



REVSCI
REVOLUTIONARY SCIENCE

The *Poly Pro* Bath Series
Instruction Manual

Revolutionary Science
Shafer, MN
USA

PLEASE READ BEFORE OPERATING THE PRODUCT---

Note To The User:

This product has updated features not yet mentioned in the product manual.

Celsius / Fahrenheit toggle:

To switch the reading between Celsius and Fahrenheit, press and hold the top button. While holding the top button, press the down or up buttons to toggle between F and C.

Note: Fahrenheit readings have a whole number resolution, while Celsius readings have a decimal resolution.

Under and over temperature alarm:

If the temperature reading is more than 1.5 degrees C out of tolerance, the alarm will sound and temperature reading will flash.

Note: It is likely that your water bath will sound this alarm when it is powered on. To override this alarm, press the top button once.

Low water sensor alarm override

The Low water sensor will sound and display will read 'Lo' when the water level is insufficient. This alarm can be overridden by pressing and holding the up button until the alarm turns off.

Powering off the water bath.

If you wish to power off the water bath, you must unplug the unit. There is no power switch on the device.

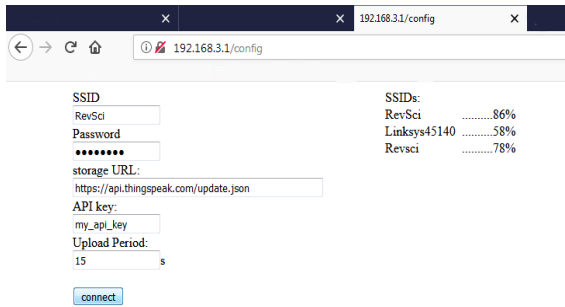
---PLEASE READ BEFORE OPERATING THE PRODUCT--

To disconnect the water bath from your network, complete these steps:

1. Type the IP address of the water bath into your browser, followed by **/config**.
 2. Type 'disconnect' into the SSID (or any other word that is not the correct SSID).
 3. Click CONNECT.
- The water bath should be now be disconnected from your network.

For ThingSpeak setup:

1. Enter your SSID and WiFi password.
2. To upload data to external server such as thingspeak, enter appropriate URL. (e.g. <https://api.thingspeak.com/upload.json>)
3. Enter APIKEY.
4. Enter upload rate (frequency of datalogging) in seconds .
5. Click on the "Connect" button to save your credentials to the Water Bath.
6. Reset your water bath momentarily by unplugging and replugging the power cord.
7. Your bath should now display its IP address on start up.
8. You can observe your water bath's temperature data by typing in its IP address.
9. "IP address"/current_temp will return 1 line of plain text with current temperature, set temperature, time (since startup) , time elapsed since latest temperature reading.
10. "IP address"/ will continually reload with current temperature every x seconds, where x is the period entered in the config form.
11. You can update your configuration by typing "IP address"/config into your internet browser where "IP address" is the ip address of the water bath.



8. Enter “NA” for APIKEY and URL if you are not uploading data to a server or follow the directions below if uploading data to a server.

9. Enter upload rate

(Upload Period). This will determine how often your water bath temperature data is uploaded. For example, '60' will upload your data every 60 seconds.

10. Press 'connect' on the form to save credentials to the water bath.

11. Connect computer back to your normal network

12. Restart the waterbath by unplugging the unit and plugging it back in.

13. The water bath should now blink an IP address when it is first plugged in.

1)The water bath will blink numbers like this: 120 IP 192 168 254 12.

2)120 means it is set to run on 120 Volts. The IP address is the numbers following IP separated by periods. If the water bath displays IP 192 168 254 12 your water bath IP would be 192.168.254.12

3)The IP address can also be obtained by holding the up and down buttons in on the water bath until the IP is displayed.

14. Type in the IP address of the water bath in your browser. You should see the current temperature and setpoint of the water bath as well as a time stamp and how long ago it was created. This will automatically renew according your set upload period.

Note: For a secure WiFi connection, your WiFi connection must be secured.

