

Ambient Weather SP-216 Solar Power Meter User Manual



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1. Introduction

Thank you for your purchase of the Ambient Weather SP-216 Solar Power Meter. The following user guide provides step by step instructions for operation and troubleshooting. To download the latest manual and additional troubleshooting tips, please visit:

<http://ambientweather.wikispaces.com/sp216>

2. Getting Started

2.1 Parts List

QTY	Item
1	SP-216 Unit Dimensions: 5(L) x 2(W) x 1.5(H) in
1	9V battery
1	Carry Case

2.2 Precautions

! **Caution:** This unit is water resistant but not water proof. Do not submerge in water. Avoid using in the rain.

! **Caution:** Do not use a rechargeable 9V battery.

2.3 Installing the Battery

Remove the back cover by sliding down with your thumb. Insert the battery and replace the cover.

3. Display Layout

The display layout is shown in Figure 1. The button layout is shown in

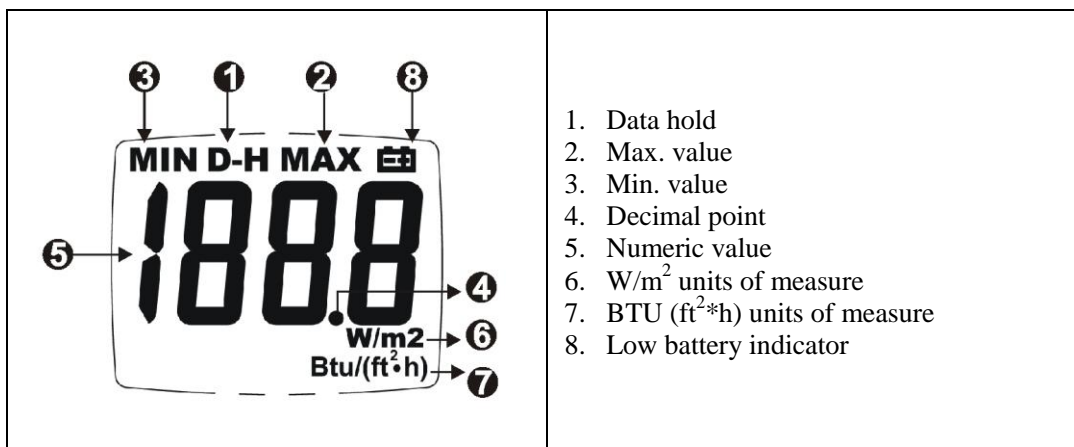


Figure 1

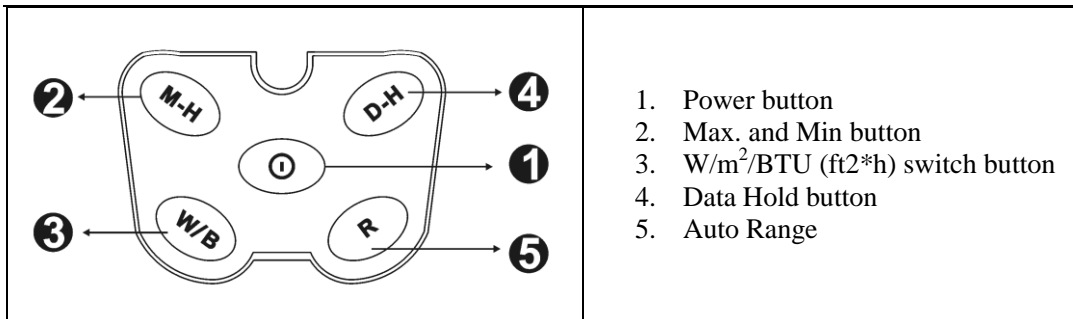


Figure 2

4. Initial Operation and Calibration

Power the unit on by pressing the ON / OFF button (I). Remove the protective film from the solar sensor on the top of the unit. Cover the sensor with a black cloth (the side of the carry case will suffice). If the display does not read 0.0, rotate the “0 Adjust” calibration set point on the side of the unit with a small tool. Please note that there is no negative sign, so you may have to adjust either clockwise (positive) or counterclockwise (negative) to adjust to 0.0.

