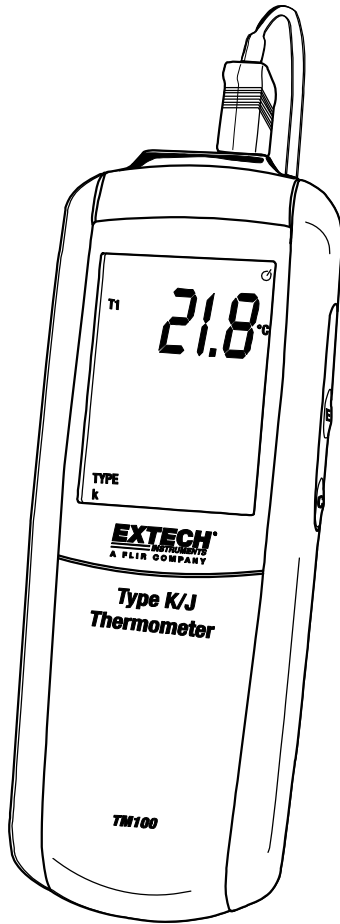


# Digital J/K Type Thermometer

## Model TM100



## Introduction

Congratulations on your purchase of the Extech TM100 Digital Thermometer with single K/J-type input. This device is shipped fully tested and calibrated and, with proper use, will provide years of reliable service. Please visit our website ([www.extech.com](http://www.extech.com)) to check for the latest version of this User Guide, Product Updates, and Customer Support.

## Safety

To prevent personal injury or meter damage, use the meter only as specified in this guide

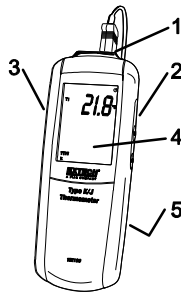
### WARNING

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

## Description

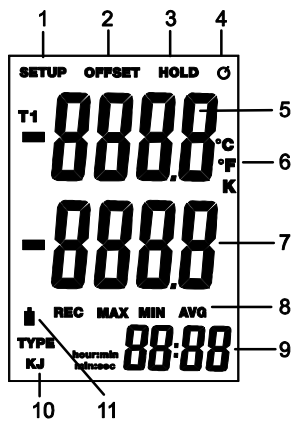
### Meter

1. Thermocouple input connector
2. Function buttons (Power, Enter, C-F-K)
3. Function buttons (Hold, MAX/MIN, Set)
4. LCD display
5. Battery compartment



### Display

1. Setup
2. Offset option
3. Hold mode
4. Auto power off
5. Upper display T1 reading
6. Temperature units
7. Lower display (max, min, avg, offset value of T1)
8. Max, Min and Average
9. Time display
10. K/J type thermocouple
11. Low Battery




## Operation

---

### Connecting thermocouples

1. This meter accepts a K/J-type thermocouple with spade lugs (sub-miniature type with one spade wider than the other).
2. Plug the thermocouple into the meter's thermocouple input jack.

### Measuring

1. Press the  button to switch ON the thermometer on. After 1 second the thermometer will display the first temperature reading (upper display).
2. Press the **C-F-K** button to select the desired temperature unit of measure. A display icon will reflect the selection.
3. Touch the object to be measured with the probe. Read the measured temperature on the display.

Note: If the display indicates "OL" the temperature is outside the measurement range. The display shows "- - - -" when a thermocouple is not connected.

### MAX/MIN/AVG mode

Press **MAX/MIN** to capture and step through the maximum (MAX), minimum (MIN) and average (AVG) temperature values. These values will be shown in the lower display with an elapsed time reference below (hrs:mins, mins:secs).

1. Press **MAX/MIN** to enter this mode.
2. Press **MAX/MIN** to step through maximum, minimum and average readings.
3. Press and hold **MAX/MIN** for 3 seconds to return to normal mode.

### Data Hold

Press the **HOLD** button to freeze the reading in the display. **HOLD** will appear at the top right of the display. Press the HOLD button again to return to normal operation mode.

