CREATEC®

POP-8300 Free Chlorine Online Analyzer

Operation Manual

Hebei Create instrumentation Technologies Co.,Ltd.

Foreword

Thanks for choosing POP-8300 Free Chlorine Online Analyzer!

Proper installation and parameter setting would give maxium performance and advantage of this instrument for your good usage. So please carefully read this manual before installation.

This analyzer should be installed and debugged by the technicians with relevant professional knowledge.

Please contact technical backup of CREATE when you meet any problems during installation and usage.

Our serious promise:

1. The indicator's quality guarantee is one year from the date of purchasing. During this period, if the meter has quality problems, manufacturer is responsible for maintenance for free or replacement.

2. We provide lifelong maintenance service for the product whatever you purchase from us or distributors.

3. If the damage of the meter is caused by the following reasons, it is out of the maintenance service:

A).The meter is burned caused by misconnection with high voltage power supply or soggy.

B).The meter is refitted or misused without permission.

C).The meter is damaged under the condition out of use environment.

D).The relevant damage caused by choosing the wrong type.

E).The physical damage caused by ultimate load.

F).The meter is out of operation caused by improper storage and transportation (reference standard SJ/T10463-93).

G).Consumable material is out of maintenance service.

Advancing with the times is the natural law of enterprise development. the product will be upgraded for technology at any time. Without notice for non-essential changes. Please make the object as the standard.

Content

1. Product Overview

POP-8300 is a wall-mounted online analyzer integrated the measurement of water quality free chlorine, pH and temperature. The instrument adopts the latest research results of the constant potential sensor application, internally configurated water sample decompression, filtration and constant flow rate device, which create a sustained and stable operating environment for the sensor, rather than simply matching sales of the sensor and instruments.

7-inch touch display, you can switch the screen style in the main interface according to your preference, with the advantages of easy operation, dynamic data display, historical data storage and others; electrical box and fluid box are separately installated, in line with the international safety standards of water and electricity separation; widely used in water disinfection and hypochlorous acid (HClO) residual chlorine or chlorine dioxide (ClO_2) residual chlorine on-line monitoring and control of the water quality in the pipeline.

(HClO/ClO_2) free chlorine model can be selected according to the types of disinfectant to be used. When used in the process of hypochlorous acid disinfection, it is recommended to use the POP-8301 free chlorine on-line analyzer; when used in chlorine dioxide generator disinfection system, it is recommended to use POP-8302 chlorine dioxide on-line analyzer, the two models with different measurement and analysis models, the measuring results are also different.

Fig.1.POP-8300 free chlorine online analyzer appearance

1.1 Performance Characteristics

- Wall mounted, integrated ($HClO/ClO_2$)free chlorine online analyzer;
- The 7-inch touch display, more convenient operation and more powerful system function;
- With the function of historical data retrieve and dynamic display of parametric curve;
- With the function of flow rate measurement display and no water alarm;
- Switch the screen style in the main interface according to preference, the function of data dynamic display;
- Wide range support for global electric standard power supply, reserved power supply, communication waterproof interface;
- Constant flow rate is patented, and not subject to the pressure change from pipeline;
- Solidify the flow through sensor sensitive areas and the measurement is more stable
- Free chlorine sensor is equipped with automatic maintenance device, free of manual maintenance;
- can be equipped with a water sample pretreatment system to improve the measurement accuracy and service life of the instrument;
- Anti-siphon design, the sensor is automatically maintained after the system is down;
- Isolated,two-way(4-20)mA current loop output, instrument/transmitter dual-mode;
- Two way photoelectric programmable switch/pulse;
- Protective sealed case, pre-set installation backplane, convenient onsite installation;
- (HClO)Free chlorine differentially shows free residual chlorine, total residual chlorine, more convenient to guide the customer for dosage control;

1.2 Main technical specifications

System Model		POP-8300 free chlorine online analyzer
Measurement configuration		(HClO)free chlorine.. total free chlorine/(ClO_2)/pH/Temperature
Measurement range	Free chlorine	(0.00-2.00)mg/L(ppm) (0.00-20.00)mg/L(ppm)
	pH	2.00-12.00
	Temperature	(0.0-99.9)℃
Resolution	Free chlorine	0.01mg/L(ppm)
	pH	0.01
	Temperature	0.1℃
Accuracy	Free chlorine	Indication error 10%
	pH	0.1pH
	Temperature	±0.5℃
Sensor life	pH/free chlorine sensor	12months(The service life is closely related to the measurement medium and maintenance frequency)
Communication interface	RS485	MODBUS RTU communication protocol
(4-20)mA output	Number of channels	Double channels
	Technical feature	Isolated, reversible, completely adjustable, instrument/transmitter dual mode
	Channel configuration	Programmable point to Free chlorine, chlorine dioxide, Temperature, pH
	Loop resistance	400Ω(Max), DC 24V
	Transmission accuracy	±0.1mA
Control output	Number of channels	Double channels
	Contact mode	The first and second for photoelectric switch

	Load capacity	Load current 50mA(Max)，AC/DC 30V
	Control point	Programmable function(Free chlorine, chlorine dioxide, Temperature, pH, Timing)
Power supply	Connected to electric supply AC80-260V;50/60Hz,compatible with all international market power standards(110V;220V;260V;50/60Hz).	
Working environment	Temperature:(5-50)℃；relative humidity:≤85% RH(non condensation)	
Power Consumption	＜20W	
Storage environment	Temperature:(-20-70)℃；relative humidity:≤85%RH(non condensation)	
Installation	Wall mounted(with the preset back cover)	
Cabinet weight	≤10kg	
Cabinet dimension	570*mm*380mm*130mm(H×W×D)	

2. Installation and construction

2.1 Installation Method

POP-8300 free chlorine online analyzer is wall-mounted, to select the appropriate installation location, and first fix the back plate with a nail or expansion bolts and keep vertical degree;

Note:When installation, be careful to ensure that all four hanging points are in the gourd hole, the horizontal fixed hole in the lower part is locked up;

