Pen type, all in one, IP-67

PURE WATER METER

Model : PWA-301

Your purchase of this PURE WATER METER marks a step forward for you into the field of precision measurement.
Although this METER is a complex and delicate instrument, its durable structure will allow many years of use if proper operating techniques are developed. Please read the following instructions carefully and always keep this manual within easy reach.

QUALITY ASSURED FIRM ISO 9001 SGS
UKAS QUALITY MANAGEMENT 005

OPERATION MANUAL

TABLE OF CONTENTS

1. FEATURES.....1

2. SPECIFICATIONS.....2

3. FRONT PANEL DESCRIPTIONS..... 4
3-1 Battery compartment/Cover.....4
3-2 Display.....4
3-3 Power Button.....4
3-4 Hold Button..... 4
3-5 REC Button.....4
3-6 Sensing Electrode..... 4
3-7 Protection Cover..... 4

4. MEASURING PROCEDURE.....5
4-1 Check the water conductivity
(water condition).....6
4-2 Check the filter condition.....6
4-3 Data hold..... 8
4-4 Data record (Max., Min. reading).....8
4-5 Auto power off management.....8

5. ZERO ADJUSTMENT.....9

6. REPLACEMENT OF BATTERY..... 10

7. OPTIONAL ACCESSORIES.....10

1. FEATURES

* The quality of the water is getting much more concerned by the human being and it also an important factor in the industrial sectors, laboratories or other fields.
* In industrial sectors, it would be a great help for the quality of the products if using the good water (more pure water) in the process.
* It may cause several diseases if home drink water existing high conductivity & contain impurities, the Pure Water Tester (Water Quality Tester) are designed to check the purity of water (water conductivity) also can determine the condition of the " Water Filter " easily and rapidly.
* The tester is used to measure the conductivity value (ranging from 0 - 1,999 uS) which can therefore judge whether water is pure or not. The conductivity value will become lower if there is much less impurities existed in water (for example, distilled water that its purity is higher than others will get a lower conductivity value of approx. < 10 uS).
* Many people always take many kinds of procedures on water treatment by install the different kinds of equipment, such as filter or purifier to improve the quality of water. However, most of people do not know whether the procedures or filter is effective and can con- tribute to the quality of water. General speaking, the impurities will be filtered out if the water process procedures attain the expected result, thus we can use this instrument to measure the conductivity value of purified water and to judge the effect of the filter (or water process procedures).
* Application : Water conditioning. aquarium, food processing, photography, school, laboratory, industrial and quality control.
* Check the condition of water filter.
* Measurement range : 0 to 1,999 uS.
* Pen type, meter with probe, all in 1, easy operation.
* Carbon rod electrode for long life.

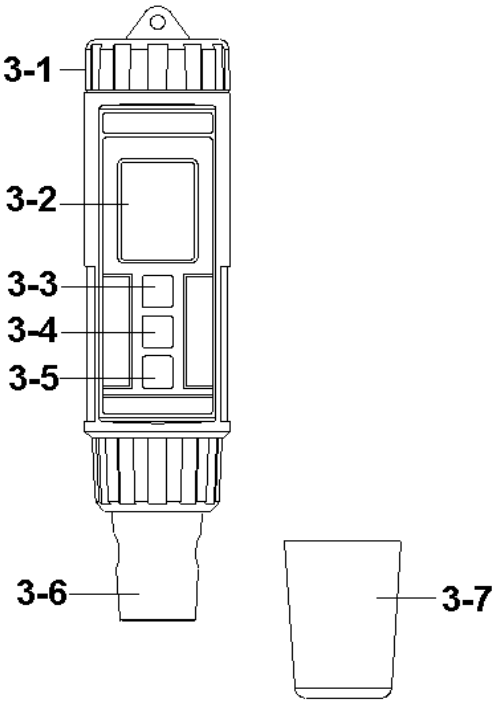
* Build in temperature sensor, ATC (auto temperature compensation).
* IP67, water proof and protection.
* Data hold function for freezing the desired value.
* Auto power off to save the battery life.
* Records max. and min. value with recall.
* Microcomputer circuit, intelligent function, high accuracy.
* Compact size, light weight.
* Power supply by DC 1.5 V battery (UM4/AAA) x 4 PCs,

