

OPERATION MANUAL

**JENCO MODEL 6307
MICROCOMPUTER BASED
pH/Conductivity/
Salinity/Temperature
BENCH METER**

JENCO ELECTRONICS, LTD.
MANUFACTURER OF PRECISION INSTRUMENTS

INITIAL INSPECTION

Carefully unpack the instrument 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.

GENERAL INTRODUCTION

The Jenco Model 6307 Bench pH, Conductivity, Salinity and Temperature System, is a rugged microprocessor based instrument designed for use in laboratories and process control applications. Using a four electrode cell for conductivity and a glass electrode for the pH, it becomes an essential tool for precise measurements of conductivity, pH, salinity and temperature.

The model 6307 micro-processor allows the user to easily recalibrate the parameters for the probe. A few keystrokes will adjust all the parameters for compensated, uncompensated conductivity and pH and will also give the user the option to select two types of probe cell constant for a better selection of available probes and applications. The micro-processor also performs a self-diagnostic routine every time you turn on the unit providing you with basic information about the current cell constant and stability of the instrument.

The system simultaneously displays temperature in °C along with either Compensated Conductivity, Uncompensated Conductivity, Salinity and pH. The user can switch back and forth from all these displays by just pressing the mode key.

The model 6307 is also equipped with a non-volatile memory allowing the user to store 50 different sets of readings. This model 6307 will also assign a site number for each set of readings to let the user an easy review of the data.

This instrument is powered by six AA-size alkaline batteries or a UL/CE approved AC adapter. The instrument also displays a "LO BAT" message when the batteries are in need of replacement.

The model 6307 comes with a RS232C interface with a proprietary driver which can easily let the user log all data simultaneously, to interface with an IBM[®] PC/AT compatible computer.

This instrument is also splash proof and CE approved making it a versatile tool for conductivity, salinity, pH and temperature applications.

USING THE JENCO MODEL 6307

THE CASE

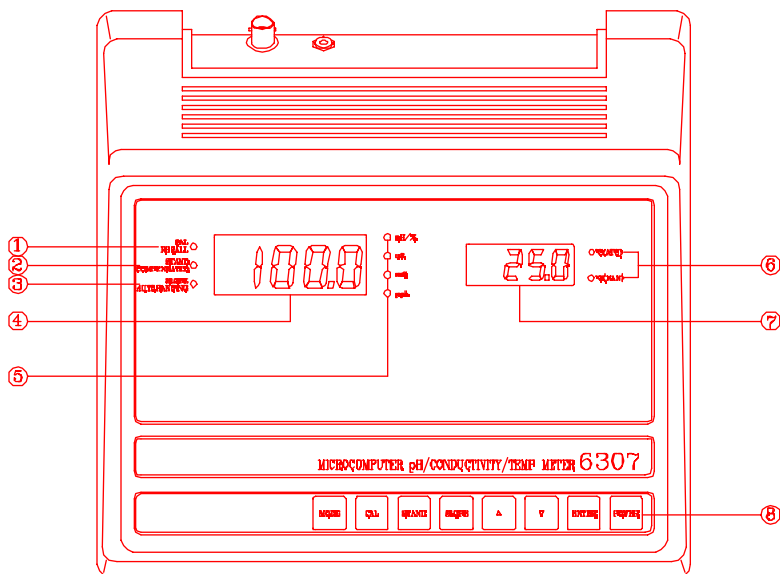


Figure 1

1. LED ANNUNCIATORS :

"CAL" : (green) - used to indicate that the unit is in calibration mode.

"**RECALL**" : (red) - to indicate that the unit is in recall mode and actively displaying saved data.

2. LED ANNUNCIATORS :

"**STAND**" : (green) - during pH calibration this will indicate if the offset is being calibrated. During normal operation this will indicate if the offset is calibrated (**lit up**) or not (**blinking**). "**AUTORANGING**" : (red) - during conductivity modes this will indicate if the display is autoranging (**lit up**) or not (turned off).

3. LED ANNUNCIATORS :

"**SLOPE**" : (green) - during pH calibration this will indicate if slope is being calibrated. During normal operation this will indicate if the slope is calibrated (**lit up**) or not (**blinking**).

"**COMPENSATED**" : (red) - to indicate that the unit is in compensated conductivity mode

4. PRIMARY LCD DISPLAY

5. PRIMARY DISPLAY UNITS

pH :green ,% :red **mS, uS, ppt** :red

6. TEMPERATURE UNIT (and ATC status) and INPUT MODE

7. SECONDARY LCD DISPLAY

8. THE KEYPAD

The Model 6307 case is **SPLASH PROOF**, but the instrument is not waterproof. The **SPLASH PROOF** feature is to prevent permanent damage to the instrument when accidentally splashed with a non-corrosive solutions.

