Water Quality Monitoring Sensor

SPECSENS

Parameter	SPS-D-Lxx	SPS-M-Lxx	SPS-F-Lxx	SPS-F-C	SPS-Color-C	SPS-M-SCx	SPS-T-SC4	SPS-T-SC3	SPS-T-SC1	SPS-DO	SPS-NH3	SPS-pH	SPS-EC	SPS-ORP	SPS-Cl-C	SPS-Cl-F	SPS-Cl-T	SPA-Chlorine	SPA-Hardness	SPA-Fe	SPA-Microscope	iSPA-T-P06	iSPS-X
Temperature	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√					√	√
Turbidity	√	√	√	√		√	√	√	√													√	√
TSS	√	√	√	√			√		√														√
COD	√	√	√	√		√																√	√
TOC	√	√	√	√		√																√	√
BOD	√	√	√	√																			√
DOC	√	√	√	√																			√
NO_3-N		√	√	√																			√
NO_2-N			√	√																			
NO_3^-		√	√	√																			√
NO_2^-			√	√																			
Color			√	√	√																	√	
O_3				√																			
DO										√													√
NH_3-N											√												√
pH												√										√	√
Conductivity													√									√	√
ORP														√								√	√
Free Chlorine															√	√		√				√	√
Total Chlorine																	√	√				√	
Hardness																			√				
Total Iron																				√			
Partical Counter																					√		
Pressure																							√

Principle

Absorption Spectroscopy	√	√	√	√	√	√																√	√
Scattering Spectroscopy							√	√	√														√
Fluorescence										√													√
Electrode											√	√	√	√	√	√	√					√	√
Titrimetric Colorimetric																		√	√	√			
Microscopic Method																					√		

Application

- Drinking Water
- Urban Sewage
- Industrial Sewage
- Natural Water

Optical

Electrodes

Meter Controller and Integration devices

High Performance Water Sensor

- Optical Method
- Electrode Method
- Integrated Multi-Parameter Online Monitoring Device
- Meter Controller

Optical

Electrodes

Integration devices

Meter Controller

Application

SPS-D Dual-wavelength Water Quality Sensor

Overview

The dual-wavelength spectrum sensor, based on the principle of ultraviolet absorption spectroscopy, can measure organic components in water; and has a turbidity compensation function effectively improving the accuracy of actual water sample measurement. It is suitable for the monitoring of domestic sewage, industrial waste water, watershed, etc. Compared with conventional chemical detection, it has the characteristics of high reliability, zero pollution and zero delay, and realizes real-time online monitoring of organic pollutants.
It can be matched with our MC series data collector and cloud service to realize remote real-time monitoring of data, operation, and maintenance of equipment.

Features

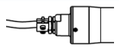
- Optical in-situ measurement, no actual pollution, environmentally friendly
- Quick measurement, the shortest measurement cycle is 1 second
- Long maintenance-free cycle, with its own cleaning brush for cleaning
- RS485 communication mode, can quickly connect the meter Controller, and control the sensor
- IP68 protection grade, can be used in harsh environments
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	UV-Vis spectral absorption	**Power**	< 6W
Dimension	ϕ45 x 325mm	**Material**	AISI 316L
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	1 to 65535 seconds	**IP rating**	IP68
Operating temperature	0 to 50 °C	**Sample flow rate**	< 3m/s
Pressure	6 bar	**Communication**	RS485 (Modbus RTU)

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
COD	SPS-D-L10 SPS-D-L05	0-500mg/L 0-1000mg/L	0.01mg/L 0.01mg/L	±2.5% or ±2.5mg/L ± 2.5% or ±2.5mg/L
TOC	SPS-D-L10 SPS-D-L05	0-200mg/L 0-400mg/L	0.01mg/L 0.01mg/L	±2.5% or ±2.5mg/L ±2.5% or ±2.5mg/L
BOD	SPS-D-L10 SPS-D-L05	0-300mg/L 0-600mg/L	0.01mg/L 0.01mg/L	±2.5% or ±2.5mg/L ±2.5% or ±2.5mg/L
TUR	SPS-D-L10 SPS-D-L05	0-500NTU 0-1000NTU	0.01NTU 0.01NTU	± 2.5% or ±5 NTU ± 2.5% or ±10NTU
TSS	SPS-D-L10 SPS-D-L05	0-500mg/L 0-1000mg/L	1mg/L 1mg/L	± 5% or ±5mg/L ± 5% or ±10mg/L
Temperature	SPS-D-Lxx	0 - 60 °C	0.0625 °C	±1 °C

Model	Description	IP rating	Connection
SPS-D-Lxx	Cable extending directly	IP68	

Application

- Sewage treatment plant outlet monitoring
- Surface water, rainwater, groundwater monitoring
- Urban domestic sewage monitoring
- River, watershed monitoring

SPS-M-Lxx Multi-Wavelength Spectrum Water Quality Sensor

Overview

The multi-wavelength spectrum water quality sensor, based on the principle of ultraviolet absorption spectrum, can measure organic matter and nitrate nitrogen in water, and has turbidity compensation function effectively improving the measurement accuracy of actual water samples. It is suitable for monitoring domestic sewage, industrial sewage, watershed, etc. Compared with conventional chemical detection, it has the characteristics of high reliability, zero pollution and zero delay, and can realize real-time online monitoring of organic pollutants.
It can be matched with our MC series data collector and cloud service to realize remote real-time monitoring of data and remote operation and maintenance of equipment.

