

Instruction Manual

INCUFRIDGE PROFESSIONAL LINE

Instruction Manual for the Revolutionary Science

INCUFRIDGE PROFESSIONAL LINE

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

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INTRODUCTION

Thank you for purchasing the Revolutionary Science Incufridge. We are confident that when used correctly, our Incufridge will provide years of reliable service in your lab, classroom, or fieldwork. We have made every effort to use high quality, durable parts to deliver the performance expected of instruments costing significantly more.

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 yours,

REVOLUTIONARY SCIENCE

To maximize the use of this Incufridge, please complete this short list before using the Incufridge:

1. Examine carton and packaging for possible damage caused during shipping. If damage is present contact carrier at once. Failure to do so immediately may release the carrier from any liability of damage.

2. Fill out the checklist (page 15 of instruction manual). If something is missing, please contact Revolutionary Science.

3. Carefully read the instruction manual.

4. Visit the product registration webpage provided on pg. 14 by scanning the QR code or entering the URL manually and complete the registration online.

RECOMMENDED SAFEGUARDS

1. Never attempt to disassemble or modify the Incufridge.

2. Do not clean any parts with solvents.

3. Do not drop.

4. Keep door closed for effective temperature stabilization.

5. Do not operate on wet surfaces.

6. Make sure the power cord is clear of hot surfaces and other hazards. We recommend any slack in the cord to be wrapped up and held together with a twisty tie.

7. Avoid spills of any kind on or in the unit. This may contaminate or corrode the surfaces.

8. Do not use around flammables, combustible materials, or explosives.

9. Keep back vents clear (at least two inches in every direction) from other equipment and avoid setting unit on unstable surfaces. This will allow for effective air convection.

10. Do not heat any substances that may release fumes considered to be toxic.

11. Avoid placing samples directly on floor of chamber, instead use shelf to insure even distribution of temperature.

12. Like all heating and cooling equipment their efficiency depends upon the external or ambient temperature. This product has a maximum efficiency at an ambient temperature of 21°C, provided that all other safeguards are met. If the ambient temperature increases or decreases, the maximum efficiency will decrease.

Recommended Room and Storage Conditions:

Do not store your REVOLUTIONARY SCIENCE Incufridge in direct sunlight, or in dusty or poorly ventilated areas.

Do not store in a cold or moist room for extended periods of time.

Never immerse your REVOLUTIONARY SCIENCE Incufridge in water.

OPERATING INSTRUCTIONS

Placement:

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

Loading:

Open the Incufridge by gently pulling outward (away from the unit) on the left side door edge. With the door open and shelves properly inserted, load your samples leaving adequate space between samples for proper air circulation. Avoid placing samples directly on floor of chamber, instead use shelf to insure even distribution of temperature.

Connecting the Power:

100-240V use: Insert power cord into an outlet designed for 100-240v use. Make sure the power cord is clear of hot surfaces and other hazards. Any slack in the cord should be wrapped up and held together with a twisty tie.

Setting the Temperature:

The home screen displays the current chamber temperature in large text toward the top while the desired (set) temperature is shown below it. To increase the chamber temperature, press and hold the up-arrow button. To decrease the chamber temperature, press and hold the down-arrow button.



Internal Light:
On the home screen press the Light icon on right side under the arrow buttons to turn on and off the internal chamber light.

Menu Screen:
To display the Menu screen, press the menu icon (three horizontal lines) in the lower right side of the home screen. On the Menu screen the following options will appear.



Temperature Cycle PROGRAM:

The Incufridge Pro can change set point temperature based on time settings for custom experiments.

1. Enter the main menu screen and press the Program button.

2. All selections can be adjusted by pressing on a selection. Then change the setting with the Up and Down arrow keys.

3. Up to 99 different programs can be set. Select Pgm to select a different saved program.

4.The Step key represents the different steps in the given program. Each step must have the time and days (D:, H:, M:, and S:) and Set Temp.

D: Press D to select the number of days the program will run.

H: Press H to select the number of hours the program will run.

M: Press M to select the number of minutes the program will run.

S: Press S to select the number of seconds the program will run.

Set Temp: Set thr temperature the program will run.

Repeat: Set the number of times the program sequence will repeat.

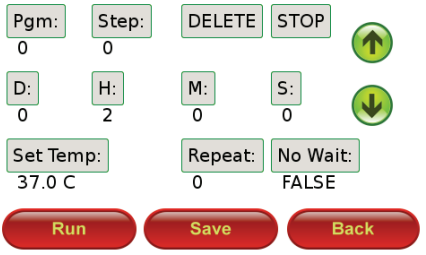
No Wait: True-Time will count down immediately, False-Time will count down once set temp is reached.

Run: Run Current Selected Program.

Save: Save Current Selected Program.

Stop: Press Stop button to cancel the currently running program

Back Button: To return to main screen.



DATA LOGGING:

Select data logging interval.

Not Logging: Press to turn off data logging feature.

1 second: Log every second

5 second: Log every 5 s

10 seconds: Log every 10 s

30 seconds: Log every 30 s

60 seconds: Log every minute.

