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Registered in England No. 3387451. Rev 2 LITDT75

DT75 DIGITAL THERMOMETER

INSTRUCTION MANUAL



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For user notes

GENERAL SAFETY INFORMATION: Always read before proceeding.

Warning

These instructions contain both information and warnings that are necessary for the safe operation and maintenance of this product. It is recommended that you read the instructions carefully and ensure that the contents are fully understood. Failure to understand and to comply with the warnings and instructions can result in serious injury, damage or even death.

In order to avoid the danger of electrical shock, it is important that proper safety measures are taken when working with voltages exceeding 30V AC RMS, 42V AC peak or 60V DC.

This product must only be used by a competent person capable of interpreting the results under the conditions and for the purposes for which it has been constructed. Particular attention should be paid to the Warnings, Precautions and Technical Specifications. Always check the unit is in good working order before use and that there are no signs of damage to it. Do not use if damaged.


Where applicable other safety measures such as use of protective gloves, goggles etc. should be employed.

Please keep these instructions for future reference. Updated instructions and product information are available at: www.martindale-electric.co.uk/instruct

REMEMBER: SAFETY IS NO ACCIDENT

MEANING OF SYMBOLS:

 equipment complies with relevant EU Directives

 end of life disposal of this equipment should be in accordance with relevant EU Directives

For user notes

Thank you for buying one of our products. For safety and full understanding of its benefits please read this manual before use. Technical support is available from 01923 441717 and support@martindale-electric.co.uk.

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1. INTRODUCTION

This manual contains information and warnings which must be followed to ensure safe operation of the thermometer.

WARNING

READ "SAFETY INFORMATION" BEFORE USING THE METER

1.1 Inspection

Examine the shipping carton for any sign of damage. Inspect the unit and any accessories for damage. If there is any damage then consult your distributor immediately.

You should have the following items:

1. Digital thermometer
2. Rubberised holster
3. 9-Volt battery (installed in meter)
4. Instruction manual
5. Two k-type bead thermocouples

1.2 Description

This instrument is a portable, 3½ digit, compact thermometer with twin sensor inputs for K-Type thermocouples measuring from -50°C to 1300°C (-58°F to 2000°F). The instrument may be used in differential mode when thermocouples are connected to both inputs.

Input Protection: 60V DC or 24V rms AC maximum input voltage on any combination of inputs. ⚠

Reading Rate: >2 times per second.

Input Connector: Accepts standard miniature thermocouple connectors (flat blades spaced 7.9mm, centre to centre).

Environmental

Ambient Operating Range: 0°C to 50 °C (32°F to 122°F)

Storage Temperature: -20°C to 60°C (-4°F to 140°F)

Relative Humidity: 0% to 80% (0°C to 35°C) (32°F to 95°F) 0% to 70% (35°C to 50°C) (95°F to 122°F)

General

Display: 3½ digit liquid crystal display (LCD) with maximum reading of 1999.

Battery: Standard 9V battery (PP3 or MN1604)

Battery Life: 200 hours typical (carbon zinc battery).

Dimensions: 147mm (H) x 70mm (W) x 39mm (D)

Weight: 7.6oz (215g)

Supplied Probe: 4ft type "K" thermocouple bead probe (teflon tape insulated). Maximum insulation temperature 260°C (500°F). Probe accuracy is ±2.2°C or ±0.75% of reading (whichever is greater) from 0° to 800°C.

International linearisation follows National Bureau of Standards / IEC 584 Temperature/Voltage tables for K-Type thermocouples.

Specification
 unit code: DT75
 unit name: Digital Thermometer



Electrical Measurement Range: -50°C to 1300°C (-58°F to 2000°F)

Resolution: Switchable between 1° / 0.1 and °C / °F

Accuracy: For operating temperatures of 18°C to 28°C (64°F to 82°F), for one year, not including thermocouple error:

-50°C to 0°C	±2°C
0°C to 1000°C	±(0.3% rdg + 1°C)
1000°C to 1300°C	±(0.5% rdg + 1°C)
-58°F to 32°F	±4°F
32°F to 2000°F	±(0.3% rdg + 2°F)

Temperature Coefficient: 0.1 times the applicable accuracy specification per °C from 0 to 18°C and 28 to 50°C (32°F to 64°F and 82°F to 122°F).



