

RS DIGITAL THERMOMETER

1319A

INSTRUCTION MANUAL

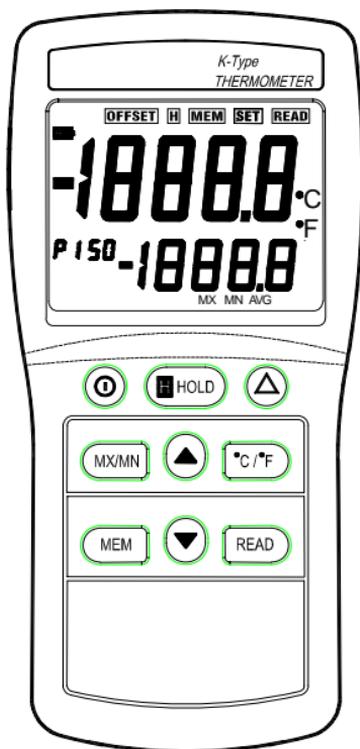


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1. INTRODUCTION

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

Temperature indication follows the international temperature scale of 1990. (ITS-90)

- Read the following information carefully before attempting to operate or service the meter. When servicing, use only specified replacement parts.

Environmental conditions:

- ① Altitude up to 2000 metres.
- ② Relatively humidity 80% max.
- ③ Operating temperature: 0 to 40 °C

U.S. Pat. No. 446,135

Safety symbols:



Complies with EMC Directive 89/336/EEC

2. SPECIFICATIONS

2-1 Electrical specifications

Measurement Range: -50 to 1300 °C , -58 to 1999 °F

Resolution: 0.1°C, 1°C, 0.1°F, 1°F

Basic Accuracy: (@23 ± 5°C Calibration)

Function	Range	Accuracy ± (% of reading + degrees)
°C	-50°C to 0°C	0.5% ± 1°C
°C	0°C to 1000°C	0.3% ± 1°C
°C	1000°C to 1300°C	0.5% ± 1°C
°F	-58°F to 0°F	0.5% ± 2°F
°F	0°F to 1832°F	0.3% ± 2°F
°F	1832°F to 1999°F	0.5% ± 2°F

NOTE

This basic accuracy specification does not include the error of the temperature probe. Please refer to the probe accuracy specification for additional details.

Temperature coefficient:

0.1 × specified accuracy / per °C at 0°C to 18°C & 28°C to 40°C.

Input Protection : 20V maximum input voltage.

Manual Data Memory capacity : 150 sets.

2-2 General specifications:

Power supply: Qty. 6 size AAA batteries.

Battery life: approx. 110 hours (carbon zinc battery).

Low battery indication: The “**BT**” symbol is displayed when the battery voltage drops below the operating voltage.

Sampling rate: 2.5 times per second.

Weight: 235 gms. (8.29 oz)

Dimensions: 5.91” L x 2.83” W x 1.38” H (150 x 72 x 35mm)

Operating temperature: 0 to 40°C (32 to 104°F)

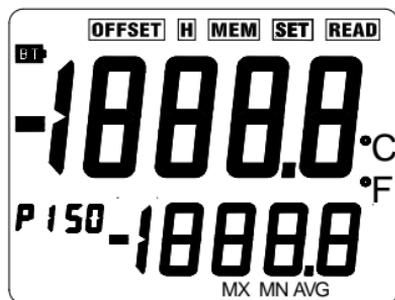
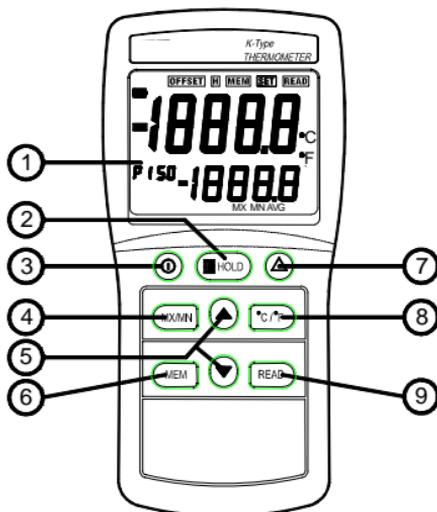
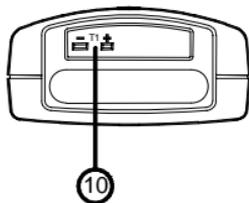
Operating humidity below 80% RH

Storage temperature: -10 to 60°C, (14 to 140°F)

Storage humidity below 70% RH

Accessories supplied: Qty. 6 AAA batteries, Instruction manual.

