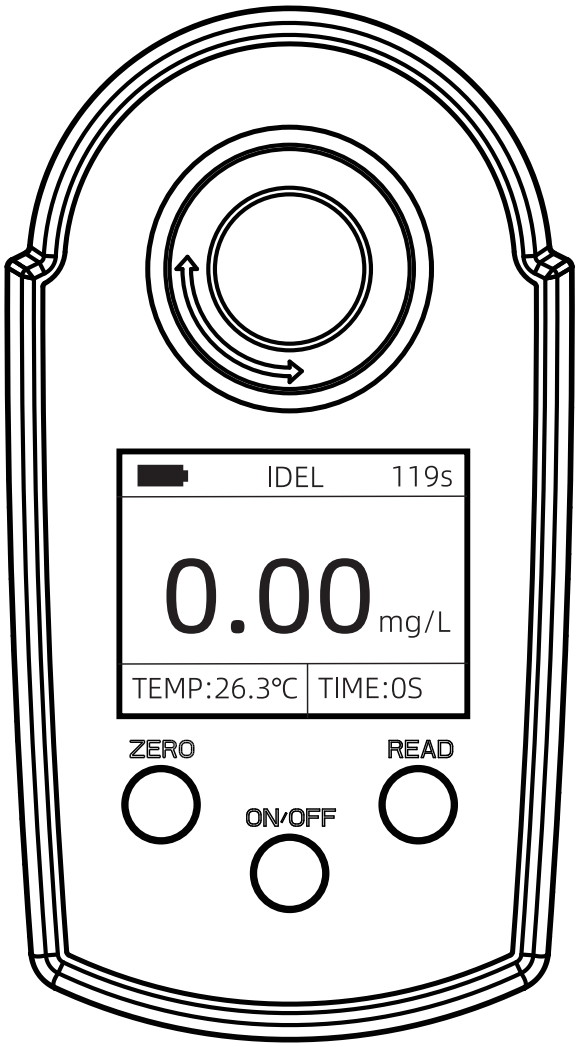
sisco

Portable Water Quality Analyzer



User's Manual

The PWQA Series

Please read this manual before using the product and keep it in a safe place.

Catalogue

Overview

Thank you very much for choosing our portable water quality analyzer. We will wholeheartedly provide you with the best service. Before you use this instrument, please read the instruction manual carefully to help you use and maintain it correctly. The company is committed to product improvement and development, and continues to upgrade the technology of its products. The contents of this manual are subject to change without prior notice.

This instrument is easy and quick to operate and has high sensitivity. The instrument is small in size, light in weight and easy to carry. It is suitable for field and on-site use and has the following characteristics:

◆Small size, light weight, protection grade IP65;

◆Professional optical design and good optical system stability;

◆Less sample and reagent consumption, fast detection speed;

◆High-sensitivity temperature acquisition chip, automatic temperature compensation;

◆Automatic shutdown function in 120 seconds to save power. 4 batteries, longer use time;

◆High-definition 2-inch color TFT screen, intuitive and clear, easy to operate;

Warning

The testing reagent is irritating, please do not touch the skin directly. Be sure to wear a mask, protective gloves and protective glasses when operating. If the skin comes into contact with the detection reagent, rinse thoroughly with water immediately. Read the product instructions before use and operate according to the instructions. Failure to operate as required may cause injury to the operator or damage to the instrument. If you have any questions about the use of instruments and reagents, please contact our company.

Hazard information reminder: If there are multiple hazards, this manual will use the prompt words (Caution, Warning, Danger) to avoid the danger as much as possible.

Note: Indicates areas that require attention.

Warning: Indicates a potential hazard that may cause discomfort or injury.

Danger: Indicates a situation that presents a serious hazard, which, if not avoided, may result in serious injury or death.

Danger reminder: Please keep chemical reagents away from minors and place them out of the reach of minors.

