



Shanghai Yoke Instrument Co.,Ltd.

Model P613 PH /Conductivity Meter

Operation Manual

Table of Contents

1. Brief Introduction -----	1
2. Technical Parameters -----	2
3. Instructions to the Meter -----	3
3.1. LCD Display -----	3
3.2. Operation Keys -----	4
3.3. The Storage, Recall and Elimination of the Measuring Information -----	5
4. P/H Measurement -----	6
4.1. Preparation Work -----	6
4.2. Meter Calibration -----	6
4.3. PH solution Test -----	8
4.4. Parameter Setting -----	8
4.5. Considerations-----	14
4.6The Self-diagnose Information-----	14
5. MV Measurement -----	14
6. Conductivity Measurement -----	14
6.1. Preparation Work -----	15
6.2. Meter Calibration -----	15
6.3. Conductivity Test -----	16
6.4. Important Statement -----	16
6.5. Parameter Setting -----	18
6.6. Considerations -----	22
7. Meter's Complete Kit -----	23
8. Warranty -----	24

1. Brief Instruction:

Thanks for buying and using the model P613 pH / mV / Conductivity 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 conductivity for high accuracy water solution. It is the best portable conductivity meter with the highest performance and the lowest cost. It is suitable for the trade such as the mining industry, power plant, water treatment projects and environmental protection, etc., especially has more extensive application in the field and spot test.

Built-in microprocessor chip, beautiful appearance, multi-functional and easy to use, this meter has the following prominent features:

- 1.1. Built-in microprocessor chip, with the intelligent functions of automatic calibration, automatic/manual temperature compensation, data storage, function setting and automatic power off and low voltage display etc. Equips with calibration solution and special carrying case, easy to use.
- 1.2. Adopts digital filter and step slipping technology to intelligently improve meter's response speed and result accuracy. “☺” will appear when reading to be stable.
- 1.3. A new type of acidity meter electrode and conductance electrode, it can be measured pH, mV, COND, RES, TDS, SAL, it is more convenient to use, more accurate to measure.

- 1.4. Automatic identification of PH buffer solution and conductivity calibration solution, user can choose anyone from three series of buffer solutions: Europe & U.S.A. series, NIST series, and China series, can be a point, two and three points to calibrate the way to facilitate customer selection.
- 1.5. Meter's circuit board adopts SMT film-covering technology to improve meter's production reliability.
- 1.6. Meter has the back light LCD display monitor.
- 1.7. IP54 dust and water resistant.

2. Technical Parameters:

2.1. pH:

Measuring range	(-2.00 - 19.99) pH (Depending on type of electrode used)
Resolution	0.1/0.01 pH
Accuracy	Meter:±0.01pH; Complete Kit: ±0.02pH
Input current	$\leq 2 \times 10^{-12}$ A
Input impedance	$\geq 1 \times 10^{12}$ Ω
Stability	±0.01 pH/3h
Temp. Compensation range	(0 - 100) °C (auto/manual)

2.2. mV:

Measuring range (mV/ORP/E _H)	-1999 mV - 0 - 1999mV
Resolution	1mV
Accuracy	Meter:±0.1% FS

2.3. Conductivity:

Measuring range	Conductivity: (0.00 - 19.99) μ S/cm (20.0 - 199.9) μ S/cm (200 - 1999) μ S/cm (2.00 - 19.99) mS/cm (20.0 - 199.9) mS/cm TDS: (0 - 100) g/L Salinity : (0 - 100) ppt Resistivity: (0 - 100) M $\Omega \cdot$ cm
Resolution	0.01/0.1/1 μ S/cm 0.01/0.1 mS/cm
Accuracy	Meter: $\pm 1.0\%$ FS, connect meter with electrode: $\pm 1.5\%$ FS
Temp. compensation range	(0 - 100) $^{\circ}$ C (manual / auto)
Electrode constant	0.1 / 1 / 10 cm^{-1}
Benchmark temperature	25 $^{\circ}$ C, 20 $^{\circ}$ C and 18 $^{\circ}$ C

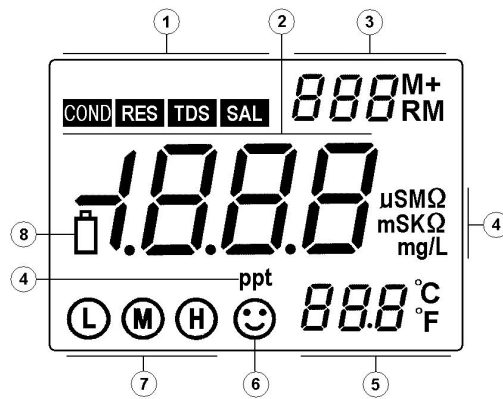
2.4. Other Technical Parameters:

Data storage	150 groups
Storage content	Series number, measuring value, measuring unit and temperature,
Power	Two AA batteries (1.5V x2)
Size and weight	Meter: (165 \times 90 \times 32)mm/310g
Quality and safety certification	ISO9001:2000, CE and CMC

2.5. Working Condition:

Environment temperature	5 - 35 $^{\circ}$ C (0.01 grade)
Environmental humidity	$\leq 85\%$
IP rating	IP54 dust and water resistant.

