User's Guide

EXTECH INSTRUMENTS

Digital Sound Level Meter

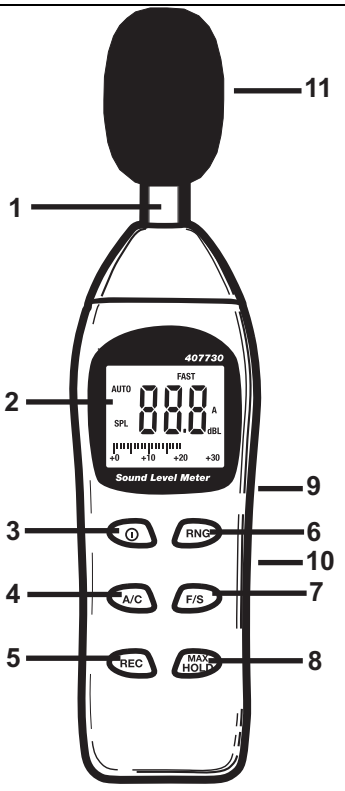
Model 407730

Introduction

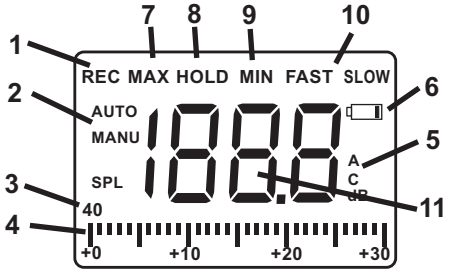
Congratulations on your purchase of the Extech 407730 Digital Sound Level Meter. The 407730 measures and displays sound pressure levels in dB from 40 to 130dB. User selectable features include Frequency Weighting ('A' and 'C'), Response Time (Fast and Slow), Max Hold, and Max/Min recording. Careful use of this meter will provide years of reliable service.

Meter Description

1. Microphone
2. LCD Display
3. ON-OFF button
4. A/C weighting selection button
5. Min/Max Record button
6. Range selector button
7. F/S response selection button
8. Max Hold selector button
9. Calibration adjustment
10. AC analog output jack
11. Windscreen



1. Record icon
2. Auto or Manual range
3. Range indicator
4. Bargraph
5. A or C weighting
6. Low bat icon
7. Max level indicator
8. Hold indicator
9. Min indicator
10. Fast or Slow weighting
11. dB display



Operation

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 away from the body.
3. View the measurement on the meter's display. If the meter is in the autoranging mode, the display may briefly indicate "HI" or "LO" if the noise level is above or below the currently selected range. The meter will change the range as needed to display the dB level.

'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. "A" or "C" icons will appear in the display.

Most noise measurements are performed using 'A' Weighting and SLOW Response.

'FAST' and 'SLOW' Response Time

Use the 'F/S' 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. "FAST" or "SLOW" icons will appear in the display.

Select Slow response for most applications.

Auto or Manual Ranging

The meter will turn on in the auto-ranging mode and "AUTO" will be indicated on the display. In this mode the meter will automatically select the best range for the noise level being measured. If the measured dB level exceeds the range of the meter or the range of a selected range, "HI" will appear in the display. If the measured dB level is lower than the selected range, "LO" will appear in the display.

1. Press the **RNG** button to manually select the range, "MANU" will be indicated on the display. The four ranges are: 40-70, 60-90, 80-110 and 100-130. Press the **RNG** button to step through the ranges.
2. Press and Hold the **RNG** button for 2 seconds to exit the manual range mode.

MAX HOLD

In this mode the meter only updates the LCD when a higher reading than the one presently on the display is detected.

1. Press the **MAX HOLD** button to enter the Max Hold mode.. The "MAX HOLD" icon will appear in the display.
2. Press the **MAX HOLD** button again to exit this mode.

MAX/MIN Recording

In this mode the meter records the Maximum and Minimum readings and stores them into memory.

1. Press the **REC** button to enter the RECORD mode. The “REC” icon will appear in the display.
2. Press the **REC** button again to display the minimum value recorded since the mode was entered. The “MIN” icon will appear in the display. The meter is not recording during this time.
3. Press the **REC** button again to display the maximum value recorded since the mode was entered. The “MAX” icon will appear in the display. The meter is not recording during this time.
4. Press the **REC** button again to display the present dB level and continue recording.
5. Press and hold the **REC** button until the “REC” icon clears to exit the mode.

Auto-Power Off

The meter will automatically shut off after 20 minutes of operation. To disable this feature:

1. With the meter OFF, Press the ⏻ and **MAX HOLD** buttons simultaneously.
2. ⊓ will appear in the display
3. Release the ⏻ button and then release the **MAX HOLD** button.
4. The meter will remain on until the power button is pressed.

Calibration

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

1. Turn the meter ON
2. Select the 80 to 110dB range
3. Select ‘A’ weighting and ‘SLOW’ response
4. Place the microphone into the calibrator. Set the calibrator to output a 1kHz sine wave @ 94dB
5. Adjust the calibration potentiometer for a display as close as possible to the calibrator’s output

Battery Replacement

When the low battery icon appear replace the battery by removing the screw securing the rear battery compartment and replacing the 4 AAA batteries.

Tripod Mount

A camera tripod mount is located on the rear of the meter for increased stability and elimination of body reflections.

Measurement Considerations

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.

Specifications

Display	LCD with bargraph
Microphone	0.5” (10mm) Electret condensor
Measurement Bandwidth	300Hz to 8KHz
Measurement Range	40 to 130dB (A wtg), 45 to 130dB (C wtg)
Frequency weighting	‘A’ and ‘C’ (selectable)
Accuracy / Resolution	± 2dB (under reference conditions) / 0.1dB
Response time	Fast: 125 milliseconds / Slow: 1 second
Calibration source	1KHz sine wave @ 94 or 114dB
AC output	0.707Vrms full scale
Power	4 AAA Batteries
Battery life	30 hours (typical); low battery indicator alerts user
Automatic power off	After approx. 20 minutes
Operating temperature	32 to 122°F (0 to 50°C)
Operating humidity	10 to 90% RH
Storage temperature	-4 to 140°F (-20 to 60°C)
Dimensions/weight	9 x 2.3 x 1.7” (230 x 57 x 44mm) / 6oz (172g)

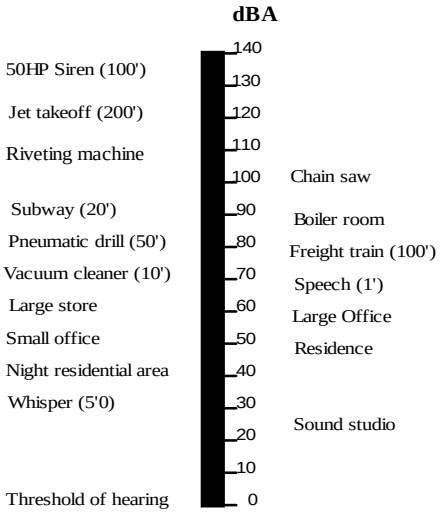
Warranty

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 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.*

Calibration and Repair Services

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.

Typical A-Weighted Sound Levels



Support line (781) 890-7440

Technical support: Extension 200; E-mail: support@extech.com

Repair & Returns: Extension 210; E-mail: repair@extech.com

Product specifications subject to change without notice

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