

pH/ORP Analyzer

Overview

SMART series intelligent multi-parameter universal controller has high accuracy, its unique professional design can be applied in water, chemical, pharmaceutical, food and hygiene in the production process of the most extreme physical and chemical environments. SMART series intelligent multi-parameter universal controller has modular bus structure, highly scalable functionality, high reliability and comfortable operation.



Principle

The electrochemical PH glass composite electrode is based on the principle of potential difference, so the voltage between the measuring electrode and the reference electrode follows the Nernst equation.

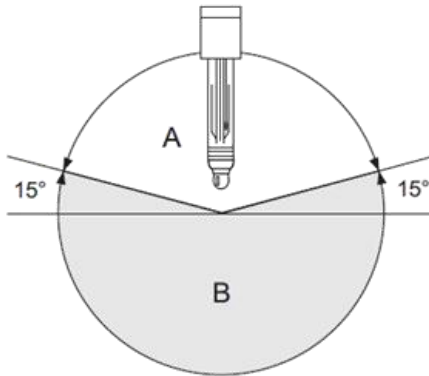
ORP is a measure of the oxidation or reducibility of the process medium. For different aqueous solutes, the measurement range is between -1500mv and 1500mv. The measuring electrode usually uses precious metals (platinum or gold).



Typical application

- ▲ Source water monitoring
- ▲ Filter monitoring
- ▲ Drinking water quality monitoring
- ▲ Separation process monitoring
- ▲ Cooling water monitoring
- ▲ Circulating water detection
- ▲ Sludge treatment monitoring
- ▲ Aeration tank monitoring





Feature

- ★ Smart digital MEMS sensor
- ★ Sensor self-diagnosis, proactively reminding maintenance and management
- ★ Quick response sensor
- ★ Sensor IP68 protection level
- ★ Automatic temperature compensation
- ★ Electrochemical sensor
- ★ KCl plastic gel electrolyte
- ★ PTFE porous permeable material is durable
- ★ Good robustness
- ★ Good stain resistance
- ★ Fully automatic cleaning
- ★ The MEMS sensor eliminates the following problems: corrosion, contact problems, salt bridges, moisture, leakage, high resistance connections, and grounding.

Installation

Please note that the installation is more than 15 degrees above the horizontal plane, the first installation and use will take about 20 minutes of polarization time. When not in use for a long time, the PH or ORP electrode can be kept moist (the best storage solution is potassium chloride solution with pH 7 or 3mol, and it must be noted that it cannot be stored in deionized water and acid-base solutions). White potassium chloride crystals appear, but it will not affect the measurement after cleaning the surface. If the sensor becomes dry during storage, you can soak the sensor in a pH 7 or 3 mol potassium chloride solution for a period of time, and the sensor will restore the water-containing glass membrane and the reference diaphragm.

Calibration

During pH calibration, wait for 5 to 10 minutes until it is stable before operation can be confirmed.

Application Case

- ★ Drinking water
- ★ Sewage: water inlet, activated sludge and water outlet pipe.

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Features

❖ Quick and convenient

The navigation menu contains 6 languages, which can be operated easily.

❖ Process safety

4.3" or 7" large size color LCD touch screen, convenient and safe touch operation and debugging

Large size screen with red flashing alarm, clearly visible from long distances and in dark areas

Alarm immediately, safe the process

❖ Alarm event record

Real-time data curve display

Record function for up to 6,000 alarms

❖ Expert calibration function

Multi-point calibration function up to 9 point

❖ Powerful self-diagnosis function

Built-in heartbeat monitoring function and watchdog

Monitor the status of analyzer and sensors, and promptly remind customers to take necessary maintenance

