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AMPROBE®

TMD-10

Dual Temperature Meter

Users Manual

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TMD-10

Dual Temperature Meter

Users Manual

TMD10_Rev001

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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. Amprobe's warranty obligation is limited, at Amprobe's option, to refund of the purchase price, free of charge repair, or replacement of a defective product. 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 excluded. Neither Amprobe nor its parent company or affiliates shall 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 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 below for address).

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: 877-993-5853
Fax: 425-446-6390

In Canada

Amprobe Test Tools
Mississauga, ON L4Z 1X9
Tel: 905-890-7600
Fax: 905-890-6866

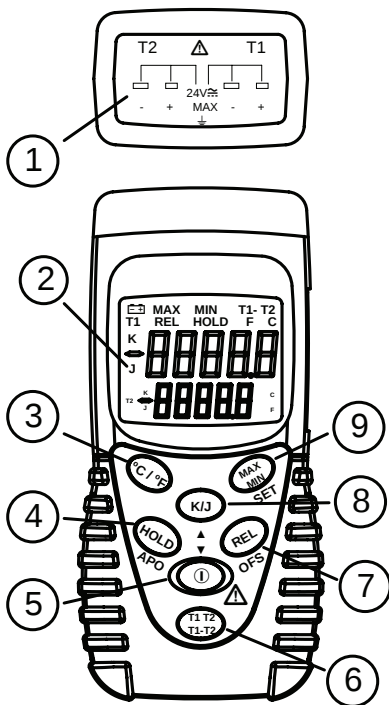
Non-Warranty Repairs and Replacement – Europe

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
Beha-Amprobe GmbH
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.)



- | | |
|--|---|
| ❶ T1 and T2 thermocouple inputs | ❹ T1, T2, T1-T2 |
| ❷ LCD | ❺ RELATIVE function
OFS, Offset Thermocouple
function |
| ❸ °C / °F temperature scales | ❻ K / J thermocouple types |
| ❹ Data HOLD
APO, turns off Auto Power Off | ❼ MAX MIN
SET command to save Thermal
Offset adjustment |
| ❺ Power ON /OFF | |

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SYMBOLS

	Refer to the manual		Complies with EU directives
	Conforms to relevant Australian standards.		Do not dispose of this product as unsorted municipal waste.

Warning and Precautions

- The bead thermocouples supplied with the meter are not intended for contact with liquids or electrical circuits.
- Do not mix thermocouple types.
- Match the polarity of the adapter to the polarity of the thermocouple inputs.

UNPACKING AND INSPECTION

Your shipping carton should include:

- 1 TMD-10 temperature meter
- 2 K-type thermocouples
- 1 9 volt battery
- 1 Manual

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

INTRODUCTION

The TMD-10 is a dual input temperature measurement meter using Type K or Type J thermocouples.

OPERATION

1. Press the ① button to turn power on or off
2. Set the Function Switch to °C or °F.
3. Select thermocouple type (K / J) and connect the thermocouple(s) to the T1 or T2 input.

 **Do not mix thermocouple types.**

 **Match the polarity of the adapter to the polarity of the thermocouple input.**

4. Expose the thermocouple(s) to the temperature(s) to be measured.
5. Read the LCD display.

°C / °F

Press the  key to change from Celsius (°C) to Fahrenheit (°F) temperature scale.

This setting can not be changed when in the HOLD mode. The TMD-10 will auto save the temperature scale setting during shutdown.

MAX, MIN and AVG

Press the  button to start the recording of the maximum, minimum, and average of all readings after the function is enabled. Pressing the  button steps the top reading through the MAX, MIN, and AVG values. Press the  button for > 1 second to disable the function.

The MAX, MIN or AVG reading is shown on the top display and the actual reading is shown on the bottom display for T1.

To use MAX, MIN, and AVG for T2, disable MAX, MIN, and AVG and press and hold  key > 1 sec to swap T2 to the top display and T1 to bottom display.

Press  button again to activate the function.

If the TMD-10 turns off because of Auto Power Off, the recorded values will be saved for use when the meter is re-energized.

K / J

Press  key to switch T1 from type K to type J thermocouple for the top display.

Press and hold  key > 1 sec to swap T2 to the top display and T1 to bottom display.

Press  key to switch T2 from type K to type J.

Press and hold  key > 1 sec to swap T1 to the top display and T2 to bottom display.

⚠ This setting cannot be changed if in HOLD, MAX/MIN, T1-T2 or REL modes.

The TMD-10 will auto save the thermocouple type setting during shutdown.

HOLD

Press the  key to freeze the LCD displays. Press the HOLD key again to return to normal operation. When the  function is enabled, all function keys are disabled except for power  key.

REL

Relative mode allows the user to offset the subsequent meter measurements with the top display reading as the reference value.

Press the  button to enable the Relative function for the T1 thermocouple. The top display will reset to 0.0 (reference value) and subsequently readings display the difference between the reference value and the actual reading. The actual reading is shown on the bottom display. Press the  button to disable the Relative function.

