Dual Input
Thermocouple Thermometer
Instruction Manual

Please read this manual before switching the unit on.
Important safety information inside.

Contents   Page

1. Introduction
　　The meter is a handheld temperature measuring instrument via probe and adopt Thermocouple sensor(J, K, T, E, S, R, N), the accuracy is high, easy to use.

2. Features
- Large LCD display with backlight
- User selectable ^oC and ^oF
- Max/Min/Difference/Average
- Low battery indication
- Data hold
- User calibration-offset adjustment (+/- 5^oC)
- High/Low alarms(audio and visual)
- Datalogging function: 16000
- Time Stamp
- Adjustable sampling rate
- USB interface with software
- Auto Power off
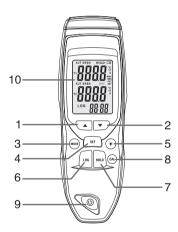- Type J, K, T, E, S, R, N input

3. Specifications:
- Temperature range:
  - Type J: -200 to 1000^oC(-328 to 1832^oF)
  - Type K: -250 to 1372^oC(-418 to 2502^oF)
  - Type T: -250 to 400^oC(-418 to 752^oF)
  - Type E: -260 to 990^oC(-436 to 1814^oF)
  - Type S: -40 to 1760^oC(-40 to 3200^oF)
  - Type R: -40 to 1760^oC(-40 to 3200^oF)
  - Type N: -260 to 1290^oC(-436 to 2354^oF)
- Resolution: $0.1^oF(0.1^oC)$ from148 to 1832°F(–99.9 to 999.9^oC); 1°F(1^oC) outside range
- Accuracy: ±1% of reading + $1.8^oF(1^0C)$ below –148°F(–99.9^oC)
  　　　　　±1% of reading + $0.9^oF(0.5^oC)$ above –148°F(–99.9^oC)

- **Note**: The accuracy is suit for the temperature from 18 ^{o}C to 28 ^{o}C and the humidity less than 80%.
- Sampling rate: three times per two seconds
- Auto Power off: 15 minutes after last operation
- Low battery indication: ▭
- Power supply: 9V battery
- Overrange, Unplug or poor contact probe will be displayed " ---- "

4. Panel Description

1. Up button
2. Down button
3. MAX/MIN/AVG/DIF
4. SET button
5. Backlight
6. Datalogger button
7. Data hold
8. Calibration button
9. Power on/Off
10. LCD display

5. LCD Introduction

1.T1 input type: JKTERSN
2.Freeze the displayed readings
3.Low battery indication
4.Temperature unit:^{0}C/ ^{0}F/ K
5.Max temperature value icon
6.Min temperature value icon
7.Average temperature in real time icon
8.Temperature difference in real time icon
9.Low alarm icon
10.High alarm icon
11.Real time clock(RTC)/remaining memory value
12.Remaining memory icon
13.Datalogger icon
14.T2 temperature value
15.T2 input type: JKTERSN
16.T1 temperature value

6.Operating Instructions

• **Temperature Measurement:**
  1.Insert the temperature probe and press the power button, there is no particular order.
  2.The screen will display the current measured value for T1 and T2.
  3.When the measured environment temperature changes, take a few minutes to stabilize readings.

• **Button operation:**
  1.Up button [▲]
  2.Down button [▼]
  3.[MODE]: MAX/MIN/AVG/DIF display
  Continuously press this key, the screen will appear sequentially MAX / MIN / AVG / DIF icon, when there is MAX / MIN, the screen will show the maximum / minimum value for T1 and T2 Channel, when there is AVG / DIF icon, T1 will display real-time temperature for T1 channel, and T2 will display the average / difference value (the average / difference value are based on real-time temperature values for T1 and T2).

• **P.S:** Pressing this key will not display MAX / MIN / AVG / DIF icon if two probes are not inserted. Only a probe is inserted, it can only display MAX / MIN icon and appears maximum / minimum value for the inserted probe, but cannot show AVG / DIF icon and display average / difference value, another channel will show "----". Only when two probes are inserted, the display will completely show MAX / MIN / AVG / DIF icon and the corresponding value.

• **Note:** Simultaneously press [▲] and [▼] , and then recalculate the maximum and minimum values. The maximum and minimum values of the actual measured temperature will be calculated again when you press the buttons at this moment.

  4.[SET] : set up sampling rate, temperature type and temperature units.
  a).Press SET button, will appear flashing LOG symbol, then display section of the real time clock(RTC) will be changed to show DataLogger sampling rate, then adjust DataLogger sampling rate (1s - 60 min) by by up button [▲] or [▼] down button ;

b).Press the SET button again, the screen will stop flashing LOG symbol, the setting of DataLogger sampling rate is successful, then the temperature type of T1 channel will flash, then select the temperature type by up button [▲] or [▼] down button ;

c).Press the SET button again, the temperature type of T1 channel will stop flashing LOG symbol, the setting of temperature type of T1 channel is successful, then the temperature type of T2 channel will flash, then select the temperature type by up button [▲] or [▼] down button ;

d).Press the SET button again, the temperature type of T2 channel will stop flashing LOG symbol, the setting of temperature type of T2 channel is successful, then temperature units icon (^{0}C/ ^{0}F/ K) will flash, then select temperature units by up button [▲] or [▼] down button ;

e).Press the SET button again , then exit the setup.