THE KEYPAD

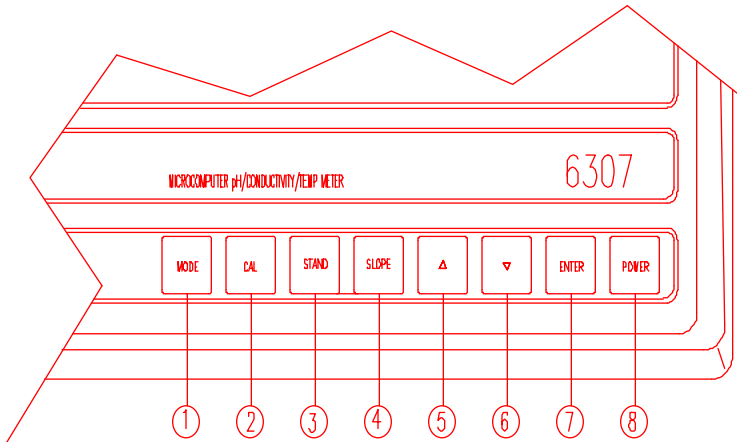


Figure 2

1. The [**MODE**] key.
 - 1a. In normal operation this key will change the display to pH, Conductivity, compensated Conductivity, Salinity, Recall and Erase mode.
 - 1b. In Calibration mode this key will exit the current calibration and go to the next calibration parameter.
2. The [**CAL**] key.
 - 2a. During any conductivity mode this key will enable CELL CONSTANT Calibration.
 - 2b. In pH mode this key will enable pH calibration. See CALIBRATION SET-UP.
3. The [**STAND**] key.

During pH calibration this key will initiate the calibration of the OFFSET of the electrode.
4. The [**SLOPE**] key.

During pH calibration this key will initiate the calibration of the pH slope only if the STAND is calibrated.

5. The [Δ] key.
 - 5a. During pH readings (**ONLY**) this key will increment the temperature in the event the unit detects no temperature input.
 - 5b. During conductivity calibration this key is used to increment the value/option of the display.
 - 5c. During Conductivity and Specific Conductivity operation this key will change the display from auto ranging to manual ranging.
 - 5d. In Recall mode this will move to a lower (older) site number.
6. The [∇] key.
 - 6a. During pH readings (**ONLY**) this key will decrement the temperature in the event the unit detects no temperature input.
 - 6b. This key is used during conductivity calibration to decrement the value/option of the display.
 - 6c. In Recall mode this will move to higher (newer) site no. Moving the site number will in no way change in which site the next data will be saved It will always save in the next open site number.
7. The [ENTER] key.
 - 7a. During normal operation pressing this key for about 2 seconds will save all the readings in the next available site number.
 - 7b. During RECALL mode this key will display the saved data in the current site. Pressing this key again will display the 2nd data on the current site and so on.
 - 7c. During CALIBRATION or PARAMETER setting mode. this key will save the current value of the displayed parameter.
8. The [ON/OFF] key.

This key will turn on or turn off the instrument. The last display mode will be saved, except during calibration, recall and erase modes where it will default to pH display.

SPECIAL KEY COMBINATIONS

- A. [∇] and [MODE] keys. Pressing this combination in any conductivity mode will enable Temperature reference, Temperature coefficient and Probe basic cell constant set-up. See CALIBRATION SET-UP.
- B. [∇] and [ENTER] keys. Pressing this combination during Erase mode for about 5 seconds will erase ALL data in the non-volatile memory. Data

in all 50 sites will be erased completely. Do not use the erase function until all recorded data has been reviewed or transcribed outside the model 6307. (SEE SAVING AND RECALLING DATA.)

