



**TMD-50**  
**Thermocouple**  
**Thermometer K Type**

**Users Manual**

- Mode d'emploi
- Bedienungshandbuch
- Manual d'Uso
- Manual de uso





# **TMD-50**

## **Thermocouple Thermometer K Type**

### **Users Manual**

**English**

June 2010, Rev.1  
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### **Limited Warranty and Limitation of Liability**

Your Amprobe product will be free from defects in material and workmanship for 1 year from the date of purchase. This warranty does not cover fuses, disposable batteries or damage from accident, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on Amprobe's behalf. To obtain service during the warranty period, return the product with proof of purchase to an authorized Amprobe Test Tools Service Center or to an Amprobe dealer or distributor. See Repair Section for details. THIS WARRANTY IS YOUR ONLY REMEDY. ALL OTHER WARRANTIES - WHETHER EXPRESS, IMPLIED OR STATUTORY - INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, ARE HEREBY DISCLAIMED. MANUFACTURER SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, ARISING FROM ANY CAUSE OR THEORY. Since some states or countries do not allow the exclusion or limitation of an implied warranty or of incidental or consequential damages, this limitation of liability may not apply to you.

### **Repair**

All test tools returned for warranty or non-warranty repair or for calibration should be accompanied by the following: your name, company's name, address, telephone number, and proof of purchase. Additionally, please include a brief description of the problem or the service requested and include the test leads with the meter. Non-warranty repair or replacement charges should be remitted in the form of a check, a money order, credit card with expiration date, or a purchase order made payable to Amprobe® Test Tools.

### **In-Warranty Repairs and Replacement – All Countries**

Please read the warranty statement and check your battery before requesting repair. During the warranty period any defective test tool can be returned to your Amprobe® Test Tools distributor for an exchange for the same or like product. Please check the "Where to Buy" section on [www.amprobe.com](http://www.amprobe.com) for a list of distributors near you. Additionally, in the United States and Canada In-Warranty repair and replacement units can also be sent to a Amprobe® Test Tools Service Center (see address below).

### **Non-Warranty Repairs and Replacement – US and Canada**

Non-warranty repairs in the United States and Canada should be sent to a Amprobe® Test Tools Service Center. Call Amprobe® Test Tools or inquire at your point of purchase for current repair and replacement rates.

In USA

Amprobe Test Tools  
Everett, WA 98203  
Tel: 877-AMPROBE (267-7623)

In Canada

Amprobe Test Tools  
Mississauga, ON L4Z 1X9  
Tel: 905-890-7600

### **Non-Warranty Repairs and Replacement – Europe**

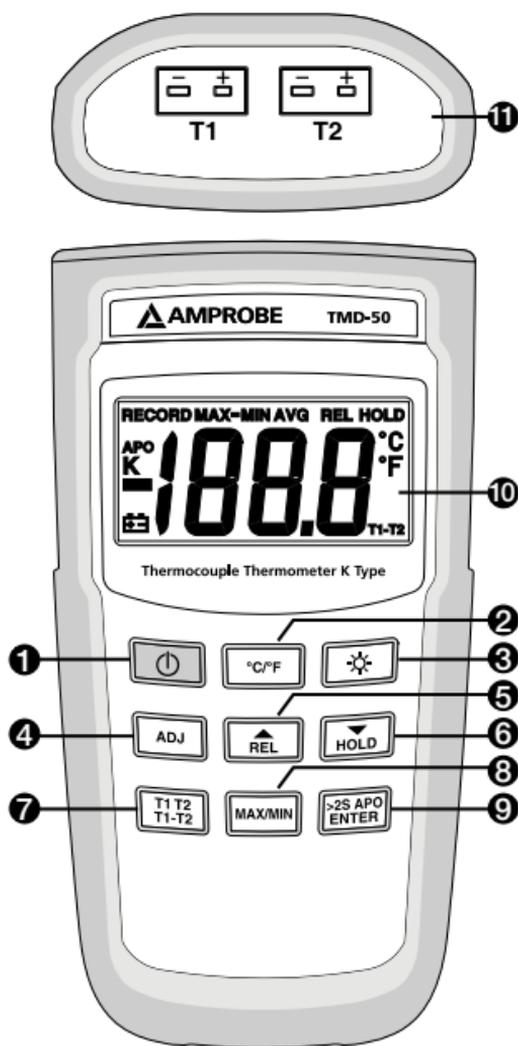
European non-warranty units can be replaced by your Amprobe® Test Tools distributor for a nominal charge. Please check the "Where to Buy" section on [www.amprobe.com](http://www.amprobe.com) for a list of distributors near you.

