Waterproof RTD Thermometer Certified

800117C

Instruction Manual

SPER SCIENTIFIC

Environmental Measurement Instruments

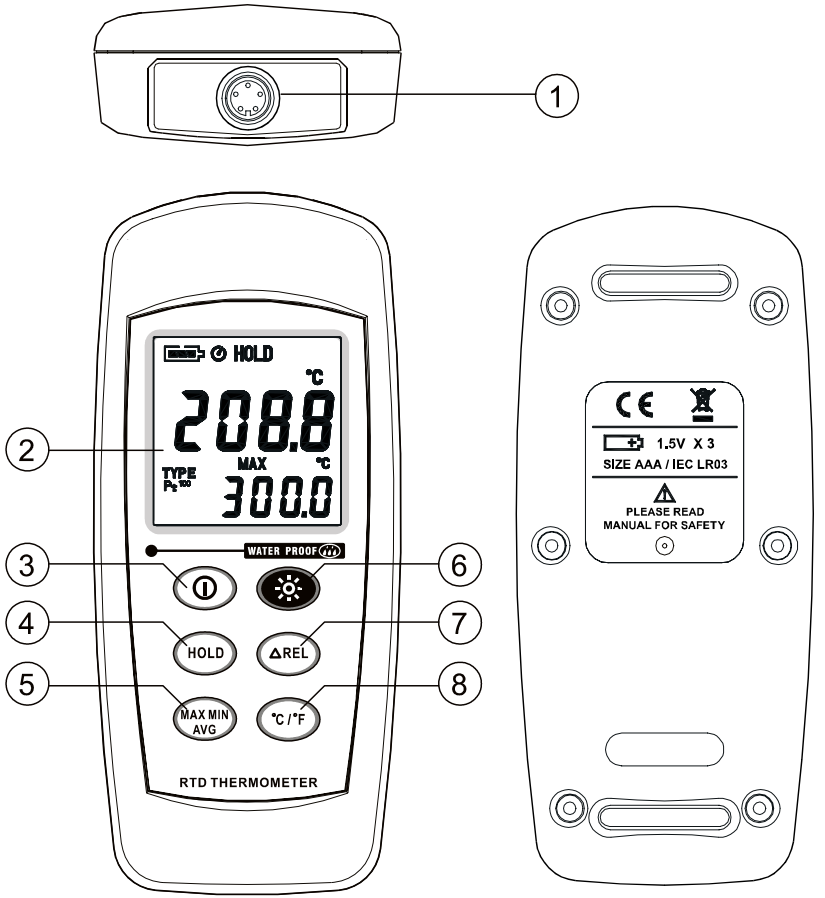
TABLE OF CONTENTS

INTRODUCTION.....4
PANEL DESCRIPTION.....5
MEASUREMENT PROCEDURES.....6
ADVANCED SETTINGS.....8
POWER MANAGEMENT.....12
AUTO POWER OFF.....12
BATTERY REPLACEMENT.....13
SPECIFICATIONS.....14
OPTIONAL ACCESSORIES.....14
WARRANTY.....16

INTRODUCTION

A sturdy, fully waterproof IP67 housing protects the thermometer in wet environments and makes clean up easy. The platinum resistance temperature probe offers high accuracy and stability even at very low temperatures and under changing environmental conditions. Results are displayed in °C or °F on a large backlit LCD along with, Min/Max/Avg readings. Also features relative temperature, data hold, auto-power-off, and a battery status indicator. Accepts Pt100, Pt500 and Pt1000 probes. Comes ready to use with a Pt100 probe, 3 AAA batteries and full instructions.

PANEL DESCRIPTION



① Pt type temperature sensor connector
② LCD display
③ Power ON/OFF button
④ HOLD button
⑤ MAX MIN Average control button
⑥ Back light button
⑦ Relative readout button
⑧ °C , °F control button

MEASUREMENT PROCEDURES

Temperature Measurement

1. Plug the probe into the top of the meter and ensure a water-proof seal by threading the connection closed.
2. Press the **POWER** button. Temperature readings will appear on the LCD.
3. The temperature sensor is located at the end of the metal temperature probe. To ensure accurately readings insert the probe at least 2” into the substance being measured.

°C/°F

Press the **°C/°F** button to select the temperature scale. “°C” or “°F” will appear on the LCD.

Backlight

Press the backlight button to turn the back light on / off.

Hold Mode

1. Press the **HOLD** button during measurement to freeze the Temperature display. “HOLD” and the temperature are shown.
2. Press **HOLD** button again to exit this mode.

Note...

While in Hold function **REL, MAX/MIN/AVG** and **°C/°F** keys are disabled.