CONNECTORS

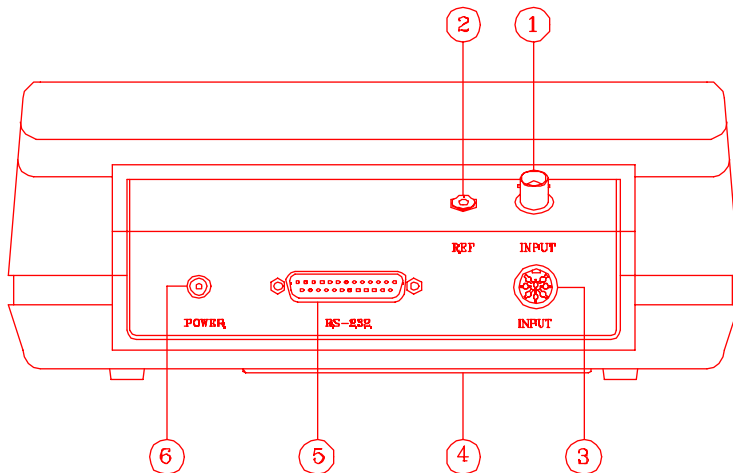


Figure 3

1. pH electrode input
2. pH REF. input
3. COND/TEMP probe input
4. Battery case
5. RS232 connector
6. AC adaptor input

REPLACING THE BATTERIES

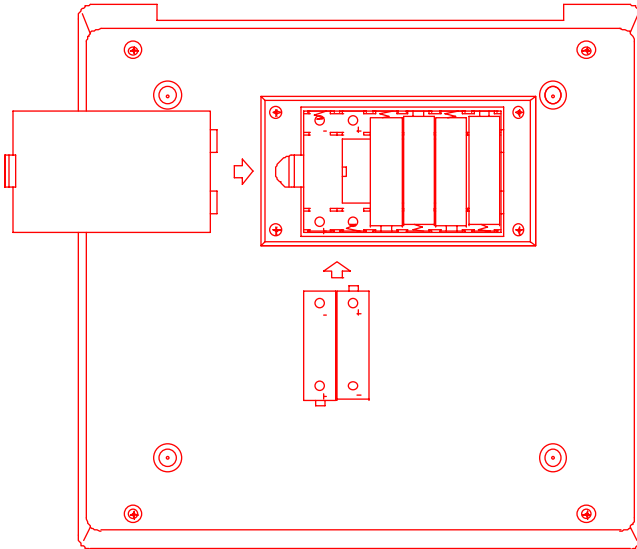


Figure 4

1. Replace the batteries when the **LO BAT** indicator on the LCD display starts to flash. The instrument can operate within specifications for approximately one hour after the **LO BAT** starts to flash.
2. To replace the batteries, position the meter so that the bottom part of the meter is facing up . (Refer to figure 4.) Lift up the battery cover to expose the battery compartment.
3. Remove all of the old batteries and insert a new set of batteries ensuring the polarities are correct.

TURNING ON/OFF THE INSTRUMENT

Once the batteries are installed correctly and/or an AC adapter is installed and plugged in the unit will turn ON at once. Pressing the [ON/OFF] key will turn on or turn off the instrument. When the unit is not in use the user should turn off the instrument to save battery life. By just unplugging the

AC adapter will not turn off the instrument if batteries are present. It would automatically switch to battery power and will continue to operate.

After the unit is turned on the unit will display all segments for a few seconds then it will display the current cell constant. If the instrument detects an internal problem it will display an error message for a few seconds. You can learn about these error messages by consulting the **ERROR DISPLAYS** of this manual.

After the self-diagnostic is complete the temperature will be displayed in the lower right of the display and the instrument is ready to make a measurement. Just immerse the probe half-way to the liquid. If possible do not allow the probe to touch any solid object in the solution. There should be no air bubbles around the probe either. Shaking or moving the probe vigorously before recording any measurement will dislodge any bubbles formed in the probe.

IF THE PROBE /INSTRUMENT IS NEW **A CELL CONSTANT CALIBRATION** MUST BE PERFORMED BEFORE USE, SINCE THE CELL CONSTANT IS SLIGHTLY DIFFERENT FOR EACH CONDUCTIVITY PROBE. REFER TO **CALIBRATION SET-UP** FOR PROCEDURES.

MODEL 6307 MODES

This instrument is designed to provide 5 distinct measurements and 2 special modes:

1. **Temperature** - current temperature of the solution which is always displayed. If the temperature probe is not available then a user selectable temperature will be used.
2. **pH** - the current degree of acidity or alkalinity of the solution with automatic temperature compensation. If a temperature probe is not attached a user selectable temperature will be used.
- 3 **Conductivity** - a measurement of the conductive material in the solution with no regard to temperature.

4 Compensated Conductivity - also known as specific conductance which automatically adjusts to a calculated value which would have been read if the sample had been at 25°C (or another reference temperature which the user can choose). See CALIBRATION SETUP.