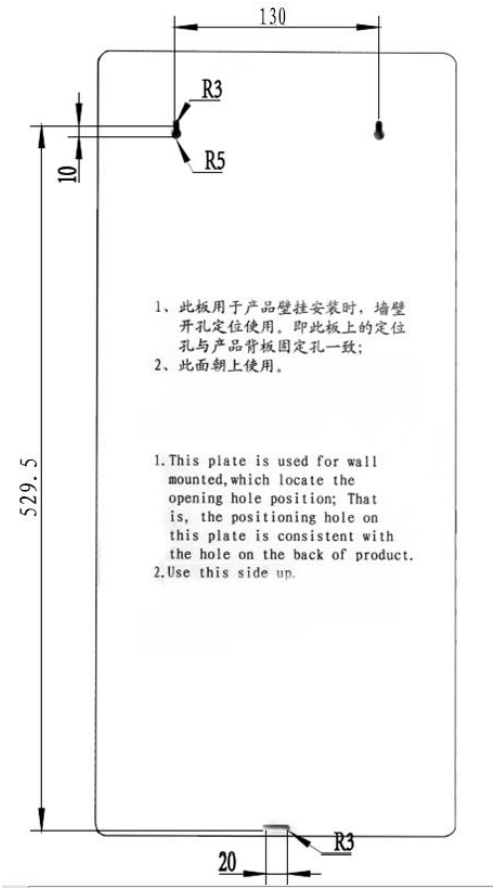

Figure 2.1 Mounting plate positioning hole plate

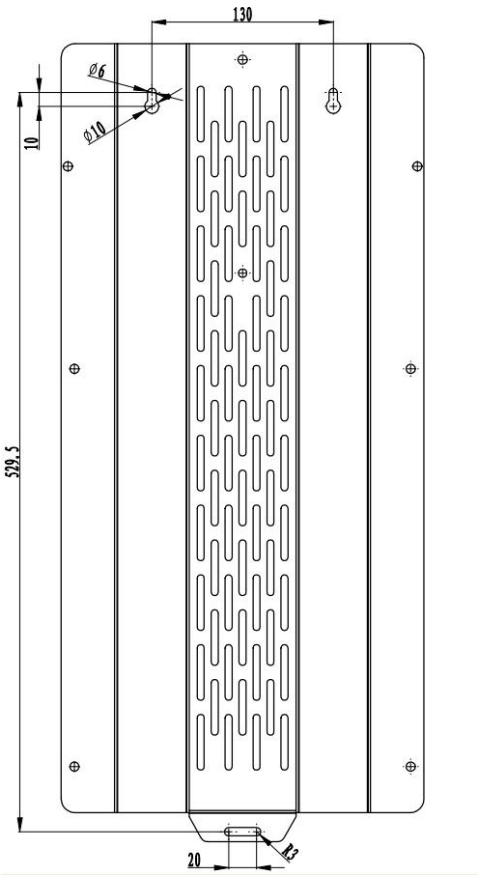

Figure 2.2 Schematic diagram of installation

2.2 Installation of water and electricity part

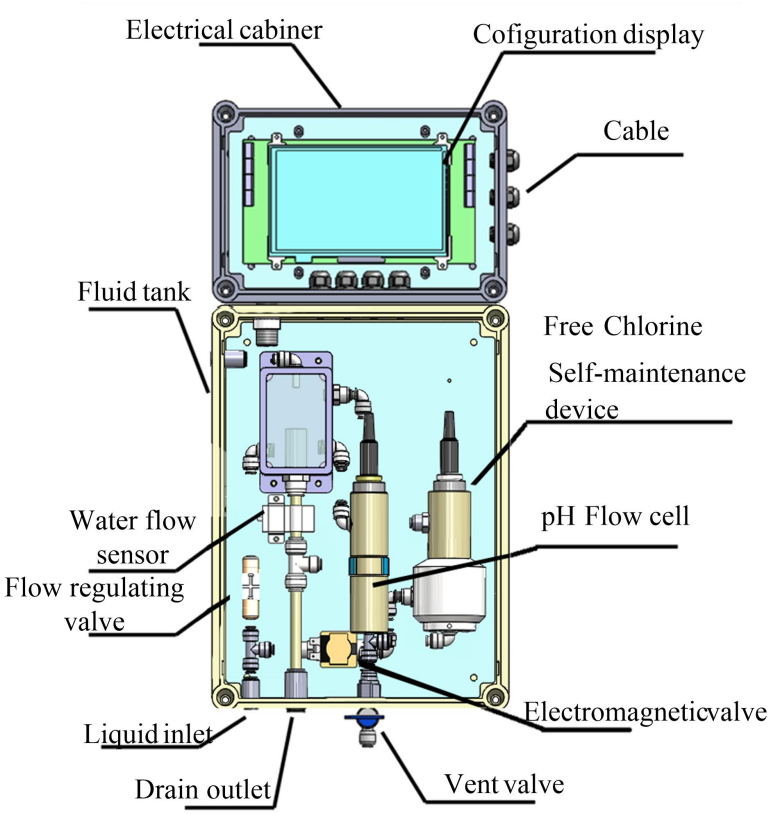

Figure 2.3 POP-8300 Free chlorine online analyzer diagram

1) In the figure above, from left to right are in turn the liquid inlet, drain outlet and vent valve.
2) The introduction of water, the installation of a 1/2 "front ball valve on the pipeline is easy for maintenance in the future, a 1/2 "turn 1/4" ball control valve is installed on the 1/2" ball valve thread, and then in series with a screen filter, and then connecting the instrument inlet with 1/4 " fine plastic pipe;
3) Drainage pipeline, outlet at the lower end of the instrument is connected with bellows to introduce the sewage tank, the water flowing through the measurement process will be discharged from here;
4) Clean the blowdown valve connection, use 1/4 "fine plastic pipe to connect the bottom of the plastic ball valve, the lower end is introduced to

the blowdown valve, the water inside the instrument can be drained when you open the plastic ball valve below the instrument.

5) Connect the power supply, the three-wire plug that comes with the instrument is connected with the nearest power outlet, with AC80-260V power supply;
6) Drain pipe must be discharged into the place where the level is below the cabinet, and it is prohibited access to the pipeline with positive or negative pressure, the use of bellows hose into the low trough to ensure that the hose does not knot;
7) If there is more suspended matter in the water, it is recommended to install a pre-filter. The monitored water sample enters into the equipment for test again. The suspended impurities in the water can be filtered out, as shown in the figure below;

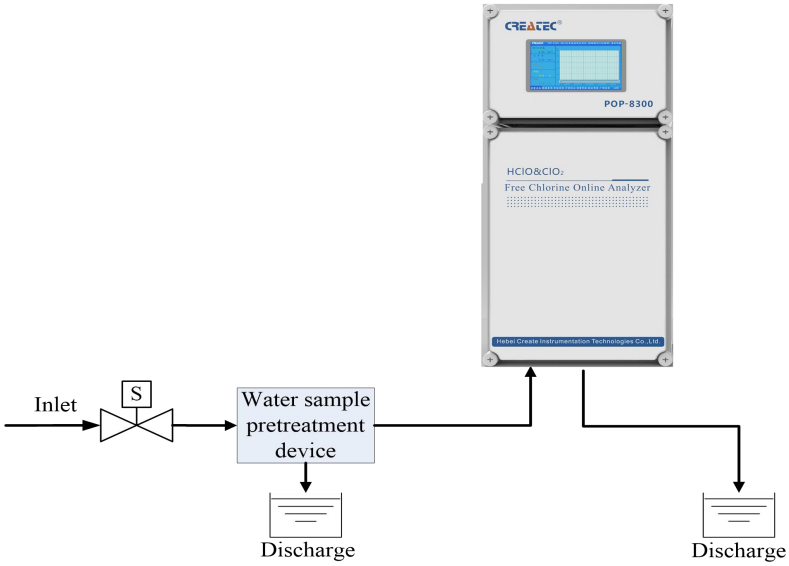

Figure 2.4 Water flow installation flow chart for POP-8300 free chlorine online analyzer

[Note]:Avoid the use of filter with degradation/reduction to free chlorine, large-capacity filter will cause the measurement data lag, carefully select the filter volume; screen filter or PP filter is recommended.

