AQUASOL DIGITAL

Table Top Meters
AB-T-PH

Warranty Card*

Customer Name/ Address : _____

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Dealer Name/ Address: _____

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Bill No. _____

Date -: _____

Product details

Dealer Stamp & Sign

RAKIRO BIOTECH SYSTEMS PVT LTD

Instruction Manual

AB-T-PH pH Meter

AQUASOL DIGITAL

Table Top Meters

An ISO 9001:2015 Company

RAKIRO

www.rakiro.net

Content

1. Brief Instruction :

Thanks for buying and using the Model AB-T-PH Meter (the following called "meter" in short). Before using this meter, please read the operation manual carefully in order to help use and maintain it correctly. On the basis of improving instrument of performance constantly, we reserve the right of changing the content of this manual and accessories in case of not notifying in advance. This meter is a perfect combination with the most advanced electronic technology, sensor technology and software design. The meter can measure the parameters of pH and temperature for high accuracy solution. It is the best portable pH meter with the highest performance and the lowest cost.

This meter has the following prominent features :

Built-in microprocessor chip, with the intelligent functions of automatic calibration, automatic/manual operation temperature compensation, data storage, function setting and data export.

Adopts digital filter and step slipping technology to intelligently improve meters' response speed and result accuracy. “☺” will appear when reading to be stable.

With new type of pH meter electrode and temperature electrode, the pH measurement mode has the function of automatic temperature compensation / manual salinity compensation, it is more convenient to use, more accurate to measure.

1.1 Product Packing

a) AB-T-PH - Meter - 1 Unit
b) AME-PH-LG - PH Electrode - 1 Unit
c) AME-T-T10 - Temperature Electrode - 1 Unit
d) Supply Adapter - 12V/1A
e) Operating Manual

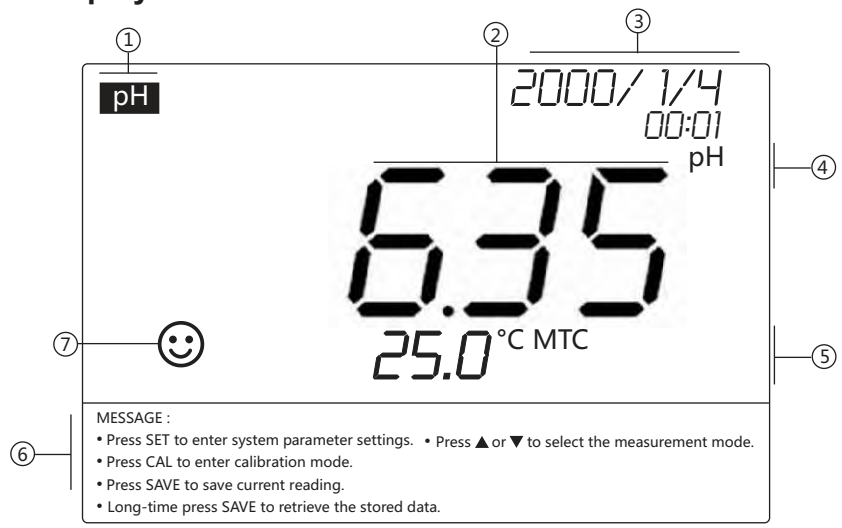
2. Technical Parameters :

Model No	**AB-T-PH**		
Parameter	**pH**	**ORP***	**Temp**
Range	0.00 to 14.00	-1999 mv to 1999 mv	0 to
Accuracy	±1% FS	±2% FS	±0.2 +1 digit
Resolution	0.01 to 0.1	0.1 to 1	0.1 Deg C
ATC	0 to 100 Deg C	NA	NA
Power	12V / 1A		
Size	240 × 170 × 80 mm		
Weight	550 Gms		

Note * - Only pH and Temperature Electrode are part of standard packing.
To measure ORP kindly purchase separate Electrode (AME-OR-LG)

3. Instrument Structure

3.1.1. Display



①--- Parameter mode icon ④--- Measurement unit ⑦--- Stable symbols
②--- Measuring value ⑤--- Temperature Value
③--- Time ⑥--- Operation reminder

3.2. Operation Key

The meter has 8 operation keys.

3.2.1. ON/OFF – Switch On/Off meter

3.2.2. CAL/LEFT – Calibration Key / Left Direction Key.

(a) When measuring state, press this button to enter the calibration setting interface of the instrument.

(b) When in system time &manual temperature compensation status, the key is a Left direction key.

3.2.3. SAVE/RIGHT – Save Record Key / Right direction key

(a) Under measurement status short press ”SAVE” key can save measurement data in the corresponding mode (the lower right corner of screen will display serial number M+).

(b) Under measurement status, long press ”SAVE” key can recall saved data in the corresponding mode (RM and serial number will be displayed in search operation).