5. Salinity - a calculation based on the Conductivity and Temperature.

6. Recall ["**rc1**"] - this is a special mode where you can display the data you saved during normal operation.

7. Erase ["**EraS**"]- this is a special mode where you can delete all saved data.

Note : Every time the unit is turned OFF the last mode is saved so that when you turn the instrument ON again it will return to this mode. Turning OFF at Calibration, Recall or Erase mode will set the mode back to pH mode.

To choose any measurement mode (temperature is always included) simply press and release the [MODE] key . Carefully observe the annunciators units at the far sides of the LCD.

<p>CAL ○</p> <p>RECALL</p> <p>STAND •</p> <p><u>COMPENSATED</u></p> <p>SLOPE ○</p> <p>AUTORANGING</p>	<div style="border: 1px solid black; width: 150px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> 99.9 </div>	<p>○ pH/‰</p> <p>○ uS</p> <p>• <u>mS</u></p> <p>○ ppt</p> <p>[LEFT LCD DISPLAY]</p>
	<div style="border: 1px solid black; width: 150px; height: 60px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> 25.0 </div>	<p>• °C (ATC) [RIGHT LCD DISPLAY]</p> <p>○ °C (MANUAL)</p>

Legends :

• LIT LED , Underlined text is the active annunciator

○ UNLIT LED

If in Salinity mode the unit will be **ppt**.

CAL	<input type="radio"/>	<div style="border: 1px solid black; padding: 20px; display: inline-block; font-size: 2em;">99.9</div>	• pH /%
RECALL	<input type="radio"/>		<input type="radio"/> uS
STAND	<input checked="" type="radio"/>		<input type="radio"/> mS
COMPENSATED	<input type="radio"/>		<input type="radio"/> ppt
SLOPE	<input checked="" type="radio"/>		
AUTORANGING	<input type="radio"/>		

For pH readings the STAND annunciator will not blink if the unit is STAND calibrated, it is the same with the SLOPE annunciator.

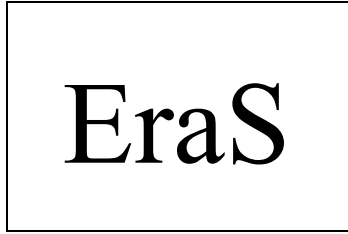
This is the recall mode with site number.

CAL	<input type="radio"/>	<div style="border: 1px solid black; padding: 20px; display: inline-block; font-size: 2em;">rcl</div>	<input type="radio"/> pH/%
RECALL	<input type="radio"/>		<input type="radio"/> uS
STAND	<input type="radio"/>		<input type="radio"/> mS
COMPENSATED	<input type="radio"/>		<input type="radio"/> ppt
SLOPE	<input type="radio"/>		
AUTORANGING	<input type="radio"/>		

<div style="border: 1px solid black; padding: 20px; display: inline-block; font-size: 2em;">01</div>	<input type="radio"/> °C (ATC)
	<input type="radio"/> °C (MANUAL)

This is the erase mode.

CAL ○
RECALL
STAND ○
COMPENSATED
SLOPE ○
AUTORANGING



○ pH / ‰
○ uS
○ mS
○ ppt

Blank →



○ °C (ATC)
○ °C (MANUAL)

AUTO/MANUAL RANGING IN CONDUCTIVITY

AUTO RANGING

This model is auto ranging in conductivity measurements . This means whatever the conductivity (with in the specifications of the instrument) of the solution all you need to do is immerse the probe into the solution. The "**AUTORANGING**" LED will lit up if you are in any of the conductivity readings and if the instrument is in auto ranging display.

After immersing the probe into the solution , the instrument will be place in a search routine to find the right range for the solution, this auto ranging will take as long as 5 seconds. During this search the instrument will display "**RANG**" on the LCD to indicate it is searching for the right range.

MANUAL RANGING

If you choose to disable the auto ranging feature and choose your own range, you can do this by pressing and releasing the [Δ] key while in any conductivity mode. You will be switching to the four ranges of the model 6307 then back to auto ranging again. During **MANUAL RANGING** the "**AUTORANGING**" LED will turn off to signify you are in **MANUAL**

RANGING. Every time you turn off the unit it will return to auto ranging again.

