

# User's Guide



# Digital Sound Level Meter

Model 407732



# Introduction

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Congratulations on your purchase of the Extech 407732 Digital Sound Level Meter. The 407732 measures and displays sound pressure levels in dB from 35 to 130dB. The LCD is backlit for viewing readings in dimly lit areas. User selectable features include Frequency Weighting ('A' and 'C'), Response Time (Fast and Slow), Max Hold, and Range (High and Low). Careful use of this meter will provide years of reliable service.

# Warranty

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**EXTECH INSTRUMENTS CORPORATION** warrants this instrument to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website [www.extech.com](http://www.extech.com) for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

# Safety

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Read the following safety information carefully before attempting to operate or service the meter. Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.

## Environmental Conditions

- Altitude up to 2000 meters
- Relative Humidity: 90% max.
- Operating Temperature: 32 to 104°F (0 to 40°C)

## Maintenance and Cleaning

- Repair or servicing not covered in this manual should only be performed by qualified personnel.
- Periodically wipe the case with a dry cloth. Do not use abrasives or solvents.

# Calibration and Repair Services

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**Extech offers repair and calibration services** for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.

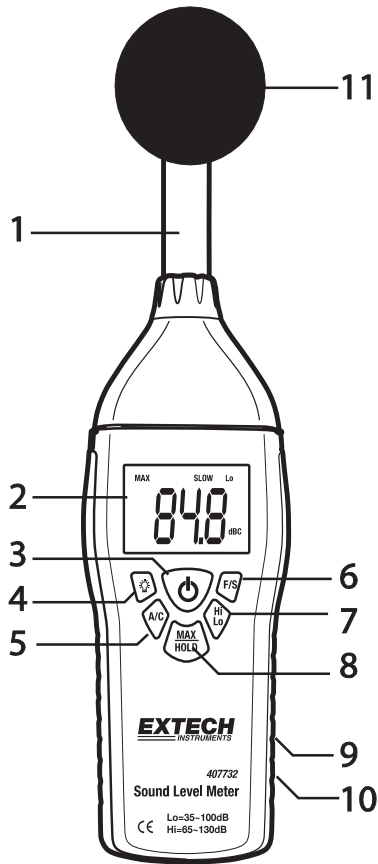
## Specifications

Display	4-digit (4000 count) backlit LCD
Display update rate	0.5 seconds
Microphone	0.5" Electret condensor
Measurement Bandwidth	31.5Hz to 8KHz
Dynamic range	65dB
Measurement Range	35 to 130dB (Low: 35 to 100; High: 65 to 130dB)
Frequency weighting	'A' and 'C' (selectable)
Accuracy / Resolution	± 1.5dB (under reference conditions) / 0.1dB
Standards	Meets ANSI and IEC Type 2 SLM standards
Maximum Hold decay time	<1dB / 3min
Response time	Fast: 125 milliseconds / Slow: 1 second
Calibration source required	1KHz sine wave @ 94dB
Power	9V Battery
Battery life	50 hours (typical); low battery indicator alerts user
Automatic power off	After approx. 15 minutes of inactivity
Operating temperature	32 to 104°F (0 to 40°C)
Operating humidity	10 to 90% RH
Storage temperature	14 to 140°F (-10 to 60°C)
Storage humidity	10 to 75% RH
Dimensions/weight	9.45 x 2.68 x 1" (240 x 68 x 25mm) / 6.75oz (210g)

## Meter Description

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1. Microphone
2. 4-digit LCD Display
3. ON-OFF button
4. LCD Backlight button
5. Frequency weighting selection button
6. Response time selection button
7. Range selector button
8. Max Hold / Data Hold selector button
9. Battery compartment on rear
10. Calibration pots in battery compartment
11. Windscreen




## Measurement Considerations

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1. Wind blowing across the microphone increases the noise measurement. Use the supplied windscreen to cover the microphone when applicable.
2. Calibrate the instrument before each use if possible. Especially if the meter has not been used for a long period of time.
3. Do not store or operate the instrument in areas of high temperature or humidity.
4. Keep meter and microphone dry.
5. Avoid severe vibration.
6. Remove the battery when the meter is to be stored for long periods of time.