8) The installation effect of the whole machine POP-8300 free chlorine

online analyzer is shown below

Fig.2.5 Installation effect map for POP-8300 free chlorine online analyzer

When the analyzer is under self-cleaning process, if the cleaning wheel does not turn, please slightly adjust the depth of insertion of the free chlorine sensor and wipe the removable pressure ring to make the wheel easily rotate;

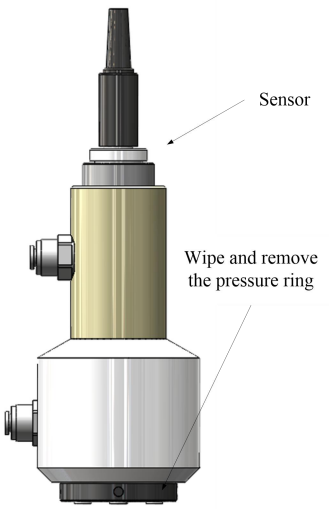

Figure 2.6 Self-cleaning effect drawing of POP-8300 free chlorine

2.3 Check before power on

1) The sensor is always in a wet environment before installation, and hydration is not needed for the sensor;
2) Adjust the inlet water ball valve to make the overflow tube in the overflow box reach the overflow state;
3) The sensor and measuring unit of the equipment have been calibrated and can measure directly after power supply. If the measurement is not accurate at the site, it can be re-calibrated according to the calibration method;
4) If required (4-20)mA transmitter/control/RS485 communication connection, open the case cover, and please wire according to the wiring diagram.

   [note]:method of opening the case cover: First, evenly unscrew the four screws on the upper cover, remove the upper cover, and then connect to the corresponding terminal of the circuit board.

2.4 Wiring Instructions

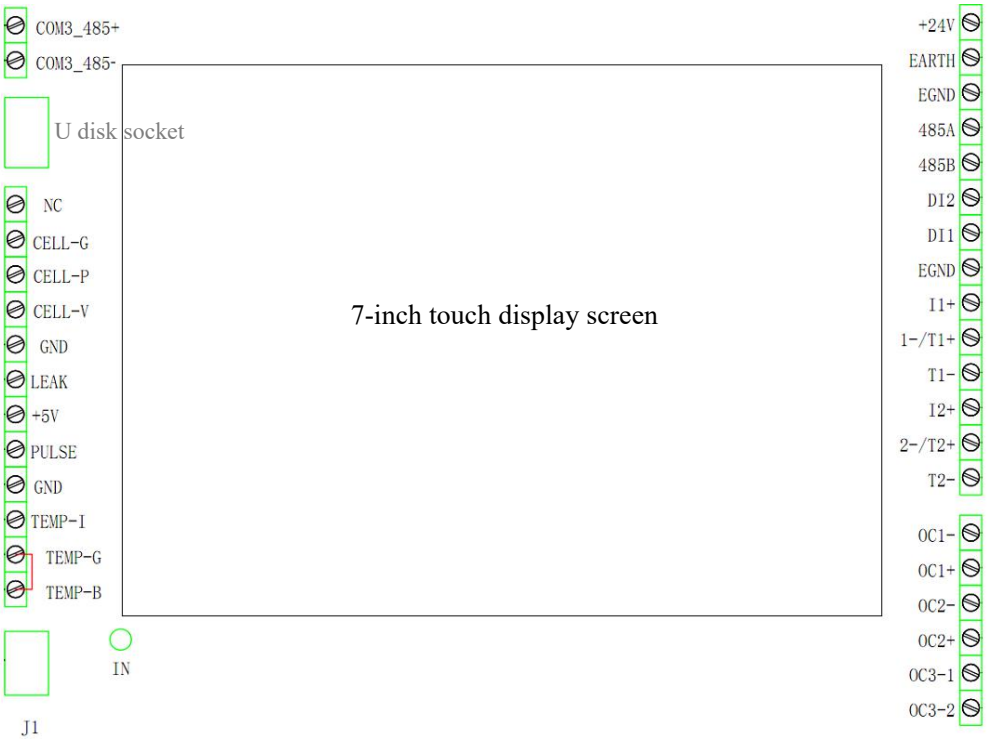

Fig.2.7 Distribution diagram of circuit board terminals in the case

pH	pH sensor with a pluggable connector, no need update wiring
CELL-P	Free chlorine/chlorine dioxide sensor shielded wire
CELL-V	Free chlorine/chlorine dioxide sensor control line
CELL-G	Free chlorine/chlorine dioxide sensor measuring line
TEMP-I	Temperature sensor line,nonpolar connection
TEMP-B	Temperature sensor line,nonpolar connection
TEMP-G	Short wires, short out TEMP-B and TEMP-G internally
LEAK	Spare leakage sensor
GND	
U disk socket	Rewrite program or data output u disk port

COM3_485+	Communication interface, connect to the upper computer RS485 port
COM3_485-	Communication interface, connect to the upper computer RS485 port
DC24V+	Power positive of circuit board touch-screen
PE	Ground wire
DC24V-	Power negative of circuit board touch-screen
DI1	The single of water flow sensor
DI2	one-way switch volume input
OC1-	The first photoelectric switch output
OC1+	
OC2-	The second photoelectric switch output
OC2+	
Relay-	Free chlorine self-maintaining solenoid valve
Relay+	
485A	Internal communication interface
485B	Internal communication interface
T1+/T1-	The first mA output, the transmitter mode
I1+/I1-	The first mA output, the instrument mode
T2+/T2-	The second mA output, the transmitter mode
I2+/I2-	The second mA output, the instrument mode

3. Typical Applications

- On-line analysis of municipal water tank disinfection
- Chlorine supplement control of pipe secondary pressurization (no negative pressure)
- Chlorination control of water for food factory and beverage factory
- Disinfectant control of circulating cooling water

- Online analysis and drug control of Pool water disinfectant
- Disinfection of sewage and waste water and drug addition control

4. Interface operation

4.1 Interface information

1）Interface Introduction

The interface scrollbar will display the flow rate low limit alarm, and the corresponding alarm will appear when the temperature, pH and free chlorine exceed the set range.

