

# JENCO®

## VisionPlus

### Operation Manual

**MODEL pH 618N**

**Microcomputer Based  
pH & Temperature  
Pocket Meter**



# pH 618N

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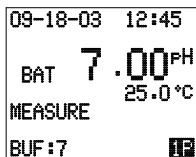
## INITIAL INSPECTION AND ASSEMBLY

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.

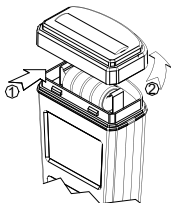
## BEFORE YOUR FIRST USE

### A. Replace the Batteries

Replace the battery when the blinking low battery indicator "BAT " appears on the middle left hand side of the LCD screen. The instrument can operate within specifications for approximately 2~3 hours after low battery indicator appears.



1. Shown in the right figure.
2. Take off the battery cover.
3. Remove all of the old batteries and insert a new set of batteries ensuring the polarities are correct.



### B. Soak the Electrode

1. Remove the electrode cap covering the VisionPlus pH meter.
2. Soak the electrode in a 3M KCL solution for 2 hours before first use or after storage.

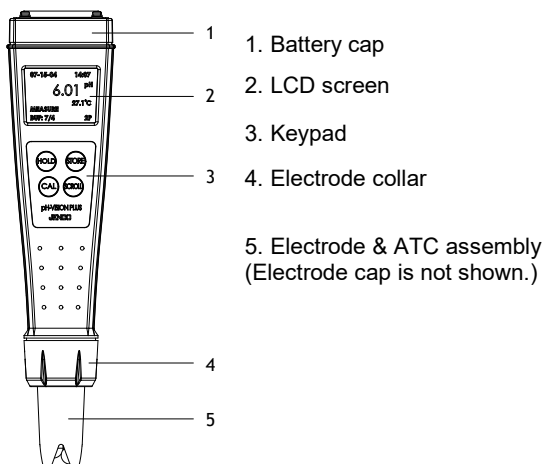
### C. Setup and Calibrate the Electrode and Meter

VisionPlus pH 618N must be setup and calibrated before your first use. Please follow the instructions detailed in section

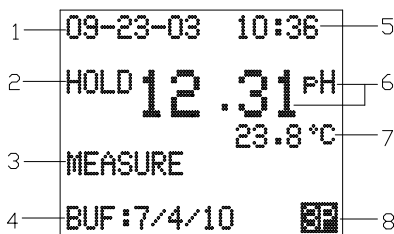
## USING VISIONPLUS pH 618N.

# VISIONPLUS pH 618N OVERVIEW

## A. Meter Description



## B. VisionPlus Graphical Display



1. DATE (MM-DD-YY)
2. HOLD mode indicator
3. MEASURE mode indicator
4. CALIBRATION buffer(s)
5. TIME (HH:MM – 24H format)
6. pH reading
7. TEMPERATURE reading
8. NUMBER of calibration point

**Note:** °C or °F is factory pre-set.

## OPERATION MODES AND KEYPAD OPERATIONS

### A. Operation Modes

VisionPlus pH meter has 6 operation modes:

1. Measure Mode. Measure Mode is used to make all pH and temperature measurements.
2. Calibration Mode. Calibration Mode is used to perform 1, 2 or 3 point calibration.
3. Hold Mode. Hold Mode is used to display held measured values for increased ease of use.
4. Recall Data Mode. Recall Data mode is used to display measured data which have been stored in memory.
5. Date and Time Set Mode. Date and Time Set Mode is used to change date and time.
6. Buffer Select Mode.  
Buffer Select Mode is used to select the buffer set, which can either be 7.00(7.00/4.01/10.01) or 6.86(6.86/4.00/9.18).

### B. Keypad Operations

Key	Operation Mode	Duration	Function
HOLD	All, except Hold	2 seconds or more	Turns meter on/off.
	Measure	0 second	Holds current measurement reading. Press again to resume measuring.
	Hold	0 second	Returns to Measure Mode.
	Date and Time Set	0 second	Moves cursor to next set of data.
CAL	Measure	2 seconds	Enters Calibration Mode.
	Measure	10 seconds or more	Enters Date and Time Set Mode.
	Calibration	0 seconds	Leaves Calibration Mode.
	Date and Time Set	2 seconds or more	Leaves Date and Time Set Mode.

Key	Operation Mode	Duration	Function
CAL	Recall Data	2 seconds	Erases ALL stored data and return to Measure Mode.
STORE	Measure	2 seconds	Stores current pH reading, date and time into memory.
	Date and Time Set	0 second	Increases current number.
	Recall Data	2 seconds or more	Leaves Recall Data Mode.
	Buffer Select	2 seconds or more	Leaves Buffer Select Mode.
SCROLL	Measure	2 seconds	Enters Recall Data Mode.
	Measure	5 seconds or more	Enters Buffer Select Mode.
	Recall Data	0 second	Scrolls through stored data.
	Date and Time Set	0 second	Decreases current number.
	Buffer Select	0 second	Selects new buffer set.