(c) Under system setting and manual temperature compensation mode, it is used as the right direction key

3.2.4. ESC/PRN – Return Key / Print Key

(a) Under measurement mode, it is used as printing key and can be printed directly through Bluetooth printer.

(b) Under non - measuring mode, it is used as a return key.

3.2.5. SET – Enter System Setting

(a) Under measurement mode, system setting interface can be entered through the key.

3.2.6. UP - Big switch mode, upwards key

(a) In the measurement status, short press (no more than 1s) is used as a large handover mode, which enables to switch back and forth between several functions.

(b) Under system setting and manual temperature compensation mode, it is used as the upwards key.

3.2.7. DOWN - Small switch mode, downward direction key

(a) In the measurement mode, the key is used as a switching mode PH/MV

(b) Under system setting and manual temperature compensation mode, it is used as the downwards direction key.

3.2.8. OK – To Confirm key

3.3. Interface picture

1 - Temperature Electrode
2 – No Connection
3 – pH / ORP Electrode interface
4 - USB interface
5 - Data line interface
6 - Power interface

4. Instrument Measurement :

4.1 Preparation Work

4.1.1. Press “ON/OFF” key to turn on, press “UP” key, and press the "PH" button to select the pH measurement mode.

4.1.2. Check PH electrode glass bulb is kept wet or not, if glass bulb's surface too dry, it needs to be immersed into a potassium chloride solution for 24 hours.

4.2. Instrument Calibration :

4.2.1. Press “**CAL**” key to enter into calibration mode, LCD displays the “**C1**”, indicating to as first point calibration.

4.2.2. Wash the PH electrode & temperature electrode in purified water and dry it, then immerse them into the 7.00PH buffer solution, shake the electrode and place it stable, then wait for the reading to be stable. Once reading is stable “☺” will appear, then press “**OK**” key, LCD will display 7.00PH, this is end for first point (Single Point) calibration. To continue with 3 Point Calibration Press “**OK**” LCD displays “**C2**”, indicating to as second point calibration or Press “**ESC**” key to exit calibration mode.

4.2.3. For second Point Calibration, wash the PH electrode & temperature electrode in purified water and dry it, then immerse them into the 4.00PH buffer solution, shake the electrode and place it stable, then wait for the reading to be stable. Once reading is stable “☺” will appear, then press “**OK**” key, LCD will display 4.00PH, this is end for second point calibration. To continue with 3 Point Calibration Press “**OK**” LCD displays “**C3**”, indicating to as second point calibration or Press “**ESC**” key to exit calibration mode.

4.2.4. For third Point Calibration, wash the PH electrode & temperature electrode in purified water and dry it, then immerse them into the 10.00PH buffer solution, shake the electrode and place it stable, then wait for the reading to be stable. Once reading is stable “☺” will appear, then press “**OK**” key, LCD will display 10.00PH, this is end for third point calibration. To confirm with 3 Point Calibration Press “**OK**”.

4.2.5. This meter can adopt random one-point, two-point or three-point automatic calibration. Exit calibration mode to enter into measurement mode, then the LCD screen will show "**L M H**" at the same time, which means the meters finish three-point calibration. If only single point calibration is done, LCD screen will show "**L**" or if two-point calibration is done, LCD screen will show "**L M**".

4.2.6. User can choose pH7.00 and pH4.00 to calibrate if only measuring acidity range or choose pH7.00 and pH10.00 to calibrate if only measuring alkalinity range. When the measuring accuracy is ?±0.1pH, user just need to choose one kind buffer solution to do one-point calibration as per measurement range.

4.2.7. Three-point calibration should be selected if the measuring range is wide, or if the electrode has been used for long period, or if new electrode is to be used, it must be calibrated by three-point calibration to adjust meter slope in accordance with pH electrode

4.3. Instrument measurement

4.3.1. **PH Measurement:** Clean and dry the pH electrode, put it in sample solution with the temperature electrode, stir it and place stable, when the measurement value is stable and LCD appears the icon " ☺ " then read it out, which is the measurement value of the pH solution.

4.3.2. ORP Measurement: Use ORP Electrode instead of pH electrode and follow the procedure as per 4.3.1 to get ORP readings.

5. Instrument Settings :

5.1 Steps to Change Parameter Setting

1) Press "**SET**" to enter Setting Mode.

2) Press "**UP**" and "**DOWN**" to select parameter from P1 to P12.

3) Press "**OK**" to enter Parameter Setting.

4) Press "**UP**" and "**DOWN**" to select value and Press "**OK**" to confirm.

5) Press "**ESC**" to return to Measurement Mode.

