

Avoid severe mechanical shock or vibration and extreme temperature.

To avoid possible corrosion from leaking batteries, remove the batteries if discharged, or when the unit is not in use for an extended period.

2. INTRODUCTION

2.1 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.

2.2 Description

The DTL84 has the following functions and features:

- ◆ Four channel inputs
- ◆ Selectable thermocouple type (K, J, E, T, N, R, S)
- ◆ Differential temperature measurement
- ◆ Temperature alarm function
- ◆ Fast response and sampling rate
- ◆ Instant recall function
- ◆ Adjustable auto power off
- ◆ Bluetooth connection to PC or mobile device
- ◆ iOS & Android APP available to download from APP store
- ◆ USB PC interface with Windows software included.

2.3 Accessories

The DTL84 comes with the following accessories:

- ◆ 2 x K-type thermocouples
- ◆ Bluetooth adaptor
- ◆ 4 x 1.5V AAA LR03 batteries
- ◆ DTL84 software CD
- ◆ Micro USB cable
- ◆ Storage case
- ◆ Instructions

2.4 Battery Installation

Refer to Section 6.1 (Battery Replacement).

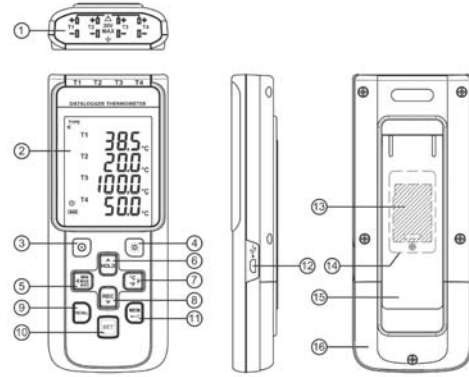
2.5 Bluetooth Adaptor Installation

Refer to Section 6.2 (Bluetooth Adaptor Installation).

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3. OPERATION

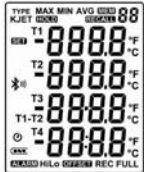
3.1 Description of Press Buttons and DTL84 Elements



1	Thermocouple input sockets
2	LCD display
3	Turns the DTL84 on/off
4	Turns the backlight on/off
5	Selects max, min or average readings
6	Selects the data hold function
7	Selects the temperature scale
8	Starts/stops the record function
9	Recalls saved readings
10	Enters/exits Set-up function
11	Saves readings to the memory
12	USB interface
13	Bluetooth adaptor
14	Bluetooth adaptor compartment
15	Tilt stand
16	Battery compartment

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3.2 Description of LCD symbols



	Indicates low battery
MIN	Minimum recorded value is displayed
MAX	Maximum recorded value is displayed
AVG	Average reading is displayed
SET	Setup option indicator
	Auto power off is active
REC	Indicates recording is active
FULL	Memory full indicator
MEM 88	Indicates memory location of stored data
RECALL 88	Indicates memory location when recalling stored data
TYPE KJET	Indicates selected thermocouple type
T1 T2 T3 T4	Temperature channel
T1-T2	T1-T2 differential temperature mode selected
ALARM	Indicates temperature alarm selected
Hi	Indicates high temperature alarm tripped
Lo	Indicates low temperature alarm tripped
OFFSET	Probe error compensation
°C/°F	Indicates temperature scale
HOLD	Display hold mode is active
N	N-type thermocouple is selected
R	R-type thermocouple is selected
S	S-type thermocouple is selected
	Bluetooth pairing/standby
	Bluetooth connected

3.3 Low Battery Indication

If the symbol is displayed, the battery needs replacing as measurement accuracy can no longer be guaranteed (See section 6.1 Battery Replacement).

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3.4 Power On/Off

Press to power on the meter. Press and hold for 3 seconds to power off.

3.5 Backlight

Press to turn on the display backlight. Press again to turn off the backlight. It will automatically turn off after 30 seconds if there is no further operation of the meter.

3.6 Data Hold

To hold displayed readings, press . The HOLD symbol will be displayed.

Press again to exit the Data-Hold mode.

Note: When Data-Hold mode is selected the , , , and buttons are disabled.

