JENCO®
VisionPlus

Operation Manual

PorTable Temperature Meter

7810

CONTENTS

GENERAL INTRODUCTION

Thank you for selecting the 7810 meter. The 7810 is a precision tool that measure temperature. A built-in microprocessor stores, calculates and compensates for K, J and T type temperature probe.

This unit has a waterproof IP67 case. The touch mode keys are highly reliable with tactile and audio feedback. This meter uses four "AAA" batteries. The resetting of parameters are not required when power is restored.

The front of the meter has a large LCD that displays temperature and time/date simultaneously along with user prompts and type indicators.

The unit is also equipped with a non-volatile memory allowing the user to store 50 different sets of readings. This unit will assign a site number for each set of reading stored, so the user can review the data easily.

Other features include long battery life and 50/60Hz AC noise rejection. This meter is user-friendly for field, industrial and laboratory applications.

INITIAL INSPECTION

Carefully unpack the unit and accessories. Inspect for damages made in shipment. If any damage is found, notify your **Jenco** representative immediately. All packing materials should be saved until satisfactory operation is confirmed.

WATER PROOF

Though the 7810 meter is housed in a watertight case, **DO NOT** use it underwater. The watertight case prevents permanent damage to the unit if accidentally dropped into non-corrosive solutions. Follow these steps immediately if the unit is immersed in any solution:

1. Rinse unit carefully with distilled water. After rinsing and drying, inspect and clean connectors to remove all contaminants that may affect probe connections.

2. Wait for the unit and probe to dry completely before resuming operation.

3. If the unit does not function correctly after steps1 and 2, call JENCO for possible repair or replacement (see Warranty).

INSTALLING THE BATTERIES

The 7810 meter is packaged with 4 "AAA" alkaline batteries required for operation. To insert the batteries into the meter, follow the procedure outlined below.

1. Use a screw driver to remove the two screws and battery cover to expose the battery compartment. (Figure 1.)

2. Note the polarity and insert the batteries into the battery compartment correctly.

3. Replace the battery cover and make sure to secure the two screws for the water-tight feature.

   [**Note:** Press the **[ON/OFF]** key to turn the unit on. If the unit is running then you can press the **[ON/OFF]** key to turn the unit off. The unit will automatically turn off after 30 minutes of no key activity.]
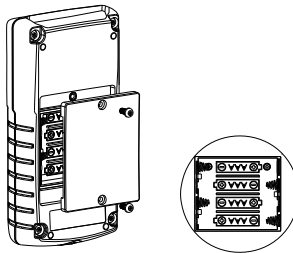

Figure 1: Battery compartment

KEYS FUNCTION

	ON/OFF- Powers on and shuts off the meter.

	HOLD-
	   In the **MEASURE mode**, press this key to freeze the temperature display. Press this key and hold for 10 seconds to turn on or turn off the one hour-auto shutdown feature.
	   In the **HOLD mode**, press this key to unlock the temperature display.

SET	**SET-**
	    In the **MEASURE mode**, press this key to enter the **SETTING mode**.
	    In the **SETTING mode**, press this key to cancel any changes made and return to the **MEASURE mode**.

SAVE	**SAVE-**
	    In the **MEASURE mode**, press this key to save the temperature reading, date and time in the next available slot of the 50-slot memory.
	    In the **SETTING mode**, press this in the "**EXIT**" option to save all the changes the user made and return to the **MEASURE mode**. This key will only work in the "**EXIT**" option.

RECALL	**LEFT / RECALL-**
	    In the **MEASURE mode**, press this key to change the mode to **RECALL mode**.
	    In the **SETTING mode**, press this key to move back to the previous setting.
	    In the **RECALL mode**, press this key to exit the **RECALL mode** and return to the **MEASURE mode**.

CLEAR	**RIGHT / CLEAR-**
	    In the **MEASURE mode**, **MAX mode**, **MIN mode**, press this key to clear the max and mix values.
	    In the **SETTING mode**, press this key to select the next setting.
	    In the **RECALL mode**, press this key for 2 seconds to clear all data saved.

