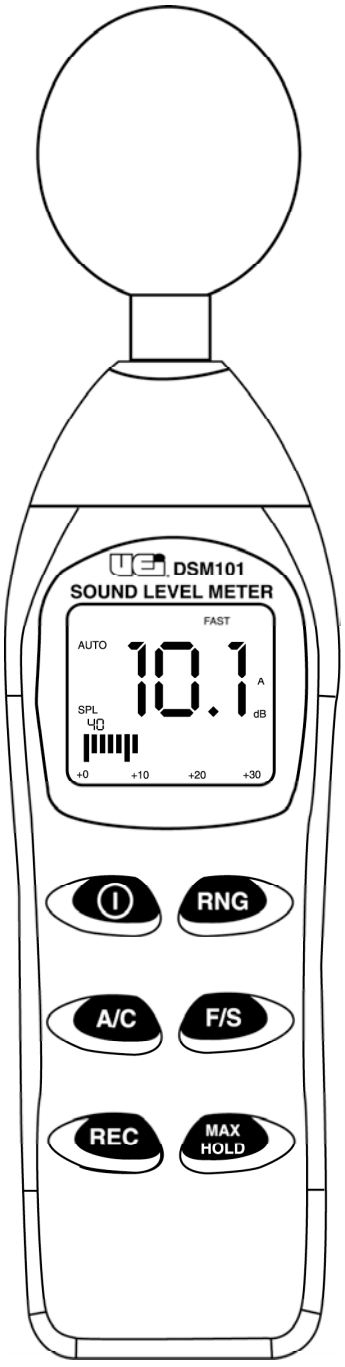
# INSTRUCTION MANUAL

# DSM101

## Sound Level Meter

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## Introduction

The DSM101 provides automatic or manual ranging. This meter features 4 measurement ranges from 40 to 130 dB and features 0.1 dB resolution.

The meter allows you to select between fast and slow response times as well as A and C weighting.

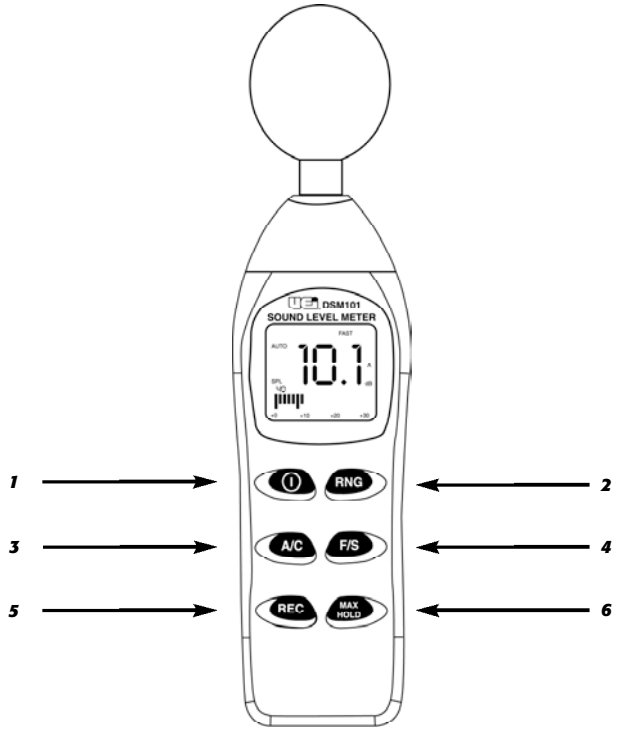
A maximum hold function is provided. Jacks on the meter provide AC analog output.

**Features include**

- Automatic or manual ranging
- 0.1 dB resolution
- Selection between slow or fast response times
- A and C weighting
- Maximum hold
- Automatic power off

## Button Description

1. **Pwr:** Power on or power off the meter.
2. **RNG:** Auto range/Manual range select key.
3. **A/C:** A weighting and C weighting select key.
4. **F/S:** Response select key.
5. **REC:** Record Maximum and Minimum sound level measurement.
6. **Max Hold:** Freeze maximum sound level reading.




## Measuring Sound Levels

Sound levels are displayed both digitally and in a bar graph. The digital display is updated every 160ms, while the bar graph is updated every 40ms.