### Backlight

Press the **SETUP** button to switch the backlight OFF/ON.

## Setup option

The setup option is used to select the thermocouple type that matches the type that will be connected to the meter, to switch the sleep mode OFF/ON, and to adjust the thermocouple offset.

Note: In the setup mode, the upper display shows the menu items and the lower display shows the selection for a given menu item.

Press and hold the **SET** button for 3 seconds to enter or exit the Setup mode. When the thermometer is in Setup mode, the display shows the **SETUP** display icon.

### Set Type J or K thermocouple

1. Press **▲** or **▼** to scroll to the "TYPE" setting (shown on the bottom left of the display).
2. Press **ENTER** to choose the option.
3. Press **▼** to toggle between J and K.
4. Press and hold the **SET** button for 3 seconds to save the setting and return to normal mode.

### Set Sleep/Non-sleep mode

The thermometer enters sleep mode by default. The meter will automatically shut off after 20 minutes of inactivity (no buttons pressed). When the thermometer is in Setup mode, the display shows the SETUP display icon.

1. Press **▲** or **▼** to scroll to the **SLP** setting.
2. Press **ENTER** to choose the option; **On** or **OFF** will appear in the display.
3. Use the arrow key **▼** to select ON or OFF.
4. Press **ENTER** to store the new setting.
5. Press and hold the **SET** button for 3 seconds to return to normal mode.

### Set Offset

Use the offset option in Setup (**T1** menu item) to adjust the thermometer's readings to compensate for known temperature offset at a specific temperature. The adjustment range is  $\pm 5.0^{\circ}\text{C}$  or  $\pm 9.0^{\circ}\text{F}$ .

1. Plug the thermocouple into the input connector.
2. Place the thermocouple into the known, stable temperature environment (such as an ice bath or dry well calibrator). Allow the reading to stabilize.
3. Use the arrow keys **▲ ▼** to scroll to the "T1" option and then press **ENTER**.
4. Change the offset temperature reading (upper display) by pressing **▼** until the desired temperature is reached.
5. Press and hold the **SET** button for 3 seconds to return to normal mode.

## Replacing the Batteries

1. Switch OFF the thermometer.
2. Loosen the battery compartment screw and remove the compartment door.
3. Replace the AAA batteries.
4. Replace the battery door and tighten the screw.



Never dispose of used batteries or rechargeable batteries in household waste. As consumers, users are legally required to take used batteries to appropriate collection sites, the retail store where the batteries were purchased, or wherever batteries are sold.

**Disposal:** Do not dispose of this instrument in household waste. The user is obligated to take end-of-life devices to a designated collection point for the disposal of electrical and electronic equipment.

## Other Battery Safety Reminders

- Never dispose of batteries in a fire. Batteries may explode or leak.
- Never mix battery types. Always install new batteries of the same type.

## Specifications

---

### Temperature Range:

K type thermocouples	-200°C to 1372°C (-328°F to 2501°F)
J type thermocouples	-210°C to 1100°C (-346°F to 2012°F)

Note that thermocouple wire may be insulated with materials that cannot withstand temperatures in the ranges listed above. Check that the thermocouples used are rated for the temperature measurements to be made.

### Temperature accuracy:

T1 Above -100 °C (-148 °F)	± [0.15%rgd+1°C (1.8°F)]
T1 Below -100 °C (-148 °F)	± [0.5%rgd+2°C (3.6°F)]

Display Resolution: 0.1°C /°F /°K <1000, 1°C /°F /°K >1000

Power supply: Three (3) AAA 1.5V batteries

Operating Temperature: 0°C to 50°C (40°F to 122°F)

Storage Temperature: -10°C to 50°C (14°F to 122°F)

Dimensions: 220 x 63 x 28mm (8.7 x 2.5 x 1.1")

Weight: 200g (7oz)



Copyright © 2013 ETE Systems, Inc. E0 01

All rights reserved including the right of reproduction in whole or in part in any form.

www.extech.com E0 01