

IR / Thermistor Pen

800108

SPER
SCIENTIFIC

Environmental Measurement Instruments

IR / Therometer Pen 800108

Copyright ©2015 by
Sper Scientific
ALL RIGHTS RESERVED
Printed in the USA

The contents of this manual may not be reproduced or transmitted in any form or by any means electronic, mechanical, or other means that do not yet exist or may be developed, including photocopying, recording, or any information storage and retrieval system without the express permission from Sper Scientific.

TABLE OF CONTENTS

1. INTRODUCTION	4
2. MATERIALS SUPPLIED	4
3. FEATURES	5
4. METER COMPONENTS	5
5. MEASUREMENT PROCEDURES	6
Thermistor Thermometer	6
IR Thermometer	8
6. BATTERY REPLACEMENT	9
7. SPECIFICATIONS	10
8. WARRANTY	12

INTRODUCTION

The Sper Scientific IR/Thermistor Pen (Model 800108) functions as a thermistor thermometer and a non-contact IR (Infrared) thermometer.

The IR thermometer takes non-contact readings of surfaces and the thermistor probe is used to penetrate and measure solids and liquids.

IR thermometers are used to safely measure the temperature in inaccessible, hot or hazardous objects in electrical, hazmat, HVAC, and other fields. IR thermometers are also used in moving machinery in factories, automobiles and elsewhere. Other uses include electrical troubleshooting HVAC energy audits and avoiding contamination in the food, beverage and pharmaceutical industries.

MATERIALS SUPPLIED

Meter

Instruction Manual

4 LR44 Batteries

Hard Carrying Case

FEATURES

- Dual function as thermistor and IR thermometer
- 5.3" rotatable probe
- Maximum and minimum Memory
- Hold function
- Auto-power-off
- Backlight

METER COMPONENTS

Rotating Probe

The thermistor thermometer includes a built-in 5.3" rotating probe. To rotate the probe:

1. Hold the probe tip and swing it away from the meter until the probe locks at a 90° angle from the meter.
2. From the 90° position, pull upward until the probe locks at 180° angle from the meter (the probe is now fully extended).
3. While pressing the release button on the swivel knob, hold the probe tip and push the probe back toward the meter.

MEASUREMENT PROCEDURES

The Sper Scientific IR/Thermistor Pen (Model 800108) functions as two thermometers with independent displays and battery power. The following measurement procedures are divided into two sections: Thermistor Thermometer and IR Thermometer.

THERMISTOR THERMOMETER

Turning the Unit On/Off

1. Press **ON/OFF** for 1 second. The meter will turn on and begin taking readings.
2. Press **ON/OFF** for 3 seconds to turn the meter off.

Backlight

Press  for 1 second. The LCD backlight will activate for 10 seconds.

Hold/Maximum/Minimum

1. Press **HOLD/MAX/MIN** button for 1 second to enter HOLD display function. The current reading will freeze on the display.
2. Press **HOLD/MAX/MIN** button again to view the maximum value of the readings taken since the thermometer was turned on. If a new maximum is

reached while viewing, the new maximum value will display on the LCD.

3. Press **HOLD/MAX/MIN** button again to view the minimum value of the readings taken since the thermometer was turned on. If a new minimum is reached while viewing, the new minimum value will display on the LCD.
4. The meter cycles from Hold → Max → Min → Hold. Press **HOLD** briefly to return to Hold Mode.



Note...

The minimum, maximum and hold values will not be saved when the meter returns to Normal Mode or when the meter is turned off.

Clear Memory

1. Press **CLEAR** for 3 seconds to delete all memory. " - - - " will appear on the LCD.
2. Wait 3 seconds and the meter will automatically return to Normal Mode.

Temperature Units

To select either Celsius or Fahrenheit temperature scale gently insert the end of a paperclip into the pick hole on the back.

Auto Power Off

To save battery life, the meter will automatically turn off after 10 minutes of inactivity when the auto power off function is enabled.

1. The clock symbol appears on the LCD to indicate that auto power off is enabled.
2. Press **HOLD** and **ON/OFF** buttons simultaneously to enable/disable the auto power off function.

IR THERMOMETER

1. Aim thermometer at the target.
2. Press the IR Button to view the surface temperature. The measurement is constantly updated as long as the IR button remains depressed.
3. When the IR button is released, the last measurement remains on the display until the unit turns off or the IR button is pressed again.

Note...

The distance-to-spot-ratio (D:S), is the ratio of the distance to the object and the diameter of the

temperature measurement area. The area being measured becomes larger as the distance from the target increases. In this instance, the D:S ratio is 1:1, so the measurement of an object 1 inch away will average the temperature over a 1-inch diameter area. (For best results, position the thermometer as close to the target as possible.)

Temperature Units

Follow the instructions for the thermistor thermometer (page 6) using the hole located on the IR side of the pen.

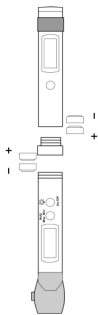
BATTERY REPLACEMENT

This model uses four LR44 1.5 V batteries: two batteries operate the thermistor thermometer and two batteries operate the IR thermometer.

1. Press ON/OFF button to turn the meter off.
2. Remove the old batteries and replace with new LR44 batteries, ensuring correct polarity.
3. Reassemble the unit.

Note...

The temperature scale will not change when the meter is turned off. Both thermometers will revert to the default scale (Fahrenheit) when the batteries are replaced.



SPECIFICATIONS

	Thermistor	IR
Range	-50 to 150°C (-58 to 302°F)	-33 to 220°C (-27.4 to 428°F)
Resolution	0.1°C/F	< 200°C, 0.1°C/F > 200°C, 1°C/F
Accuracy	<p>± 1.0°C (±2°F): -50 to -10°C (-58 to 14°F) & 80 to 125°C (176 to 257°F)</p> <p>± 0.5°C (±1°F): -10 to 80°C (14 to 176°F) ± 1.5%: 125 to 150°C (257 to 302°F)</p>	± 2% of reading or 2°C, whichever is greater
Measurement Temperature		-33 to 250°C (-27.4 to 482°F)
Response Time	20 seconds	1 second

SPECIFICATIONS CONT.

Operating Temperature	0 to 50°C (32 to 122°F)	
Storage Temperature	-20 to 60°C (-4 to 140°F)	
Field of View		1:1 optics ratio
Emissivity		0.95 fixed
	Thermistor	IR
Weight	2 oz (57 g)	
Dimensions	7" × ¾" (178 × 19 mm)	
Probe Dimensions	6" × 1/16" (152 × 1.5 mm)	
Batteries	2 x LR44 (1.5 V) batteries	2 x LR44 (1.5 V) batteries

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for period of **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 probes, batteries, battery leakage, or damage resulting from accident, tampering, misuse, or abuse of the product. Opening the meter to expose its electronics will void the warranty.

To obtain warranty service, ship the unit postage prepaid to:

SPER SCIENTIFIC LTD.
8281 E. Evans Rd, Suite #103
Scottsdale, AZ 85260

The defective unit must be accompanied by a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days.

