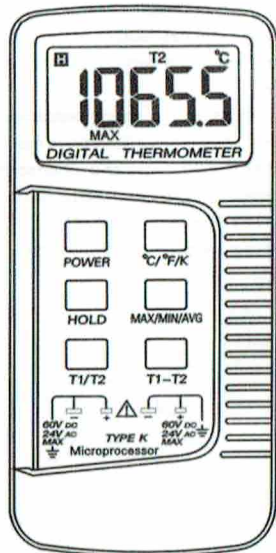


# Microprocess DIGITAL INSTRUMENT OPERATING MANUAL (TWO K-TYPE)



Thank you for your patronage and choose our products. The instrument is a temperature measuring instrument controlled by a microcontroller software, 9V battery-powered and 5 digit LCD display, can use any K-Type thermocouple as a temperature sensor. Please read this manual carefully before using, it will teach you the correct methods of operation and ease of check processing essentials, So that the product can play hard-working good performance and better serve you. Please keep it in an easy taking and reading place.

## I. Product Features:

- Wide measuring range:  $-50.0^{\circ}\text{C} \sim 1370.0^{\circ}\text{C}$ ,  $-58.0^{\circ}\text{F} \sim 2498.0^{\circ}\text{F}$
- Microcontroller software controlled, accurate and reliable, no drift
- $^{\circ}\text{C}/^{\circ}\text{F}/\text{K}$  switchable
- Data hold
- MAX/MIN/AVG selection button
- Quick sampling speed and automatic temperature compensation
- Low battery indication and auto power shut off function
- Integrated rear bracket, and with shockproof protective sleeve
- T1 and T2 double-end input: T1-T2, differential temperature measurement

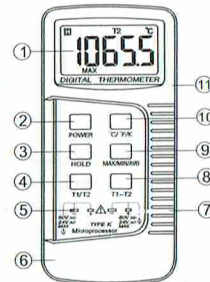
## II. Technical Parameters :

- Display: 5 digit LCD display, maximum display 88888
- Temperature Range:
  - Instrument Body:  $-50.0^{\circ}\text{C} \sim 1370.0^{\circ}\text{C}$ ,  $-58.0^{\circ}\text{F} \sim 2498.0^{\circ}\text{F}$
  - K-Type Thermocouple(TP01):  $-50^{\circ}\text{C} \sim 500^{\circ}\text{C}$ ,  $-58^{\circ}\text{F} \sim 932^{\circ}\text{F}$
- If the temperature of the measured object exceeds the standard K-type thermocouple temperature, it need to reprovision a high temperature K-type thermocouple.
- Resolution:  $0.1^{\circ}\text{F}/0.1^{\circ}\text{F}$

- Accuracy:  $\pm 0.5\%$  (Not including sensor error)
- Storage Environment:  $-10 \sim 50^{\circ}\text{C} (-14 \sim 122^{\circ}\text{F})$ , Humidity  $< 80\%$
- Working Environment:  $-10 \sim 50^{\circ}\text{C} (-14 \sim 122^{\circ}\text{F})$ ,  $0 \sim 70\% \text{Rh}$
- Power: one 9V battery (Can't use the rechargeable battery.)
- Dimension:  $158 \times 75 \times 41 \text{mm}$
- Weight: approx.300g (Including battery)

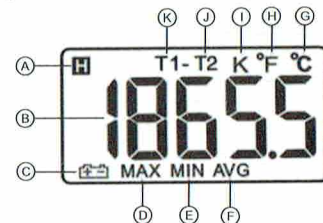
## III. Part Name and Functions:

- 1). LCD display
- 2). POWER button
- 3). HOLD button
- 4). T1/T2 selection button
- 5). K-TYPE thermocouple input maximum input voltage: DC 60V, AC 24V
- 6). Battery cover
- 7). Shockproof protective sleeve
- 8). Differential temperature measurement button
- 9). MAX/MIN/AVG selection button
- 10).  $^{\circ}\text{C}/^{\circ}\text{F}/\text{K}$  selection button
- 11). Integrated rear bracket



