GENERAL®

DIGITAL SOUND LEVEL METER

USER'S MANUAL

GENERAL®

68.9

DSM8930

MAX ⏻ MIN

DSM8930

Please read this manual carefully and thoroughly before using this product.

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INTRODUCTION

Thank you for purchasing General Tools & Instruments'
DSM8930 Digital Sound Level Meter. Please read this user's
manual carefully and thoroughly before using the instrument.

The DSM8930 uses an integrated condenser microphone to
measure the noise level of an environment or the loudness of
a machine, typically in order to comply with health and/or
safety rules. The meter has a measurement range of
40 to 130 dB over four ranges, an accuracy of ±2 dB,

and a digital display resolution of 0.1dB. Real-time measurements are shown on a green backlit LCD in two forms: as a three- or four-digit dB value, and as a moving vertical line on a horizontal analog bar graph.

Several features improve the meter's versatility. Among them are "A" frequency weighting and "fast" (125 ms) time response. The meter can display real-time readings or the minimum or maximum sound levels measured since being powered on.

Physical features of the DSM8930 include a wind shield ball and an analog output jack for connecting to a chart recorder.

The DSM8930 is powered by one "9V" battery (included).

KEY FEATURES

- Measures sound level of a machine or an environment
- Meets IEC651 TYPE 2 and ANSI S1.4 TYPE 2 standards
- Large backlit LCD + analog bar graph
- "A" frequency weighting and fast time weighting
- Autoranging
- Tracks and displays maximum and minimum readings
- 20-minute Auto Power Off
- Analog output for chart recording
- Includes wind shield ball
- Powered by one "9V" battery (included)

WHAT'S IN THE BLISTER PACK

The DSM8930 comes fully assembled in a blister pack along with a wind shield ball, one "9V" battery and this user's manual.

PRODUCT OVERVIEW

Figure 1 shows all of the controls, indicators and connectors on the front, bottom and right side of the DSM8930. Figure 2 shows all text and icons that could appear on the LCD. Familiarize yourself with the positions and functions of these symbols and structures before moving on to the Setup Instructions.

Fig. 1. The DSM8930's controls, display and connectors

A. Wind shield ball covering Electret microphone

B. LCD

C. ⏻ (Power on/off), **MIN** and **MAX** buttons
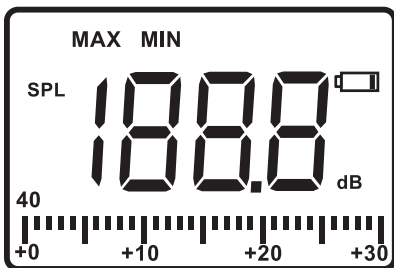
D. Battery compartment

E. Audio output jack

Fig. 2. All possible display indications and their meanings

MAX	Digital readout is highest level recorded since meter was powered on
MIN	Digital readout is lowest level recorded since meter was powered on
SPL	Abbreviation of sound pressure level (the parameter measured)
⊏▯▮▮	Meter's battery is very low on charge and should be replaced
dB	Sound level unit (accompanies reading at its left)
40	Range Baseline (low end of current measurement range, in dB). "40" indicates 40 to 70 dB range; other possible numbers at this position are 60 (for 60 to 90 dB range), 80 (for 80 to 110 dB range) and 100 (for 100 to 130 dB range)
+0, +10, +20, +30	Labels of analog bar graph scale. Indicate amplitude of input (in dB) relative to low end of measurement range above left end of graph

SETUP INSTRUCTIONS

INSTALL BATTERY

1. The meter's battery compartment (Fig. 1, Callout D) is accessible from the back of the unit near the bottom. Use a Phillips-head screwdriver to loosen the screw holding the yellow battery compartment cover in place. Set the cover and screw aside.

2. Remove the "9V" battery from the blister pack and plug it into the wired socket inside the compartment. The terminals of the battery and the socket mate in only one way, with the smaller male terminal plugging into the larger female terminal.

3. Replace the battery compartment cover and tighten the screw to secure it to the housing.

OPERATING INSTRUCTIONS

MAKING BASIC MEASUREMENTS

Press the ⏻ button to power on the meter. The display will take a few seconds to stabilize and then begin reading out real-time sound level measurements.

Note how the digital numbers and the readings on the analog bar graph track each other. At times, the two displays may seem slightly out of sync—and they are, because they refresh at different rates.

Also note how the number above the left end of the bar graph—the Range Baseline—changes each time a much louder or softer sound is heard. Each change confirms that

the meter is operating in Autoranging mode. To demonstrate that autoranging is on in a quiet environment, rub the windscreen with your hand (to simulate a loud noise) and watch the Range Baseline change to 100 dB.

