A120 Benchtop pH Meter

Instruction Manual

Introduction

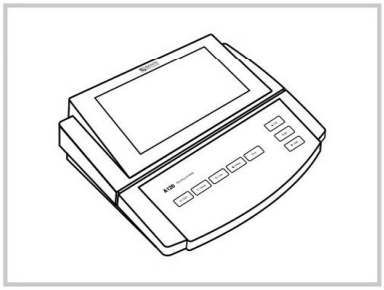
Thank you for selecting the A120 benchtop pH meter. This manual provides a step-by-step guide to help you operate the meter, please carefully read the following instructions before use.

Unpacking

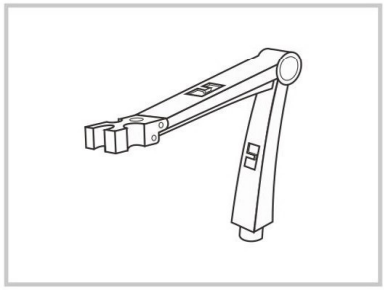
Before unpacking, ensure that the current work environment meets following conditions.

- Relative humidity is less than 80%.
- Ambient temperature is greater than 0°C and less than 60°C.
- No potential electromagnetic interference.

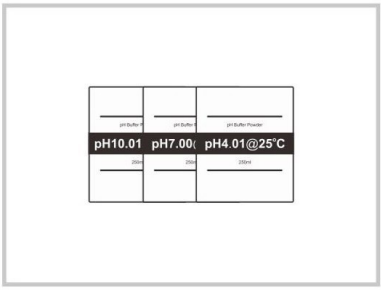
The following list describes the standard components of the meter. After the unpacking, please check all components are complete. If any are damaged or missing, please contact nearest distributor.



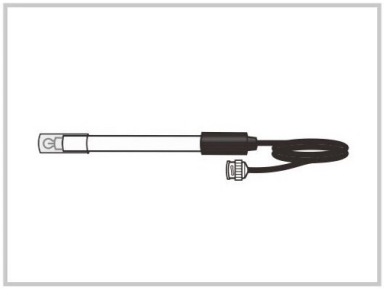
A120 pH Meter



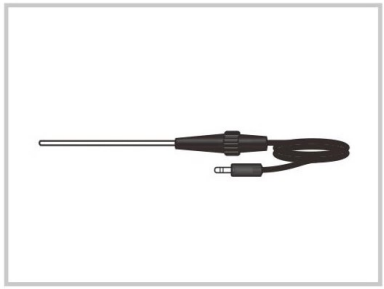
Electrode Holder



pH Buffer Pouches



E65-1 pH Electrode



TP-10K Temperature Probe

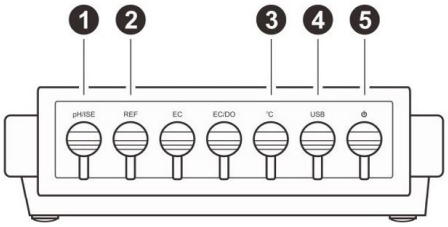
DC12V Power Adapter

Keypad

The A120 meter has a succinct membrane keypad, names and symbols describe the each function key controls.

KEY	FUNCTION
⏻ | ESC	• Switches the meter ON/OFF. • Exits the calibration or setting and returns to measurement.
°C | Mode	• Selects the measurement mode. • Sets the temperature of sample (Press and hold the key for 3 seconds).
☼ | Cal	• Starts calibration. • Enters the setup menu (Press and hold the key for 3 seconds).
🔒 | Meas	• Locks the measured value. • Resume measuring.
Print	• Sends data to a printer or computer.
▲ | MI	• Stores current reading to memory. • Increase value or scroll up through the menu item.
▼ | MR	• Views the calibration report or data logs. • Decrease value or scroll down through the menu item.
Enter	• Confirms the calibration, settings or displayed options.

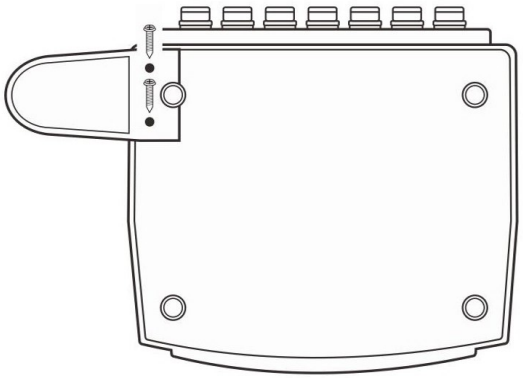
Connectors



NO.	CONNECTOR	DESCRIPTION
1	pH/ISE	Used for connecting the pH or ORP electrode
2	REF	Used for connecting the reference electrode
3	°C	Used for connecting the temperature probe
4	USB	Used for connecting the computer or printer
5	⏻	Used for connecting the power adapter

Installing the Electrode Holder

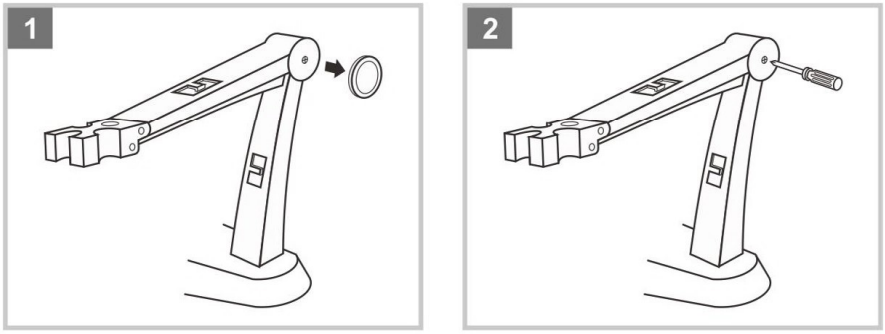
Take out the electrode holder from the packaging. Turn the meter over. Align the base plate of the electrode holder with the circular holes on the meter. Moderately tighten two screws.



Adjustment of electrode arm

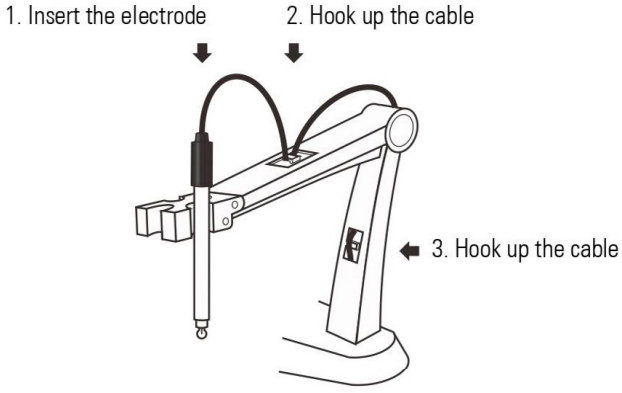
After installation, if the electrode arm automatically rises or falls, you need to adjust the screw until arm locate at any position.

1. Remove the plastic cover from the electrode arm.
2. Use the screwdriver to tighten the screw moderately.
3. Insert the plastic cover to previous position. Installation is completed.

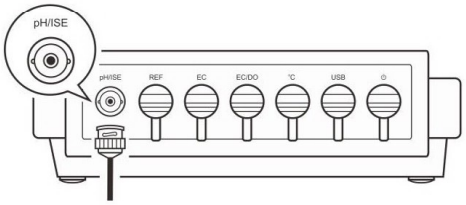


Connecting the Electrode

1. Take out the pH electrode from the packaging. Follow the steps below to place the electrode into left or right side of the electrode arm.

