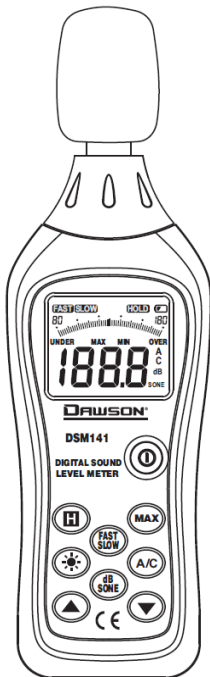


# Dawson DSM141

Digital Sound Level Meter

User's Manual



# TABLE OF CONTENTS

<b>LIMITED WARRANTY AND LIMITATION OF LIABILITY .....</b>	<b>3</b>
<i>Out of the Box.....</i>	<i>3</i>
<i>Accessories .....</i>	<i>4</i>
<i>Safety Information.....</i>	<i>4</i>
<i>Certification .....</i>	<i>6</i>
<b>INTRODUCTION .....</b>	<b>7</b>
<i>Overview.....</i>	<i>7</i>
<i>Figures and Components .....</i>	<i>7</i>
<i>Buttons and Components .....</i>	<i>7</i>
<i>Display Description .....</i>	<i>9</i>
<b>USING THE METER.....</b>	<b>10</b>
<i>Preparation.....</i>	<i>10</i>
<i>Backlight.....</i>	<i>10</i>
<i>Sound Level Measurement (dB).....</i>	<i>11</i>
<i>Basic Functions .....</i>	<i>11</i>
<i>Selecting the weighting mode .....</i>	<i>12</i>
<i>FAST and SLOW mode .....</i>	<i>12</i>

<i>Sound Units</i> .....	12
<i>Maximum Value</i> .....	13
<b>SPECIFICATIONS</b> .....	<b>13</b>
<b>MAINTENANCE AND REPAIR</b> .....	<b>14</b>
<i>Repair</i> .....	15
<i>Meter Calibration</i> .....	16
<i>Replacing Batteries</i> .....	16
<b>CONTACT DAWSON</b> .....	<b>17</b>
<b>FEATURES</b> .....	<b>Back Page</b>

## **LIMITED WARRANTY AND LIMITATION OF LIABILITY**

This instrument from Dawson Tools Inc. will be free from defects in workmanship and material for three years from the date of original purchase. This warranty does not cover defects resulting from damage caused by the user such as drops, neglect, misuse, unauthorized alteration, usage outside of specified conditions, contamination, or improper repair/maintenance. To receive service on the instrument if it becomes necessary during the warranty period, contact your nearest Dawson authorized service center at (800) 898-6991 or visit [www.DawsonTools.com](http://www.DawsonTools.com) to obtain a return authorization (within the US only). A return authorization is necessary before returning any instrument to Dawson; no service will be provided without a return authorization. The user is responsible for properly packing the unit and charges such as shipping, freight and insurance charges. The extent of Dawson's liability is limited solely to the repair/replacement of the instrument. The above warranty in its entirety is inclusive and no other warranties, written or oral, are expressed or implied.

### **Out of the Box**

Check the Meter and accessories thoroughly before using the Meter. Contact your local distributor if the Meter or any components are damaged or malfunction.

## Accessories

- Microphone cover 1pc
- 1.5 AAA Batteries 4pc
- Case 1pc
- User's Manual

## Safety Information



### **WARNING**

TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK, PRODUCT DAMAGE OR PERSONAL INJURY, PLEASE FOLLOW THE SAFETY INSTRUCTIONS DESCRIBED IN THE USER MANUAL. READ THE USER MANUALS BEFORE USING THE METER.




### **WARNING**

TO ENSURE SAFE OPERATION AND LIFE OF THE METER, DO NOT PLACE THE METER IN ANY ENVIRONMENT WITH HIGH PRESSURE, HIGH TEMPERATURE, DUST, EXPLOSIVE GAS OR VAPOR.