2. SPECIFICATIONS

Display	LCD, size : 20 mm x 28 mm.
Measurement	0 to 1999 uS. ** uS - micro simens cm.*
Resolution	1 uS.
Accuracy	± (3 % + 1 d) F.S. ** F.S. : full scale.* ** 23 ± 5℃*
Temperature Compensation	Automatic, 0 to 50 ℃ (32 to 122 ℉).
Probe Structure	Carbon rod electrode for long life.
Data Hold	Freeze the display reading.
Memory Recall	Maximum & Minimum value.
Sampling Time	Approx. 0.8 second.
Circuit	Custom one-chip of microprocessor LSI circuit.
Power off	Auto shut off saves battery life or manual off by push button. ** Power will off automatically after 10 min., if no button be pressed.*

Operating Temperature	0 to 50 ℃ (32 to 140 ℉).
Operating Humidity	Less than 80% RH.
Power Supply	DC 1.5V battery (UM-4/AAA) x 4 PCs.
Power Consumption	Approx. 5.7 mA.
Dimension	190 x 40 x 40 mm (7.5 x 1.6 x 1.6 inch).
Weight	171 g/0.38 LB.
Standard Accessories	Instruction Manual..... 1 PC
Optional Accessories	* Soft carrying case with sash (210 x 80 x 50 mm), Model : CA-52A * Hard carrying case (280 x 195 x 65 mm), Model : CA-06

3. FRONT PANEL DESCRIPTION



3-1 Battery compartment/Cover
3-2 Display
3-3 Power Button
3-4 Hold Button
3-5 REC Button
3-6 Conductivity Electrode
3-7 Protection Cover

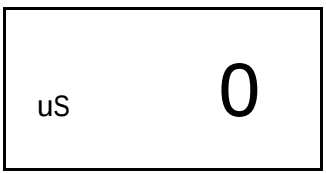
4. MEASURING PROCEDURE

4-1 Check the water's conductivity (water condition)

1) Turn on the meter by pressing the " Power Button " (3-3, Fig. 1) momentarily.

** Press the " Power Button " (3-3, Fig. 1) momentarily again will turn off the meter.*

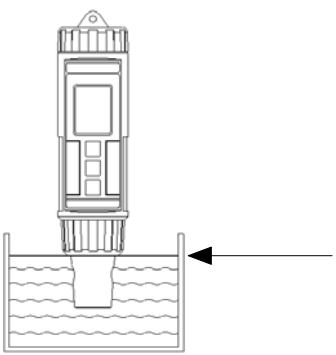
The " Display " (3-2, Fig. 1) will show the unit as :



Now the meter is ready for the measurement.

2) Hold the meter by hand and immerse the " Sensing Electrode " (3-6, Fig. 1) immersed wholly into the measured solution. Shake the " Sensing Electrode " to let the electrode's internal air bubble drift out from the sensing Electrode.
" Display " (3-2, Fig. 1) will show the conductivity values in uS unit,

Fig. 2



When make the measurement should immerse the " Sensing Electrode " immersed wholly into the measured solution.

3) a. If the water is pure, then the meter will display the low conductivity values, typically. For example the distill water conductivity value will approx. less than 10 uS.
   b. If the water contain the impurity, then the meter will show the high conductivity typically.
   c. From the different water's conductivity value, user can juge the water quality condition.
   (Due to drinking mineral water contain the mineral material, when measure the mineral water if the meter display the high conductivity value, it is normal.)

4-2 Check the filter condition

1) Power on the meter by pushing the " Power On Button " (3-3, Fig. 1).
2) Hold the meter by hand and immerse the " Sensing Electrode " (3-6, Fig. 1) immersed wholly into the measured solution. Shake the " Sensing Electrode " to let the electrode's internal air bubble drift out from the sensing Electrode, refer to Fig. 2.
3) First check the reading values (uS) for the water that is not made the treatment (not via the FILTER), then record the reading value, ref. Fig. 3

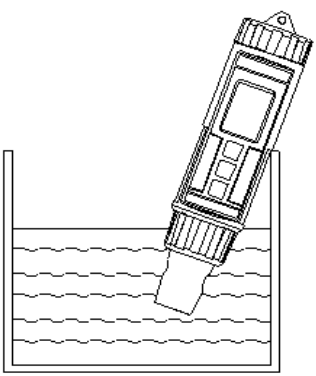


Fig. 3

3) Secondary check the reading values (uS) for the water that already make the treatment (after the FILTER), ref. Fig. 4.

