

CIRCUIT-TEST

DMS-4420

Sound Level Meter Datalogging



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To ensure proper use of this Sound Level Meter, we recommend that you read and follow this manual carefully.

This unit conforms to the IEC61672 Type2, ANSI S1.4 Type2 for Sound Level Meters.

This Sound Level Meter has been designed to meet the measurement requirements of safety Engineers, Health, Industrial safety offices and quality control in various environments.

- Ranges from 30dB to 130dB at frequencies between 31.5HZ and 8 KHZ .
- Display with 0.1dB steps on a 4 digits LCD.
- With two equivalent weighted sound pressure levels, A and C.

1. GENERAL DESCRIPTION & SPECIFICATIONS

- a. Display: 4 digits LCD with maximum/minimum, Resolution: 0.1dB, Display Update: 0.5 sec.
- b. Standard applied: IEC651 Type2, ANSI 1.4 Type2.
- c. Frequency range: 31.5Hz ~ 8KHz.
- d. Measuring level range: A Weighting 30 ~ 130dB. C Weighting 35 ~ 130dB.
- e. Frequency weighting: A/C.
- f. Microphone: 1/2 inch Electret condenser microphone.
- g. Time weighting: FAST (125ms), SLOW (1 sec).
- h. Level ranges: 30 ~ 130dB (Auto Range).
- i. Accuracy: ± 1.5 dB.
- j. Dynamic range: 50dB.
- k. MAX/MIN: Hold readings for the Maximum and Minimum value.

- l. DATA HOLD: The reading data shown on LCD can be locked while pressing the button
- m. Low Battery Indication: Replace battery as LCD display "⎓".
- n. Power Supply: 9V NEDA 1604, IEC 6F22, JIS 006P battery × 1 pcs.
- o. Power Life : About 50 hrs (Alkaline Battery).
- p. Operating Altitude: Up to 2000M.
- q. Operating temperature & Humidity: 5°C~40°C, below 80%RH.
- r. Storage Temperature & Humidity: -10°C ~60°C, below 70%RH.
- s. Dimension: 200mm(L)×55mm(W)×38mm(H).
- t. Weight: About 170g. (Including batteries)
- u. Accessories: Instruction manual 、 carrying case 、 9V Battery, windscreen.

2. NAME AND FUNCTIONS

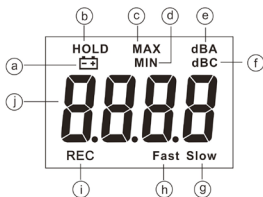


1. Windscreen
2. Display
3. HOLD button
4. Frequency weighting select button
5. Time weighting select button
6. Maximum/Minimum hold button
7. Backlight button
8. Power button
9. REC button
10. USB Interface Connector
11. Microphone
12. Battery Cover

1. Windscreen

If operating at wind speeds over 10m/sec, please put protective accessory windscreen in front of the microphone.

2. Display



- a. Low battery indicator
- b. DATA HOLD indicator
- c. Maximum indicator
- d. Minimum indicator
- e. A-Weighting
- f. C-Weighting
- g. Slow response
- h. Fast response
- i. REC response
- j. Sound level readout

3. **DATA HOLD button**

Readings shown on the LCD can be locked while pressing this button.

4. **Frequency Weighting select button**

A: A Weighting for general sound level measurements. C: C Weighting for checking the low-frequency content of noise.(If the C-Weighted level is much higher than the A-weighted level, then there is a large amount of low-frequency noise).

5. **Time weighting select button**

FAST: for normal measurements. SLOW: for checking average level of fluctuation noise.

6. **MAX/MIN hold button**

- 6.1 Press the key to activate the function. The "MAX" symbol appears on the display and the instrument will show the Maximum value measured and will automatically update itself when a greater value is measured.
- 6.2 Press the key again and the "MIN" symbol appears on the display and the instrument will show the Minimum value measured and will automatically update itself when a lower value is measured.
- 6.3 The MAX/MIN function will be disabled if the MAX/MIN button is pressed for more than 1 second or if the meter is turned off.

7. Backlight button

Press this button to enable the backlight display for easy readings in dark environments. Press more than 1 second to disable backlight or wait and it will automatically turn OFF after 15 seconds.

8. Power button

Press key for 1sec to turn the sound level meter ON or OFF. The auto power will be off automatically after 5 minutes idle time.

9. REC button

Press the button to start recording data and press REC again to stop recording.

The minimal interval is 1 second and the maximum interval time is 7 Hours 59 Minutes 59 Seconds. Total Records: 14.000.

10. USB Interface Connector

USB interface with a computer.

