OPERATING INSTRUCTIONS

DUAL INPUT K/J THERMOMETER

802
802U USB & DC Power
802W Wireless
802UW USB & DC Power & Wireless

CE

- Main Display
- Second Display
- Third Display

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

(SECOND DISPLAY)

⑬

(802W/802UW)
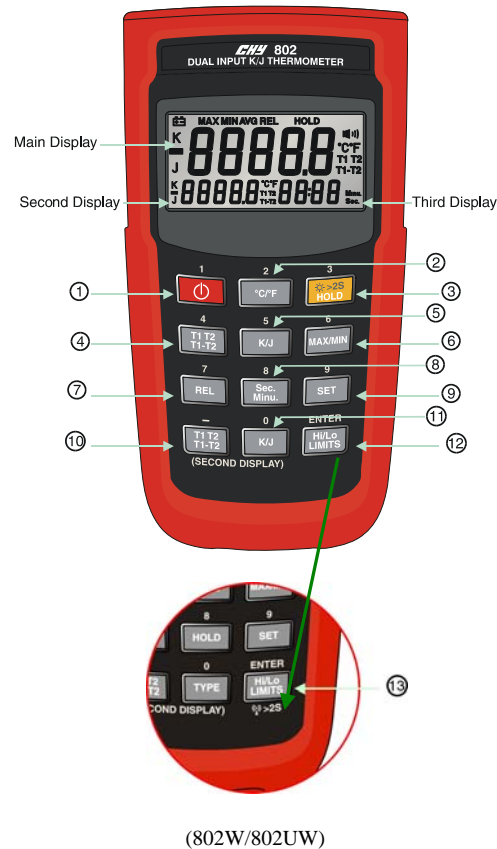
INTRODUCTION

This instrument is a 5 digit, compact-sized portable digital thermometer designed to use external K-type and J type thermocouples as temperature sensor. Temperature indication follows Reference Temperature/Voltage Tables (N.I.S.T. Monograph 175 Revised to ITS-90) for K-type and J-type thermocouples. Two K-type thermocouple are supplied with the thermometer.

SAFETY INFORMATION

It is recommended that you read the safety and operation instructions before using the thermometer.

WARNING
To avoid electrical shock, do not use this instrument when working voltages at the measurement surface over 24V AC or DC.

WARNING
To avoid damage or burns, do not make temperature measurement in microwave ovens.

CAUTION
Repeated sharp flexing can break the thermocouple leads. To prolong lead life, avoid sharp bends in the leads, especially near the connector.

FEDERAL COMMUNICATIONS COMMISSION

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit dif-

ferent from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

WIRELESS NOTE
Wireless receiver must keep a distance at least 40cm from the meter and meter to meter must keep a distance at least 30cm.

SPECIFICATIONS
ELECTRICAL

Temperature Scale: Celsius or Fahrenheit user-selectable.
Measurement Range:
J-TYPE -200°C to 1050°C, (-328°F to 1922°F)
K-TYPE -200°C to 1370°C, (-328°F to 2498°F)
Resolution: 0.1°C or 0.2°F
Accuracy: Accuracy is specified for operating temperatures over the range of 18°C to 28°C (64°F to 82°F), for 1 year, not including thermocouple error.
$\pm(0.05\%$ rdg + 0.3°C) -50°C to 1370°C
$\pm(0.05\%$ rdg + 0.7°C) -50°C to -200°C
$\pm(0.05\%$ rdg + 0.6°F) -58°F to 2498°F
$\pm(0.05\%$ rdg + 1.4°F) -58°F to -328°F
Temperature Coefficient:
0.1 times the applicable accuracy specification per °C from 0°C to 18°C and 28°C to 50°C (32°F to 64°F and 82°F to122°F).
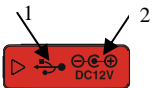**Input Protection:**
24V dc or 24V ac rms maximum input voltage on any combination of input pins.
Maximum Differential Common Mode Voltage (Maximum Voltage between T1 and T2 during measurement): 1volt.
Reading Rate: 1 time per second.