3. Instructions to the Meter:



3.1. LCD Display:


- ① — Parameters mode icon
- ② — Measuring value
- ③ — Serial number and icon as measuring value to be stored and recalled, and indication icon for special state.
M+ — measuring value to be stored icon; RM — reading to be recalled icon;
- ④ — Measuring unit
- ⑤ — Temperature measuring value and unit
- ⑥ — Measuring value to be stable icon
- ⑦ — Electrode calibration indicate icon
- ⑧ — Indication icon of low voltage, appears when the voltage less than 2.4V, call attention to change the batteries.

3.2. Operation Keys:

The meter has 7 operation keys in all.

- 3.2.1.  — Switch key

In the measurement mode open and shutdown function, other mode keys do not work.

3.2.2.  — Calibration key

- (a) When in the measurement state, press this key to enter into calibration mode.
- (b) When in the non - measurement state, the key is returned as the exit key.

3.2.3.  — Function key



- (a) When in pH measurement mode, Short-time press (time<1.5s) switch the measuring parameters, the meter will display



pH → **mV**

- (b) When in Conductivity measurement mode, short press (less than 1.5s) the key to in turn change measuring mode: COND→ RES → TDS → SAL.
- (c) Long press(≥2S)switching PH and electrical conductivity measurement mode.

3.2.4.  —Back light and data deleting key

- (a) When in the measuring state, short press (less than 1.5s) to open or close the back light display.
- (b) When the storage records are queried, long press (more than 5s) to delete the saved data.

3.2.5.  —Adding and querying keys .  — Reduce and store keys

- (a) When in measurement mode, short time press (less than 1.5s) the key  to store the measuring data. Short time press (less than 1.5s) the key  to recall the saved data;
- (b) When in the parameter setting state, press the two key to alter the number.


3.2.6.  — The combination key of enter and return.

- (a) When in measurement mode, long time press (more than 2s) the key to enter into parameter setting state;
- (b) When in the non measurement state, short time press (less than 1.5s) the key to




determine the current choice.

3.3. The Storage, Recall and Deletion of the Measuring Information:

3.3.1. Store the measuring information:


In the measuring mode, when the measuring data is stable and appear the “ 😊 ”, short-time press  key ($\leq 1.5s$), LCD will display “ **M+** ” icon and storage serial number, and meanwhile memory all the measuring information. Meter can store 150 groups of data (A total of 150 sets of data stored in a variety of different units).

3.3.2. Recall measuring information:

(a) Under the measuring mode, depress the  key, meter will recall the last stored information, and the storage number and “**RM**” icon will appear in the lower right corner of the LCD, and the complete measuring information. Again press  or  key, meter will in turn recall all the measuring information.

(b) In the recalling mode, press  key to return to the measuring mode.

3.3.3. Deleting the stored measuring information:

In the recalling mode, long-time press the key  for 2 seconds, LCD will appear “ **Clr** ” for 2 seconds. It means the storage has been eliminated, and returns to measuring mode.

4. pH Measurement:



4.1. Preparation Work:






4.1.1. Press  key to turn on, press  to choose pH measurement mode.






4.1.2 Check E-201-9 composite electrode, check whether the PH composite electrode glass remains moist. If the glass bubble is damaged, the electrode will not be used properly. The surface of the bulb is too dry. It needs to be soaked in saturated potassium chloride solution for 24 hours, then activated, and then used.





4.1.3. Insert the PH composite electrode and the temperature electrode into the corresponding interface.

4.2. Meter Calibration:






4.2.1. Press  to enter into calibration mode, LCD displays the twinkling “” indicate to enter into the first point calibration.

4.2.2. Wash the pH electrode in purified water and dry it, then immerge it into the pH7.00 buffer solution, rock the electrode holder and then still, waiting for the data stable and appear “”, then again press key , the LCD will appear a twinkling 7.00 pH,make sure that this calibration is unmistakable, please press  key to confirm the first point,at this time the LCD displays the twinkling “”, Prompt for second point calibration, Or press the  key to exit the calibration mode.