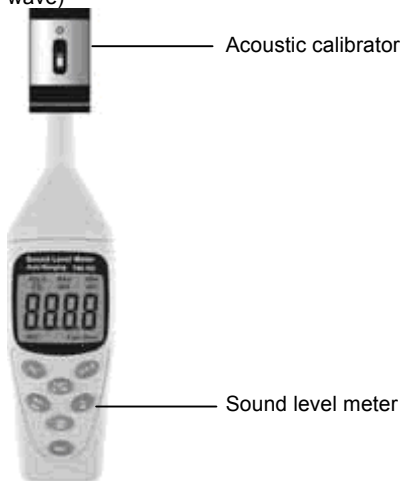
11. Microphone

1/2 inch Electret Condenser microphone.

12. Battery cover

3. Calibration Procedures

Using a standard Acoustic Calibrator (94dB, 1KHz Sine wave)



1. Make the button settings display: dBA
Time weighting: FAST
2. Insert the Microphone nozzle carefully into the insertion hole of the calibrator.
3. Press the A/C and the HOLD button simultaneously for more than 1 second and the LCD will start blinking to confirm calibration.
4. When the LCD stops blinking, release the A/C and

the HOLD buttons. The sound level meter will display 94.0 dBA when the calibration is done.


5. The 94 dB calibration process can be repeated until the meter reads 94.0 dB. Recalibration cycle:1 year.

4. MEASUREMENT PREPARATION

1. Battery Loading

Remove the battery cover on the back and put in one 9V Battery.

2. Battery Replacement

When the battery voltage is low, the following symbol  appears; this indicated that the battery needs to be replaced.

5. OPERATING PRECAUTIONS

1. Air blowing across the microphone can cause noise and interference when using the instrument in windy environments, use the windscreen to reduce noise.
2. Calibrate the instrument before operation if the instrument was not in use for a long time or operation at bad environment.
3. Do not store or operate the instrument in a high temperature or high humidity environment.
4. Keep microphone dry and avoid severe vibration.
5. When the instrument is not used for an extended period of time, remove the battery and store the unit in a low humidity environment.

6. Measurement

1. Open battery cover and install a 9 Volt battery in battery compartment.
2. Turn on power and select the desired response time and weighting. If the sound source consists of short bursts or only catching sound peak, set response to FAST. To measure average sound level, use the slow setting. Select A weighting for general noise sound level and C weighting for measuring sound level of acoustic material.
3. Hold the instrument comfortably in hand or fix on tripod and point the microphone at the suspected noise source, the sound pressure level will be displayed.
4. When MAX/ MIN (maximum, minimum hold) mode is chosen. The instrument captures and holds the maximum or minimum noise level. Press once to select MAX value. Press again to select MIN value, Press again to exit the MAX/MIN mode. "MAX" or "MIN" symbol disappears.
5. Turn off the instrument and remove the battery when it is not in use.

7. System requirements

1. The User End package contains

Custom designed USB cable

2. System Required

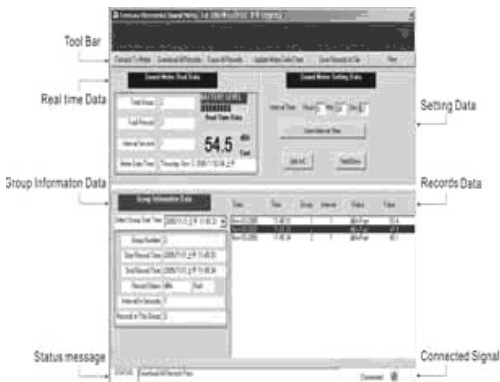
Windows 2000, Windows XP

3. Minimum Hardware Required

Pentium III 500MHZ PC compatible, or above
128MB RAM; At least 10MB hard disk space
available to install User End program.

Recommended display resolution is 800X600 or
above.

8. User End Menu



1. Tool Bar

Tool bar section has 6 buttons:

- [Connect To Meter] [Download All Records]
- [Erase All Records] [Update Meter Date/Time]
- [Save Records to File] [Print]

Use button [Connect to meter] to connect meter to PC. This step is the first step before running the software.

Use button [Download All Records] to download records from Meter to Local computer.

Use button [Erase All Records] to erase all the records saved in memory.

Use button [Update Meter Date/Time] to synchronize the time in meter with the computer. Remember if the

battery is taken out, the clock in the meter will stop. Use button [Save Records to File] to export the records from the list box to txt file. This button will be enabled after downloading records. Use button [Print] to print all the downloaded data.

2. Real time Data

Real time data section is used to display real time data including DB value, dba/dbc status, fast/slow status, hold, rec, max/min status. Current meter situation including total group and total records in the memory, interval, meter date and time, are also displayed at the left side.

3. Group information Data

The Group information data section is used to display selected group information including start time, end time, dBA/dBC status and record number in selected group.

4. Status Message

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