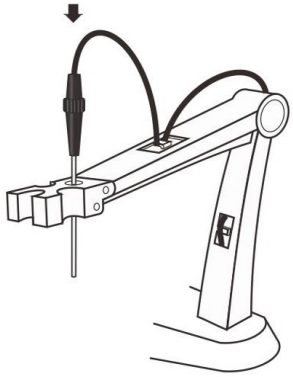


2. Insert the BNC connector into the connector socket labeled pH/ISE. Rotate and push the connector clockwise until it locks. After the connection is completed, DO NOT pull on the cable. Always make sure that the connector is clean and dry.

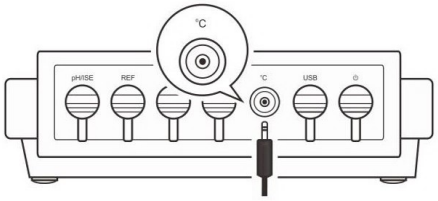


Connecting the Temperature Probe

1. Place the temperature probe into the circular hole of the electrode arm.

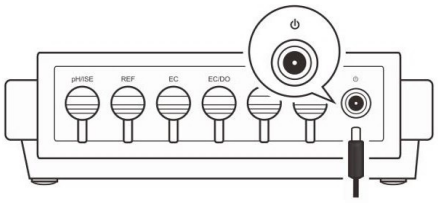


2. Insert the phone plug to the connector socket labeled °C. Ensure the connector is fully seated.



Connecting the Power Adapter

1. Before plugging in the power adapter, ensure that its voltage matches the local main voltage.
2. Insert the connector to the power socket. The meter is now ready for use.



Switching the Meter On and Off

- Press and hold the ⏻ key to switch on the meter, the display shows the measured values.
- Press and hold the ⏻ key for 3 seconds, the meter will switch off.

ⓘ To enable the Auto-Power Off feature, please refer to chapter SETUP MENU.

Setup Menu

The A120 pH meter contains an integrated setup menu that is used to customize the displayed option to meet measurement requirements. The following table describes the functions of the menu items.

MENU	OPTIONS	DESCRIPTION	DEFAULT
Sample ID	0000 to 9999	Set the sample ID to associate readings with the data log.	0000
pH Buffer Group	USA	Set the pH buffer group for calibration and auto-recognition	USA
	NIST		
	DIN		
	Custom (Any 2 to 5 values ⩾1 pH apart)		
Calibration Points	1 to 5 points	Set the number of calibration points.	3 points
Resolution	0.001	Set the resolution of the pH measurement.	0.001
	0.01		
STC	High purity water	The solution temperature coefficient is used to correct the pure water samples with a conductivity of less than 30µS. If enabled, the readings will automatically reference to 25°C.	Off
	Sample contained the ammonia or phosphate		
	Off		
Alarm Limits	Enable	Set the high and low limit values to activate alarm (Range: -2.00 to 20.00pH).	Disable
	Disable		
Calibration Due	Enable	Set the calibration interval to activate alarm (1 to 31 days).	Disable
	Disable		
Temperature Unit	°C	Set the default temperature unit.	°C
	°F		
Stability Criteria	Standard	Set when a measurement is recognized as stable.	Standard
	High-accuracy		
Auto-Read	Enable	When the option is enabled, the meter will automatically sense a stable reading and lock the measurements.	Disable
	Disable		
Auto-Power Off	Enable	When the option is enabled, the meter will automatically switch off if no key is pressed within 3 hours.	Disable
	Disable		
Date and Time	Year-month-day, hour-minutes	Set the current date and time.	

Interval Readings	Off	When the option is enabled, the meter will automatically send the measured data to the computer or printer.	Off
	10 seconds		
	30 seconds		
	60 seconds		
	10 minutes		
	30 minutes		
Password	Enable	Set the password protection for calibration and settings.	Disable
	Disable		
Brightness	Low, Mid, High	Set the brightness level of the backlight.	Mid
Clear Stored Data	Enable	Delete all stored readings in the memory.	Disable
	Disable		
Factory Reset	Enable	Reset the meter to factory default settings.	Disable
	Disable		

Setting the default option

1. In the measurement mode, press and hold the ☼ key for 3 seconds to enter the setup menu.
2. Press the ▲ or ▼ key to select the menu item.
3. Press the **Enter** key, the cursor changes to highlight.
4. Press the ▲ or ▼ key to select the desired option.
5. Press the **Enter** key to confirm, the meter returns to the measurement mode. Setting is completed.

Setting the default parameter

The meter provides two methods for parameter settings.

- Press the ▲ or ▼ key to modify the value, press the **Enter** key to confirm.
- If the cursor appears below the first digit, press the ▲ or ▼ key to set the value, press the **Enter** key to confirm and move to the next digit. Repeat the steps above until the meter returns to the measurement mode. Setting is completed.

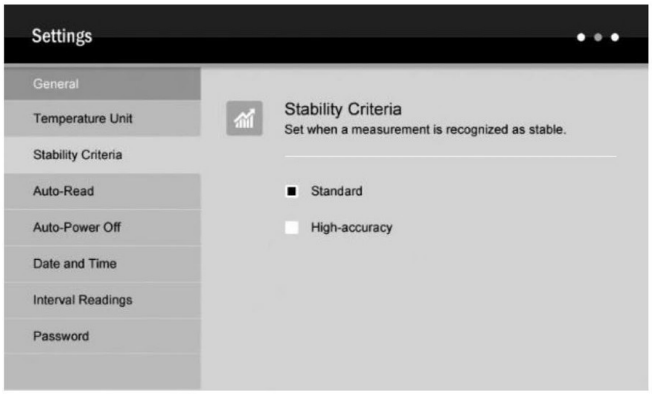
ⓘ During the setting process, press the ▲ or ▼ key once, the setting value will increase or decrease gradually. Press and hold the ▲ or ▼ key, the setting value will increase or decrease quickly.

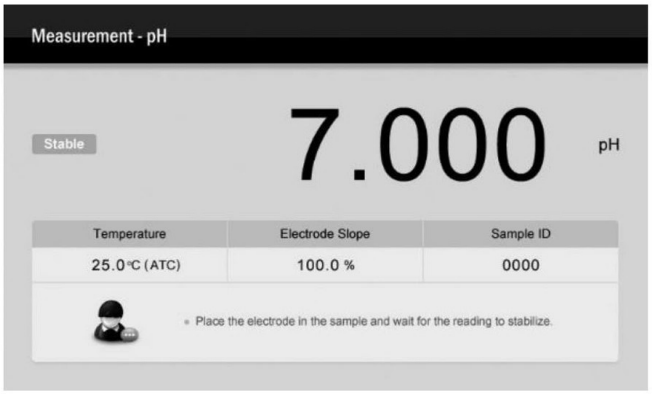
Setup example - alarm limits

1. In the measurement mode, press and hold the ☼ key for 3 seconds to enter the setup menu.
2. Press the ▲ or ▼ key select the “Alarm Limits”.
3. Press the **Enter** key, the cursor changes to highlight.
4. Press the ▲ key to select the “Enable”, press the **Enter** key to confirm.
5. Press the ▲ or ▼ key to set the high alarm value, press the **Enter** key to confirm.
6. Press the ▲ or ▼ key to set the low alarm value, press the **Enter** key to return to the measurement mode.

Stability Criteria

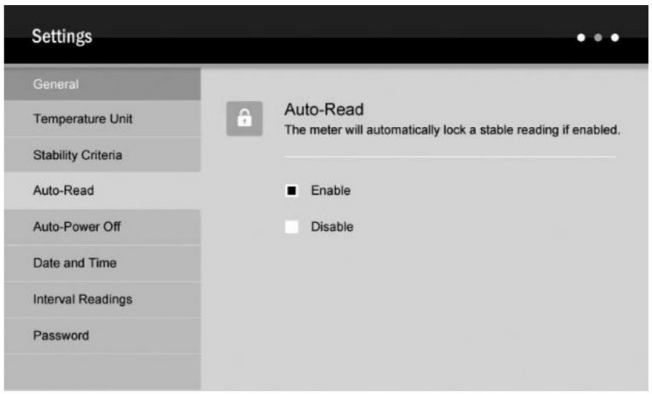
The Stability setting allows the user to set when a measurement is recognized as stable by the meter. When the Standard option is enabled, the Stable icon will quickly appear on the display. When the High-accuracy option is enabled, the icon will take longer to appear, but guarantees high accuracy of the measurement.

