



# **4-IN-1 SOIL CONDITION METER**

## ***USER'S MANUAL***



### **DSMM600**

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

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## INTRODUCTION

Thank you for purchasing General Tools & Instruments' (General's) DSMM600 4-in-1 Digital Soil Condition Meter. Please read this manual carefully and thoroughly before using the instrument.

The DSMM600 is ideal for measuring the temperature, pH and moisture content of soil and the intensity of sunlight shining on it. The meter cannot accurately gauge the intensity of grow lights because most light bulbs lack the full spectral range of sunlight.

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## KEY FEATURES

- Measures soil pH and temperature
- Also gauges soil moisture content within 5 levels and sunlight intensity within 9 levels
- Large backlit triple readout LCD
- °F/°C switch
- Auto Power Off
- Low battery indication
- CE approved

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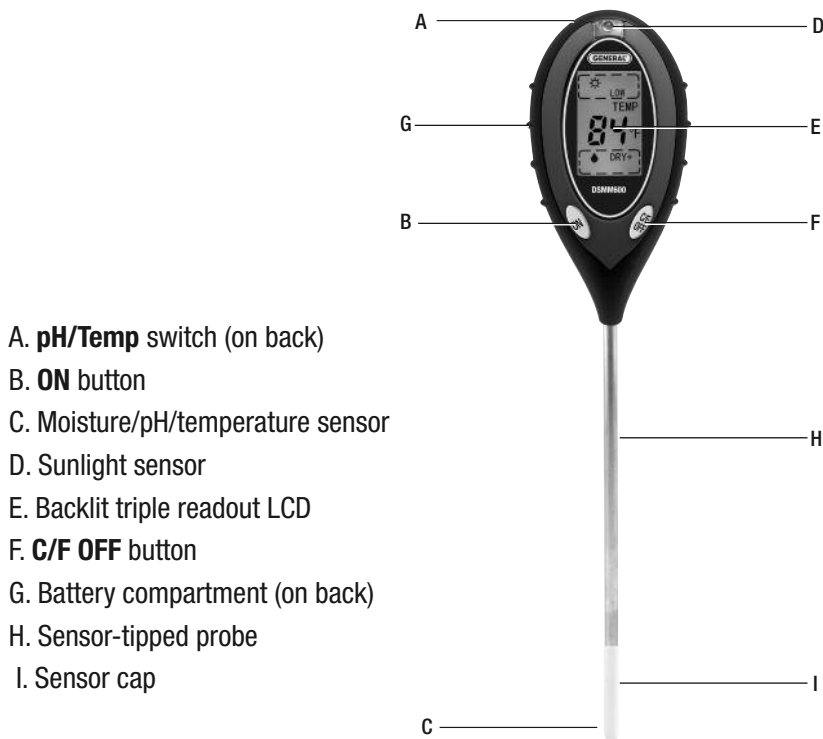
## WHAT'S IN THE PACKAGE

The DSMM600 comes in a blister pack with this user's manual inside the fold-over card.

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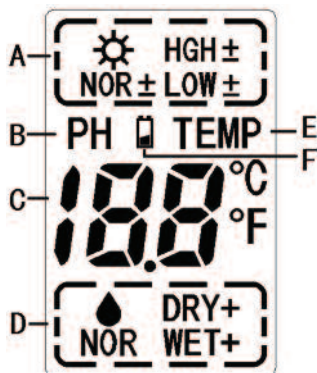
## PRODUCT OVERVIEW

Figure 1 shows the names and locations of the meter's controls, indicators and physical structures. Figure 2 shows all possible indications on the LCD. Familiarize yourself with the labels, positions, and functions of all buttons and switches and the meaning of all display indications before moving on to the Setup Instructions and Operating Instructions.



**Fig. 1. The DSMM600's controls, display and physical structures**

- A. Sunlight intensity readout
- B. Indicates main readout is showing pH
- C. Main readout
- D. Moisture level readout
- E. Indicates main readout is showing temperature
- F. Low battery icon



**Fig. 2. All possible display indications**

## SETUP INSTRUCTIONS

### INSTALL BATTERY

To open the battery compartment, turn the meter over and lift the tab at the bottom of the battery compartment cover (Fig. 1, Callout G). Remove the cover and set it aside. Then plug a “9V” Alkaline battery 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. Close the battery compartment by replacing its cover and snapping it shut.

## OPERATING INSTRUCTIONS

**To power on the meter**, press the **ON** button (Fig. 1, Callout B). The meter will immediately display the sunlight intensity, moisture level and temperature of the ambient environment on the three readouts (Fig. 2, Callouts A, D and C).

Note that the green LCD backlight comes on automatically when the meter powers on. It will remain on for 90 seconds. **To reactivate the backlight** after it goes out, briefly press (but do not hold) the **C/F OFF** button twice. The first press will change the temperature unit from °F to °C and turn the backlight back on. The second press will switch back to °F.

Also note that the meter will automatically power off after any 5-1/2 minute period during which no front-panel buttons are pressed. This Automatic Power Off (APO) function extends battery life.