5. Functions

5.1 Power On / Off

To power on the unit, press the ON / OFF button (I). To power off the unit, press the ON / OFF button again.

5.2 Minimum and Maximum

1. Press the Minimum / Maximum button (M-H) and the maximum value will be displayed with the **MAX** icon.
2. Press the Minimum / Maximum button (M-H) again and the minimum value will be displayed with the **MIN** icon.
3. To reset the minimum and maximum values and exit the minimum and maximum mode, press and hold the Minimum / Maximum button (M-H) for at least one second.

5.3 Units of Measure

To toggle the units of measure between W/m² and BTU, press the W/B button (W/B).

5.4 Data Hold

To hold the current measured value on the display, press the Data-Hold button (D-H) and the D-H icon will be displayed. To cancel the data hold feature, press the Data-Hold button again (D-H).

5.4 Auto Range

If the display is out of range, **OL** (overload) will be displayed. To change the range by a factor of 10, press the Range button (R). You can also improve the resolution by pressing the Range button (R).

6. Battery Replacement

The display will indicate low battery  when it is time to replace the battery.

7. Glossary of Terms

Term	Definition
Range	Range is defined as the amount or extent a value can be measured.
Solar Radiation	Solar radiation is radiant energy emitted by the sun from a nuclear fusion reaction that creates electromagnetic energy. The spectrum of solar radiation is close to that of a black body with a temperature of about 5800 K. About half of the radiation is in the visible short-wave part of the electromagnetic spectrum. The other half is mostly in the near-infrared part, with some in the ultraviolet part of the spectrum. The units of measure are Watts per square meter or BTU.

8. Specifications

Specifications:

- Battery life: approx. 100 hr
- Battery type: 9V
- Accuracy: $\pm 10\text{W/m}^2$ [$\pm 3 \text{ BTU} / (\text{ft}^2 \cdot \text{h})$] or $\pm 5\%$, whichever is greater in sunlight; Additional temperature induced error: $\pm 0.38\text{W/m}^2 / \text{degC}$ [$\pm 0.12 \text{ BTU} / (\text{ft}^2 \cdot \text{h}) / \text{degC}$] from 25 degC
- Operating temperature: 5 degC to 40degC
- Storage temperature: -10 degC to 60 degC

Display:

- Large 3.5" digits LCD display
- Sampling Time: Approx. 0.25 seconds
- Resolution: 0.1W/m², 0.1 BTU / (ft²*h)
- Range: 1999W/m², 634 BTU / (ft² * h)
- Dimensions & weight: 5(L) x 2(W) x 1.5(H) in., approx. 0.3 pounds
- EMC: this instrument is EMC-compliant and has undergone compatibility tests according to EN61326 (1997) + A1 (1998) + A2 (2001)

9. Troubleshooting Guide

If your question is not answered here, you can contact us as follows:

1. Email Support: support@ambientweather.com
2. Live Chat Support: www.ambientweather.com/chat.html (M-F 8am to 4pm Arizona Time)
3. Technical Support: 480-283-1644 (M-F 8am to 4pm Arizona Time)

Problem	Solution
The display is reading OL (overload)	Press the Range Button (R) to extend the range by a factor of 10.
The display does not read 0.0 with the sensor covered by a black medium.	Calibrate the unit to 0.0.

10. Liability Disclaimer

Please help in the preservation of the environment and return used batteries to an authorized depot. The electrical and electronic wastes contain hazardous substances. Disposal of electronic waste in wild country and/or in unauthorized grounds strongly damages the environment.

Reading the “User manual” is highly recommended. The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.

This product is designed for personal use as indication of weather conditions. This product is not to be used for medical purposes or for public information.

The specifications of this product may change without prior notice.

This product is not a toy. Keep out of the reach of children.

No part of this manual may be reproduced without written authorization of the manufacturer.

Ambient, LLC WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE, OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS PRODUCT.

11. 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 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 (6) extreme acts of nature, such as lightning strikes or floods.

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.

