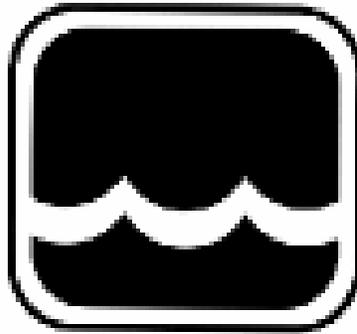




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## **Instrumentation, Inc.**

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## **Solar Panels**

**2 Watt Solar Panel: SP101**

**5 Watt Solar Panel: SP102**

01-752  
May 2007

Rev. B



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Congratulations on your purchase of the Global Water Solar Panel. This instrument has been quality tested and approved for providing accurate and reliable measurements. We are confident that you will find the solar panel to be a valuable asset for your application. Should you require assistance, our technical staff will be happy to help.

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## **I. Item Checklist**

- a. Solar Panel
- b. Solar Panel Manual

## **II. Inspection**

- a. Your Solar Panel was carefully inspected and certified by our Quality Assurance Team before shipping. If any damage has occurred during shipping, please notify Global Water Instrumentation, Inc. and file a claim with the carrier involved.

Use the checklist to ensure that you have received everything needed to operate the Solar Panel.

## **III. Installation Precautions**

- a. The Solar Panel is designed for rugged use, however it must be handled with care. Front and rear impacts can damage the panel.
- b. The panel should not be flexed or bent.
- c. There are no user serviceable components inside the housing.
- d. Light should not be concentrated on the panel to increase the power output.

### **Location and Placement**

- e. The Solar Panel should be located in an area where it is free of shading for the majority of the day, particularly during midday when the unit is most productive.
- f. The Solar Panel comes with mounting hardware that will allow the unit to be attached to a 1" pipe. The pipe may be mounted horizontally or vertically. For best results the face of the panel should be pointed true north if you are in the southern hemisphere and true south if in the



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northern hemisphere. Use the included Allen wrench to tighten the set screw and lock the Solar Panel onto the mounting pipe.

- g. The panel should be angled to receive the maximum amount of light during the day. To move panel loosen the hinge bolt and rotate the panel into position, then retighten the bolt. The angle depends on the panel's location, see following table:

Latitude of site	Tilt angle
0-4°	10°
5-20°	Add 5° to local latitude
21-45°	Add 10° to local latitude
45-65°	Add 15° to local latitude
65-75°	80°

*Table for fixed angle above horizontal for solar panel.*

At most latitudes the panel's performance can be improved during the winter by setting the panel to a steeper angle and during the summer by setting the panel at a flatter angle.

If the panel will not be cleaned regularly Global Water recommends that they not be mounted at an angle flatter than 15°. Flatter angles will not be cleaned properly by rainfall.

### **Electrical**

- h. The Solar Panel comes with a blocking diode installed (internally in the SP101) to prevent the attached device from reversing the current polarity on the solar panel.
- i. The Solar Panel should be attached to the battery or appliance using tight connections. Use terminal connectors or if splicing the wire solder it together for a solid connection. The red or striped black wire is positive and the black wire is negative. The panel should be connected to the device with matching polarities.



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#### **IV. SP101 Specifications**

**Sensing element:**

Output: >120mA@>17 Volts  
Power: >1.9W  
Operating Temperature: -40°C to +80°C (-40°F to 176°F)  
Size of Panel: 6.25"H x 9.25"W x 1"D  
Weight: 3.4 lb. w/mounting bracket  
Connector Cable Length: 120"

#### **V. SP102 Specifications**

**Sensing element:**

Output: >300 mA@>16.5 Volts  
Power: >4.9W  
Operating Temperature: -40°C to +80°C (-40°F to 176°F)  
Size of Panel: 10"H x 12"W x 2.25"D with junction box  
Weight: 4.6 lb. w/mounting bracket  
Connector Cable Length: None

#### **VI. Maintenance**

- a. Global Water recommends inspecting the panel once every 6 months to verify the connections are still good and there is no corrosion on the contacts.
- b. The panel should be cleaned periodically. Dirt and dust will reduce the power output of the panel. Gently clean the surface with a soft cloth or sponge using water and a mild detergent. Do not scrub the surface using a brush or abrasive material this may damage the face. Please take care, since the unit generates direct current and the potential for shocks is present.



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## **VII. Trouble Shooting**

- a. Call Global Water for Technical Support: 800-876-1172 or 916-638-3429 (many problems can be solved over the phone). Fax: 916-638-3270 or Email: [globalw@globalw.com](mailto:globalw@globalw.com).

When calling for Technical Support, please have the following information ready;

1. Model #.
2. Unit serial number.
3. P.O.# the equipment was purchased on.
4. Our sales number or the invoice number.
5. Repair instructions and/or specific problems relating to the product.

Be prepared to describe the problem you are experiencing including specific details of the application, installation, and any additional pertinent information.

- b. In the event that the equipment needs to be returned to the factory for any reason, please call to obtain RMA # (Return Material Authorization number). Do not return items without an RMA # displayed on the outside of the package.

Include a written statement describing the problems that are being experienced.

Send the package, with shipping prepaid, to our factory address. Insure your shipment - Global Water's warranty does not cover damage incurred during transit.



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## **VIII. Warranty**

- c. Global Water Instrumentation, Inc. warrants that its products are free from defects in material and workmanship under normal use and service for a period of one year from date of shipment from factory. Global Water's obligations under this warranty are limited to, at Global Water's option: (I) replacing or (II) repairing; any products determined to be defective. In no case shall Global Water's liability exceed the products original purchase price. This warranty does not apply to any equipment that has been repaired or altered, except by Global Water Instrumentation, Inc., or which has been subject to misuse, negligence or accident. It is expressly agreed that this warranty will be in lieu of all warranties of fitness and in lieu of the warranty of merchantability.
  
- d. The warranty begins on the date of your invoice.