AUTOMATIC AND MANUAL TEMPERATURE

ATC (AUTOMATIC TEMPERATURE COMPENSATION)

If the probes you are using have a built in thermistor then all temperature readings will be automatic. The "°C (ATC)" annunciator will also displayed as long as the thermistor is available

MANUAL TEMPERATURE COMPENSATION

In such a case where the probes you are using contains no thermistor or if the thermistor is not connected then the model 6307 provides a way to still get pH readings by incorporating a manual setting for the temperature. As soon as the unit detects no temperature reading it will automatically use the last user temperature setting to compensate the pH readings. You can only use and change this temperature in pH mode since conductivity and salinity readings depend strictly on automatic temperature compensation. While in pH mode press the [Δ] and [▽] keys to increment and decrement the manual temperature respectively . The "°C (MAN)" annunciator will be displayed every time the unit is in manual temperature setting.

CALIBRATION SET-UP

STAND AND SLOPE CALIBRATION (pH mode)

To calibrate the stand and/or slope follow these steps:

1. Go to pH mode. Press the [CAL] key, the "CAL" annunciator will lit up.

At this point the unit will display the current buffer set : 7.00 for buffer set #1 (7.00,4.01 & 10.01) or 6.86 for buffer set #2 (6.86, 4.01 & 9.18). The "STAND" annunciator will start to flash indicating that the first buffer to be used is 7.00 or 6.86.

CAL
 RECALL
 STAND
 COMPENSATED
 SLOPE
 AUTORANGING

7.00

pH / %
 uS
 mS
 ppt

25.0

°C (ATC)
 °C (MANUAL)

2. Place the probe in a standard buffer solution (7.00 or 6.86 buffer depending on what set you are using). Press the [**STAND**] key.(The buffer setting is factory selected according to the user's request but can be changed by moving the jumper (J1) located on the pcb near the microcomputer chip.)

3. The "**STAND**" annunciator will stop flashing and stay ON. The display will change to the pH value of the current temperature (if a temperature probe is available the "**°C (ATC)**" annunciator will turn on. If the input mV of the solution is greater or less than ± 100 mV (for buffer 7.00) or 108.3 mV/ -91.7 mV (for buffer 6.86) then an error display will occur, you can clean the probe and change the solution or you can press [**MODE**] key to exit the calibration. If no error occurs the unit will wait for the reading to stabilize for about ten seconds (during this wait, the "**pH**" annunciator will blink) then it will lock the value of the display, if during stabilization period and the reading changes by more than 0.01 pH then this wait time will reset (In this case : 1. you can change the solution. 2. just abort by pressing the [**MODE**] key. or 3. wait it out until the solution stabilizes). Once the display is locked changing the input or temperature will not change the display.

4. You can press [**ENTER**] for about 2 seconds to save this new STAND calibration or you can press[**MODE**] key to abort the calibration.

5. If you save the new STAND calibration you will now go to the SLOPE calibration. The "**SLOPE**" annunciator will start to flash indicating that the instrument is ready for the second buffer. The main display will try to

show the pH of the second buffer but since at this point the solution is still the STAND solution the display will be unstable. You can now change solution or just press the [MODE] key to exit for a one-point pH calibration.

6. If you are doing a two-point calibration you must change the solution for the next buffer. Press the [SLOPE] key. The "SLOPE" annunciator will stop flashing and stay ON. If the mV input is greater or less than $\pm 30\%$ of the ideal mV input of this buffer then an error display will occur. You can change solution now or you can press the [MODE] key to abort the SLOPE Calibration. If no error occurs the unit will wait for the reading to stabilize for about ten seconds (during this wait the "pH" annunciator will blink) then it will lock the value of the display, if during stabilization period and the reading changes more than 0.01 pH then this wait time will reset (In this case : 1. you can change the solution. 2. just abort by pressing the [MODE] key. or 3. wait it out until the solution stabilizes). Once the display is locked changing the input or temperature will not change the display.

7. You can press the [ENTER] key for about 2 seconds to save this new SLOPE calibration or the [MODE] key to abort. If you save this calibration, you just finished a two-point pH calibration and the unit will return you to normal operation.

TEMPERATURE COEFFICIENT (conductivity mode)

To change the temperature coefficient follow these steps:

1. After the power-on diagnostics, go to any conductivity mode and press the [V] and the [MODE] keys simultaneously, the CAL annunciator will lit up. The left LCD will display 1.91 % or a value set previously using this procedure.

<u>CAL</u>	•		• pH / $\frac{\%}{}$
RECALL			○ mS
STAND	○		○ uS
COMPENSATED			○ ppt
SLOPE	○		

1.91

24.9	<input checked="" type="radio"/> °C (ATC) <input type="radio"/> °C (MANUAL)
------	--

2. Using the [Δ] and [∇] keys you can now change the coefficient to the desired value.

3. To save the new value you can press the [ENTER] key or press [MODE] to exit (and go to the next calibration parameter). If you press the [ENTER] key, the word "SAVE" will be displayed to indicate that a new temperature coefficient is accepted and then will switch to Temperature Reference set-up.