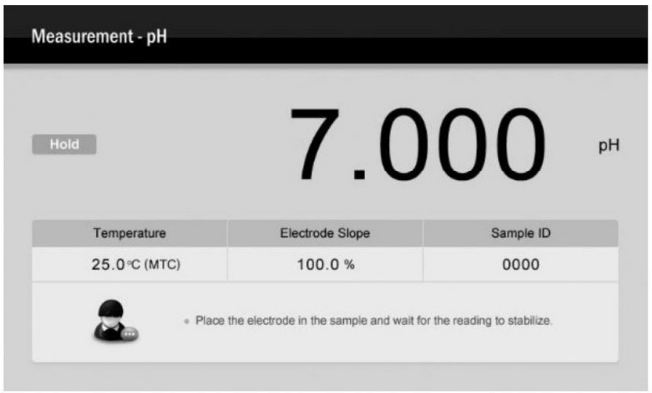




Auto-Read

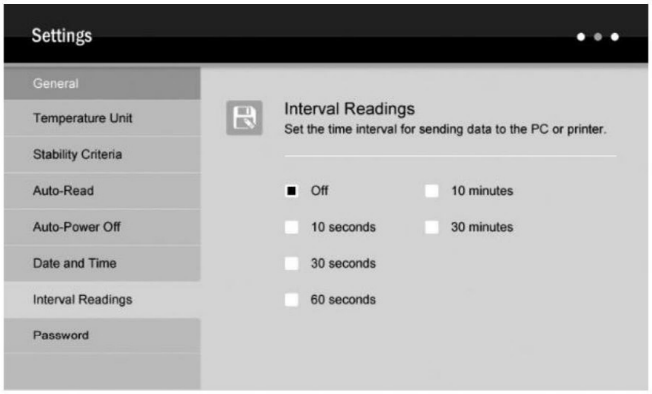
The Auto-Read feature is used to lock a measurement endpoint. If enabled, the meter will automatically sense a stable reading and lock the measurements. The HOLD icon appears on the display. Press the **Meas** key, the meter resumes measuring.





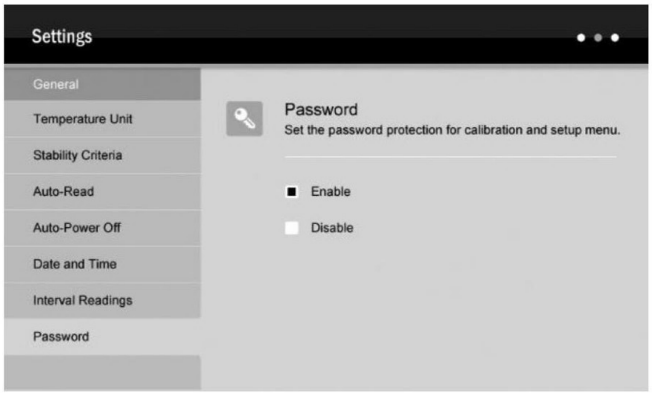
Interval Readings

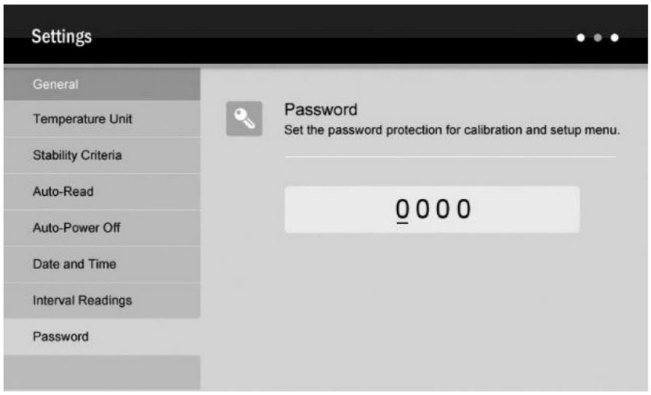
The Interval Readings is capable of recording the measurements at the predefined time intervals. If enabled, the meter will continue to send measured data to the printer or computer until the measurement mode is exited. You are able to use the DAS software for receiving the data or viewing the real-time graph. For more details, please refer to chapter COMMUNICATION.



Password

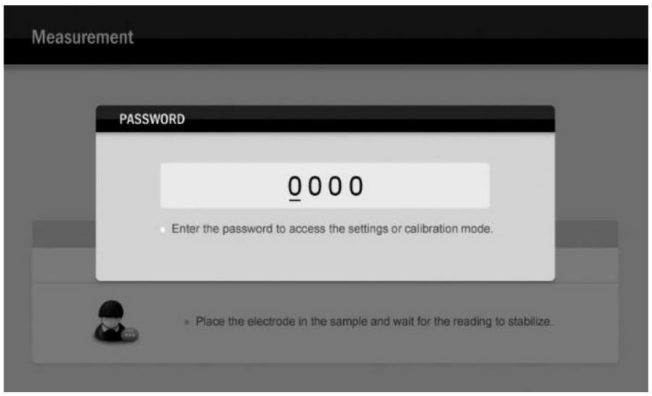
The password protection is used to prevent the unauthorized calibration and settings. If enabled, the user must enter the 4-digit password to access the calibration or setup menu. If the setting value is 0000, the password protection will invalid.





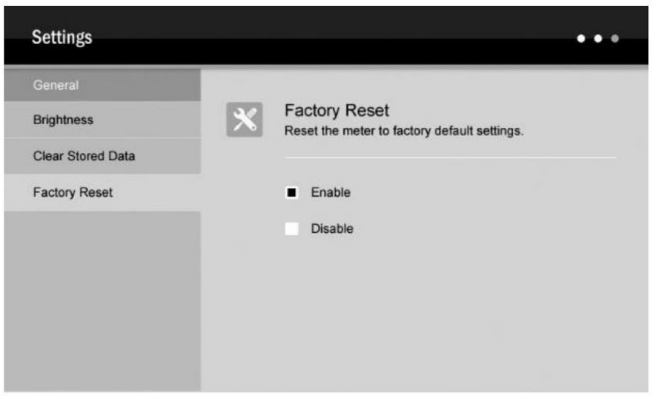
Unlock or Reset the password

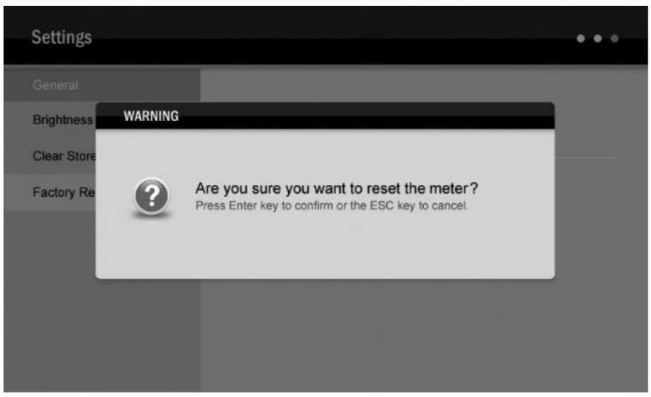
Press and hold the ⚙ key in the measurement mode, the password input window immediately shows on the display and wait for entering the correct digits. Press the ▲ or ▼ key to input the password, press the **Enter** key to confirm. Once you have successfully entered the setup menu, selecting the "Disable". The password will be removed.