Features

- 4 wavelengths measured, obtaining more spectral information of water samples
- Optical in-situ measurement, no chemical reagent consumption, environmentally friendly
- Quick measurement, the shortest measurement cycle is 1 second
- The maintenance-free period is long, and the sensor has its own cleaning brush
- RS485 communication mode, can quickly connect to the meter
- IP68 protection grade, can be used in harsh environment
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	UV - Vis spectral absorption	**Power**	< 2W
Dimension	ϕ29 x 245mm	**Material**	AISI 316L
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	10 seconds to 65535 seconds	**IP rating**	IP68
Operating temperature	0 to 50 °C	**Sample flow rate**	< 3m/s
Pressure	6 bar	**Communication**	RS485 (Modbus RTU), Bluetooth

Parameter

Parameter	Model No.	Range	Resolution	Accuracy
COD	SPS-M-L10	0-500mg/L	0.01mg/L	±5% or ±5 mg/L
TUR	SPS-M-L10	0-500NTU	0.01NTU	±5% or ± 5NTU
NO_3- N	SPS-M-L10	0-50mg/L	0.01mg/L	±5% or ± 1mg/L
TOC	SPS-M-L10	0-200mg/L	0.01mg/L	±5% or ± 2mg/L
TSS	SPS-M-L10	0-500mg/L	1mg/L	±10% or ± 10mg/L
Temperature	SPS-M-L10	0-60 °C	0.0625 °C	± 1 °C

Model	Description	IP rating	Connection
SPS-M-L10-P02	Cable extending directly	IP68	
SPS-M-L10-S02	5 pole aviation plug with waterproof connection thread	IP65	

Application

- Sewage treatment plant effluent monitoring
- Watershed, surface water, groundwater monitoring
- Urban domestic sewage monitoring
- Industrial water monitoring

SPS-F Full Spectrum Water Quality Sensor

Overview

The multi-parameter sensor adopts the measurement principle of UV-Vis absorption spectroscopy to monitor the "light pattern" (fingerprint) information in the wavelength range of 200-800 nm online in real time, and realize multi-parameter measurement through AI algorithm, including: COD, TOC, DOC, BOD, TUR, TSS, nitrate, color, etc. It is mainly applied to influent feature identification and real-time online monitoring of domestic and industrial sewage, as well as process parameter optimization enhancing efficiency and reducing consumption of the sewage treatment. It can be matched with our MC series data controller and cloud service to realize remote monitoring of data and remote operation and maintenance of equipment.

Features

- 200~800nm full spectrum measurement with more water samples spectral information
- Water pattern recognition, which identifies the type of water sample based on the water pattern (fingerprint).
- Optical in-situ measurement, no chemical reagent consumption, environmentally friendly
- Quick measurement, the shortest measurement cycle is 10 second
- The maintenance-free period is long, and the sensor has its own cleaning brush
- RS485 communication mode, can quickly connect to the meter
- IP68 protection grade, can be used in harsh environment
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	Ultraviolet - visible (200nm ~ 800nm)	**Power**	< 8W
Dimension	ϕ66 x 505mm	**Material**	AISI 316L
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	10 seconds to 65535 seconds	**IP rating**	IP68
Operating temperature	0 to 50 °C	**Sample flow rate**	< 3m/s
Pressure	6 bar	**Communication**	RS485 (Modbus RTU), WiFi Bluetooth

Parameter

Parameter	Model No.	Range	Resolution	Accuracy
COD	SPS-F-L02	0-1000mg/L	0.01mg/L	±3% or ± 3mg/L
	SPS-F-L05	0-500mg/L	0.01mg/L	±3% or ± 2.5mg/L
	SPS-F-L15	0-150mg/L	0.01mg/L	±3% or ± 1.5mg/L
TUR	SPS-F-L02	0-1000NTU	0.01NTU	±3% or ± 10NTU
	SPS-F-L05	0-500NTU	0.01NTU	±3% or ± 10NTU
	SPS-F-L15	0-150NTU	0.01NTU	±3% or ± 2.5NTU
NO_3-N	SPS-F-L02	0-50mg/L	0.01mg/L	±3% or ± 0.5mg/L
	SPS-F-L05	0-20mg/L	0.01mg/L	±3% or ± 0.2mg/L
	SPS-F-L15	0-8mg/L	0.01mg/L	±3% or ± 0.1mg/L

Model	Description	IP rating	Connection
SPS-D-Lxx	Cable extending directly	IP68	

Application

- Sewage, industrial sewage
- sewage treatment process monitoring
- Water quality monitoring of urban pipe network
- Basin, surface water, groundwater monitoring
- Tap water and pipe network monitoring
- Industrial water monitoring

SPS-F-C Full Spectrum Water Quality Sensor

Overview

The full spectrum sensor adopts the measurement principle of UV-Vis absorption spectroscopy to monitor the "light pattern" (fingerprint) information in the wavelength range of 200-800 nm online in real time, and realize multi-parameter measurement through AI algorithm, including: O_3, COD, TOC, DOC, BOD, TUR, TSS, nitrate, chroma, etc. SPS-F-C series full-spectrum adopts configurable measuring range design, with the measuring range of 40 mm-150 mm that can be set continuously. It supports automatic window cleaning, and can be applied to a variety of water body water quality measurement, supports in-situ installation, flow-through installation.
It is mainly used for real-time online monitoring of water quality in waterworks, water distribution network and secondary water supply, as well as for online monitoring of surface water and groundwater quality.