To use the Relative mode for T2, disable **REL** and press and hold **T1 T2 T1-T2** key > 1 second to swap T2 to the top display and T1 to bottom display.

T1 T2 / T1-T2

T1 T2 displays the 2 inputs independently. Press and hold **T1 T2 T1-T2** button > 1 second to swap display location of the display location of T1 and T2.

(T1-T2)

Press **T1 T2 T1-T2** button to display T1 minus T2 temperature value. The top display shows the T1-T2 temperature. The lower display shows the top display selected in the T1 T2 mode. Press **T1 T2 T1-T2** button again to disable this function

Auto Power Off (APO)

The TMD-10 powers down automatically after approximately 15 minutes of inactivity to save battery life. Press the **ⓘ** button to turn the TMD-10 ON. You can disable Auto Power Off by pressing the **HOLD** button > 1 second after the TMD-10 is ON.

⚠ The power cannot be turned OFF in the OFFSET SETUP mode.

Thermocouple Error Correction (OFS, Offset)

User can add an offset to compensate for the error of specific thermocouple probes.

1. Press and hold the **REL** (OFS) button > 1 second to enter the Offset Setup mode.
2. Immerse the thermocouple(s) in thermos bath with crushed ice and fresh water (0.0 °C / 32.0 °F).
3. Press the **K/J** button to increase or power **ⓘ** button to decrease the Offset value. The allowable adjustment range is $\pm 5\text{ °C} / \pm 9\text{ °F}$ in 0.1°C/°F increments.
4. Press **MAX MIN** (SET) button to save and leave setup mode. The "Offset" icon will remain on the LCD.
5. Press and hold **T1 T2 T1-T2** button > 1 second to swap T2 to the top display and T1 to bottom display. Press **K/J** button to switch T2 from type K to type J.
6. Repeat steps 1, 2, 3 and 4 for T2.
7. To remove the Offset, Repeat steps 1, 2, 3 and 4 setting the offset (lower display) to 0.0. When both thermocouple offset are zeroed out, the "Offset" icon will be turned off.

SPECIFICATIONS

General

Display: Dual 5-digit LCD displays

Overrange indication:

“OL” stands for positive temperature

“-OL” stands for negative temperature.

Low battery: the “” sign will appear while battery is low.

Power Supply: 9V NEDA 1604, IEC 6F22, JIS 006P battery.

Battery life: approx. 200 hours.

Auto power off: approx. 15 minutes.

Environment: Indoor operation, - Altitude: Up to 2000 m.

Temperature / Humidity:

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

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

Dimensions: 130 x 56 x 38 mm (5.1 x 2.2 x 1.5 in.)

Weight: 170g(0.37 lb.) battery included

CE-EMC: 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.

Electrical (23 °C ± 5°C, < 80 % RH)

Temperature scale: °C or ° F

Thermocouple type:

K-type: -200°C to 1370 °C (-328 °F to 2498 °F)

J-type: -200°C to 1050 °C (-328°F to 1922 °F)

Resolution: 0.1

Accuracy: ± (0.05 % rdg + 0.7 °C), ± (0.05 % rdg + 1.4 °F)

Input protection: 24V DC or AC.

Temperature Coefficient:

$\pm (0.01 \% \text{ rdg} + 0.03 \text{ }^{\circ}\text{C per }^{\circ}\text{C}); \pm (0.01 \% \text{ rdg} + 0.06 \text{ }^{\circ}\text{F per }^{\circ}\text{F})$ outside the specified $+ 18 \text{ }^{\circ}\text{C}$ to $+ 28 \text{ }^{\circ}\text{C}$ ($+ 64^{\circ}\text{F}$ to $+ 82^{\circ}\text{F}$) range.

Calibration: Yearly

MAINTENANCE AND REPAIR

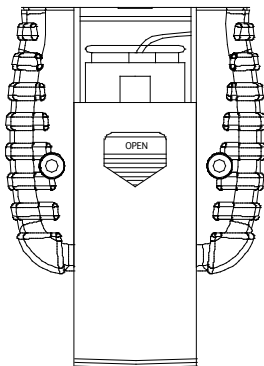
If there appears to be a malfunction during the operation of the meter, the following steps should be performed in order to isolate the cause of the problem.

1. Check the battery. Replace the battery immediately when the symbol "" appears on the LCD.
2. Review the operating instructions for possible mistakes in operating procedure.

Except for the replacement of the battery, repair of the meter should be performed only by a Factory Authorized Service Center or by other qualified instrument service personnel. The front panel and case can be cleaned with a mild solution of detergent and water. Apply sparingly with a soft cloth and allow to dry completely before using. Do not use aromatic hydrocarbons or chlorinated solvents for cleaning.

BATTERY REPLACEMENT

1. Turn off the meter and slide out the battery cover. Replace the battery with a NEDA type 1604 or equivalent 9V alkaline battery. Replace the cover.
2. Remove battery when the TMD-10 is not used for extended period.



Battery Replacement



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