pH/ORP Analyzer

Overview

SMART series intelligent pH 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

▲Chlor-Alkali, Chlorinated and Waste Brine

▲Petroleum Refining, Sour Water Stripper, Wastewater Treatment

▲Oil Refinery Desalter, Wash and Brine Water

▲Ultra Pure Water / Boiler Feed Waters

▲Source water monitoring

▲Filter monitoring

▲Drinking water quality monitoring

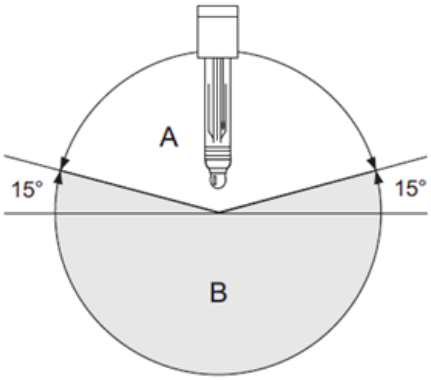
▲Separation process monitoring

▲Cooling water monitoring

▲Circulating water detection

▲Aeration tank monitoring

pH/ORP Analyzer



Feature

★Sensor diagnosis, proactively reminding maintenance and management

★Quick response sensor

★Sensor IP68 protection level

★Automatic temperature compensation

★Electrochemical sensor

★KCl plastic gel electrolyte

★Good robustness

★Good stain resistance

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

★Petro/Chemical, Pulp & Paper, Pharmaceutical, Water Treatment, UPW,

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

pH/ORP Analyzer

Features

❖ **Quick and convenient**

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

❖ **Process safety**

4.3" 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

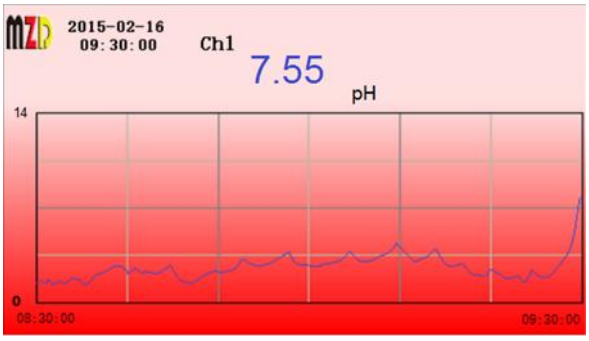
❖ **Powerful control function**

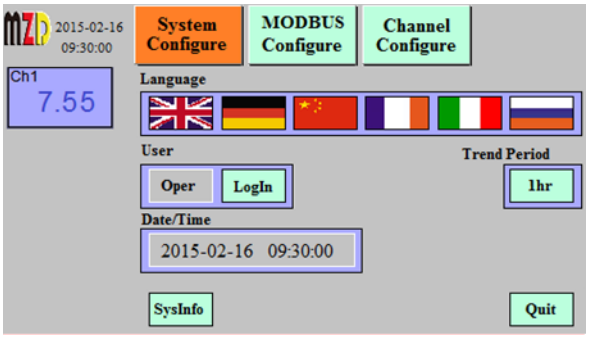
High(low) limit control function

Optional: Timer control(automatic cleaning) function

❖ **Flexible fieldbus communication functions for IOT4.0**

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



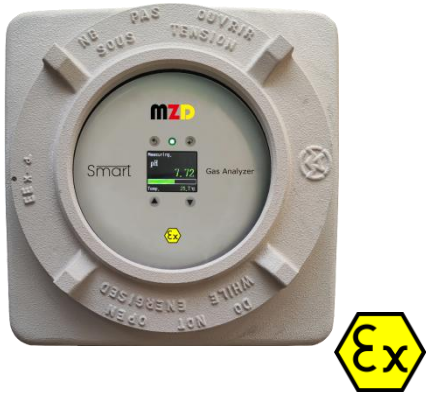


pH/ORP Analyzer

Parameters

Sensor Type	pH/ORP redox (electrochemical KCl gel)
Display	4.3" industrial color touch screen
Language	Multi-Language (English, German, Chinese, French, Italian, Russian or Customized)
Range	-2 ~16pH, -2000~2000mv, -50 ~ 180℃
Accuracy	0.02pH, 1mv, 0.3℃
Resolution	0.01pH, 0.01mv, 0.1℃
Response Time T90	<5 s
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 control function(clean)
Calibration	Expert calibration function,Multi-point calibration function up to 9 point
Temperature compensation	Automatic/Manual
Communication	RS485 MODBUS RTU, HART, Foundation Fieldbus FF, PROFIBUS PA, PROFIBUS DP
Power	80~264V AC,1A or 19~28V DC,3A
Electrical protection	EMI / RFI CEI-EN55011 – 05/99
Ambient Temperature	-15 ~ 60℃
Storage and transport temperature	-25 ~ 70℃
Ambient humidity	0~90%, not condensing
Protection	IP65
Housing Material	ABS,Gray RAL7045
Size	213*185*84mm
Weight	1.2Kg
Sensor	
Range	0 ~12pH, -2000~2000mv, 0 ~ 100°C
Temperature Sensor	Pt1000, Pt100, NTC22K Thermistor, NTC30K Thermistor
Impedance pH-glass/ref	200MΩ Nom. / <100KΩ
Pressure	Max. 20Bar
Sensor Size	Φ12mm*120/225/325/425mm / 1”NPT threaded bodies * 215mm / 3/4”NPT threaded bodies*215mm
Protection	IP69
Sensor Material	Glass / PVDF
Sensor Cable	3 / 5/ 10 m

pH/ORP Analyzer



Sensor Type	pH/ORP redox (electrochemical KCl gel)
Display	1.8" color LCD, 160*128Pixel
Language	English Menu
LED Light	Status LED Light(NAMUR NE107)
Keypad	Magnetic button
Range	-2 ~16pH, -2000~2000mv
Accuracy	0.02pH, 1mv
Resolution	0.01pH, 0.01mv
Response Time T90	<5 s
Diagnosis function	Sensor and controller self-diagnosis,Heartbeat monitoring
Analog Output	4~20mA，Maximum load 500 ohms
Relay Output	2 Relays (2A, 230V AC/DC freely set alarm), 1 Relay (System alarm)
Communication	RS485 MODBUS RTU Slave
Power	19 ~ 28V DC,0.5A
Electrical protection	EMI / RFI CEI-EN55011 – 05/99
Ambient Temperature	5 ~ 65℃
Ambient humidity	0~90%
Protection	IP67
Housing Material	Aluminum alloy
Size	Φ126*110 mm
Weight	1.5Kg
Explosion-proof	Ex d IICT4 optional

Note:

MZD reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail.

MZD does not accept responsibility for potential errors or possible lack of information in this document.

MZD Analytik GmbH
Enderstraße 94
01277 Dresden, Germany
Tel: +49-(0)351-850-710-10
Email: info@mzdd.de