Features

- 200~800nm full spectrum measurement with more water samples spectral information
- Water pattern recognition, which identifies the type of water sample based on the water pattern (fingerprint).
- Optical in-situ measurement, no chemical reagent consumption, environmentally friendly
- Quick measurement, the shortest measurement cycle is 1 second
- The maintenance-free period is long, and the sensor has its own cleaning brush
- RS485 communication mode, can quickly connect to the meter
- IP68 protection grade, can be used in harsh environment
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	Ultraviolet - visible (200nm ~ 800nm)	**Power**	< 8W
Dimension	ϕ66 x 536 mm	**Material**	AISI 316L
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	10 seconds to 65535 seconds	**IP rating**	IP68
Operating temperature	0 to 50 °C	**Sample flow rate**	< 3m/s
Pressure	6 bar	**Communication**	RS485 (Modbus RTU), WiFi, Bluetooth

Parameter

Parameter	Optical path	Range	Resolution	Accuracy
COD	80mm (Typical) 40mm (Min)	0-15mg/L 0-50mg/L	0.01mg/L 0.01 mg/L	±0.5mg/L ±3% or ± 1mg/L
TUR	80mm (Typical) 40mm (Min)	0-15NTU 0-50NTU	0.01NTU 0.01NTU	±1NTU ±5% or ± 1NTU
NO_3-N	80mm (Typical) 40mm (Min)	0-0.5mg/L 0-2.5mg/L	0.01mg/L 0.01mg/L	± 0.05mg/L ± 0.1mg/L
O_3	100mm (Typical) 40mm (Min)	0-0.5mg/L 0-1.5mg/L	0.001mg/L 0.01mg/L	± 5%F.S. ± 5%F.S.

Model	Description	IP rating	Connection
SPS-F-C	Cable extending directly	IP68	

Application

- Monitoring of water inbound and outbound of sewage treatment plant
- Water quality monitoring in the treatment process of the sewage treatment plant
- Water quality monitoring of urban pipe network
- Basin, surface water, groundwater monitoring
- Tap water and pipe network monitoring
- Industrial water monitoring

SPS-T-SC1 Turbidity/Suspended Solids Water Quality Sensor

Overview

The turbidity/suspended solids (sludge concentration) sensor is a water quality sensor that measures turbidity and suspended solids based on 90° and backscattered light measurement principles. Mainly used in the fields of surface water, domestic sewage, and industrial sewage. The turbidity sensor is equipped with an automatic optical window cleaning function, which greatly reduces the amount of manual maintenance and ensures the normal operation of the sensor even in harsh environments. In addition, with the MC-W-S series meter controller and cloud service, users can realize on-site and remote data viewing.

Features

- Optical in-situ measurement
- Quick measurement, the shortest measurement cycle is 3 seconds
- The maintenance-free period is long, and the sensor has its own cleaning brush
- RS485 communication mode, can quickly connect to the meter
- IP68 protection grade, can be used in harsh environment
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	Scattering	**Power**	< 3W
Dimension	ϕ55 × 212mm	**Material**	AISI 316L
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	10 seconds to 65535 seconds	**IP rating**	IP68
Operating temperature	0 to 50 °C	**Sample flow rate**	< 3m/s
Pressure	6 bar	**Communication**	RS485 (Modbus RTU)

Parameter

Parameter	Model No.	Range	Resolution	Accuracy
TUR	SPS-T-SC1	0-4000NTU/FNU	0.001NTU	±5% or ± 0.015NTU
TSS	SPS-T-SC1	0-10g/L (Diatomaceous earth) 0-5g/L (Kaolin)	1mg/L	±5% or ± 1mg/L

Model	Description	IP rating	Connection
SPS-T-SC1	Cable extending directly	IP68	

Application

- Influent and effluent monitoring of sewage treatment plant
- Watershed, surface water, groundwater monitoring
- Urban domestic sewage monitoring
- Industrial water monitoring
- Raw water monitoring of water works
- Water pipe network monitoring

SPS-T-SC4 Turbidity Water Quality Sensor

Overview

The turbidity water quality sensor, with the principle of 90° scattered and 180°transmission light measurement, can measure turbidity and suspended solids. It is mainly used in the field of surface water, domestic sewage, and industrial sewage. The turbidity sensor is equipped with an automatic optical window cleaning function. In addition, with the MC-W-S series meter controller and cloud service, users can realize both on-site and remote data viewing.