4.2.3. Wash the pH electrode in purified water and dry it, then immerge it into the pH4.00 buffer solution, rock the electrode holder and then still, waiting for a stable data and appear“”,then again press key , the LCD will appear a twinkling 4.00pH,make sure that this calibration is unmistakable, please press  key to confirm the second point,at this time the LCD displays the twinkling “”Prompt for the third point calibration, Or press the  key to exit the calibration mode.

4.2.4. Wash the pH electrode in purified water and dry it, then immerge it into the pH10.01 buffer solution, rock the electrode holder and still, waiting “” for the data stable and appear, then again press key , LCD will appear a twinkling 10.01 pH,,make sure that this calibration is unmistakable, please press  key to confirm the third point, at the same time, exiting the calibration mode into the measurement mode,at the same time, the lower right corner of the LCD displays  simultaneously,the representative instrument was calibrated at third points.

4.2.5. Calibration description:

- (a) This meter can adopt random one-point, two-point or three-point automatic calibration, after the first point calibration (see item 4.2.2.), press  to exit calibration mode and enters into measuring mode. The indication icon “  ” will appear on the lower left corner of LCD. When the measuring accuracy is $\leq \pm 0.1\text{pH}$, user just need to choose one kind buffer solution to take one-point calibration according to the measuring range.
- (b) After the second point calibration, (see item 4.2.3.), press  to exit calibration mode and enter into measuring mode. The indication icon “   ” for two-point calibration will appear on the lower left corner of LCD. User can choose pH4.00 and pH 7.00 to calibrate if the measurement is just within the acidity range and choose pH 7.00 and pH 10.01 to calibrate if just within the alkalinity range.
- (c) User should choose three-point calibration so as to reach a more accurate measurement if the measuring range is wide, or if the electrode has been used for long or has ageing phenomenon. As to the new electrode which be used for the first time, it must be calibrated by three-point calibration to keep the unanimity of the meter slope adjustment with the pH electrode.

4.3. PH Solution Test:

Immerge pH electrode into the sample solution after washing and dry it, rock the electrode holder and still, when the LCD appears the icon “  ” to take the reading after displaying value to be stable.

Note: According to the pH equal temperature measuring theory: the closer the temperature of the sample solution with the calibration solution, the more accurate the measuring value will be acquired. So please comply with this theory.



4.4. Parameter Setting:



4.4.1. pH measuring parameter setting schedule (Chart (4-1))

Chart (4-1)


Prompt Mark	Parameter Setting Items	Parameters
P1	Manual temperature compensation setting	(0-99.9)°C
P2	Resolution selection	0.1pH/0.01pH
P3	pH standard buffer solution selection	CH、USA、NIST
P4	Temperature unit setting	°C °F
P5	Purified water, Ammonia added purified water pH restitution	OFF-ON
P6	Backlight timing shutdown time setting	(0-20)m/0 means closes this
P7	Auto power off setting	(0-20)m/0 means closes this
P8	Restore to producer setting	OFF-ON

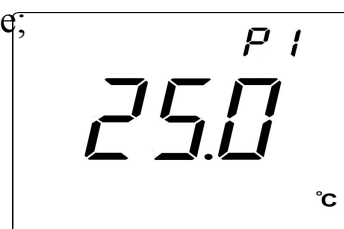
4.4.2 Manual temperature compensation settings(P1)

(a) Depress  key enter into setting mode, press  enters into P1 mode: see picture (4-2).



(b) Press  or  key to change the temperature value;

Long press the two settings keys can be changed quickly;



Press  key determines the current settings and returns.




picture 4-2

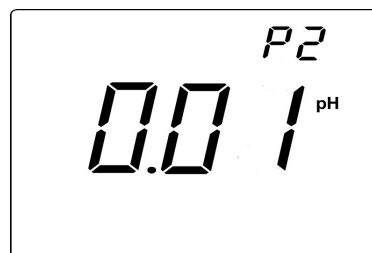
(c) Press  key to enter into next parameter setting or press  key to return to measuring mode.

4.4.3. Resolution selection (P2)



(a) Press  key in the mode P1 choose P2 , press  key enters into mode P2, see picture (4-3).

(b) Press  or  to choose resolution :
0.1→0.01;



Press  key determine the choice.








picture 4-3

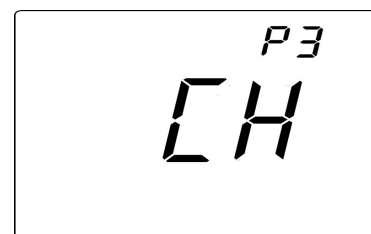
(c) Press  key to enter into next parameter setting or press  key to return to measuring mode.

4.4.4. pH standard buffer solution selection (P3)

(a) press  key in mode P2 to choose mode P3,press  key enters into mode P3 see picture (4-4).