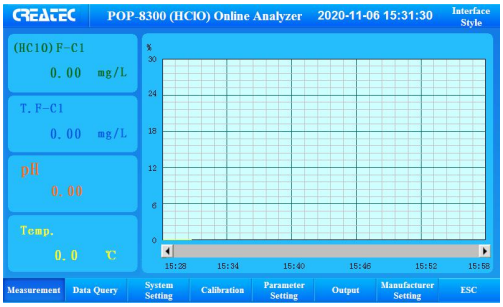

Fig.4.1(HClO)The main interface of the free chlorine online analyzer

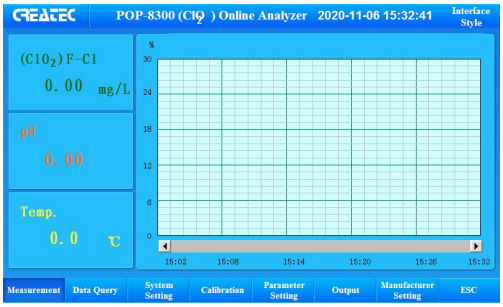

Fig.4.2(ClO_2)The main interface of the free chlorine online analyzer

Note:the real-time status,interface style and system time of each measurement data are shown on the main screen, click on each parameter box to view the historical curve diagram.

2）Interface Parameters Introduction

A.(HClO)Residual chlorine is also called active free chlorine, when water quality disinfection material is hypochloric acid disinfection material, hypochloric acid is added into the water to have the weak electrolytic reaction: $HClO=H^{+}+ClO^{-}$

The proportion of hypochloric acid and hypochlorite in the water depends on the pH value of the water, the constant potential sensor itself responds to the free chlorine, without the premise of pH compensation, it is the current free residual chlorine;

B.Residual chlorine after the pH compensation (equivalent to

acidification) is total residual chlorine, the potential chlorine (ClO^-) can be acidified by water, or transformed into HClO by activated chlorine consumption; total residual chlorine is the residual chlorine calue measured by conventional DPD reagent;

C.Through the residual chlorine differential display, which can better guides the customers to understand the water quality situation, and better guidance on the water quality of the disinfection process;

D.(ClO_2)residual chlorine： the residual amount of drug residual chlorine after using chlorine dioxide (ClO_2) disinfection material;

E.pH: showing the degree of acid-base in water, when hypochlorite (HClO) is for drug disinfection, the active chlorine content is significantly affected by pH; Chlorine dioxide (ClO_2) is in the pH range of 5-9, sterilization and disinfection is almost free from the impact of pH;

F.Temperature:Important physical indicator of water quality, the water temperature directly determines the size of the water molecule or the size of the water volume, determines the degree of water viscosity, and affects the activity of chloride ions in water.

3）Introduction to classification of free chlorine

Noun	Composition	
Total residual chlorine	(HClO)residual chlorine	Active chlorine: Elemental chlorine (Cl_2), hypochlorous acid
	Potential chlorine	Hypochlorite ion(ClO^-)
Total chlorine	Total residual chlorine	(HClO)residual chlorine + potential chlorine
	Combined chlorine	Chloramine, trichloromethane, etc
(ClO2)residual chlorine	Chlorine dioxide is used to disinfect, it is (ClO_2) residual chlorine	

4.2 Interface style

A.There are three kinds of interface styles for(HClO)residual chlorine online analyzer: curve main interface, data main interface and standard curve interface.

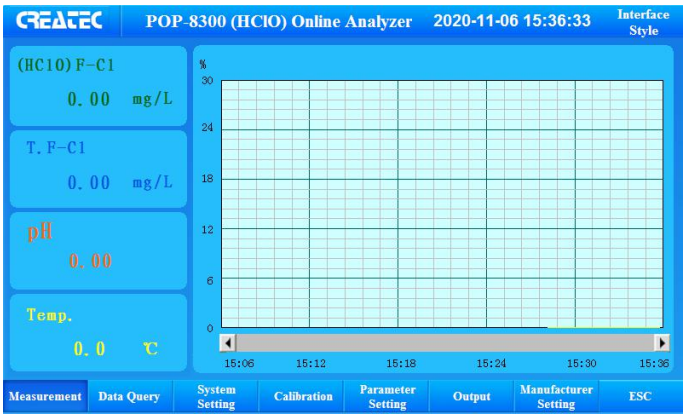

Figure 4.3 (HClO) free chlorine online analyzer curve interface

Curve main interface: through the style interface, the customers can view the dynamic trend of each parameter, click the left, right arrow time X axis value left and right moving to view the data in different time period; Click on the left side "free residual chlorine/total residual chlorine/pH data" parameter attribute icon to view the corresponding single curve, to avoid confusion when the intersection of multi-curves.

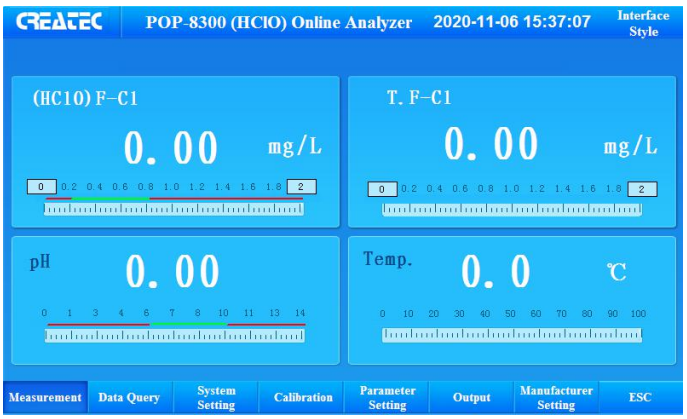

Figure 4.4 (HClO) free chlorine online analyzer data main interface

Data main interface:the customers can view the scale value of each parameter through the style interface; Free residual chlorine, total residual

chlorine, the maximum and minimum scale value can be entered to view the different indexing situation value;

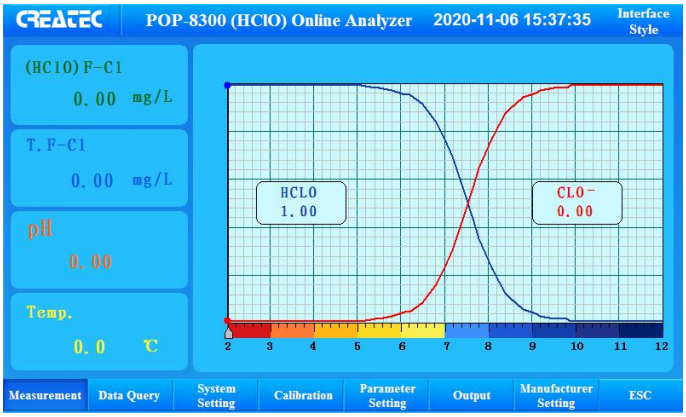

Figure 4.5 (HClO) free chlorine online analyzer standard curve interface

Standard curve interface: The blue and red curves show the respective proportion of HClO and ClO^- at the current pH value. The display box represents the respective component values of HClO and ClO^-; the X coordinate axis pH vernier is moved with real-time measurement value.