5.2 Setting Parameter and its Functions

Code	Parameter Setting
P1	Export Data to USB
Code	Parameter Setting
P1	Export Data to USB
P2	Date and Time
P3	Clear Stored Records
P4	Temperature Unit Selection
P5	Display Machine Code
P6	Android App Authorization Code
P7	Restore to Factory default
P8	Manual Temperature Compensation Value
P9	Bluetooth Mode Selection
P10	PH Resolution Setting
P11	PH Standard Buffer Selection
P12	Pure water with Ammonia Compensation setting

P1 - Export Data to USB

This setting will transfer Data from Meter to USB disk in Excel Format (If no USB is detected Meter will prompt ERROR)

a) In Setting Mode select "**P1**" and press "**OK**". Data Will be copied to USB.

b) Press "**ESC**"and Exit settings.

P2 - Set DATE and TIME

This setting will set Date and Time

a) In Setting Mode select "**P2**" and press "**OK**" to change Date an Time.

b) Press "**UP**" or "**DOWN**" to change values, Press "**LEFT**" or "**RIGHT**" to shift between variables.

c) Press "**OK**" to Confirm and "**ESC**" and Exit settings.

P3 - Clear Records

This setting will delete Stored values in the Meter

a) In Setting Mode select “**P3**” and press “**OK**” to Clean records.
b) Press “**UP**” or “**DOWN**” to select record and press “**OK**” to Clear Value.
c) Press “**ESC**” and Exit settings.

P4 - Temperature Unit

This setting will select Temperature Unit Deg C or Deg F

a) In Setting Mode select “**P4**” and press “**OK**” to select unit.
b) Press “**UP**” or “**DOWN**” to select unit and press “**OK**” to confirm.
c) Press “**ESC**” and Exit settings.

P5 - Display Machine Code

This setting will display 4-digit Machine Code, used for Bluetooth paring.

a) In Setting Mode select “**P5**” and press “**OK**”. Machine Code will be displayed.
b) Press “**ESC**” and Exit settings.

P6 - Bluetooth App Code

(Useful only when Bluetooth App is Purchased)

This setting will enter Bluetooth App Authorization Code in the machine for Android Bluetooth App and Meter Paring.

a) In Setting Mode select "P6" and press "OK" to enter code.
b) Press "UP" or "DOWN" to enter values, Press "LEFT" or "RIGHT" to shift between variables.
c) Press "OK" to Confirm and "ESC" and Exit settings.

P7 - Restore Factory Setting

This setting will restore Meter to Factory Default Values.

a) In Setting Mode select "P7" and press "OK". Machine will display "8888"
b) Press "OK" to Confirm and "ESC" and Exit settings.

P8 - Manual Temperature Compensation

(Default Value = 25 Deg C)

This setting will enter the manual temperature compensation value, applicable only if Temperature Electrode is not connected.

a) In Setting Mode select “**P8**” and press “**OK**” to enter value.
b) Press “**UP**” or “**DOWN**” to enter values, Press “**LEFT**” or “**RIGHT**” to shift between variable.
c) Press “**OK**” to Confirm and “**ESC**” and Exit settings.

P9 - Bluetooth Operation Mode

This setting will select Bluetooth Operation Mode

APP Mode - Use Android App to connect Meter

Bluetooth Mode - Use to print Meter reading on Bluetooth Printer

a) In Setting Mode select “**P9**” and press “**OK**” to select APP or Bluetooth.
b) Press “**UP**” or “**DOWN**” to select Mode and press “**OK**” to confirm.
c) Press “**ESC**” and Exit settings.

P10 - PH Resolution Setting

This setting will select pH resolution (0.1/0.01) range as required.

a) In Setting Mode select “**P10**” and press “**OK**” to select resolution.
b) Press “**UP**” or “**DOWN**” to select range and press "**OK**" to confirm.
c) Press “**ESC**” and Exit settings.

P11 - PH Standard Buffer Selection

This setting will select pH Standard Buffer (USA/NIST/CH) range as required.

USA (Default) : 1.68 pH / 4.00 pH / 7.00 pH / 10.01 pH / 12.45pH

NIST : 1.68 pH / 4.01 pH / 6.86 pH / 9.18 pH / 12.45pH

a) In Setting Mode select “**P11**” and press “**OK**” to select resolution.
b) Press “**UP**” or “**DOWN**” to select range and press “**OK**” to confirm.
c) Press “**ESC**” and Exit settings.

P12 - Pure Water Compensation setting

This setting will select Pure water with ammonia Compensation setting for measurement.

OFF : No Compensation

H_20 : Purified water pH compensation

NH_3 : Pure water with Ammonia compensation

a) In Setting Mode select “**P11**” and press “**OK**” to select resolution.
b) Press “**UP**” or “**DOWN**” to select range and press “**OK**” to confirm.
c) Press “**ESC**” and Exit settings.