(b) Press  key or  change buffer solution selection;there are Europe & U.S.A series,NIST series and China series;press  key determines the current settings and returns;

(c) press  key enter into next parameter setting or press  key to return to measuring mode.



picture 4-4



Three series standard buffer solution values:




CH(China series): 1.68ph 4.00ph 6.86ph 9.18ph 12.46ph



NIS(NIST series):1.68ph 4.00ph 6.86ph 9.18ph 12.46ph

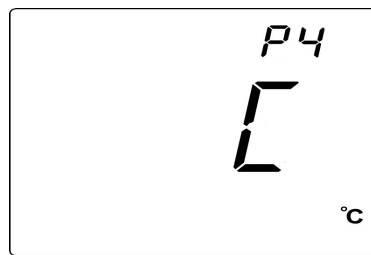
USA(Europe & U.S.A series):1.68ph 4.00ph 7.00ph 10.01ph 12.46ph

4.4.5. Temperature unit °C/°F setting (P4)

(a) Short press  key in mode P3 to choose mode P4, press  key enters into P4 see picture (4-5).



(b) Press  or  key to choose temperature unit: °C or °F, press  key determines and returns;



(c) Press  key to enter into next parameter setting or press  key return to measuring mode.





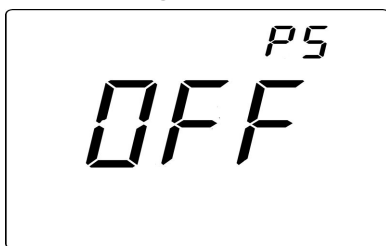
picture4-5

4.4.6. Purified water, Ammonia added purified water pH restitution (P5)

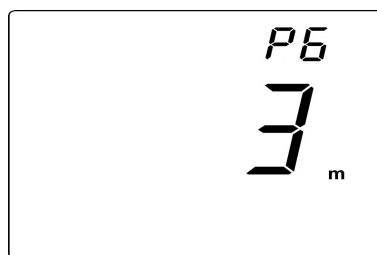
(a) Press  key in mode P4 to choose mode P5, press  key enters into P5 see picture (4-6).

(b) Press  key and  key modified, " OFF "no compensation," H2O "Purified water pH compensation;" nH3 "ammonia added purified water compensation;"

(c) Press  key to enter into next parameter setting or press  key return to measuring mode.








picture4-6





picutre 4-7



4.4.7. Back light display time setting (P6)




(a) Press  key in mode P5 to choose mode P6, press  key enters into P6 see picture (4-7).



(b) Press  and  key to choose the time of back light auto power off,press  key determines and returns;

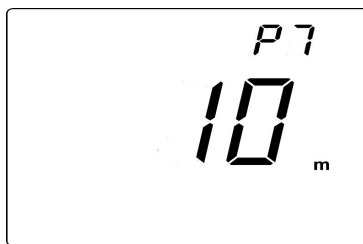
(c) Press  key to enter into next parameter setting or press  key to confirm and return to measuring mode.

4.4.8. Auto power off time setting (P7)

(a) Press  key in mode P6 to choose mode P7,press  key enters into P7 see picture (4-8).



(b)Press  or  key to choose the auto power off time,press  key determines and returns; " 0"means to shut off auto power function;





(c)Press  key to enter into next parameter setting or press  key return to measuring mode.



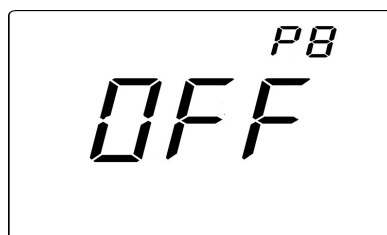
picture 4-8

4.4.9. Restore to producer setting (P8)

(a) Press  key in mode P7 to choose mode P8,press  key enters into P8 see picture (4-9).

(b)Press  or  key to choose “ ON ”, then press  key determines,“ 888 ”flicker means restore to producer setting; press  key return to measuring mode.

(c) This function is used carefully. Once the factory setting is restored, the data that is stored before the calibration will be deleted.