European Correspondence Address\*

Amprobe® Test Tools Europe  
In den Engematten 14  
79286 Glotttetal, Germany  
Tel.: +49 (0) 7684 8009 - 0

\*(Correspondence only – no repair or replacement available from this address. European customers please contact your distributor.)

## TMD-50 Thermocouple Thermometer K Type



1) "⏻" Power Button

2) °C /°F Button

3) "☀️" Button

4) "ADJ" Button

5) "▲/REL" Button

6) "▼/HOLD" Button

7) "T1 T2/T1-T2" Button

8) "MAX/MIN" Button

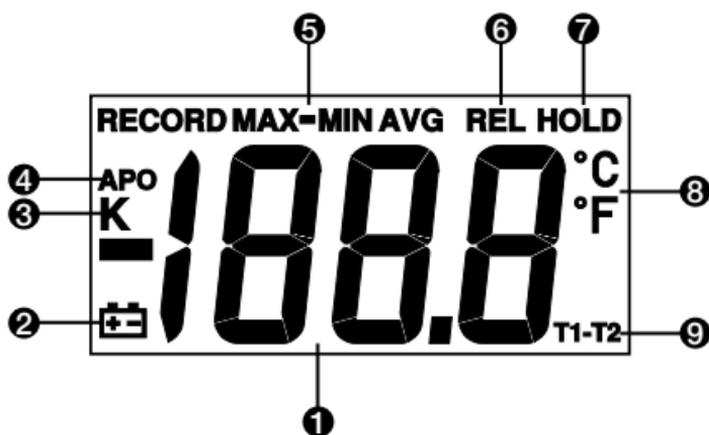
9) ">2S APO/ENTER"  
Button

10) LCD Display

11) T1/T2 Input

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## Screen Display



- 1) Temperature display
- 2) Low BATT display
- 3) K type of T/C thermocouple
- 4) Auto power off
- 5) MAX/MIN reading

- 6) Relative mode
- 7) Data HOLD mode
- 8) Degrees °C /°F
- 9) T1/T2 thermocouple or T1-T2 differential

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## SYMBOLS

|   |   |
|---|---|
|  | Caution! Refer to the explanation in this Manual                |
|  | Conforms to relevant Australian standards                       |
|  | Complies with European Directives                               |
|  | Tested Comply With FCC Standards                                |
|  | Do not dispose of this clamp meter as unsorted municipal waste. |

### **⚠ WARNING and PRECAUTIONS**

- *To avoid electrical shock, do not use this instrument when working voltages at the measurement surface over 24V AC or DC.*
- *To avoid damage or burns, do not make temperature measurement in microwave ovens.*
- *Repeated sharp flexing can break the thermocouple leads. To prolong lead life, avoid sharp bends in the leads, especially near the connector.*

## UNPACKING AND INSPECTION

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Your shipping carton should include:

- 1 TMD-50 meter
- 1 Manual
- 2 K type Thermocouple
- 4 AAA Batteries
- 1 Plain white box

If any of the items are damaged or missing, return the complete package to the place of purchase for an exchange.

## INTRODUCTION

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There are 2 sets of sockets for thermocouple plugs at the top of instrument marked with T1 and T2.

### Features

- Highly accurate dual input thermometer with 0.1% basic accuracy.
- Dual input T1, T2, T1-T2.
- Thermocouple offset adjust.
- Large display for easy to read.
- Robust protective Holster.
- Auto-Power Off.
- Display back-light.
- MIN/MAX/AVG/REL/HOLD functions.
- Wide measuring ranges for versatile applications

## OPERATING INSTRUCTIONS

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### "" Power Button

Press the "" key to turn on or off thermometer. In the MAX/MIN record mode can not power off, must leave MAX/MIN record mode then power off.