Features

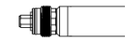
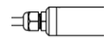
- Optical in-situ measurement
- Quick measurement, the shortest measurement cycle is 1 seconds
- The maintenance-free period is long, and the sensor has its own cleaning brush
- RS485 communication mode, can quickly connect to the meter
- IP68 protection grade, can be used in harsh environment
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	Transmission and 90° scattering	**Installation**	Submerged, Flow-through
Dimension	ϕ30 × 267mm	**Material**	AISI 316L
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	10 seconds to 65535 seconds	**IP rating**	IP68
Operating temperature	0 to 50 °C	**Sample flow rate**	< 3m/s
Pressure	6 bar	**Communication**	RS485 (Modbus RTU), Bluetooth

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
TUR	SPS-T-SC4	0-1000 NTU/FNU	0.001NTU	±3% or ± 0.015NTU
TSS	SPS-T-SC4	0-2000 mg/L	1 mg/L	±5% or ± 5mg/L

Model	Description	IP rating	Connection
SPS-T-SC4-S01	5 pole aviation plug with waterproof connection thread	IP65	
SPS-T-SC4-S11	Cable extending directly with waterproof connection thread	IP68	
SPS-T-SC4-P01	5 pole aviation plug	IP65	
SPS-T-SC4-P11	Cable extending directly	IP68	

Application

- Influent and effluent monitoring of sewage treatment plant
- Watershed, surface water, groundwater monitoring
- Urban domestic sewage monitoring
- Industrial water monitoring
- Raw water monitoring of water works
- Water pipe network monitoring

SPS-T-SC3 Ultra-low Turbidity Water Quality Sensor

Overview

The turbidity sensor, is a ultra-low turbidimetry based on the principle of 90° scattered light, using high parallelism, with automatic light intensity correction laser light source and highly sensitive detector. Its detection performance at low turbidity (<1NTU) is excellent. The turbidity sensor is equipped with automatic optical window cleaning function, which is maintenance-free for a long time for tap water application scenarios. In addition, with the MC-W-S series meter controller and cloud service, users can realize on-site and remote data viewing.

Features

- Small and compact structure
- Accuracy comparable to SWAN and Hach Brand
- Pass CE/RoHS/vibration/high and low temperature test
- 1-3 months secondary water supply sensor maintenance-free
- 3 months factory water sensor maintenance-free
- 1/4 the volume of 1720E and TU5300
- Withstand pressure up to 1 MPa (10 atm)

Specifications

Principle	90° scattering method	**Power**	10 bar
Dimension	150 × 82 × 175mm	**Material**	< 6W
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	10 seconds to 65535 seconds	**Sample flow rate**	200-500m L/min
Operating temperature	0 to 50 °C	**Communication**	RS485 (Modbus RTU)

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
TUR	SPS-T-SC3	0-100 NTU/FNU	0.001 NTU	±2% or ±0.015NTU
Model	**Description**	**IP rating**		**Connection**
SPS-T-SC3	5 pole aviation plug	IP65		

Application

- Tap water factory water monitoring
- Water quality monitoring of tap water network
- Monitoring of secondary water supply of tap water

SPS-M-SCx Multi-Parameter Water Quality Sensor

Overview

The multi-parameter water quality sensor adopts optical principle and integrates multiple parameters into one, which can measure turbidity, TOC, and COD. Users can choose specific parameters according to their needs. The turbidity sensor is equipped with automatic optical window cleaning function, which is maintenance-free for a long time for tap water application scenarios. In addition, with the MC-W-S meter controller and cloud service, users can realize on-site and remote data viewing.

Features

- Pass CE/RoHS/vibration/high and low temperature test
- 1-3 months secondary water supply sensor maintenance-free
- 3 months factory water sensor maintenance-free
- Withstand pressure up to 1 MPa (10 atm)
- Highly integrated, can measure turbidity, organic matter

Specifications

Principle	90° scattering + UV spectrometry	**Pressure**	10 bar
Dimension	150 × 82 × 175mm	**Power**	< 6W
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	10 seconds to 65535 seconds	**Sample flow rate**	200-500 mL/min
Operating temperature	0 to 50 °C	**Communication**	RS485 (Modbus RTU)

Parameter

Parameter	Model No.	Range	Resolution	Accuracy
TUR	SPS-M-SC2 SPS-M-SC3 SPS-M-SC5	0-100NTU	0.001 NTU	±2% or ±0.015NTU
TOC	SPS-M-SC2 SPS-M-SC5	0-20mg/L	0.001 mg/L	±2% F.S.
COD	SPS-M-SC3 SPS-M-SC5	0-50mg/L	0.001 mg/L	±2% F.S.
Model	**Description**	**IP rating**		**Connection**
SPS-M-SCx	5 pole aviation plug	IP65		

Application

- Tap water factory water monitoring
- Water quality monitoring of tap water network
- Monitoring of secondary water supply of tap water

SPS-DO Dissolved Oxygen Water Quality Sensor

Overview

The dissolved oxygen water quality sensor is based on the principle of fluorescence quenching. When light shines on the fluorescent material, the fluorescent material will be excited and emit red light. Since oxygen molecules can take away energy, the time of excited red light is inversely proportional to the concentration of oxygen molecules. The concentration of dissolved oxygen can be calculated by measuring the duration of red light. SPS-DO sensor can meet all the requirements of field operation and long-term or short-term test. On the premise of not consuming oxygen, fluorescence technology can provide users with accurate measurement data for all measurement environments, especially those with low oxygen concentration.

