

# OPERATION MANUAL

## IP67 WATERPROOF RTD THERMOMETER



■ 8821

■ 8822

## INTRODUCTION

Thank you for purchasing this portable IP67 waterproof RTD thermocouple meter. The meter measures temperature fast with accuracy and is an ideal instrument for most measuring applications.

## FEATURES

- ▲ Rigid housing design and the real time response RTD probe
- ▲ Fast data updating in 1 second time interval
- ▲ Complete set IP67 waterproof and washable in washing machine
- ▲ Follow HACCP principle to check food safety
- ▲ Green/Red dual color backlight to indicate temperature hazards
- ▲ Countdown timer function included
- ▲ Hold function to freeze current reading
- ▲ One touch to display temperature change from baseline
- ▲ Temperature unit °C/°F switchable
- ▲ Non-sleep mode function available
- ▲ Big LCD for easy reading
- ▲ Max./Min. reading display
- ▲ Temperature high alarm threshold programmable
- ▲ 99 points data records w/ review function (8822 only)

## MATERIAL SUPPLIED


This package contains:

- ✓ Meter x 1
- ✓ AAA battery x 6
- ✓ Operation manual x1
- ✓ Temperature probe x1
- ✓ Hard carrying case x1
- ✓ Stainless probe holder x1

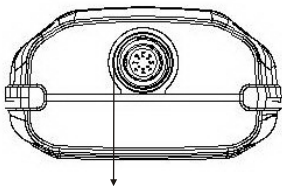
## POWER SUPPLY

The meter is powered by 6pcs AAA batteries.

Install the batteries into the battery compartment on the rear side and make sure they are in correct polarity and good contact.

When battery voltage gets low,  will appear on the LCD as a replacement reminder.

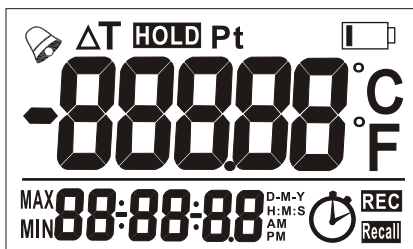
## PROBE & CONNECTOR



Probe connect port

There is guide way design between the probe plug and the meter connect to help you easily install the probe by plugging the probe with the aligned guide way, then put the probe guard on and screw it tight moderately.

## LCD DISPLAY



### Symbols

UpperLCD	Temperature reading
LowerLCD	Real time display
Pt	RTD (Pt) type thermo probe
HOLD	Readings are frozen unchanged
MIN/MAX	Minimum/Maximum readings
	Low battery indicator
	Temperature alarm indicator
$\Delta T$	Differential Temperature
$^{\circ}C/^{\circ}F$	Celsius/Fahrenheit of temp.
REC	Manual logging
RECALL	Recall mode
	Count down timer
D-M-Y	Day-Month-Year
H:M:S	Hour-Minute-Second
AM	AM
PM	PM

## KEYPAD

- Turns on and off the meter.  
-Long press entering setup mode while meter is on.
- Turn on with to become non-sleep mode
- In 8822, press to enter recall mode.  
-Exits setup/recall /max/min page.
- Press to show differential temperature.  
-Press again to return to normal.



- Freezes the current readings.
- Selects unit or increases value in setup.
- Cancels data hold function.



- In 8822, press to record reading.
- Selects unit or decreases value in setup.




- Activates MIN,MAX function.
- Saves and finishes settings.





- Activates timer
- Stop timer

## OPERATION

### POWER ON/OFF

Press  to turn the meter on and off. At power up, it emits a short beep and performs 3 seconds full display, then enters normal mode with temperature reading displayed.

### AUTO POWER OFF

The meter turns off automatically after 10 minutes of inactivity. To override the function, while the meter is off, hold down  and  for 2 seconds to turn on the meter until “n” appears.(Fig.1)

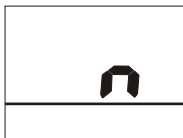













Fig.1


### DATE & TIME

The LCD can show the real time. While the meter is on, press  for 2 seconds to enter setup mode. Press  or  to select P4.0 and press  to enter.

Press  or  to adjust the number of year then press  to save. Repeat above to finish month and date setup.

Press  to enter time format selection. 12 & 24 hour time formats are selectable. Press  or  to choose format and press  to save.

Continue to setup hour/minute/second by press  or  to adjust the number and then press  to save.

After setting up, press  to return to normal display. You can now see the correct date & time display on LCD.