T**o measure the loudness of a sound source**, point the microphone at it. The measurement calculation reflects the meter's fixed settings: "A" frequency weighting and fast time weighting. The shape of the "A" frequency-weighting curve simulates the response of the human ear, so "A" weighting is suitable for measuring the sound level of an environment for the purpose of regulatory compliance, workplace design or noise-pollution control. Fast time weighting, with a response time (integration time constant) of 125 milliseconds, also simulates the response time of the human ear and is most suitable for measuring the volume of singular events.

If a sound level is below 40 dB, the readout will be **LO**. If a sound level is above 130 dB, the readout will be **HI**.

TRACKING MIN AND MAX LEVELS

After being powered on, the DSM8930 automatically operates in "Recording" mode for the purpose of tracking and displaying minimum and maximum sound level measurements.

To display the minimum sound level measured since the meter was powered on, press the **MIN** button. The text **MIN** will appear on the top line of the display and the digital display will indicate the lowest sound volume measured since power on. While the digital display is showing the minimum sound value, the meter continues to measure real-time sound level inputs and to display its results on the analog bar graph.

To display the maximum sound level measured since the meter was powered on, press the **MAX** button. The text **MAX** will replace **MIN** on the top line of the display and the digital display will indicate the highest sound volume measured since power on. While the digital display is showing the maximum sound value, the meter continues to measure real-time sound level inputs and to display its results on the analog bar graph.

To exit MIN or MAX display mode and return the digital display to showing real-time values, press whichever button corresponds to the current display mode. You cannot switch from MIN to MAX mode by pushing the "opposite" button. You must first exit one mode before entering the other.

By default, the meter powers off automatically after 20 minutes of inactivity by the end user (no front-panel buttons are pushed) to extend the "9V" battery's life. This "APO" feature cannot be disabled. As a result, you cannot track sound levels for longer than 20 minutes by feeding the meter's 0 to 0.707VAC analog output signal from the jack on the right side of the meter (Fig. 1, Callout E) into a chart recorder. However, 20 minutes is more than sufficient to perform and document a typical sound-level check.

SPECIFICATIONS

Measurement Range	40 to 130 dB over four ranges (40 to 70 dB, 60 to 90 dB, 80 to 110 dB, 100 to 130 dB)
Measurement Accuracy	±2 dB
Display Size/Type	4-digit (4000 count) LCD
Digital Display Resolution	0.1 dB
Digital Display Refresh Period	160 milliseconds
Analog Bar Graph Resolution	1 dB
Analog Bar Graph Refresh Period	40 milliseconds
Frequency Range	100 Hz to 8.3 kHz
Time Weighting Time Constant	125 milliseconds
Microphone Diameter/Type	0.5 in. (12.7mm) Electret condenser
Battery Life	30 hours (typical)
Analog Output	0 to 0.707VAC
Operating Temperature	32° to 122°F (0° to 50°C) @<80% R.H.
Storage Temperature	-4° to 122°F (-20° to 50°C) @<90% R.H.
Dimensions	8.1 x 2.4 x 1.6 in. (210 x 61 x 40mm)
Weight	5.2 oz. (147g), including battery
Power Source	(1) "9V" battery

MAINTENANCE TIPS

When the ▯▭▯ icon appears at the upper right of the display, it's time to replace the "9V" battery that powers the instrument (although measurements will remain valid for several hours after the icon first appears). To replace the battery, follow the instructions on p. 6.

Remove the battery when storing the meter and when you do not expect to use it for an extended period of time (months rather than weeks).

Do not drop or disassemble the meter or immerse it in water.

WARRANTY INFORMATION

General Tools & Instruments' (General's) DSM8930 Digital Sound Level Meter is warranted to the original purchaser to be free from defects in material and workmanship for a period of one year. Subject to certain restrictions, General will repair or replace this instrument if, after examination, the company determines it to be defective in material or workmanship.

This warranty does not apply to damages that General determines to be from an attempted repair by non-authorized personnel or misuse, alterations, normal wear and tear, or accidental damage. The defective unit must be returned to General Tools & Instruments or to a General-authorized service center, freight prepaid and insured.

Acceptance of the exclusive repair and replacement remedies described herein is a condition of the contract for purchase of this product. In no event shall General be liable for any incidental, special, consequential or punitive damages, or for

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any cost, attorneys' fees, expenses, or losses alleged to be a consequence of damage due to failure of, or defect in any product including, but not limited to, any claims for loss of profits.

RETURN FOR REPAIR POLICY

Every effort has been made to provide you with a reliable product of superior quality. However, in the event your instrument requires repair, please contact our Customer Service to obtain an RGA (Return Goods Authorization) number before forwarding the unit via prepaid freight to the attention of our Service Center at this address:

> General Tools & Instruments
> 80 White Street
> New York, NY 10013
> 212-431-6100

Remember to include a copy of your proof of purchase, your return address, and your phone number and/or e-mail address.

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