HUMMING PROBE pH Measurement system

User Manual (V1.0)

Contents

1. Intro	oduction2
1.1.	Product Introduction2
1.2.	Safety Instructions2
2. Pro	duct Description2
2.1.	HUMMING PROBE pH Measurement System2
3. Pro	duct, Accessories and Function keys3
3.1.	UX200 pH Measurement Meter
3.2.	UH1: pH Test Strip Electrode3
3.3.	Strip Extended Connection Cable4
3.4.	Charging4
3.5.	Touch screen icon definition4
4. Mai	n screen & Description5
5. UX2	200 Setup6
5.1.	Setup Menu and Function List6
5.2.	Measuring Mode Selection:
6. Mea	asuring pH14
6.1.	Strip Port Mode measuring procedure14
6.2.	Cable Socket Mode Measuring Procedure16
7.1	Read or Edit Data18
7.2	USB Storage Mode to connect to PC19
8. Techr	ical Data sheet19
9. Wa	rranty20

1. Introduction

1.1. Product Introduction

- Thank you for choosing HUMMING PROBE pH measurement system. Please read this manual carefully before using. It will provide you with the information you need to use this product.
- HUMMING PROBE calibration-free pH measurement system UX200 together with UH strip electrodes make pH measurement simple and accurate. The unique features: calibration-free and low sample requirement allow multiple applications feasible.
- UX200 Meter design with high-resolution color touch panel and comprehensive user interface, make it easy to learn and operate. Data can be edited and stored with graphics and text, making data storage complete and meaningful.
- UH strip electrode, innovatively integrate the principle of electrode measurement on a single test strip electrode for pH measuring. It is easy to use, free from calibration, convenient to store and carry. Measurement is just easy and quick.
- UX200 possesses the function of real time XY axis data chart on screen, showing a continuous pH or voltage data curve (Y axis) relevant to time (X axis). Users can instantly trace the change of pH or voltage curve clearly.
- The HUMMING PROBE pH measurement system is manufactured by UltraE Co., Ltd., and sold by authorized dealers. If you have any questions or comments about our products, please call our company or contact your local distributor. We will assist you as soon as possible.

1.2. Safety Instructions

- Read this manual thoroughly before using the instrument.
- When you suspect that the instrument is damaged, do not use it, notify us or distributor immediately.
- Do not place the pH Meter in water.
- If you have any questions about using the system, please contact us or your dealer.

2. Product Description

2.1. HUMMING PROBE pH Measurement System

Using calibration-free test strip electrode to measure pH value of solvent: The package contains:

- (1). UX200 : pH Measurement Meter (1 unit)
- (2). UH : pH test Strip electrode (10 pcs in a vial)
- (3). Strip Extended Connection cable (1 pc)
- (4). Charger (1 pc)
- (5). Micro USB cable for charging and data transfer. (1 pc)
- (6). Brief User Manual

(7). User manual is built inside the Meter storage and can be copied to computer for reading.

3. Product, Accessories and Function keys

3.1. UX200 pH Measurement Meter



3.2. UH1: pH Test Strip Electrode



Vial (10 pcs/vial) Note: The vial should be closed constantly to maintain the quality of the strips.



pH Test Strip Electrode UH1

Note :The pH Test Strip Electrode should always be capped and stored in the vial and only to be taken out when using.

3.3. Strip Extended Connection Cable

Strip Extended Connection Cable Plug connecting to Meter socket

Adapter for pH test strip electrode to insert

Strip electrode insert method and direction.





