

*Pt 100 + Type K/J/R/E/T*

# THERMOMETER

**Model : TM-936**

*ISO-9001, CE, IEC1010*



**LUTRON ELECTRONIC**

*The Art of Measurement*

Pt 100 ohm + Type K/J/R/E/T, 2 in 1

# THERMOMETER

Model : TM-936

## FEATURES

- \* 2 in 1, Pt 100 ohm thermometer + Thermocouple type J/K/R/E/T ) thermometer.
- \* Microcomputer circuit with high performance.
- \* Wide temperature measuring range.
- \* Build in °C & °F select button on the front panel.
- \* 0.1 degree resolution for Pt 100 ohm & type K/J/T/E.
- \* Data hold function for storing the desired value .
- \* Memory function to record the maximum & minimum reading.
- \* Build in a REL button, useful for relative measurement.
- \* Sensor select button on the front panel, easy to change different type probe.
- \* 4 wires PT 100 ohm probe input, 0.00385 alpha coefficient, meet DIN IEC 751, high precision.
- \* Thermocouple probe accept 5 different types : type K, type J, type R, type T, type E.
- \* RS 232 data output, easy to connect with computer.
- \* Optional data acquisition software for data record.
- \* Auto power off saves battery life.
- \* Built-in low battery indicator.
- \* Heavy duty & compact housing case with stand.
- \* Powered by 006P DC 9V battery.

## GENERAL SPECIFICATIONS

|                       |                                                                                                                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Display               | 51 mm x 32 mm supper large LCD display, 15 mm ( 0.6" ) digit size.                                                                                                                                                           |
| Sensor Type           | 1. Platinum Pt 100 ohm ( 0.00385 alpha coefficient, meet DIN IEC 751 )<br>2. Thermocouple probe<br>@ Thermocouple type K<br>@ Thermocouple type J<br>@ Thermocouple type T<br>@ Thermocouple type E<br>@ Thermocouple type R |
| Functions             | °C, °F, Data hold, Memory ( Max., Min. ), Relative measurement,                                                                                                                                                              |
| Resolution            | 0.1 degree or 1 degree.                                                                                                                                                                                                      |
| Circuit               | Exclusive microcomputer circuit, the software build in linearity correction function instead of the traditional hardware circuit.                                                                                            |
| Probe Input Socket    | Pt 100 ohm probe :<br>DIN type 4 pin socket.<br>Thermocouple couple probe :<br>Standard 2 pin thermocouple socket.                                                                                                           |
| Sampling Time         | Approx. 1 second.                                                                                                                                                                                                            |
| Hold Function         | To freeze the display reading value.                                                                                                                                                                                         |
| Memory Recall         | Memorize the Maximum, Minimum reading.                                                                                                                                                                                       |
| Offset Adjustment     | Available for thermocouple thermometer, adjustment by pushing button on front panel.                                                                                                                                         |
| Over Indication       | Show " - - - - ".                                                                                                                                                                                                            |
| Data Output           | RS232 PC serial interface.                                                                                                                                                                                                   |
| Power Supply          | Alkaline or heavy duty type, DC 9V battery, 006P, MN1604 ( PP3 ) or equivalent.                                                                                                                                              |
| Power Consumption     | Approx. DC 11 mA.                                                                                                                                                                                                            |
| Operating Temperature | 0 to 50 °C (32 to 122 °F).                                                                                                                                                                                                   |
| Operating Humidity    | Less than 80% RH.                                                                                                                                                                                                            |
| Size                  | 195 x 68 x 30 mm ( 7.6 x 2.6 x 1.2 inch ).                                                                                                                                                                                   |

|                        |                                                                                                                                                                                                     |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                 | 220 g/0.48 LB.                                                                                                                                                                                      |
| Standard               | Operational manual..... 1 PC.                                                                                                                                                                       |
| Accessory              |                                                                                                                                                                                                     |
| Optional & accessories | Thermocouple couple ( Type K ) probe :<br>Model : TP-01, TP-02A, TP-03, TP-04.                                                                                                                      |
| Temp. Probe            | Pt 100 ohm probe : Model : TP-100<br>USB cable<br>Model : USB-01<br>RS232 cable<br>Model : UPGB-02<br>Carrying case, CA-05A, CA-03<br>Application software, windows version.<br>Model : SW-U801-WIN |

