R2900

REED INSTRUMENTS

Dry Block Calibrator

WARRANTY 1 YEAR WARRANTY

Instruction Manual

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Introduction

Thank you for purchasing your REED R2900 Dry Block Calibrator. Please read the following instructions carefully before using your instrument. By following the steps outlined in this manual your meter will provide years of reliable service.

Product Quality

This product has been manufactured in an ISO9001 facility and has been calibrated during the manufacturing process to meet the stated product specifications. If a certificate of calibration is required please contact the nearest authorized REED distributor or authorized Service Center. Please note an additional fee for this service will apply.

Safety

- Never attempt to repair or modify your instrument.
- Dismantling your instrument other than for the purpose of replacing fuses may cause damage that will not be covered under the manufacturer's warranty. Servicing should only be provided by an authorized Service Center
- Use this instrument only for temperature calibration as specified in the instruction manual.
- Operate indoors and in environments listed in the instruction manual.
- Inspect the instrument for damage before each use. Do not use if damaged or malfunctioning.
- Handle the instrument and thermometer probes with care to prevent drops, shocks, or overheating.
- Only trained personnel should operate this equipment.
- Before initial use, after transport, or after storage in humid conditions, energize the instrument for 2 hours to ensure it meets IEC 1010-1 safety requirements. Remove any moisture beforehand.
- Allow at least 6 inches (15 cm) of clearance around the instrument for air circulation.

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- Do not operate near flammable materials or under overhead structures.
- Avoid fully unattended operation.
- Do not touch the well-access surface or hot components.
- Avoid turning off the instrument above 100°C. Cool to below 100°C before shutting down.
- Probes and inserts should only be removed when the temperature is below 50°C.
- High-temperature operation (300°C and above) requires caution to prevent burns or fire.
- Use only grounded and polarized power cords with properly grounded outlets.
- Replace fuses with ones of the same rating, voltage, and type if needed.
- High voltage is present. Turn off and disconnect power before performing internal maintenance.
- Keep the well and inserts clean; do not use fluids for cleaning or introduce foreign materials into the probe hole.
- Handle probes carefully to prevent calibration errors from shocks or damage.
- Always carry the instrument upright to prevent probe sleeves from falling out.
- Avoid excessively wet, oily, dusty, or dirty environments during operation or storage.
- Turn off the instrument during mains power fluctuations. Wait for power to stabilize before re-energizing.
- Allow for probe expansion during heating. Ensure probe handle temperature limits are not exceeded.
- Extended operation at high temperatures can shorten component lifespan.

Features

- Designed to calibrate RTDs, thermocouples, and small bimetal thermometers
- Dual LED display allow simultaneous monitoring of set and actual temperatures
- Accommodates multiple probe sizes with Ø3.5mm (x2), Ø4.2mm, Ø5mm, and Ø6.8mm apertures
- User selectable °F or °C

Included

- Dry Block Calibrator
- Power Cord

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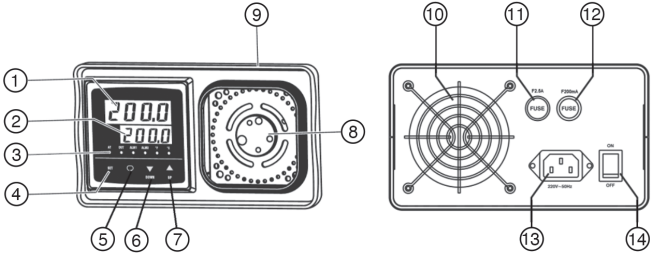
Specifications

Temperature Range:	91 to 572°F (33 to 300°C)
Accuracy:	≤212°F (≤100°C): ±1.6°F (0.8°C) 212 to 392°F (100 to 200°C): ±3.2°F (1.6°C) 392 to 572°F (200 to 300°C): ±5.6°F (2.8°C)
Stability:	≤212°F (≤100°C): ±0.2°F (0.1°C) 212 to 392°F (100 to 200°C): ±0.4°F (0.2°C) 392 to 572°F (200 to 300°C):±0.8°F (0.4°C)
Resolution:	0.1°F (0.1°C)
Heating Time:	Approx. 30 mins from 91 to 572°F (33 to 300°C)
Cooling Time:	Approx. 30 mins from 572 to 122°F (300 to 100°C)
Well Depth:	3.54" (90mm)
Aperture Diameter:	ø3.5mm(2), ø4.2mm, ø5mm, ø6.8mm
Display:	Dual LED
Power Supply:	110VAC, 2.5A
Product Certifications:	CE
Operating Temperature:	41 to 95°F (5 to 35°C)
Storage Temperature:	-4 to 140°F (-20 to 60°C)
Operating Humidity Range:	15-80%
Dimensions:	7.1 x 4.5 x 8.8" (180 x 114 x 233mm)
Weight:	6.6lbs (3kg)