3.7 Record Function

Measurement data recorded at set time intervals can be saved to the internal memory. Refer to 4.4 (Setting Data Recording Interval Time) to set the required time interval.

Press to start recording data. The REC symbol will be displayed.

To stop recording, press again.

The recorded data can be downloaded to a PC using the DTL84 software.

Note:

- ◆ During recording, the and buttons are disabled so any required settings need to be selected before starting the data logger function.
- ◆ When the memory is full (32,000 results), the "FULL" symbol will flash on the LCD. The data logger function will stop.
- ◆ When the battery power is low, the symbol appears on the screen and the data logger function will not start. If the battery is running low during data logging, it will stop recording automatically.

3.8 Memory Function

Press to save the current displayed temperature readings to memory. The MEM symbol and the number of the memory location will appear on the screen for 2 seconds.

Press again to store further sets of results.

The memory has 0-99 locations.

3.9 Recalling Saved Results

Press to recall saved results. The RECALL symbol and the number of the last used memory location will be displayed.

The time the data was saved will be displayed in hours, mins, secs for 2 seconds before the saved temperature readings are displayed.

Press the arrow keys , , , and to select the required memory location.

Press or to exit RECALL mode.

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4.10 Clearing instant Read-out Memory

Switch off the DTL84. Press and hold **MEM** and **0** to switch the meter back on. Keep holding both buttons and **MEM**, **CLr**, **SUR**, and **5** will appear on the LCD. Continue to hold both buttons until 5 counts down to 0.

The LCD will show CLr, 0 and will start erasing the stored results from 00 to 99. When all of the stored records are deleted, release both buttons and the DTL84 will return to measurement mode.

5. Connecting to a PC using the DTL84 software

The DTL84 can be connected to a PC via the micro USB cable or the Bluetooth adaptor to download the recorded data or perform real time monitoring or data logging using the DTL84 software.

5.1 System Requirements

Windows XP, VISTA, Windows 7, Windows 8, Windows 10.

5.2 Minimum Hardware Requirements

PC or laptop with CD-ROM drive.

At least 50MB hard disk space available to install DTL84 software.

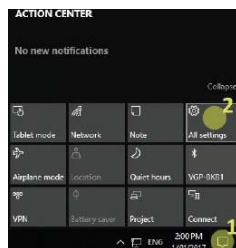
Recommended screen resolution 1024 x 768.

5.3 Quick Start Tutorial

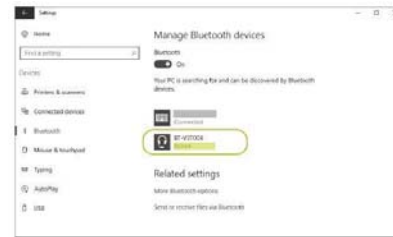
For guidance on the use of the DTL84 software there is a quick start tutorial within the HELP of the DTL84 software.

5.4 Bluetooth pairing using the Windows 10 Action Centre (Windows 10)

- 1) Open **Action Centre**
- 2) Click **All Settings**
- 3) Click on **Devices**
- 4) Select **Bluetooth**
- 5) Turn On
- 6) Select BT XXXXXXXX (serial number of adaptor)
- 7) Click **Pair**
- 8) After installing, the device will appear as paired



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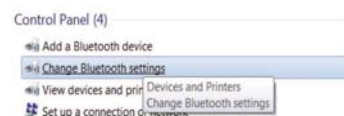
5.5 Bluetooth pairing using the Windows Control Panel

- 1) Click **Start** and then click **Devices and Printers**
- 2) Click **Add a Device**
- 3) Choose **Bluetooth Adaptor** then click **Next**.

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- 4) To find out which COM port has been allocated to the meter, click on the Windows Start button and search for "Bluetooth" and choose "Change Bluetooth settings."



Click on the COM ports tab to see which port has been allocated to the meter.

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6. MAINTENANCE

6.1 Battery Replacement

The battery compartment is underneath the unit and can be accessed by undoing the screw.



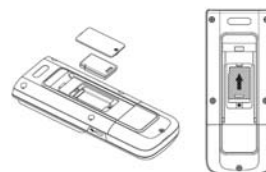
Fit 4 new 1.5V, AAA alkaline batteries (IEC LR03, NEDA 24A) observing correct polarity. Replace the battery cover and the screw.

