DICKSON

TC200/TH300

Handheld Temperature and Temperature / RH Indicators

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TC200

TH300

Rev. 10/07

TC200

This versatile temperature indicator accepts J, K and T thermocouple probes with mini-connectors. The smooth ergonomic design allows easy clean-up and maintenance in harsh environments. Great for measuring wid temperature ranges, as well as narrow ranges where accuracy is demanded. The TC200 will store and recall 16 readings with the press of a button. A Delta T fuction allows the user to calculate a change in temperature readings. Additional features include: °C/°F switchable, hold key, user calibration, Min/Max, large digital display, low batter indicator and automatic shut-off.

TC200 Useful Features

- HUGE digital display of temperature in Celsius or Fahrenheit
- Outstanding ergonomic design with slim case and K-Thermocouple probe with mini-connector
- Accepts any K, J, or T-thermocouple with mini-connector
- °F/°C switchable
- Displays minimum/maximum readings, and can store/recall 16 readings with the touch of a button

TH300

This highly accurate instrument is ideal for field and on-site temperature, humidity and calculated dew point readings. The sturdy design features a smooth, ergonomic body that allows for easy clean-up and maintenance. The advanced TH300 stores and recalls 16 readings, including temperature, humidity, and calculated dew point, with the touch of a button. Additional features include: large digital display (characters almost 1 inch in height), automatic shut-off, min/max, hold key, low battery indicator, calibration, and delta T function.

TH300 Useful Features

- HUGE digital display of temperature and humidity
- Outstanding ergonomic design with slim case and remote wand
- Calculates dew point, and can store/recall 16 readings with the touch of a button
- User calibration
- °F/°C switchable
- Displays minimum/maximum readings, and data hold

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Product Specifications

	TC200
K Range:	-300 to +1999°F (-184 to +1093°C)
J Range:	-200 to +1400°F (-130 to +760°C)
T Range:	-250 to +750°F (-157 to +399°C)
Accuracy (Indicator Only):	±2% of reading ±0.9°F (±0.5°C)
Accuracy (K & J Probes):	±0.4% of readings above +32°F, ±2% of readings below +32°F
Accuracy (T Probes):	±0.4% of readings above +32°F, ±0.8% of readings below +32°F
Display Resolution:	0.1° from 0.0 to 999.0; 1° above 1000 and below 0
Ambient Operating Range:	+32 to +120°F, 0 to 95% RH (non-condensing)
Response Time:	10 seconds to full scale
Power Supply:	One 9V battery
Battery Life:	Approximately 50 hours typical (auto shutoff after 12 minutes)
Approvals:	CE
Calibration:	User: zero point; Factory: zero point and span
Display:	LCD, 4 digit with indicators
Enclosure:	ABS & polycarbonate
Dimensions:	7.0" x 2.75" x 1.375" (17.8cm x 7.0cm x 3.5cm)
Included:	K-Thermocouple Probe shown & 9V battery

	TH300
Temperature Range (probe only):	-22 to +185°F (-30 to +85°C)
Temperature Accuracy:	±1.8°F (±1°C)
Temperature Sensor:	Thermistor
Humidity Range:	0 to 95% RH (non-condensing)
Humidity Accuracy:	±2% from 0 to 60%, ±3% from 60 to 95%
Humidity Sensor:	Monolithic IC humidity sensor
Calculated Dew Point Range:	-20 to +120°F (-30 to +50°C)
Dew Point Accuracy:	±3°F (±2°C) from 30 to 95% RH
Ambient Operating Range:	+32 to +122°F, 0 to 95% RH (non-condensing)
Probe Type:	6 pin mini DIN
Probe Dimensions:	5.9" x 0.91" diameter (15.0cm x 2.3cm diameter)
Cable Length:	6' (2 meters)
Response Time:	30 seconds to move 63% of full scale
Resolution:	0.1% RH, 0.1°F/C
Power Supply:	One 9V alkaline battery
Battery Life:	Approximately 50 hours typical (auto shutoff after 12 minutes
Approvals:	CE
Calibration:	User: zero point; Factory: zero point and span
Display:	LCD, 4 digit with indicators
Enclosure:	ABS & polycarbonate
Dimensions:	7.0" x 2.75" x 1.35" (17.8cm x 7.0cm x 3.5cm)
Included:	9V battery, 1-pt. NIST, carrying case

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Product Applications & Useful Features

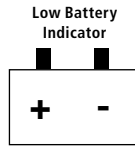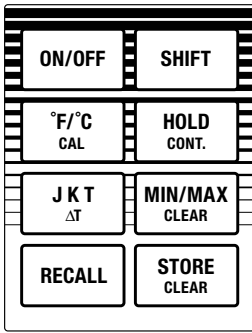Product Specifications

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ON/OFF
When the unit is off, the (ON/OFF) button turns the unit on and recalls stored settings from the novram. When powering on, first the unit will turn on all no-digit LCD segments, then is will display the temperature for one or two seconds while it continues to warm up. Then it will enable (MIN/MAX) and continue displaying the temperature. When the unit is on, pressing the (ON/OFF) button displays off then stores settings in novram and turns the unit off.