B. Interface styles for(ClO_2)residual chlorine online analyzer, As there is no ion differentiation for the chlorine dioxide at pH value, the interface style is divided into two kinds, the interface style is the same with the first two interface styles of (HClO) residual chlorine, as shown in the figure below:

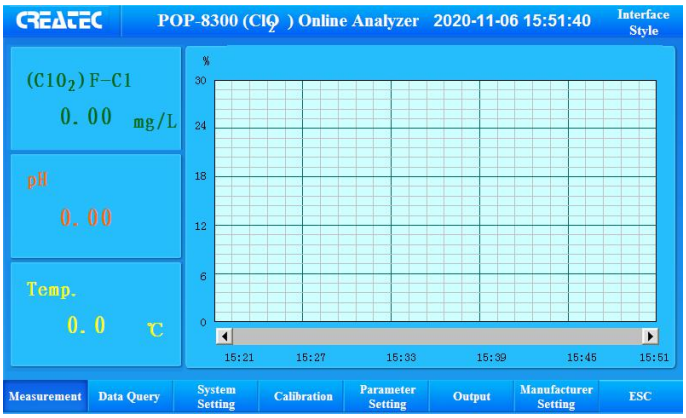

Figure 4.6 (ClO_2) free chlorine online analyzer curve main interface

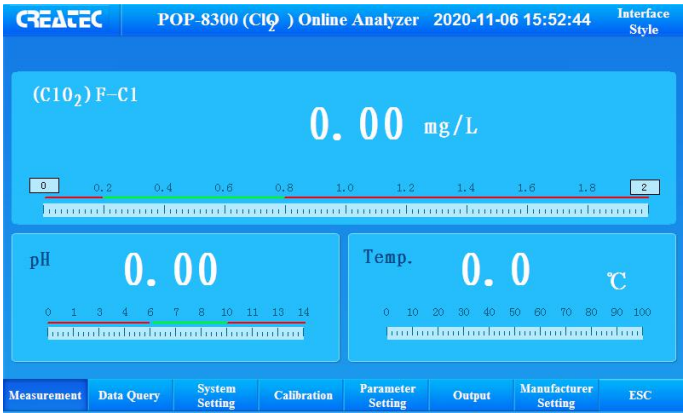

Figure 4.7 (ClO_2) free chlorine online analyzer data main interface

4.3 Ordinary user operation

Ordinary user login and menu,you can click the triangle on the lower right corner to modify the ordinary user password, initial password of ordinary user is 0.

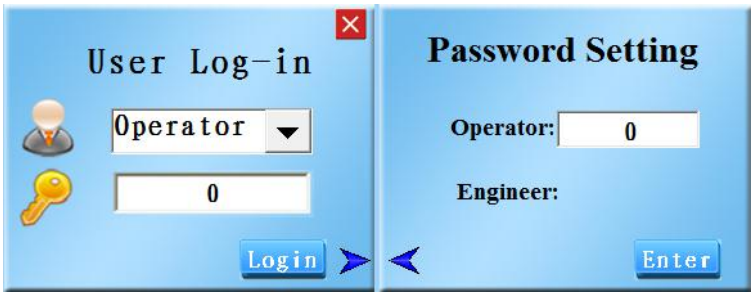

Figure 4.8 Login interface for common users

The ordinary user has the following permissions: data query, system setting, metering calibration, manufacturer information.

1）Data query

A.The data query has the function of historical data, alarm data and data export. The following figure shows the historical data record saved every 10s. The saving period can be changed in the system setting.

Figure 4.9 Maintenance Log Interface

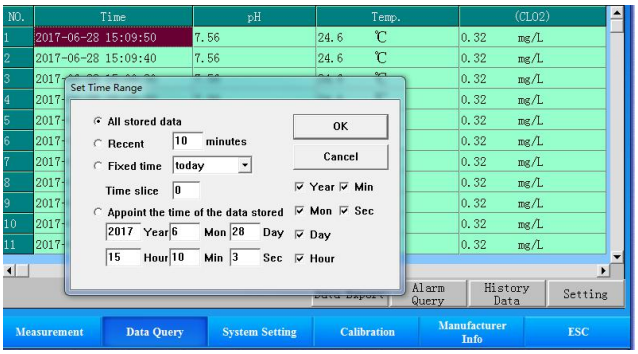

Figure 4.10 Data query interface

Note:Click on the scroll bar to turn the page up and down, left and right.

B.Data export function can export historical data and alarm data.

Figure 4.12 Historical data export

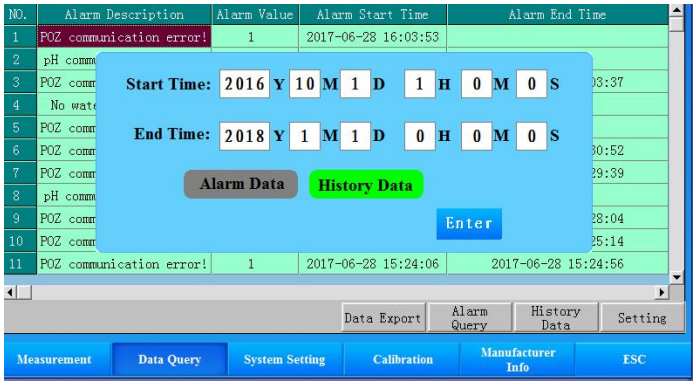

Figure 4.13 Alarm data export

Note: The user inserts the U disk into the U port, selects the exported data type according to the requirements, and sets the export start time and end time. Be sure to input it in strict accordance with the time format. Otherwise, the user can not export it successfully.

2）System setting

System settings have time setting, display setting, communication setting, and storage setting.

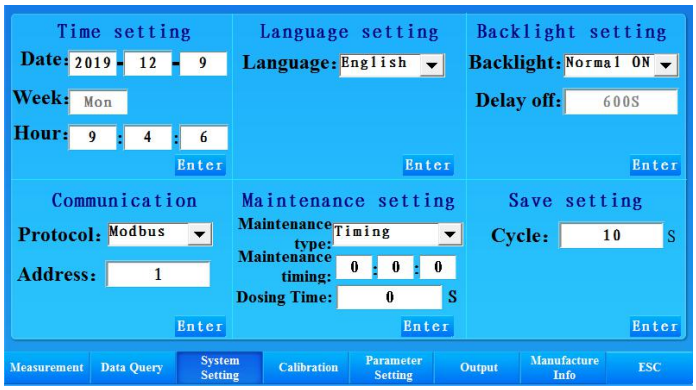

Figure 4.14 Configuration main interface

A.Time setting:can adjust the date and time.