Note: Do not mix old and new batteries.

6.2 Bluetooth Adaptor Installation

Before installing the Bluetooth adaptor, switch the DTL84 off. The Bluetooth adaptor compartment is underneath the unit and can be accessed by undoing the screw.

Place the adaptor into the compartment and gently push in an upwards direction ensuring the pins are lined up with the connector. Replace the cover and the screw.



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6.3 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. Email: service@martindale-electric.co.uk. Tel: 01923 650660

6.4 Cleaning

If contamination is found, clean with a damp soft cloth and if necessary a mild detergent or alcohol. Do not use abrasives, abrasive solvents, or detergents which can cause damage to the unit. If a mild detergent is used, the unit should subsequently be thoroughly cleaned with a water dampened soft cloth. After cleaning, dry and allow to remain in a dry environment for 2 hours before use.

6.5 Repair & Service

There are no user serviceable parts in this unit other than those that may be described in section 6. Return to Martindale Electric if faulty. Our service department will quote promptly to repair any fault that occurs outside the guarantee period.

6.6 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.

7. 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.

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 to 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.

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Specification DTL84 Data Logging Thermometer

All specified accuracies are at 23°C ± 5°C < 90% R.H. (non-condensing) for 1 year.

Temperature coefficient:

0.01% of reading + 0.05°C (0.0028°F) per °C (0°C to 18°C, 28°C to 50°C or 32°F to 64°F, 82°F to 122°F)

Range: K: -200°C-1372°C (-328°F-2501°F)
J: -200°C-1000°C (-328°F-1832°F)
E: -200°C-750°C (-328°F-1382°F)
T: -200°C-400°C (-328°F-752°F)
N: -200°C-1300°C (-328°F-2372°F)
R, S: 0°C-1767°C (32°F-3212°F)

Resolution: K, J, E, T, N-type

0.1°C < 600°C
0.1°F < 1000°F
1°C ≥ 600°C
1°F ≥ 1000°F

R, S-type

0.2°C < 600°C
0.5°F < 1000°F
1°C ≥ 600°C
1°F ≥ 1000°F

Accuracy:

J, K, E, T, N-type
-200°C to -100°C ± (0.5% of reading +0.7°C)
≥100°C ± (0.1% of reading +0.7°C)
-328°F to -148°F ± (0.5% of reading +1.3°F)
≥-148°F ± (0.1% of reading +1.3°F)

R, S-type

0°C to 1767°C ± (0.2% of reading +1.4°C)
32°F to 3212°F ± (0.2% of reading +2.5°F)

General purpose 100cm Type K thermocouple bead probe
Temperature measurement range: -50°C to 200°C (-58°F to 392°F)
Probe accuracy: ± 2.2°C (± 3.9°F)



Specification DTL84 Data Logging Thermometer

GENERAL

Display: Liquid crystal display

Over range: OL is displayed

Measurement rate: twice per second

Power: 4 x 1.5V AAA alkaline batteries (IEC LR03, NEDA 24A)

Continuous operating time: Bluetooth OFF – 120 hours approx

Bluetooth ON – 30 hours approx

Auto power off: Setable to 10mins, 30mins, 1hr, 2hrs, 4hrs, 8hrs or disabled

Dimensions: 187mm (L) x 75mm (W) x 29mm (H)

Weight: 290g

Includes: storage case, 2 x K-type thermocouples, bluetooth adaptor, 4 x 1.5V AAA alkaline batteries, DTL84 software CD, micro USB cable and instruction manual.

ENVIRONMENTAL

Temperature & Humidity: Operating: 0°C to 50°C, 10% to 90% R.H. non-condensing

Storage: -20°C to 60%, 10 to 75% R.H.

EMC

Conforms to BS EN 61326-1

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- Digital Multimeters
- Labels
- Microwave Leakage Detectors
- Motor Maintenance Equipment
- Multifunction Testers
- Non-trip Loop Testers
- Pat Testers & Accessories
- Phase Rotation Testers
- Proving Units
- Socket Testers
- Thermometers & Probes
- Test Leads
- Voltage Indicators
- Specialist Metrohm Testers (4 & 5kV)
- Specialist Drummond Testers



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