3. NAME OF PARTS AND POSITIONS



① **LCD Display :**

- a). Main display : Temperature reading.
- b). Secondary display : Temperature MAX, MIN, AVG reading and offset reference value.
- c). Memory display : 1 ~ 150 sets.
- d). Auto power off mark (P).

② **H HOLD key** : Press **H** HOLD key to freeze or unfreeze the display reading.

③ **Ⓜ Power key** : Press **Ⓜ** key to turn the meter on or off.

④ **MX/MN key** :

- a). Press "MX/MN" key to cycle through the maximum, minimum, and average readings.
- b). Press "MX/MN" key for 2 seconds to exit MX/MN mode.

⑤ **▲▼ Key** : Press **▲** or **▼** key to increase or decrease the READ mode memory location.

⑥ **MEM key** : Press "MEM" key each time, stores one set of logged reading in memory.

⑦ **△ key** : Press **△** key to enter the offset (Relative) mode, zero the displayed reading as a reference value. The offset mode annunciator OFFSET is displayed, and the reference value displayed on the secondary display. Press **△** key again to exit the offset mode.

⑧ **°C / °F key** : Press **°C / °F** key to select Celsius(°C) or Fahrenheit (°F) temperature scale.

⑨ **READ key** : Press "READ" key to show memory logged reading, press again to exit this mode.

⑩ **Input** : Thermocouple input.

4. OPERATION INSTRUCTIONS

WARNING

- To avoid electrical shock or personal injury, do not apply more than 20Vrms, between the thermocouple input, or between thermocouple and earth ground.

4-1 Temperature Measurement

- ① Press "  " key to turn on the thermometer.
- ② Plug the thermocouple into the thermocouple input. If no thermocouple is plugged into the input or the thermocouple is "open", the display will show "- - - -".
- ③ Press "°C / °F" key to the desired temperature scale.
- ④ Perform measurements by contacting the object being measured with the probe sensor.
- ⑤ Read the temperature on the display. The display shows "OL" (overload) when the temperature being measured is outside the meter valid range.

4-2 MAX, MIN and AVG Function Operations

- ① Press "MX/MN" key to enter to MX/MN mode, to cycle through the maximum (MAX), minimum (MIN) or the true average (AVG-true 4 hours recording average) readings, and disable auto power off function. If over 4 hours, will restart the average value compute.
- ② Press "MX/MN" key for 2 seconds to exit MX/MN mode.

4-3 To Trigger "One by One Datalogging" and Clear Stored Data

- ① Press "MEM" key each time, stores one set logged reading in memory, LCD will show " MEM " and memory location numbers (1 to 150).
- ② Press "READ" key to enter the reading memory data mode. LCD will show " READ " and memory location numbers.
- ③ Press "▲" or "▼" key to scroll through the logged readings.
- ④ Press "READ" key again to exit READ mode.
- ⑤ To Clear the Memory Data
 - a). Press " 1 " key to turn off the meter.
 - b). Press and hold down "MEN" key then press " 1 " key to turn on the meter, LCD will show "ALL CLR" mark, press ▼ key select " **YES** " or " **NO** ", then press "MEM" key exit this mode. If you select yes the all memory will be cleared.

4-4 How to Disable Auto Power off Function

The meter will enter to the sleep mode if no key pressed occurs for 30 minutes.

- ① Press " 1 " key to turn off the meter.
- ② Press and hold down " H HOLD " key then press " 1 " key to turn on the meter, the "P" and "OFF" indication one time, the auto power off function will be disabled.

The auto power off mark " P " on the memory display will disappeared.

Auto power off mode is enabled each time you turn on the meter and is automatically disabled in "MX/MN" mode.

5. OPEN THERMOCOUPLE INDICATION

Overrange (OL) is displayed if any of the following condition occur:

1. If no thermocouple is plugged into the thermocouple connector.
2. If the thermocouple connected to the input is broken or open-circuit.

6. RECALIBRATION PROCEDURE

The thermometer should be calibrated once a year to ensure its continued accuracy. Contact RS Components for further details of calibration service. The address is given at the end of these instructions.

7. MAINTENANCE

7-1 Cleaning:

Periodically wipe the case with a damp cloth and mild detergent.

Do not use abrasives or solvents. Clean and dry as required.

7-2 Battery Replacement:

When LCD display shows “**BT**”, the batteries have insufficient power to support an accurate test. Replace the batteries with Qty 6 type AAA cells.