



TMD-52
Thermocouple
Thermometer
K/J/T/E type

Users Manual

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



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**Thermocouple
Thermometer K/J/T/E type**

Users Manual

English

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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.

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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 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

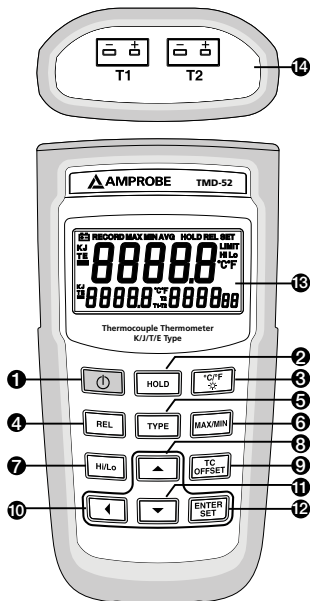
Non-Warranty Repairs and Replacement – Europe

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 for a list of distributors near you.

European Correspondence Address*

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

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



1) "⏻" Power Button

2) "HOLD" Button

3) "☀/°C/°F" Button

4) "REL" Button

5) "Type" Button

6) "MAX/MIN" Button

7) "Hi/Lo" Button

8) "▲" Button

9) "TC OFFSET" Button

10) "◀" Button

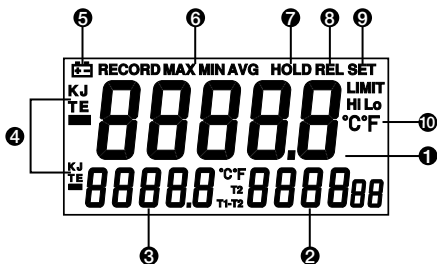
11) "▼" Button

12) "SET" Button

13) LCD Display

14) T1/T2 Input

Screen Display








- | | |
|-----------------------------|--------------------|
| 1) T1 Temperature display | 6) MAX/MIN reading |
| 2) T2 Temperature display | 7) Data HOLD mode |
| 3) T1-T2 differential | 8) Relative mode |
| 4) Type of T/C thermocouple | 9) SET mode |
| 5) Low BATT display | 10) Degrees °C /°F |

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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

Your shipping carton should include:

- 1 TMD-52 meter
- 1 Manual
- 2 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

This instrument is a portable 4½ digit, compact-sized digital thermometer designed to use external K/J/T/E-type thermocouple as temperature sensor. It also has the feature that sensor offset can be adjusted for in the field. There are 2 sets of sockets for thermocouple plugs at the top of instrument marked with T1 and T2.

Features

- Highly accurate thermometer with 0.1% basic accuracy.
- Three display for easy observations.
- Thermocouple offset Adjust.
- Four types K/J/T/E for common use.
- Robust protective Holster.
- Auto-Power Off and Backlight functions.
- MIN/MAX/AVG/REL/HOLD/ functions.

OPERATING INSTRUCTIONS

"⏻" Power Button

Press the "⏻" key turns the thermometer on or off. In the MAX/MIN record mode can not power off, must exit MAX/MIN record mode then power off. In power off status, push this key more than 4 seconds to disable auto power-off and turn on the power.

"HOLD" Button

Press the "HOLD" key to enter the Data Hold mode, the "HOLD" annunciator is displayed. When HOLD mode is selected, the thermometer held the present readings and stops all further measurements.

Press the "HOLD" key again to cancel HOLD mode, make thermometer to resume taking measurements. In the

MAX/MIN recording mode, press "HOLD" key to stop the recording. Press "HOLD" key again to resume recording. (Previously recorded readings are not erased.)

"☀/°C/°F" Button

Press "☀" button to turn on or off backlight. The backlight will switch-off automatically after 30 seconds. Readings is 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 then the thermometer was last turned off. To change the temperature scale, pressing the "°C/°F" button more than 2 seconds to toggle the °C/°F.

"REL" Button

Press "REL" key to enter the Relative mode, zero the display, and store the displayed reading as a reference value and annunciator REL is displayed. Pressing "REL" key more than 2 seconds to exit the relative mode. The relative value can also be entered by the user. (See "SET mode" later in this manual). When the desired Relative value has been entered, press "SET" key use set Relative value as a reference value. Press "REL" key again to exit the relative mode.

In the Relative mode, the value (can not be $\pm 2,000$ counts) shown on the LCD is always the difference between the stored reference and the present reading.

"TYPE" Button: K/J/T/E Input Thermocouple Type

The "TYPE" key switch the input circulating selects the K/J/T/E type thermocouple as input. When the thermometer is turned on, it is set to the type selected that was in use when the thermometer was last turned off.

"MAX/MIN" Button: Record mode

Press **"MAX/MIN"** key to enter the MAX/MIN Recording mode, (Displays the Maximum reading, Minimum reading, **"MAX-MIN"** reading and Average reading stored in record mode). In this mode the automatic power-off feature is disabled and **"⏻"** key and all function key are disabled. The beeper emits a tone when a new maximum or minimum value is recorded.

Push **"MAX/MIN"** key to cycle through the MAX, MIN, MAX-MIN and AVG readings. If overload is recorded, the averaging function is stopped and average value display **"-OL"**. In this mode, press **"HOLD"** key to stop the recording of readings, all values are frozen, press again to restart recording. To prevent accidental loss of MAX, MIN, **"MAX-MIN"** and AVG data, in this mode can only be cancelled by pressing and hold down the MAX/MIN key for 2 seconds to exit and erased recorded readings.