### " °C/°F " Selecting the Temperature Scale

Reading are displayed in either degrees Celsius(°C) or degrees Fahrenheit(°F). When the thermometer is turned on, it is set to the temperature scale that was in use when the thermometer was last turned off. To change the temperature scale, press the "°C/°F" key.

### "" Button: Display Back-Light

Press the key to turn on the Back-Light. Press the "" key again to make the Back-Light lighter and press ""

key once more to cancel the Back-Light function.  
Back-Light on → lighter → Back-Light off

### **"ADJ" Button: Adjust thermocouple offset**

1. Insert the bead wire into a known temperature (T) until the display equal to known temperature (T).  
exp: ice point at 0°C boiling water at 100°C (Press "ADJ" key).
2. Press "▲" or "▼" to add or subtract the value.
3. It can be adjusted  $\pm 6^{\circ}\text{C}$  ( $\pm 10.8^{\circ}\text{F}$ ) of default. If you can't adjust your T/C, please check your T/C or send the meter to be calibrated.
4. Press "ENTER" key to confirm.

### **"▲/REL" Button**

Press "REL" key to enter Relative mode, zero the display, and store the displayed reading as a reference value and annunciator REL is displayed. Pressing "REL" key over 2 seconds to exit the relative mode.

### **"▼/HOLD" Button**

Press the "HOLD" key to enter the Data Hold mode, the "HOLD" annunciator is displayed at the higher center of display. When HOLD mode is selected, the thermometer held the present readings and stops all further Measurements. Press the "HOLD" key again cancels HOLD mode, causing thermometer to resume taking measurements.

### **"T1 T2/T1-T2" Button**

Press "T1", "T2", "T1-T2" key to select input mode T1, T2 or T1-T2.

The input selection indicates which input is selected for display. T1 thermocouple, T2 thermocouple or the differential between the two thermocouples(T1-T2), when the thermocouple is turned on, it is set to T1.

## **"MAX/MIN" Button**

Press **"MAX/MIN"** key to enter the MIN MAX recording mode. (Displays the Maximum reading, Minimum reading, **"MAX-MIN"**, **"AVG"** reading stored in record mode). Press **"MAX/MIN"** key to cycle through the MAX, MIN, MAX-MIN, **"AVG"** readings. In this mode, press **"HOLD"** key to stop recording, all values are frozen, press again to restart recording.

In this mode, the APO function and other keys is disabled, excluding **"HOLD"** and **"☀"** keys. To prevent accidental loss of MAX, MIN and MAXMIN, in this mode can only be cancelled by pressing and holding down the **"MAX/MIN"** key for 2 seconds to exit and erased recorded reading.

## **">2S APO/ENTER" Button**

Pressing and holding down **"APO"** key for 2 seconds to trigger on or off APO mode, and then APO annunciator will appear or disappear on the display. Power is automatically turn off, if no operation for a period of time, and **"APO"** annunciator is displayed at upper-left corner when APO function is enabled.

## **SPECIFICATION**

---

### **Electrical**

|                          |  |
|--------------------------|--|
| <b>Temperature Scale</b> | Celsius or Fahrenheit user-selectable            |
| <b>Measurement Range</b> | K-TYPE(0.1°C) -200°C to 1372°C, -328°F to 1999°F |
| <b>Auto range</b>        | 0.1°C/1°C, 0.1°F/1°F                             |

|                 |   |
|-----------------|---|
| <b>Accuracy</b> | Accuracy is specified for operating temperatures over the range of 18°C to 28°C (64°F to 82°F), for 1 year, not including thermocouple error.<br>$\pm(0.1\%rdg+1^{\circ}C)$ on -60°C to 1372°C<br>$\pm(0.1\%rdg+2^{\circ}C)$ on -60°C to -200°C<br>$\pm(0.1\%rdg+2^{\circ}F)$ on -76°F to 1999°F<br>$\pm(0.1\%rdg+4^{\circ}F)$ on -76°F to -328°F |
|-----------------|---|