Maximum/Minimum/Ave Mode

1. Press **MAX/MIN/AVE** to enter the MAX/MIN/AVE mode. “MAX” appears on the LCD and the meter will now begin storing the maximum, minimum and average values. Current temperature appears in the large upper display and a continually updated maximum (peak) temperature appears in the smaller lower display temperature

MEASUREMENT PROCEDURES

2. Press **MAX/MIN/AVE** again. “MIN” appears on the LCD and the lower display shows a continually updated minimum.
3. Press **MAX/MIN/AVE** again. “AVE” appears on the LCD and the lower display shows a continually updated average of the last 8 data points updated with each change in reading.
4. Press **MAX/MIN/AVE** again. “MAX/MIN/AVE” will flash on the LCD and the meter will continue recording data while showing current temperature.
5. Press **MAX/MIN/AVE** for 2 seconds at any time to exit MAX/MIN/AVE mode and erase all Max/Min/Ave data.

Note...

While in MAX/MIN/AVE mode the **REL**, and **°C/°F** keys are disabled.

The thermometer must be in the MAX/MIN/AVE mode to display max, min or average values. These values are not updated during temperature readings taken in the standard measurement mode.

Relative Measurement

1 . Press the **Δ REL** button during measurement to store the current temperature into memory. “REL” and “0 .0°” appear on the LCD.

2 . As subsequent temperatures are measured, the difference (Δ delta) between the stored temperature and current temperature appear on the LCD.

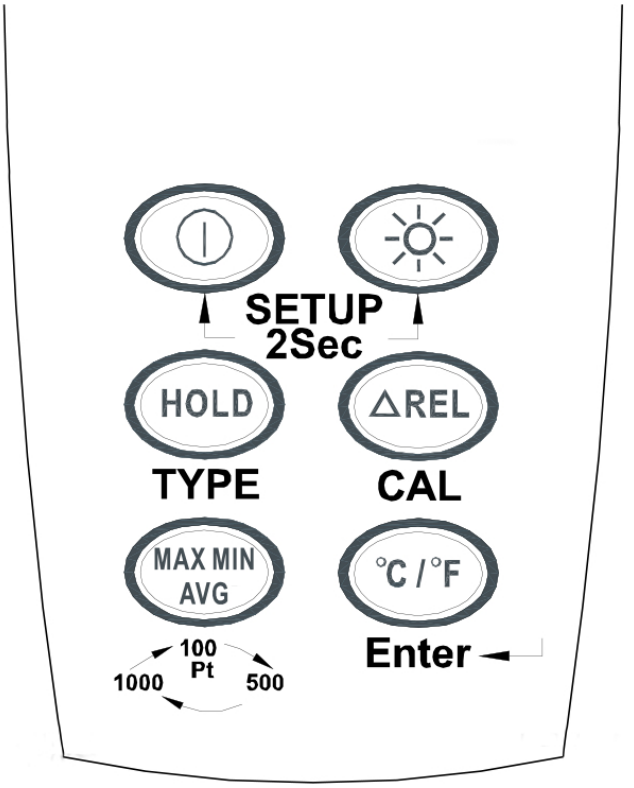
3 . Press the **REL** button again to exit.

Example: A temperature reading of 75.0°F was stored in memory by pressing the **REL** button. Next, the probe was placed in a 55.0°F environment. “REL” and “-20.0°F” now appear on the LCD.

ADVANCED SETTINGS

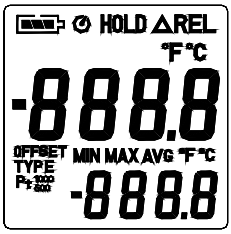
Turn power off prior to advanced settings. Advanced settings mode will be cancelled if **POWER** is pressed.

During Advanced Set-up mode the Buttons will function as below.

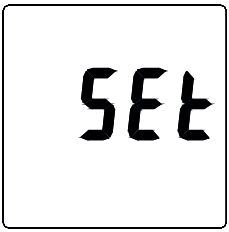


ADVANCED SETTINGS

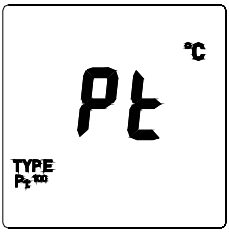
PT Probe Selection

1. 

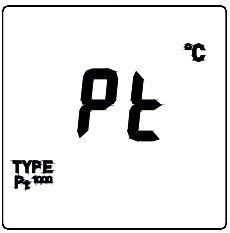
Press and hold “Power” + “Light” buttons for 2 seconds to enter setup mode.

2. 

Press “Hold” button to enter PT selection mode.

3. 

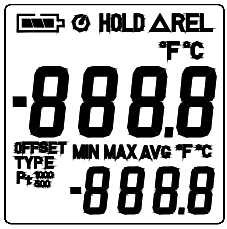
Press “Max” button to select between PT probe type.
(Pt100, Pt500, Pt1000 is circulate)

4. 

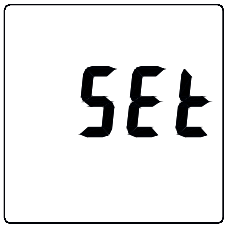
Press “°C/°F” button to confirm selection.

ADVANCED SETTINGS

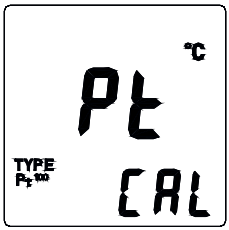
Recall Default factory setting value

1. 