• **P.S:** During setup, you can always press the LOG key to start recording data; once you start recording, settings cannot be changed, If need to change, please stop data recording.

5. [☀] : Open or close backlight. The default backlight is on when open, then will be automatically off after 30s. Press the button to open or close backlight. The backlight will be automatically off after 5 minutes if without any operation. Press the button again to open backlight if needed.

6. [LOG] : DataLogger
When the sampling rate is set to 0 second, or the data is full, press this button not start recording data, LOG symbol will flash on the screen for half a second, then disappeared;
At the time of recording data, pressing this button will end data records for 2s; If data is recorded over 15 minutes without any operation, the meter will sleep, sleeping does not affect data logging.

7. [HOLD] : freeze current measured temperature value
The value of maximum and minimum will not be frozen; press the button again to return to normal measurement mode.

8. [CAL] : user calibration

a).Press CAL button for 3s to come into user calibration mode of T1 channel; User calibration interface of T1 channel is as follows:

The upper display shows the measured value of T1 channel, below is to show the user calibration value of T1 channel (positive or negative), then adjust the calibration value by up button [▲] or [▼] down button , the temperature change is 0.1 $^oC/$ ^oF when you press each time.

b).Press CAL button for 3s again to come into user calibration mode of T2 channel (user calibration data of T1 has been saved):

User calibration interface of T2 channel is as follows:

The upper display shows the user calibration value of T2 channel (positive or negative), below is to show the measured value of T2 channel, then adjust the calibration value by up button [▲] or [▼]down button , the temperature change is 0.1 $^oC/$ ^oF when you press each time

• **P.S**: adopting the units ($^oC/$ ^oF) of user calibration mode depend on the units before entering the user calibration mode, if units before calibraion is ^oC, the unit of user calibration is ^oC.

9. Press 🔘 for power on/off

The meter is shutdown when data is being recorded, the recorded data is automatically saved before the shutdown, then the meter will stop the data logging function, if need to record again, then press the power button and LOG button again.

• **Note** : High/Low temperature alarm

When the measured temperature value is higher or lower than the value of high/low temperature that set up, there will be a buzzer, meanwhile, the related icon of the high or low temperature will be displayed.
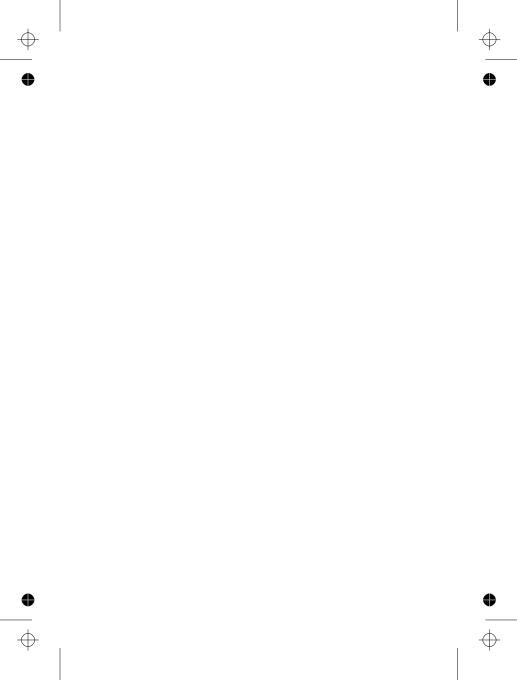
10. [HOLD] [▲] : Open or close alarm
    After pressing the HOLD button for one second, then pressing the UP button, will turn off the alarm, it will show bELL ON or bELL OFF on the screen, and then display the current measured temperature; this function only turned off the buzzer, the screen still show the icon of high or low temperature when there is a alarm. Just press the HOLD button and UP button again to open alarm.

11. [HOLD] [▼] : Delete datalogger
    After pressing the HOLD button for one second, then press DOWN button will delete the stored data, it will show d dAtA CLR on the screen, and then display the current measured temperature.

• **P.S**: When press HOLD button 4 seconds, still no press UP button or DOWN button, the meter will estimate that you want to press the HOLD button, the measured temperature will be frozen, HOLD icon is displayed.

12. Press ⊙ first, and then press [HOLD] for 1s, LCD will show APO ON or APO OFF (APO ON means it will be auto power off after 15 mins without any operation, APO OFF means auto power of turn off).

13. Press ☀ first, and then press [MODE] for 1s, LCD will show remaining memory positions, it will restore temperature display after 2s.

• **Tips:**
  After measuring high temperatures, do not touch the probe immediately, to avoid burns.

7. Maintenance
• Replacement battery:
  If the logo ▱ appears on the LCD display, the battery should be replaced promptly. Open the battery box and remove the old battery, put a new battery (9 volt battery NEDA 1604 or 6F22 or other similar batteries).

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