3.4. Charging

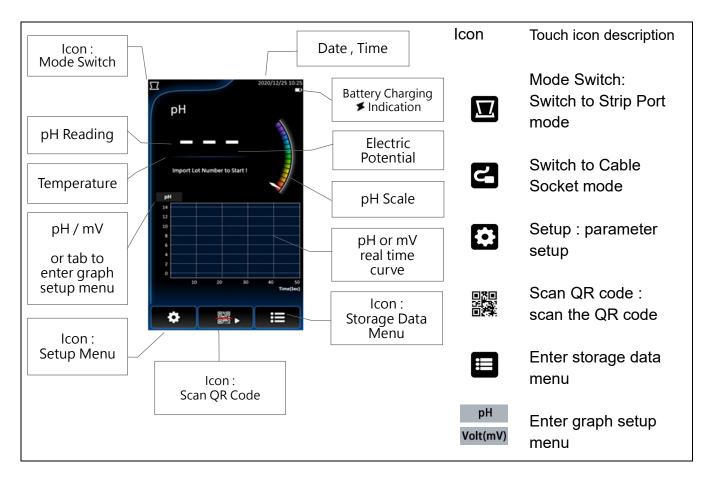
UX200 rechargeable battery can be used for a few hours after fully charged. Plug the Charger into 100/240V AC power supply and connect to the Meter with micro USB Cable.

3.5. Touch screen icon definition

\$	Setup		HOME
	Scanning QR code	₽	Previous Menu
	Execute Inspection	ŀ	Previous Menu
ł	Enter	\leq	Previous Menu
	Enter pH inspection data database	=	Scan QR code
世	Delete	¥	Camera light off
	Selects All	×	Camera light on
	Input Text		Not selected
[+]	Activate Camera	\checkmark	Selected
_	1. Enter the mode selection	_	1. Enter the mode selection
5	menu	$\mathbf{\Sigma}$	menu
	2. Select the Cable Socket mode		2. Select the Strip Port Mode
Ø	Take Photo	▼	Enter selection chart
рН	Show pH value	Volt(mV)	Show volt value
	Enter setup graph menu	Volt(inV)	Enter graph setup menu

4. Main screen & Description

Switch on and enter main screen (press and hold the power switch for 2 seconds)



Import Lot number to start.

Lot number : Also known as batch number. Every batch of strip production has its unique lot number, printed as QR code on the cap of the vial. Scan the QR Code when using the strip for the first time to load the technical parameter of the pH Strip into the Meter.

Lot number format : nnnnnnnn # nn n: number

The left 10 digits is the Lot number, while the number behind # is the number of the strips in the vial un-used. Every time when you insert and pull out a strip, the number will be decrease by 1, and when the number becomes zero, rescanning the QR code is necessary. This count down design is to remind users to re-scan the QR code of a new batch of strips .

5. UX200 Setup

- 5.1. Setup Menu and Function List
- Tab 🚺 to initiate setup menu

Tab and drag the screen to move the menu up and down.

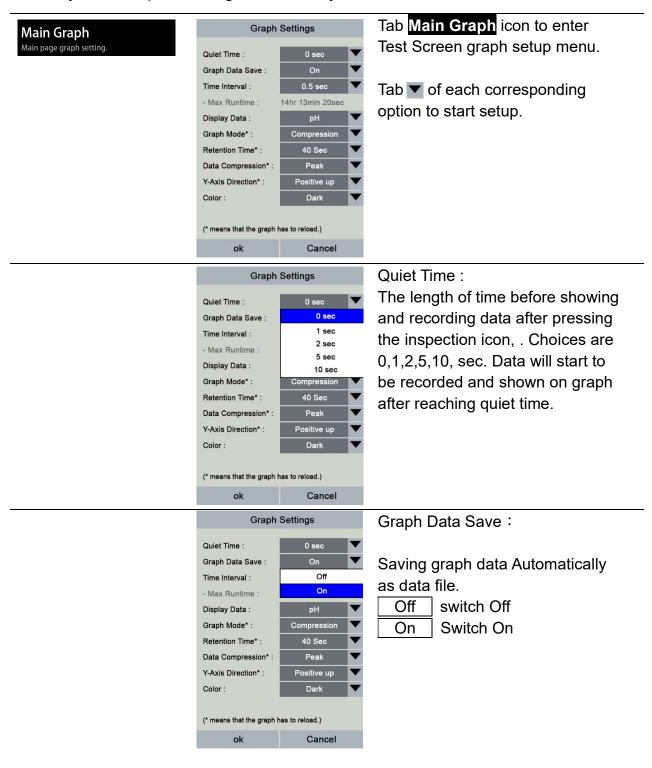
2018/12/25 17:20	
Settings	
Data Log Custom Title	Custom storage pH data title
None Main Graph	Graph setup for Test Screen
Main page graph setting. Data Graph Data setting	Graph setup for Data Screen
Data page graph setting. Clear Data Delete all data.	Delete all data
General Power Saving mode Automatically shuts down after 5 minutes idle.	Power Saving mode
USB Storage mode Use USB to connect with PC.	Connect to computer using USB cable
Date	Date setup
Time Brightness	Time setup
47%	Brightness setup
Firmware Update Restore Defaults	Firmware update
About	Restore to factory default settings
	About the meter