1. Press the "⏻ " key to turn the meter on. The unit will first display the full screen and **"188.8"** then count down from 99.9 to zero. The meter will now begin measuring the current sound levels. **"SPL"** (Sound Pressure Levels) appears on the left side. **"A"**, **"dB"** on the right side of screen. Point the microphone toward the source of the sound to be measured.

**Diagram A**

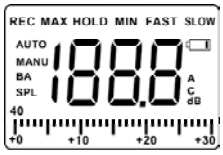



**Diagram B**


## Selecting the Response Time

You can select fast or slow response time to suit different applications and standards.

**EXAMPLE**

Most OSHA-related testing is done using slow response time and A weighting. When you turn the meter on, it will be in fast response mode. Press the F/S key to toggle between fast and slow response.

**Diagram C**

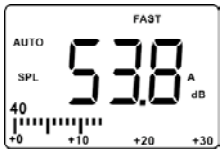


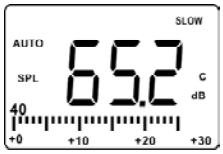

**Diagram D**


A small icon "**FAST**" or "**SLOW**" will be displayed on the top of the screen to indicate the current mode.

## Selecting A and C Weighting

When you turn the meter on, it will be in A weighting mode. A weighting enables the meter to respond in the same manner as the human ear, which increases and decreases amplitude over the frequency spectrum. Applications for A weighting include OSHA regulatory testing, environmental, workplace safety design, and law enforcement.

**Diagram E**



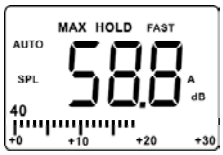
C weighting is suitable for the flat response measurements with no increase or decrease of amplitude over the frequency spectrum. Applications for C weighting include the sound level analysis of engines and machinery.

Press the **"A/C"** key to select between A and C weighting. A small **"A"** or **"C"** icon will be displayed on the right side of the screen to indicate the current mode.

## Freezing the Maximum Sound Level Reading

1. Press the " ⏻ " key to turn the meter on.
2. When measuring sound levels, press the **"MAX HOLD"** key to freeze the maximum reading. **"MAX HOLD"** will be displayed. The digital display will remain unchanged until a higher reading is detected. Note that the bar graph will continue to record the current reading.
3. Press the **"MAX HOLD"** key again to exit maximum hold mode.

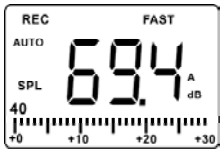
**Diagram F**

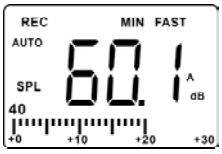



## Recording the Maximum and Minimum Measurements

1. Press the " ⏻ " key to turn the meter on.
2. Press the **"REC"** key. The **"REC"** icon will be displayed in the upper corner of the screen. The meter will begin tracking the maximum and minimum sound level measurements.
3. Press the **"REC"** key again. **"MIN"** icon will appear in the upper middle of the screen and the minimum sound level measurement will be displayed. The unit is not recording at this time, but the bar graph will continue to show the current reading.

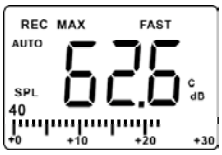
**Diagram G** **Diagram H**




4. Press the **"REC"** key again. **"MAX"** will appear on screen side by the **"REC"** and the maximum sound level recording at this time, but the bar graph will continue to show the current reading.

**Diagram I**




5. Press the **"REC"** key again to resume recording and repeat the process.
6. Press and hold the **"REC"** key until the **"REC"** indicator disappears to exit recording mode.

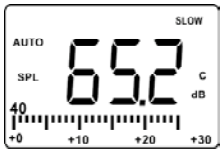
## Selecting Automatic and Manual Ranging

The meter features 4 measurement ranges in 10 dB steps: 40-70 dB. 60-90 dB, 80 dB - 110 dB, 100 dB - 130 dB.

When you turn the meter on, it will be in automatic range mode and a small "**AUTO**" will be displayed on the left side of the screen. In this mode, the meter will adjust the measurement range automatically for accuracy.

The two digit number to the left of the bar graph on the LCD will show the low end of the current range. You can also set the range manually.

**Diagram J** **Diagram K**





In the manual range mode, the meter will be able to take readings more quickly, because the unit does not need to first establish the range before displaying the measurement. This is helpful when you know the measurement range in advance.

