

Water Quality Sensors Catalogue

Shandong Renke Control Technology Co.,Ltd.


Our water quality sensor types list:

- 1. Water ph sensor**
- 2. Water conductivity sensor**
- 3. Dissolved oxygen meter**
- 4. Turbidity sensor**
- 5. Residual chlorine sensor**
- 6. ORP sensor**
- 7. Ammonia nitrogen sensor**
- 8. COD sensor**
- 9. Blue-green algae sensor**
- 10. Chlorophyll sensor**
- 11. Water ion sensor**

1. Water ph sensor


1.1 Integrated pH sensor

RS-PH-N01-3-EX is a integrated pH sensor for measuring the pH value (hydrogen ion concentration index, pH) of a solution, with automatic temperature compensation function. Automatic temperature compensation and manual temperature compensation can be switched at will. This pH meter adopts an integrated design, with a lighter and simpler structure and more convenient use. Waterproof grade IP68. It is suitable for industrial sewage, domestic sewage, agriculture, aquaculture and other scenes in non-corrosive weak acid and weak alkali environments.

	<p>Power supply: DC 7~30V Power consumption: 0.3W pH measure range: 0~14.00PH Resolution: 0.01PH pH measure error: ± 0.15PH Repeatability error: ± 0.02PH Temperature range: 0~60$^{\circ}$C Resolution: 0.1$^{\circ}$C Temperature measurement error: $\pm 0.5$$^{\circ}$C Withstand voltage: 0.6MPa Line length: default 5m (can be customized) Output: RS485</p>
<p>Advantages:</p> <ol style="list-style-type: none"> 1. Integrated design, light and simple structure, easy to use. 2. Waterproof grade IP68. 3. The device uses a wide voltage power supply DC 7~30V 	

1.2 Industrial pH sensor


RS-PH-*-*-*EX industrial pH sensor is our series of products for PH monitoring indifferent environments. We have different probes corresponding to different use environments. There are corresponding products for industrial sewage, domestic sewage, agriculture, aquaculture, biological engineering, pharmaceuticals, mineral suspension, flue gas desulfurization and other environments.

	<p>Power supply DC 10~30V Power consumption: 0.6W (RS485), 1.2W (Analog) PH range: 0~14.00PH Resolution: 0.01PH PH measurement error: ± 0.15PH Repeatability error: ± 0.02PH Temperature measurement range: 0~80°C Resolution: 0.1°C Electrode applicable temperature: 0~80°C Electrode withstand voltage: 0.6MPa Electrode wire: 5m (10m, 15m, 20m for optional) Electrode use period: 6~12 months Output mode: RS485/0-5V/0-10V/4-20mA</p>
<p>Advantages:</p> <ol style="list-style-type: none"> 1. Complete variety, covering a wide range 2. High precision, high sensitivity and high stability 3. With automatic temperature compensation function 4. Obvious price advantage 	

2. Water conductivity sensor


2.1 Integrated conductivity sensor

RS-EC-N01-3-EX is a integrated conductivity sensor for measuring the conductivity of solutions. It has an automatic temperature compensation function, which can compensate the current temperature conductivity to the specified temperature. This conductivity sensor adopts an integrated design, and the structure is lighter and simpler. It can measure the values of conductivity, salinity and TDS at the same time. It is widely used in places such as cross-section water quality, aquaculture, sewage treatment, environmental protection, pharmaceuticals, food and tap water.

	<p>Power supply: DC 10~30V Power consumption: 0.4W EC range: K=1: 1~2000μS/cm (resolution 0.1μS/cm), K=10: 10~20000μS/cm (resolution 1μS/cm) EC measure error: \pm1%FS Temperature measure range: -5~+80$^{\circ}$C (resolution: 0.1$^{\circ}$C) Temperature measure error: \pm0.5$^{\circ}$C Temperature compensation range: -5~+80$^{\circ}$C Temperature compensation coefficient: default 0.02 Salinity range: K=1: 0~1000ppm; K=10: 0~11476ppm TDS range: K=1: 0~1100ppm; K=10: 0~13400ppm Transmitter element temperature resistance -20~+80$^{\circ}$C Pressure resistance: 0.6MPa Line length: default 5m (customizable) Signal output: RS485</p>
<p>Advantages:</p> <ol style="list-style-type: none"> 1. Waterproof grade IP68. 2. With salinity and TDS conversion function 3. ModBus communication address can be set and baud rate can be modified. 4. Wide voltage power supply, DC 10~30V is available. 	

2.2 Industrial conductivity sensor

RS-EC-*-*-*EX industrial conductivity sensor is a device for measuring the conductivity of a solution. It has an automatic temperature compensation function and has two ranges: 1~2000 μ s/cm and 10~20000 μ s/cm. It is widely used in continuous monitoring of the conductivity value of aqueous solutions such as section water quality, aquaculture, sewage treatment, environmental protection, pharmaceuticals, food and tap water.

	<p>Power supply DC 10~30V Power consumption: 0.4W (RS485), 1W (4-20mA/0-5V/0-10V) EC measure range: K=0.01: 0.01~20μS/cm (resolution 0.001μS/cm), K=0.1: 0.1~200μS/cm (resolution 0.01μS/cm), K=1: 1~2000μS/cm (resolution 0.1μS/cm), K=10: 10~20000μS/cm (resolution 1μS/cm) EC measure error: \pm1%FS Temperature compensation range: -20~100$^{\circ}$C Temperature compensation coefficient: default 0.02 Salinity range: K=0.01: 0~10ppm, K=0.1: 0~100ppm, K=1: 0~1000ppm, K=10: 0~11476ppm TDS range: K=0.01: 0~10ppm, K=0.1: 0~100ppm, K=1: 0~1100ppm, K=10: 0~13400ppm Electrode line length: default 5m (customizable)</p>
<p>Advantages:</p> <ol style="list-style-type: none"> 1. With automatic temperature compensation function. 2. High precision, high sensitivity and high stability 3. It can monitor EC and temperature at the same time, and one device can monitor multiple elements 4. Obvious price advantage 	

3. Dissolved oxygen meter

RS-LDO*-*EX Dissolved oxygen meter is a device for measuring the concentration of dissolved oxygen in a solution. It adopts the principle of fluorescence measurement, does not consume oxygen, and does not require electrolyte. It is divided into two types: sea water and fresh water. It is suitable for scenarios where maintenance is inconvenient and requires long-term monitoring, such as industrial water quality monitoring, aquaculture monitoring, and river and lake seawater quality parameter monitoring.

	<p>Power supply: DC 10~30V Power consumption: 0.2W (RS485), ≤0.8W (4-20mA/0-5V/0-10V) Measurement principle: fluorescence method DO range: 0~20mg/L (0~200% saturation) Measurement error: ±3%FS; ±0.5℃ (25℃) Resolution: 0.01mg/L; 0.1%; 0.1℃ Response time: ≤60s Equipment working conditions: 0~40℃ Waterproof grade: IP68 Pressure resistance: 0.6MPa Electrode line length: default 5m Casing material: corrosion-resistant plastic/stainless steel/corrosion-resistant plastic</p>
<p>Advantages:</p> <ol style="list-style-type: none"> 1. Built-in temperature transmitter with automatic temperature compensation function 2. Using German imported membrane head, high precision, high sensitivity and high stability 3. There is no need to replace the diaphragm regularly, frequent calibration problems, and long-term maintenance-free (compared to the extremely popular method) 4. Simultaneously monitor dissolved oxygen, saturation, and temperature, and one device measures multiple factors. 	

4. Turbidity sensor


The RS-ZD-*-EX turbidity sensor is designed and manufactured using the principle of laser scattering turbidity measurement. The laser scattering method can overcome the shortcomings of traditional classical measurement methods that cannot be continuously measured online. The laser scattering method is stable in measurement and is not subject to magnetic field interference. It has been widely used. It is suitable for agricultural water, industrial water, sewage discharge in mining area, aquaculture, surface water, domestic sewage treatment terminal and other places.

	<p>Power supply: DC 10~30V Power consumption: 0.2W (RS485), ≤0.8W (4~20mA/0~5V/0~10V) Turbidity range: 0.00~50.00NTU, 0.0~200.0NTU, 0.0~1000.0NTU, 0~4000NTU Measure error: ±5%FS (25℃); ±0.5℃ Resolution: 0.01NTU (0.00~50.00NTU), 0.1NTU (0.0~200.0NTU), 0.1NTU (0.0~1000.0NTU), 1NTU (0~4000NTU) Response time: ≤30sec Working conditions: 0~40℃ Working principle 90° light scattering method Electrode line length: default 5m Casing material: corrosion-resistant plastic</p>
<p>Advantages:</p> <ol style="list-style-type: none"> 1. 90° angle scattered light principle, built-in temperature sensor optical fiber structure, strong resistance to external light interference. 2. Infrared LED light source, high stability, convenient, fast, stable and easy to maintain. 3. Simultaneous monitoring of turbidity and temperature, one device measures multiple elements. 4. No probe consumption, high sensitivity, low detection limit, long life, continuous online monitoring. 	

5. Residual chlorine sensor

5.1 Integrated residual chlorine sensor

RS-CL-N01-3-EX is a device for measuring residual chlorine concentration in water (hypochlorous acid, hypochlorite concentration). The three-electrode system has the advantages of high measurement accuracy, long working life and no need for frequent calibration. It is suitable for automatic dosing of circulating water, chlorination control of swimming pools, and accurate measurement of residual chlorine content in aqueous solutions in drinking water treatment plants, drinking water distribution networks, swimming pools, and hospital wastewater.


	<p>Power supply: DC 7~30V Power consumption: 0.19W Measure range: 0-2mg/L, 0-10mg/L, 0-20mg/L Resolution: 0.01mg/L Measure error: $\pm 5\%$FS Repeatability error: ± 0.05mg/L Response time: <30s Transmitter withstand voltage: 0.6MPa Electrode line length: default 5m (customizable) Signal output: RS485</p>
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Advantages:

1. The integrated design directly outputs 485 signals to eliminate signal interference.
2. 3/4 upper and lower mounting thread design for easy installation.
3. Using advanced non-membrane constant voltage sensor, no need to replace diaphragm and reagent.
4. ModBus communication address can be set and baud rate can be modified.
5. Wide voltage power supply DC 7~30V is available.

5.2 Industrial residual chlorine sensor

RS-CL-*-2-20-*-EX chlorine sensor uses a diaphragm polarographic sensor. The residual chlorine in the measured liquid diffuses to the cathode through the diaphragm. Applying an appropriate polarization voltage between the cathode and the anode can reduce the residual chlorine in the measured solution. These chemical reactions produce a current proportional to the residual chlorine in the measured solution. It is suitable for online monitoring of residual chlorine concentration in medicine, environmental protection, tap water monitoring, drinking water, and industrial process water disinfection and sterilization.

	<p>Power supply: DC 10~30V Power consumption: 0.19W (RS485), 0.67W (4-20mA/0-5V/0-10V) Measure range: 0-2mg/L, 0-10mg/L, 0-20mg/L Resolution 0.01mg/L Measure error: 5% or 0.05mg/L Repeatability error: ± 0.05mg/L Response time: <30s Electrode applicable temperature: 0~50°C Electrode withstand voltage: 0.6MPa Wire length: 5m by default (customizable)</p>
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Advantages:

1. The product does not need to be calibrated at one time.
2. The measurement principle of the constant voltage method does not consume reagents and replace the diaphragm, and the maintenance is simple.
3. By default, residual chlorine and temperature are monitored at the same time, and one device measures multiple elements.

6. ORP sensor

6.1 Integrated ORP sensor

The RS-ORP-N01-3-EX ORP sensor can measure the redox potential of a solution. The ORP composite electrode is made of high-purity platinum and has strong resistance to acid, alkali and oxidation. This ORP sensor adopts an integrated design, with a lighter and simpler structure, high measurement accuracy and temperature measurement function. It is suitable for industrial wastewater containing cyanide, chromium, etc., rivers, lakes and aquaculture industries.

	<p>Power supply: DC 7~30V Power consumption: 0.3W ORP range: -1999~1999mV Resolution: 1mV ORP measure error: $\leq \pm 5\text{mV}$ Temperature range: 0~60°C; Resolution: 0.1°C Temperature measure error: $\pm 0.5^\circ\text{C}$ Working conditions: 0~60°C Withstand voltage: 0.6MPa Line length: 5m by default (customizable) Signal output: RS485</p>
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Advantages:

1. Integrated design, output 485 signal, easy to use, waterproof level IP68.
2. High measurement accuracy, fast response, good stability.
3. ModBus communication address can be set, baud rate can be modified.
4. Wide voltage power supply DC 7~30V is available.

6.2 Industrial ORP sensor


The RS-ORP -*-2*-EX is used to measure the oxidation-reduction potential of a

solution. The ORP value is an important indicator of water quality. It is generally integrated with other water quality indicators to reflect the ecological environment in the aquarium system, but cannot independently reflect water quality. Good or bad. Suitable for on-line monitoring of the oxidation-reduction potential of agricultural water, aquaculture, surface water, cyanide-containing, chromium-containing wastewater, etc.

	<p>Power supply: DC 10~30V Power consumption: 0.6W (RS485), 1.2W (4~20mA/0~5V/0~10V) ORP measurement range: -1999~1999mV Resolution: 1mV ORP measurement error: ± 10mV Transmitter temperature resistance: -20°C~+80°C, 0%RH~95%RH (non-condensing) Electrode applicable temperature: 0~80°C Electrode withstand voltage: 0.6MPa Electrode line length: default 5m (customizable) Signal output: RS485/4-20mA/0-5V/0-10V</p>
<p>Advantages:</p> <ol style="list-style-type: none"> 1. Made of high-purity platinum, it has strong anti-acid and alkali ability and anti-oxidation ability 2. With automatic compensation function 3. High precision, high sensitivity and high stability 	


7. Ammonia nitrogen sensor

The RS-NHN-*-3/4/5-*-EX ammonia nitrogen sensor is a device that measures the concentration of ammonia nitrogen in water (combined nitrogen in the form of free ammonia (NH₃) and ammonium ions (NH₄⁺)). It can automatically perform temperature and pH compensation to suit measurements in various environments. It can be directly installed, which is more economical, environmentally friendly, convenient and fast than traditional ammonia nitrogen analyzers.

	<p>Power supply: DC 10~30V Power consumption: 0.3W (RS485), 0.9W (4~20mA/0~5V/0~10V) Ammonia nitrogen range: 0-10mg/L (resolution 0.01mg/L), 0-100mg/L (resolution 0.01mg/L), 0-1000mg/L (resolution 0.1mg/L) PH measure range: 0-14PH Temperature measure range: -20-80°C Ammonia nitrogen measure error: ±3%FS PH measure error: ±0.15PH Temperature measure error: ±0.3°C Repeatability error: 1% Response time: <30s Applicable temperature: 0~50°C Equipment withstand voltage: 0.2MPa Line length: 5m by default (customizable)</p>
<p>Advantages:</p> <ol style="list-style-type: none"> 1. With automatic temperature compensation, the accuracy is higher and the applicable environment is wider. 2. Online equipment, no reagents are required, no pollution, more economical and environmentally friendly. 3. One-piece housing, 3/4 thread design, easy to install. 4. Wide voltage power supply DC 10~30V is available. 	


8. COD sensor

RS-COD-*-2-EX is a device for measuring the chemical oxygen demand (COD) of a solution. It uses the ultraviolet absorption method and does not require chemical reagents. The internal integrated self-cleaning system effectively prevents biological attachment. The COD sensor has an automatic temperature compensation function and uses a modulated light signal to reduce visible light interference. It has a turbidity measurement function to effectively compensate for the impact of turbidity on COD measurement. It can be widely used in water treatment, aquaculture, environmental monitoring and other industries.

	<p>Power supply DC 12~30V Measuring principle: dual-wavelength ultraviolet absorption method Measuring range: 0~500mg/L equiv.KHP Measuring error: $\pm 5\%$FS equiv.KHP (25°C) Resolution: 0.1mg/L Repeatability $\pm 1\%$FS equiv.KHP (25°C) Response time: ≤ 20sec Flow rate: <3m/s Withstand pressure: <0.1MPa Electrode line length: default 5m (customizable) Material: corrosion-resistant plastic/stainless steel Calibration frequency: 3 months Self-cleaning system life: 18 months Signal output: RS485/4-20mA/0-5V/0-10V</p>
<p>Advantages:</p> <ol style="list-style-type: none"> 1. Use modulated light signals to reduce visible light interference. 2. Dual optical path measurement to compensate for the impact of turbidity on COD measurement. 3. Internally integrated self-cleaning system to effectively prevent biological attachment. 4. The equipment uses a wide voltage power supply, DC 12~30V is available. 	

9. Blue-green algae sensor

RS-BA-*-2-EX is a device for measuring the concentration of blue-green algae in water. It uses the principle of fluorescence, which is more efficient and faster than the traditional manual counting method, and can be monitored online in real time. The internal filter algorithm is added to have strong resistance to external light interference. The built-in temperature transmitter can automatically compensate for the temperature.

	<p>Power supply DC 7~30V Power consumption 0.4W Measurement range: 0~300000 cells/ml Temperature error: ± 0.5°C Resolution: 1cells/ml, temperature: 0.1°C Linearity: $R^2 > 0.999$ Working conditions: 0~40°C Electrode line length: default 5m Casing material: corrosion-resistant plastic Withstand pressure: <0.6MPa Signal output: RS485</p>
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Advantages:

1. Waterproof grade IP68.
2. Light filtering algorithm, strong resistance to external light interference, automatic temperature compensation, suitable for online long-term detection environment.
3. ModBus communication address can be set, baud rate can be modified.
4. Wide voltage power supply, DC 7~30V is available.

10. Chlorophyll sensor

RS-CH-*-2-EX is a device for measuring chlorophyll concentration in water. It adopts the principle of fluorescence and uses the design method of optical fiber transmission light path. The internal filter algorithm is added to have strong resistance to external light interference. The built-in temperature transmitter can automatically compensate for temperature. It can be used in rivers, lakes, ponds, marine surveys, aquaculture, drinking water sources and other places.



Power supply: DC 7~30V
 Power consumption 0.4W
 Measurement range: 0~400 μ g/L; 0~100RFU
 Measurement error: \pm 5%FS (25 $^{\circ}$ C); \pm 0.5 $^{\circ}$ C
 Resolution: 0.1 μ g/L, 0.1RFU, 0.1 $^{\circ}$ C (temperature)
 Response time: \leq 30s
 Working conditions: 0~40 $^{\circ}$ C
 Waterproof grade: IP68
 Electrode cable length: default 5m
 Casing material: corrosion-resistant plastic
 Signal output: RS485

Advantages:

1. Waterproof grade IP68.
2. Light filtering algorithm, strong resistance to external light interference, automatic temperature compensation, suitable for online long-term detection environment.
3. ModBus communication address can be set, baud rate can be modified.
4. Wide voltage power supply, DC 7~30V is available.

11. Water ion sensor

Potassium ion: RS-LK-*-2-EX

Mainly used in mineral water, drinking water, surface water, sea water, boiler feed water, tea, honey, feed, milk powder and other agricultural products, saliva, serum,



urine and other biological samples, and the determination of potassium ions in ceramic raw materials.

Nitrate ion: RS-LNO3--*-2-EX

Mainly used in the determination of nitrate ions in solid leachate, rainfall and surface water, and pickled products.

Chloride ion: RS-LCL-*-*2-EX

Mainly used in mineral water, drinking water, surface water, sea water, boiler feed water, tea, honey, feed, milk powder and other agricultural products, saliva, serum, urine and other biological samples, as well as the determination of chloride content in soil extract.

Calcium ion: RS-LCA-*-*2-EX

Mainly used in mineral water, drinking water, surface water, sea water, boiler feed water, tea, honey, feed, milk powder and other agricultural products, saliva, serum, urine and other biological samples, and the determination of calcium ions in ceramic raw materials.

Ammonium ion: RS-LNH-*-*2-EX

Mainly used in the measurement of ammonium ions in boiler feed water, surface water and fertilizers.

Nitrite ion: RS-LNO2-*-*2-EX

Mainly used in the determination of nitrite ions in solid extracts and pickled products.

Magnesium ion: RS-LMG-*-*2-EX

Mainly used in the monitoring of magnesium ions in mineral water, drinking water, surface water and sea water.