**To power off the meter**, press and hold the **C/F OFF** button for at least 3 seconds.

**To measure the conditions of soil** in a pot or garden plot, first remove the protective sensor cap (Fig. 1, Callout I). Then insert the probe slowly and vertically into the soil:

- For plants in pots less than 1 ft. in diameter, insert the probe halfway between the plant stem and the edge of the pot. Be careful not to damage delicate roots by inserting the probe close to a plant's stem.
- For plants in larger pots, insert the probe one-third of the distance between the stem and the edge of the pot.
- If the pot is deep, push the probe deeper—where plant roots are denser.

The upper and lower readouts of the DSMM600 are dedicated to sunlight and moisture levels. The meter does not indicate the precise value of either level; instead, it displays the “ballpark” range containing the current reading. The Specifications section of this manual correlates the names of displayed ranges (**HGH-**, **NOR**, **WET+**, for example) with the sunlight or moisture level value measured. (**NOR** is shorthand for normal, **HGH-** and **NOR-** mean slightly less than high and normal, **NOR+** is slightly higher than normal, and **WET+** and **DRY+** should be interpreted as extremely wet and dry.)

To maximize the accuracy of sunlight readings, point the light sensor at the top front of the meter (Fig. 1, Callout D) toward the sun.

The middle (main) readout shows soil pH or soil temperature, depending on the position of the switch at the top of the back of the meter body (Fig. 1, Callout A).

**To display soil pH** instead of soil temperature on the main readout, slide the switch to the left (the **pH** position). Note that doing so causes the lower, moisture level readout to disappear.

To resume showing soil temperature on the main readout, slide the **pH/Temp** switch to the right. If the soil temperature is lower than 16°F (-9°C), **Lo** will appear on the main readout. If the soil temperature is higher than 122°F (50°C), **HH** will appear on the main readout.

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## SPECIFICATIONS

pH Measurement Range:	3.5 to 9.0
pH Accuracy and Resolution:	±0.5 pH units
Temperature Measurement Range:	16° to 122°F (-9° to 50°C)
Temperature Accuracy/Resolution:	±1.8°F (1°C)/1° (F or C)
Moisture Level Ranges:	<5% ( <b>DRY+</b> ), 5 to 10% ( <b>DRY</b> ), 10 to 20% ( <b>NOR</b> ), 20 to 30% ( <b>WET</b> ), >30% ( <b>WET+</b> )
Light Level Ranges:	<500 Lux ( <b>LOW-</b> ), 500 to 5000 Lux ( <b>LOW</b> ), 5000 to 10,000 Lux ( <b>LOW+</b> ), 10,000 to 25,000 Lux ( <b>NOR-</b> ), 25,000 to 60,000 Lux ( <b>NOR</b> ), 60,000 to 80,000 Lux ( <b>NOR+</b> ), 80,000 to 100,000 Lux ( <b>HGH-</b> ), 100,000 to 120,000 Lux ( <b>HGH</b> ), >120,000 Lux ( <b>HGH+</b> )
LCD Size:	1.8 in. (46mm) diagonal; main readout has 0.48 in. (12mm) high digits
Auto Power Off Trigger:	5-1/2 minutes of front-panel inactivity
Backlight Duration:	90 seconds
Operating Temperature:	41° to 104°F (5° to 40°C) @ 5 to 95%RH, non-condensing
Storage Temperature:	-4° to 140°F (-20° to 60°C) @ <85%RH (without battery)
Dimensions of Meter Body:	4.8 x 2.5 x 1.4 in. (122 x 63 x 36mm)
Dimensions of Probe (Length x Diameter):	7.9 x 0.24 in. (200 x 6mm)
Weight (without battery):	2.9 oz. (81g)
Power Source:	(1) "9V" Alkaline battery (not included)

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## OPERATING & MAINTENANCE TIPS

When the Low Battery icon appears in the center of the display (Fig. 2, Callout F), it's time to change the "9V" battery that powers the meter (although measurements will remain valid for several hours after the icon first appears). To change the battery, follow the instructions on p. 4.

Take the average of multiple measurements to improve accuracy.

Do not leave the probe inserted in soil longer than necessary to make a measurement.

Do not drop the meter, bend the probe, or use the probe to break up clumps of soil.

Wipe the probe clean with a soft, damp cloth and dry it before and after each measurement.

Slide the sensor cap (Fig. 1, Callout I) over the end of the probe after each measurement session.

Do not disassemble the meter body or the probe; doing so voids the product's limited warranty.

Remove the battery if you do not expect to use the meter for an extended period of time (months or years).

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## **WARRANTY INFORMATION**

General Tools & Instruments' (General's) DSMM600 4-in-1 Soil Condition 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. The warranty period begins on the date of purchase. You are encouraged to register your product online. General will extend your warranty an additional 60 days if you register at [www.generaltools.com/ProductRegistry](http://www.generaltools.com/ProductRegistry).

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

Register now at [www.generaltools.com/ProductRegistry](http://www.generaltools.com/ProductRegistry) to receive a 60-day extension to your warranty.

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## 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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## Specialty Tools & Instruments

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DSMM600 User's Manual

Specifications subject to change without notice

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MAN# DSMM600 12/03/13