# Operation

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1. Power the meter by pressing the  power button. The meter will begin displaying sound level readings. If the LCD does not switch on, check the 9V battery located in the rear battery compartment.
2. Hold the meter in hand facing the microphone toward the source of the sound to be measured.
3. View the measurement on the meter's LCD. An indication of **OVER** means that the measurement is out of range. Toggle the 'Hi' (65 to 130dB) and 'Lo' (35 to 100dB) measurement ranges using the HI/LO button. For measurements in the 65 to 100dB region either range can be used.

## 'A' and 'C' Frequency Weighting

Use the 'A/C' button to select 'A' or 'C' frequency weighting. With 'A' weighting selected, the frequency response of the meter is similar to the response of the human ear. 'A' weighting is commonly used for environmental or hearing conservation programs such as OSHA regulatory testing and noise ordinance law enforcement. 'C' weighting is a much flatter response and is suitable for the sound level analysis of machines, engines, etc. Most noise measurements are performed using 'A' Weighting and SLOW Response.

## 'FAST' and 'SLOW' Response Time

Use the 'F/C' button to select FAST (125 ms) or SLOW (1 second) response time. Select FAST to capture noise peaks and noises that occur very quickly. Select the SLOW response to monitor a sound source that has a consistent noise level or to average quickly changing levels. Select Slow response for most applications.

## 'Hi' and 'Lo' Range Selections

Use the 'Hi/Lo' button to select the appropriate range. If the measurement is in the range of 35 to 100 dB, use the 'Lo' range. If the measurement is between 65 and 130dB, use the 'Hi' range. For measurements between 65 and 100dB, either range can be used. If the display flashes the OVER icon, press the range button to toggle the range.

## MAX HOLD

In this mode, the meter only updates the LCD when a higher reading than the one presently on the display is detected. Select MAX HOLD by momentarily pressing the MAX HOLD button. The meter displays the MAX icon when in the MAX HOLD mode. Press the MAX HOLD button again to exit this mode (the MAX indicator will switch off).

## DATA HOLD

To freeze a displayed reading, press and hold the MAX HOLD button until the MAX and HOLD display icons appear. To release the display and return to the normal operating mode, press and hold the MAX HOLD button until the MAX and HOLD icons switch off.

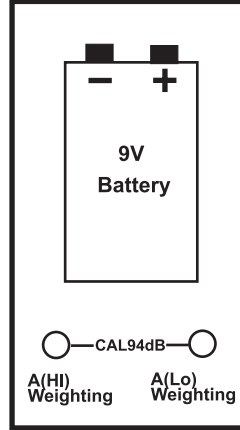
## Backlight button

The LCD is equipped with backlighting for easier viewing, especially in dimly lit areas. Press the backlight button to turn the backlight on. Press again to turn the backlight off. The backlight does not have an automatic power down function; judicious use will conserve battery life.

# Calibration

To calibrate the 407732, an external calibrator such as the Extech 407744 or the Extech 407766 is required in addition to a small screw-driver.

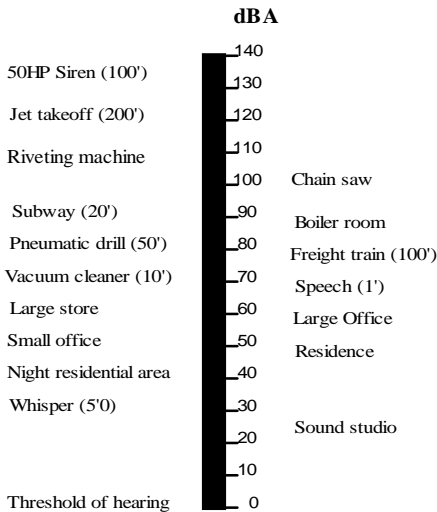
1. Open the battery compartment and locate the two calibration potentiometers behind the 9V battery (see diagram)
2. Turn the meter ON
3. Put the meter in the 'A' weighting mode
4. Put the meter in the 'SLOW' response mode
5. Place the 407732 microphone into the calibrator. Set the calibrator to output a 1kHz sine wave @ 94dB
6. Put the meter in the low range
7. Adjust the 'A (Lo)' potentiometer for a display of 94.0 dB
8. Put the meter in the high range
9. Adjust the 'A (HI)' potentiometer for a display of 94.0 dB



## Battery Replacement

When the low battery icon **BAT** appears on the LCD replace the 9V battery as soon as possible. The battery compartment cover is located on the rear of the meter. Remove the Phillips screw to loosen the cover. Slide the battery compartment cover off, change the battery, and replace the compartment cover.

## Typical A-Weighted Sound Levels



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