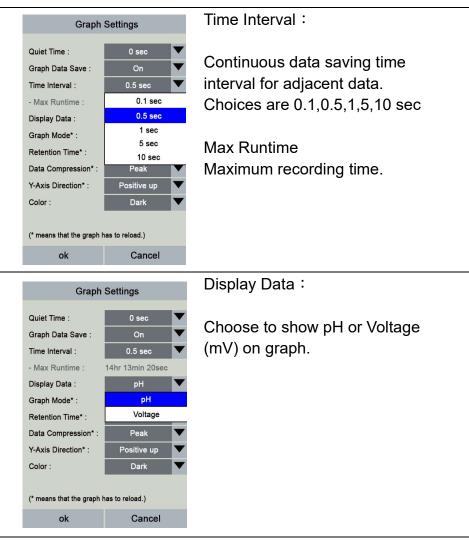
Operation Instruction

Custom Title

Tab to enter the input page, you can input a title as the preset title of the pH storage record, tab ← to confirm , or tab ⊆ to return to the previous screen.

UX200 possesses the function of **real time XY axis data chart on screen**, showing a continuous pH or voltage data curve (Y axis) relevant to time (X axis). Users can instantly trace the pH or voltage curve clearly.





Graph Settings		
Quiet Time :	0 sec 🔻	
Graph Data Save :	On 🔻	
Time Interval :	0.5 sec 🔍	
- Max Runtime :	14hr 13min 20sec	
Display Data :	рН 🔻	
Graph Mode* :	Compression 🔻	
Retention Time* :	Compression	
Data Compression* :	Shifting	
Y-Axis Direction* :	Reflash	
Color :	Dark 🗸	
(* means that the graph has to reload.)		
ok	Cancel	

Graph Mode :

The initial time range setting for x axis will be 40 secs . As the time proceeds , there are 3 choices to show the data graph on screen : **Compression** \ **Shifting \ Reflash** **Compression** : All the data will be shown on the screen. As time proceeds, all the data will immediately form a continuous curve on the screen .

i.e. The initial time range setting will be 40 secs . When the time exceeds 40 secs, the X axis time range will double to 80 secs and the curve will be compressed in accordance . Every time the time exceeds the present range, the time axis range will again double and the data curve will be compressed accordingly.

The compression method of Y axis data can be set up as peak or average at the later setup option.

Shifting :When time reaches Retention time, time Axis (X axis) length will be fixed as Retention time , showing only the newest data as time proceeds..

i.e. The initial time range setting will be 40 secs . When the time exceeds 40 secs, the X axis time range will double to 80 secs and the exiting curve will be compressed in accordance . Every time the time exceeds the present range, the time axis range will again double and the data curve will be compressed accordingly..