Instruction Manual for the Revolutionary Science Poly Pro Bath Series



REVOLUTIONARY SCIENCE

Manufacturer of Precision Laboratory Equipment

Table of Contents

| | |
|----------------------------|----|
| Introduction | 2 |
| Recommended Safeguards | 3 |
| Operating Instructions | 4 |
| Care and Maintenance | 5 |
| Calibration | 5 |
| Specifications | 6 |
| Contact Us | 6 |
| Registration | 7 |
| Warranty | 7 |
| Warranty Registration Card | 8 |
| Checklist | 9 |
| Notes and Service Record | 9 |
| Troubleshooting | 10 |
| Wi-Fi Setup | 11 |

NOTE: This manual contains important information, safeguards and operating instructions for the operation of the REVOLUTIONARY SCIENCE Poly Pro Bath Series by Alternative Pioneering Research & Development, Inc. (APR&D, Inc.)

© Alternative Pioneering Research and Development, Inc.

REVOLUTIONARY SCIENCE

17319 Lake Blvd.
Shafer, MN 55074
Toll Free: (800) 775-7942
Fax: (775) 218-7015

E-mail: support@revsci.com
Website: www.revsci.com

Introduction

Thank you for purchasing the Revolutionary Science Poly Pro Bath. We are confident that when used correctly, our water bath will provide years of reliable service in your lab or classroom. We have made every effort to use high quality, durable parts to deliver the performance expected of instruments costing 3 to 4 times as much.

Please let us know what you think of our products, positive or negative, so we can continue to enhance and improve our products in the future.

Sincerely,

REVOLUTIONARY SCIENCE

To maximize the use of this Dual Poly Pro Bath, please complete this short list before using the product:

1. Examine carton and packaging for possible damage caused during shipping. If damage is present contact carrier at once.
2. Fill out the checklist (page 9 of instruction manual).
3. Carefully read this instruction manual.
4. Fill out warranty registration card and mail it to Revolutionary Science.

Poly Pro Bath WiFi setup and configuration

If your water bath is Wi-Fi enabled, and you wish to configure it on your network, perform the following steps:

To access the water bath with a Wi-Fi capable computer or cell phone complete the following instructions:

1. Plug in Water Bath. Display should read '120' for 120 Volt operation.
1. Wait a few seconds. Display should now read "CFG" (for Config).
1. Using a WiFi enabled computer (or smart phone), find the SSID "WATERBATH_A" or "WATERBATH_B" in the Wireless Network Connection list. (See Illustration)
1. Connect to WATERBATH_A (or B) using the password "admin001".

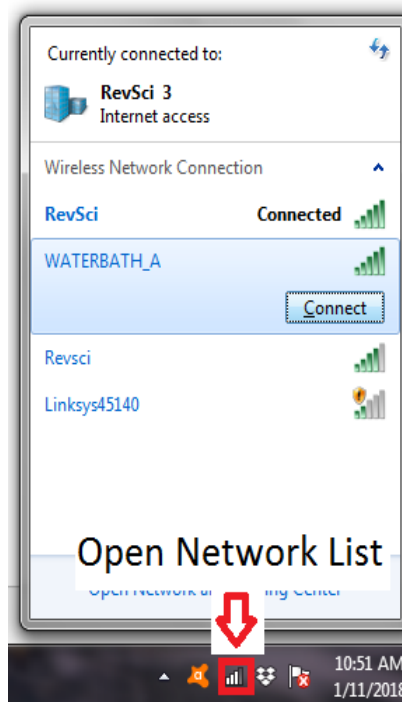


Illustration 1

2. Type 192.168.3.1 (for WATERBATH_A) or 192.168.4.1 (for WATERBATH_B) into a browser window.

CAUTION: The above instructions will only connect a device (cell phone or computer) to one bath via Wi-Fi. If you would like to use your device to access the internet or use additional water baths on the network, please follow the simple configuration steps below:

To configure the network to allow for a single or multiple water baths, complete these additional steps:

6. Open an internet browser and type 192.168.3.1/config into the address bar if using WATERBATH_A or 192.168.4.1/config if using WATERBATH_B.
7. Enter your wifi credentials (SSID and password) into the corresponding fields in the config form. (See Illustration 2)