TEMPERATURE REFERENCE

To change the temperature reference follow these steps:

1. After the power-on diagnostics, go to any conductivity mode and press the [V] and [DOWN] keys simultaneously, the CAL annunciator will lit up. The left LCD will display **1.91 %** or a value set previously using this procedure.

2. Press the [MODE] key. The left LCD will display **25.0 C** or a value set previously using this procedure.

<p><u>CAL</u> •</p> <p>RECALL</p> <p>STAND ○</p> <p>COMPENSATED</p> <p>SLOPE ○</p> <p>AUTORANGING</p>	25.0C	<p>○ pH / ‰</p> <p>○ uS</p> <p>○ mS</p> <p>○ ppt</p>
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25.0

- °C (ATC)
- °C (MANUAL)

3. Using the [Δ] and [∇] keys you can now change the reference to the desired value.

4. To save the new value you can press the [ENTER] key or press to [MODE] to exit (and go to the next calibration parameter). If you press [ENTER] the word "SAVE" will be displayed to indicate that a new temperature reference is accepted and switch to Probe Basic Cell Constant set-up

PROBE BASIC CELL CONSTANT

To change the probe basic cell constant follow these steps:

1. After the power-on diagnostics, go to any conductivity mode and press the [∇] and [DOWN] keys simultaneously, the CAL annunciator will lit up. The left LCD will display 1.91 % or a value set previously using this procedure.

2. Press the [MODE] key. The left LCD will display 25.0 C or a value set previously using the calibration set-up.

3. Press the [MODE] key again. The left LCD will display the actual (calibrated previously or default) cell constant while the right LCD will display the current selected cell number preceded with a capital "C" .

- CAL •
- RECALL
- STAND ○
- COMPENSATED
- SLOPE ○
- AUTORANGING

1.01

- pH / ‰
- uS
- mS
- ppt

-
-

C1.0

- °C (ATC)
- °C (MANUAL)

4. Using the [Δ] and [∇] keys you can now change the cell probe constant to the 2 available constants (1.00 and 5.00).
3. To save the new value you can press the [ENTER] key or press the [MODE] key to exit (and return to normal operation). If you press the [ENTER] key the word "SAVE" will be displayed to indicate that a new probe cell constant is accepted. The instrument will return to normal reading mode. This cell constant will be the basis for the cell constant calibration, which means during cell constant calibration it will only accept new probe cell constants ranging $\pm 10\%$ from this value.

THIS PROCEDURE IS USUALLY NOT REQUIRED SINCE THIS OPTION IS SET AT THE FACTORY, BUT IF YOU WILL USE ANOTHER PROBE WHICH IS DIFFERENT FROM THE DEFAULT THEN YOU HAVE TO DO THIS PROCEDURE. EVERY TIME YOU SET A NEW CELL CONSTANT YOU MUST CALIBRATE THE PROBE. REFER TO CELL CONSTANT CALIBRATION.

CELL CONSTANT CALIBRATION

To calibrate the cell constant follow these steps:

1. After the power-on diagnostics, immerse the probe to a known standard conductivity solution (Refer to PREPARING STANDARD SOLUTIONS.) which is chosen to calibrate your probe. Wait for the temperature to stabilize for a few seconds. Press the [MODE] key to go to any conductivity display.
2. Press the [CAL] key, the CAL annunciator will lit up. The left LCD will display the rough conductivity value of the standard solution, depending how far the current saved cell constant to the true cell constant of the probe. The temperature unit will also **blink** indicating that you are in compensated mode. During cell constant calibration the following parameters are over-ridden : temperature reference fixed to 25 °C and temperature coefficient fixed to 1.91%.

<u>CAL</u> •	9.90	<input type="radio"/> pH / ‰
RECALL		<input type="radio"/> uS
STAND •		<input checked="" type="radio"/> <u>mS</u>
<u>COMPENSATED</u>		<input type="radio"/> ppt
SLOPE •	24.8	<input checked="" type="radio"/> °C (ATC)
<u>AUTORANGING</u>		<input type="radio"/> °C (MANUAL)

4. Using the [Δ] and [∇] keys you can now change the display to reflect the known standard conductivity solution at 25°C.