Factory Reset

The Factory Reset will restore the meter back to factory default settings. If enabled, all of the calibration data and selected options/parameters will be lost or reset, the meter must be recalibrated. During the setting process, when the display shows "Are you sure you want to reset the meter?", press the **Enter** key, the meter will immediately restore the factory settings, press the **ESC** key to cancel.

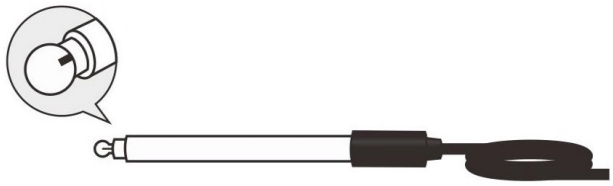




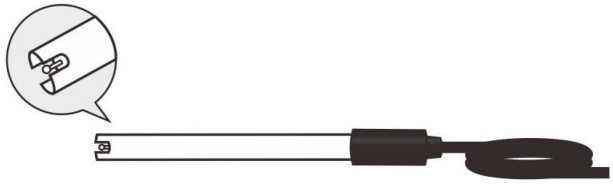
Prior to Use

Remove the protective cap from the bottom of the electrode.

pH Electrode:
If the glass sensitive membrane has dried out, soak the electrode in 3M KCL solution (pH adjusted to 4.0) for at least 30 minutes.



ORP Electrode (purchase separately):
If the sensing element has dried out, soak the electrode in 4M KCL solution for at least 20 minutes.

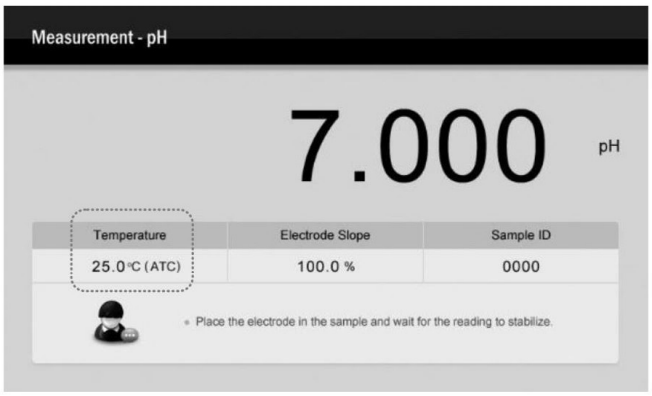


Temperature Compensation

For better accuracy, we recommend the use of either a sensor with a built-in or a separate temperature probe for the calibration or measurement.

Automatic Temperature Compensation

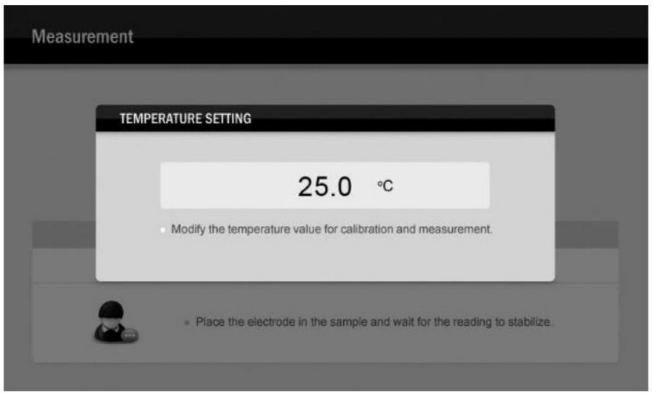
Connect the temperature probe to the meter (Refer to page 4 "Connecting the Temperature Probe"). The ATC icon immediately appears on the display, the meter is now switched to the automatic temperature compensation mode.



Manual Temperature Compensation

If the meter does not detect a temperature probe, the MTC icon will show on the display indicating that the meter is switched to the manual temperature compensation mode. To set the temperature value, follow the steps below.

1. Press and hold the **°C** key for 3 seconds to enter the temperature setting mode.
2. Press the ▲ or ▼ key to modify the temperature value.
3. Press the **Enter** key to confirm, the meter returns to the measurement mode. Setting is completed.



ⓘ Press the ▲ or ▼ key once, the setting value will increase or decrease by 0.1. Press and hold the ▲ or ▼ key, the setting value will increase or decrease by 1.

pH Calibration

The A120 meter allows 1 to 5 points calibration in the pH mode. We recommend that you perform at least 2 points calibration for high accuracy measurement. The meter will automatically recognize and calibrate to following standard buffer values.

USA Standard Buffers	pH1.68, 4.01, 7.00, 10.01, 12.45
NIST Standard Buffers	pH1.68, 4.01, 6.86, 9.18, 12.45
DIN Standard Buffers	pH1.09, 3.06, 4.65, 6.79, 9.23, 12.75

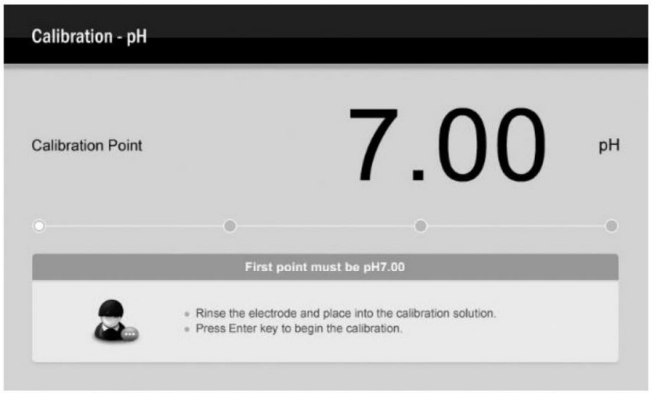
If the Custom option is selected, the meter will allow only 2 to 5 points calibration. Single point calibration should only be carried out with pH7.00, 6.86 or 6.79, otherwise calibration will not be accepted.

Make sure to calibrate the meter when attaching a new electrode. Do not reuse the calibration solution after calibration, contaminants in solution will affect the calibration and eventually the accuracy of the measurement.

Single point calibration

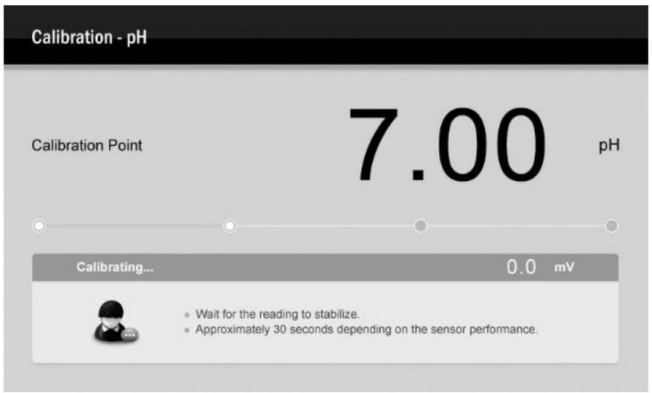
1.1 Ensure that the meter is in the pH measurement mode and you have selected 1 point calibration in the setup menu.

1.2 Press the **Cal** key, the display shows "Calibration Point 7.00" or "6.86" or "6.79" (Depend on the pH buffer group you selected).



1.3 Rinse the pH electrode with distilled water, place the electrode (and temperature probe) into the pH7.00 (or 6.86, or 6.79) buffer solution. The end of the electrode must be completely immersed into the calibration solution. Stir the electrode gently to create a homogeneous solution.