B.Language setting: Chinese and English language can be selected;

C.Display setting: can set English and Chinese language, backlight mode setting.

D.Communication setting: can set communication protocol and correspondence address

E. Cleaning settings: You can choose the cleaning method of the free chlorine sensor according to actual needs, regular cleaning, interval cleaning, manual cleaning;

a. Regular cleaning: can be automatically cleaned according to the set time and duration;

Maintenance timing: set the start time of the scheduled cleaning;

Flushing duration: Set the length of the flushing time.

b. Interval cleaning: automatic cleaning according to the set time interval and cleaning time;

Open interval: the interval between cleaning and maintenance;

Turn on time: Set the length of the flushing time.

c. Manual cleaning: manual cleaning;

Start: Cleaning on;

Stop: Cleaning off.

F.Save setting: set the period of data storage based on actual requirements.

3）Metering Correction

The engineering user can correct the pH and calibrate the (HClO, ClO_2) residual chlorine; pH and free chlorine sensor s belong to the electrochemical sensor, its sensitivity persistently decays with time and the influence of the measured medium, which is determined by the natural law of the sensor, to make the measurement data accurate, you need to regularly calibrate the sensor slope, The calibration cycle is determined by the extent to which the measured medium affects the sensor.

A. pH correction: place the sensor in the (10.00/7.00/4.01 or 9.18/6.86/4.00) buffer solution to calibrate.

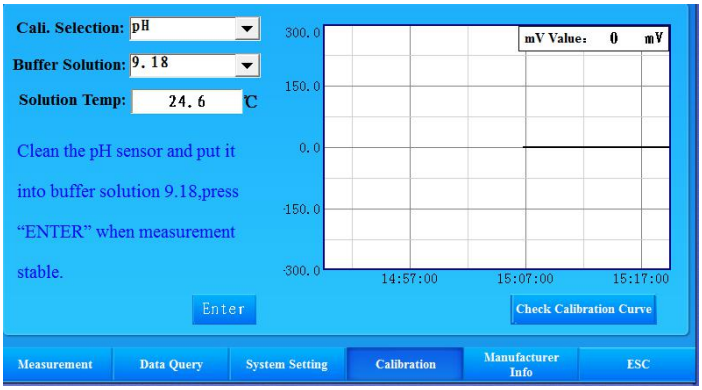

Figure 4.15 pH Calibration Interface

Note:After the sensor responses mV value and is stable, click ok to start calibration

B.(HClO) residual chlorine calibration:Zero calibration,(HClO) residual chlorine calibration (Slope calibration), Total residual chlorine calibration (pH Residual chlorine compensation);

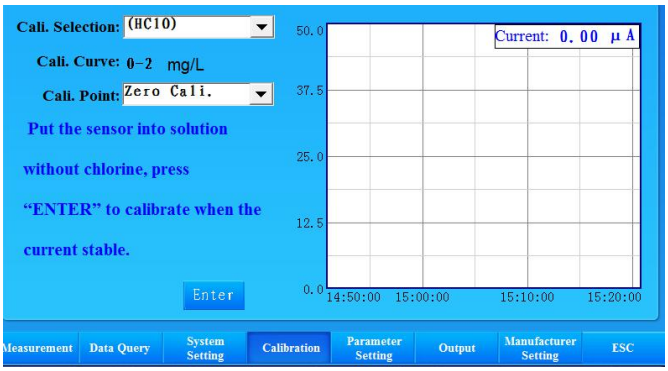

Figure 4.16 (HClO) free chlorine zero point calibration interface

Zero calibration,free chlorine zero only has deviation below 0.1mg/L , only when the measured free chlorine is less than 0.1mg/L, it is necessary to calibrate zero point; for zero calibration, please calibrate zero in the chlorine-free water.

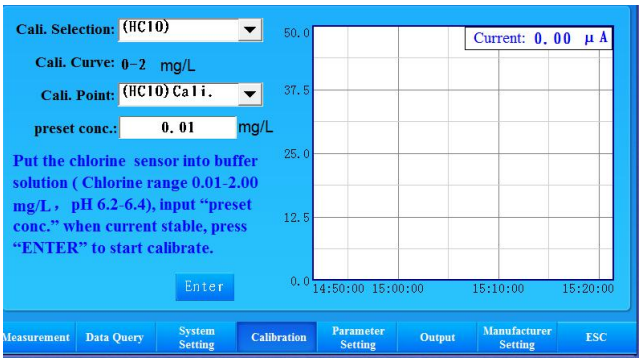

Figure 4.17 (HClO) free chlorine calibration interface

(HClO) residual chlorine calibration, select the known free chlorine concentration for calibration according to the concentration range of water quality free chlorine at site (The concentration of free chlorine in water sample can be obtained by DPD method).

Note: When the free chlorine is calibrated in the factory, the pH is adjusted for calibration in the range of 6.2-6.4. To ensure the site calibration more accurate, it is recommended to calibrate in the weak acid environment.

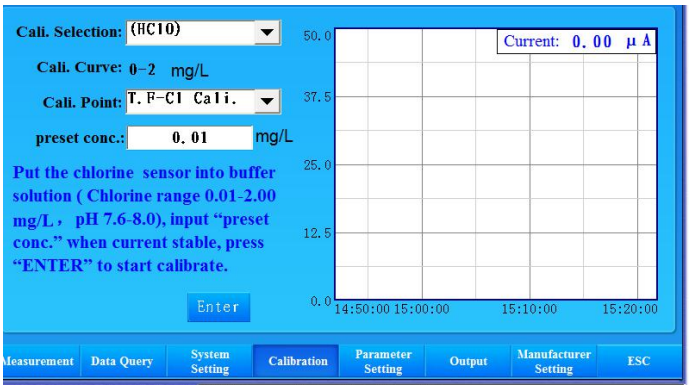

Figure 4.18 (HClO) total free chlorine calibration interface

Total residual chlorine calibrateion is also known as pH compensation factor calibration, the active chlorine content of each sensor at different pH is different, the compensation factor has been calibrated in the factory; The total residual chlorine calibration is not recommended at site due to the critical calibration conditions.

C.(ClO_2)residual chlorine calibration:Including the zero calibration and the (ClO_2) free chlorine calibration (slope);The zero calibration is the

same with that of (HClO) residual chlorine; Slope calibration:select the known free chlorine concentration solution for calibration according to the concentration range of water quality free chlorine at site (The concentration of chlorine dioxide in water sample can be obtained by DPD method).

