
Ambient Weather WS-YG720 Thermometer, Liquid Barometer, Hygrometer and Clock Weather Station



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1. Introduction

Thank you for your purchase of the Ambient Weather WS-YG720 Thermometer, Liquid Barometer, Hygrometer and Clock Weather Station. The following is a guide for preparation, care and operation of your traditional weather station.

2. Preparation

You will need food coloring to color the water in the storm glass. Any color is fine, based on personal taste.

3. Care and Cleaning

Avoid use of harsh household cleaners and coarse paper towels, which can damage the lacquer coating or scratch the bezel or lens. Fingerprints and dirt may be removed the lenses and bezels with a soft cloth lightly dampened with a mixture of water and mild dishwashing liquid. Be sure to dry the lens and bezel with a soft cloth after cleaning.

Do not install the weather station outside. The weather station is intended for indoor use only.

4. Hygrometer (Humidity Meter)



4.1 How the hygrometer works

The hygrometer measures the indoor relative humidity. The sensor measures the air moisture by a sensitive mechanical coil spring that is bonded with a moisture absorbent material.

Hygrometers register the percentage of water vapor present in the air, compared to the maximum amount that can be present at a given temperature.

The coils in hygrometers respond slowly and while humidity levels change abruptly, it can take an hour or more for the meter to reach an accurate reading. Remember that the hygrometer is reading indoor humidity, and is vastly different than outdoor humidity, as reported by the National Weather Service.

It is not uncommon to have low humidity reading during cold weather when indoor air is heater. Air

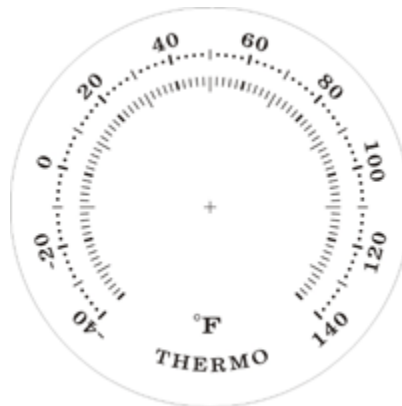
conditioning also removes moisture from the air. The optimum levels are 45% to 50% during heating and cooling seasons. Low humidity can cause health problems and can be hard on wood furnishings. High humidity can cause mold or mildew to grow.

4.2 Hygrometer Accuracy

Humidity measurement is among the more difficult problems in basic meteorology. Accuracy is difficult to achieve and are subject to drift, so need regular recalibration.

A further difficulty is that most hygrometers sense relative humidity rather than the absolute amount of water present, but relative humidity is a function of both temperature and absolute moisture content, so small temperature variations within the air in a test chamber will translate into relative humidity variations.

5. Dial Thermometer



The dial thermometer uses a bimetallic strip wrapped into a coil. One end of the coil is fixed to the housing of the device and the other drives an indicating needle. The principle behind a bimetallic strip thermometer relies on the fact that different metals expand at different rates as they warm up. By bonding two different metals together, the coil bends, causing the needle to move. Bimetallic thermometers are not as accurate as bulb (mercury or red spirit) thermometers. The dial thermometer should require no calibration.

6. Storm Glass Barometer

6.1 How the storm glass works

The concept that 'decreasing atmospheric pressure predicts stormy weather' was postulated by Lucien Vidie - and it's the basis for a weather prediction device called a storm glass or liquid barometer. It consists of a glass container with a sealed body, half filled with water.

A narrow spout connects to the body below the water level and rises above the water level, where it is open to the atmosphere. When the air pressure is lower than it was at the time the body was sealed, the water level in the spout will rise above the water level in the body and when the air pressure is higher, the water level in the spout will drop below the water level in the body.