3. To save the new value you can press [ENTER] key to save or the [MODE] key to exit. If you press [ENTER] the word "SAVE" will be displayed to indicate that a new probe cell constant is accepted and return you to normal operation.

SAVING AND RECALLING DATA

The Model 6307 is equipped with a non-volatile memory than can store up to 50 different sets of readings. Non-volatile memory will be retained even if power is lost.

SAVING READINGS TO MEMORY

1. While in pH, mV, conductivity, salinity modes press the [ENTER] key for about 2 seconds. The unit will display "SAVE" and the site no. for a brief moment to indicate a successful save.

2. When all 50 sites are used up, the LCD will display "FULL". This message will remain on the LCD (even after power down) until a key (except for the [ON/OFF] key) is pressed.

3. Once you have acknowledged that the memory is full, any subsequent saving of data will begin overwriting the existing data starting at site #1.

RECALLING READINGS FROM MEMORY

1. Press the [MODE] key repeatedly until Recall mode ("rcl" see MODEL 6307 modes) is displayed on the screen along with the site number on the right LCD.

CAL	•	<h1>7.90</h1>	• <u>pH</u> / %
<u>RECALL</u>			○ uS
<u>STAND</u>	•		○ mS
COMPENSATED			○ ppt
<u>SLOPE</u>	•	<h1>24.8</h1>	• °C (ATC)
AUTORANGING			○ °C (MANUAL)

2. Press the [ENTER] key to display the last set of data that was saved. The model 6307 will display pH and temperature and the "RECALL" annunciator will turn on to indicate you are in Recall mode. Press the [ENTER] key again to display the conductivity and temperature. Press the [ENTER] key again and again to display compensated conductivity and salinity. All of which are displayed with the temperature.

3. Press the [Δ] key to move to a lower (older) site number.

4. Press the [▽] key to move to a higher (newer) site number.

Here is an example of the model 6307 memory.

Site #1 (oldest data)

Site #2

Site #3 ← for example if you are displaying site #3, then if you press the [Δ] key the model 6307 will display site #2.

Site #4

Site #5 (newest data)

ERASING DATA

1 To erase ALL the data stored in memory , press the [MODE] key repeatedly until the unit displays Erase mode ("EraS" see MODEL 6307 modes).

2. Press the [▽] and [ENTER] keys simultaneously for about 5 seconds. The LCD will display "dONE" to indicate successful erasure and return to normal operation.

CAUTION : All data will be erased, so be sure you have reviewed them thoroughly or transcribed to an archive before using this function.

RS232C INTERFACE OPERATION

INTRODUCTION

This section assumes you are familiar with the basics of data communication, the RS232C interface, a rudimentary knowledge and a copy of the following computer languages : Turbo BASIC, Quick BASIC, Turbo PASCAL and Turbo C.

This meter can only be operated using the RS232C interface by using a special software driver included with this meter. A simple program must be written in order to send your command and receive data from the meter by using any of the above mentioned computer languages.

An annotated sample program for each computer language and a more detailed explanation of the software driver are included in the accompanying disk.

PREPARING THE METER

This meter comes equipped with an RS232C interface. This meter communicates with a PC computer (100% IBM PC/AT compatibles) through a DB-9 interface connector. A standard RS232C cable used for interconnecting two IBM PC/ATs can also be used for this operation.

After you have connected the cable and turned on both the meter and the computer, you are now ready for the software preparation.

SOFTWARE

The accompanying disk includes a special driver to let you write a simple program to read data from the meter. By incorporating the driver into your software, you can then use the special commands without worrying about the protocol between the meter and your computer.

Read the file "MAN6307.TXT" in the accompanying disk to jump-start you in using the meter with its RS232C interface.

ERROR DISPLAYS

Display

Main display : "OVER"
2ndary display : "ovr"

Possible Cause(s)

Temperature > 75.0°C

Main display : "OVER"
2ndary display : "udr"

Temperature < -5.0°C

Main display : "OVER"
basic cell K : 1.00

Conductivity > 30.00mS

Main display : "OVER"
basic cell K : 5.00

Conductivity > 200.0mS
Salinity > 80.0 ppt

Main Display : "OVER"
during pH

Temperature > 60.0°C

calibration

Main Display : "**OVER**"
pH mode

pH > 16.00 pH

Main Display : "**OVER**"
during cell constant
calibration

Cell constant calibration
is greater than $\pm 30\%$
of selected basic
cell constant.