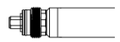
Features

- Optical in-situ measurement, no actual pollution, environmentally friendly
- Fast measurement, the fastest measurement cycle is 10 second
- Long maintenance-free cycle, with its own cleaning brush for cleaning
- RS485 communication mode, can quickly connect to the meter controller, control the sensor
- IP68 protection grade, can be used in harsh environments
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	Fluorescence method	**Pressure**	6 bar
Dimension	ϕ30 × 240mm	**Material**	AISI 316L
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	10 seconds to 65535 seconds	**Sample flow rate**	< 3m/s
Operating temperature	0 to 50 °C	**Communication**	RS485 (Modbus RTU), Bluetooth

Parameter

Parameter	Model No.	Range	Resolution	Accuracy
DO	SPS-DO	0-20mg/L, 0-200	0.01mg/L, 0.1%	±0.1mg/L
Model	**Description**		**IP rating**	**Connection**
SPS-DO-S01	5 pole aviation plug with waterproof connection thread		IP65	
SPS-DO-S11	Cable extending directly with waterproof connection thread		IP68	
SPS-DO-P01	5 pole aviation plug		IP65	
SPS-DO-P11	Cable extending directly		IP68	

Application

- Urban sewage
- Industrial sewage
- Seawater, fishery, aquaculture
- Surface water
- Drinking water

SPS-Color-C Color Water Quality Sensor

Overview

The color water quality sensor is a color online monitoring sensor with self-cleaning for long term reliable and maintenance free real time water quality monitoring. The sensor can be widely used in the fields of drinking water, tap water, water pipeline network, groundwater, and sewage.

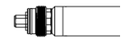
Features

- Quick measurement, the shortest measurement cycle is 10 second
- No chemical reagent consumption, environmentally friendly
- Self-cleaning brushes for long maintenance-free cycles and low maintenance costs

Specifications

Dimension	ϕ30 × 301mm	**Installation**	Material: 316L stainless steel / Titanium (Optional)
Principle	Multi-wavelength absorption spectrometry	**Pressure**	6 bar
Power requirements	DC + 12V ~ + 24V	**Cleaning method**	Cleaning brush
Measurement period	10 seconds to 65535 seconds	**Sample flow rate**	< 3m/s
Operating temperature	0 to 50 °C	**Communication**	RS485 (Modbus RTU), Bluetooth

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
Color	SPS-Color-C	0-500 PCU	≤ 1PCU	±3% or ± 1.5PCU
Temperature	SPS-Color-C	0-50 °C	0.1 °C	±1 °C
Model	**Description**		**IP rating**	**Connection**
SPS-Color-C-S01	5 pole aviation plug with waterproof connection thread		IP65	
SPS-Color-C-S11	Cable extending directly with waterproof connection thread		IP68	
SPS-Color-C-P01	5 pole aviation plug		IP65	
SPS-Color-C-P11	Cable extending directly		IP68	

Application

- Drinking water and pipeline network water quality monitoring
- Drinking water plant effluent
- Groundwater
- Sewage

SPS-pH
Water Quality Sensor

Overview

The pH water quality sensor uses a composite electrode that combines a glass indicator electrode and a reference electrode to measure the pH of water. The potential of the internal reference electrode in the glass electrode is constant regardless of the pH of the solution to be measured. When the glass bubble is immersed in the test solution with changing H+ concentration, the difference between the stable potential of the reference electrode and the potential generated by the glass ball will be read by the voltmeter and used as the measurement result.
The pH sensor supports RS485 output mode, and the controller module is miniaturized and integrated with pH electrode. pH sensor is widely used in drinking water, pipeline water, surface water and all kinds of sewage.

Features

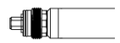
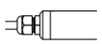
- Electrodynamic measurement, no pollution, friendly to the environment
- Quick measurement, the shortest measurement cycle is 1 second
- RS485 communication mode, can quickly connect the meter controller, control the sensor
- IP68 protection grade, can be used in harsh environments
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	Glass electrode method	**Pressure**	1 bar
Dimension	ϕ25 × 228mm	**Installation**	Submerged, flow-through
Power requirements	DC + 12V ~ + 24V	**Sample flow rate**	200-500mL/min
Operating temperature	2 to 50 °C	**Communication**	RS485 (Modbus RTU), Bluetooth

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
pH	SPS-pH	0-14pH	0.01pH	±0.1pH
Temperature	SPS-pH	2-50 °C	0.1 °C	±1 °C

Model	Description	Application	IP rating	Connection
SPS-pH-S01 SPS-pH-S02	5 pole aviation plug with waterproof connection thread	Surface water or drinking water Sewage	IP65	
SPS-pH-S11 SPS-pH-S12	Cable straight out with waterproof connection thread	Surface water or drinking water Sewage	IP68	
SPS-pH-A01 SPS-pH-A02	5 pole aviation plug	Surface water or drinking water Sewage	IP65	
SPS-pH-A11 SPS-pH-A12	Cable straight out	Surface water or drinking water Sewage	IP68	