Troubleshooting

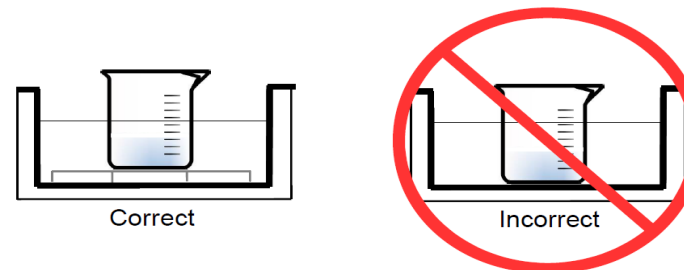
| Symptom | Fault | Action |
|---|--|--|
| Temperature on the display is higher than the actual | Polypro Bath may be in need of calibration | See calibrations instructions in the manual |
| Temperature on the display is lower than the actual | Polypro Bath may be in need of calibration | See calibrations instructions in the manual |
| Display screen does not turn on | Power button must be pressed | Inspect power button and repress |
| | Power cord may be disconnected | Inspect power cord connection |
| Display reads "Lo" and alarm sounds | Insufficient water | Fill with at least one gallon of water. If alarm does not stop, contact Revolutionary Science |
| Unit does not turn off when the top button is pressed | The button was not held down long enough | When powering down the unit, push and hold the top button for about five seconds |
| Water does not get warm or hot | Possible defective components | Contact Revolutionary Science |
| Takes a long time to reach the set temperature | Cover may not be on | Place cover over the chamber. The Poly Pro Bath is not a rapid heat water bath, like the revolutionary Science Speed Pro Bath. It may take a few hours to reach high temperatures of 80°C or higher. Set point temperature can be more rapidly achieved by filling the chamber with warm or hot tap water. |

If symptoms persist, please contact Revolutionary Science Support Center at support@revsci.com or call 651-674-3112

Recommended Safeguards

CAUTION: Chamber contains hot water and steam during and after operation. Hot water may drip from cover during removal and can cause scalding.

1. Never attempt to move the Poly Pro Bath when water in chamber is hot, doing so could cause severe burns. Wait until water in chamber is cool to the touch.
2. Never attempt to disassemble or modify the product.
3. Never operate bath when chambers are dry. Operating the bath with not enough water (less than 1 inch) will cause the low water detection alarm to sound.
4. Use only deionized water.
5. Keep clear covers in place when operating bath 60°C and above.
6. Do not operate on wet surfaces.
7. Make sure the power cord is clear of hot surfaces and other hazards. We recommend slack in the cord to be wrapped up and held together with a twisty tie.
8. Do not use around flammables, combustible materials, or explosives.
9. Keep vents clear from other equipment and avoid setting unit on soft, fluffy surfaces. This will allow for effective air flow.
10. Do not heat any substances that may release fumes considered to be toxic.
11. Plug into power cord into a grounded electrical outlet only of the appropriate voltage.
12. Like all heating and cooling equipment their efficiency depends upon the external or ambient temperature. If the ambient temperature decreases, the maximum efficiency may decrease.



- CAUTION:**
- Do not place beakers or other flat bottomed devices directly on the bottom of the bath. Doing so may cause damage to the bath liner. Place beakers and flasks on racks that allow for a sufficient amount of water ventilation underneath.
 - Bath must be filled with water. Do not substitute water with glass or metal beads.



Recommended Room and Storage Conditions:

- Do not store your water bath in direct sunlight, or in dusty or poorly ventilated areas.
- Do not store in a cold or moist room for periods of time.
- Never immerse your water bath in water.

Operating Instructions

(1) PLACEMENT:

Place unit on a stable, hard surface away from the edge of the counter and moving equipment.

(2) CONNECTING THE POWER:

Plug the power cord to your water bath into a grounded electrical outlet of the appropriate voltage. The RS-PB-100 requires 170 watts and the RS-PB-200 requires 340 watts. Almost any circuit should suffice. Make sure the cord is routed safely away from mechanical hazards and hot surfaces. Avoid routing the cord where others may trip on it or snag it.

(3) TO OPERATE THE WATER BATH:

To turn the water bath off, the entire device must be unplugged from power. Default display is actual chamber temperature. To increase water temperature, press and hold the arrow button pointed up for 2+ seconds. To decrease water temperature, press and hold the arrow button pointed down for 2+ seconds. To display current set temperature, press either button.

(4) LOW WATER DETECTION SYSTEM:

An alarm will sound if the water level is too low (less than 1 inch deep). Simply add more water until the alarm stops.



Checklist

Before packaging material is discarded please make sure all parts are accounted for:

- Clear cover(s)
- Poly Pro Bath
- Black mesh (for Beakers, bottles and flasks)

Notes, Service Record, etc.



Please fill out this page, or a copy of it, and send it to the address below to validate your warranty.