picture 4-9

4.5. Considerations:

- 4.5.1. Calibration times of meter rely on the sample, electrode performance and required accuracy. For high accurate measurement ($\leq \pm 0.02\text{pH}$), which should be calibrated immediately with high accurate standard buffer solution, for general accuracy measuring ($\leq \pm 0.1\text{pH}$), which can be used almost one week or long time once be calibrated.
- 4.5.2. The meter must be re-calibrated in the following situations:
- (a) New changed or unused electrode for a long time;
 - (b) After measuring acid ($\text{pH} < 2$) or alkaline ($\text{pH} > 12$) solution;
 - (c) After measuring solution which contains fluoride and concentrated organic solution;
 - (d) The solution's temperature is much different with calibration temperature.
- 4.5.3. The soaking solution in the protecting bottle of front pH electrode is to keep the glass bulb and junction activating. Loose the capsule, pull out the electrode and wash it in purified water before measuring. Insert the electrode and screw tight the capsule after measuring to prevent the solution leaking. If the soaking solution is turbid or moldy, please wash and change a new one at once.
- 4.5.4. The preparation of the soaking solution: take 25g analytical pure KCL, dissolved with purified water and dilute to 100mL. Electrode should avoid soaking in purified water protein solution and acid fluoride solution for a long time as well avoid getting touching with organic silicon lipidic matters.
- 4.5.5. To calibrate the meter with the given value pH buffer solution, the pH value of the standard buffer solution must be reliable so as to improve the accuracy. Buffer solution should be changed in time after many times using.
- 4.5.6. Always keep the meter clean and dry; especially for the socket of meter and electrode, otherwise it may lead to an inaccurate measurement or invalidity. To clean and dry them with medical cotton with dehydrated alcohol if there are any dirty.

4.5.7. The sensitive glass bulb in the front of combination electrode should not touch with hard things, any broken and rough will make the electrode invalidity. Before and after measuring, the electrode should be washed with purified water, and dry electrode after washing, don't clean glass bulb with tissue for it will effect stability of electrode potential and enlarge response time. The electrode should be washed many times for removing the sample stuck on the electrode, or wash with suitable solvent then clean the solvent with purified water after measuring sticky sample.

4.5.8. An electrode be used for a long time, or measured solution which contains a polluting solute easily for the sensitive bulb, or a substance resulting in jam at the junction, the electrode will be getting passivated, its sensitivity will decrease and its response is getting slow, the reading are not correct. It could adopt the following method for various cases:

(a) The glass bulb is contaminated and aging: Put the electrode into 0.1mol/L dilute hydrochloric acid (Preparation: diluted 9mL hydrochloric acid to 1000mL with purified water) for 24h. Rinse it with purified water, then dipped it into the electrode dipping solution for 24h. If the passivation is serious, then user can also put the bulb of electrode into 4% HF (hydrofluoric acid) or the electrode activation solution for 3 to 5 seconds, rinsing it with purified water, and dipped it in the electrode soaking solution for 24h to renew it.

(b) Wash for contaminated glass bulb and junction: (For reference)

Contamination	Abluent
Inorganic metal oxide	diluted acid less than 1mol/L
Organic lipidic matter	dilute washing (weak alkaline)
Resin macromolecule matter	dilute alcohol, acetone, ether
Proteinic haematocyte sediment	Acidic enzymatic solution (such as dried yeast)
Kinds of paint	dilute bleach, peroxide

4.5.9. pH electrode using period is about 1 year, but its life will be shortened if using condition is poor or incorrect maintenance. So it should be replaced immediately after electrode become aging or invalid.

4.5.10. When it appears an abnormal reading when calibration or displaying, please set P8 as “ON” to restore the meter to producer setting mode, and then to calibrate and measure again.

4.6. The Self-diagnose Information:

When using, there might appear the following icons. This is the meter’s self-diagnose information, which can help to know some information about the meter or the electrode when using:

4.6.1. The stable icon -2.00 pH or the 19.99 pH — this icon appeared when the value has surpassed the measuring range. There will also appear such signs when the electrode is not well connected with the meter or when the electrode is not immersed into the solution. This is a normal phenomenon.

4.6.2. “*Err 1*” — Electrode zero potential to be exceeded (<-60mV or >60mV)




4.6.3. “*Err 2*” — Electrode slope to be exceeded (< 50% or >105%)

When appear “*Err 1*” or “*Err 2*”, the meter can not work, please take the following check:

- (a) Check if the electrode bulb has air bubble, if has, please shake it hardly.
- (b) Check the quality of buffer solution, if it goes bad or the value has biggish error.
- (c) Set the meter to producer setting mode (for details see P12 item 4.4.9.), then re-calibrate it.



If still can not recover the normal state after doing the above checking, please replace a new pH electrode.

5. mV Measurement:








- 5.1. Press  key to turn on, and short press  to switch to **mV** mode;
- 5.2. Connect the ORPC composite electrode or the ion composite electrode (sold separated), the electrode is washed and dried in pure water and immersed in the measured solution., slowly stir and then still. When there appear a “  ” and a stable reading, that is the value .

