INSTRUCTION MANUAL

MT630

SINGLE CHANNEL
DIGITAL THERMOMETER

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1. INTRODUCTION

The one input contact thermometers offer fast response and laboratory accuracy. These thermometers work with K-type or J-type thermocouples as temperature sensors, and it has 0.1°C/0.1°F resolution.

2. SPECIFICATIONS

| Function	Range
Battery	AAA x 3
Operating Temperature	0°C to 50°C (4°F to 122°F) **Noncondensing**
Storage Temperature	-10°C to+50°C (14°F to 122°F)
Temperature Range:	
K type thermocouples	-200°C to 1372°C (-328°F to 2501°F)
J type thermocouples	-210°C to 1100°C (-346°F to 2012°F)
Temperature accuracy:	
Tl Above -100°C (-148°F)	±[0.15%rgd + 1°C (1.8°F)]
Tl Blow -100°C (-148°F)	±[0.5%rgd + 2°C (3.6°F)]
Display Resolution	0.1°C; °F; K <1000 1°C / °F / K>1000

3. FEATURES

1. Large backlit display shows any combination of T1, plus MAX, MIN, AVG.
2. Relative time clock on MAX MIN and AVG provides a time reference for major events.
3. Electronic Offset function allows compensation of thermocouple errors to maximize overall accuracy.
4. Work with tow K-type or J-type thermocouples as temperature sensors.
5. Readout in °C, °F or Kelvin (K).
6. Auto Power Off mode (Sleep mode) increases battery life.
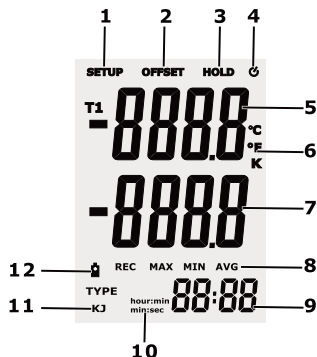
4. BUTTON

1. Press ⏻ to turn the thermometer on or off.
2. When the thermometer is in Setup mode, press ⏎ to enter a setup option and press ⏎ again to store the displayed setting in memory.
3. Press 🌐 button to start or exit Setup. (See "Changing Setup Options.")
4. Press ⏎ to switch between Celsius (°C), Fahrenheit (°F), and Kelvin (K).
5. Press 🔒 to freeze or unfreeze the displayed readings. When the thermometer is in Setup mode, press 🔒 to scroll to the Setup option you want to change or press 🔒 to increase the displayed setting.
6. Press 🔘 to step through the maximum, minimum, and average

readings. When readings, shows the maximum, minimum, and average of the logged readings. To exit the MIN/MAX/AVG mode, press the (MAX MIN) button for 3 seconds to return to normal operation. When the thermometer is in Setup mode, press ⊙to scroll to the Setup option you want to change or press ⊙to decrease the displayed setting.

7. Press (☼) button to turn on the backlight. Press it again to turn off the backlight.

4.1. DISPLAY ELEMENTS

1 - Entering or Exiting Setup.
2 - Offset option.
3 - Freeze the displayed readings.
4 - Auto Power Off mode sign.
5 - Primary Display: T1 reading.
6 - The temperature units.
7 - Secondary Display: MAX, MIN, AVG, or offset.
8 - MAX, MIN, AVG display.
9 - Time display.
10 - Min: sec or hour: min Display.
11 - Thermocouple type K or J.
12 - Low battery.

4.2. USING THE THERMOCOUPLE (S)

1. Plug the thermocouple(s) into the T1 input connector(s).
2. 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 "- - - -".

4.3. CHANGING SETUP OPTIONS

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

4.4. SETUP OPTIONS

Option	Menu item	Settings
Type	TYPE	K or J
Offset	OFFSET	T1
Sleep Mode	SLP On	(sleep mode on) or OFF (sleep mode off)

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4.5. ENTERING OR EXITING SETUP
When the thermometer is in Setup mode, the display shows SETUP.
Press 🔆 to start or exit Setup.

4.6. CHANGING SETUP OPTION
1. Press 🔆 or ▼ to scroll to the setup option you want to change.
2. Press (enter) to indicate that you want to change this setting.
3. Press 🔆 or ▼ until the setting you want to use appears on the display.
4. Press (enter) to store the new setting in memory.
Notes: Setup is disabled in **MAX MIN** mode.

5. OFFSET
The primary display shows the temperature plus the offset and the
secondary display shows the offset. You can store individual offsets for T1.
When the thermometer is in Setup mode, the display shows SETUP.
Press 🔆 or ▼ to scroll to the T1 or T2 offset setup option page. Press 🔆
to indicate the T1 or T2 offset in Secondary Display. Press 🔆 or ▼ until the
setting you want to use appears on the display (fig.1). Press (enter) to store
the new setting in memory.

fig1   fig2

6. AUTO POWER OFF MODE
The thermometer enters sleep mode (default). That is to say, the meter will
automatically shut off after 20 minutes 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 (enter) to indicate "ON" or "OFF". Press 🔆 or 🔆
until the setting you want to use appears on the display (fig.2). Press (enter) to store
the new setting in memory. ON (sleep mode on) or OFF (sleep mode off).

7. MEASURING TEMPERATURES
7.1. CONNECTING A THERMOCOUPLE
To change the thermocouple type, see "Changing Setup Options."
The North American ANSI Color Code is:

Type	J	K
Color	Color	Yellow

1. Plug a thermocouple into the input connector(s). (Make sure that the polarity is correct.)
2. Set the thermometer for the correct thermocouple type.

7.2. DISPLAYING TEMPERATURES
1. Press (°F/°C) to select the correct temperature scale.
2. Hold or attach the thermocouple(s) to the measurement location. The temperature reading appears in the primary 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.

7.3. HOLDING THE DISPLAYED READINGS
1. Press (HOLD) to freeze the readings on the display. The display shows HOLD.
2. Press (HOLD) again to turn off the HOLD function.

7.4. VIEWING THE MIN, MAX, AND AVG READINGS
1. Press (MAX) 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 on the display.
2. Press (MAX) button for 3 seconds to exit MAX, MIN and AVG mode.

7.5. 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 the thermocouple and IR temperature. The allowable adjustment range is ±5.0°C or ±9.0°F.
1. Plug the thermocouple into the input connector.
2. Place the thermocouple in a known, stable temperature environment (such as an ice dry well calibrator).
3. Allow the readings to stabilize.
4. In Setup change the offset until the primary reading matches the calibration temperature. ("Changing Setup Options.")

8. REPLACING THE BATTERIES
1. Turn off the thermometer if necessary.
2. Loosen the screw and remove the battery door.
3. Replace 1.5V batteries.
4. Replace the battery door and tighten the screw.

9. Battery Instruction
If the meter will not be in use for a long period of time, remove the batteries immediately. Batteries have the potential to leak acid, this acid is harmful and can cause corrosion inside the meter.

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