Instrument Description



1. Temperature Indicator (Red LED)
2. Set Temperature Indicator (Green LED)
3. Status Indicators
4. SET Button
5. Return Button
6. Down Arrow Button
7. Up Arrow Button
8. Dry-Block Heat Sources
9. RTD Reference Well
10. Fan
11. Heating System Fuse
12. Control System Fuse
13. Power Socket
14. Power Switch

Note: The fan inside the calibrator has two speeds and runs continuously when the unit is in operation. The fan runs slow for heating and maintaining operation and runs fast for rapid cooling. The area around the calibrator must be kept clear to allow adequate ventilation. The airflow is directed out the front and can be extremely hot.

Status Indicator Description

Note: Using any other parameter other than the ones described in this manual will affect performance and could damage the calibrator.

AT	Auto-Tuning Parameter Adjustment (For Authorized Service Centers Only)
OUT	Heating Output Power Indicator
ALM1	Overload Alarm indicates that the Calibrator temperature exceeds the set temperature. To set the alarm, refer to Setting Overload Alarms 1 & 2 for details. **Note:** When triggered the heating output power is turned off.
ALM2	Overload Alarm indicates that the Calibrator temperature exceeds the set temperature. To set the alarm, refer to Setting Overload Alarm 1 & 2 for details. **Note:** When triggered, the rapid cooling process will begin.
°F/°C	Temperature unit of measure.

Keypad Description

The four-button keypad allows for easy set-point temperature. The temperature set-point can be set to a resolution of 0.1°F or °C.

SET	The **SET** button is used to confirm the selected value within the parameter and to exit the set up mode and resume normal operation. **Note:** At any time, you can press the **SET** button to exit the Setup mode and resume normal operation.
	The enter button is used to scroll through parameters.
	The up arrow is used to increase temperature values and to toggle between menu options within the selected parameter.
	The down arrow is used to decrease temperature values and to toggle between menu options within the selected parameter.

Operation Instructions

Initial Start up

1. Place the calibrator on a flat surface with at least 8" of free space around the instrument.
2. Connect the included power cord and plug into a power outlet.
3. Turn the calibrator on by toggling the power switch to ON.
4. The fan should begin blowing air through the instrument.
5. After a brief 3-second self-test, the calibrator will begin normal operation by displaying both the current target surface temperature and the last registered set temperature.

Note: When the calibrator is first powered ON, the default set temperature is set to 50°C. Refer to “Setting the Temperature Set-Point” for details.

6. The calibrator will now heat up to reach the registered set temperature.

Note: The top display (Green LED) will continue to update the current temperature until the set temperature is reached.

Turning Off the Calibrator

It is recommended to select a set-point less than 140°F (60°C) and allow the unit to cool down before turning it off.

Warning: Do not turn the instrument off at a temperature higher than 212°F (100°C). Lower the temperature below 212°F (100°C) before powering OFF.

Selecting the Temperature Unit of Measure

1. To unlock, hold down both the **SET** and ↻ buttons simultaneously and release when the display indicates ''At" & ''oFF" confirming that the parameters are now unlocked.
2. Press the **SET** button for three seconds and release to enter the setup mode as indicated by [CnPt] and [Pt2]
3. Press ↻ button once and the display will indicate [tPUn] and [C] which confirms the current temperature scale.
4. Use the ▲ and ▼ buttons to select between °C and °F which will flash until confirmed.
5. Press the **SET** button to confirm selection.
6. Press the **SET** button again to exit set up mode and resume normal operation.

Setting the Temperature Set-Point

1. Use the ▲ and ▼ buttons to increase or decrease the temperature set-point value.
2. Press the ▲ button to increase the temperature value.
3. Press the ▼ button to decrease the temperature value.

Note: The values will adjust by 0.1° at every click and will adjust by 1° if pressed and held.

4. Press the **SET** button to confirm the new temperature set-point.
5. Press the **SET** button again to exit set up mode and resume normal operation.

