EXTECH INSTRUMENTS

Instruction Manual

MODEL 407736
Digital Sound Level Meter

- 1.5 dB accuracy meets ANSI and IEC 651 Type II standards
- A/C weighting & Fast/Slow response
- Built-in calibration check
- 0.1dB resolution

1. INTRODUCTION

Congratulations on your purchase of the Extech Model 407736 Digital Sound Level Meter. This professional meter, with proper care, will provide years of safe reliable service.

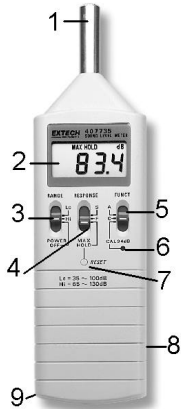
2. SPECIFICATIONS

Display	3-1/2 digit (2000 count) LCD
Display update rate	0.5 seconds
Microphone	0.5" Electret condensor-type
Measurement Bandwidth	31.5Hz to 8KHz
Dynamic range	55dB
Measurement Range	35 to 130dB (Lo: 35 to 90; Hi: 75 to 130dB)
Frequency weighting	'A' and 'C'
Applicable standards	IEC-651 & ANSI S1.4 Type 2
Accuracy / Resolution	± 1.5dB / 0.1dB
Maximum hold decay time	<1dB / 3min
Response time	Fast: 125ms / Slow: 1 second
Built-in calibration check	1KHz internal sine wave @ 94dB
AC Analog output	0.65VAC rms (full scale); 600Ω output impedance
DC Analog output	10mVDC / dB; 100Ω output impedance (approx).
Power	9V Battery (006P or 6F22)
Battery life	50 hours typical
Operating temperature	32 to 104°F (0 to 40°C)
Operating humidity	10 to 90% RH
Dimensions/weight	9.45x2.68x1" (240x68x25mm) / 6.75oz (210g)

3. METER DESCRIPTION

1. Microphone
2. LCD display
3. POWER OFF & RANGE select switch
4. RESPONSE & HOLD select switch
5. A/C weighting and Calibration switch
6. Calibration adjust screw for 94dB
7. Reset key (resets max hold reading)
8. AC/DC analog output 3.5mm phone jack
9. Battery compartment on rear of meter

Note: The threaded tripod mount screw hole is on the center rear of the meter (not shown).



4. METER OPERATION

4.1 Quick Start

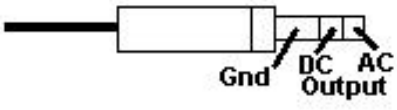
1. Power the meter by moving the RANGE switch to the LO or HI range position, the meter will begin measuring sound levels. If the LCD does not display, check the battery.
2. Place the meter on a tripod via the tripod mount on the rear of the meter or hold the meter in hand to take noise measurements.
3. Point the microphone toward the source of the sound level to be measured and view the reading on the meter's LCD. An indication of 'OVER' means that the measurement is out of range, try selecting the other measurement range.

4.2 'A' and 'C' Weighting. Select 'A' or 'C' Weighting via the FUNCT switch. Use 'A' weighting to have the meter respond as the human ear would with regard to frequency response (the human ear boosts and cuts amplitude over the frequency spectrum therefore it is not 'flat' responding). 'A' weighting is used for environmental measurements, OSHA regulatory testing, law enforcement, and workplace design. Select 'C' weighting for flat response measurements (no amplitude boost or cut across the frequency spectrum). 'C' weighting is suitable for the sound level analysis of machines, engines, etc.

4.3 FAST/SLOW Response Time. Select either FAST (125msec response) or SLOW (1sec response) measurement mode via the RESPONSE switch. Selection of Fast or Slow is determined by the application and any directives or standards related to that application. For example, most hearing conservation or OSHA related testing is done using SLOW mode and A weighting.

4.4 MAX HOLD. In this mode, the meter takes continuous measurements and only updates the LCD when a higher reading than the one presently on the display is detected. Select MAX HOLD using the RESPONSE switch. The LCD will reflect the MAX HOLD function. Press the RESET key to reset the MAX HOLD reading.

4.5 Analog Outputs. The meter includes an AC and a DC analog output for use with chart recorders, dataloggers, etc. The AC output is 0.65V rms full scale and the DC output is 10mV per dB. The 3.5mm output mini-jack is located on the right side of the instrument. Configure a mini-plug for use with AC, DC, or both as shown in the diagram below:



This is a diagram of a 3.5mm phone plug used to connect to the meter. Select the output wires (referenced to ground) corresponding to the AC, DC, or both signals to connect to chart recorders, dataloggers, etc.

5. MEASUREMENT CONSIDERATIONS

1. Wind blowing across the microphone adds extraneous noise to the readout. Use the supplied windscreen to cover the microphone in windy conditions.
2. Calibrate the instrument before using it. 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 for long periods of time.
4. Keep meter and microphone dry.
5. Avoid severe vibration when using the meter.
6. Remove the battery when the meter is not expected to be used for long periods of time.

6. BATTERY REPLACEMENT

When the low battery message appears on the LCD, the 9V battery has fallen to a critically low voltage level and should be replaced as soon as possible. The battery compartment cover resides at the bottom, rear of the meter. Slide the battery compartment cover off, change the battery, and replace the compartment cover.

7. CALIBRATION CHECK

This meter provides a built-in calibration check. The calibration screw adjustment is located on the front panel under the FUNCT switch. Put the FUNCT switch to the CAL 94dB position and adjust the screw with a small tweaking tool for a display of exactly 94dB. For calibration with an external sound level calibrator, refer to the instructions accompanying the calibrator.

8. REPAIR AND CALIBRATION SERVICES

Extech offers complete repair and calibration services for all of the products we sell. For periodic calibration, NIST certification or repair of any Extech product, call customer service for details on services available. Extech recommends that calibration be performed on an annual basis to insure calibration integrity.

9. WARRANTY

EXTECH INSTRUMENTS CORPORATION warrants the basic instrument to be free of defects in parts and workmanship for one year from date of shipment (a six month limited warranty applies on 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. **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.

Tech Support Hotlines
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