Shift
Displays (---)and puts the unit into shift mode. A second press of the button takes the unit out of shift mode. The unit will also time out of shift mode and return to displaying the current value after a few seconds.

F/C
Pressing this key toggles between Fahrenheit and Celsius on the unit's display.

Cal (shifted °F/°C)
To get into calibration mode, press and hold shift. Then press and hold (°F/°C) (about 12 seconds) until the unit shows that it is in calibration mode by putting a Z to the left of the temperature type (°F/°C). The temperature will be displayed, unless the (°F/°C) key is pressed, then zero adjustment is displayed. To increment the zero adjustment press the (SHIFT) key once for each 0.1 degree Fahrenheit. Both increment and decrement are autorepeat. When you are done with the calibration, the only exit is to turn the unit off, or let it time out and turn it self off, to store the setting in the novram.

Hold
Stops updating the display of the current temperature until pressed a second time.
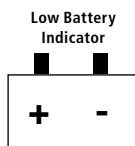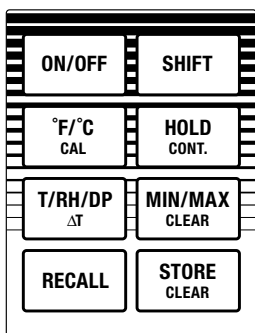
Cont (shifted Hold)
Disables the automatic power off feature until pressed a second time.

JKT
Pressing the key will cycle the unit thorough a choice of which type of thermocouple it is connected to.

ΔT (shifted JKT)
Puts the unit into ΔT mode where the current temperature has the temperature that is stored in the delta T register subtracted from it and the result displayed. If recall is pressed while in ΔT mode, the recalled number will be used for the subtract instead of the current temperature during the recall display. The delta T register is loaded when (shift) (MIN/MAX) is pressed.

MIN/MAX
One press displays the minimum temperature since the (MIN/MAX) clear key was pressed. A second press displays the maximum temperature sine the (MIN/MAX) clear was pressed. A third press returns the unit to displaying the current temperature. If you just press the button once, the unit will cycle MIN, MAX, current temperature on its own.

MIN/MAX Clear (shifted MIN/MAX)
Displays CLR then loads the current temperature into the MIN, MAX and delta T registers, then goes back to displaying the current temperature.

Recall
Starting with register one the unit displays the register number then the stored value then continues on until all sixteen registers have been displayed. If the register has been previously cleared, '----' will be displayed. The display of values can be halted by pressing recall a second time. The unit will then return to displaying the current temperature.

Store
Displays which of its sixteen registers it will be storing the current temperature in, displays the temperature being stored, displays '----', then goes back to displaying the current temperature. The register pointer is incriminated after the store is completed.

Clear (shifted Store)
Displays CLR -then clears all of the stored temperatures from their respective registers.

°F/°C
Pressing this key will toggle between Fahrenheit and Celsius on the display.

NOTE:
- The unit will turn itself off if no key is pressed for about 12 minutes.
- There is a battery indicator that will show when the battery voltage is too low for reliable operation.
- When the unit first powers up, all LCD segments will be turned on for about three seconds. The unit will then clear the display and start displaying the current value for a couple of seconds without updating MIN or MAX. After the warm up period, MIN and MAX update is enabled.

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Low Battery Indicator

ON/OFF
When the unit is off, the (ON/OFF) button turns the unit on and recalls stored settings from the novram. When powering on, first the unit will turn on all no-digit LCD segments, then it will display the currently selected variable for one or two seconds while it continues to warm up. Then it will enable (MIN/MAX) and continue displaying the currently selected variable. When the unit is on, pressing the (ON/OFF) button displays off then stores settings in novram and turns the unit off.

Shift
Displays (---)and puts the unit into shift mode. A second press of the button takes the unit out of shift mode. The unit will also time out of shift mode and return to displaying the current value after a few seconds.

F/C
Pressing this key toggles between Fahrenheit and Celsius on the unit's display.

