

Thermometer Instruction manual



Version: 1312-EN-00

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A. Introduction

The thermocouple is one of the most commonly used industrial elements in temperature measuring which is formed when 2 dissimilar metals are joined as a circuit with the thermocouple generated from the temperature difference between the metals. If there is any temperature difference between the thermocouple tip and reference end of the thermocouple, the instrument will display the temperature value versus the thermocouple generated from the thermocouple. On-site measurement and long distance transmission can both be carried out.

This device is able to measure the temperature of the liquid/vapors and surface temperature of a solid object, with a considerable wider measuring range than those of mercury thermometer and alcoholometer. It is suitable to be used both in the high temperature fields of blast furnace and cooking and the low temperature measuring for liquefied hydrogen and liquefied nitrogen etc.

Features:

1. High accuracy: due to direct contact with the measured without intermediate which effects the final output.
2. Convenient operation.
3. Unit Celsius and Fahrenheit unit.
4. Data hold and MAX, MIN, AVG.
5. Human centered design, easy operation.
6. Double display with backlight shows T1/T2 and combination of T1 and T2.
7. To measure the thermocouple of J, K, T, E, N and R type.
8. The electrical compensation function provides the compensation to the thermocouple error so as to improve the overall precision.

B. Warning & Cautions

A Warning identifies conditions and actions that pose hazards to the user. To avoid electrical shock or personal injury, follow the safety guidelines:

- Before using the thermometer inspect the case. Do not use the thermometer if it appears damaged. Look for cracks or missing plastic. Pay particular attention to the insulation around the connectors.

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- Disconnect the thermocouple(s) from the thermometer before opening the case.
- Replace the batteries as soon as the battery indicator " " appears. The possibility of false readings can lead to personal injury.
- Do not use the thermometer if it operates abnormally. Protection may be impaired. When in doubt, have the thermometer serviced.
- Do not operate the thermometer around explosive gas, vapor, or dust.
- Reflective objects result in lower than actual temperature measurements. These objects pose a burn hazard.
- Do not connect to voltages >30 V ac rms, 42 V pk, 60 V dc from earth ground.
- Measurement errors may occur if voltages on the measurement surfaces result in potentials greater than 1 V between the two thermocouples. When potential differences are anticipated between the thermocouples, use electrically insulated thermocouples.
- Use the proper thermocouples, function, and range for your thermometer.
- Do not attempt to recharge the batteries.
- Do not throw batteries into a fire to prevent explosion.
- Match the + and - polarities of the battery with the battery case.

C. LCD display(Figure 1)

1. Maximum, minimum, average
2. Auto power shut off symbol
3. Low battery indication
4. The thermocouple T1-T2
5. The thermocouple T1 and T2
6. The thermocouple Types
7. Reading Hold symbol
8. Temperature Units
9. Primary Display
10. Sub display

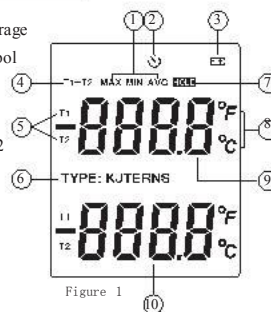


Figure 1

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D. Name and functions (Figure 2)

1. The thermocouple T1 input
2. The thermocouple T2 input
3. LCD Display
4. ON/OFF key
5. Data hold key
6. °C/°F selection key
7. MAX/MIN/AVG key
8. Type selection key
9. T1/T2 and T1-T2 key
10. Battery door

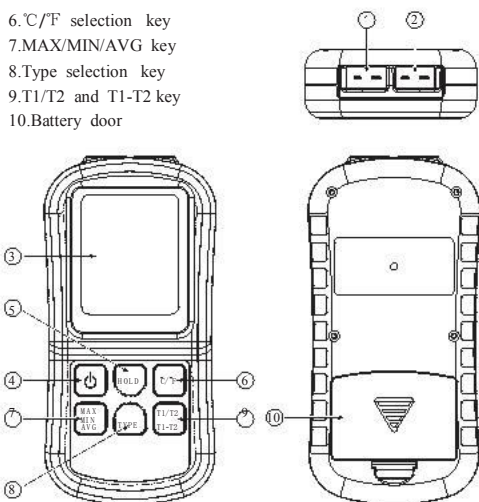


Figure 2

E. Operation

1. ON/OFF key
Press it to turn on/off the unit.

2. Data hold

On the top left of the LCD appears the "HOLD" icon after pressing the HOLD key to hold the reading. Press the HOLD key again to release the hold function.

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3. Unit switch

Press °C/°F key to switch the temperature unit between the °C/°F.

4. MAX/MIN and AVG

- (1) Press the MAX/MIN/AVG key until there is MAX icon appearing on the LCD to get the maximum reading.
- (2) Press the MAX/MIN/AVG key again until there is MIN icon appearing on the LCD to get the minimum reading.
- (3) Press the MAX/MIN/AVG key until there is AVG icon appearing on the LCD to get the average reading.
- (4) Repeat the press the key to show the readings in sequence above.

5. Option of the thermocouple type

Press TYPE key to switch the type of the thermocouple in sequence of K-J-T-E-R-N-S for option.

6. Switch between T1/T2 & T1-T2

The following information in sequence repeatedly: main display T1 & auxiliary display T2 > main display T2 & auxiliary display T1 > main display T1-T2 & auxiliary display T2.

7. Backlight

Press any key to activate the backlight. The backlight will be turned off automatically within 30 seconds if there is no further operation on the key.

8. Automatic shut-off

To save power the device will be turned off automatically if there is no operation on the key within 1 minute. To close this function, hold on pressing the HOLD key to activate the device and the red " " displays on the LCD, and can only manually power-off be used. After power off the device again, this automatic shut-off function will be cancelled again.

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9. battery replacement

when the " " flashes on the LCD indicating the insufficient battery, replace the old ones with 3 fresh 1.5V AAA batteries.

F. Specification

Main unit	
Measuring range	J-type: -20°C to 1200°C (-346°F to 2192°F)
	K-type: -200°C to 1372°C (-328°F to 2501°F)
	T-type: -250°C to 400°C (-418°F to 752°F)
	E-type: -150°C to 1000°C (-238°F to 1832°F)
	N-type: -200°C to 1300°C (-328°F to 2372°F)
R and S-type: 0°C to 1767°C (32°F to 3212°F)	
Resolution	0.1°C/°F < 1.000°; 1.0°C/°F ≥ 1000°
Accuracy	±0.1% + 0.6°C
input	Bi-channel input
Operating Temperature	0°C ~ 40 °C
Storage Temperature	-10 °C ~ 50 °C
Storage Humidity	20~90%
Power supply	3*1.5V AAA Battery
Size	72*29*145.5mm
Weight	159.0g
K-type thermocouple(2pcs included in the package)	
Measuring range	-30~300°C
Accuracy	±1.5%

*If you need the device of other specification please contact the local dealer.

Specific Declarations :
We reserves the right to modify product design and specification without notice .



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