ACCURA®

USER'S MANUAL
"K" TC Temperature Meter

ACKTC-HT1
High Temperature
Thermocouple"K"

ACCC-KTC
Soft Carying Case

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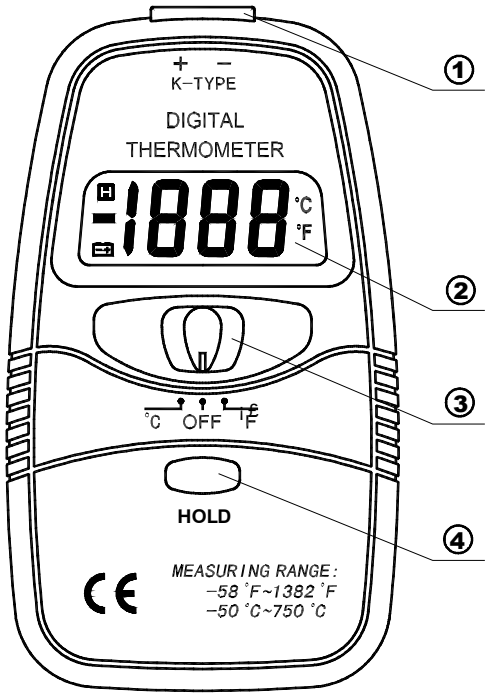
1 FEATURES

- Can match any standard type K Thermocouple.
- Standard K female connector.
- LCD display allows clear read out in bright light.
- LCD display provides low power consumption.
- LSI-circuitry provides high reliability and durability.
- High accuracy and wide measurement range.
- Compact, lightweight, and portable.

2 FRONT PANEL DESCRIPTION



1. Thermocouple input socket
2. LCD display
3. Function switch
4. HOLD switch

3 SPECIFICATIONS

3.1 General Specification

- Environment Conditions:
  Operating Temperature:
  0℃ to 40℃ ≤ 80% RH, non-condensing
  Storage Temperature:
  -10℃ to 60℃ ≤ 70% RH, battery removed
- Operating principle: dual slop integration
- Sample Rate: 2 times/sec for digital data
- Display:
  1/2 digits LCD Display with max. Reading 1999,
  Automatic indication of functions.
- Polarity indication: "-" displayed automatically.
- Open-circuit Sensor indicator:
  LCD will display "1" when sensor is open-circuit.
- Power Supply:
  DC 9V battery (NEDA 1604 6F22 006P).
- Low Battery Indicator:
  The "[-+]" is displayed when the battery is under the proper operation range
- Impedance: 10MΩ
- Dimension: 125.5(L)×72(W)×27(H)mm
- Weight: 145g approx. (battery included)
- ACKTC-HT1 Thermocouple Probe:
- The sensor supplied with the instrument is an ultra-fast response naked-bead thermocouple ACKTC-HT1 suitable for many applications but with a maximum operating temperature of 250℃ /482℉ (300℃ /572℉ short-term).
- Accessories: ACKTC-HT1 Thermocouple Probe with plug, Instruction manual, Carrying case

3.2 Technical Specification

- Measurement Range:
  -50℃ to 750℃; -50℉ to 1382℉
- Sensor Type: K type thermocouple
- Resolution: 1℃ or 1℉
- Accuracy:
  ±(% of reading + number of digits) at 18℃ to 28℃ (64℉ to 82℉) with relative humidity to 80%.

3.2.1 Celsius scale

Range	Accuracy
0℃ to 500℃	±(0.75%+2℃)
500℃ to 750 □	±(1%+3℃)
0℃ to -20℃	typ. ±3℃
-20℃ to -40℃	typ. ±5℃
-40℃ to -50℃	typ. ±6℃

3.2.2 Fahrenheit scale

Range	Accuracy
32℉ to 932℉	±(0.75%+4℉)
932℉ to 1382℉	±(1%+5℉)
32℉ to -4℉	typ. ±4℉
-4℉ to -58℉	typ. ±7℉

*typ.(typically): means almost units within such accuracy.

4 MEASURING PROCEDURE

4.1 Temperature Measurement

- Connect the Thermocouple into the socket on top edge of the instrument.
  Note: Observe polarity
- Select the ℃/℉ function desired.
- Use the sensing point of thermocouple to measure the surface or media to be measured.
- Read the stable reading.
- Hold the value, if necessary, by pressing the hold switch. A second short press returns the instrument to normal mode.

4.2 Considerations

When the sensor is first plugged into the thermometer, or if the sensor is changed, the connection needs time to reach the temperature of the socket, which is in thermal contact with the cold junction compensation device, to achieve better accuracy. This will only take few minutes and only applies if the sensor plug has previously been exposed to an ambient temperature different to that of the thermometer.
Note that in comparison with other thermocouple thermometers the accuracy specifications apply only to the instrument itself and allowance must be made for limits of error permitted in the thermocouple. The relevant specifications and respective limits for K type thermocouples are:

DIN 43710

Measurement Temp.	Allowable Error
0℃ to 400℃	±3%
400℃ to 1100℃	±0.75%

JIS C1602-1981

Measurement Temp.	Class	Allowable Error
>0℃ <1000℃	0.4	±1.5℃ or ±0.4% of Measured Temp.
>0℃ <1200℃	0.75	±2.5℃ or ±0.75% of Measured Temp .
>-200℃ <0℃	1.5	±2.5℃ or ±1.5% of Measured Temp.

5 MAINTENANCE

5.1 General maintenance

- To keep the instrument clean, wipe the case with a dry cloth and detergent, do not use abrasives or solvents.
- Any adjustment maintenance and repair shall be done by a skilled person in temperature measurements technology.

To maintain a thermocouple in good condition:
- Avoid excess bending.
- Don't overheat the thermocouple.
- Avoid chemical reactions that can damage the thermocouple.

5.2 Battery Replacement

- When the battery voltage drops below proper operation level and battery symbol appears on the LCD display, the battery needs to be replaced.
- Slide the battery cover away from the instrument and remove the battery.
- Replace with 9V battery and reinstall the cover

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