1.4 Press the **Enter** key, the Calibrating.. icon shows on the display.

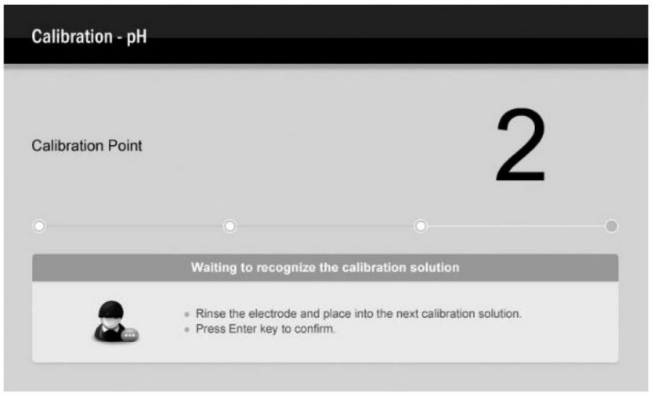


1.5 Wait for the mV value to stabilize, the meter automatically shows "Calibration is completed" and returns to the measurement mode.

Multi-point calibration

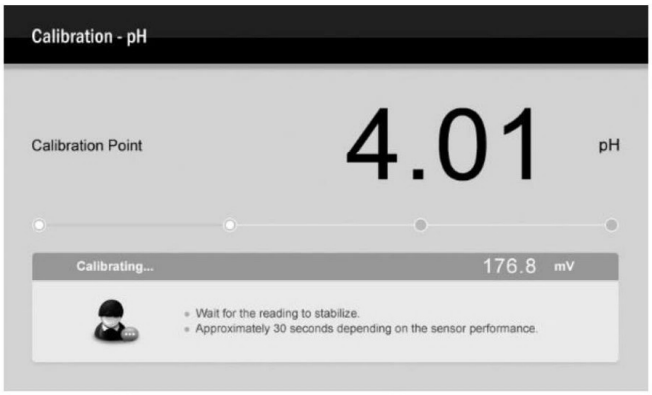
2.1 Ensure that you have selected 2 to 5 points calibration in the setup menu.

2.2 Repeat steps 1.2 to 1.4 above. When the first calibration point is completed, the display will show “Calibration Point 2”. The meter prompts you to continue with second point calibration.



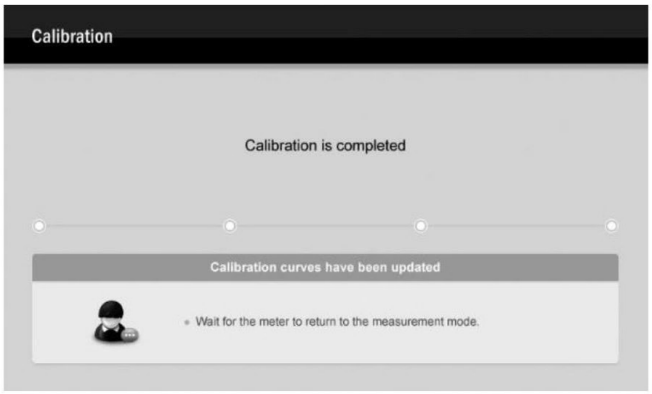
2.3 Rinse the pH electrode with distilled water, place the electrode (and temperature probe) into the next buffer solution (e.g., pH4.01). Stir the electrode gently.

2.4 Press the **Enter** key, the meter automatically recognizes the current calibration solution and begins the calibration.



2.5 Wait for the mV value to stabilize, the display will show “Calibration Point 3”. The meter prompts you to continue with third point calibration.

2.6 Repeat the steps 2.3 to 2.4 above until the meter returns to the measurement mode. Calibration is completed.

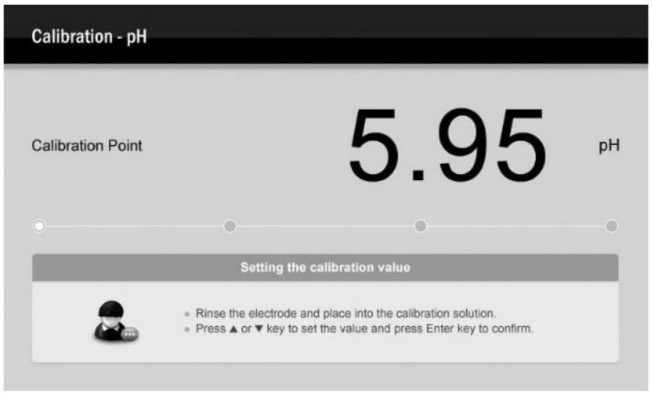


pH calibration with custom buffers

3.1 Ensure that you have select the Custom option in the setup menu. The calibration solutions should be at least 1 pH unit apart from each other.

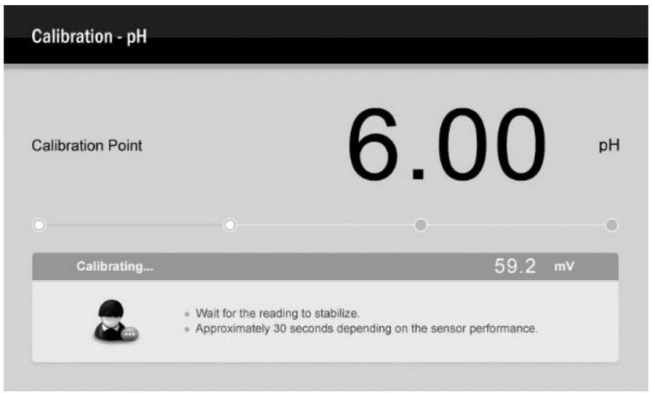
3.2 Rinse the pH electrode with distilled water, place the electrode (and temperature probe) into the custom buffer solution. Stir the electrode gently and wait until the measurement is stable.

3.3 Press the **Cal** key, the meter enters the calibration mode.



3.4 If necessary, press the ▲ or ▼ key to set the calibration value (e.g., 6.00pH).

3.5 Press the **Enter** key, the meter begins the calibration.



3.6 Wait for the mV value to stabilize, the display will show "Setting the calibration value" again. The meter prompts you to continue with second point calibration.

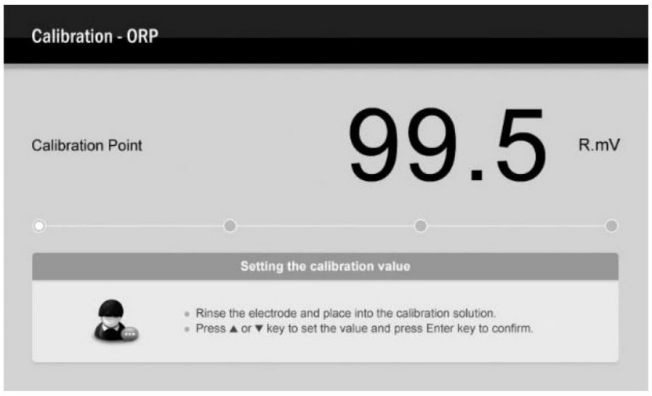
3.7 Repeat steps 3.2 and 3.5 above until the meter returns to the measurement mode. Calibration is completed.

ⓘ If you want to exit the calibration, press the **ESC** key, the meter will immediately return to the measurement mode.

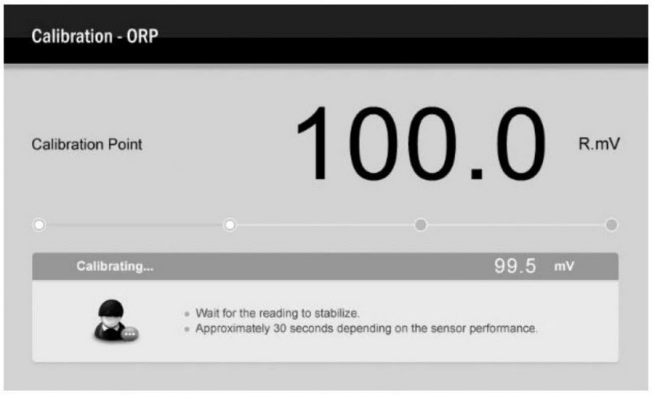
ORP Calibration

The A120 meter allows 1 point calibration in the ORP mode, but calibration is not necessary unless exact readout agreement with a work standard and at a specific ORP value is needed.

