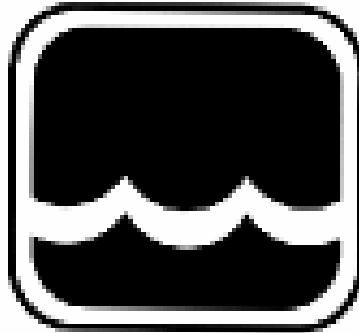




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Display: EZ100

11/12/04



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Congratulations on your purchase of the Global Water EZ100 Display. This instrument has been quality tested and approved for providing accurate and reliable measurements. We are confident that you will find the EZ100 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. EZ100 Checklist

- a. Display
- b. EZ100 Manual
- c. Two 9V batteries (Inside case)

II. Inspection

- a. The EZ100 unit was carefully inspected and certified by Global Water's 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 everything needed to operate the EZ100 was received.



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III. Display Installation

- a. The Display is designed for handheld applications, however there are four holes in the back of the case that may be used to mount the unit to a flat surface (screws not included.)
- b. If the Display is mounted insure that it is located in an area that is protected from direct rainfall and immersion in water. The Display is water resistant, not water proof.
- c. See Appendix B for installation of Display with external power source and/or additional external recording/monitoring device.

IV. Display Set Up and Use

Output Range:	+1900 Engineering Units
Input Range:	4-20 mA
Accuracy:	<u>±</u> 0.1% of full scale
Operating Voltage:	12-36VDC
Current Draw:	Same as sensor output
Warm Up Time:	3 seconds
Operating Temperature:	0° to +60°C
Size of Probe:	4 ¾"x3 1/8"x2 1/8"
Weight:	0.5 lb.

- a. If the EZ100 was shipped with a sensor attached, the display was calibrated for that sensor at Global Water's factory. Pressing the button on the front of the EZ100 will display the sensor's output. Please read the sensor manual for installation and maintenance instructions.



Two wire sensor attachment

- b. Unscrew the four bolts in the cover to access the internal terminal strip. Disconnect one of the batteries. Orient the unit with the terminal block at the top, see appendix C. Attach the positive voltage wire to terminal #1. Attach the signal wire to terminal #2. Reconnect the battery. See appendix A for Display calibration instructions.

Three wire sensor attachment

- c. Unscrew the four bolts in the cover to access the internal terminal strip. Disconnect one of the batteries. Orient the unit with the terminal block at the top, see appendix C. Attach the positive voltage wire to terminal #1. Attach the signal wire to terminal #2. Attach the ground wire to terminal #4. Reconnect the battery. See appendix A for Display calibration instructions.

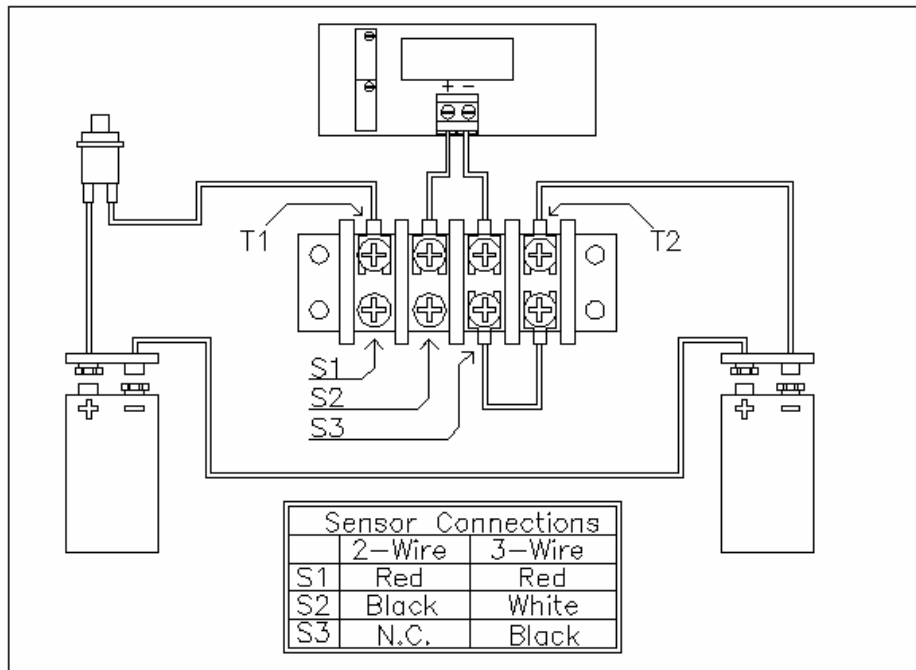


Figure 1.

V. Maintenance

- a. Replace the unit's batteries annually. The Display comes with two 9V Lithium batteries. To access the batteries, unscrew the four cover screws and remove the top.



