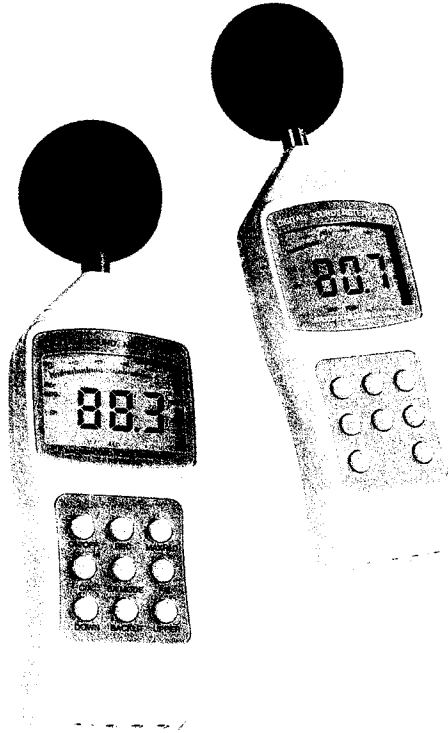


Owner's Manual

Digital Sound Level Meter

Model 8921/8922



INTRODUCTION

Your digital sound level meter provides automatic or manual ranging in six measurement ranges from 30 to 130dB. The unit meets ANSI S1.4 and IEC 651 Type 2 standards, and features 0.1dB resolution.

A background noise absorber permits you to measure sound levels accurately even in the presence of high background noise.

The meter allows you to select between fast and slow response times and A and C weighting. A maximum hold function is provided.

Jacks on the meter provide both AC and Dc analog output, while an RS-232 interface allows you to use an optional cable to capture sound level data on a PC.

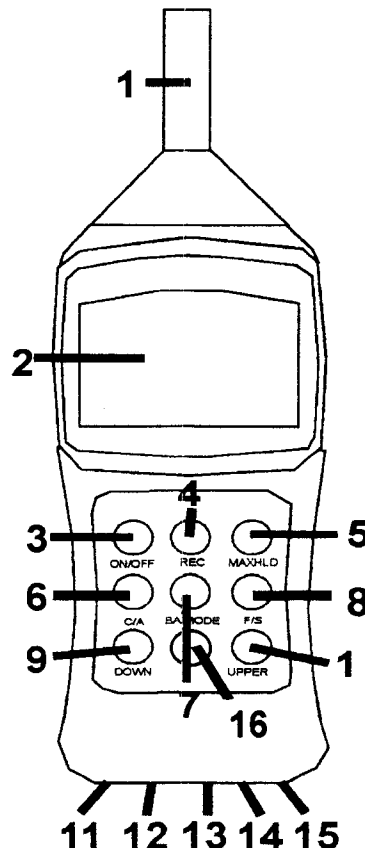
WARRANTY

We warrant this product against defects in materials and workmanship for a period of one (1) year from the date of purchase, and agrees to repair or replace any defective unit without charge. This warranty does not cover probes, batteries, or damage resulting from accident, misuse, or abuse of the product.

FRONT PANEL DESCRIPTION

1. **MICROPHONE**
2. **LCD DISPLAY**
3. **ON/OFF** - Power button
4. **REC** - Records sound level readings
5. **MAXHLD** - Freezes the maximum sound level digital reading
6. **C/A** - A/C frequency weighting selector
7. **BA MODE** - Background noise absorber
8. **F/S** - Fast/slow response selector
9. **DOWN** - Adjusts the measurement range
10. **UPPER** - Adjusts the measurement range
11. **DC 9V** - DC adapter jack
12. **CAL** - Calibration screw
13. **AC OUT** - AC analog output jack
14. **DC OUT** - DC analog output jack
15. **RS232** - RS-232 output jack
16. **BACKLIT**-Back light (8922 only)

FRONT PANEL DIAGRAM



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 **ON/OFF** key to turn the meter on. The unit will first display the full screen and then count down to zero. The meter will now begin measuring the current sound levels.