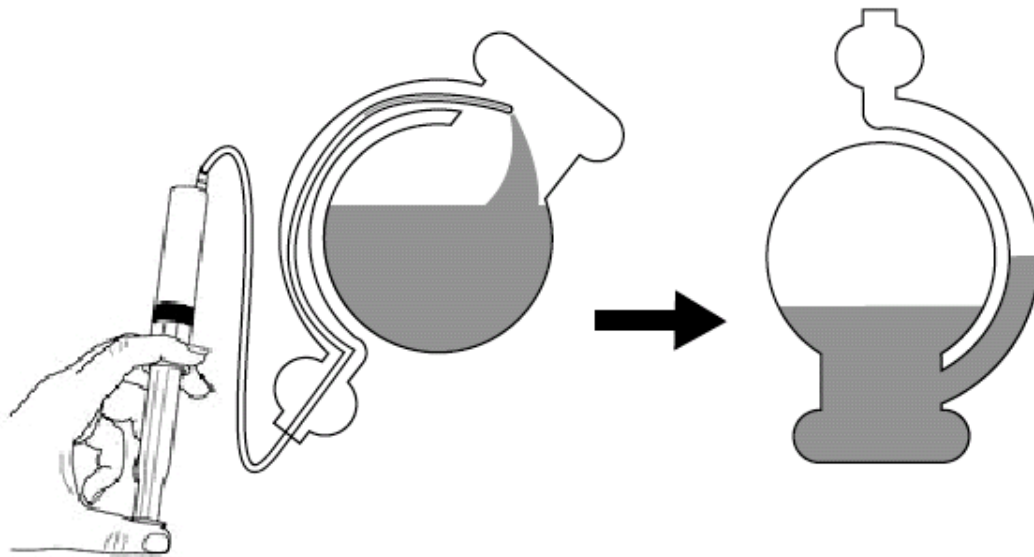


Figure 1

6.2 Filling the storm glass

1. Fill the syringe (included in the package) the colored water (use food coloring).
2. Attach the syringe to the inlet of plastic tube (included in the package).
3. Turn the storm glass **upside down**. This is to ensure the liquid does not flow out.
4. Gently push the tube into the storm glass through the inlet of the spout until the end of the tube has reached the bottom of the storm glasses bulb.
5. Slowly inject the liquid into the storm glass until half of the bulb is filled, as shown in Figure 1 (your glass figure may vary).
6. Turn the storm glass over to its proper position (**do not** remove the syringe).
7. Use more liquid to fill the glass tube until the colored liquid has reached the fair symbol.
8. You may have to add or remove liquid after observing the storm glass for several days and comparing to current and predicted weather conditions.
9. Note that evaporation is normal over time and the storm glass must be topped off occasionally.

6.3 Emptying the storm glass

1. Attach the syringe to the long plastic tube.
2. Put the storm glass in an upright position.
3. Insert the tube into the storm glass until it reaches the bottom of the bulb.
4. Slowly pump the liquid out until all of the liquid is gone.

6.4 Final Installation and Drip Cup

Install the drip cup into the drip cup hole, below the storm glass. Hang the storm glass from the storm glass hook.

7. Quartz Clock



To energize the quartz clock, pull the plastic tab from the battery compartment. To set the clock, turn the adjustment knob clockwise to advance the time.

8. Measurement Specifications

The following table provides specifications for the measured parameters.

| Measurement | Range | Accuracy | Resolution |
|--------------------|---------------|---|------------|
| Indoor Temperature | -40 to 140 °F | ± 3.6 °F | 2 °F |
| Indoor Humidity | 0 to 100 % | 20% – 45%: ± 9% 45% – 75%: ± 6% 75% – 98%: ± 9% | 1 % |

9. Warranty Information

Ambient, LLC provides a 1-year limited warranty on this product against manufacturing defects in materials and workmanship.

This limited warranty begins on the original date of purchase, is valid only on products purchased and only to the original purchaser of this product. To receive warranty service, the purchaser must contact Ambient, LLC for problem determination and service procedures.

Warranty service can only be performed by a Ambient, LLC. The original dated bill of sale must be presented upon request as proof of purchase to Ambient, LLC.

Your Ambient, LLC warranty covers all defects in material and workmanship with the following specified exceptions: (1) damage caused by accident, unreasonable use or neglect (lack of reasonable and necessary maintenance); (2) damage resulting from failure to follow instructions contained in your owner's manual; (3) damage resulting from the performance of repairs or alterations by someone other than an authorized Ambient, LLC authorized service center; (4) units used for other than home use (5) applications and uses that this product was not intended, such as outdoor use.

This warranty covers only actual defects within the product itself, and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, claims based on misrepresentation by the seller or performance variations resulting from installation-related circumstances.