1. Digital display
2. Rubberised holster
3. **ON/OFF** button
4. **F/C**
Press to change between fahrenheit and centigrade
5. **MAX**
Press to show and store the maximum temperature
6. **HOLD**
Freezes the reading displayed
7. **T1** socket for T1 thermocouple
8. **T2** socket for T2 thermocouple
9. Offset adjustment for T1
10. Offset adjustment for T2
11. **T1-T2**
Displays difference between T1 & T2

12. T2

Displays temperature measured from socket T2




13. T1

Displays temperature measured from socket T1

14. 0.1°/1°

Press to change resolution/range

2. PRODUCT SPECIFIC SAFETY INFORMATION

WARNING	
	To avoid electrical shocks, and damage to the instrument, do not use this instrument when voltages at the measurement surface exceed 24V AC or 60V DC.
	To avoid burns or damage to equipment, do not take temperature measurements inside microwave ovens.
CAUTION	
	Repeated flexing can break the thermocouple leads. To prolong lead life, avoid sharp bends in the leads, especially near the connector.

2.1 Precautions

This product has been designed with your safety in mind, but please pay attention to the following warnings and cautions before use.

Warning

Before use check the unit for cracks or any other damage. Make sure the unit is free from dust, grease and moisture. Also check any associated leads and accessories for damage. Do not use if damaged.

This warranty is the buyer's sole and exclusive remedy and is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. Martindale shall not be liable for any special, indirect, incidental or consequential damages or losses, including loss of data, arising from any cause or theory.

Since some jurisdictions do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any part of any provision of this warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision or other part of that provision.

Nothing in this statement reduces your statutory rights.

4.4 Storage Conditions

The instrument should be kept in warm dry conditions away from direct sources of heat or sunlight, and in such a manner as to preserve the working life of the unit. It is strongly advised that the unit is not kept in a tool box where other tools may damage it.

5. WARRANTY AND LIMITATION OF LIABILITY


This Martindale product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is 2 years and begins on the date of receipt by the end user. This warranty extends only to the original buyer or end-user customer, and does not apply to fuses, disposable batteries, test leads or to any product which, in Martindale's opinion, has been misused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation, handling or storage.

Martindale authorised resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Martindale.

Martindale's warranty obligation is limited, at Martindale's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to Martindale within the warranty period.

3. OPERATION

3.1 Replacing the Battery

This meter is powered by a PP3 or MN1604 or equivalent 9-volt battery. When the meter shows the " " sign the battery must be replaced to maintain proper operation. Follow the procedure below to replace the battery.

1. Disconnect the thermocouples and turn the unit off.
2. Using a Phillips screwdriver, remove the three screws securing the back of the meter.
3. Replace the battery with a new equivalent 9-volt one observing correct polarity.



NOTE It is essential to transfer the protective insulating sleeve from the old battery to the new battery.

4. Replace the back cover and re-install the screws.

3.2 How it Works

Selecting °C or °F

The **F/C** button may be used to change the measurement between °C and °F. The chosen unit is shown on the display. On power up, the instrument defaults to the units last selected before power down.

Single Input Temperature Measurement

To display the temperature from the input selected, press either the **T1** or **T2** button, provided that a thermocouple is connected. A symbol on the display shows the input in use (T1 or T2).

Differential Temperature Measurement T1 or T2

In Difference mode, two temperatures are measured, one at the **T1** input and the other at **T2**. Pressing the **T1-T2** button displays the difference in temperature between the two thermocouples. A **T1-T2** symbol appears in the display.

Selecting the Display Resolution

The **0.1°/1°** button selects either the low resolution 1°, or the high resolution 0.1°, display mode.

HOLD Mode

The latest value for the T1, T2 or T1-T2 temperature may be frozen by pressing the **HOLD** button; a **D-H** symbol appears in the display and all further measurement stops until the **HOLD** button is pressed again.

MAX Mode

Pressing the **MAX** button updates the display with the latest maximum value for the selected measurement (T1, T2 or T1-T2) and the **MAX** symbol is shown in the display. A further press of the **MAX** button exits the mode.

The **HOLD** facility is available while the **MAX** function is being used. A **D-H** symbol will be displayed.

4. MAINTENANCE

4.1 Calibration

To maintain the integrity of measurements made using your instrument, Martindale Electric recommends that it is returned at least once a year to an approved Calibration Laboratory for recalibration and certification.

Martindale Electric is pleased to offer you this service. Please contact our Service Department for details.

E: service@martindale-electric.co.uk

T: 01923 650660

4.2 Cleaning

The unit may be cleaned using a soft dry cloth. Do not use moisture, abrasives, solvents, or detergents, which can be conductive.

4.3 Repair & Service

There are no user serviceable parts in this unit other than those that may be described in section 3. Return to Martindale Electric if faulty. Our service department will quote promptly to repair any fault that occurs outside the guarantee period.

Before the unit is returned, please ensure that you have checked the:

- battery
- thermocouples