Back Side: (802U/802UW)
1. USB Port
2. DC power JACK(12V)

Wireless Features: (802W/802UW)
Frequency range: 904~927.83MHz
Low current consumption les than 5 to 20mA
Viewable distance 25M

ENVIRONMENTAL
Ambient Operating Ranges:
0°C to 50°C (32°F to 122°F) <80% R.H.
Storage Temperature:
-20°C to 60°C (-4°F to 140°F) <70% R.H.

GENERAL
Display: 5 digit liquid crystal display (LCD).
Overload: "----.-" or "OL" is display.
Battery: 1.5V x 4 PCS (SIZE AAA) UM-4 R03.
Battery Life: 190 hours typical with carbon zinc battery.
Auto power off: The meter key switches inactive for more than 30 minutes, press power key to resume operation.
Dimensions: 160mm(H) x 83mm(W) x 38mm(D)
Weight: Approx. 270g including batteries.
Supplied Wire: 4 feet type "K" thermocouple bead wire (Teflon tape insulated). Maximum insulation temperature 260°C (500°F). Wire accuracy ±2.2°C or ±0.75% of reading (whichever is greater) from 0°C to 800°C.
Input Connector: Accepts standard miniature thermocouple connectors (flat blades spaced 7.9mm, center to center).

OPERATING INSTRUCTIONS

1. "⏻" Power Switch
The "⏻" key turns the thermometer on or off. In the data SET mode, can not power off, must leave data SET mode then power off.

APO function mode
Pressing "⏻" power key > 6 seconds to disable auto-power function, and the display shows "APO OFF".

2. °C/°F Selecting the Temperature Scale
Readings are dual displayed in either degrees Celsius(°C) or degrees Fahrenheit(°F). When the thermometer is turned on, it is set to the temperature scale that was in use when the thermometer was last turned off. To change the temperature scale, press the °C/°F key.

3. ☼>2S HOLD Button (only Main display)
Press the key to enter the Data Hold mode, the "HOLD" annunciator is displayed. When HOLD mode is selected, the thermometer held the present readings and stops all further measurements. Press the ☼>2S HOLD key again to cancel HOLD mode causing thermometer to resume taking measurements. In the MIN/MAX recording mode, press ☼>2S HOLD key to stop the recording. Press ☼>2S HOLD key again to resume recording. (Previously recorded reading is not erased).

Backlight function mode
Pressing the ☼>2S HOLD button over two seconds to turn on and pressing the button again over two seconds to turn off the backlight. The backlight will switch-off automatically after 30 seconds.

4. T1 T2/T1-T2 Main display Input Selection
The input selection indicates which input is selected for main display; T1 thermocouple, T2 thermocouple or the difference between the two thermocouples (T1-T2), when the thermometer is turned on, it is set to T1, when main display input selected T1, then T1 input can select

alternate of thermocouple by pressing K/J key switch.

5. K/J Main display Input Thermocouple Type Select

The K/J key switches the T1 input to select the K-type or J-type thermocouple as input, when main display input selected T1. When the thermometer is turned on, it is set to the type selected that was in use when the thermometer was last turned off.

6. MIN MAX with Time record mode
(only Main display)

Press MIN MAX key to enter the MIN MAX recording mode, (displays the Maximum reading with time, Minimum reading with time and Average reading stored in recording mode). In the this mode the automatic power-off feature is disabled and ⏻ key, °C/°F key, REL key, SET key, Hi/Lo Limits key and main display T1 T2 T1-T2 key, K/J key are disabled. The beeper emits a tone when a new minimum or maximum value is recorded.

Push MIN MAX key to cycle through the MAX, MIN and AVG readings. If an overload is recorded, the averaging function is stopped. In this mode, press HOLD key to stop the recording of readings, all values are frozen, press again to restart recording.

To prevent accidental loss of MIN, MAX and AVG data, in this mode can only be cancelled by pressing and hold down the MIN MAX key for 2 seconds to exit and erased recorded readings.