To adjust the range manually:

1. When measuring sound levels, press the **"RNG"** keys as needed to adjust the measurement range. **MANU** will appear on the display. Note that the two digit numbers to the left of the bar graph will change to reflect the low of the newly selected range.
2. Press "**RNG**" key to switch back to automatic ranging.

If the meter is operating in manual range and **"LO"** is displayed, the sound is too low or the range.

If **"HI"** is displayed, the sound is too loud. In either case, you must adjust the measurement range or your readings will be inaccurate.

**Diagram L**

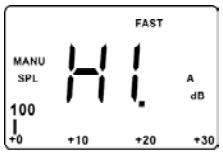
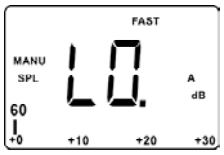



**Diagram M**




## Automatic Shutoff

The meter will turn off automatically after 20 minutes to preserve the battery.

To override this feature:

1. Make sure the unit is turned off.
2. Press the "⏻" and **"MAX HOLD"** buttons simultaneously.
3. When the full display appears, release the "⏻" button, " " icon will appear on the screen, now release the "**MAX HOLD**" button, " " will be replaced with full display.
4. The meter will remain on until the "⏻" button is pressed again.

The automatic shut off feature will resume the next time the meter is turned on.

**Diagram N**

## Calibration

Using a standard Acoustic Calibrator which generate "94 dB" output.

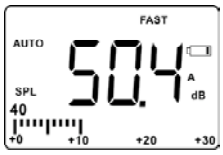
1. Set whichever time weighting: Fast or Slow.
2. Set sound level range at: 80-110 dB.
3. Select weighting A or C.
4. MAX HOLD function measurement mode disabled.
5. Calibrate under 60 dB sound environment. (recommended)

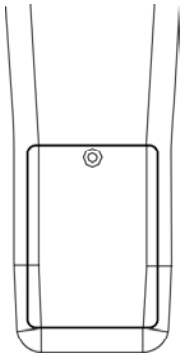
Insert the microphone into the hole of the calibrator. Press calibrator ⏻ key to power on, and adjust the CAL potentiometer of the unit, the level display will indicate the desired level. While selecting C weighting, display +/-0.3 dB deviation is reasonable.

## Replacing the Battery

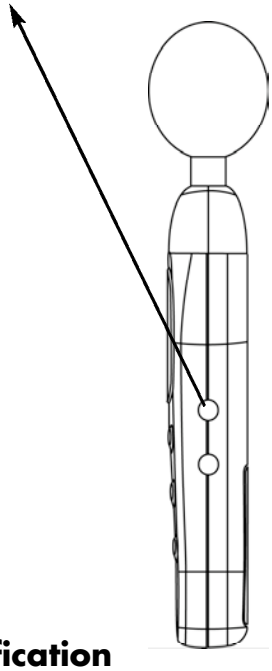
When the icon of "▭" appears, the 9V battery has fallen to a critically low voltage level and should be replaced as soon as possible. Use a screwdriver to unscrew the back battery compartment cover. Insert 4 fresh AAA batteries and screw the cover back on.

**Diagram O**



1. **Calibration Adjustment** (side) By using a Phillips (+) screw driver to adjust the calibration (Follow the calibration instruction).
2. **Tripod Mount** Mount the meter to a camera tripod for increased stability and accuracy, further eliminate hand or any sound reflected form the user.



## CE Certification

The meter conforms to the following standards:

EN 50081-1/1992 : EN 55022
EN 50082-1/1997 :
(EN 61000-4-2/-3/-8, ENV 50204)

The meter complies with the essential protection requirements of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

# DSM101
## Sound Level Meter

## Limited Warranty

The DSM101 is warranted to be free from defects in materials and workmanship for a period of three years from the date of purchase. If within the warranty period your instrument should become inoperative from such defects, the unit will be repaired or replaced at UEi's option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect or improper maintenance. Batteries and consequential damage resulting from failed batteries are not covered by warranty.

Any implied warranties, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the express warranty. UEi shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expenses or economic loss. A purchase receipt or other proof of original purchase date will be required before warranty repairs will be rendered. Instruments out of warranty will be repaired (when repairable) for a service charge. Return the unit postage paid and insured to:

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This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

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