℃/℉	**Up ∕ °C ∕ °F-**
	    In the **MEASURE mode**, **MAX mode**, **MIN mode**, press this key to display the temperature reading in either °C or °F**.**
	    In the **SETTING mode**, press this key to select the next option of the flashing setting. In the time and date setting, it will advance the date or time.
	    In the **RECALL mode**, press this key to display the next available data storage site.

|	**DOWN / MAX / MIN-**
MAX MIN	In the **MEASURE mode**, press this key to change the mode to **MAX mode**.
	In the **MAX mode**, press this key to change the mode to **MIN mode**.
	In the **MIN mode**, press this key to change the mode to **MEASURE mode**.
	In the **SETTING mode**, press this key to go back to the previous selection option. In the time and date settings, it will advance the value of the date or time.
	In the **RECALL mode**, press this key to display the last data storage site.

MODEL 7810 MODES

A. MEASURE mode
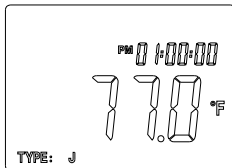
When user powers on the model 7810, the **MEASURE mode** screen will appear. The instrument will return to this mode once you exit from other modes. Only in the **MEASURE mode**, the user can press the **[SAVE]** key to save the temperature reading, time and date into the next available slot of the 50-slot memory.
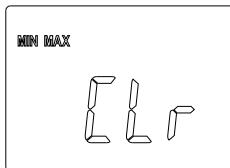


The user can clear the MIN and MAX values while in the **MEASURE mode**. The instrument will display the screen on the left for a few seconds when the user presses the **[CLEAR]** key.
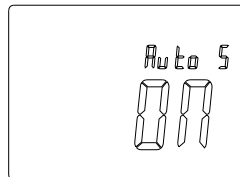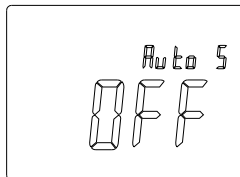
The user can turn on or turn off the one hour-auto shutdown feature only in the **MEASURE mode**. Press the **[HOLD]** key and hold for 10 seconds to toggle the setting of the one hour-auto shutdown feature.

B.   MAX mode
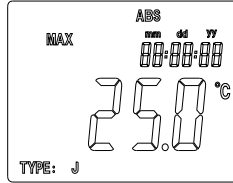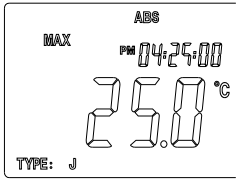
Press the **[MAX/MIN]** key in **MEASURE mode** to enter the **MAX** mode, the model 7810 will display the maximum temperature reading it has captured since the last time the instrument has been cleared. The instrument will display 2 screens, one with time and the other with date. The user can press the **[CLEAR]** key to clear the MAX and MIN values while in this mode.

C.   MIN mode

Press the **[MAX/MIN]** key in **MEASURE mode** to enter the **MIN mode**, the model 7810 will display the minimum temperature reading it has captured since the last time the instrument has been cleared. The instrument will display 2 screens, one with time and the other with date. The user can press the **[CLEAR]** key to clear the MAX and MIN values while in this mode.

D.   HOLD mode
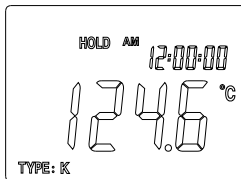
Press the **[HOLD]** key in **MEASURE mode** to enter the **HOLD mode**, the model 7810 will freeze the temperature reading. The time will still be updated on screen but the temperature reading will NOT be updated until you return to the **MEASURE mode**.
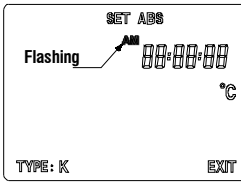
Press the **[HOLD]** key again to return to the **MEASURE mode**.

E.   SETTING mode

Press the **[SET]** key in **MEASURE mode** to enter the **SETTING mode**.

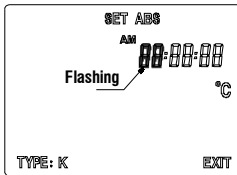In this mode the user can change the following model 7810 settings:

a. AM / PM

SET ABS
AM
Flashing **88:88:88**
℃

TYPE: K   EXIT

Press the **[UP]** or **[DOWN]** key to change to PM or AM.

Press the **[RIGHT]** key to move to **Hour, Min, Sec** setting. Press the **[LEFT]** key to move to the EXIT option.
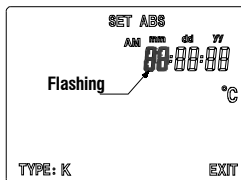
b. Hour / Min / Sec

SET ABS
AM
88:88:88
Flashing
℃

TYPE: K   EXIT

Press the **[UP]** or **[DOWN]** key to change the flashing value or press the **[RIGHT]** key to move to the next time setting. After the Sec setting, press the **[RIGHT]** key to move to **Month, Day, Year** setting.