## IV. LCD Display Description:

- A. Data hold symbol
- B. Measurement value
- C. Low voltage prompt
- D. Maximum lock symbol
- E. Minimum lock symbol
- F. Average lock symbol
- G. Celsius temperature scale symbol



H. Fahrenheit temperature scale symbol

I. Kelvin temperature scale symbol

J. Measuring probe T2

K. Measuring probe T1

## V. Instructions:

- 1). Open package, remove the instrument then put the battery into the instrument, close the battery cover and install shockproof sheath.
- 2). Press "POWER" button, connected the power, insert the thermocouple is marked by the negative into the instrument, warm up 1 minute. For the convenience of users. There are three temperature mode, (°C/°F/K) press °C/°F/K button, it is switched between Celsius (°C), Fahrenheit (°F) and Kelvin (K).
- 3). Put the other end of the thermocouple in the place that you want to measure, until the display on the instrument is stabilized, at this time, the value display on the instrument's screen is the measured temperature.
- 4). Press the "HOLD" button, the value temperature will be locked, not changed, the display will appear "H" symbol, press "HOLD" again, the "H" will disappear, to continue the normal measurement.
- 5) Press the "MAX/MIN/AVG" button, the display is switched MAX/MIN/AVG, so that users understand the changes of temperature.
- 6). Please put two thermocouples into the T1, T2 port (only one is ok). Press "T1/T2" button, then can be measured the temperature of the two different objects. LCD display T1, the temperature is analyte T1's; LCD display T2, the temperature is analyte T2's. Press "T1 - T2" button, the LCD display T1-T2, (that is, the differential temperature between two different objects) can measure the value of differential temperature between two different objects.
- 7). When you finish the measure, please press "POWER" button turn off the instrument.

## VI. Note:

1. The first turn on the instrument, the instrument response time a little longer, the LCD will display full screen, about 2 seconds will have to enter the normal working state.
2. When the instrument's reading is beyond the measuring range or no thermocouple input, the LCD display "-----".
3. In the MAX/MIN/AVG mode, press "HOLD" button is not effect; in the HOLD mode, press "MAX/MIN/AVG", "T1/T2", "T1-T2" button, the test will be continue.
4. The instrument will turn off automatically after 5 minutes work boot, in order to save electricity.

## VII. Battery Replacement:

- 1). The instrument has a battery power tips, when the battery symbol appears on the left corner of the LCD display, it means the battery electricity is not enough and need to replace a new battery. (with low battery, it will affect the accuracy of the normal use and measurement)
- 2). Remove the Shockproof protective sleeve, open the battery cover, remove the old battery from the battery buckle, according to the power button on the positive and negative installed a new 6F22 9V battery into the battery buckle, installed the battery cover.
- 3). If not using the instrument for a long time, remove the battery to avoid damage the instrument because of the battery leakage. Do not throw the used battery to avoid pollution of the environment.

## VIII. Care and Maintenance:

1. When the thermocouple measure temperature, the instruments should isolate the source of the temperature measured, to ensure the instrument used within the permissible ambient temperature range, so as not to affect the accuracy of measurement.

2. When the instrument is equipped with K-type thermocouple, it must comply with the thermocouple temperature range. The instrument dispensed probe is TP01, the measurement range is -50 ~ 500°C.
3. In order to obtain and ensure high measurement accuracy, the measurement should be warmed up before measured; if the thermocouple instruments are first time inserted, or replaced a thermocouple, the thermocouple plug should be inserted in the instrument input for one minute before measured; if the measured temperature is higher, suggested to use TP02 probe, the measurement range is -50 ~ 750 °C.
4. To avoid beat meter, high-intensity vibration; do not change the instrument of the circuit, if it has fault or problem, please send it to dealer or a professional service department for inspection and repair.
5. The instrument is a precision measuring instrument, in the preservation and use, should pay attention to moistureproof and dustproof, can not use in acid, alkali and other corrosive places and hot, humid places (such as bathroom), so as not to affect the measurement accuracy degree or damage.
6. Use clean soft cloth to wipe the instrument shell.

## IX. Accessories:

- 9V battery (installed) ... 1  
Instruction manual..... 1  
Tp01 probe..... 2