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VI. Trouble Shooting

Issue: Display not reading correctly

- a. Verify battery voltage (see maintenance section).
- b. Recalibrate sensor to Display using appendix A.

Other issues

- c. Call us for tech 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.

Be prepared to describe the problem being experienced including specific details of the application and installation and any additional pertinent information.

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

Include a written statement describing the problems.

Send the package with shipping prepaid to our factory address. Insure the shipment, as the warranty does not cover damage incurred during transit.

- e. When calling for tech support, please have the following information ready;
 1. Model #.
 2. Unit serial number.
 3. P.O.# the equipment was purchased on.
 4. Global Water's sales number or the invoice number.
 5. Repair instructions and/or specific problems relating to the product.



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VII. Warranty

- a. 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.
- b. The warranty begins on the date of the product's invoice.



VIII. Appendix A: Display Calibration

- a. Remove the front cover of the EZ100 to show the rear of the display.
- b. The Display must be connected to a 4-20mA sensor or current loop meter to work properly.
- c. Use the following diagram and tables to determine the correct DIP switch settings for the attached sensor.

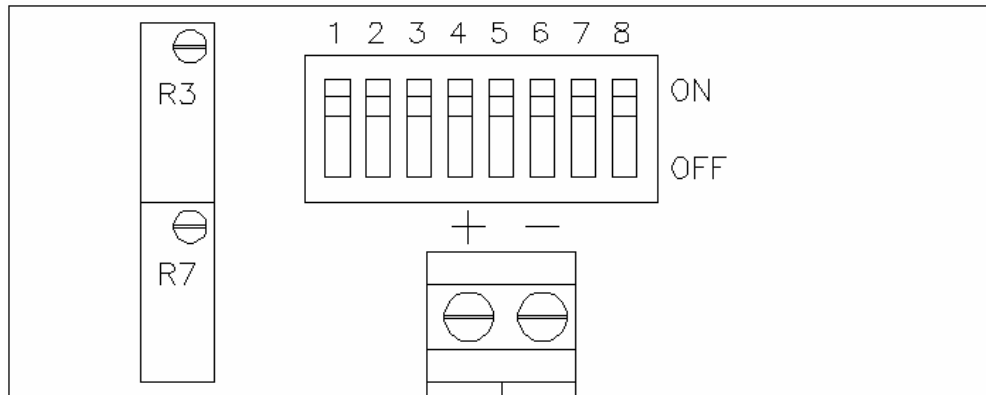


Figure 2.

Minimum Reading (4mA)	Maximum Reading (19/20mA)	SW1	SW2	SW3	SW4	SW5
0-1200	1200-1999	Off	Off	Off	Off	Off
0-600	600-1200	On	Off	Off	Off	Off
0-400	400-600	Off	Off	On	Off	Off
0-200	200-400	On	On	On	Off	Off
0-100	100-200	On	On	On	On	Off

- d. Determine the highest and lowest reading for the display. This is the value that will be displayed at the maximum and minimum output currents of the sensor, Water Level = 0-15 feet, Humidity = 0-100%, etc. Ignore the decimal point and set DIP Switches 1-5 based on the above table:



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- e. Set DIP Switches 6-8 to place the decimal point in the correct position according to the following table:

Decimal Location	SW6	SW7	SW8
9999	Off	Off	Off
9.999	On	Off	Off
99.99	Off	On	Off
999.9	Off	Off	On

- f. Set up the sensor for its minimum output current or put the current loop meter in “Simulate” mode and set it for the minimum output current of the sensor that will be connected to the EZ100 (4.000mA, 3.986mA, etc). If using a current loop meter, connect the red lead to terminal S1 and the black lead to terminal S2 according to Figure 1 on page 5.
- g. While holding down the “Display” button on the front panel of the meter, adjust R3 until the display reads the correct minimum reading.
- h. Set up the sensor for its maximum output current or set the current loop meter for the output current of the sensor that will be connected to the EZ100 (19.000mA, 19.064mA, 20.000mA, etc).
- i. While holding down the “Display” button, adjust R7 until the display reads the correct maximum reading.
- j. Repeat steps f - i and confirm the display reads the correct low and high values. Readjust R3 and R7 as necessary until the correct display is achieved without adjustment.



IX. Appendix B: External Power and Recording Devices

- a. Use the following instructions to connect an external source that will allow the display and sensor to be powered continuously:
 1. Remove both 9 VDC batteries.
 2. Remove the battery leads from terminals T1 and T2 (see Figure 1 on page 5).
 3. Drill a hole in the bottom of the case next to the sensor wire for a power wire to pass through. Run all external wires through this hole.
 4. Seal any gaps with silicon adhesive.
 5. Connect a 12VDC to 36VDC external power source to the power terminals, positive to T1 and negative to T2 in place of the battery leads. The display and sensor are now powered continuously.

- b. Follow the diagram below to connect external power and a PLC or recording/monitoring device.