Application

- Urban sewage
- Industrial sewage
- Seawater, fishery, aquaculture
- Surface water
- Drinking water

SPS-EC Conductivity
Water Quality Sensor

Overview

The conductivity water quality sensor operates with an alternating voltage applied between the measuring electrodes, which will generate a corresponding current in the medium. The magnitude of the current is positively correlated with the conductivity of the medium, thus measuring the conductivity of the medium. To compensate for the measurement errors caused by polarization, the SPS-EC has a reference electrode, making the measurement results more accurate.
The SPS-EC sensor has a built-in five-point interpolation algorithm that allows the user to calculate TDS and salinity from conductivity.
The SPS-EC series conductivity sensor uses RS485 communication interface and Modbus RTU protocol communication, which is widely used and easy to use. It is widely used in tap water, surface water, groundwater, domestic sewage and other scenarios to provide customers with stable and reliable water quality monitoring data.

Features

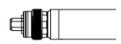
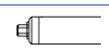
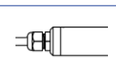
- Easy to install
- Low maintenance costs
- Multiple shapes for different installation conditions

Specifications

Principle	Coaxial 4 graphite electrodes	**Pressure**	1 bar
Dimension	ϕ25 × 196mm	**Installation**	Submerged, flow-through
Power requirements	DC + 12V ~ + 24V	**Sample flow rate**	200-500mL/min
Operating temperature	2 to 50°C	**Communication**	RS485 (Modbus RTU), Bluetooth

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
EC	SPS-EC	0.001-200 000μS/cm	Minimum 0.001μS/cm	± 5%
TDS	SPS-EC	0.01-100 000mg/L	Minimum 0.01mg/L	± 5%
Salinity	SPS-EC	0.01-120 000mg/L	Minimum 0.01mg/L	± 5%
Temperature	SPS-EC	2-50°C	0.1 °C	± 1 °C

Model	Description	IP rating	Connection
SPS-EC-S01	5 pole aviation plug with waterproof connection thread	IP65	
SPS-EC-S11	Cable extending directly with waterproof connection thread	IP68	
SPS-EC-P01	5 pole aviation plug	IP65	
SPS-EC-P11	Cable extending directly	IP68	

Application

- Municipal Pipe Network
- Waterworks
- Secondary water supply
- Surface water or groundwater

SPS-ORP
Water Quality Sensor

Overview

The water quality sensor (redox potential sensor) adopts the electrode principle, can measure the redox potential, can react to the water samples redox strength, the sensor is widely used in water, pipe network, medical sewage and other fields, can provide customers with accurate and efficient monitoring.

Features

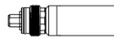
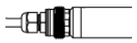
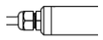
- Electrodynamic measurement, no pollution, friendly to the environment
- Quick measurement, the shortest measurement cycle is 1 second
- RS485 communication mode, can quickly connect to the meter controller, control the sensor
- IP68 protection grade, can be used in harsh environments
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	Glass electrode method	**Pressure**	1 bar
Dimension	ϕ25 × 226mm	**Installation**	Submerged, flow-through
Power requirements	DC + 12V ~ + 24V	**Sample flow rate**	200-500 mL/min
Operating temperature	2 to 50 °C	**Communication**	RS485 (Modbus RTU), Bluetooth

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
ORP	SPS-ORP	-1500mV ~ + 1500mV	1 mV	±20mV
Temperature	SPS-ORP	2-50 °C	0.1 °C	±1 °C

Model	Description	IP rating	Connection
SPS-ORP-S01	5 pole aviation plug with waterproof connection thread	IP65	
SPS-ORP-S11	Cable straight out with waterproof connection thread	IP68	
SPS-ORP-P01	5 pole aviation plug	IP65	
SPS-ORP-P11	Cable extending directly	IP68	

Application

- Drinking water and pipeline water quality monitoring
- Swimming pool disinfectant monitoring
- Medical sewage, disinfected sewage monitoring
- Other industrial water, cooling water and other monitoring

SPS-Cl-C Free Chlorine
Water Quality Sensor

Overview

The free chlorine water quality sensor based on the principle of constant voltage method measurement, can continuously and accurately determine the free chlorine or chlorine dioxide of water samples, without consuming any reagent, or replacing the diaphragm and electrolyte. Measuring range: 0-2mg/L, 0-5mg/L, 0-20 mg/L. DC12 V~DC24 V power supply, RS485 Modbus RTU communication.
The free chlorine sensor is widely used in water supply, secondary water supply, municipal network, disinfection process and other fields to provide customers with reliable monitoring data.