Cal (shifted °F/C)
To get into calibration mode, press and hold shift. Then press and hold (°F/C) (about 12 seconds) until the unit shows that it is in calibration mode by putting a Z to the left of the currently selected variable type (ZF/ZC/ZH) (You can't calibrate DP since it is calculated from T and RH). Once in calibration mode, the currently selected variable will be displayed, unless the (°F/C) key pressed, then zero adjustment is displayed. To increment the zero adjustment press the (SHIFT) key once for each 0.1 degree Fahrenheit. To decrement the zero adjustment press the (HOLD) key once for each 0.1 degree Fahrenheit. Both increment and decrement are autorepeat. When you are done with the calibration, the only exit is to turn the unit off, or let it time out and turn itself off, and store the setting in the novram.

Hold
Stops updating the display of the current temperature until pressed a second time.

Cont (shifted Hold)
Disables the automatic power off feature until pressed a second time.

T/RH/DP
Pressing the key will cycle the unit through a choice of which variable you wish to read: T/RH/DP.

ΔT (shifted T/RH/DP)
Puts the unit into a Δ (delta) mode where the currently selected variable has the currently selected variable that is stored in its respective delta register subtracted from it and the result displayed. If recall is pressed while in Δ mode, the recalled number will be used for the subtract instead of the currently selected variable during the recall display. The delta register is loaded when shift (MIN/MAX) is pressed.

MIN/MAX
One press displays the minimum temperature since the (MIN/MAX) clear key was pressed. A second press displays the maximum temperature sine the (MIN/MAX) clear was pressed. A third press returns the unit to displaying the current temperature. If you just press the button once, the unit will cycle MIN, MAX, current temperature on its own.

MIN/MAX Clear (shifted MIN/MAX)
Displays CLR then loads the current temperature into the MIN, MAX and delta T registers, then goes back to displaying the current temperature.

Recall
The unit starts with register one. It displays the register number then the stored value for the currently selected variable then continues on until all sixteen registers have been displayed. If the register has been previously cleared, '----' will be displayed. The display of values can be halted by pressing recall a second time. The unit will then return to displaying the currently selected variable.

Store
Displays which of its sixteen register sets it will be storing all variables in displays '----', then goes back to displaying the currently selected variable. The register pointer is incriminated after the store is completed. All three variable values are stored at the same time: T/RH/DP.

Clear (shifted Store)
Displays CLR -then clears all of the stored temperatures from their respective registers.

°F/C
Pressing this key will toggle between Fahrenheit and Celsius on the display.

NOTE:
- The unit will turn itself off if no key is pressed for about 12 minutes.
- There is a battery indicator that will show when the battery voltage is too low for reliable operation.
- When the unit first powers up, all LCD segments will be turned on for about three seconds. The unit will then clear the display and start displaying the current value for a couple of seconds without updating MIN or MAX. After the warm up period, MIN and MAX update is enabled.

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TC200 Accessories

(for current pricing go to www.dicksondata.com or call 1-800-323-2448)

Description	Order #
NIST Traceable Calibration 3-pt. (new unit)	**N300**
NIST Traceable Calibration 1-pt. (new unit)	**N100**
A2LA Accredited Calibration 3-pt. (new unit)	**N400**
Carrying Case	**A710**
4" Piercing Probe, 5' coiled cable, +1650˚F, +900˚C	**D605***
5" Immersion Probe, 5' coiled cable, +1650˚F, +900˚C	**D608***
J-Probe, 5' coiled cord, +1400˚F, +760˚C	**D610**
Angled Surface Probe, 5' coiled cord, +1200˚F, +649˚C	**D606***
6" High Temperature Basic Probe, +2100˚F	**A203***
10' Straight Extension Cable	**D617***
100' Straight Extension Cable	**A202***
5/16" Compression Fitting	**D163**
Bead Wire Replacement Probe	**R013***

*K-Thermocouple

TH300 Accessories

(for current pricing go to www.dicksondata.com or call 1-800-323-2448)

Description	Order #
NIST Traceable Calibration 3-pt. (new unit)	**N300**
A2LA Accredited Calibration 3-pt. (new unit)	**N400**
Calibration Kit (33% & 75%)	**A834**
Carrying Case	**A710**
Probe Dust Filter	**A867**

Troubleshooting
For troubleshooting information, click **here** for the technical support page.

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Calibration Services - New Units

- **N100 - NIST Traceable Calibration 1-Point:** Includes documentation to one Dickson pre-selected point on new units only.