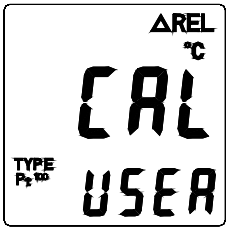
Press and hold “Power” + “Light” buttons for 2 seconds to enter setup mode.

2. 

Press “REL” button to enter calibration mode. Enter PT selection first.

3. 

Press “°C/°F” button to confirm PT selection

4. 

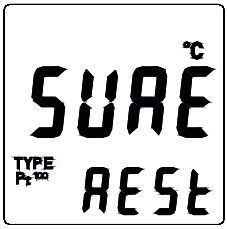
Press “Light” button to enter recall mode.

ADVANCED SETTINGS

5.

Press “°C/°F” button to confirm revert back to “Default factory setting value”

6.



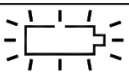
Press “°C/°F” button to confirm selection.

POWER MANAGEMENT

Auto Power Off

The Meter automatically powers off after 30 minutes of inactivity. To override Auto Power Off press and hold the **HOLD** button while turning the meter on. Two beeps will sound to indicate that auto power off has been disabled.

Low Battery Indicator

	Batteries ok, measurements are possible.
	Batteries low, need to be replaced, measurements are still possible.
	Batteries exhausted, replace with AAA, 1.5V x 3.

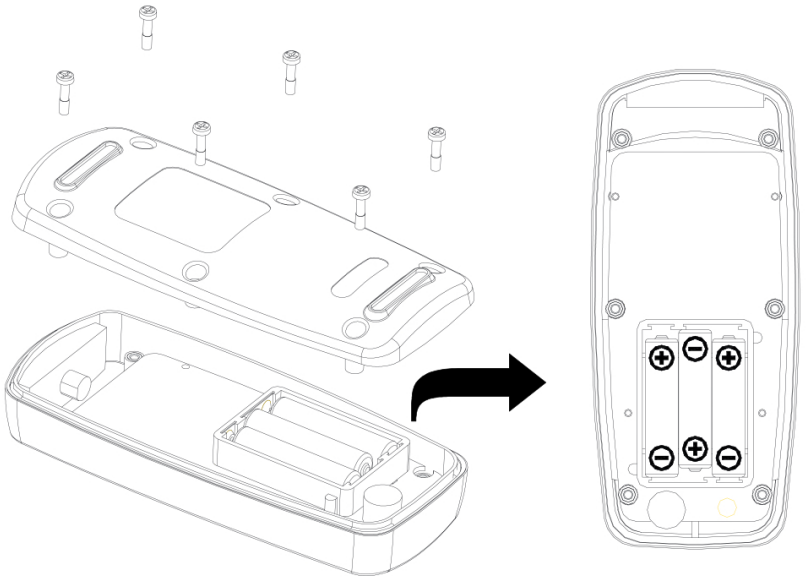
POWER MANAGEMENT

- **Replacing the Batteries**

  (1) Remove back cover screw to remove cover. Verify polarity and install new LR03(AAA size) alkaline batteries.

  (2) Fit cover properly and tighten screw.

⚠ ***The unit's back cover is fitted with rubber rings. After replacing the battery, check that the rubber rings are properly seated before reinstalling the back cover. Improper seating of the rubber rings will compromise the unit's water-resistant structure, and possibly result in damage to the equipment.***



SPECIFICATIONS

Range -148 to 572°F -100 to 300°C	Accuracy ±(0.1% reading + 0.8°F) ±(0.1% reading + 0.4°C)
Temperature Coefficient	For ambient temperatures of 0°C to 18°C & 28°C to 50°C: For each °C below 18°C or above 28°C add the following tolerance into the accuracy spec: 0.01% reading. + 0.03°C (0.06°F)
Resolution	0 .1 C&F
Weight	6 oz (175g)
Dimension	6" x 2 ½" x 1 ¼" 150 x 66 x 31 mm
Operating Environment	32 to 122°F (0°C to 50°C)
Storage Environment	14 to 140°F (10°C to 60°C) RH <70%
Sensor	Platinum Resistance temperature sensor 4 wires, selectable for Pt-100/500/1000. ALPHA-0.003850 Temperature indication follows IEC751 temperature table for PT-type sensor.
Water Resistance	IP67
Power	3 X 1.5V AAA batteries. Approximately 100 hours with alkaline batteries
Sample Rate	2 times per second

OPTIONAL ACCESSORIES

PT1000 probe 800117P - Accuracy ±0.15°C ±0.002t

NOTES

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for **five (5) years** from the date of purchase and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover damage resulting from accident, misuse, or abuse of the product. To obtain warranty service or recalibration, ship the unit postage prepaid to:

SPER SCIENTIFIC LTD
8281 E. Evans Rd., Suite #103
Scottsdale, AZ 85260
(480) 948-4448

Be sure to include a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days