*all in one*

# THERMOMETER

## Model : PTM-816

Your purchase of this METER marks a step forward for you into the field of precision measurement.

Although this METER is a complex and delicate instrument, its durable structure will allow many years of use if proper operating techniques are developed. Please read the following instructions carefully and always keep this manual within easy reach.

# OPERATION MANUAL

# TABLE OF CONTENTS

# 1. FEATURES

* Heavy duty and all in one pen type thermometer.
* ℃/℉, 0.1 degree.
* Meter can default the measuring unit to ℃ or ℉.
* Two type display, normal or reverse, easy for
  operation.
* IP67, water proof and protection.
* Data hold to freeze the display value.
* Bright LCD display.
* Microprocessor circuit ensures high accuracy and
  provides special functions and features.
* Operates from DC 1.5V ( UM4/AAA ) x 4 PCs batteries.
* Durable, long-lasting components, enclosed in strong,
  compact ABS-plastic housing.

# 2. SPECIFICATIONS

### 2-1 General Specifications

| Display | LCD size : 28 mm x 19 mm. |
|---|---|
| Temp. unit | ℃ or ℉ with default. |
| Circuit | Custom one-chip of microprocessor LSI circuit. |
| Temp. Sensor | Type K thermocouple. |

| | |
|---|---|
| Data Hold | Freeze the display reading. |
| Sampling Time | Approx. 1 second. |
| Protection | IP67, water proof. |
| Operating Temperature | 0 to 50 ℃. <br> *Meter only.* |
| Operating Humidity | Less than 80% R.H. <br> *Meter only.* |
| Power Supply | DC 1.5 V battery ( UM4/AAA ) x 4 PCs, |
| Power Current | Approx. DC 6.5 mA |
| Weight | 142 g/ 0.31 LB.   @ Battery is included. |
| Dimension | *Meter :* <br> 150 x 40 x 40 mm ( 5.9" x 1.6" x 1.6" ). <br> *Temp. Probe Sensing Head :* <br> 70 mm x 3.2 mm Dia. |
| Accessories Included | *  Instruction manual..................1 PC <br> *  Temp. probe protection <br>    cover....................................1 PC |
| Optional Accessory | *  Soft carrying case with sash <br>    ( 210 x 80 x 50 mm ), Model : CA-52A |

## 2-2 Electrical Specifications    (23± 5 ℃)

| Resolution | Range | Accuracy |
|------------|-------|----------|
| 0.1 ℃ | -40.0 to 230.0 ℃ | ± ( 0.4 % + 0.8 ℃ ) |
| 0.1 ℉ | -40.0 to 446.0 ℉ | ± ( 0.4 % + 1.5 ℉ ) |
| * Above specification tests under the environment RF Field Strength less than 3 V/M & frequency less than 30 MHz only. | | |

# 3. FRONT PANEL DESCRIPTION
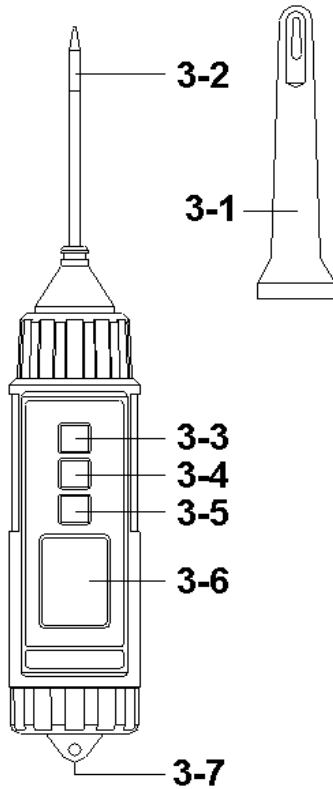


Fig. 1

3-1 Temp. Probe Cover
3-2 Temp. Probe Sensing Head
3-3 Power Button
3-4 Hold Button
3-5 Display Reverse Button
3-6 LCD Display
3-7 Battery Compartment/Cover

# 4. MEASURING PROCEDURE

## *4-1 Probe installation*

" Temp. Probe Sensing Head " ( 3-2, Fig. 1 ) is packed sepeartely with the main meter's body.

Before the measurement, should install the " Temperature Probe " into the meter's body, the installation procedures please refer to the following Fig. 2.
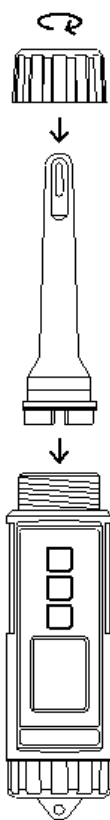


Fig. 2

### 4-2 Temperature measurement

1) Turn on the meter by pressing the " Power Button "
   ( 3-3, Fig. 1 ) momentarily.