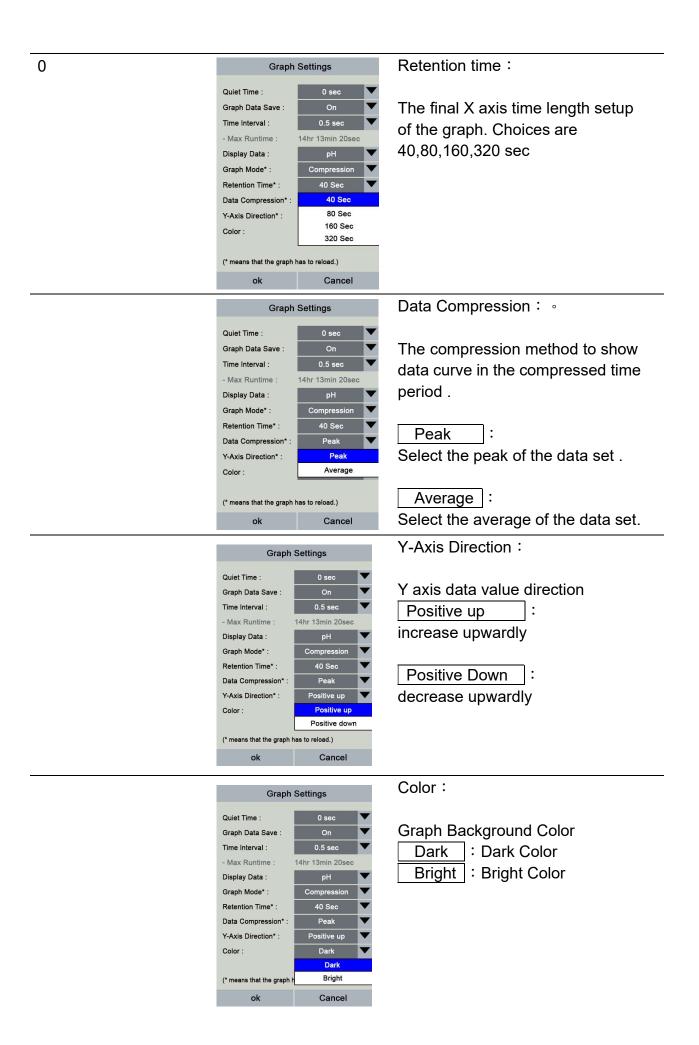
But When the time reaches the retention time, the X axis time range will no longer increase and stay fixed. As time proceeds, only the newest data will be shown in the newest time range, data before the range will not be shown. The compression method of Y axis data can be set up as peak or average at the later setup option.

Reflash :When time reaches Retention time, time Axis (X axis) length will be fixed as Retention time , showing only the newest data as time proceeds..

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But When the time reaches the retention time, the X axis time range will no longer increase and stay fixed. As time proceeds, a whole new time segment will appear and the newest data will be shown in the newest time segment, data before the range will not be shown.

The compression method of Y axis data can be set up as peak or average at the later setup option.



The data charts in the **Data Graph Section** consist all the data, which are compressed.

Data Graph Graph Settings Ital Detect Graph Data Compression: Pailor with the graph tast in practice of the graph settings Display Data : Choose to show pH or Voltage (mV) on graph. Choose to show pH or Voltage (mV) on graph. Choose to show pH or Voltage (mV) on graph. Data Compression : •• Choose to show pH or Voltage (mV) on graph. Data Compression : •• Organ Settings Data Compression : •• Organ Settings Data Compression : •• Choose to show pH or Voltage (mV) on graph. Choose to show data curve in the time period . Choose to show pH or Voltage (mV) on graph. Peak : Select the peak of the data set . Vivas Director : Pailor with the to the data set . Average : Select the average of the data set . Average : Select the average of the data set . Outs Compression : Pailor with to the data set . Y-Axis Direction : Outs Compression : Pailor with to the data set . Y-Axis Direction : Outs Compression : Pailor with to the data set . Y-Axis Direction : Outs Compression : Pailor with to the data set . Y-Axis Direction : Outs Compression : Pailor with to the data set . Y-Axis Direction : Outs Compressether to graph the t		0 1 0 11	Tab Data Graph icon to enter
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Dark Bright : Bright Color			
ok Cancel		ok Cancel	



Tab and the deletion option appears, tab Yes to delete all data, tab No to cancel. Note that you cannot restore the change after deleting.