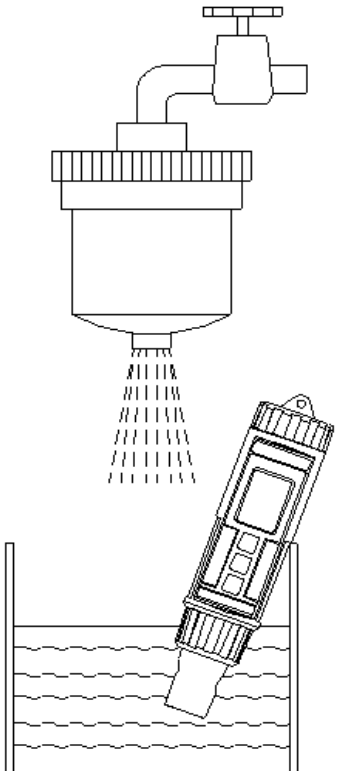


Fig. 4

4) If the water quality already be improved, then the reading values should be change with a certain values, other wise the FILTER is dirty or not under the normal condition.

4-3 Data Hold

1) During the measurement, press the " Hold Button " (3-4, Fig. 1) momentarily to hold the measured value. The LCD will show a " HOLD " symbol.
2) Press the " Hold Button " once again to release the data hold function.

4-4 Data Record (Max., Min. reading)

1) The data record function records the maximum and minimum readings. Press the " REC Button " (3-5, Fig. 1) momentarily to start the Data Record function, shows " REC " on the display.
2) With the " REC " symbol on the display.
   a) Press the " REC Button " (3-5, Fig. 1) momentarily, the " REC MAX " symbol along with the maximum value will appear on the display.
   b) Press the " REC Button " (3-5, Fig. 1) momentarily again, the " REC MIN " symbol along with the minimum value will appear on the display.

      When display shows " REC MAX " or " REC MIN ",
      ** press the " Hold Button " (3-4, Fig. 1) momentarily will delete the max. (min.) value, the display will show the " REC. " only and execute the memory function continuously.*

   c) To exit the memory record function, press the " REC " button for 2 seconds at least. The display will revert to the current reading, not show " REC " indicator.

4-5 Auto power off management

The meter has built-in "Auto Power Shut-off " function in order to prolong battery life. The meter will switch off automatically if none of the buttons are pressed within 10 min..

5. ZERO ADJUSTMENT

Power ON the meter and do not make the measurement, if the display exist certain value (not zero), then it can according the following procedures to make the Zero Adjustment :

1) Power Off the meter, press the " Hold Button " (3-4, Fig. 1) continuously (not release), then press the " Power Button " (3-3, Fig. 1), until the " Display " (3-2, Fig. 1) show the value, then release the both buttons.
2) * Press the " Hold Button " (3-4, Fig. 1) once, the Display will show the " HOLD " indicator and the value.
   * Press the " REC button " (3-5, Fig. 1) once, the Display will show the " CAL " text and go to make the Zero adjustment, final the Display will show End " text and finish the Zero Adjustment procedures, the Display will show the zero value.

6. REPLACEMENT OF BATTERY

1) When the LCD display show " " ,
   it is necessary to replace the battery. However, in-spec measurement may still be made for several hours after Low Battery Indicator appears before the instruments instrument become inaccurate.
2) To replace the battery, rotate and remove the " Battery Cover " (3-1, Fig. 1), take out the old ba**DC 1.5V battery (UM-4/AAA) x 4 PCs.**

3) When install the batteries, should make attention the battery polarity.

4) After install the batteries, reinstall the battery cover again.

7. OPTIONAL ACCESSORIES

Hard carrying case. Model : CA-06 280 x195 x 65 mm	Soft carrying case. Model : CA-52A 210 x 80 x 50 mm