   * Press the " Power Button " ( 3-3, Fig. 1 )
     momentarily again will turn off the meter.

2) Insert the '" Temp. Probe Sensing Head " ( 3-2, Fig. 1 )
   into the material that intend to measure the temperature.
   The " Display " ( 3-6, Fig. 1 ) will show the temperature
   value that sensing from the probe's head.



   * The max. measuring operation
     temperature of the " Temp. Probe
     Sensing Head " ( 3-2, Fig. 1 ) is
     230 ℃, please do not measure the
     Temp. value over it.

   * After finish the measurement, install  the
     " Temp. Probe Cover " ( 3-1, Fig. 1 ) into the
     " Temp. Probe Sensing Head " ( 3-2, Fig. 1 ).

### 4-3 Data Hold

1) During the measurement, press the " Hold Button "
   ( 3-4, Fig. 1 ) momentarily to hold the measured
   value. The LCD will show a  " HOLD " symbol.
2) Press the" Hold Button " once again to release the
   data hold function.

### 4-4 Display Reverse

During the measurement, press the " Display Reverse
Button  " ( 3-5, Fig. 1 ) once will reverse the display
direction for the user convenience.

   * Press the " Display reverse button " once again will
     return to the normal display.

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Normal display



Reverse display
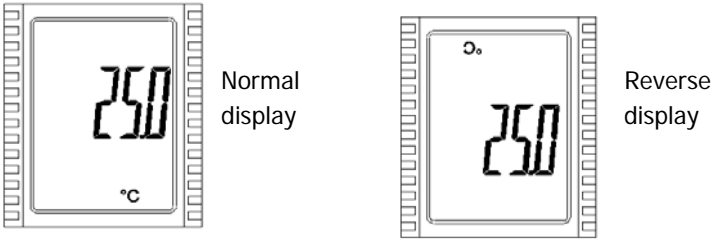
### 4-5 Change the ℃, ℉ unit

1) Refer to Fig. 3 , open the " Battery Cover " ( 3-7, Fig. 1 ), use the finger ( middle finger ) to hold the battery cover and let the snap contact the batteries completely.

2) Turn on the meter by pressing the " Power Button " ( 3-3, Fig. 1 ) momentarily.
   Press the " ℃, ℉ Button " ( Fig. 3 ) momentarily will switch the Temp. unit from " ℃ to ℉ " or " ℉ to ℃ ".

3) After the Temp. unit is selected, then release the finger from the battery snap and install the " Battery Cover " ( 3-7, Fig. 1 ) again..
   Now the Temp. unit is selected and with default.
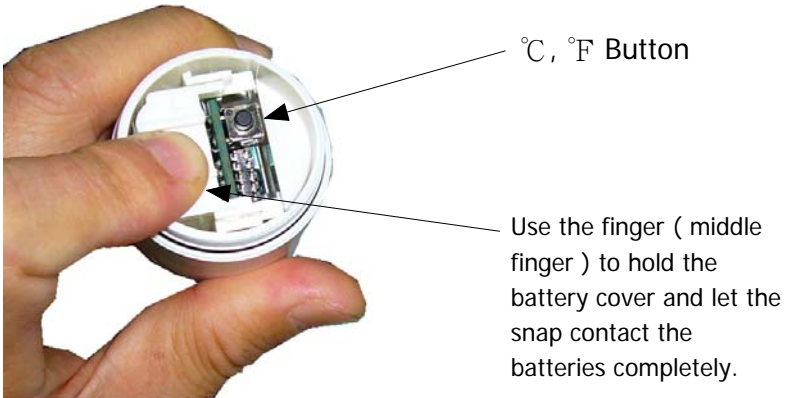   If power on the meter again, the selected Temp. unit will present.

Fig. 3



℃, ℉ Button

Use the finger ( middle finger ) to hold the battery cover and let the snap contact the batteries completely.

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# 5. BATTERY REPLACEMENT

* Replace the batteries when the left corner of the LCD displays the low battery icon "  ", using 4 fresh 1.5 V ( UM4, AAA ) batteries.
* To change the batteries, open ( rotate clockwise direction ) the " Battery Cover " ( 3-7, Fig. 1 ).
* Make sure the " Battery cover " (3-7, Fig 1) is secured after changing the batteries.

0710-PTM816