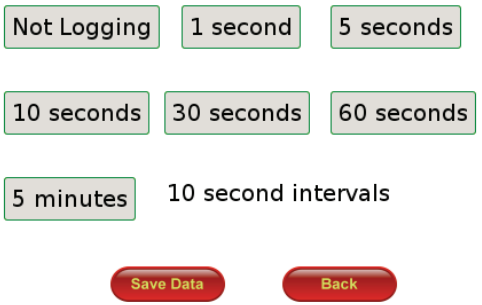
5 minutes: Log every 5 min. (most efficient memory storage)

Save Data button: Will immediately save cached data to internal storage.

Note: Data is stored in a cache in memory until cache is full, then it is written to internal storage.

When turning machine off, press Save Data button to ensure no data is lost.

Back Button: To return to main screen.

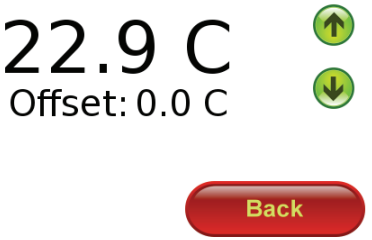


The Calibrate Screen:

Displays the current calibrated temperature with offset.

1. Place a NIST traceable thermometer in the center of the Incufridge chamber.
2. Set the Incufridge to the desired set point.
3. Wait until temperature reading equilibrates and note the offset (the difference between the Incufridge chamber reading and independent thermometer)
4. Enter the calibration mode, by going to the main menu and selecting Calibration.
5. Press Up/Down arrows to increase/decrease the offset. Calibration offset and calibrated temp will reflect any change.
6. Press the Back button to save and return to main screen.
7. Celsius and Fahrenheit can be toggled in the Calibration screen by pressing in the lower, left corner of the Calibration screen.

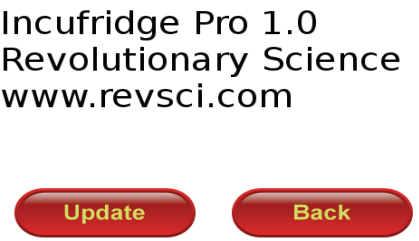
Note: The Incufridge has a single point calibration. It is recommended that you calibrate the Incufridge at your most commonly used temperature setting.



ABOUT:

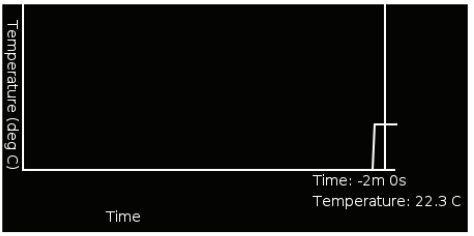
Displays Incufridge Pro:
When connected to Wi-Fi, the display will show the IP and website address. Pressing the Update button will update your version of software:

CAUTION: Contact Revolutionary Science prior to updating the software. New versions of software may not be compatible with old versions of hardware. Press the Back button to return to main screen.



GRAPH:

The Incufridge Pro graphs temperature vs time lapsed.
Enter the menu screen. Press Graph to show (time, temperature) coordinate.
Time is counted backwards from current time.
Press the Back button to return to the main screen.



Back

WI-FI Configuration:

To connect the Incufridge to the Wi-Fi network:
1. Select Wifi Config from the menu.
2. Select SSID: (SSID is the Wi-Fi network the Incufridge should be connected to)
3. WIFI: Enter Wi-Fi password.*

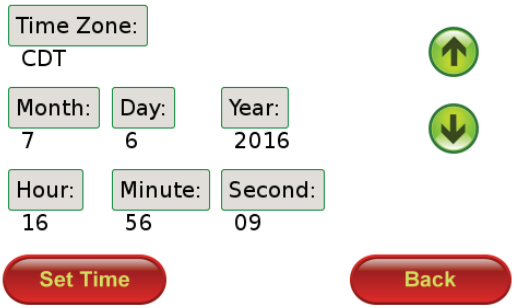
To connect the Incufridge to the internet:
1. Complete selections above, plus the following
2. DATA URL: Enter the URL website to access the data log remotely.
3. API Key: Enter the API Key associated with data logging site.
4. Device ID: Enter the Device ID associated with data logging site, if any.
5. Connect: Press Connect to WIFI or save changes in data logging URL
6. Back Button: To return to main screen.



*A USB keyboard may also be used to type in information. If using the on-screen keyboard a stylus should be used.

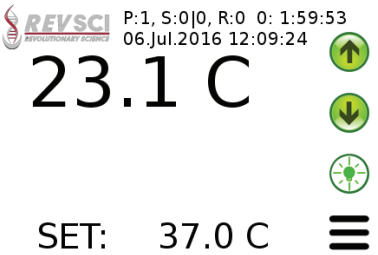
Setting the Time:

1. Time is normally synced to an internet source, however, if no internet connection is available, one can set the time manually.
2. To change time zone, use Up/Down arrows to scroll through available choices. Note: Time Zone is defaulted to US Central Time.
3. Select month, day, year: Adjust to the appropriate setting.
4. Select hour, minute, second: Adjust to the appropriate setting.
5. Press the Set Time button to save the settings. Note: Set time will not be updated until button is pressed.
6. Back Button: To return to main screen.



