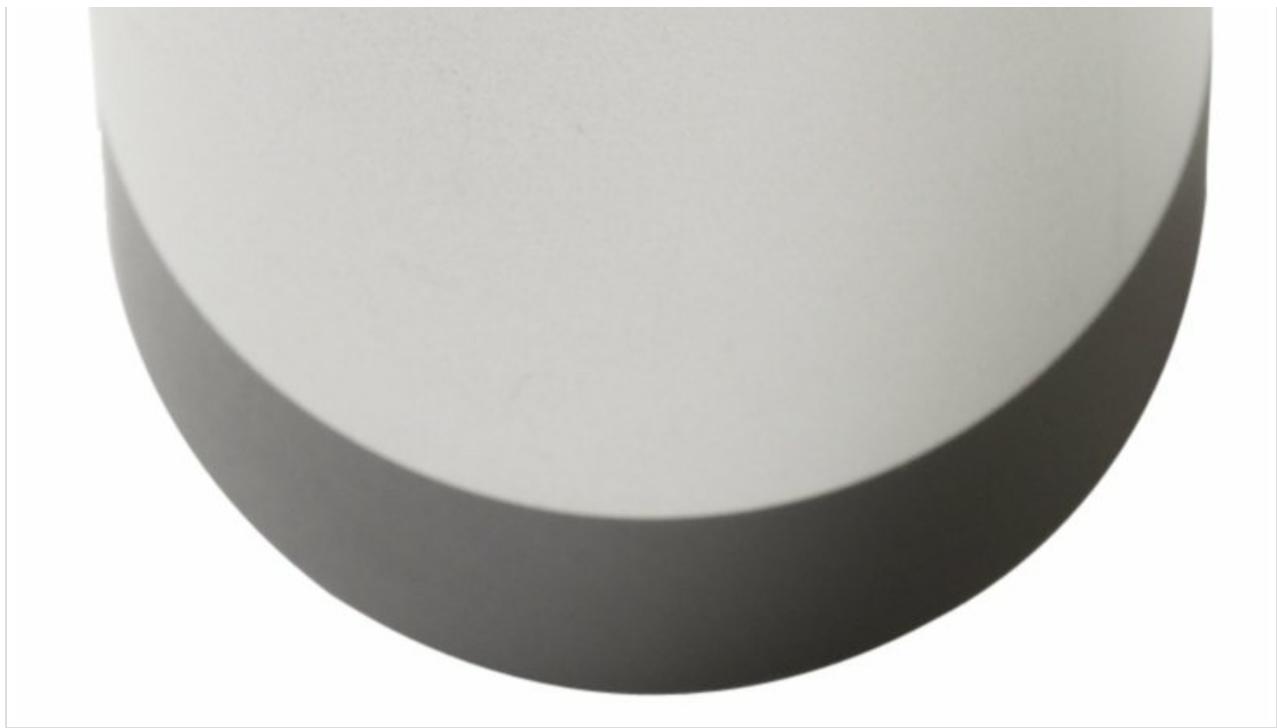


Figure 1: Amprobe SM-CAL1 Sound Meter Calibrator. The image shows the top face of the cylindrical calibrator, featuring the 'AMPROBE' logo, 'SM-CAL1' model number, a three-position slide switch labeled '94', 'OFF', and '114' (referring to dB levels), and text indicating 'db at 1kHz', 'IEC 942 1988 CLASS 2', and 'Sound Calibrator'. A red power indicator light is also visible.

5. OPERATION

5.1 Calibrating a Sound Meter

1. Gently insert the microphone of your sound level meter into the opening on the top of the SM-CAL1 calibrator. Ensure a snug fit to minimize sound leakage.
2. Select the desired calibration level using the slide switch on the calibrator:
 - Slide to '94' for a 94 dB signal.
 - Slide to '114' for a 114 dB signal.
3. Observe the reading on your sound level meter. Adjust your sound meter's calibration settings until its display matches the selected output level of the SM-CAL1 (either 94 dB or 114 dB). Refer to your sound meter's user manual for specific calibration adjustment procedures.
4. Once calibration is complete, slide the switch to 'OFF' to conserve battery life.
5. Carefully remove the sound meter's microphone from the calibrator.

5.2 Low Battery Indication

The SM-CAL1 is equipped with a low-battery indicator. When the battery voltage drops below a certain level, the indicator light will dim or not illuminate, signaling that the 9V battery needs to be replaced.

6. MAINTENANCE

6.1 Cleaning

To clean the exterior of the calibrator, use a soft, dry cloth. Do not use abrasive cleaners or solvents, as these may damage the casing or internal components.

6.2 Storage

When not in use, store the SM-CAL1 in a cool, dry place, away from direct sunlight and extreme temperatures. If storing for extended periods, it is recommended to remove the 9V battery to prevent leakage.

6.3 Recalibration of the SM-CAL1

While the SM-CAL1 is designed for stable output, periodic verification of its accuracy by a certified calibration laboratory is recommended to ensure continued compliance with standards and optimal performance. The frequency of such recalibration depends on usage and regulatory requirements.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
No sound output / Power indicator off	Battery is dead or incorrectly installed.	Replace the 9V battery, ensuring correct polarity.
Inaccurate calibration readings on sound meter	Microphone not properly seated; Calibrator needs recalibration; Sound meter issue.	Ensure microphone is snugly fitted. Consider sending SM-CAL1 for professional recalibration. Check your sound meter's functionality.
Sound meter reading fluctuates	Ambient noise interference; Loose microphone connection.	Perform calibration in a quiet environment. Re-seat the microphone firmly.