## ELECTRICAL SPECIFICATIONS

### A. Thermocouple ( type K/J/R/E/T ) Thermometer

| Sensor Type | Resolution | Range               | Accuracy             |
|-------------|------------|---------------------|----------------------|
| Type K      | 0.1 °C     | -50.0 to 1300.0 °C  | ± ( 0.2 % + 0.5 °C ) |
|             |            | -50.1 to -100.0 °C  | ± ( 0.2 % + 1 °C )   |
|             | 0.1 °F     | -58.0 to 2372.0 °F  | ± ( 0.2 % + 1 °F )   |
|             |            | -58.1 to -148.0 °F  | ± ( 0.2 % + 1.8 °F ) |
| Type J      | 0.1 °C     | -100.0 to 1150.0 °C | ± ( 0.2 % + 0.5 °C ) |
|             |            | -50.1 to -100.0 °C  | ± ( 0.2 % + 1 °C )   |
|             | 0.1 °F     | -58.0 to 2102.0 °F  | ± ( 0.2 % + 1 °F )   |
|             |            | -58.1 to -148.0 °F  | ± ( 0.2 % + 1.8 °F ) |
| Type T      | 0.1 °C     | -50.0 to 400.0 °C   | ± ( 0.2 % + 0.5 °C ) |
|             |            | -50.1 to -100.0 °C  | ± ( 0.2 % + 1 °C )   |
|             | 0.1 °F     | -58.0 to 752.0 °F   | ± ( 0.2 % + 1 °F )   |
|             |            | -58.1 to -148.0 °F  | ± ( 0.2 % + 1.8 °F ) |
| Type E      | 0.1 °C     | -50.0 to 900.0 °C   | ± ( 0.2 % + 0.8 °C ) |
|             |            | -50.1 to -100.0 °C  | ± ( 0.2 % + 1 °C )   |
|             | 0.1 °F     | -58.0 to 1652.0 °F  | ± ( 0.2 % + 1.5 °F ) |
|             |            | -58.1 to -148.0 °F  | ± ( 0.2 % + 1.8 °F ) |
| Type R      | 1 °C       | 0 to 600 °C         | ± ( 1 % + 5 °C )     |
|             |            | 601 to 1700 °C      | ± ( 1.5 % + 5 °C )   |
|             | 1 °F       | 32 to 1112 °F       | ± ( 1 % + 10 °F )    |
|             |            | 1113 to 3092 °F     | ± ( 1.5 % + 10 °F )  |

Remark :

- Accuracy value is specified for the meter only.
- Accuracy is tested under the ambient temperature within  $23 \pm 5^{\circ}\text{C}$ .
- Linearity Correction :  
Memorize the thermocouple's curve into the intelligent CPU circuit.

### B. Platinum PT 100 ohm Thermometer

| Resolution | Range               | Accuracy             |
|------------|---------------------|----------------------|
| 0.1 °C     | -200.0 to 850.0 °C  | ± ( 0.2 % + 0.5 °C ) |
| 0.1 °F     | -328.0 to 1562.0 °F | ± ( 0.2 % + 1.0 °F ) |

Remark :

- Accuracy value is specified for the meter only.
- Accuracy is tested under the ambient temperature within  $23 \pm 5^{\circ}\text{C}$ .
- Linearity Correction :  
Memorize the Pt 100 ohm's curve into the intelligent CPU circuit.
- Pt 100 probe input, 0.00385 alpha coefficient, meet DIN IEC 751.
- Input socket : DIN 4 pin socket.
- 4 wires Pt 100 ohm probe ( model : PT-100 ) is optional Temp. probe.