Warranty Registration Card for the
REVOLUTIONARY SCIENCE RS-PB-200 Dual Poly Pro Bath
(Please Print)

Date Purchased: _____ Serial Number: _____

Purchased From: _____

Name of Purchaser: _____

Company School Individual (Please check one)

Name of institution: _____

Department: _____

Address: _____

Intended use: _____

Where did you hear of our product?: _____

Comments: _____

Mail to: Revolutionary Science
17319 Lake Blvd., Shafer, MN 55074



Care and Maintenance

Your water bath should be cleaned periodically to ensure optimal performance, cleanliness, and to eliminate contamination. Clean your REVOLUTIONARY SCIENCE RS-PB-200 only when it is not plugged in. Scrape residue from the chamber walls. Follow through with a cloth soaked in water and bleach or mild detergent, wipe the inside and outside of the unit. Then let air dry or wipe with a dry cloth.

User Calibration Instructions

NOTE: This device was not calibrated in our factory. Initial and regular calibration is the responsibility of the user.

Setup:

Set temperature on Poly Pro Bath and insert thermocouple or thermometer. Place cover and check accuracy of temperature one hour later. If temperature is off by more than 0.5°C, record Poly Pro Bath display reading and thermometer reading and calibrate accordingly, following these three simple steps.

1. Press up and down buttons simultaneously. Display should read "CAL."
2. Then press up arrow if you desire to increase display reading or down arrow if you wish to decrease display reading.
3. Then wait for three seconds for the display to return to the temperature reading.

NOTE: Poly Pro Bath will maintain adjusted calibration if it is turned off or restarted. Calibration may be adjusted anytime.



Poly Pro Specifications (Single Chamber)

| | |
|---------------------|---|
| Model No.: | RS-PB-100 |
| Capacity: | 5.5L |
| Precision: | Temperature uniformity $\pm 0.4^{\circ}\text{C}^*$ |
| Display: | 3 digits, 0.1°C resolution |
| Controller: | Digital microcomputer |
| Power Requirements: | 110-240VAC, 50-60 Hz, 170W, 1.5 A |
| Net Weight: | 6 lb. |
| Outside Dimensions: | 40cm wide x 25cm deep x 17cm tall 15.7" wide x 9.8" deep x 6.7" tall |
| Inside Dimensions: | 32cm wide x 17cm deep x 13.3 cm tall, 12.6" wide x 6.75" deep x 5.25" tall |
| Temperature Range: | Ambient to 99.9°C^* |
| Warranty: | 2 year, repair or replacement |

Dual Poly Pro Specifications (Dual Chamber)

| | |
|---------------------|---|
| Model No.: | RS-PB-200 |
| Capacity: | 5.5L per chamber |
| Precision: | Temperature uniformity $\pm 0.4^{\circ}\text{C}^*$ |
| Display: | 3 digits, 0.1°C resolution |
| Controller: | Digital microcomputer |
| Power Requirements: | 110-240VAC, 50-60 Hz, 340W, 3 A |
| Net Weight: | 16 lb. |
| Outside Dimensions: | 56cm wide x 45.5cm deep x 14.7cm tall 22" wide x 17.9" deep x 5.8" tall |
| Inside Dimensions: | 32cm wide x 17cm deep x 13.3 cm tall, 12.625" wide x 6.75" deep x 5.25" tall |
| Temperature Range: | Ambient to 99.9°C^* |
| Warranty: | 2 year, repair or replacement |

*Measured @ 37°C under controlled laboratory conditions.

Contact Us

| | |
|-----------------------|--|
| Mailing address: | Toll Free: (800) 775-7942 |
| Revolutionary Science | Fax: (775) 218-7015 |
| 17319 Lake Blvd. | E-mail: support@revsci.com |
| Shafer, MN 55074 USA | Web site: www.revsci.com |



Registration

For your future reference and to expedite answers to your questions, please complete the following information:

Date Purchased: _____

Serial Number: _____

Model Number: _____

Purchased From: _____

Full Two Year Warranty

Your REVOLUTIONARY SCIENCE RS-PB-200 is warranted to be free from defects of material or workmanship under normal use for a period of two years from date of purchase. If your RS-PB-200 proves to be defective within this warranty period, Revolutionary Science will repair or replace your unit at our option. This warranty will be void if malfunction is caused by accident, misuse, or negligence, including tampering, abuse, or damage in transit. This warranty excludes any relief for incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights; you may also have other rights, which may vary from state to state. Your RS-PB-200 comes with several built in safety features. Any attempt to interfere with the operation of these features makes this warranty null and void.

To validate this warranty, be sure to complete and return the Warranty Registration Card, found on page 8.