6. Conductivity Measurement:

6.1. Preparation Work:

- 6.1.1. Press  key to turn on the meter; press  key, choose **COND** measurement mode.
- 6.1.2. Check whether the DJS-1.0 conductivity electrode pole piece is intact. If the electrode pole piece glass is damaged, the conductivity electrode pole piece rusts will cause the electrode not to be used normally, so we should replace the new electrode.
- 6.1.3. Connect the DJS-1 conductivity electrode and temperature electrode into the meter.

6.2. Meter's Calibration (Standard solution calibration method):

Press  key, “**CAL**” is flashing on the upper right corner of the LCD, indicate enters into the calibration mode, wash the DJS-1 conductivity electrode with purified water and dry it, then insert it into the 1413 μ S/cm calibration solution with temperature electrode, still it after stirring, Wait for solution stability and “  ” icon appears, press  key, LCD shows the current calibrated solution value 1413 μ S/cm, confirm the correct solution of the solution at this time, and then press the  key, Save calibration data and exit the calibration mode according to the  key, at this time, the calibration indication icon  and  will be displayed at the lower right corner of the LCD.


Note: (a) The meter has been calibrated before leaving factory, so generally users can use it directly.

(b) The standard solution method is aimed at the long time use of conductance electrode, which leads to inaccuracy of conductance constant. The new conductance electrode has been calibrated before being released. Its constant is marked on the electrode and input constant before use.

(c)The electrode constant input method ,first determines the type of electrode constant. Then, when the input constant coefficient is constant, for example, the constant is 10.5, select the 10 electrode type first, then set the constant 1.05, that is: $10.5=10*1.05$.

6.3. Conductivity solution Test:

6.3.1. Wash the conductivity electrode and throw off the water on it, then insert it into the solution with temperature electrode, still it after stirring, take the reading after “ 😊 ” appears, which is the conductivity values of this solution.

6.3.2 Short-time press  key can display the value of the TDS, salinity or resistivity value which against the conductivity value.

6.4. Important Statement:

6.4.1. This meter build-in below two kinds of calibration solution series, please set up in the parameters P4;

(a) **USA** (Europe & U.S.A. series) — 84 μ S/cm, 1413 μ S/cm, 12.88 mS/cm and 111.9 mS/cm

(b) **CH** (China series) — 146.6 μ S/cm, 1408 μ S/cm, 12.85mS/cm and 111.3 mS/cm

6.4.2. This meter has an unique one-point calibration function, to choose one calibration solution based on the principle of the water samples and calibration solution conductivity as close as possible, in general the most common calibration solution is 1413 $\mu\text{S}/\text{cm}$. Use the equipped DJS-1 conductivity electrode ($K=1$), and do calibrate with 1413 $\mu\text{S}/\text{cm}$ calibration solution, can use within the range of less than 100 mS/cm . Please choose refer to the chart (6-1).

Chart (6-1)

Measuring range	0.05 to 20 $\mu\text{S}/\text{cm}$	0.5 $\mu\text{S}/\text{cm}$ to 200 mS/cm		
Electrode constant	$K=0.1\text{cm}^{-1}$ (flow test)	$K=1.0\text{cm}^{-1}$		
Calibration solution	84 $\mu\text{S}/\text{cm}$	84 $\mu\text{S}/\text{cm}$	1413 $\mu\text{S}/\text{cm}$	12.88 mS/cm 111.9 mS/cm
Calibration indication icon	Ⓕ	Ⓕ	Ⓕ Ⓜ	Ⓕ Ⓜ ⓗ

6.4.3. There are two kinds of method which are standard solution calibration method and constant calibration method for conductivity electrode calibration which have been set in meter, the statement in item 6.2. “electrode calibration” is the standard calibration method, and when the accuracy of standard solution is accurate then suggest the standard solution calibration method is priority selected, it can ensure the best accuracy. If user used to use constant calibration method, it can be set according to the constant on the conductance electrode (The new conductance electrode manufacturers have been standard accurate, customers can be used at ease, such as long-term no use or fouling. In order to ensure accuracy, first clean up the electrode and then calibrate

the standard solution.) Please set the settings in the parameter settings P1 and P2 (See the 6.5.2, 6.5.3 in P18 and P19) .

6.4.4. The temperature compensation coefficient of the meter setting is 2.00%/°C by producer. However, the conductivity temperature coefficient is different for solution of different variety and concentrations, the user can refer chart (6-2), as well as the data which they own get in the experiment, to set in the parameters setting of P5. At the same time, meter will do automatic non-linear temperature compensation in the high purified water which less than 10 μ S / cm.

Note: When the coefficient of temperature compensation is set to be 0.00, that is, there is no temperature compensation when testing, the measuring value based on current temperature.

