CEM DT-85A

User Manual for CEM DT-85A Digital Sound Level Meter

Model: DT-85A

Introduction Safety Information Features Components Setup Operation Maintenance Troubleshooting Specifications Warranty & Support

1. Introduction

This manual provides detailed instructions for the proper use, setup, and maintenance of the**CEM DT-85A Digital Sound Level Meter**. The DT-85A is a compact and portable device designed for measuring sound levels in various environments. It features a wide measuring range, A-weighted measurement, fast and slow response rates, and a clear digital LCD display with backlight.



Figure 1.1: CEM DT-85A Digital Sound Level Meter and included 9V battery.

2. Safety Information

Please read and understand all safety instructions before operating the device. Failure to follow these instructions may result in injury or damage to the meter.

- Do not expose the meter to extreme temperatures, humidity, or direct sunlight.
- Avoid dropping the meter or subjecting it to strong impacts.
- Do not attempt to open or modify the meter. Refer all servicing to qualified personnel.
- Remove the battery if the meter is not going to be used for an extended period to prevent battery leakage.
- Dispose of batteries properly according to local regulations.
- Keep the microphone free from dust and debris to ensure accurate readings.

3. Product Features

The CEM DT-85A Sound Level Meter offers the following key features:

- **Accurate Measurement:** Measures sound levels from 30dB to 130dB with an accuracy of ±3.5 dB. Provides real-time monitoring for precise data.
- **A-Weighted Measurement:** Simulates the frequency characteristics of low-intensity human ear noise, ideal for ambient noise detection.
- **Fast and Slow Response Rates:**
  - Fast response (0.125s/time) for general environmental measurements.
  - Slow response (1s/time) for environments with significant noise level changes.
- **Digital LCD Display:** 4-digit LCD with 0.1 dB resolution and backlight for clear readings in dark conditions. Includes a low voltage icon for battery status.
- **MAX/MIN Hold Function:** Allows for capturing the highest and lowest sound levels measured over a period.
- **Auto Power Off:** Automatically shuts down after 15 minutes of inactivity to conserve battery life.
- **Anti-slip Design:** Lightweight and easy to carry with durable plastic anti-slip strips for improved grip.



Figure 3.1: Overview of the DT-85A's main features.

4. Components and Parts Description

Familiarize yourself with the different parts of your DT-85A Sound Level Meter:



Figure 4.1: Detailed view of the DT-85A components and dimensions.

1. **Windscreen:** A foam cover over the microphone to reduce wind noise and protect the microphone.
2. **Microphone:** 1/2-inch condenser microphone for sound detection.
3. **Power On/Off Button:** Used to turn the device on or off.
4. **Backlight Sensor:** Automatically controls the LCD backlight based on ambient light.
5. **LCD Display:** Digital screen showing sound level readings, MAX/MIN indicators, and battery status.
6. **MAX/MIN Hold Button:** Toggles between current, maximum, and minimum measured values.
7. **Tripod Hole:** Standard threaded insert for mounting the meter on a tripod.
8. **Battery Cover:** Located on the back, provides access to the battery compartment.



Figure 4.2: Detail of the 1/2-inch condenser microphone.

5. Setup

5.1. Battery Installation

The CEM DT-85A requires one 9V battery (included). Follow these steps to install the battery:

1. Locate the battery cover on the back of the meter (refer to Figure 4.1).
2. Slide the battery cover downwards to open the compartment.
3. Connect the 9V battery to the battery connector, ensuring correct polarity (+ to + and - to -).
4. Place the battery into the compartment.
5. Slide the battery cover back into place until it clicks securely.

Note: If the low voltage icon appears on the LCD display, replace the battery promptly.

6. Operating Instructions

6.1. Powering On/Off

- To turn on the meter, press the **Power On/Off** button. The LCD display will illuminate.
- To turn off the meter, press and hold the **Power On/Off** button until the display turns off.
- The meter will automatically shut down after approximately 15 minutes of inactivity to save battery life.

6.2. Taking Measurements

Once powered on, the meter will immediately begin displaying the current sound level in decibels (dB). Ensure the microphone is pointed towards the sound source.



Figure 6.1: LCD Display with Backlight.

6.3. A-Weighted Measurement

The DT-85A uses A-weighting, which is the most common weighting for environmental noise measurements, as it approximates the human ear's response to sound.



Figure 6.2: A-Weighted Sound Frequency Measurement.

6.4. MAX/MIN Hold Function

To capture the maximum or minimum sound level during a measurement period:

- Press the **MAX/MIN Hold** button once to display the maximum recorded value. The "MAX" indicator will appear on the LCD.
- Press the **MAX/MIN Hold** button again to display the minimum recorded value. The "MIN" indicator will appear on the LCD.
- Press the **MAX/MIN Hold** button a third time to return to real-time measurement.

Note: If the input exceeds the measurement range, "OL" (Overload) will be displayed.

7. Maintenance

7.1. Cleaning

- Wipe the meter's casing with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- Keep the microphone area clean and free of dust or debris. Use a soft brush if necessary.

7.2. Storage

- When not in use for extended periods, remove the 9V battery to prevent leakage and damage to the meter.
- Store the meter in a cool, dry place, away from direct sunlight and extreme temperatures.
- Utilize the included carrying case for protection during storage and transport.

8. Troubleshooting

Problem	Possible Cause	Solution
Meter does not turn on.	Low or dead battery. Incorrect battery installation.	Replace the 9V battery. Ensure the battery is installed with correct polarity.
"OL" displayed on screen.	Sound level exceeds the measurement range (Overload).	Move the meter further away from the sound source or reduce the sound level if possible.
Inaccurate readings.	Microphone obstructed or dirty. Environmental interference.	Clean the microphone. Ensure no objects are blocking the microphone. Minimize environmental noise if possible.
Display is dim or flickering.	Low battery.	Replace the 9V battery.

9. Specifications

Parameter	Value
Measuring Range	30dB to 130dB
Accuracy	±3.5 dB
Frequency Range	31.5Hz to 8KHz
Frequency Weighting	A-Weighting
Resolution	0.1 dB
Response Time	Fast (0.125s), Slow (1s)
Display	4-digit LCD with Backlight
Microphone	1/2-inch Condenser Microphone
Power Supply	1 x 9V Battery
Auto Power Off	Approx. 15 minutes
Product Dimensions	2.01 x 1.26 x 5.04 inches (51 x 32 x 128 mm)
Item Weight	1.45 ounces (41 grams)

10. Warranty and Support

For warranty information and technical support, please contact CEM customer service. Details can typically be found on the manufacturer's official website or through the retailer where the product was purchased.
Please retain your purchase receipt as proof of purchase for any warranty claims.

11. What's in the Box

Upon opening the package, you should find the following items:

- 1 x CEM DT-85A Sound Level Meter
- 1 x 9V Battery
- 1 x Instruction Manual (this document)
- 1 x Carrying Case/Bag



Figure 11.1: Package Contents.

© 2024 CEM. All rights reserved.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question