

UEI INSTRUCTION MANUAL

DT221/222

TEST INSTRUMENTS™



Digital Thermometers

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INTRODUCTION

Thank you for purchasing the UEi DT221 single input DT222 dual input K and J type digital thermometer. This thermometer features a built-in microprocessor and high resolution analog to digital converter chip. The thermocouple probe responds very quickly to a wide range of temperature measurements. The industry standard mini thermocouple jack accepts a wide selection of probe types.

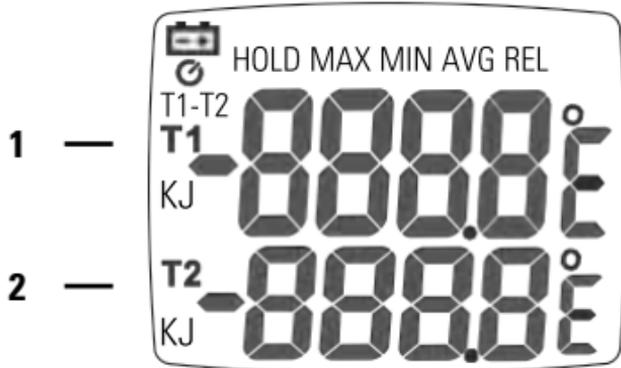
FEATURES

- 1) Auto power off with disable feature (60 minutes).
- 2) Single (DT221) or dual input (DT222).
- 3) Large LCD screen.
- 4) Bright back-lit display
- 5) Complete with bead wire temperature probes and 9V battery
- 6) °C/°F select function.
- 7) REL mode to observe temperature changes
- 8) Differential (T1-T2) on DT222

MATERIAL SUPPLIED

- Meter
- 9V battery
- Operation manual
- DT221 J-type probe with clip
- DT222 K-type bead probe (2)

LCD DISPLAY



1. Primary LCD: Display T1 (1st thermocouple reading)
2. Secondary LCD: Display T2 (2nd thermocouple on differential or initial valve for relative mode.)

WARNING

1. Always connect thermocouple before turning the unit on for most accurate readings
2. Make sure to plug sensor with correct polarity. Do not be alarmed if erratic readings appear on display prior to normal mode.

KEYPAD (CONTROLS)



Press "**UNIT**" to select °C/°F.



Freeze display

MODE

Press "**MODE**" to change operation mode T1, T1-T2 or REL. The corresponding reading will display on the primary LCD. The secondary LCD will always display T2 reading in differential (DT222). It will display the initial value when using "**REL**" mode.

PWR

Press and hold "**PWR**" to turn on the meter or press it to turn off the meter. The meter will turn off automatically after 60 minutes if you don't press any key. Press "**HOLD**" and "**PWR**" buttons to disable Auto sleep mode. (see page 4)

**MAX
MIN**

Press "**MAX/MIN**" to change operation mode from measured temperature -> Max.-> Min.-> Avg. -> back to live date. The corresponding value will display on primary LCD. The corresponding value is calculated since powered on or reset.

SET

Press and hold to change thermocouple type.
J-Type-Black Molded Connector
K-Type-Yellow Molded Connector

BKLT

Press to activate backlight

OPERATION

(1) POWER ON/OFF

Note:

Make sure you have plugged in the thermocouple probe before turning on. Press and hold **PWR** button to turn on the meter.

While the meter is on, press **PWR** button to turn off the meter.

(2) SLEEP MODE (AUTO POWER OFF)

The meter will turn off automatically after 60 minutes if no buttons are pressed. To disable auto power off function, when the meter is off, press and hold "**HOLD**" button then press "**PWR**" button to turn on the meter, the primary LCD shows the following. Sleep mode is now disabled.



(3) SET THERMOCOUPLE TYPE

Verify thermocouple type matches the probe being used.

K-type = Yellow molded plug

J-type = Black molded plug

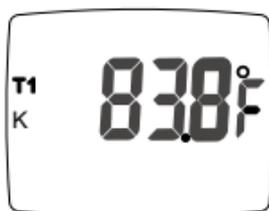
Press and hold "**SET**" to switch type.

(4) TAKING MEASUREMENT

Connect thermocouple. If probe is open or not connected, the LCD will show "---".

Verify thermocouple type is set correctly (see page 4)

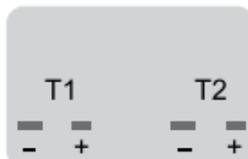
Single input model shows T1, dual input model shows T1 and T2



Single Input: (DT221)



Dual Input: (DT222)



(5) CHANGE UNIT

Press **UNIT** button to change unit °C or °F. The meter default temperature unit is °F. The meter will default to last selected scale.