Point the microphone toward the source of the sound to be measured.

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 measurement, workplace design, and law enforcement.

C weighting is suitable for 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 **C/A** key to toggle between A and C weighting. A small A or C will be displayed on the right side of the screen to indicate the current mode.

SELECTING THE RESPONSE TIME

You can select fast or slow response time to suit different applications and standards. For 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. A small **FAST** or **SLOW** will be displayed on the right side of the screen to indicate the current mode.

FREEZING THE MAXIMUM SOUND LEVEL READING

1. Press the **ON/OFF** key to turn the meter on.
2. When measuring sound levels, press the **MAXHLD** 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 **MAXHLD** key again to exit maximum hold mode.

RECORDING THE MAXIMUM AND MINIMUM MEASUREMENTS

1. Press the **ON/OFF** key to turn the meter on.
2. Press the **REC** key. **REC** will be displayed on the bottom of the screen. The meter will begin tracking the maximum and minimum sound level measurements.
3. Press the **REC** key again. **MIN** will appear on the bottom 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.
4. Press the **REC** key again. **MAX** will appear on the bottom of the screen and the maximum 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.
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.

USING THE BACKGROUND NOISE ABSORBER

This feature allows you to measure equipment noise accurately, even in the presence of high background noise.

1. Press the **ON/OFF** key to turn the meter on.
2. Press the **MAXHLD** key. **MAX HOLD** will be displayed.
3. Press the **BA MODE** key. **F** will be displayed to the left of the **SPL**(sound pressure level) icon. The digital display will show the background noise level.
4. Press the **MAXHLD** key again and **MAX HOLD** will be displayed. The meter is now ready to measure the actual machine noise.
5. Turn on the machine you want to measure and note the new sound level reading. This number represents the sound level of the device without the background noise. If there is no change in the reading, the background noise is greater than the noise of the device.
6. Press the **MAXHLD** key and then the **BA MODE** key to exit background noise absorber mode.

BACKLIT KEY (8922 only)

Offer a light for approximate 5 seconds to make it easier to see the display in the dark.

SELECTING AUTOMATIC AND MANUAL RANGING

The meter features six measurement ranges in 10dB steps: 30~80dB, 40~90dB, 50~100dB, 60~110dB, 70~120dB, 80~130dB.

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. This is helpful when you know the measurement range in advance. 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.

To adjust the range manually:

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

If the meter is operating in manual range and **UNDR** is displayed, the sound is too low

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

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 **ON/OFF** and **MAXHLD** buttons simultaneously.
3. When the full display appears, release the **MAXHLD** button first.
4. Release the **ON/OFF** key. The meter will remain on until the **ON/OFF** button is pressed again.

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

REPLACING THE BATTERY

When the entire display flashes, 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 a fresh 9V battery and replace the cover.

SPECIFICATIONS

Applicable Standards	IEC 651 Type 2, ANSI S1.4 Type 2
Measurement Frequency Range	31.5Hz~8KHZ
Accuracy	± 1.5dB (Under reference conditions)
Measurement Level A Weighting	30dB~130dB
Measurement Level C Weighting	35dB~130dB
Measurement Level Range	6 ranges in 10dB steps: 30~80dB, 40~90dB, 50~100dB, 60~110dB, 70~120dB, 80~130dB
Automatic Range	30~130dB
Time Weighting	Fast and slow
Range	50dB
Digital Display	3 1/2 digit LCD, 0.1dB resolution updated every 0.5 seconds
Quasi-Analog Bar Indicator	1dB display steps, 50dB display range, updated every 50ms
Microphone	6mm diameter Electret condenser microphone
Analog Output	AC: 0.707Vrms (at full scale), DC: 10mVDC/dB
Size	80mm × 256mm × 38mm (3" × 11" × 1.5")
Weight	240g(10.3oz)
Operating Temperature	4~50°C, 10~90% Relative Humidity
Storage Temperature	-20~60°C
Battery	9V Battery
Battery Life	Approximately 20 hours
Accessories	Instruction Manual, Battery, Carrying Case