- Avoid shaking, dropping or any kind of impacts when using or transporting the Meter.
- To avoid electric shock or personal injury, repairs or servicing not covered in this manual should be performed only by qualified personnel.
- Avoid direct exposure to sunlight to ensure extended life of the Meter.
- Use only the batteries indicated in the Technical Spec.
- Avoid exposing batteries to humidity. Replace batteries as soon as the low battery indicator appears.
- Please keep the original packing for future shipping purposes (ex. Calibration)
- After opening the box, check for any damage during delivery.


### **Safety Symbols on the Meter**

	<p>Important safety information, please refers to the user manual</p>
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### **Important Safety Information**

- Repair or maintenance should be implemented by trained personnel.

### **Certification**

-  The Meter is complied to EMC requirements.
- **IEC651 Type 2:** This meter has meet **IEC651 Type 2** Sound level Meter standard.
- **ANSI S1.4 Type2:** This meter has meet **ANSI S1.4 Type2** Sound level Meter standard.

# Introduction

## Overview

The DSM141 is a basic portable multifunction digital sound level meter. It measures ambient sound level ranging from 30dB to 130dB with frequency range of 30Hz~8 kHz.

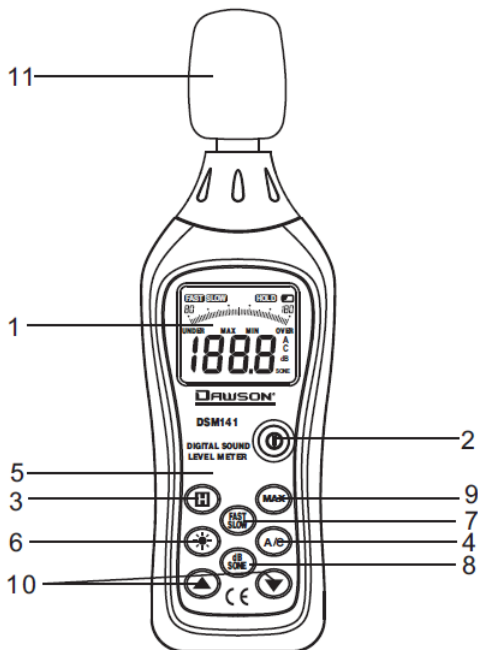
## Figures and Components

### Buttons and Components

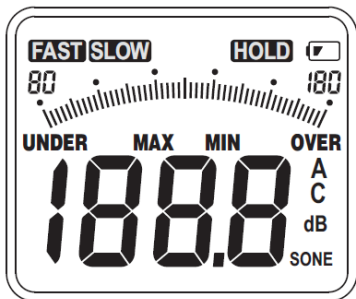
1. LCD (Liquid-Crystal Display)
2. **Power** Button
3. **HOLD** Button
4. **A/C** Button
5. Panel
6. **Backlight** Button
7. **Fast/Slow** Button
8. **dB/SONE** Button
9. **Maximum** Button
10. **Up/Down** Button
11. Microphone




# Front Panel




## Display Description



Display symbols	Description
FAST	Real time value
SLOW	Average Value
HOLD	Data Hold
MAX	Maximum
UNDER	Sound Level Below Range
OVER	Sound Level Over Range
A	A Weighting Mode
C	C Weighting Mode
dB	Decibel
SONE	Sound Unit (Sone)
	Low Battery Indicator

# Using the Meter


## Preparation

- If the battery voltage is lower than 4.5V the “” symbol will appear and the batteries should be replaced.
- Cover the metal microphone with microphone cover that's included.
- Auto gear level (30-130 dB) is not suitable for measuring impact noise.

## Readings Hold

- Press “H” button to hold the readings of current measurement.
- Press “H” button again to release the hold.

## Backlight

- To light up the LCD, press  key to turn on backlight. The light will be on for 6 seconds.

## Sound Level Measurement (dB)

### Basic Functions

- Press the power button, the default measurement range is 40~90dB. The measured ambient sound level is displayed within this range.
- If **“UNDER”** or **“OVER”** is displayed on the LCD, the ambient sound is either lower or higher than the 40 ~ 90 dB range limit. (These numbers are located on upper-left/right sides of the screen) If so, the measurement value is not guaranteed. Click **“▲” Up** or **“▼” Down** key to set the proper measurement range.

