Type K/J Thermometers

800005

CONTENTS

INTRODUCTION

This instrument is a digital thermometer
for use with any K-type and J-type
thermocouple as temperature sensor.

Temperature indication follows National
Bureau of Standards and IEC584
temperature/voltage table for K-type and
J-type thermocouples.

FRONT PANEL DESCRIPTION
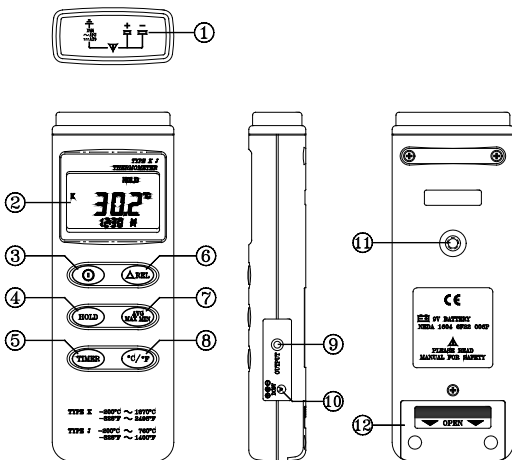
1. K/J type temperature sensor connector
2. LCD display
3. ON/OFF button
4. HOLD button
5. Timer function control button
6. Relative readout button
7. MAX/MIN Average control button
8. °C/°F control button
9. Digital output connector
10. AC power adapter connector
11. Tripod connector
12. Battery cabinet cover

LCD DISPLAY

Main Display   Timer Display
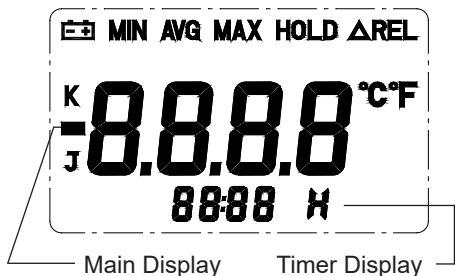
-	This indicates that the minus temperature is sensed.
H	It indicates that the timer is expressing in hours and minutes.
°C °F	Centigrade and Fahrenheit indication.
K J	Thermocouple Type Indication
HOLD	This indicates that the display data is being hold.
MAX	The Maximum value is now being displayed
MIN	The Minimum value is now being displayed
AVG	The Average value is now being displayed.
ΔREL	The reading is now under Relative Mode.
🔋	The Battery is not sufficient for proper operation.

OPERATION INSTRUCTIONS

Power-Up

Press the **POWER** button to turn the thermometer **On** or **OFF**

Connection the Thermocouples

For measurement, plug the thermocouple into the input connectors.

Selecting the Temperature Scale

When the meter was first power on, the default scale setting is set at Celsius (°C) scale. The user may change it to Fahrenheit (°F) by pressing **°C/°F** button and vice versa to Celsius.

Selecting the Thermocouple Type

By default, when the meter is powered on, it is K-Type, One may press and hold **°C/°F** button and then power on the meter, then it will change to J-Type.

Data-Hold Operation

The user may hold the present reading and keep it on the display by pressing the **HOLD** button. When the hold data is no longer needed, one may release the data-hold operation by pressing **HOLD** button again. When the meter is under Data Hold operation, the ΔREL, MAX/MIN/AVG and °C/°F button are disabled.

Timer Operation

One may start the timer by press the **TIMER** button. The counting can be stopped or continued by pressing it again.

When the counting exceed 59 min 59 sec, the time scale will be changed to hours and minutes and the "H" symbol will appear on the display.

The counting can be reset by press and hold **TIMER** button for 2 sec.

Relative Operation

When one press the **ΔREL** button, the meter will memorize the present reading and the difference between the new reading and the memorized data will be shown on the display. Press the **ΔREL** button again to exit the Relative operation.

MAX/MIN/AVG Operation

When one press the **MAX/MIN/AVG** button the meter will enter the MAX/MIN mode. Under this mode the maximum value, minimum value and average value of latest 4 data is kept in the memory simultaneously and updated with every new data.

When the MAX symbol is display, the Maximum is shown on the display.

Press **MAX/MIN/AVG** again, then the NIN symbol is on the display and also the minimum reading.

Press **MAX/MIN/AVG** again, the AVG symbol is on the display and also the average reading.

Press **MAX/MIN/AVG** again, MAX, MIN and AVG will blink together. This means that all these data is updated int the memory and the reading is the present temperature.

One may press **MAX/MIN/AVG** to circulate the display mode among these options.

When the meter is under operation, ΔREL and °C/°F are disabled.

To exit the MAX/MIN mode, one may press and hold **MAX/MIN/AVG** for two seconds.

Auto Power Off

By default, when the meter is powered on, it is under auto power off mode. The meter will power itself off after 30 minutes if no key operation and RS232 communication. Key combination at power on or RS232 communication can disable auto power off.

One may press and hold "**HOLD**" button and then power on the meter and there will be two successive beeps to indicate that auto power off is disabled.

Low Battery Condition

When the battery voltage is under proper operation requirement, the **BATTERY** symbol will show on the LCD and the battery need to be replaced with new one.

SPECIFICATIONS

Numerical Display

4 digital liquid crystal display

Measurement Range

K-Type -200°C to 1370°C
         -328°F to 2498°F
J-Type   -200°C to 760°C
         -328°F to 1400°F

8

Resolution

K-Type:

  -200°C to 800°C 0.1°C; 800°C to 1370°C 1°C

  -328°F to 1000°F 0.1°F; else 1°F

J-Type:

  -200°C to 600°C 0.1°C; 600°C to 760°C 1°C

  -328°F to 1000°F 0.1°F; else 1°F

Maximum Voltage at Thermocouple Input

60V DC, or 24 Vrms AC

Environmental

• Operating Temperature and Humidity:

  0°C to 50°C (32°F to 122°F) ; 0 to 80% RH

• Storage Temperature and Humidity:

  -10°C to 60°C (14°F to 140°F); 0 to 80% RH

• Altitude up to 2000 meters.

Accuracy at (23 ± 5°C)

Range	Accuracy
K-Type -200°C to 1370°C	±(0.1% reading + 0.7°C)
J-Type -200°C to 760°C	±(0.1% reading + 0.7°C)
K-Type -328°F to 2498°F	±(0.1% reading + 1.4°F)
J-Type -328°F to 1400°F	±(0.1% reading + 1.4°F)

Temperature Coefficient:

For ambient temperatures from 0°C to 18°C and 28°C to 50°C, for each °C ambient below 18°C or above 28°C add the following tolerance into the accuracy spec.

0.01% of reading + 0.03°C

(0.01% of reading + 0.06°F)

Note...

The basic accuracy Specification does not include the error of the probe please refer to the probe accuracy specification for additional details.

Sample Rate

3.3 times per second

Dimension

184×64×30 mm

Weight

210 g Approx.

Accessory

K Type Bead Probe, Battery, Carrying Case, Instruction Menu.

Option

Soft Ware Package (Program, RS232 Connection Cable), AC Adapter

Power requirement

9 Volt Battery, NEDA 1604 or JIS 006P or IEC6F22

Battery Life

Approx. 100 hrs with alkaline battery

AC Adapter

9VDC ±15% 100 mA

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, 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.