Features

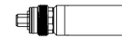
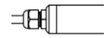
- No need for any reagents
- No need to change diaphragms and electrolyte Easy to install
- Low maintenance cost
- Zero-point stability

Specifications

Principle	Double platinum ring, constant voltage method	**Pressure**	1 bar
Dimension	ϕ25 × 231mm	**Installation**	Submerged, flow-through
Power requirements	DC + 12V ~ + 24V	**Sample flow rate**	200-500 mL/min
Operating temperature	2 to 50°C	**Communication**	RS485 (Modbus RTU), Bluetooth

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
Free Chlorine	SPS-Cl-C	0-2mg/L, 0-5mg/L, 0-20mg/L	0.001mg/L	± 3%F.S.
Temperature	SPS-Cl-C	2-50 °C	0.1 °C	±1 °C

Model	Description	IP rating	Connection
SPS-Cl-C-S01	5 pole aviation plug with waterproof connection thread	IP65	
SPS-Cl-C-S11	Cable straight out with waterproof connection thread	IP68	
SPS-Cl-C-P01	5 pole aviation plug	IP65	
SPS-Cl-C-P11	Cable extending directly	IP68	

Application

- Pipe system
- Waterworks
- Secondary water supply
- Disinfection process

SPS-Cl Chlorine Water Quality Sensor

Overview

The chlorine sensor adopts membrane covered, amperometric potentiostatic 3-electrode, which effectively improves the measurement stability and accuracy of the sensor. The free chlorine or total chlorine factor enters the sensor through the selective permeability membrane, and a redox reaction occurs on the surface of the gold electrode to generate a weak current. The signal value obtained after processing is proportional to the free chlorine or total chlorine concentration. After calculation, it can obtain the free or total chlorine concentration. SPS-Cl series chlorine sensors are widely used in tap water, pipe network, medical sewage, and other fields, and can provide customers with accurate and efficient monitoring.

Features

- Three-electrode coating method, stable and accurate measurement
- No chemical reagent consumption, environmentally friendly
- Long maintenance-free period and low maintenance cost
- The device is compact and easy to install

Specifications

Principle	Membrane covered, amperometric potentiostatic 3-electrode	**Pressure**	1 bar
Dimension	ϕ25 × 205mm	**Installation**	Submerged, flow-through
Power requirements	DC + 12V ~ + 24V	**Sample flow rate**	200-500mL/min
Operating temperature	2 to 45 °C	**Communication**	RS485 (Modbus RTU)

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
Free Chlorine	SPS-Cl-F	0-2mg/L, 0-5mg/L, 0-20mg/L	0.001mg/L	±3% F.S.
Total Chlorine	SPS-Cl-T	0-2mg/L, 0-5mg/L, 0-20mg/L	0.001mg/L	±3% F.S.
Temperature	SPS-Cl	2-50 °C	0.1 °C	±1 °C
Model	**Description**	**IP rating**		**Connection**
SPS-Cl-F/T	5 pole aviation plug	IP65		

Application

- Monitoring of tap water and pipe network
- Swimming pool total chlorine monitoring
- Medical sewage, effluent monitoring after disinfection
- Other industrial water, cooling water and other total chlorine monitoring

SPS-NH3 Ammonia Nitrogen Water Sensor

Overview

Ammonia nitrogen is a common pollutant found in industrial, agricultural, and domestic sewage. Ammonium nitrogen depletes dissolved oxygen in water bodies and leads to eutrophication. Ammonium ions are measured using the ion-selective method, which consists of a working electrode, a reference electrode, an ion-selective membrane, and an electrolyte. Only the ammonium ions to be measured can pass through the ion-selective membrane and undergo a charge change, generating a potential at the working electrode that is proportional to the ion concentration and a constant potential at the reference electrode. The controller is based on the Nernst equation, which measures the potential difference between the working and reference electrodes and converts it to the ammonia nitrogen concentration based on the principle of potentiometric measurement, independent of coloration and turbidity.
It is suitable for online and portable monitoring of municipal sewage, domestic sewage, agricultural sewage, industrial sewage, process control, nitrification treatment and aeration tanks, etc. It is suitable for integrated applications such as buoy monitoring, floating discharge monitoring and vessel monitoring

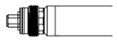
Features

- Quick measurement, the shortest measurement cycle is 1 second
- RS485 communication mode, can quickly connect the meter controller, control the sensor
- IP68 protection grade, can be used in harsh environments
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	Ion-selective electrode method	**Pressure**	1 bar
Dimension	ϕ25×226mm	**Installation**	Submerged, flow-through
Power requirements	DC+12 V ~ +24 V	**Sample flow rate**	200-500 mL/min
Operating temperature	2 to 50°C	**Communication**	RS485 (Modbus RTU), Bluetooth

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
NH_3-N	SPS-NH3	0~100mg/L, 0~1000mg/L, 0~2000mg/L	0.001mg/L	± 3%F.S.
Temperature	SPS-NH3	2-50°C	0.1 °C	± 1 °C
Model	**Description**		**IP rating**	**Connection**
SPS-NH3-S01	5 pole aviation plug with waterproof connection thread		IP65	
SPS-NH3-S11	Cable straight out with waterproof connection thread		IP68	
SPS-NH3-P01	5 pole aviation plug		IP65	
SPS-NH3-P11	Cable extending directly		IP68	

Application

- Domestic sewage
- Surface water, ground water
- Industrial sewage
- sewage treatment process

iSPA-T Multi-parameter Water Quality Online Monitoring System

Overview

The iSPA series water quality monitoring system is a multi-functional water quality monitoring system integrating control, sensing, wireless communication, and cloud platform. The iSPA series water quality monitoring system can monitor COD, TOC, turbidity, free chlorine/total chlorine (Constant voltage method, membrane covered method, DPD method), pH, conductivity, water temperature in real time with optional parameters. Through this system, water quality information can be collected and detected on-site, transmitted to the monitoring system in real time, and interacted with the cloud platform through big data statistics, analysis, and automatic data verification. It can realize closed-loop control of everything in the pump room, laying a solid foundation for the construction of an unattended smart water supply platform.