## USING VISIONPLUS pH 618N

### A. Power ON/OFF

Press “HOLD” key for 2 seconds or more. The unit will turn on and enter the “Measure Mode”. Repeat the process to turn off the unit. The unit will also automatically turn off after 10 minutes of no key activity.

### B. Set Date and Time

1. Press “CAL” key for 10 seconds or more to enter “Date and Time Set Mode”.
2. Press “HOLD” key to select calendar or time parameters.

```

09-18-03  12:45

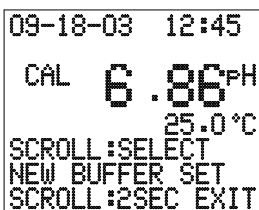
HOLD  :NEXT SET
STORE :UP
SCROLL:DOWN
CAL   :2SEC EXIT

```

3. Press “STORE” and “SCROLL” keys to increase and decrease values respectively.
4. Press “CAL” key for 2 seconds to exit and return to “Measure Mode”.

### **C. Select Buffer**

1. Press "SCROLL" key for 5 seconds or more to enter "Buffer Select Mode".
2. Press "SCROLL" key again to select either 7.00 (7.00/4.01/10.01) or 6.86 (6.86/4.00/9.18) buffer sets.



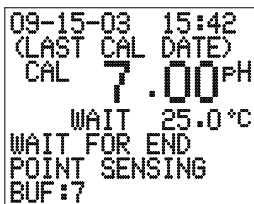
09-18-03 12:45  
CAL 6.86<sup>PH</sup>  
25.0 °C  
SCROLL:SELECT  
NEW BUFFER SET  
SCROLL:2SEC EXIT

3. Press "STORE" key for 2 seconds to exit and return to "Measure Mode".

**Note:** There is no need to repeat this procedure every time unless one decides to change the buffer settings.

### **D. Calibrate pH**

1. Press "CAL" key for 2 to 3 seconds to enter "Calibration" mode.
2. Clean and dip meter into either pH 7.00 or 6.86 buffer solution. A "WAIT" icon will flash.



09-15-03 15:42  
(LAST CAL DATE)  
CAL 7.00<sup>PH</sup>  
WAIT 25.0 °C  
WAIT FOR END  
POINT SENSING  
BUF:7

3. VisionPlus pH meter will perform end point sensing to determine when the calibration reading is stable. Meter is calibrated when "WAIT" icon disappears, and the unit will automatically enter the next point calibration 5 seconds later. One point/first point calibration is now completed. Press "CAL" key to exit or continue to next step for two points / second point calibration.
4. Repeat Steps 2 and 3 for two points/second point calibration by dipping the meter in pH 4.01/4.00 or 10.01/9.18 buffers.
5. Continue to next step for three points/third point calibration or press "CAL" to exit two points calibration mode.
6. Repeat Steps 2 and 3 for three points / third point calibration.
7. When "WAIT" icon disappears, the unit will automatically return to Measure Mode.

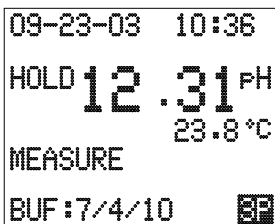
**Note:** For accurate measurements, it is recommended that pH calibration is performed once a week and after replacing the electrode.


## **E. Measure**

Dip the meter into the test solution in the “Measure Mode”.

## **F. Hold Data**

1. When the pH readings is stable, press “HOLD” key once to lock the reading.
2. Press “HOLD” key again to unlock reading and the unit will return to “Measure Mode”. The unit is now ready for another measurement.

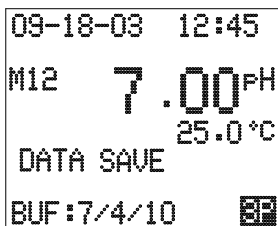



09-23-03 10:36  
HOLD 12.31 PH  
23.8 °C  
MEASURE  
BUF:7/4/10 

**Note:** The unit cannot be power off in “Hold Mode”.

## **G. Save Data**

Either in the “Hold Mode” or the “Measure Mode”, press “STORE” key for 2-3 seconds. The “DATA SAVE” and “M-XX” icons will appear indicating the reading has been saved and stored in memory location XX. The unit will automatically returns to “Measure Mode” and ready to perform other task.