### NOTE:

Make sure the ambient sound level measured is between the range.

## Selecting the weighting mode

### A mode:

- To measure the sound level within the human audible range, select “**A**” weighting mode (simulates the hearing characteristics of human ears). This is the default mode.

### C mode:

- Press the “**A/C**” key to select “**C**” mode, C is displayed on the right side of the screen.
- To measure the actual sound level, select C weighting mode.
- Press the “**A/C**” key to return to “**A**” mode

### FAST and SLOW mode:

- To read real-time sound level, select “FAST” (high speed). To obtain the average sound level, select “SLOW” (low speed). Press FAST/SLOW key to select “FAST” or “SLOW”.

### Sound Units

- Press “**dB/SONE**” to choose between dB (decibel) or SONE.

## Maximum Value

- To obtain the maximum sound level, press “**MAX**” to have maximum sound level displayed. Press “**MAX**” key again to return to the normal measurement mode.

## Specifications


- Microphone type: polarized capacitive microphone
- Sound pressure accuracy:  $\pm 1.5$  dB (sound pressure standard, 94 dB @ 1 KHz).
- Sound pressure frequency response: 30Hz - 8 KHz.
- Dynamic range of sound pressure: 50 dB (for each measurement gear level).
- Sound pressure measurement scope: 30-130 dBA, 35-130 dBC.
- Sound pressure frequency weighting characteristics: A and C.
- Dynamic characteristic of sound pressure: FAST: 125ms, SLOW: 1sec
- Digital display: 4-digit, resolution: 0.1 dB, sampling rate: 2 times/sec.
- Analog bar display: Each analog bar represents 1 dB, sampling rate is 20 times/sec.

- Measurement range: 30-80 dB, 40-90 dB, 50-100 dB, 60—110 dB, 70—120 dB, 80-130 dB, 6 ranges in total.
- Automatic shifting: microcomputer will automatically select the best gear level in the range from 30 to 130 dB.
- Below or above limit prompt: indicated by “UNDER” or “OVER”.
- Power supply: 4 x 1.5V AAA
- Operating temperature: 32°F to 104°F (0 ~40 °C)
- Operating humidity: 10 ~80% RH
- Storage temperature: 10°F to 140°C (- 10 ~60 °F)
- Storage humidity: 10 ~70% RH
- Outside measurement: 7.6(L) x 2.4(W) x 1.14(H)  
(193 (L) × 60(W) × 29 (H) mm)
- Weight: about 7 oz. (200 g) including batteries

# Maintenance and Repair

## Repair

Please follow these steps closely if the Meter is not functioning properly:

- Check batteries; replace with new batteries if low battery indicator “” appears.
- Follow User’s Manual to confirm all procedures.
- Before sending Meter back for repair, include a description of the problems encountered. Remove batteries and pack Meter well to avoid damage in delivery, Dawson does not cover damage due to delivery.
- Repair or service not covered in this manual should be performed only by the authorized service center or qualified personnel.



## **Meter Calibration**

- After sound level meter have been used extensively, the measurement accuracy may be reduced over the time; the Meter should be calibrated once a year. A standard sound source is required for calibration. Please contact Dawson for more details.

## **Replacing Batteries**

Follow these steps to replace batteries:

- Turn off the Meter.
- Loosen the battery compartment door screw, and remove the door from the case bottom.
- Remove the batteries and replace the batteries with new batteries.
- Reattach the battery compartment door to the case bottom and tighten the screw.
- Reattach the battery compartment door to the case bottom and tighten the screws.

# Contact Dawson

Dawson Tools, Inc.

1142 S. Diamond Bar Blvd., #858

Diamond Bar, CA 91765

Phone: (310) 728-6220

[www.DawsonTools.com](http://www.DawsonTools.com)



Do not recycle

(Back page)

## Features

- LCD Display
- Auto and manual Range
- Auto Power Off
- MAX/MIN Display
- Decibel/SONE
- Back Light
- Data Hold
- Low Battery Indicator