## TAKING MEASUREMENT

The meter starts measurement when power on and update reading quickly. (Fig.2)

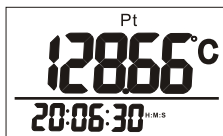



Fig.2

## DATA HOLD

In normal display mode, press  to freeze the readings, "HOLD" appears on top of LCD (Fig.3). All current readings are kept unchanged.


Press  again to cancel the hold function.



Fig.3

## HACCP REMINDER

Since power on, red or green full display backlight flashes every 5 seconds to indicate temperature hazards.

While the measured temperature is above  $4^{\circ}\text{C}$  ( $39.2^{\circ}\text{F}$ ) and below  $60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ ), red color backlight flashes

While the measured temperature is below  $4^{\circ}\text{C}$  ( $39.2^{\circ}\text{F}$ ) or above  $60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ ), green color backlight flashes

## DIFFERENTIAL TEMPERATURE

In normal display mode, press  $\Delta T$  to activate the temperature change display function. At the moment of pressing  $\Delta T$ , temperature value is taken as the base value. Afterward, the displayed readings is the temperature difference between baseline and existing temp. of measuring object. (Fig.4)

In case of fast temperature change, suggest to press  $\text{HOLD}$  first to freeze a value as baseline and then press  $\Delta T$  to activate the temperature change display function.

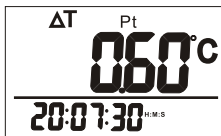



Fig.4

## MIN,MAX REVIEW

This thermometer allows you to check the minimum, maximum value counted from the moment you press the  $\text{Mx/Mn}$  key.

Under normal mode, each press of , it displays MAX, MIN value in sequence. (Fig.5~6) on the bottom LCD. At the meantime, the real time measured temp. value is continuing updating on top LCD.


To return to normal mode, press  to escape.



Fig.5



Fig.6

### RECORDING-8804 ONLY

The meter features 99 point memories.



In normal or hold mode, Press  key to record, **REC** icon flashes for about 3 seconds. The main display shows the memory serial number, at most 99 points .( Fig. 7)




Fig.7

If the reading changes quickly, you can press  to freeze the reading before manually recording the data.

The manually recording function is enabled in temperature difference mode.

### 99 MEMORIES RECALL-8822 ONLY

The meter features 99 point memories review function.

In normal mode, press  key and then **Recall** icon appears.



Press  or  to scroll the memories. The memory serial number displays on main LCD first and reading comes after. (Fig. 8&9)




Fig.8











Fig.9



The time displayed in memory recall mode is the recording time of this memory.

To escape the memory recall mode, press  key to leave and return to normal display.

## COUNT DOWN TIMER

Besides the temperature hazards LCD backlight reminder, this thermometer is equipped with timer function allow you to setup the count down timer as a reminder to process object properly.

First, setup the timer. Press  to enter setup mode. Press  or  to choose P1.0. Press  to enter. Press  or  to adjust the timer value you need from hour to second. Then, press  to save. Press  to escape.

To start the count down timer, press  to start. (Fig.10). To stop the timer, press . There is no pause function in this meter, once you starting again after stopping a timer counting, the counting will start over again.

Once time is up, "🕒" will flash on bottom LCD (Fig.11) and emits beeps until any one of the keys are pressed to stop.



Fig.10



Fig.11

## ALARM

🔔 appears on LCD when alarm function is activated. The meter features audible & flashing icon alarm to give warnings when measured temperature exceeds the limit. It emits beeps when goes over the set value and stops only when the readings fall below the set value or press any key can stop the beeps.

However, flashing icon only stops when the value return to normal range.

(Fig.12)

Alarm beeps & flashes again when value goes over the limit one more time.

To setup the alarm, press **ON/OFF SET** to enter setup mode. Press **MEMO** or **HOLD** to choose P2.0. Press **Mx/Mn** to enter. Press **MEMO** or **HOLD** to enable (YES) or disable (NO) the alarm function. Then, press **MEMO** or **HOLD** to adjust the alarm threshold value you need. Press **Mx/Mn** to save. Press **RECALL ESC** to escape.

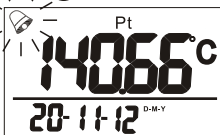










Fig.12

## SETUP

When the meter is on, hold down  for more than 2 sec to enter setup mode. To exit setup, press  in P1.0 ~ P4.0 and it returns to normal mode.

### P1.0: COUNT DOWN TIMER

When entering setup mode, P1.0 and “” (Fig.13) are displayed on LCD. Press  to go into. Press  or  to adjust the timer value you need from hour to second. (Fig.14) Then, press  to save. Press  to escape.