Setting Overload Alarms 1 & 2

The calibrator allows a user to set overload alarms to trigger when the IR block temperature is over the temperature set-point. When set and triggered, AL 1H will turn off the heating power. When set and triggered, AL 2H will turn the cooling fan on.

Note: The default high overload alarms are set to 5°C (8°F).

These alarms can be set by following the steps below:

1. Press the ↻ button two times until the top screen displays AL 1H.
2. Use the ▲ and ▼ buttons to change the temperature value which will flash until confirmed.
3. Press the **SET** button to confirm the new high overload alarm 1
4. Press the ↻ button once to switch to high overload alarm 2 as indicated by AL 2H.
5. Use the ▲ and ▼ buttons to change the temperature value which will flash until confirmed.
6. Press the **SET** button to confirm the new high overload alarm 2.
7. Press the **SET** button again to exit set up mode and resume normal operation.

Enabling/Disabling the Heating Power

1. Press the ↻ button once to display the run / StoP heating power function as indicated by r-S.
2. Use the ▲ and ▼ buttons to select between run (enable heating power) or StoP (disable heating power) which will flash until confirmed.

Note: The default heating power is set to run

3. Press the **SET** button to confirm selection.
4. Press the **SET** button again to exit set up mode and resume normal operation.

Keypad Lock/Unlock

The calibrator allows a user to lock/unlock the keypad to avoid unwanted changes to the settings. Follow the steps below to lock or unlock the keypad.

1. Press the ↻ button four times until the screen displays LOC & oFF.
2. Use the ▲ and ▼ buttons to select between LoC1, LoC2 & oFF which will flash until confirmed.

Note: LoC1 will lock all of the keypad buttons, while LoC2 will only lock the button allowing the user to continue to modify/confirm the set temperature if required.

3. Press the **SET** button to confirm selection.
4. Press the **SET** button again to exit set up mode and resume normal operation.

Replacing the Fuses

The calibrator must be switched off before attempting to replace fuses.

To replace fuses:

1. Open the faulty fuse compartment by rotating it counter clockwise.
2. Gently slide out the fuse.
3. Replace with the appropriate fuse (see Specifications below) and tighten the compartment back into place.

Fuse Specifications	
Fuse 1	2.5A/250V
Fuse 2	200mA/250V

This instrument is equipped with operator-accessible fuses. If a fuse blows, it may be due to a power surge or failure of an internal component. Replace the fuse once. If the fuse blows again, it is likely caused by failure of an internal component, and you should contact an Authorized REED Service Center.

Accessories and Replacement Parts

R8888 Deluxe Hard Carrying Case

Applications

- Calibrating thermocouples and RTDs to ensure precise temperature control in manufacturing and production machinery
- Maintaining accurate temperature conditions for experiments in research and testing environments by calibrating sensors
- Verifying and calibrating temperature-sensitive equipment for compliance in food safety and quality control processes
- Ensuring efficient heating and cooling operations by calibrating thermocouples and RTDs used in HVAC systems
- Validating temperature accuracy in drug production and storage through calibration of critical sensors
- Supporting the calibration of temperature sensors used in power generation and utilities for operational consistency

Product Care

To keep your instrument in good working order we recommend the following:

- Store your product in a clean, dry place.
- Change the battery as needed.
- If your instrument isn't being used for a period of one month or longer please remove the battery.
- Clean your product and accessories with biodegradable cleaner. Do not spray the cleaner directly on the instrument. Use on external parts only.

Product Warranty

REED Instruments guarantees this instrument to be free of defects in material or workmanship for a period of one (1) year from date of shipment. During the warranty period, REED Instruments will repair or replace, at no charge, products or parts of a product that proves to be defective because of improper material or workmanship, under normal use and maintenance. REED Instruments total liability is limited to repair or replacement of the product. REED Instruments shall not be liable for damages to goods, property, or persons due to improper use or through attempts to utilize the instrument under conditions which exceed the designed capabilities. In order to begin the warranty service process, please contact us by phone at 1-877-849-2127 or by email at info@reedinstruments.com to discuss the claim and determine the appropriate steps to process the warranty.

Product Disposal and Recycling

Please follow local laws and regulations when disposing or recycling your instrument. Your product contains electronic components and must be disposed of separately from standard waste products.

Product Support

If you have any questions on your product, please contact your authorized REED distributor or REED Instruments Customer Service by phone at 1-877-849-2127 or by email at info@reedinstruments.com.

Please visit **www.REEDInstruments.com** for the most up-to-date manuals, datasheets, product guides and software.

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