7. REL Relative mode (only Main display)

Press REL key to enter the Relative mode, zero the display, and store the displayed Reading as a reference value and annunciator REL is displayed. Press REL key again to exit the relative mode. The relative value can also be entered by the user. (See "SET mode" later in this manual). When the desired Relative value has been entered, press REL key to enter the Relative mode, press SET key use set Relative value as a reference value. Press REL key again to exit the relative mode. In the Relative mode, the value (can not $>\pm3000.0$ counts) shown on the LCD is always the difference between the stored reference and the present reading.

8. Sec. Minu. Selecting the Time scale

Read the third displayed (Time) in either second or minute. When the thermometer turned on, it is set to second. To change the Time scale, press sec. Minu. key. Maximum Time reading is 100 hours. If 100 hours is exceeded, reset Time to zero and restart.

9. SET mode (Relative value set, Time set and
Hi/Lo Limits value set)

9.1 Press SET key to enter Relative values SET mode (Press ENTER key can escape relative values set mode), REL set mode. = = = =.= is displayed in main display. Relative value is entered via overlay numbers, then press overlay ENTER key, stored the relative value, enter Time set mode.

9.2 Time set mode, (Press ENTER key can escape Time set mode) =.= = = : = = is displayed in second and third display. Time (hours, minutes, seconds) value is entered via overlay numbers, then press overlay ENTER key. Time starts from set time value, enter Hi/Lo Limits value set mode.

9.3 Hi Limit value set mode, 🔊 is displayed (Press ENTER key can escape Hi Limit value set mode), = = = =.= is displayed in main display, Hi Limit value is entered via overlay numbers, then press overlay ENTER key, stored the Hi Limit value, enter Lo Limit value set mode (Press ENTER key can escape Lo Limit value set mode). = = = =.= is displayed in main display, Lo Limit value is entered via overlay numbers, then press overlay ENTER key, stored the Lo Limit value and exit SET mode.

9.4 When the thermometer is turned on. The Relative set value and Hi/Lo Limits set value that was in use when thermometer was last turned off set values.

10. T1/T2 T1-T2 second display Input Selection

The input selection indicates which input is selected for second display; T1 thermocouple, T2 thermocouple or the difference between the two thermocouples (T1-T2), when the thermometer is turned on, it is set to T2 input can select alternate of thermocouple by second display K/J key switch.

11. K/J Second display Input thermocouple type select

The K/J key switches the T2 input to select the K-type or J-type thermocouple as input, when second display input selected T2. When the thermometer is turned on, it is set to the type selected that was in use when the thermometer was last turned off.

12. Hi/Lo Limits mode (only Main display)

Press Hi/Lo Limits key to enter the Hi/Lo Limits comparative mode, 🔊 is displayed. When input temperature value exceed Hi or Lo Limits value. The beeper emits a continuity pulse tone, press Hi/Lo Limits key again to exit the Hi/Lo Limits mode.

13. WIRELESS MODE: (802W/802UW)

Pressing 📶 key over two seconds to start wireless function and pressing 📶 again for another two seconds to stop wireless function. The wireless mode will shunt down if there is no wireless signal for two minutes.

SET CH/ID to 00,00, pressing Hi/Lo Limits key and ⏻ power key over six seconds when the meter shuts down sand then the meter will set channel and ID to 00,00 status. The second display will appear 00, which means that the channel and ID has been set to 00.

OPERATOR MAINTENANCE

Battery Replacement
1. Power is supplied by 4pcs 1.5V (SIZE AAA) UM-4 R03.
2. The "🔋" appears on the LCD display when replacement is needed. To replace battery remove screw from back of meter and lift off the battery cover.
3. Remove the battery from battery contacts and replace.
4. When not use for long time remove battery.
5. Don't keep in place with high Temp, or high humidity.

Cleaning

Periodically wipe the case with a damp cloth and detergent, do not use abrasives or solvents.

*Software operation manual is in the software disk.