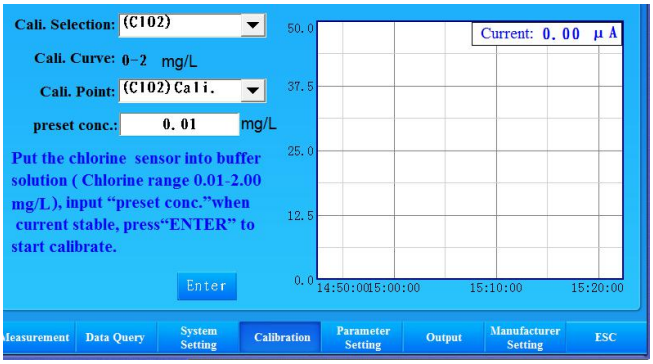

Figure 4.19 (ClO_2) free chlorine calibration interface

4）Manufacturer information

The manufacturer information will provide company address, company website and company telephone, welcome to visit our official website to check product information; involving applications and other technical issues, welcome to call our company telephone to consult after-sales service engineer;

Figure 4.20 Manufacturer information interface

4.4 Engineering user operation

Data query, system setting, metering correction, manufacturer information

in the engineering user's permission are the same with the setting in ordinary user, no longer repeat. The engineering user can also set "measurement parameters and output parameters". The initial password for engineering user is 1000. The engineering users who login successful can modify the password of ordinary user and engineering user.

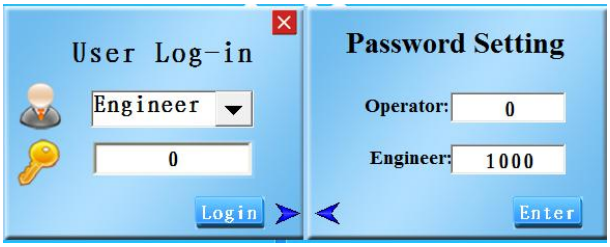

Figure 4.21 Engineering user login interface

1) Measurement setting

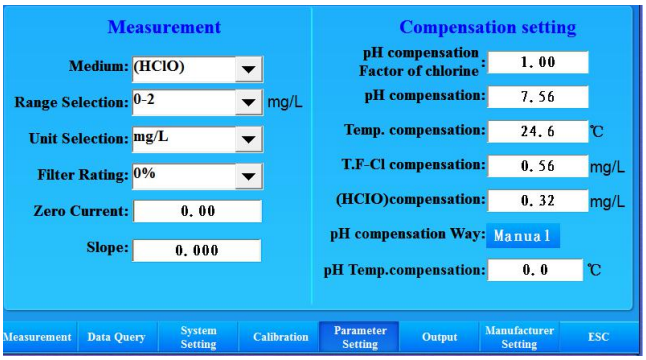

Figure 4.22 Measurement parameter interface

A.Measurement attribute: The engineering user can click on the drop-down box to set the two different measurement attributes of HClO residual chlorine and (ClO_2) residual chlorine;

Note: the factory calibrated slope is not the same for different measurement attributes, when ordering attribute is wrong, you can modify and set the measurement attribute by using this drop-down box;

B.Range selection:The engineering user can click on the drop-down box to set the measurement range of measured parameters, the measurement is divided into three different ranges (0-2) mg/L, (0-5) mg/L, (0-20) mg/L;

Note: the factory calibrated slope is not the same for different ranges, when the application range exceeds the measurement range or the application

range is too small, you can click on the drop-down box to switch the range;

C.Unit selection: The engineering users can click on the drop box to set two different units mg/L or ppm (unit 1mg/L = 1ppm)according to different application habits;

D.Filtering selection:The engineering users can click on the drop-down box to set different display filtering;

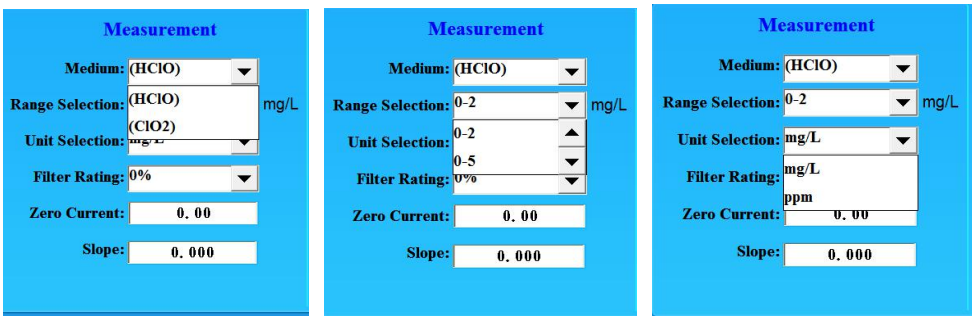

Figure 4.23Measurement setting interface

E.Zero current: The free chlorine zero current in general condition is below 0.1μA, when the customer measures the nearby zero data with deviation, the zero current value can be set,and the recommended setting value is less than 0.2μA;

F.Slope setting:The slope value directly affects the measurement data, and the slope value can be adjusted properly only when the field measurement data deviation exceeds the allowable range;

When incorrect operation leads to large data derivation, the customer can click on the the factory reset "ok" button on the bottom left, the system will automatically revert to the factory setting;

2)Hypochlorous acid (HClO) free chlorine compensation setting

The engineering user can correct the compensation measurement data of "free residual chlorine, total free chlorine, pH, temperature data, pH temperature compensation" in the "compensation setting" section at the right of the "measurement parameters";

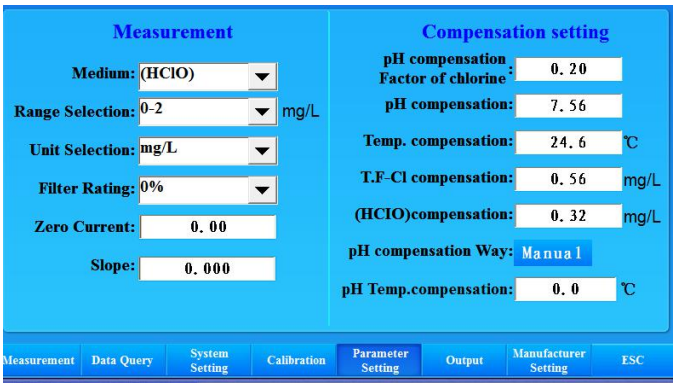

Figure 4.24 (HClO)free chlorine measurement setting interface

A.Residual chlorine pH compensation factor:The compensation factor is the data obtained from the total free chlorine calibration, the customers do not recommend to modify for non-special circumstances;

B.pH compensation value:The engineering user modifies the pH compensation value, and the display value changes; the display value=measurement value +compensation value (you can input negative number for negative compensation);

C.Temperature compensation value:The engineering user modifies the displayed temperature value by modifying the temperature compensation value, the compensation is the same with pH;

D.Total free chlorine compensation value:The engineering user modifies the display value by modifying the total free chlorine compensation value, the compensation is the same with pH;

E.The engineering user modifies the (HClO) free chlorine value by modifying the (HClO) free chlorine compensation value, the compensation is the same with pH;