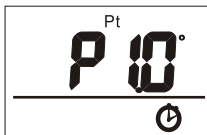


Fig.13

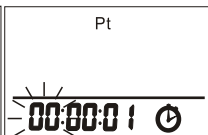










Fig.14

### P2.0: TEMP. ALARM

When entering setup mode, P2.0 and “” (Fig.15) are displayed on LCD.

Press  to enter. Press  or  to enable (YES) or disable (NO) the alarm function. (Fig.16). Then, press  or  to adjust the alarm threshold value you need. The adjustable scale is every 1 degree. Press  to save. Press  to escape.

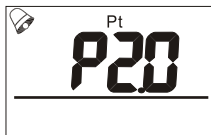


Fig.15

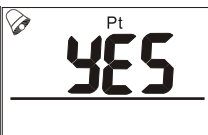



Fig.16

### P3.0 TEMPERATURE UNIT

When entering setup mode, P3.0 is displayed on the LCD.

Press  to go into to decide the temp. unit.

The current set will display on LCD (Fig.17).

Press  or  to choose °C or °F and press  to confirm.

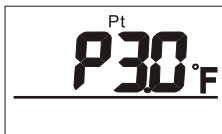










Fig.17


### P4.0:REAL TIME CLOCK

Press  go into P4.0 for setting the real time clock of this meter.

Press  or  to adjust the number of year then press  to save. Repeat above to finish month and date setup. (Fig.18)

Press  to enter time format selection. 12 & 24 hour time formats are selectable. Press  or  to choose format and press  to save.

Continue to setup hour/minute/second by press  or  to adjust the number and then press  to save. (Fig.19)

After setting up, press  to return to normal display. You can now see the correct date & time display on LCD.

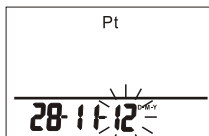


Fig.18

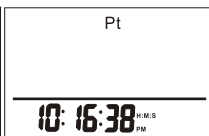


Fig.19

### **P5.0:MEMORY CLEAR (8822only)**

Press  go into P5.0 to clear the manually logged data.


Press  or  to choose NO or YES and press  to confirm.



Fig.20

## **TROUBLESHOOTING**

### **? Can't power on**

Press  for more than 0.3 seconds and try again. Check whether batteries are in good contact and correct polarity, You may also remove the batteries for > 10 mins and then install the batteries again.

### **? Fixed readings**

Check whether data hold function was activated. (HOLD icon at the top)

### **? Slow response**

Check whether the probe is well connected.

### **? Error messages**

- E05: Probe is unplugged.
- E02: The value is under range.
- E03: The value is over range.
- E31: Temperature sensor or AD damaged.
- E32: Memory IC damaged.

## SPECIFICATION

Model	8821	8822
Measuring Range	-100~300°C(-148~572°F)	
Resolution	0.01°C/0.01°F	
Accuracy (under 18~28°C ambient temp.)	+/- 0.15°C	
IP rating	IP 67	
Temp. Response time	180 seconds typical	
LCD update time	every second	
LCD size (mm, HxW)	54 x 32.5	
Probe size(mm)		
Length	150	
Diameter	3.2	
Handle length(mm)	100	
Cable length(mm)	1100	
Probe Weight	~50g	
Operating temp.	0~50°C	
Operating RH%	Humidity < 80%	
Storage temp.	-20~50°C	
Storage RH%	Humidity < 90%	
Dimension(mm,LxWxT)	169 x 78.3 x 34.4	
Weight	~200g	
Battery	6pcs AAA battery	
Standard Package	Meter, Pt probe, stainless holder, battery, manual	
Optional Accessory	Custom made Pt probes are available upon request	

## **WARRANTY**

The meter is warranted to be free from defects in material and workmanship for a period of one year from the date of purchase. This warranty covers normal operation and does not cover battery , misuse , abuse , alteration , tampering , neglect , improper maintenance , or damage resulting from leaking batteries . Proof of purchase is required for warranty repairs . Warranty is void if the meter has been opened

## **RETURN AUTHORIZATION**

Authorization must be obtained from the supplier before returning items for any reason . When requiring a RA (Return Authorization) , please include data regarding the defective reason, the meters are to be returned along with good packing to prevent any damage in shipment and insured against possible damage or loss.

## **Accuracy, the Zenith of Measuring / Testing Instruments !**

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Thermometer  
Anemometer  
Sound Level Meter  
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K type Thermometer  
K.J.T. type Thermometer  
K.J.T.R.S.E. type Thermometer  
pH Meter  
Conductivity Meter  
T.D.S. Meter  
D.O. Meter  
Saccharimeter  
Manometer  
Tacho Meter  
Lux / Light Meter  
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**2015.07.V02**