1. Ensure that the meter is in the ORP measurement mode.
2. Rinse the ORP electrode with distilled water, place the electrode into the calibration solution. Stir the electrode gently and wait until the measurement is stable.
3. Press the **Cal** key, the meter enters the calibration mode.



4. If necessary, press the ▲ or ▼ key to set the calibration value (e.g., 100.0mV).
5. Press the **Enter** key, the meter begins the calibration.



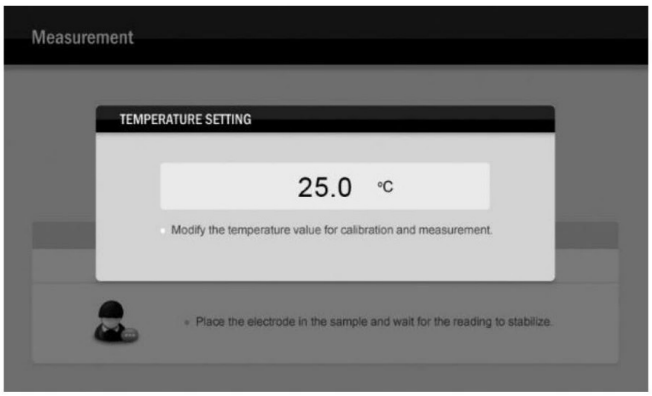
6. Wait for the mV value to stabilize, the meter automatically shows “Calibration is completed” and returns to the measurement mode.

ⓘ During the setting process, press the ▲ or ▼ key once, the setting value will increase or decrease by 0.1. Press and hold the ▲ or ▼ key, the setting value will increase or decrease by 1.

Temperature Calibration

During the measurement process, if the temperature reading displayed differs from that of an accurate thermometer, the meter needs to be calibrated.

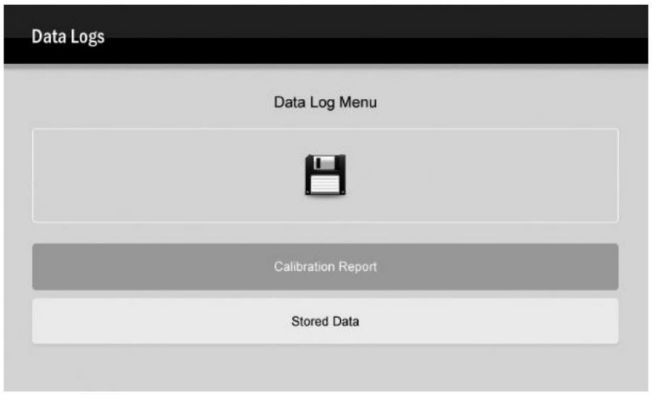
1. Connect the temperature probe to the meter and place into a solution with a known accurate temperature.
2. Press and hold the **°C** key for 3 seconds to enter the calibration mode.
3. Press the ▲ or ▼ key to set the temperature value.
4. Press the **Enter** key, the meter returns to the measurement mode. Calibrating is completed.



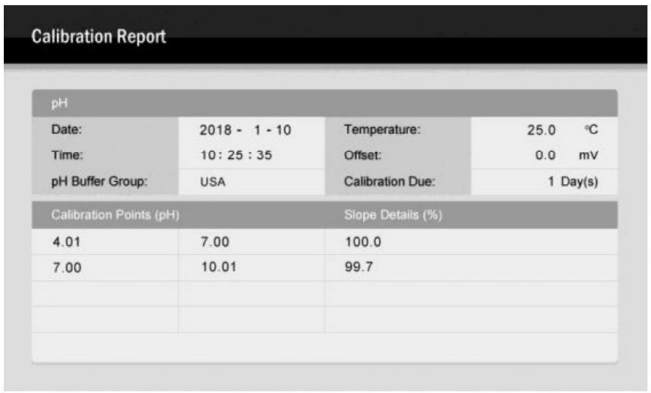
Calibration Report

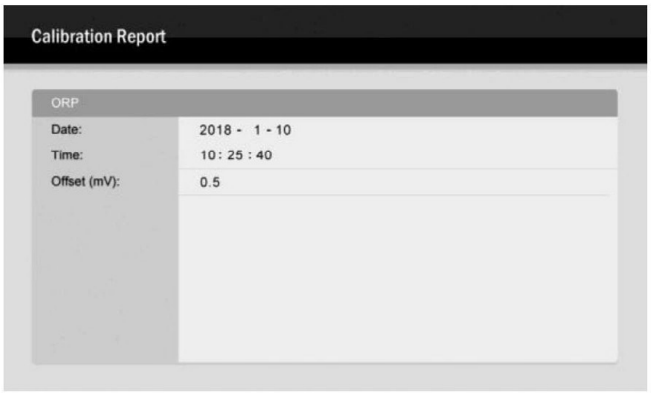
The A120 meter provides detailed report for the pH and ORP calibrations. If the custom buffers used in last pH calibration, the pH calibration report will not available.

1. Press the **MR** key in the measurement mode, the meter shows the data log options.



2. Press the ▲ or ▼ key to select the "Calibration Report".
3. Press the **Enter** key, the display shows the updated calibration information.
4. Press the **ESC** key, the meter returns to the measurement mode.





pH Measurement

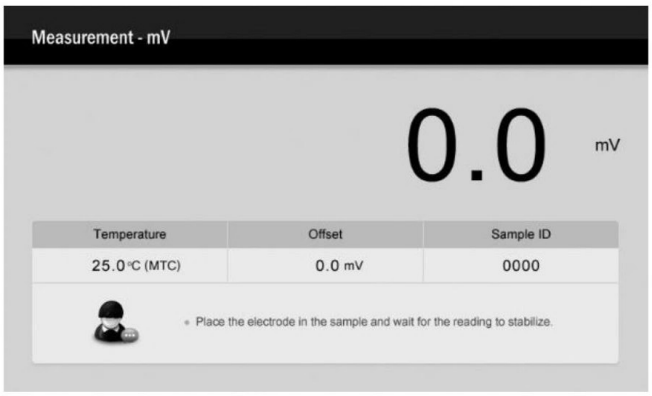
1. Press the **Mode** key in the measurement mode and the ▲ or ▼ key to select the "pH" option, press the **Enter** key to confirm.
2. Rinse the pH electrode with distilled water to remove any impurities adhering to the probe body.
3. Place the electrode (and temperature probe) into the sample solution, stir the electrode gently.
4. Record the measured value when the reading is stable.

ORP Measurement

The A120 meter contains two millivolt measurement modes.

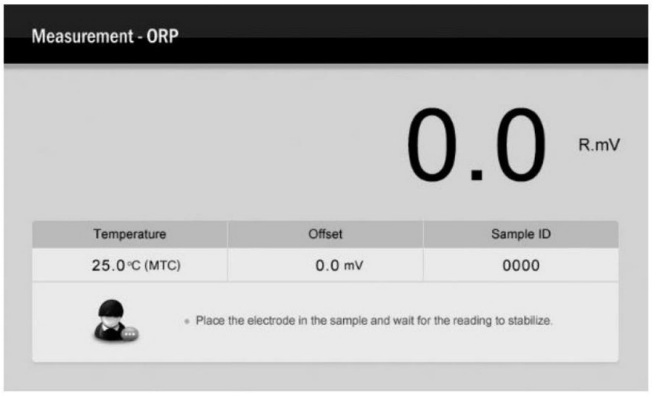
Absolute millivolt

Press the **Mode** key in the measurement mode and the ▲ or ▼ key to select the "mV" option. Press the **Enter** key, the meter is now enters the absolute millivolt measurement mode.



Relative millivolt

Press the **Mode** key in the measurement mode and the ▲ or ▼ key to select the "ORP" option. Press the **Enter** key, the meter enters the relative millivolt measurement mode.



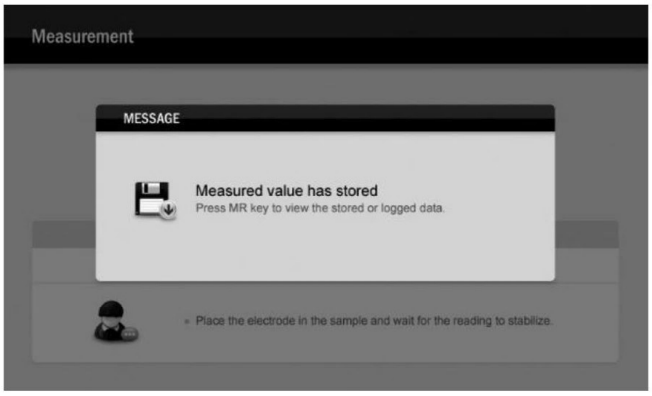
Select one of the above modes. Place the ORP electrode into the sample solution, stir the electrode gently. Record the measured value when the reading is stable.

Storing and Recalling Data from Memory

The A120 meter are capable of storing and recalling up to 1000 data sets.

Storing a measurement result

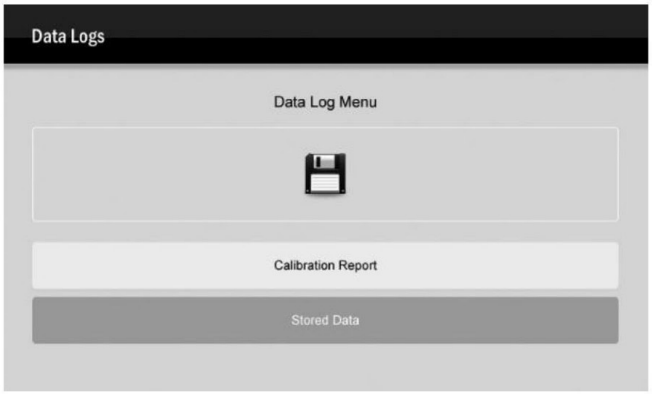
During the measurement process, press the **MI** key to store the measured value, the meter will show a reminder as follow.



Recalling from memory

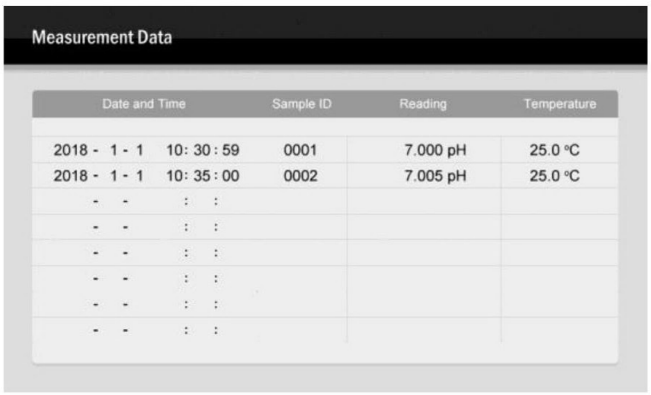
1.1 Press the **MR** key in the measurement mode, the meter shows the data log options.

1.2 Press the ▲ or ▼ key to select the "Stored Data".



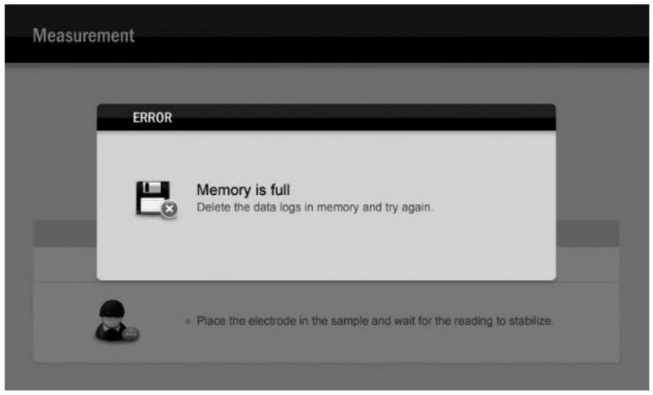
1.3 Press the **Enter** key, the display shows the data list.

1.4 Press the **ESC** key, the meter returns to the measurement mode.

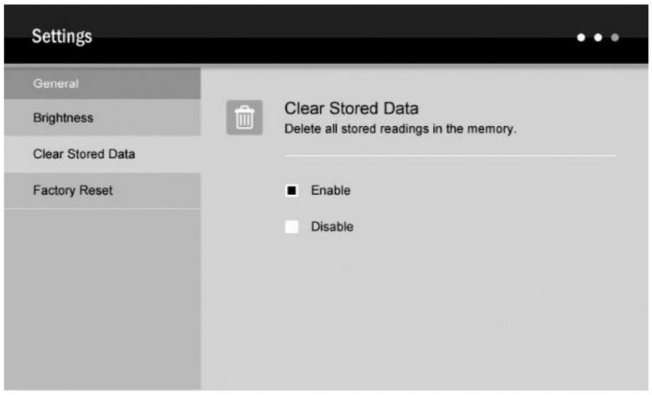


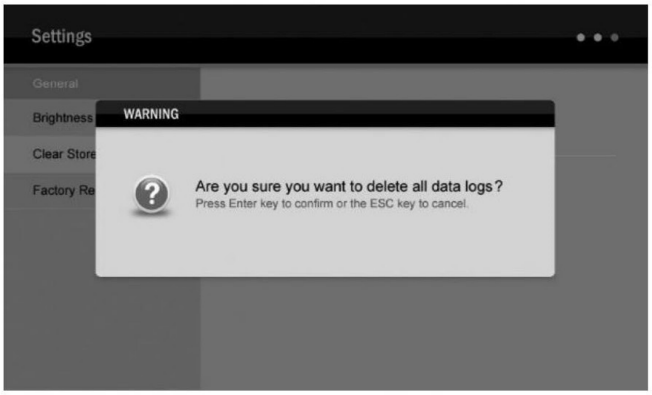
Clearing the memory

If the memory is full, the meter will automatically show a reminder and wait for user to delete all stored readings.
WARNING: once the data are deleted that can not be recovered.



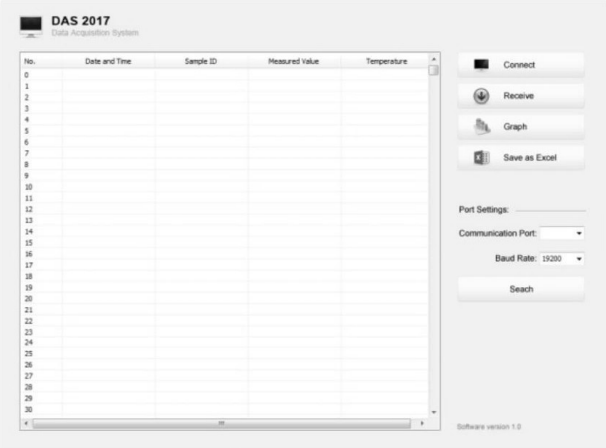
2.1 In the measurement mode, press and hold the ☼ key for 3 seconds to enter the setup menu.
2.2 Press the ▲ or ▼ key to select the "Clear Stored Data".
2.3 Press the **Enter** key, the cursor change to highlight.
2.4 Press the ▲ key to select the "Enable".
2.5 Press the **Enter** key, the meter shows a warning "Are you sure you want to delete all date logs ?"
2.6 Press the **Enter** key to confirm or the **ESC** key to cancel. The meter returns to the measurement mode.