Chart (6-2)

Solution	Temperature compensation coefficient
NaCl salt solution	2.12%/°C
5%NaOH solution	1.72%/°C
Dilute ammonia solution	1.88%/°C
10% hydrochloric acid solution	1.32%/°C
5% sulfuric acid solution	0.96%/°C








6.5. Parameter Setting:

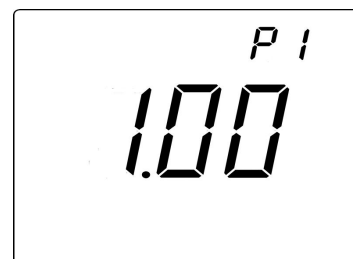
6.5.1. Conductivity parameters setting schedule (chart (6-3))

Chart (6-3)

Prompt Mark	Parameter Setting Items	Parameter
P1	Electrode constant selection	0. 20-5. 00
P2	Setting of constant coefficient of electrode	0.1, 1.0, 10
P3	Manual temperature compensation setting	(0-99.9) °C
P4	Calibration solution series selection	CH USA
P5	Selection of temperature compensation coefficient	0.00%-9.99%
P6	Selection of datum temperature	25°C 20°C 18°C
P7	Selection of temperature units	°C/°F
P8	Back light display time setting	(0-20) m/0The representative closes this
P9	Auto power off time setting	(0-20) m/0The representative closes this
P10	Restore to producer setting	OFF-On

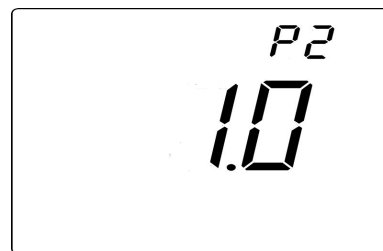
6.5.2. Electrode constant selection (P1)

- (a) Long-time press  key entering into setting mode, press  meter is entering into P1 mode, see picture (6-1);
- (b) Press  or  key constant coefficient of change, long press these two settings can be changed quickly, press  key determine the current set value.
- (c) Press  key to enter into the next parameter setting or press  key return to measuring mode.










picture 6-1

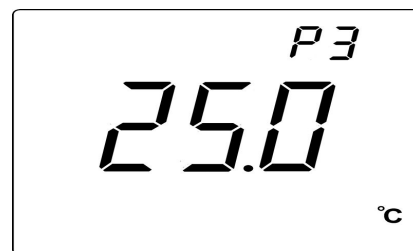
6.5.3. Electrode constant coefficient selection (P2)










picture6-2

- (a) Under P1 mode to short press the  key choose P2, Press  enter into P2 mode, see picture (6-2);
- (b) Press  or  key to change the constant setting, press  key determine the current set value.
- (c) Press  key to enter into the next parameter setting or press  key return to measuring mode.

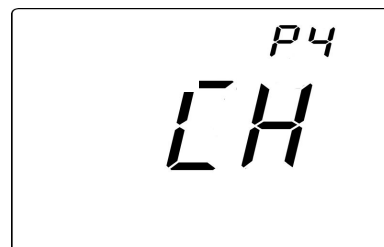
6.5.4. Manual temperature compensation setting (P3)










picture6-3

- (a) Under P2 mode to press  key choose P3 mode, press  enter into P3, see picture (6-3);
- (b) Press  or  key to change temperature value, long press these two settings can be changed quickly, press  key determine the current set value.
- (c) Press  key to enter into the next parameter setting or press  key return to measuring mode.

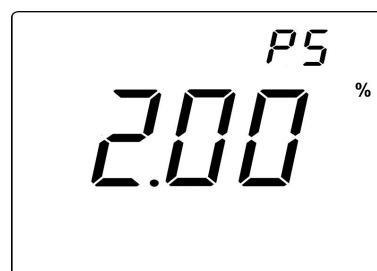
6.5.5. Calibration solution series selection (P4)



picture6-4

- (a) Under P3 mode to short press  key choose P4, press  enter into P4 mode, show as the picture (6-4);
- (b) Press  or  key to change calibration solution series, press  key determine the current set value.
- (c) Press  key to enter into the next parameter setting or press  key return to measuring mode.




6.5.6. Temperature compensation coefficient setting (P5)





picture6-5

- (a) Under P4 mode to press  key choose P5,

press  enter into P5 mode, shown as picture (6-5);



(b) Press  or  key constant coefficient of change, long press these two settings can be changed quickly, press  key determine the current set value.



(c) Press  key to enter into the next parameter setting or press  key return to measuring mode.





picture 6-6

6.5.7. Selection of datum temperature (P6)



(a) Under P5 mode to press  key choose P6, press  enter into P6 mode, shown as picture (6-6);



(b) Press  or  key to choose datum temperature


three options: 25°C, 20°C, 18°C; Press the  key to determine the current selection



(c) Press  key to enter into next parameter setting or press  key to confirm and return to measuring mode.