High-standard hardware and software security and password protection

❖ Powerful control function

High(low) limit control function

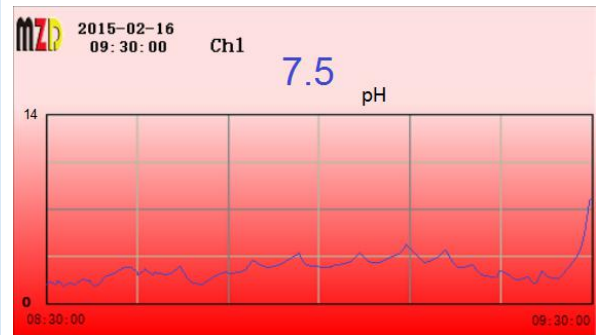
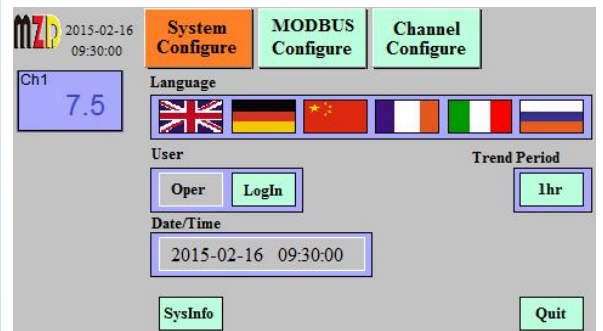
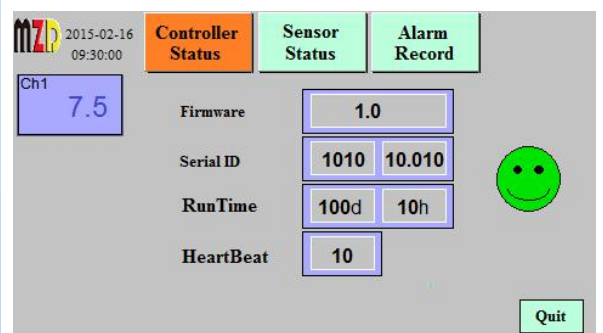
Optional: Timer control(automatic cleaning) function

Optional: analog PID control function

Optional: PWM control function

❖ Flexible fieldbus communication functions for IOT4.0

Optional fieldbus MODBUS, HART, Foundation Fieldbus FF, PROFIBUS PA, PROFIBUS DP, etc.


Parameters

Sensor Type	pH/ORP redox (electrochemical KCl gel)			
Range	0~14pH, -1000~1000mv			
Accuracy	0.1pH, 2mv/10mv			
Resolution	0.01pH, 0.1mv			
Response Time T90	<5 s			
Temperature compensation	Automatic			
Working temperature	0~50°C			
Temperature Sensor	CTN Thermistor			
Pressure	Max. 5Bar			
Ambient Temperature	-10~50°C			
Ambient humidity	0~90%			
Sensor Size	Φ25mm*150mm			
Sensor Weight	350g			
Sensor Material	PVC			
Sensor Ingress Protection	IP68			
Sensor cable length	7m			
Display	4.3" or 7" industrial color touch screen			
Language	Multi-Language (English, German, Chinese, French, Italian, Russian or Customized)			
Diagnosis function	Sensor and controller self-diagnosis, Heartbeat monitoring			
Event Logger	Internal Flash, up to 6,000 alarm records			
Analog Output(Galvanic)	4~20mA, maximum load 500Ω			
Relay Output(Galvanic)	Relay(2A, 230V AC freely set alarm), System alarm			
Control function	Optional Timer controller, PID analog controller, PWM controller			
Calibration	Can store 6 calibration curves of different materials, Multi-point calibration function up to 9 point			
Communication	RS485 MODBUS RTU, HART, Foundation Fieldbus FF, PROFIBUS PA, PROFIBUS DP, MODBUS TCP/IP, etc			
Power	80~264V AC, 1A or 19~28V DC, 3A			
Electrical protection	EMI / RFI CEI-EN55011 – 05/99			
Ambient Temperature	-15 ~ 60°C			
Storage and transport temperature	-25 ~ 70°C			
Ambient humidity	0~90%RH			
Wall-mounted(1~2Channels)	4.3" color touchscreen	ABS, Gray	213*185*84mm	IP65, Ex d IICT4 optional
	7" color touchscreen	RAL7045	323x237x172mm	

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Note:

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