Parameters

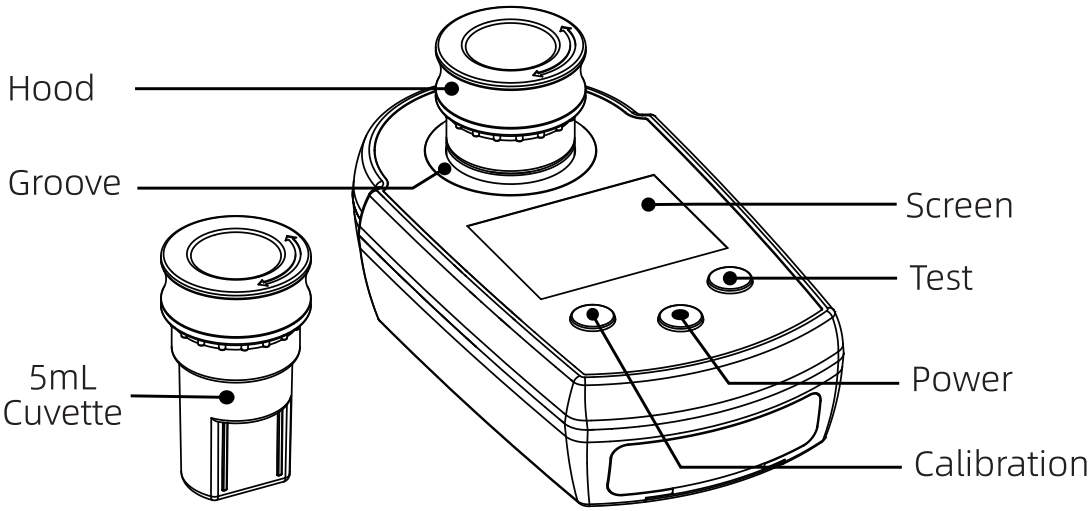
Test Items

Items	Range	Wave Length	Principle
Residual Chlorine	0.05~10.00mg/L	520nm	DPD spectrophotometry
Total Residual Chlorine	0.05~10.00mg/L	520nm	DPD spectrophotometry
Chlorine Dioxide	0.1~5.00mg/L	520nm	DPD spectrophotometry
Ozone	0.05~2.50mg/L	520nm	DPD spectrophotometry
Ammonia Nitrogen	0.1~10.00mg/L	420nm	Nessler's reagent method
Phosphate	0.00~2.00mg/L	620nm	Ammonium molybdate spectrophotometry

Parameters

Screen	2inch TFT
Laser Source	LED
Precision	< 1.0mg/L Error: ≤±0.05mg/L; ≥1.0mg/L Error: ≤±5%
Temp. Range	work temp: 0~60℃; storage temp: -10~50℃;
Power Supply	6V（AAA battery*4）
Size	120*66*30mm
Weight	174g

Instruction



Precautions

1 Please complete the test within the specified time after adding the reagent, otherwise it will affect the test accuracy.
2 The colorimetric bottle must be wiped off the surface water and foreign matter before putting it into the detection slot for testing, otherwise it will affect the detection accuracy.
3 Any liquid or foreign matter entering the detection slot will cause damage to the instrument, and the detection slot must kept clean.
4 The colorimetric bottle cannot be filled with corrosive liquids.
5 The colorimetric bottle needs to be stored properly, and the surface cannot have scratches, dust, fingerprints, etc. The water sample cannot have bubbles, and bubbles will affect the accuracy of the test results.
6 After use, please clean the colorimetric bottle in time, and do not let the test sample stay in the colorimetric bottle for a long time, otherwise it will damage the colorimetric bottle.
7 You can press and hold the "ON/OFF" button for 3 seconds to turn off the power and save power. When the battery icon on the screen shows low power, please replace the battery in time.

Residual Chlorine Meter

Reagent name: Residual chlorine test reagent

Test steps:

1 Press the "ON/OFF" button to turn on the machine, the upper part of the screen displays "IDLE", the main window displays "Please Zero-Calibration" indicating that the machine is on, wait for completion.

2 Rinse the cuvette bottle with an appropriate amount of water sample and pour it out, then take 5mL of water sample and inject it into the cuvette bottle, cover it, and wipe off the surface water and fingerprints of the cuvette bottle, put it into the detection slot.

3 Press the "ZERO" button, the upper part of the screen displays "TEST" indicating that the test is in progress, when the TIME counts down to 0, "TEST" will change to "CAIL", and the zero calibration is completed.