Power Saving mode Automatically shuts down after 5 minutes idle		Tick here to enter Power Saving Mode. If the Meter is not in the Detection Status or Measure Screen, the Meter will shut down automatically after 5 minutes of idle to save power consumption.
USB Storage mode	Are you sure to enter USB storage mode? Yes No	Tab for the USB connection option to appear, tab Yes to connect to the computer, tab No to cancel.
	Connected	When Connected icon is shown, the file manager of the computer will display the UX200 DISK disc. Tab Touch Here to Exit to disconnect from the computer and return to the main menu whenever needed.
Date	2018 4 14 2019 5 15 2020 6 16 Year Mouth Day Ok Cancel	Date setting Tab to enter the date setting menu, select the correct year, month, and day and tab OK to set a new date or tab Cancel to cancel.
Time	17 0 4 18 1 5 10 2 6 Hour Minute Second Ok Cancel	Time setting Tab to enter the time setting menu, select the correct hour ,minute, and second and tab OK to set a new time or tab Cancel to cancel.
Brightness 47%	Settings Brightness 47 %	Brightness Tab to enter the brightness adjustment menu and slide the indicator to adjust the brightness, tab
Firmware Update Check firmware		After downloading the new firmware FWUD.PACK and store it in UX200 , tab here to update.
update at <u>www.ultrae.com.tw</u> . For new firmware found, download it to computer, then connect Meter to the	Current Ver:1.00 Update Ver:1.00 Are you sure to update? (Ensure battery has enough power.) Yes No	When the Update Firmware Options appears. Tab Yes to confirm update. It will be updated according to the newest firmware version file in the

computer using USB storage mode		root directory of the UX200.
and save the update directory to the UX200 root directory.	FWUD.PACK not found! (Using USB Storage mode to put PACK in) Ok	If the left screen appears, it indicates that the update file was not found, please download the new firmware to the root directory of UX200 in order to update.
Restore Defaults	are you sure to restore factory settings? Yes No	Tab for the restore defaults option , tab Yes to restore to the original factory setting or tab No to cancel.
	Delete all data together ? (It may take some time.) Yes No	If choosing to restore to the original factory setting, tab Yes to confirm data deletion, tab No to keep data
About	2018/12/25 17:20 Settings About UtraE Co.LId Model UX100_DEMO SN DEMOAB1234567890 Firmware : 1.00 System : 1.00	Tab to Display : Company Name, Model Name SN Firmware serial number System serial number

5.2. Measuring Mode Selection:

Strip Port Mode or Cable Socket Mode can be selected for detection (factory default setting as Strip Port Mode), the operation steps are as follows:

H. 100 Jan	Tab 🔄 or 🔟 in the upper left corner of the main screen if you want to change it to another mode.
Cable Socket	Option screen appears, tab to choose Cable Socket mode 🗲 or Strip Port mode 🔟 according to usage.
Cable Socket	After choosing the new Mode, it will return to the main screen, and the chosen mode will display in the upper left corner.

6. Measuring pH

6.1. Strip Port Mode measuring procedure.

- (1) Turn on the meter (press the power switch for 2 seconds), choose the Strip Port Mode.
- (2) Tab the QR code Icon 🧱 below the main screen.
- (3) The current Lot no. will display (the number before # is the Lot no., the number after # shows the un-used qty of the strips in the vial. Every strips inserted and pulled out, the qty number will minus 1 automatically) If it is correct, tab Continue to enter the Test Screen. Tab Rescan for need to rescan.
- (4) Rescan: Align the "photo frame" with the QR code on the vial, and then tab the scan icon to scan.
- (5) Check the Lot no. (number before #) and tab OK if correct. If not, tab Rescan to rescan.