- **N300 - NIST Traceable Calibration 3-Point:** Includes documentation of three Dickson pre-selected points (a high, medium, and low) on new units only.

- **N400 - Deluxe A2LA Accredited NIST Traceable Calibration 3-Point:** ISO Guide 25/A2LA Documentation of 3 pre-selected points of as found data before and after calibration for Dickson temperature and/or humidity instrumentation on new units only.

- **N995 - NIST User Selected Temperature Points:** Documentation of one customer specified point. Should be selected in addition to one of the above calibration options.

The Importance and Benefits of Regular Calibrations

Once you begin to use your precision Dickson instrumentation, regular calibrations are necessary to ensure accurate readings.

The following Calibration Services are available:

- **N150 - NIST Traceable Calibration 1-Point:** Includes documentation to one Dickson pre-selected point after re-calibration.

- **N350 - NIST Traceable Calibration 3-Point:** Includes documentation of three Dickson pre-selected points (a high, medium, and low) after re-calibration.

- **N450 - Deluxe A2LA Accredited NIST Traceable Calibration 3-Point:** ISO Guide 25/A2LA Documentation of 3 pre-selected points of as found data before and after calibration for Dickson temperature and/or humidity instrumentation.

- **N995 - NIST User Selected Temperature Points:** Documentation of one customer specified point. Should be selected in addition to one of the above calibration options.

1. **Why should I recalibrate my instrumentation?** Over time dirt, dust and normal handling can throw your precision instrumentation out of calibration. Regular calibrations ensure that you receive the most accurate readings possible.

2. **How often should I recalibrate my instrumentation?** Depending on the environment your instrument is used in and how often it is handled you will want to recalibrate your instrument every 6 to 12 months. Instruments in environments where there are extreme temperatures, wide temperature ranges, humidity or pressure variations, high condensation, dirt, dust and other debris will require calibration at least every 6 months. Instruments that are frequently moved or in locations with heavy machinery that cause vibrations should also be calibrated at least every 6 months.

3. **Why should I return my instrument to Dickson for calibration?** Dickson calibrates your instrument at the factory using proprietary production/calibration software that guarantees proper calibration.

Our Capabilities: Dickson is the first manufacturer of humidity and temperature instrumentation to receive A2LA accreditation. We are also NIST Traceable; our procedures conform to MIS-STD-45662A, ANSI/NCSL 2540-1-1994, ISO/IEC Guide 25 and ISO10012. We are experts in the manufacture and calibration of humidity and temperature instruments.

- **Fast Service:** Our turnaround time is 3 days or less so you receive not only expert service but fast service as well.

- **Easy:** We make it easy for you! No phone calls for Return Authorization Numbers are required. We remind you when your instrument is due for calibration. You simply send in the completed Calibration Order Form with your unit for calibration with freight prepaid to Dickson.

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Warranty

Dickson warrants that the products it sells will be free from defects in material and workmanship under normal use and service for a period of twelve months after delivery. In the event of a claim under this warranty, the product or part must be returned to the factory for repair or replacement (shipping pre-paid) with a Return Authorization Number (see Return Information above). It will be repaired at Dickson's option without charge. This warranty DOES NOT cover routine calibration, pen, chart and battery replacement. The foregoing warranty and remedy are exclusive and in lieu of all other warranties either expressed or implied. Dickson shall not be liable for consequential or incidental damages resulting from failure or malfunction of its products. Dickson makes no warranty for products not manufactured by it or for any products modified by buyer, or subject to misuse or neglect.

Factory Service & Returns

Contact the factory (630-543-3747) for a Return Authorization (RA) Number before returning any instrument. The model number, serial number and a purchase order number will be requested before an RA number is issued.

- Carefully repack the instrument, label the outside of the box with the RA# and return the instrument (freight pre-paid) to Dickson.

- All instruments that do not have the RA# clearly marked on the outside of the box will be refused. When returning instruments for credit, please include all accessories in shipment.

- Calibration/Freight charges are non-refundable.

NOTE: Dickson shall not be liable for consequential or incidental damages resulting from failure or malfunction of its products.

- **Customer Satisfaction:** Dickson takes pride in providing you, the customer, with the highest quality instrumentation. We welcome the opportunity to help you in any way possible. Whether it be a question or a new idea in documentation, the Dickson Company would like to hear your response. Please call our Customer Service Department at 1-800-323-2448 or (630) 543-3747 (in Illinois).

- **Software Return Policy:** IMPORTANT-Read your Software License Agreement carefully before installing software. DIckson will accept returns for replacement of defective disks and CDs only.

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