F.pH temperature compensation:The engineering user can modify the pH temperature compensation mode. Normally, since the instrument comes with a temperature sensor, it is set to auto compensation mode. The pH measurement data can be used to calculate the temperature compensation automatically. When the customer calibrates the pH, to ensure more accurate calibration, the compensation mode can be set into

manual mode, the buffer stability value is entered into this box, so as to avoid the difference of buffer solution and instrument temperature measurement water affecting the calibration value;

Figure 4.25 pH temperature compensation interface

3）Chlorine dioxide(ClO_2)residual chlorine compensation setting

The engineering user can correct the compensation measurement data of "(ClO_2) residual chlorine, pH compensation, temperature compensation, pH temperature compensation" in the "compensation setting" section at the right of the "measurement parameters";

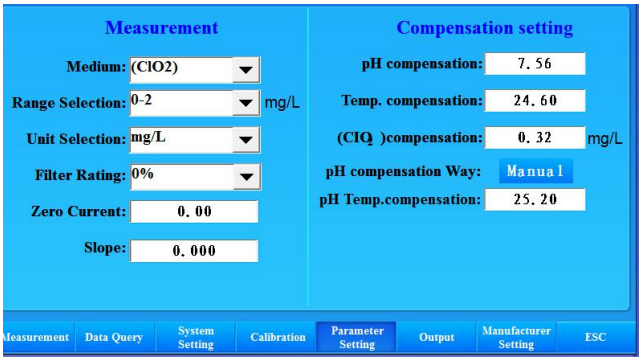

Figure 4.26 (ClO2) Free chlorine compensation setting interface

A.(ClO_2) free chlorine compensation value: the engineering user modify the displayed (ClO_2) free chlorine value by modifying (ClO_2) free chlorine compensation value, the compensation is the same with the pH setting in the hypochlorous acid free chlorine setting;

B.pH compensation, temperature compensation,pH temperature compensation, the setting compensation is the same with hypochlorous acid(HClO)residual chlorine;

4）Output setting

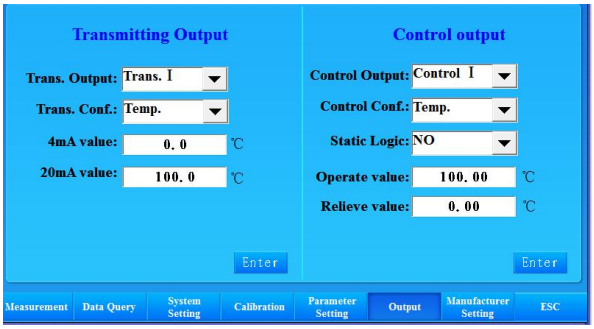

Figure 4.27 Output Setting Interface

A.Transmission output 2 channels 4-20mA output can be freely configured as free chlorine,pH and temperature;

B.Normally open normally close can be set for one channel relay, 2 channels OC normally open normally close pulse can be set, can be configured as free chlorine, pH and temperature;

5. System Maintenance

5.1 Cleaning and maintenance

1) Regularly check the connection parts of the device, the filter, the constant current device, the water inlet, the outlet, etc. to observe whether there is sediment materials, if these symptoms are found, promptly clean up;
2) Regularly open the blowdown valve to remove the impurities trapped by the filter to keep the filter smooth;
3) Please clean the surface of the instrument with a damp cloth and neutral mild detergent, avoid using acidic, corrosive and other strong solution or abradant to clean the case surface.

5.2 Maintenance of electrochemical sensors

1) The sensor room is always in a humid environment from the factory to the use process, and can be directly powered on;
2) Even if the long-term shutdown, the circulating device of the sensor will always remain moist, no need to deal with;
3) If the sensor is attached to suspended solids, you can take it out and rinse with 0.01mol/L HCl or NaOH solution, and then rinse cleanly

with distilled water;

4) If it is still can not accurately measure after maintenance of the sensor with the above methods, the sensor needs to be updated;
5) The temperature of the buffer solution shall be controlled when the new sensor is calibrated;
6) In addition to free chlorine/chlorine dioxide, other oxidative and strong reducing substances are cross-sensitive to the sensor, masking or exclusion measures are used depending on the cross-sensitive material properties;
7) It is not recommended to use the measurement of sodium hypochlorite prepared by the electrolytic salt, the hydrogen ions produced in the electrolysis process will affect the platinum layer, and form the negative current of reverse chlorine, resulting in speeding up the sensor failure.

5.3 Replacing sensor

1) There is a difference between different channels of the sensor and the instrument , it is recommended to replace the original sensor;
2) When purchasing, it is stated that the purchased free chlorine sensor is used in the integrated system and the manufacturer has a specific connection;
3) When replacing the pH sensor, directly unscrew the electrode wire from the sensor, without replacing the electrode line;
4) Do not voluntarily replace or cut the sensor low noise coaxial cable.

6. Fault analysis

Phenomenon	Possible reasons	Troubleshooting
No display after the system power on	The external power is not connected	Check if there is 220V voltage between the input AC220;
The free chlorine reading is incorrect	Check if the flow rate indication is normal	Adjust the inlet ball valve to meet the flow rate Or update the sensor

The transmitting data is different	A.The corresponding settings are incorrect B.Receiving transfer does not correspond	A.Reset (4-20) mA correspondence B.Reset the transfer volume in receiving end
Inaccurate pH value	A. The sensor needs calibration B. pH sensor lose efficiency	A． Recalibrate the pH slope B.Update the sensor and re-calibrate it

7. Complete set

Product Name	(HClO) Online Free chlorine analyzer	(ClO_2)Online Free chlorine analyzer
Model	POP-8301	POP-8302
Main Configuration	Free Chlorine Sensor	
	pH Sensor	
	Temperature Sensor	
	Free chlorine self-cleaning device	
	Operational Manual	
	Certificate of conformity	
Auxiliary Configuration	Plastic tube(5meters)	
	4"-2" ball adjust valve(1pieces)	
	Discharge 3" tube (1 piece)	
	Cabinet hanging plate (1 piece)	
	Filter (1 piece)	
Selection	Sampling distribution system(1set)	

8. Ordering Notes

Please specify the following items when ordering this product:

1）The POP-8301 free chlorine online analyzer is recommended when using hypochlorous acid (HClO) disinfectant to measure.

2）The POP-8302 free chlorine online analyzer is recommended when

using chlorine dioxide (ClO_2) disinfectant to measure.

3）Please inform the field or industry you used in and the characteristics of the measurement medium, so as to provide the best service.

Communication Protocol:

1. Correctly set the consistent baud rate and address with the host computer system, you can connect MODBUS protocol system network.

2. Obtain the communication protocol of the instrument from the user name of Hebei Create Instrumentation Technologies Co.,Ltd.

Official Website: http://www.createc.cn