PH Lot: 1234567890 #30

Continue Rescan

Lot: 0118111901#25

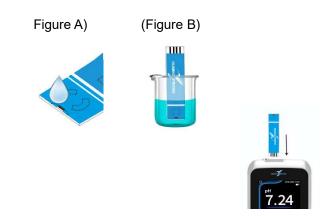
Ok

Rescan





Test Screen



- (6) Enter Test Screen
- (7) Take the test strip electrode out of the vial and close the vial instantly.
- (8) Drop the test sample into the strip sampling port (figure A) or immerse sampling port end into the testing sample until the white line for about 2 seconds .(figure B)
- (9) Insert the Strip Insert End into the Meter Strip Port. (step 8 and 9 can be reversed)

- (10) Tab the Inspect icon **>** .
- (11) Current setup parameters will appear on screen. Tab OK to continue or tab Cancel to cancel.
- (12) Real time pH ,(mV), temperature and curve will start to display on screen together with the real time curve.
 Bubble icons will appear to indicate the status of measurement ,1 bubble (begin) to 5 bubbles (pH stable state).
 When the pH stable state display, the pH measuring is done and the stable pH reading will display on screen. If autosave was set, the reading data will be automatically saved to UX200 storage.
- (13) Tab **T** to end
- (14) Do you want to save the data ?Tab Yes to store the pH data or tab No to cancel.
- (15) Back to the main Test Screen, the same Lot.no. strips can be used for the next measurement.

(16) Tab for option screen and tab Yes to return to main menu, tab No to remain in the Test Screen.



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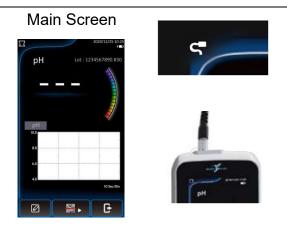






6.2. Cable Socket Mode Measuring Procedure

- Turn on the meter (press the power switch for 2 seconds), choose the Cable Socket Mode.
- (2) Connect the strip Extended Connection Cable plug to the socket of the meter



- (3) Tab the QR code icon on the main screen.
- (4) The current Lot no. will display (the number before # is the Lot no., the number after # shows the un-used qty of the strips in the vial. Every strips inserted and pulled out , the qty number will minus 1 automatically).

Tab Continue to enter the Test Screen if the correct lot no. is displayed. Tab Rescan for need to rescan.

- (5) Rescan: Align the "photo frame" with the QR code on the vial, and then tab the scan icon 🖨 to scan.
- (6) Check the Lot no. (number before #) and tab OK if correct. If not, tab Rescan to rescan.
- (7) Enter Test Screen
- (8) Take the test strip electrode out of the vial and close the vial instantly.



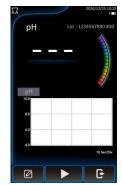








Test Screen



- (9) Insert the test strip electrode into the adapter of the cable.
- (10) Immerse the strip sampling port end into the testing sample until the white line. If you have a CS200 mixer, you can attach the Extended Connection Cable to the bracket.
- (11) Tab the Inspect icon
- (12) Current setup parameters will appear on screen. Tab OK to continue or tab Cancel to cancel
- (13) Real time pH ,(mV), temperature and curve will start to display on screen together with the real time curve.

Bubble icons will appear to indicate the status of measurement ,1 bubble (begin) to 5 bubbles (pH stable state).

When the pH stable state display, the pH measuring is done and the stable pH reading will display on screen. If autosave was set, the reading data will be automatically saved to UX200 storage

- (14) Tab **T** to end.
- (15) Do you want to save the data ? Tab Yes to store the pH data or tab No to cancel.
- (16) Back to the Test Screen, the same Lot.no. strips can be used for the next measurement.
- (17) Tab and tab Yes to return to main menu, tab No to remain in the Test Screen









Do you want to quit?