4 When the instrument displays, the flashing "-.--" icon, take out the cuvette bottle, open the cap, and add a packet of residual chlorine test reagent to the cuvette bottle, cover the cap.

5 Shake the cuvette bottle for about 20 seconds to dissolve the reagent completely, if there are bubbles, tilt and rotate the bottle to expel the bubbles, and wipe off the surface water or fingerprints.

6 Put the cuvette bottle into the detection slot, react for about one minute, and press "READ" to test. The test value displayed on the screen is the measured concentration value.

7 After the test is completed, you can press and hold the "ON/OFF" button for 3 seconds to turn off the machine, or wait until the upper left corner of the screen "120s" counts down, the instrument will automatically turn off.

Note: After adding the residual chlorine reagent, please shake it to distribute evenly, test it as soon as possible after the reaction is completed, otherwise it will affect the test accuracy.

Interference factors

- Oxidants: bromine, iodine, bromamine, hydrogen peroxide, chromate, manganese dioxide, ozone, etc.
- Reducing agents: nitrite, etc.
- If the alkalinity of the water exceeds 250 mg/L or the acidity exceeds 150 mg/L, the test value will be unstable. Dilute hydrochloric acid or sodium hydroxide solution can be added for adjustment.
- Extreme PH or samples with strong buffering capacity will cause unstable measurement results, you can add dilute hydrochloric acid or sodium hydroxide solution to adjust the PH between 6-7.
- Samples with high turbidity or color will cause interference and should be pretreated.

Total Residual Chlorine Meter

Reagent name: Total residual chlorine test reagent

Test steps:

1 Press the "ON/OFF" button to turn on the machine, the upper part of the screen displays "IDLE", the main window displays "Please Zero-Calibration" indicating that the machine is on, wait for completion.

2 Rinse the cuvette bottle with an appropriate amount of water sample and pour it out, then take 5mL of water sample and inject it into the cuvette bottle, cover it, and wipe off the surface water and fingerprints of the cuvette bottle, put it into the detection slot.

3 Press the "ZERO" button, the upper part of the screen displays "TEST" indicating that the test is in progress, when the TIME counts down to 0, "TEST" will change to "CAIL", and the zero calibration is completed.

4 When the instrument displays, the flashing "-.--" icon, take out the cuvette bottle, open the cap, and add a packet of total residual chlorine test reagent to the cuvette bottle, cover the cap.

5 Shake the cuvette bottle for about 20 seconds to dissolve the reagent completely, if there are bubbles, tilt and rotate the bottle to expel the bubbles, and wipe off the surface water or fingerprints.

6 Put the cuvette bottle into the detection slot, react for about one minute, and press "READ" to test. The test value displayed on the screen is the measured concentration value.

7 After the test is completed, you can press and hold the "ON/OFF" button for 3 seconds to turn off the machine, or wait until the upper left corner of the screen "120s" counts down, the instrument will automatically turn off.

Note: After adding the total residual chlorine reagent, please shake it to distribute evenly, test it as soon as possible after the reaction is completed, otherwise it will affect the test accuracy.

Interference factors

- Oxidants: bromine, iodine, bromamine, hydrogen peroxide, chromate, manganese dioxide, ozone, etc.
- Reducing agents: nitrite, etc.
- If the alkalinity of the water exceeds 250 mg/L or the acidity exceeds 150 mg/L, the test value will be unstable. Dilute hydrochloric acid or sodium hydroxide solution can be added for adjustment.
- Extreme PH or samples with strong buffering capacity will cause unstable measurement results, you can add dilute hydrochloric acid or sodium hydroxide solution to adjust the PH between 6-7.
- Samples with high turbidity or color will cause interference and should be pretreated.

Chlorine Dioxide Meter

Reagent name: Chlorine dioxide test reagent

Test steps:

1 Press the "ON/OFF" button to turn on the machine, the upper part of the screen displays "IDLE", the main window displays "Please Zero-Calibration" indicating that the machine is on, wait for completion.

2 Rinse the cuvette bottle with an appropriate amount of water sample and pour it out, then take 5mL of water sample and inject it into the cuvette bottle, cover it, and wipe off the surface water and fingerprints of the cuvette bottle, put it into the detection slot.

3 Press the "ZERO" button, the upper part of the screen displays "TEST" indicating that the test is in progress, when the TIME counts down to 0, "TEST" will change to "CAIL", and the zero calibration is completed.

4 When the instrument displays, the flashing "-.--" icon, take out the cuvette bottle, open the cap, and add a packet of chlorine dioxide test reagent to the cuvette bottle, cover the cap.

5 Shake the cuvette bottle for about 20 seconds to dissolve the reagent completely, if there are bubbles, tilt and rotate the bottle to expel the bubbles, and wipe off the surface water or fingerprints.

6 Put the cuvette bottle into the detection slot, react for about 30 seconds, and press "READ" to test. The test value displayed on the screen is the measured concentration value.

7 After the test is completed, you can press and hold the "ON/OFF" button for 3 seconds to turn off the machine, or wait until the upper left corner of the screen "120s" counts down, the instrument will automatically turn off.

Note: After adding the chlorine dioxide reagent, please shake it to distribute evenly, test it as soon as possible after the reaction is completed, otherwise it will affect the test accuracy.

Chlorine dioxide in water is extremely unstable. Test immediately after sampling and avoid strong light and heat.

Interference factors

- Oxidants: bromine, iodine, ozone, organic amines, chloramines and peroxides. etc.
- Manganese oxide and various metals interfere with the measurement results. Add activators to eliminate interference.
- Samples with high turbidity or color will cause interference and should be pretreated.

Ozone Meter

Reagent name: Ozone test reagent

Test steps:

1 Press the "ON/OFF" button to turn on the machine, the upper part of the screen displays "IDLE", the main window displays "Please Zero-Calibration" indicating that the machine is on, wait for completion.

2 Rinse the cuvette bottle with an appropriate amount of water sample and pour it out, then take 5mL of water sample and inject it into the cuvette bottle, cover it, and wipe off the surface water and fingerprints of the cuvette bottle, put it into the detection slot.

3 Press the "ZERO" button, the upper part of the screen displays "TEST" indicating that the test is in progress, when the TIME counts down to 0, "TEST" will change to "CAIL", and the zero calibration is completed.

4 When the instrument displays, the flashing "-.--" icon, take out the cuvette bottle, open the cap, and add a packet of ozone test reagent to the cuvette bottle, cover the cap.

5 Shake the cuvette bottle for about 20 seconds to dissolve the reagent completely, if there are bubbles, tilt and rotate the bottle to expel the bubbles, and wipe off the surface water or fingerprints.

6 Put the cuvette bottle into the detection slot, react for about 40 seconds, and press "READ" to test. The test value displayed on the screen is the measured concentration value.

7 After the test is completed, you can press and hold the "ON/OFF" button for 3 seconds to turn off the machine, or wait until the upper left corner of the screen "120s" counts down, the instrument will automatically turn off.

Note: After adding the ozone reagent, please shake it to distribute evenly, test it as soon as possible after the reaction is completed, otherwise it will affect the test accuracy.

Interference factors

- Oxidants: bromine, iodine, bromamine, iodoamine, hydrogen peroxide, chromate, manganese oxide, etc.
- Reducing agents: nitrite, etc.
- Samples with high turbidity or color will cause interference and should be pretreated.

Ammonia Nitrogen Meter

Reagent name: Ammonia nitrogen test reagent

Test steps:

1 Press the "ON/OFF" button to turn on the machine, the upper part of the screen displays "IDLE", the main window displays "Please Zero-Calibration" indicating that the machine is on, wait for completion.

2 Rinse the cuvette bottle with an appropriate amount of water sample and pour it out, then take 5mL of water sample and inject it into the cuvette bottle, cover it, and wipe off the surface water and fingerprints of the cuvette bottle, put it into the detection slot.

3 Press the "ZERO" button, the upper part of the screen displays "TEST" indicating that the test is in progress, when the TIME counts down to 0, "TEST" will change to "CAIL", and the zero calibration is completed.