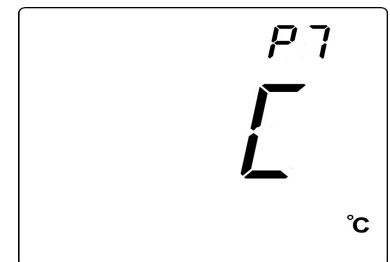
6.5.8. Selection of temperature units °C/ °F (P7)

(a) Under P6 mode to press  key choose P7, press  enter into P7 mode, shown as picture (6-7);

(b) Press  or  key to choose temperature units



°C/ °F; Press the  key to determine the current selection




(c) Press  key to enter into next parameter setting or press  key to conform and return to measuring mode.

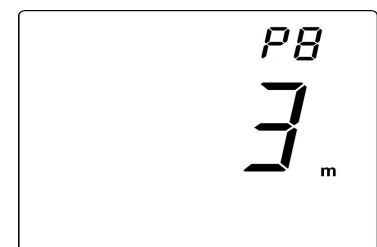


picture 6-7



6.5.9. Back light display time setting (P8)

(a) Under P7 mode to press  key choose P8, press  enter into P8 mode, shown as picture (6-8);



(b) Press  or  key to choose the time of automatic back lighting, press  key determine the current set value.

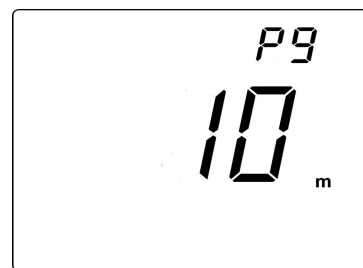


picture 6-8




(c) Press  key to enter into next parameter setting or press  key to confirm and return to measuring mode.

6.5.10. Auto power off time setting (P9)



(a) Under P8 mode to press  key choose P9, press  enter into P9 mode, shown as picture (6-9);



picture6-9

(b) Press  or  key to choose auto power off time, press  key determine the current set value.

“0” means to close the automatic shutdown function.






(c) Press  key to enter into next parameter setting or press  key to confirm and return to measuring mode.



picture6-10

6.5.11. Restore to producer setting (P10)

(a) Under P9 mode to short press  key choose P10, press  enter into P10 mode, shown as picture (6-10);

(b) Press  or  key to choose “”, then press  key to confirm, “888” flicker means restore to producer setting; press  key return to measuring mode.

(c) This function is used carefully. Once the factory setting is restored, the data that is stored before the calibration will be deleted.

6.6. Considerations:

6.6.1. The conductivity electrode has been calibrated before meter leaving factory, its constant value is marked on the electrode, user can direct set constant value, direct use without calibration.

- 6.6.2. Recommend calibrating one time every month under the normal circumstances; The use of the conductance electrode after a period of time also needs to be calibrated once.
- 6.6.3. Keeping the conductivity electrode clean and wash it with purified water, then throw off the water on it before and after testing. It's better to rinse electrodes with sample solution;
- 6.6.4. The DJS series platinum black conductivity electrode surface is plated with a layer of metal platinum black to used as lowering the electrode polarization, enlarge measuring range, so can not polish the surface of platinum black, only can wash it in water by shaking, in case to damage the platinum black coating; for organic stained things can be washed with hot water with detergent or alcohol.
- 6.6.5. Conductivity electrode before use can be immersed in purified water, to prevent the platinum black from passivation, if found the platinum black plated electrode is invalid, can immerse it into 10% nitric acid solution or 10% hydrochloric acid for 2 minutes, then rinse with purified water and again test. If the situation does not improve, then need to replace platinum black, or replacing a new conductivity electrode.
- 6.6.6. When it appears an abnormal reading when calibrating or displaying, please set P10 as “ON” to make the meter restore to producer setting mode, and then do calibrate and measure again.

7. Meter's Complete Kit:

7.1. Model P613 pH/ Conductivity meter	1unit
7.2. E-201-9 composite electrode	1pc
7.3 DJS-1 Conductivity electrode	1pc
7.4. T-10-Q temperature electrode	1pc
7.5 Standard buffer solution (4.00, 7.00, 10.1)	1set
7.6 spare AA battery	2 pc
7.7. Manual	1pc
7.8. Carrying case	1pc

8. Warranty:

- 8.1. We warrant this meter to be free of charge maintain, replace the parts or products under normal using circumstances, from purchased time within one year caused by manufacturing bad and unable to work.
- 8.2. Attached electrodes do not belong to this warrant range. But, if the newly purchased electrode went wrong without using, it's free of charge to maintain and replace.
- 8.3. The above warranty is not apply to defects resulting from action of user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification.