Dissolved oxygen 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

Dissolved oxygen is the content of gaseous molecular oxygen dissolved in water. The content of dissolved oxygen in water is closely related to the partial pressure of oxygen in the air and the temperature of water.

Luminescent optical method: The blue pulsating light beam emitted by the internal optical system of the sensor hits the fluorescent layer, and the marker "responds" (produces fluorescence) with pulsating red light. The duration and intensity of the excited response signal are directly related to oxygen The composition is related to the partial pressure. (*Amperometric method: Oxygen molecules penetrate the gas permeable membrane at the front of the sensor and are reduced by the working electrode to generate a diffusion current proportional to the oxygen concentration.)

Typical application

▲Sewage treatment plant

▲Drinking water plant

▲Rivers and lakes

▲Fishing

▲Circulating water of power plant boiler

▲Fermentation tank product quality monitoring in the food and pharmaceutical industry

Dissolved oxygen Analyzer

Feature

★Smart digital MEMS sensor

★Sensor self-diagnosis, proactively reminding maintenance and management

★Automatically completes all compensation and measurement algorithms

★Real-time temperature, salinity and pressure compensation

★Quick response sensor

★IP68 Sensor

★Luminescent optical sensor

★Good robustness

★No calibration, no film, no fluoride, no drift

★Unlimited PH value, CO2, H2S, SO2 influence

★High-precision measurement under low dissolved oxygen concentration

★No oxygen consumption

★Comply with ASTM standard D888-05

Installation

▲No need to wait for polarization, measure immediately!

▲No need to replace the membrane and fluorocarbon, saving cost!

▲No need to disassemble, convenient!

▲No regeneration, it is impossible to predict the decay from sewage on the surface of the thermometer

▲H2S or ammonia in the liquid does not affect the measurement

▲No need to replace the film and carbon dioxide

▲No need to continuously perform on-site calibration

▲Clean the sensor surface: every month

▲Sensor calibration: every quarter

▲Replace the fluorescent cap: about every 2 years

Application Case

★Sewage aeration tank: Nitrogen and phosphorus removal, COD degradation, and dissolved oxygen as an important parameter for controlling aeration.

★Ion: Dissolved oxygen detection during iron and manganese ion removal process

★Power plant: boiler water supply

Dissolved oxygen Analyzer

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

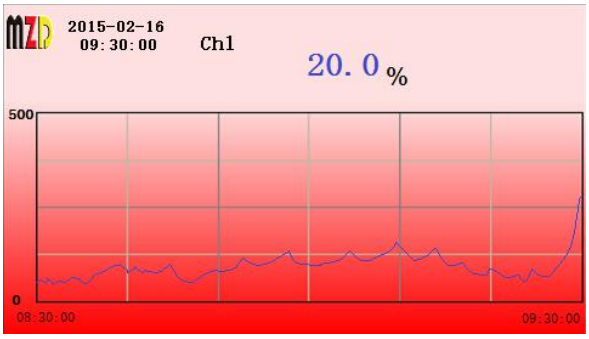
Optional: Timer control(automatic cleaning) function

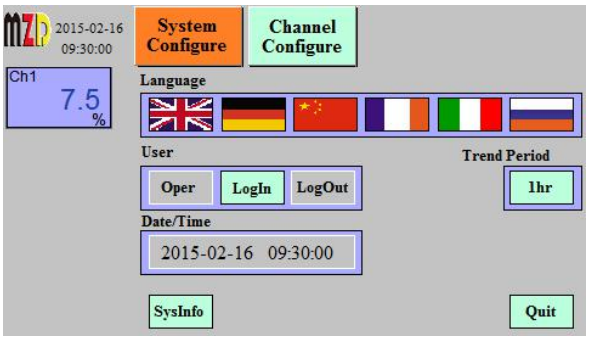
Optional: analog PID control function

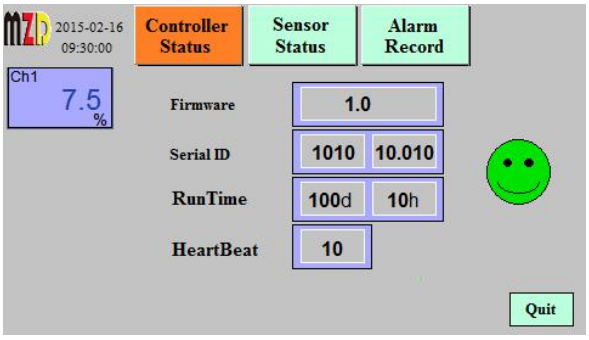
Optional: PWM control function

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

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







Modbus PROFIBUS Fieldbus Foundation HART COMMUNICATION PROTOCOL WirelessHART

Dissolved oxygen Analyzer

Parameters

Sensor Type	Dissolved oxygen(luminescent optical)			
Range	0~20mg/L，0~200ppm，0~200%SAT			
Accuracy	0.1%，0.1°C			
Resolution	0.01mg/L，1%SAT			
Response Time T90	< 1 s			
Compensation	Atmospheric pressure,Salinity,Temperature			
Working temperature	0~50℃			
Temperature Sensor	CTN Thermistor			
Pressure	Max. 5Bar			
Ambient Temperature	-10~50°C			
Ambient humidity	0~90%			
Sensor Size	Φ25mm*150mm			
Sensor Weight	450g			
Sensor Material	SS16L/Ti(Sea water)			
Sensor Ingress Protection	IP68			
Sensor cable length	7m			
Spare parts	Sensor cap (fluorescent film)			
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℃			
Storage and transport temperature	-25 ~ 70℃			
Ambient humidity	0~90%RH			
Wall-mounted(1~2Channels)	4.3" color touchscreen	ABS,Gray RAL7045	213*185*84mm	IP65,Ex d IICT4 optional
	7" color touchscreen		323x237x172mm	

Dissolved oxygen Analyzer

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
Radeberger Str. 21
D-01900 Großröhrsdorf
Tel: 0049-35952-289-78
Fax: 0049-35952-4294-57
Email: info@mzdd.de