No

Yes

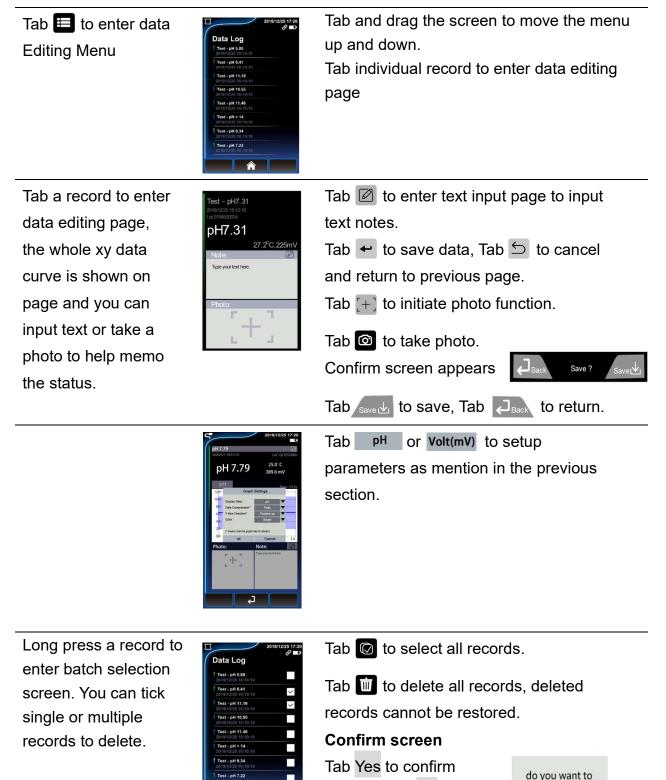


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7. Stored data Reading and Editing

Tab 🔲 to enter data editing Mode

7.1 Read or Edit Data



deletion, tab No to

cancel deletion.

delete this data?

Yes

No

7.2 USB Storage Mode to connect to PC

- (1) Connect the Meter to computer with USB cable, then choose and enter the USB Storage Mode, run the file manager of the computer to find "UX200 DISK".
- (2) Enter "UX200 DISK" root directory, UX200_UserManual.pdf can be found for download.
- (3) The directory "Data" in "UX200 DISK" contains all stored pH measuring data.
- (5) Copy "dataLog.txt" > "PHOTO" directory and RAWDATA" directory to PC.
- (6) Use EXCEL to run "DataLog.txt", select "Delimited " and choose "Tab" to separate and group the data. You can then save it as Excel file in your Computer.
- (7) Tab the file name on the photo data column to open the photo file. (The Photo directory must be in the same directory of "DataLog.txt".)
- (8) To update firmware, store the newest updated directory FWUD.PACK into the UX200 DISK root directory and run the firmware update process.

Specification	
Screen :	7" color LCD touch screen
IP Code :	IP54
Camera :	5 M pixels
Power :	5V DC · 2A(100/240V AC)
Battery :	Rechargeable battery 2500 mAh
Dimension (WxLxH):	129 x 214 x 25 mm
weight :	540 g
Measuring range	
pH range:	0.00 ~ 14.00 pH
Electric Potential :	±1000.00 mV
Temperature :	10° ~ 40°C
Resolution	
pH Value:	0.01 pH
Electric Potential :	0.1 mV
Temperature :	0.1°C
Accuracy	
pH Value:	±0.1 pH
Electric Potential :	0.05%
Temperature :	±0.5° C

8. Technical Data sheet

9. Warranty

- Under normal usage, UltraE provides a 12 month guarantee for material or manufacturing defects of products after purchase.
- The decision whether or not the guarantee is applicable is subject to UltraE's assessment of the defect cause.
- The guarantee explicitly excludes normal wear and tear and misuse of the meter.
- UltraE holds the right, at wholly its own discretion, to refuse guarantee claims in the event it suspects the meter has been used incorrectly. In cases of incorrect use, UltraE may, but is not obliged to, offer to repair the meter at regular repair fees.
- Please confirm the integrity of the product when purchasing the Meter.
- Any representations and guarantees made by any person, including distributors, representatives and employees of UltraE that are contradictory to the abovementioned guarantee conditions are void unless these are made in writing and signed by an authorized person.
- UltraE is not liable to users for any damages, either direct or indirect, relating to the misuse of the products and accessories