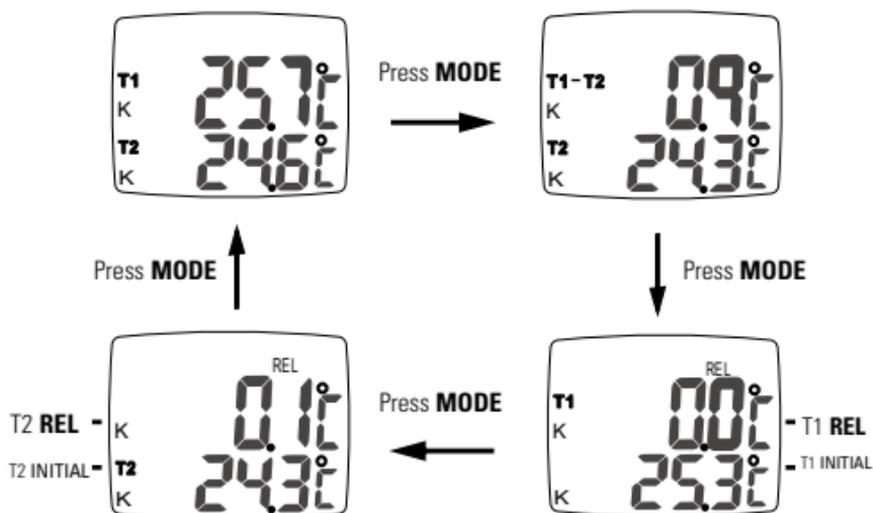


Press UNIT



(6) T1-T2/RELATIVE

Press **MODE** button to change operation, options include T1-T2 (DT222 only), T1-REL, T2-REL (DT222). The corresponding reading will display on the primary and secondary LCD.



Change Thermocouple Type: Press SET button for 2 seconds to change thermocouple type K or J.

NOTE: Always verify proper selection of thermocouple type see page 3 "Set."



K-TYPE (Yellow Plug)

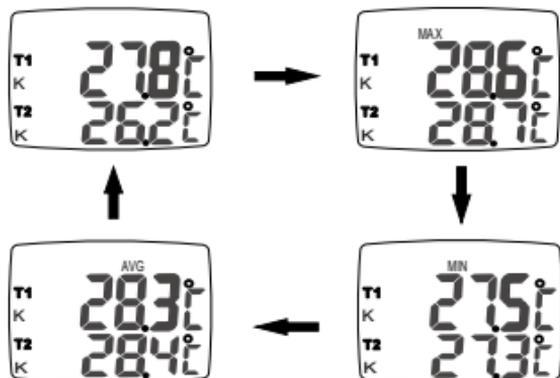
Press **SET**
for 2 seconds



J-TYPE (Black Plug)

(7) MAX/MIN/AVG

Press **MAX/MIN** button to change operation mode from live data ->MAX -> MIN -> AVG -> back to live data. Corresponding value will display on upper LCD. These values will reset at power on or reset.



Reset MAX/MIN/AVG: Press Max/Min button for 2 seconds to reset MAX/MIN/AVG analysis value. The MAX/MIN/AVG value is updated to current reading.

(8) DATA HOLD

Freeze display of basic measurements or disable. Press **HOLD** button again to go back to the temperature reading.



(9) BACKLIGHT

Press **BKLT** to turn on the back light in any function. Back light function will turn off automatically after 30 seconds.

SPECIFICATIONS

SPECIFICATION	DT221	DT222
TEMPERATURE UNIT	°C or °F Selectable	
SENSOR INPUT	Single Input	Dual Input
TEMPERATURE RANGE	K-Type: -328°F ~ 2498°F (-200°C ~ 1370°C) J-Type: -328°F ~ 1922°F (-200°C ~ 1050°C)	
DISPLAY RESOLUTION	0.1°C (0.1°F)	
ACCURACY	±(0.2% + 1.4)°F) ±(0.2% + 1°C)	
INPUT PROTECTION	Maximum Voltage of Temperature input is 24DC or AC	
TEMPERATURE COEFFICIENT	0.01% of reading + 0.03°C per °C 0.01% of reading + 0.06°F per °F When out of range 18°C~28°C (64F° ~ 82°F)	
SIZE	159 x 55 x 38mm (L x W x H)	

CE CERTIFICATE

The product complies with EMC directive 2004/108/EC
Technical standard: Emission EN 61326-1:2006 Class B
EN 55011:2009/A1:2010 Group 1 Class B
Immunity EN 61326-1:2006 EN 61000-4-2:2009
EN 61000-4-3:2006 A2:2010



TROUBLESHOOTING

- E-1** Thermocouple 1 circuit error or over range
- E-2** Thermocouple 2 circuit error or over range
- E-3** Over/ under operation temperature
- E-4** Hardware error

* LCD display “---” disconnected or open thermocouple.

BATTERY REPLACEMENT



WARNING

If the symbol “” appears on the LCD, please replace the battery immediately

- Turn off the instrument
- Remove the battery compartment
- Change the battery
- Replace the compartment cover



END OF LIFE



CAUTION: This symbol indicates that equipment and its accessories shall be subject to a separate collection and correct disposal.

Limited Warranty

The DT221 and DT222 are warranted to be free from defects in materials and workmanship for a period of three years from the date of purchase. If within the warranty period your instrument should become inoperative from such defects, the unit will be repaired or replaced at UEi's option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect or improper maintenance. Batteries and consequential damage resulting from failed batteries are not covered by warranty.

Any implied warranties, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the express warranty. UEi shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expenses or economic loss. A purchase receipt or other proof of original purchase date will be required before warranty repairs will be rendered. Instruments out of warranty will be repaired (when repairable) for a service charge. Return the unit postage paid and insured to:

- Accessories, probes and batteries (Not Covered by Warranty)
- Claims are not acceptable for improper use (including adaptation to particular applications not foreseen in the instruction manual or improper combination with incompatible accessories or equipment, or for repair carried out by unauthorized personnel.

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This warranty gives you specific legal rights. You may also have other rights which vary from state to state.