4 When the instrument displays, the flashing "-.--" icon, take out the cuvette bottle, open the cap, and add 3 drops of reagent A1 to the cuvette bottle, cover the cap and shake it distribute evenly, then add 3 drops of reagent B2 to the cuvette bottle, cover the cap..

5 Shake the cuvette bottle for about 20 seconds to dissolve the reagent completely, if there are bubbles, tilt and rotate the bottle to expel the bubbles, and wipe off the surface water or fingerprints.

6 Put the cuvette bottle into the detection slot, react for about 3 minutes, and press "READ" to test. The test value displayed on the screen is the measured concentration value.

7 After the test is completed, you can press and hold the "ON/OFF" button for 3 seconds to turn off the machine, or wait until the upper left corner of the screen "120s" counts down, the instrument will automatically turn off.

Note: If it contains ammonia nitrogen, the solution should appear yellow-brown, and the greater the concentration, the darker the color.

Interference factors

- When measuring suspended solids, residual chlorine, calcium and magnesium and other metal ions, sulfides and organic matter, if there is interference in the measurement, it must be pre-treated or diluted before measurement.
- Samples with high turbidity or color will cause interference and should be pretreated.

Phosphate Meter

Reagent name: phosphate test reagent
Test steps:
1 Press the "ON/OFF" button to turn on the machine, the upper part of the screen displays "IDLE", the main window displays "Please Zero-Calibration" indicating that the machine is on, wait for completion.
2 Rinse the cuvette bottle with an appropriate amount of water sample and pour it out, then take 5mL of water sample and inject it into the cuvette bottle, cover it, and wipe off the surface water and fingerprints of the cuvette bottle, put it into the detection slot.
3 Press the "ZERO" button, the upper part of the screen displays "TEST" indicating that the test is in progress, when the TIME counts down to 0, "TEST" will change to "CAIL", and the zero calibration is completed.
4 When the instrument displays, the flashing "-.--" icon, take out the cuvette bottle, open the cap, and add 7 drops of phosphate test reagent to the cuvette bottle, cover the cap.
5 Shake the cuvette bottle for about 20 seconds to dissolve the reagent completely, if there are bubbles, tilt and rotate the bottle to expel the bubbles, and wipe off the surface water or fingerprints.
6 Put the cuvette bottle into the detection slot, react for about 40 seconds, and press "READ" to test. The test value displayed on the screen is the measured concentration value.
7 After the test is completed, you can press and hold the "ON/OFF" button for 3 seconds to turn off the machine, or wait until the upper left corner of the screen "120s" counts down, the instrument will automatically turn off.
Note: After adding the Phosphate reagent, please shake it to distribute evenly, test it as soon as possible after the reaction is completed, otherwise it will affect the test accuracy.
Interference factors
• Arsenic, arsenates, sulfides, heavy metals, and nitrites interfere with each other.
• Samples with high buffering capacity or extreme pH values.

Maintenance

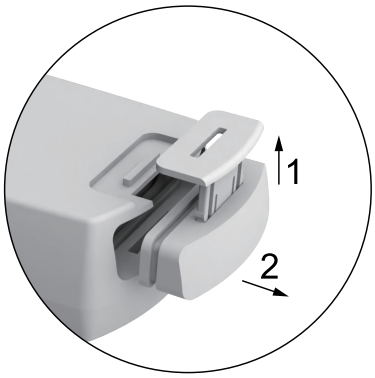
Battery Replacement:

1.Open as shown in the picture

2.Pull out the battery backwards

3.Remove the old, replace with 4 new batteries

4.Reinstall the battery compartment door



Common Troubleshooting

Phenomenon	Reason	Solution
cannot boot	Battery is dead or incorrect installation	check battery installation or replace battery
big error	bubbles in the cuvette	check again after clearing bubbles
	stains in the detection tank	clean the stains in the detection tank and test again
	scratches on cuvette	replace new cuvette
bad consistency	long intervals between multiple measurements	try to complete multiple tests in a short period of time
displays "HI"	sample concentration exceeds instrument range	remeasure after dilution
displays "ERROR"	haven't zero calibration yet	zero calibration first then measure again