09-18-03 12:45  
M12 7.00 PH  
25.0 °C  
DATA SAVE  
BUF:7/4/10 

**Note:** The Model pH 618N is equipped with a non-volatile memory that can store up to 50 different sets of readings (pH, temperature, Time and date). Non-volatile memory will be retained even if power is lost. When all 50 memory locations are used up, the next set of data saved will overwrite the data stored in the first location and so on.

## **H. Recall and Erase Data**

1. In “Measure Mode”, press “SCROLL” key 2-3 seconds, the last set of saved data will appear.
2. By pressing the “SCROLL” key, previous saved data will appear.
3. Press “STORE” key for 2 seconds to exit and return to “Measure Mode”.



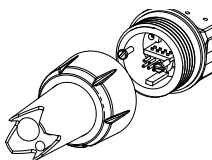
4. Press "CAL" key for 2-3 seconds to erase ALL stored data and return to "Measure Mode."

08-18-08 12:45  
M12 7.00<sup>PH</sup>  
25.0°C  
SCROLL: NEXT DATA  
CAL :2SEC ERASE  
STORE:2SEC EXIT

## ONGOING MAINTENANCE

### A. Replace Electrode

1. Unscrew the electrode collar to remove the electrode & ATC assembly as shown in the right figure.
2. Remove the old electrode from the electrode collar.
3. Insert a new electrode, make sure the electrode fit back into the meter correctly.
4. Screw back the electrode collar.
5. Soak the electrode in a 3M KCL solution for 2 hours and recalibrate the pH 618N following the instructions detailed in section **USING VISIONPLUS pH 618N**.



## ERROR DISPLAYS AND TROUBLESHOOTING

pH LCD Display	ATC Disp	DISPLAY Mode	Possible cause(s) [Action(s)]
Any Value	"OVER"	Measure	a. Temperature over 0 to 99.9°C range. [Bring solution to a lower/higher temperature.] [Replace temperature probe.] b. No temperature sensor. [Use a temperature probe.]
"OVER"	0.0~99.9°C	Measure	pH value over 0.00 to 14.00pH range . [Over Range or Recalibrate.]
"OVER"	0.0 ~ 60.0°C	pH CAL a.pH-STAND b.pH-SLOPE	a. Offset @ 7.00pH: mV>90mV Offset@6.86pH: mV>98.3mV b. New slope>ideal slope by 30% [Use a new buffer solution.] [Replace electrode.]
"OVER"	0.0 ~ 60.0°C	pH CAL a.pH-STAND b.pH-SLOPE	a. Offset @ 7.00pH: mV<-90mV Offset @ 6.86pH: mV< -81.7 mV b. New Slope<ideal slope by 30% [Use a new buffer solution.] [Replace electrode.]
Any Value	"OVER"	pH CAL a.pH-STAND b.pH-SLOPE	Buffer temperature over 0 to 60 °C range. [Bring buffer temperature within 0 to 60°C range .]

## SPECIFICATIONS

### pH

Range	Resolution	Accuracy
0.00 to 14.00 pH	0.01 pH	$\pm 0.02 \text{ pH} \pm 1 \text{ LSD}$

### Temperature

Range	Resolution	Accuracy
0.0 to 99.9 °C	0.1 °C	$\pm 0.3 \text{ °C}$
32.0 to 211.8 °F	0.2 °F	$\pm 0.6 \text{ °F}$

### pH

**pH buffer recognition**

pH 7.00, 4.01, 10.01 or  
pH 6.86, 4.00, 9.18

**pH Temperature compensation**

AUTO 0.0(32.0°F) to  
99.9 °C(211.8°F)

**pH Buffer Temperature range**

0.0 (32.0°F) to 60.0°C(140.0°F)

**pH Electrode Offset recognition**

$\pm 90 \text{ mV}$  at pH 7.00  
 $+98.3 \text{ mV} / -81.7 \text{ mV}$  at pH 6.86

**pH Electrode Slope recognition**

$\pm 30\%$  at pH 4.00, 4.01, 9.18 and 10.01

**Input impedance**

$>10^{12} \Omega$

### Temperature

**Temperature sensor**

Thermistor, 10 k $\Omega$  at 25°C

**Temperature unit**

Default in factory

### General

**Power**

Meter : LR44 x 4  
Calendar : CR2032

**Battery life**

Meter: 200 Hours  
Calendar: 5 years

**Ambient temperature range**

0.0 to 50.0 °C

**Display**

98x64 graphic LCD

**Case**

IP67 water-tight case

**Weight**

107 g

## WARRANTY

Jenco Instruments, Ltd. warrants this product to be free from significant deviations in material and workmanship for a period of 1 year for the meter and 6 months for the electrode from date of purchase. If repair or adjustment is necessary and has

not been the result of abuse or misuse, within the warranty 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.

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