



DIGITAL PSYCHROMETER

USER'S MANUAL



SAM990DW

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

GENERAL

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SAM990DW User's Manual
Specifications subject to change
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MAN# SAM990DW

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INTRODUCTION

Thank you for purchasing General Tools & Instruments' (General's) SAM990DW Digital Psychrometer.

The SAM990DW is a psychrometer because it can measure relative humidity (RH) as well as ambient, Dew Point and Wet Bulb temperatures.

The Dew Point (DP) temperature is the temperature below which the water vapor in a volume of air at a given constant barometric pressure will condense into liquid water at the same rate at which it evaporates. Condensed water is called dew when it forms on a solid surface.

The Wet Bulb (WB) temperature is the temperature that a volume of air would have if it were cooled to saturation (100% RH) by the evaporation of water into it, with the latent heat coming from the volume of air. The WB temperature is the temperature you feel when your skin is wet and exposed to moving air as opposed to the actual air temperature—the dry bulb temperature.

KEY FEATURES

- Measures and displays RH as a percentage + ambient, DP and WB temperatures in °C or °F on a dual-readout LCD
- Min/Max memory + data hold
- 20-minute Auto Power Off (APO)
- 1-year limited warranty

WHAT'S IN THE PACKAGE

The SAM990DW comes in a blister pack with two "AAA" batteries. A hard copy of this user's manual is inside the fold-over blister card.

SETUP INSTRUCTIONS

INSTALL BATTERIES

To open the battery compartment, turn the SAM990DW over, place your thumb on the area of the battery compartment cover marked **OPEN**, and slide the cover down and away.

Install the two included "AAA" batteries in series in the compartment. To do so, slide each battery into its half of the compartment cathode (- side) first, so the cathode contacts the coiled spring. If the batteries have been installed correctly, when side by side they should face in opposite directions.

OPERATING INSTRUCTIONS

To begin, grasp the sides of the sensor protection cap at the top of the unit and pull the cap until it releases.

To power on the unit, press the **ON/OFF** button. After a few seconds, the LCD will begin showing real-time RH readings on the top line and real-time ambient temperature readings on the bottom line.

The SAM990DW's default temperature unit is degrees Fahrenheit. To switch to degrees Celsius, press and hold the **C/F** button until the lower readout changes.

To display the real-time Dew Point temperature on the lower readout, press and hold the **td/WBT** button until **td** appears at the lower left of the LCD.

To display the real-time Wet Bulb temperature on the lower readout, press and hold the **td/WBT** button a second time, until **WB** appears at the lower left of the LCD.

To return to showing ambient temperature on the lower readout, press and hold the **td/WBT** button a third time, until **WB** disappears.

DISPLAYING MINIMUM AND MAXIMUM READINGS

The SAM990DW automatically tracks the maximum and minimum (highest and lowest) RH values and temperatures (ambient, Dew Point and Wet Bulb) sensed over a measurement “session”—the time during which you make measurements at multiple locations and/or under different conditions. Each session begins when you power on the unit; it typically ends 20 minutes later with the activation of the APO function.

The value of being able to quickly determine the hottest or coolest, or wettest or driest area of several possibilities should be obvious.

To display the minimum RH level and temperature sensed during a measurement session, press and hold the **MN/MX** once. Doing so will cause both readings to appear on the LCD, with the term **MIN** at the right of the RH%.

To switch to the maximum RH level and temperature detected over the same period, press and hold the **MN/MX** button again. This will change **MIN** to **MAX**.

To resume displaying real-time readings, press and hold the **MN/MX** button again.

To clear the Min and Max session values from memory, press and hold the **RST** button until the LCD briefly shows all possible display indications, and then returns to showing real-time, Min or Max readings.

SPECIFICATIONS

Temperature Measurement Range:
-4° to 122°F (-20° to 50°C)

Temperature Measurement Accuracy: $\pm 1.8^{\circ}\text{F}$ ($\pm 1^{\circ}\text{C}$)

Temperature Measurement Resolution: 0.1°

RH Measurement Range: 0 to 100%

RH Measurement Accuracy: $\pm 3\%$ at 77°F (25°C)
from 10 to 90% RH; $\pm 4\%$ elsewhere

RH Measurement Resolution: 0.1%

Dew Point Measurement Accuracy: $\pm 1.2^{\circ}\text{F}$ ($\pm 0.6^{\circ}\text{C}$)

Auto Power Off Trigger: 20 minutes of front-panel inactivity

Dimensions: 6.7 x 1.85 x 0.5 in. (170 x 22 x 13mm)

Weight: 4 oz. (113g)

Power Source: 2 “AAA” batteries (included)

OPERATING & MAINTENANCE TIPS

When the entire displays flashes, the batteries’ voltage has fallen below the threshold needed to assure accurate measurements. Replace weak or dead batteries immediately.

Never immerse the temperature-humidity sensor at the top of the SAM990DW in liquid. Doing so will permanently damage the sensor and void the instrument’s limited warranty.

A small amount of condensation visible on the LCD will not affect the unit’s accuracy.

WARRANTY INFORMATION

In the U.S, General warrants its instruments and accessories against defects in material or workmanship for one year from the date of purchase. General will replace or repair the defective unit, at its option, subject to verification of the defect.

This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the product.

Any implied warranties arising from the sale of a General product, including but not limited to implied warranties of

merchantability and fitness for a particular purpose, are limited to the above. General shall not be liable for loss of use of the product or other incidental or consequential damages, expenses, or economic loss, or for any claim of such damage, expenses, or economic loss.

State laws vary. The above limitations or exclusions may not apply to you.

We encourage you to register your product online. General will extend your warranty an additional 60 days if you register at www.generaltools.com/ProductRegistry.

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:

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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.