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Dual Input K-Type Thermometer with IR Probe



Operating Instructions

Dual Input K-Type Thermometer with IR Probe

The contact thermometers offer fast response and laboratory accuracy. These thermometers work with two K-type thermocouples and one IR temperature probe as temperature sensors and offer 0.1°C/0.1°F resolution.

Specifications

General Specifications	
Battery	9V
Operating Temperature	0° to 50°C (4° to +122°F) Non-Condensing
Storage Temperature	-10° to +50°C (14° to +122°F)
Temperature Range	
K-Type Thermocouples	-200° to +1372°C (-328° to 2501°F)
IR Temperature	-30° to 550°C (-22° to 1022°F)

Temperature Accuracy	
T1, T2 Above -100°C (-148°F)	±[0.15% rdg + 1°C (1.8°F)]
T1, T2 Below -100°C (-148°F)	±[0.5% rdg + 2°C (3.6°F)]
T1 - T2	±[0.5% rdg + 1°C (1.8°F)]
T3 (IR Temperature)	±[2.0% rdg + 2°C (3.6°F)]
T1 - T3	±[2.0% rdg + 3°C (5.4°F)]
T2 - T3	±[2.0% rdg + 3°C (5.4°F)]
Display Resolution	0.1°C/°F/K < 1000°, 1°C/°F/K > 1000°

Features

- Large backlit display shows any combination of T1, T2, T3, T1-T2, T1-T3, T2-T3, plus MAX, MIN, AVG.
- Relative time clock on MAX, MIN and AVG provides a time reference for major events.
- Electronic Offset function allows compensation of thermocouple errors to maximise overall accuracy.
- Readout in °C, °F or Kelvin (K).
- Auto Power Off mode (Sleep mode) increases battery life.

Button

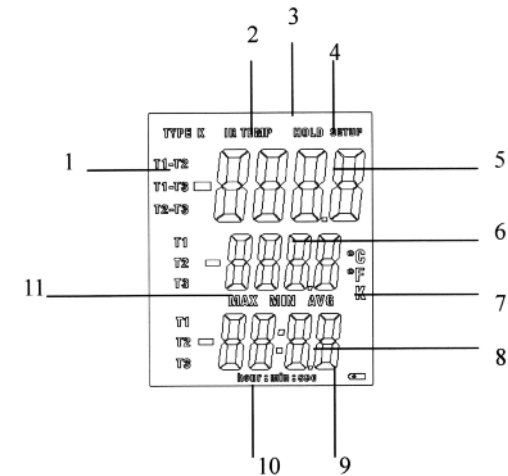
- Press to turn the thermometer on or off.
- Press to step through the maximum, minimum and average of the logged readings.

To exit the MIN/MAX/AVG mode, press the button for 3 seconds to return to normal operation.
- Press to switch between Celsius (°C), Fahrenheit (°F) and Kelvin (K).
- Press to freeze or unfreeze the displayed readings.
- Press to toggle showing the T1, T2, T3 and T1-T2, T1-T3, T2-T3 (differential temperature measurement) in the primary, secondary and tertiary display.
- Press button to turn on the backlight. Press it again to

turn off the backlight. Press and hold the button for 3 seconds to start or exit Setup (see “Changing Setup Options”).

- Press to scroll to the Setup option you want to change.
Press to increase the displayed setting.
- Press to scroll to the Setup option you want to change.
Press to decrease the displayed setting.
- Press to enter a Setup option. Press again to store the displayed setting in memory.

Display Elements



- Thermocouple type
- IR temperature
- The displayed readings do not change
- Entering or exiting Setup
- Primary display: T1, T2, T3, T1-T2, T1-T3 or T2-T3 reading
- Secondary display: MAX, MIN, AVG or offset, T1 or T2, T3 reading
- The temperature units
- Tertiary display: the elapsed time or T1, T2, T3 reading
- Low battery - replace the batteries
- MIN:SEC or HOUR:MIN display
- MAX, MIN, AVG display

Using the Thermocouple(s)

- Plug the thermocouple(s) into the T1 or T2 input connector(s).
- Press to turn on the thermometer. After 1 second the thermometer displays the first reading. If no thermocouple is plugged into the selected input or the thermocouple is “open” the display shows “- - - -”.

Using the IR (Infrared Ray)

- Plug the output of **IR-82** into the T3 (IR input) connector, “T3 - - - -” will show on the screen. If the **IR-82** is not connected “T3 - - - -” is not shown on the display.
- Press the “SCAN” button of **IR-82**, the temperature will show on the screen.

Changing Setup Options

use Setup to change offset, sleep mode settings. The thermometer stores the settings in its memory.

Setup Options

Option	Menu Item	Settings
Offset	Offset	T1 or T2, T3
Sleep Mode	SLP	On (sleep mode on) or OFF (sleep mode off)

Entering or Exiting Setup

When the thermometer is in Setup mode the display shows **SETUP**.

Press and hold button for 3 seconds to start or exit Setup.

Changing a Setup Option

- Press or to scroll to the setup option you want to change.
- Press to indicate that you want to change this setting.
- Press or until the setting you want to use appears on the display.
- Press to store the new setting in memory.

Note: Setup is disabled in MIN/MAX mode.

Offset

The primary display shows the temperature plus the offset and the secondary display shows the offset. You can store individual offsets for T1, T2 and T3.

Auto Power Off Mode

The thermometer enters sleep mode (default). That is to say, the meter will automatically shut off if no button press occurs for 20 minutes.

When the thermometer is in Setup mode, the display shows **SETUP**.

Press or to scroll to the “SLP” page.

Press to indicate “On” or “OFF”.

Press or until the setting you want to use appears on the display.

Press to store the new setting in the memory. On (sleep mode on) or OFF (sleep mode off).

Displaying Temperatures

- Press to select the correct temperature scale.
- Hold or attach the thermocouple(s) to the measurement location. The temperature reading appears in the primary display.
- Press to toggle between showing the T1, T2, T3, T1-T2, T1-T3 and T2-T3 readings in the primary or secondary display.

Notes

The display shows “- - - -” when a thermocouple is not connected.

The display shows **OL** (overload) when the temperature

being measured is outside the thermocouple’s valid range.

Holding the Displayed Readings

- Press to freeze the readings on the display. The display shows **HOLD**.
- Press to toggle showing the T1, T2, T3, T1-T2, T1-T3 or T2-T3 readings in the primary or secondary display.
- Press again to turn off the HOLD function.

Viewing the MIN, MAX and AVG Readings

- Press to step through the maximum (MAX), minimum (MIN) or the average (AVG) readings. The elapsed time since entering MIN/MAX mode or the time at which the minimum or maximum occurred appears in the display.
- Press button for 3 seconds to exit MIN/MAX mode.

Using the Offset to Adjust for Probe Errors

Use the offset option in Setup to adjust the thermometer’s readings to compensate for the errors of a specific thermocouple and IR temperature. The allowable adjustment range is ±5.0°C or ±9.0°F.

- Plug the thermocouple into the input connector.
- Place the thermocouple in a known, stable temperature environment (such as an ice dry well calibrator).
- Allow the readings to stabilise.
- In Setup, change the offset until the primary reading matches the calibration temperature (“Changing Setup Options”).

Replacing the Batteries

- Turn off the thermometer if necessary.
- Loosen the screw and remove the battery door.
- Replace 9V batteries.
- Replace the battery door and tighten the screw.