Communication

Bante Instruments provides a Data Acquisition System that can be used to transfer data, receive the measuring values or import the data to Excel. You are able to download this software from our official website at Before installation, ensure that Windows 7/8/10 operating system has been installed on your computer.



Receiving data

1. Connect the USB cable and data converter to the meter and computer.
2. Click the DAS_A_Series icon on computer, the system will automatically scan an available communication port and show the message box "Found a port on your computer".
3. Click the **OK** button, the application starts.
4. Click the **Connect** button, the screen shows "Port is connected" indicating that the communication between the meter and the computer has been established.
5. Click the **OK** button to confirm.
6. Click the **Receive** button, the stored data automatically transfer to computer.

Interval recording

This function is used to record the measuring value within the specify time period. The setting method refers to page 6 "Setting the Default Options". Note:

- The first data need 1 minute to be shown on screen.
- Do not press any key on meter during the Interval Recording mode, it will cause the communication interruption.

Graph mode

This function helps user to view variations of the measured value continuously. Click the **Graph** button, the screen immediately shows the curve graph. Click the **X** button to quit.

Create the excel file

When the data transfer is completed, click the **Save as Excel** button, the measured values in the data sheet will automatically convert to Excel file. WARNING: Once the software is closed, all received data will be lost and can not be recovered.

Electrode Care and Maintenance

pH electrode

Since pH electrode is susceptible to dirt and contamination, clean as necessary depending on the extent and condition of use.

- After measuring: rinse the electrode in distilled water, store the electrode into the 3M KCL solution.
- Salt deposits: soak the electrode in warm tap water to dissolve deposits, then thoroughly rinse with distilled water.
- Oil or Grease film: wash the glass sensitive membrane of electrode gently in some detergents and water. If necessary, using the alcohol to clean the sensitive membrane, then rinse with distilled water. Place the electrode in the 3M KCL solution for at least 30 minutes.
- Clogged reference junction: heat a diluted KCl solution to 60°C to 80°C. Place the electrode into the heated solution for about 10 minutes. Allow the electrode to cool in some unheated KCl solution.
- Protein deposits: prepare a 1% pepsin solution in 0.1M of HCL. Place the electrode in the solution for 10 minutes. Rinse the electrod with distilled water.

Rectivating the pH Electrode:

If stored and cleaned properly, the electrode should be ready for immediate use. However, a dehydrated sensitive membrane may cause sluggish response. To rehydrate the sensitive membrane, immerse the electrode in a pH4.01 buffer solution for 10 to 30 minutes. If this fails, the electrode requires activation.

1. Soak the electrode in 0.1M HCl for 5 minutes.
2. Remove and rinse with deionized water, then place in 0.1M NaOH for 5 minutes.
3. Remove and rinse again, and soak in 3M KCL solution for at least 30 minutes.

ORP electrode

- Ensure that the ORP electrode is thoroughly washed with distilled water after use.
- In aggressive chemicals, dirty or viscous solutions, and solutions with heavy metals or proteins, take readings quickly and rinse electrode immediately.
- If you do not use the electrode for long periods, store the electrode with 4M KCL solution.

Cleaning the Electrode:

Contamination of the sensing element often results in slow response and inaccurate readings. If necessary, clean the element by one of the following procedures.

Inorganic Deposits:

1.1 Soak the ORP electrode in 0.1M HCl for 10 minutes.
1.2 Remove and rinse with distilled water, then place in alcohol for 5 minutes.
1.3 Remove and rinse again, and soak in pH4.01 buffer solution for 15 minutes.

Oil and Grease Films:

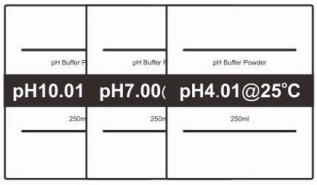
2.1 Wash the electrode gently in some detergents and water.
2.2 Dip the electrode in the 4M KCL solution for at least 30 minutes.

Specifications

pH	Model	A120
	Range	-2.000~20.000pH
	Accuracy	±0.002pH
	Resolution	0.01, 0.001pH, Selectable
	Calibration Points	1 to 5 points
	pH Buffer Options	USA, NIST, DIN or Custom
	Automatic Buffer Recognition	Yes
	Temperature Compensation	0~100°C, 32~212°F, Manual or Automatic
mV	Range	-2000.0~2000.0mV
	Accuracy	±0.2mV
	Resolution	0.1mV
	Calibration Points	1 point (Only for relative mV mode)
Temperature	Range	0~105°C, 32~221°F
	Accuracy	±0.5°C, ±0.9°F
	Resolution	0.1°C
	Calibration Points	1 point
General	Memory	Stores up to 1000 data sets
	Output	USB Communication Interface
	Connector	BNC
	Power Requirements	DC12V/2A, using AC adapters, 220VAC/50Hz
	Dimensions	240 (L) × 220 (W) × 80 (H)mm
	Weight	1.7kg

Addendum 1: Preparation of pH Buffer Solutions

Bante Instruments provides 3 buffer packets required for pH calibration (Order Code: PHR-USA).



- Open the pH7.00 buffer packet, place the reagent into a 250ml volumetric flask. Pour the distilled water 250ml to scale line, mix the solution until the reagent is completely dissolved.
- Preparation of pH4.01 and 10.01 standard buffer solutions are the same as above. Prepared standard buffer solutions should be stored in hermetically sealed glass containers.

Addendum 2: Preparation of ORP Standard Solutions

- Add 3 grams of quinhydrone to 500ml buffer pH4.01 and stir for 15 minutes. Un-dissolved quinhydrone powder must be present.
  Potential @ 25°C = +263mV (±10mV)

- Add 3 grams of quinhydrone to 500ml buffer pH7.00 and stir for 15 minutes. There must be an excess of undissolved quinhydrone powder.
  Potential @ 25°C = +87mV (±10mV)

Addendum 3: pH Electrode Selection Guide

The A120 meter comes with a general purpose pH electrode that is used to measure the pH of the liquids. If this electrode can not meet your measurement requirements, please refer to the table below to select an applicable probe.

SAMPLE TYPE	P11	P12	P13	P15	P16	P18	P19	P21	E201	E202
Agar										•
Beer	•	•	•					•	•	•
Blood Products	•	•	•					•		•
Bread, Dough						•	•			
Cement	•									
Cosmetics	•	•	•					•	•	•
Dairy Products	•	•	•				•			•
Education	•								•	•
Fats/Cream							•			
Field Use						•			•	•
Fish Products							•			•
Lab Flasks		•								
Low Ionic	•			•				•		
Meat, Cheese							•			•
Micro Samples			•							
Paint		•	•							•
Photographic										
Soil						•	•			
Surface										•
Test Tubes		•			•					
Tris Buffer					•					
Viscose Samples										•

Addendum 4: ORP Electrode Selection Guide

ORDER CODE	APPLICATION
501	Suitable for the sample with strong redox potential, plastic body, temperature range: 0~80°C
502	Suitable for the sample with weak redox potential, plastic body, temperature range: 0~80°C
504	Suitable for the high temperature samples, glass body, temperature range: 0~100°C

Hazardous Substance Statement

Instruments is committed to the reduction and eventual elimination of all hazardous substances in both the manufacturing process and finished products we supply. We have an active manufacturing and procurement program to minimize and eliminate the use of harmful heavy metals such as cadmium, lead, mercury and the like. New technologies and design parameters are also promoting these efforts and we expect to have little or no such materials in our product in the coming years. We welcome our customer suggestions on how to speed up these efforts.

Warranty

The warranty period for meter is one year from the date of shipment. Above warranty does not cover the sensor and calibration solutions. Out of warranty products will be repaired on a charged basis. The warranty on your meter shall not apply to defects resulting from:

- Improper or inadequate maintenance by customer.
- Unauthorized modification or misuse.
- Operation outside of the environment specifications of the products.

For more information, please contact the nearest authorized distributor.