## Environmental

|                                 |  |
|---------------------------------|--|
| <b>Ambient Operating Ranges</b> | 0°C to 50°C (32°F to 122°F) <80% R.H.                                    |
| <b>Storage Temperature</b>      | -20°C to 60°C (-4°F to 140°F) <80% R.H. with battery removed from meter. |

## General

|                               |   |
|-------------------------------|---|
| <b>Low battery Indication</b> | The "⊕⊖" is displayed when the battery voltage drops below the operating level. |
| <b>Measurement rate</b>       | 2.5 times/second.   |
| <b>Accuracy</b>               | Stated accuracy at 23°C±5°C, <75% R.H.  |
| <b>Battery</b>                | 1.5V x 4pcs AAA size  |
| <b>Battery Life</b>           | 200 hours typical with carbon zinc battery.                                     |
| <b>Dimensions</b>             | 160mm(H) x 83mm(W) x 38mm(D);<br>6.3 in (H) x 3.3 in (W) x 1.5 in (D).          |
| <b>Weight</b>                 | Approx. 240g (0.5lb) including batteries.                                       |

**CE** - EMC: Conforms to EN61326-1.

This product complies with requirements of the following European Community Directives: 89/ 336/ EEC (Electromagnetic Compatibility) and 73/ 23/ EEC (Low Voltage) as amended by 93/ 68/ EEC (CE Marking). However, electrical noise or intense electromagnetic fields in the vicinity of the equipment may disturb the measurement circuit. Measuring instruments will also respond to unwanted signals that may be present within the measurement circuit. Users should exercise care and take appropriate precautions to avoid misleading results when making measurements in the presence of electronic interference.

## MAINTENANCE AND REPAIR

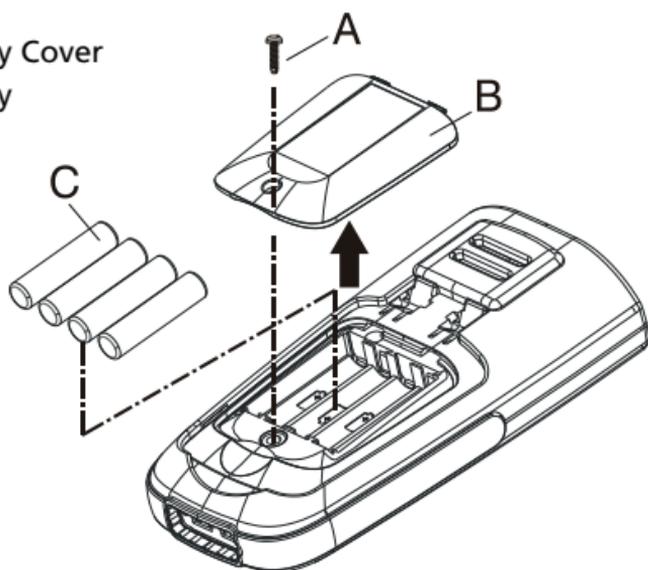
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### **⚠ WARNING**

*To avoid possible electrical shock, disconnect the thermocouple connectors from the thermometer before removing the cover.*

### Installing and Replacing Battery

- A. Screw
- B. Battery Cover
- C. Battery



1. Power is supplied by 4pcs 1.5V (SIZE AAA) UM-4 R03.
2. The “” appears on the LCD display when replacement is needed. To replace battery remove screw from back of meter and lift off the battery cover.
3. Remove the batteries from the battery compartment and replace them with new ones.
4. When not use for long time, remove the battery.
5. Do not store the unit in place with temperature and humidity beyond the recommended storage temperature.

## **Cleaning**

Periodically wipe the case with a damp cloth and detergent, do not use abrasives or solvents.

**Visit [www.Amprobe.com](http://www.Amprobe.com) for**

- Catalog
- Application notes
- Product specifications
- User manuals



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