MAIN SCREEN PROGRAM DISPLAY:

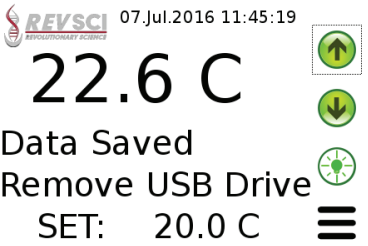
Current Running Program is Displayed:
Program Number (P:x), Current Step of total Steps (S:x|x), Number of times Steps Repeat (R:x), Count-down to step completion, days, hours, minutes, seconds



MAIN SCREEN REMOVE USB:

When the USB is inserted, data is saved and transferred to the USB thumb drive, then the data is erased from Incufridge.

'Data Saved Remove USB' is displayed when data is transferred to drive and it is safe to remove USB drive.



CARE AND MAINTENANCE:

Your Incufridge should be cleaned periodically to ensure optimal performance, to promote cleanliness, and to eliminate contamination. Clean your REVOLUTIONARY SCIENCE Incufridge only when it is not plugged in. Using a soft cloth soaked in water and a mild detergent wipe the inside and outside of the unit, then let air dry or wipe with a dry cloth. Be careful not to scratch surfaces with abrasive cleaners or dirty cloths.

Incufridge Professional Line Specifications

Precision:	±0.7°C (at 21°C ambient)
Uniformity:	Internal temperature uniformity ±1.0°C (at 21°C ambient)
Display:	3 digits, 0.1°C resolution
Controller:	Digital microcomputer
Temperature Range:	4 °C to 70 °C (at 20 °C ambient)
Warranty:	2-year, repair or replacement

Model #	Chamber Capacity	Interior Dimensions Width x Depth x Height	Exterior Dimensions Width x Depth x Height	Power
RS-IF-233pro	1.2 cu.ft. (33L)	12.25in x 16in x 10in	15in x 23in x 16.5in	100-240VAC, 50-60 Hz, 120 W, 12 VDC
RS-IF-253pro	1.9 cu.ft. (53L)	12in x 16.5in x 16.5in	15in x 23in x 21.5in	100-240VAC, 50-60 Hz, 120 W
RS-IF-273pro	2.6 cu.ft. (73L)	12in x 16.5in x 22.5in	15in x 23in x 27.5in	100-240VAC, 50-60 Hz, 420 W

CONTACT US

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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 Incufridge 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 Incufridge 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 Incufridge 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 the product registration by visiting the website found on pg. 14.

LIMITATION OF LIABILITY

In no event will seller be liable for any consequential, indirect, exemplary, special, or incidental damages, including any lost profits, arising from or relating to the services even if seller has been advised of the possibility of such damages. Seller's total cumulative liability in connection with the services, whether in contract or tort or otherwise, will not exceed the fees paid for the services. One or more claims will not enlarge this limit.

WARRANTY REGISTRATION

Please visit the registration webpage by scanning the QR code or entering it in manually to register your Revolutionary Science Incufridge.



https://www.revsci.com/pages/product-registration-and-feedback

CHECKLIST

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

__ Incufridge

__ 2 Shelves 100-I00016

__ 1 Stylus

__ 1 Handbook 310-I00003

Notes, Service Record, etc.

TROUBLESHOOTING

Symptom	Cause	Action
Temperature on the display is higher than the actual	Incufridge may be in need of calibration or the Celsius/ Fahrenheit setting is incorrect.	See calibration instructions in the manual
Temperature on the display is lower than the actual	Incufridge may be in need of calibration or the Celsius/ Fahrenheit setting is incorrect.	See calibration instructions in the manual The Incufridge Basic only displays Celsius
Display screen does not turn on	Power cord may be disconnected	Inspect all power supply conditions
	Something may be caught in the fan	Turn off Incufridge and inspect internal and external fans. Carefully remove foreign objects if any are found
Chamber temperature does not get high enough or cool enough.	Fans or heat sinks may be obstructed with dust or too close to the wall The room temperature may be too cold or too warm to attain cold or heat setting.	Check the fans. It is likely that the fan in the back is too close to the wall or it is dirty and proper venting cannot occur. The room temperature should be 21C or below, in order to achieve the coldest temperature settings in the chamber. The room temperature should be 21C or above in order to achieve the highest set temperatures in the chamber.
Touch screen display does not respond to touch	Edge of display may be pinched by the metal control panel or foreign object	Carefully inspect and for obstructions.
Temperature stays at ambient and does not heat or cool	Possible defective components	Contact Revolutionary Science
Either fan is not operational	Possible defective components	Contact Revolutionary Science

If symptoms persist, please contact Revolutionary Science Support Center at support@revsci.com or call (800) 775-7942.

ISO 9001 REGISTERED FIRM

TROUBLESHOOTING

Please visit the Revolutionary Science troubleshooting webpage by scanning the QR code or entering it in manually to view instructional videos covering potential Incufridge issues and their solutions.

https://www.revsci.com/pages/troubleshooting



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