"Hi/Lo" Button: LIMITS mode

Press **"Hi/Lo"** key to enter the Hi/Lo LIMITS comparative mode, **"LIMIT"** is displayed. When the input temperature value more than Hi value, the beeper emits a continuity pulse tone and **"Hi"** is displayed, and when input temperature value less than Lo value. The beeper emits a discontinuous pulse tone and **"Lo"** is displayed. Press **"Hi/Lo"** LIMIT key again to exit the Hi/Lo LIMIT mode.

"▲" Button

The **"▲"** key increases the setting value.
(See **"SET mode"** later in this manual.)

"TC Offset" Button

Set the Cool Junction Compensation. User can adjustment the measurement readings in ± 5.0 counts. This value is used to compensate the thermocouple sensor. If this value has been entered, the readings displayed on LCD would be auto plus or subtract this setting value. (See **"SET mode"** later in this manual.)

"◀" Button

The "◀" key changes setting digit. (See "SET mode" later in this manual.)

"▼" Button

The "▼" key decreases the setting value. (See "SET mode" later in this manual.)

"SET" Button

Relative value set, Hi/Lo Limits value set and Cool Junction Compensation value set. Press "SET" key to enter SET mode. The LCD displayed "SET" and set annunciator is displayed.

Set Relative value

Press "SET" key to enter SET mode, then Press "REL" button to set relative value. First, "REL" displayed on LCD and wait for one second to enter SET REL mode.

SET", "REL" and "T1" annunciator are displayed.

Press "▲", "▼" to increase or decrease blink digit, press "◀" to change blink digit.

If have no blink digit, press "▲", "▼" to set the positive or negative for this relative value. Then press "ENTER" key, stored the relative value for T1, enter set relative value for T2. In this Relative SET mode, the value can not be ± 1999.9 counts. If this value more than ± 1999.9 counts, "Err" displayed and re-input.

Set Hi/Lo Limit value

Press "SET" key to enter SET mode, then press Hi/Lo button to set Hi/Lo Limit value. "SET", "LIMIT", "Hi" and "T1" annunciator are displayed.

Press "▲", "▼" to increase or decrease blink digit, press "◀" to change blink digit.

If have no blink digit, press "▲", "▼" to set the positive or negative for this Hi/Lo Limit value. Then press "ENTER" key, stored the Hi Limit value for T1, enter set Lo Limit value for T1. In this Hi/Lo Limit SET mode, the value can

not be ± 1999.9 counts. If this value more than ± 1999.9 counts, "Err" displayed and re-input.

Set Cool Junction Compensation (TC Offset)

Press SET key to enter SET mode, then press TC OFFSET button to set TC OFFSET value. First, "CJC" displayed on LCD and wait for one second to enter SET TC OFFSET mode. "SET" and "T1" annunciator are displayed.

Press " \blacktriangle ", " \blacktriangledown " to increase or decrease blink digit, press " \blacktriangleleft " to change blink digit.

If have no blink digit, press " \blacktriangle ", " \blacktriangledown " to set the positive or negative for this TC OFFSET value. Then press "ENTER" key, stored the TC OFFSET value for T1, enter set TC OFFSET value for T2. In this TC OFFSET SET mode, the value can not be ± 5.0 counts. If this value more than ± 5.0 counts, "Err" displayed and re-input.

SPECIFICATION

Electrical

Temperature Scale: Celsius or Fahrenheit user-selectable

Measurement Range:


Thermocouple	Range
K-TYPE (0.1°)	-200°C to 1372°C (-328°F to 2501°F)
J-TYPE (0.1°)	-210°C to 1050°C (-346°F to 1922°F)
T-TYPE (0.1°)	-200°C to 400°C (-328°F to 752°F)
E-TYPE (0.1°)	-220°C to 790°C (-364°F to 1454°F)

Auto Range	0.1°C/1°C, 0.1°F/1°F
Accuracy	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. $\pm(0.1\%rdg+1^{\circ}C)$ on -60°C to 1372°C $\pm(0.1\%rdg+2^{\circ}C)$ on -60°C to -220°C $\pm(0.1\%rdg+2^{\circ}F)$ on -76°F to 2501°F $\pm(0.1\%rdg+4^{\circ}F)$ on -76°F to -364°F

Environmental

Ambient Operating Ranges	0°C to 50°C (32°F to 122°F) < 80% R.H.
Storage Temperature	-20°C to 60°C (-4°F to 140°F) < 70% R.H.

General

Display	Automatic, positive implied, negative polarity indication.
Over Load	"OL" or "-OL" is displayed.
Zero	Automatic.
Reading Rate	1 time per second.
Battery	4 X 1.5V AAA
Battery Life	200 hours typical with carbon zinc battery
Low battery Indication	The "  " is displayed when the battery voltage drops below the operating level.

Measurement Rate	1 times/second.
Accuracy	Stated accuracy at 23°C±5°C, <75% R.H.
Dimensions	160 mm (H) x 83 mm (W) x 38 mm (D); 6.3 in (H) x 3.3 in (W) x 1.5 in (D).
Weight	Approx. 265 g (0.6 lb) 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.

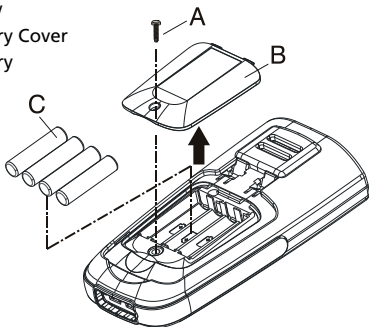
MAINTENANCE AND REPAIR

⚠ 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 for

- Catalog
- Application notes
- Product specifications
- User manuals



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