Press the **[LEFT]** key to move back to the previous option.

c. Month / Day / Year

SET ABS
AM mm dd yy
88:88:88
Flashing
℃

TYPE: K   EXIT

Press the **[UP]** or **[DOWN]** key to change the flashing value or press the **[RIGHT]** key to move to the next date setting.

After the Year setting, press the **[RIGHT]** key to move to **ABS/REL** setting. Press the **[LEFT]** key to move back to the previous option.

d. ABS / REL

SET **ABS** Flashing
AM
PM **88:88:88**
℃

TYPE: KJTER   EXIT
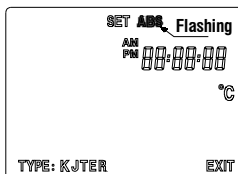
Press the **[UP]** or **[DOWN]** key to change to ABS or REL value settings. If the user chooses **ABS**, the **MAX** and **MIN mode** will display the actual time the MAX and MIN temperature occurred.

If the user chooses **REL**, the **MAX** and **MIN mode** will display the ELASPED TIME from time the user cleared the last MAX and MIN values to the time the new MAX and MIN values occurred. Press the **[RIGHT]** key to move to the next setting.

SPECIAL NOTE WHEN SETTING IN REL TIME

The Instrument will auto shutdown after 1 hour of no key activity unless the user turns off the auto shutdown feature (see **[HOLD]** key function). The maximum elapsed time the instrument can record is about 24 hours "23:59:59" after which it will start back to "00:00:00". If the user turns on the instrument after shutting down for a long period of time, the instrument will still compute the elapsed time from the last **[CLEAR]** key function the user performed.

Example: If the user clears the min/max at 03:00:00AM and the last max recorded occurred at 04:00:00AM the next day (after more than 1 day) the recorded elapsed time will be 01:00:00.

e.   °C / °F

Press the **[UP]** or **[DOWN]** key to change to °C or °F. This will set the default turn-on temperature unit.

f.   TYPE K, J or T
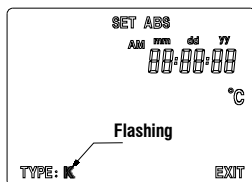
Press the **[UP]** or **[DOWN]** key to select K, J or T type thermocouple. Press the **[RIGHT]** key to move to the OFFSET option.

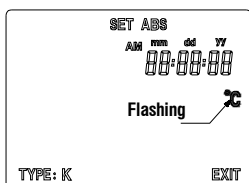Press the **[LEFT]** key to move back to the previous option.

g.   OFFSET
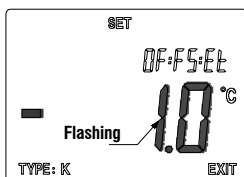
Press the **[UP]** or **[DOWN]** key to change the value from –10.0 to 10.0 if the unit is in °C or –18.0 to 18.0 if unit is in °F. The value here will be added to the temperature display in the **MEASURE mode.**

Press the **[RIGHT]** key to move to the EXIT option.

h. EXIT

Press the **[SAVE]** key to save all the changes data the user **HOLD** made in the **SETTING mode.** (*IMPORTANT:* The user must press the **[SAVE]** key in order to save all setting changes in the "**EXIT**" interface.)

If the user wants to cancel all the changes data just press the **[SET]** key anywhere in **SETTING mode.** After saving, the unit will return to **MEASURE mode**.

F.   RECALL mode

Press the **[LEFT/RECALL]** key in the **MEASURE mode** to switch to the **RECALL mode**. Press the **[LEFT/RECALL]** key again to exit the **RECALL mode** and return to the **MEASURE mode**.

When the instrument switches to the **RECALL mode**, it will first display the last data saved by the user. Three screens will be displayed for every site data site.
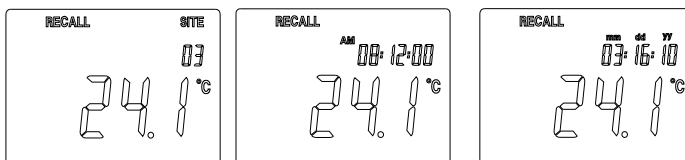
The first screen will display the site number, the 2nd screen will display time and the 3rd screen will display the date. The temperature reading saved is always displayed in all screens.