8. SPECIFICATIONS

- Model:** SM-CAL1
- Output Sound Pressure Levels:** 94 dB and 114 dB
- Output Frequency:** 1,000 Hz (1 kHz)
- Microphone Compatibility:** Fits microphones up to 1/2 inch diameter
- Accuracy:** Meets IEC 942 1988 Class 2 standards
- Power Source:** One (1) 9V battery
- Low Battery Indicator:** Yes
- Operating Temperature:** 0°C to 40°C (32°F to 104°F)
- Storage Temperature:** -10°C to 50°C (14°F to 122°F)
- Dimensions (H x D):** Approximately 4.9 x 1.9 inches (125 x 48 mm)
- Weight:** Approximately 0.6 lb (285 g)
- Certifications:** CE compliant, ANSI, IEC standards

9. WARRANTY AND SUPPORT

9.1 Warranty Information

Amprobe products are warranted against defects in material and workmanship for a specified period from the date of purchase. For detailed warranty terms and conditions, please refer to the warranty card included with your product or visit the official Amprobe website. This warranty does not cover damage resulting from misuse, accident, neglect, alteration, contamination, or abnormal conditions of operation or handling.

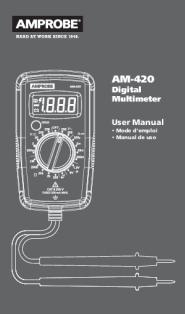
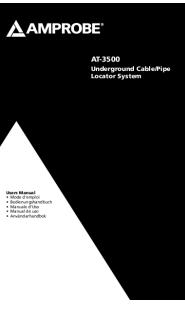
9.2 Customer Support

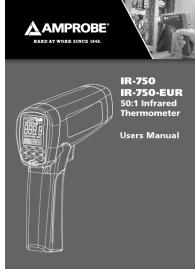
If you encounter any issues or have questions regarding your Amprobe SM-CAL1 Sound Meter Calibrator, please contact Amprobe customer support. Before contacting support, ensure you have reviewed the troubleshooting section of this manual. You can find contact information on the official Amprobe website or through your local distributor.

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Related Documents - SM-CAL1

 A photograph of the Amprobe AM-420 Digital Multimeter. The meter has a black face with a digital display showing '0.000'. It features a circular dial for selecting functions and several test leads. The brand name 'AMPROBE' and 'MADE AT WORK SINCE 1946' are visible at the top left. The model name 'AM-420 Digital Multimeter' is at the top right, with 'User Manual' and 'Mode d'emploi' below it.	<p>Amprobe AM-420 Digital Multimeter User Manual</p> <p>User manual for the Amprobe AM-420 Digital Multimeter, detailing its features, measurement capabilities, safety precautions, and specifications for electrical testing. Suitable for residential and professional use.</p>
 A photograph of the Amprobe CR50A Capacitance and Resistance Meter. The meter has a black face with a digital display showing '152'. It features a circular dial for selecting functions and several test leads. The brand name 'AMPROBE' is at the top left. The model name 'CR50A Capacitance, Resistance Meter' is at the top right, with 'User Manual' and 'Mode d'emploi' below it.	<p>Amprobe CR50A Capacitance and Resistance Meter User Manual</p> <p>This user manual provides comprehensive instructions for operating the Amprobe CR50A Capacitance and Resistance Meter, covering its features, measurement procedures, safety guidelines, and technical specifications.</p>
 A photograph of the Amprobe AT-3500 Underground Cable/Pipe Locator System. The image shows a black control unit with a screen and several buttons. The brand name 'AMPROBE' is at the top left. The model name 'AT-3500 Underground Cable/Pipe Locator System' is at the top right, with 'User Manual' and 'Mode d'emploi' below it.	<p>Amprobe AT-3500 Underground Cable/Pipe Locator System User Manual</p> <p>Comprehensive user manual for the Amprobe AT-3500 Underground Cable/Pipe Locator System, detailing operation, features, technical specifications, and maintenance for accurate underground utility detection.</p>

	<p>Amprobe IR-750 / IR-750-EUR 50:1 Infrared Thermometer User Manual</p> <p>User manual for the Amprobe IR-750 and IR-750-EUR 50:1 infrared thermometers. Features include wide temperature range, high accuracy, laser pointer, data logging, and USB connectivity for industrial and professional applications.</p>
	<p>Amprobe UAT-600 Underground Utilities Locator Quick Start Guide</p> <p>A quick start guide for the Amprobe UAT-600 Underground Utilities Locator Series, providing instructions on active and passive location of utilities using various modes like Power, Radio, Induction, Direct Test Leads, and Signal Clamp.</p>
	<p>Amprobe AM-560 & AM-570 Multimeter User Manual</p> <p>Comprehensive user manual for Amprobe AM-560 Advanced HVAC Multimeter and AM-570 Industrial Multimeter, covering features, specifications, operation, maintenance, and safety guidelines.</p>