

User's Manual



Model 407727 Digital Sound Level Meter



Introduction

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

Specifications

Measurement ranges	Auto range from 40 to 130dB ('A' Weighted) Auto range from 45 to 130dB ('C' Weighted)
Resolution	0.1 dB
Accuracy	±2 dB at 94 dB sound level
Display	3 1/2 digit LCD with analog bargraph
Display update rate	160ms (LCD), 40ms (bargraph)
Time weighting	Fast / Slow Response (selectable)
Frequency weighting	'A' and 'C' weighting (selectable)
Analog output	AC: 0.707Vrms
Microphone type	Condenser Electret
Power	Meter powered by 9V battery ;120 hour battery life
Dimensions/Weight	2.7x7.1x1.4" (68 x 180 x 36mm) / 5.1 oz. (160g)

Front Panel Description

- 1 Microphone
- 2 LCD Display
- 3 Analog Bargraph Display
- 4 ON/OFF key
- 5 Range key
- 6 A/C Weighting selection key
- 7 Min/Max Record key
- 8 Fast/Slow selection key
- 9 Maximum Hold activation key

Note: Battery compartment and Tripod mount are on the rear of the meter.
The Analog output jack is located on the left side of the meter.



Operation

LCD Display with Analog Bargraph

Sound levels are displayed both digitally and in bargraph format. When the ON/OFF key is pressed to power the meter, the LCD will display all characters and then it will count down to zero. After countdown, the meter displays sound pressure levels (SPL) in units of dB. Point the microphone toward the source of the sound being measured, and read the measurement on the LCD.

Auto and Manual Ranging

The default mode of operation is Auto Range. To manually select a range, press the RANGE key ('MANU' will appear on the LCD). Press the RANGE key until the desired range is displayed. Note that the two-digit number to the left of the bargraph changes to reflect the new range.

Tripod Mount

A threaded insert on the rear of the meter permits attachment to a tripod stand for increased stability and accuracy (eliminates hand noise and minimizes the effects of sound reflected from the user's body).

Weighting A / C

Press the Weighting key to select A or C weighting. The LCD will reflect which weighting mode is currently selected. 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 a flatter response measurement (especially for lower frequencies). 'C' weighting is suitable for the sound level analysis of machines, engines, etc.

Fast (F) and Slow (S) Response

Press the Fast or Slow key to select the response. The LCD will reflect the currently selected mode. 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 and A weighting.

Maximum Hold

Press the Max Hold key to display the maximum reading during the measurement period. In the Max position, the LCD will hold the highest reading measured and will update only if a higher reading is measured. The bargraph will continue normal measurements. Press the key again to return to normal operation.

Low Battery Indication

If the low battery icon 'BAT' appears on the display, replace the 9V battery as soon as possible. See the battery replacement section for further information.

Analog Output

A 3.5mm phono output jack is provided on the meter for connection to external test equipment. An AC rms voltage is provided (0.707V maximum) which is a linearized representation of the analog pointer reading. Connect this output to a datalogger, chart recorder, etc. for datalogging purposes.

Data Recording

To begin recording the MIN and MAX sound level readings, press the RECORD key (REC will appear on the LCD). To recall the stored minimum reading, press the RECORD key again (MIN will appear on the LCD along with the recorded measurement data). To view the stored maximum reading, press RECORD again. To resume normal meter operation, press RECORD key a final time. NOTE: The bargraph displays continues to work while in the Data Recording mode.

Auto Power Off

The meter automatically shuts down after 20 minutes of non-use to preserve battery life. To override this feature, press the ON/OFF and MAX HOLD keys simultaneously from a power off condition. When the display appears release only the MAX HOLD key (a lower case 'n' will appear on the LCD). Now Release the ON/OFF key. Note: The Auto Power Off feature will be re-activated the next time the meter is manually powered down.

Battery replacement

Remove the battery compartment cover on the rear of the meter by removing the cover screw. Replace 9V battery and compartment cover.

Typical A Weighted Sound Levels

50HP Siren (100')	135db	Speech (1')	68dB
Jet Takeoff (200')	120dB	Large store	62dB
Riveting machine	110dB	Large office	58dB
Chain saw	100dB	Residence	48dB
Subway (20')	90dB	Night residential area	42dB
Freight train (100')	80dB	Whisper (5')	32dB
Vacuum cleaner (10')	72dB	Sound studio	24dB

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 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 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

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