In the **RECALL mode**, press this key for 2 seconds to clear all data saved

ERROR DISPLAYS AND TROUBLESHOOTING

LCD display	Additional LCD message	Mode	Possible cause(s) [Action(s)]
"**ovEr**" (OVER)		MEASURE	a. Temperature measured > the instrument's range for the thermocouple type sensor used. b. Probe not properly connected. [Change sensor with proper temperature range.] [Check probe connection.]
"**undr**" (UNDER)		MEASURE	a. Temperature measured < the instrument's range for the thermocouple type sensor used. b. Probe not properly connected. [Change sensor with proper temperature range.] [Check probe connection.]
"**ovEr**" (OVER)	"**MAX**"	MAX	Unit recorded an over temperature reading before. [Clear the MAX values]
"**undr**" (UNDER)	"**MIN**"	MIN	Unit recorded an under temperature reading before. [Clear the MIN values]
"**FUL**" (FULL)	"**SAVE**"	MEASURE	User tries to save data but the 50 sites are full. [Go to the RECALL mode and erase all data]
"**EPt**" (EMPTY)	"**RECALL**"	RECALL	User tried to go to the RECALL mode but no data has been saved. [Save at least 1 set of data]

[Note: If the meter still does not perform normally after the above measures are taken, call **Jenco** Service Department.**]**

SPECIFICATIONS

Type	Range	Resolution	Accuracy
J,K,T	-328.0°F to 392.0°F -200.0°C to 200.0°C	0.1°F 0.1°C	±0.1%FS ±1.4°F ±0.1%FS ±0.7°C
J	393°F to 2010°F 201°C to 1099°C	1°F 1°C	±0.1%FS ±1.4°F ±0.1%FS ±0.7°C
K	393°F to 2500°F 201°C to 1371°C	1°F 1°C	±0.1%FS ±1.4°F ±0.1%FS ±0.7°C
T	393°F to 752°F 201°C to 400°C	1°F 1°C	±0.1%FS ±1.4°F ±0.1%FS ±0.7°C

Clod Junction Compensation Error	0.05°C / °C; 0,05°F / °F

Ambient Temperature:
    Measurement Range
    Rated Accuracy
	
	0.0°C to 50.0 °C
	18.0°C to 28.0 °C

Power	Four "AAA" Batteries
Battery Life	500 Hours (Typical)
Display (Time : Temperature)	4.7mm : 13.9mm high LCD
Relative Humidity	up to 90%
Case	IP67 water-tight case
Dimensions (W x D x H)	75mm x 157mm x 35mm
Weight	230 grams (Batteries included)

WARRANTY

Jenco warrants this product to be free from significant deviations in material and workmanship for a period of 1 year from date of purchase. If repair or adjustment is necessary and has not been the result of abuse or misuse, within the year period, please return-freight-prepaid and the correction of the defect will be made free of charge. If you purchased the item from our **Jenco** distributors and it is under warranty, please contact them to notify us of the situation. **Jenco** Service Department alone will determine if the product problem is due to deviations or customer misuse.

Out-of-warranty products will be repaired on a charge basis.

RETURN OF ITEMS

Authorization must be obtained from one of our representatives before returning items for any reason. When applying for authorization, have the model and serial number handy, including data regarding the reason for return. For your protection, items must be carefully packed to prevent damage in shipment and insured against possible damage or loss. **Jenco** will not be responsible for damage resulting from careless or insufficient packing. A fee will be charged on all authorized returns.

NOTE: Jenco reserves the right to make improvements in design, construction and appearance of our products without notice.

Jenco Instruments, Inc.
7968 Arjons Drive, Suite C
San Diego, CA 92126 USA
TEL: 858-578-2828
FAX: 858-578-2886
E-Mail: jencoinfo@jencoi.com; sales@jencoi.com
Website: www.jencoi.com

Jenco Electronics Inc.
1F., NO. 11, Lane 370, Sec. 6, Zhongxiao E. Rd. Nangang Dist.,
Taipei, Taiwan
TEL: 886-2-2782-3226
FAX: 886-2-2782-3234

Shanghai Jenco Instruments, Ltd.
18 Wang Dong Zhong Road
Sijing Town, Songjiang
Shanghai, China
TEL: 86-021-5761-9599
FAX: 86-021-5761-9598
E-Mail: jencos@jenco.com.cn
Website: www.jenco.com.cn