Main display : "**Undr**"
during cell constant
calibration

Cell constant calibration
calibration is greater
than $\pm 30\%$ of selected
basic cell constant.

Main Display : "**Undr**"
during pH
calibration
Main display : "**Undr**"
pH mode

Temperature < 0.0°C

pH < -2.00

Main display : "**rErr**"
during manual ranging

Conductivity exceeds
selected manual
range.

Main display : "**Perr**"
during cell constant
calibration

Computed new cell
constant is
undefined.

Main display : "**Lerr**"

Temperature exceeds the
limit, computed using the
current temperature
coefficient and temperature
reference.

Main display : "**Err**"

Ram test has failed.

2ndary display : "ra_"

Main display : "Err"

2ndary display : "ro_"

ROM test has failed.

Main display : "Err"

2ndary display : "EEP"

Saving to non-volatile memory has failed.

Main Display : "FULL"

Non-volatile memory is full.

SPECIFICATIONS

Conductivity with 1 cm⁻¹ cell constant probe

Range	Resolution	Accuracy
0.00 to 99.99 μ S/cm	0.01 μ S/cm	\pm 0.5% FS
100.0 to 999.9 μ S/cm	0.1 μ S/cm	\pm 0.5% FS
1.000 to 9.999 mS/cm	0.001 mS/cm	\pm 0.5% FS
10.00 to 30.00 mS/cm	0.01 mS/cm	\pm 0.5% FS

Conductivity with 5 cm⁻¹ cell constant probe

Range	Resolution	Accuracy
0.0 to 499.9 μ S/cm	0.1 μ S/cm	\pm 0.5% FS
0 to 4999 μ S/cm	1 μ S/cm	\pm 0.5% FS
0.00 to 49.99 mS/cm	0.01 mS/cm	\pm 0.5% FS
0.0 to 200.0 mS/cm	0.1 mS/cm	\pm 0.5% FS

pH

Range	Resolution	Accuracy
-2.00 to 16.00 pH	0.01 pH	\pm 0.01 pH \pm 1 LSD

Salinity

Range	Resolution	Accuracy
0.0 to 80.0 ppt	0.1 ppt	\pm 1% FS

Temperature

Range	Resolution	Accuracy
-5.0 to 75.0 °C	0.1 °C	±0.1 °C

Temperature Compensation

Reference temperature : 15.0 to 25°C, keypad selectable at 0.1°C increment

Temperature coefficient : 0.0 to 4.0%, keypad selectable at 0.1% increment

Probe cell constant

Basic probe cell number: 1.0 & 5.0, keypad selectable

Cell constant calibration: Easy calibration by immersing the probe in known standard solution and keying-in the known conductivity.

PC Communication

Connector : RS232C compatible DB25 connector, connects directly to PC (IBM PC/AT 100% compatible) serial port via a null modem connector.

Protocol : Source code libraries are provided for Turbo Basic, Quick Basic, Turbo Pascal and Turbo C. Supports Com1 to Com4 .

Baud Rate : 4800 (fixed)

POWER

Power supply : 6 AA batteries/ 9V AC adapter

Battery Life (Alkaline) : ~ 25 Hours (typical)

OTHERS

Ambient temperature
operating range : 0 - 50 °C

Dimensions

Main display : 12.7 mm high
2ndary display : 12.7 mm high
Case length : 250 mm
Case height : 100 mm
Width : 240 mm
Weight : 1090 g (batteries included)

PREPARING STANDARD SOLUTIONS

Suitable conductivity standards are available commercially or the user can prepare them using research grade reagents.

Here are some standard solutions the user can prepare to calibrate the probe of the model 6307.

1. Standard solution of 1413 μS at 25°C : accurately weight out 0.746 grams of research grade dried Potassium Chloride (KCl). Dissolve in 1000ml of deionized water

1. Standard solution of 12.90 mS at 25°C : accurately weight out 7.4365 grams of research grade dried Potassium Chloride (KCl). Dissolve in 1000ml of deionized water

1. Standard solution of 111.0 mS at 25°C : accurately weight out 74.2640 grams of research grade dried Potassium Chloride (KCl). Dissolve in 1000ml of deionized water

STORAGE

You can store the remaining solution in a plastic container for one week but the air space between the cap and the solution must be kept to an absolute minimum. The storage life can be increased by storing the solution below 4°C. If you have any doubt of the accuracy of the stored solution, a fresh batch should be prepared.

WARRANTY

Jenco Instruments, Ltd. 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 without 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, please 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 unauthorized returns.

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

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