Features

- Quick measurements with a minimum cycle time of 10 seconds
- Self-cleaning module for long term maintenance-free operation
- Multi-parameter integration, can measure turbidity, free chlorine / total chlorine, pH, COD, TOC, conductivity, water temperature
- The system supports 4G wireless transmission, through which users can transfer data to the cloud platform.
- Users can set the threshold value of water quality parameters; the water quality exceeds the set threshold value will trigger the system alarm.

Specifications

Display	7-inch LCD touch screen	**Pressure**	1 bar
Dimension	400 × 300 × 180mm	**Installation**	Wall - mounted
Power requirements	100 - 230VAC, 50 / 60Hz	**Sample flow rate**	200 - 500mL/min
Operating temperature	2 to 50 °C	**Communication**	RS485 (Modbus RTU), WiFi, 4G

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
TUR	SPS-M-SCx	0-100 NTU/FNU	0.001 NTU	±2% or ±0.015 NTU
COD	SPS-M-SCx	0-50mg/L	0.001mg/L	±2% F.S.
TOC	SPS-M-SCx	0-20mg/L	0.001mg/L	±2% F.S.
Free Chlorine	SPS-Cl-C/F	0-2mg/L, 0-5mg/L, 0-20mg/L	0.001mg/L	±2% F.S.
Free Chlorine	DPD method	0-2mg/L, 0-5mg/L, 0-10mg/L	0.001mg/L	±5% or ± 0.05mg/L
Total Chlorine	SPS-Cl-T	0-2mg/L, 0-5mg/L, 0-20mg/L	0.001mg/L	±3% F.S.
Total Chlorine	DPD method	0- mg/L, 0-5mg/L, 0-10mg/	0.001mg/L	±5% or ±0.05mg/L
Conductivity	SPS-EC	0.001-200 000 µS/cm	Minimum 0.001 µS/cm	±5%
pH	SPS-pH	0-14 pH	0.01 pH	±0.1 pH
Temperature	SPS-pH	2-50 °C	0.1 °C	±1 °C

Application

- Drinking water plant
- Secondary pumping station
- Water supply network

Integration devices

iSPS-X Multi-Parameter Water Quality Measurement Instrument

Overview

The multi-parameter water quality meter is a multi-parameter measuring instrument that can integrate pH/ORP, conductivity, salinity, dissolved oxygen (DO), turbidity, COD, TOC, ammonia nitrogen, nitrate nitrogen, and temperature into one instrument. The instrument can be installed up to four sensors to obtain water quality parameter data. Each sensor through different electrochemical, optical, or physical detection means to measure the respective parameters. Users can read the measurement data through handheld instruments, but also through the data acquisition instrument to transfer data to the data acquisition platform.

Features

- Quick measurement, shortest measurement cycle of 10 second
- No reagent consumption, environmentally friendly
- Long maintenance-free cycle, sensor comes with cleaning brush
- RS485 communication for fast connection to gauge heads
- IP68 protection for harsh environments

Specifications

Dimension	ϕ66 × 466mm (Without Battery)	**Installation**	Submerged
Power requirements	DC 24V	**Depth**	Maximum depth 100m
Operating temperature	2 to 45 °C	**Communication**	RS485 (Modbus RTU), WiFi/Bluetooth

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
pH/ORP	ASM002772	pH: 0-14 ORP: -1500mV~1500mV	pH: 0.01 ORP: 1mV	pH: ±0.1pH ORP: ±20mV
EC TDS Salinity	ASM002774	0.001-200000µS/cm 0.01-100000mg/L 0.01-120000mg/L	0.001µS/cm 0.01mg/L 0.01mg/L	±5% ±5% ±5%
DO	ASM002775	0-20mg/L 0-200%	0.01mg/L	±0.1mg/L
TUR	ASM002776	0-1000NTU	0.001NTU	± 5 % or ± 0.015NTU
COD NO_3-N TOC	ASM002777	0-500mg/L 0-50mg/L 0-200mg/L	0.01mg/L 0.01mg/L 0.01mg/L	±5% or ±5mg/L ±5% or ±1mg/L ±5% or ±2mg/L
NH_3-N	ASM002770	0-1000mg/L	1mg/L	±5% or ±1mg/L
Chlorophyll-a	ASM002790	0-400µg/L 0-100RFU	0.01µg/L 0.01RFU	R^2 > 0.999
Blue-green algae	ASM002791	BGA PC: 0-100ug/L 0-100 RFU BGA PE: 0-100ug/L 0-100RFU	0.01µg/L 0.01RFU	R^2 > 0.999
Temperature		0-50 °C	0.1 °C	±1 °C
Depth		0-100m	0.001 ~ 1m	±0.05 ~ ±10m

Application

- Monitoring of influent and effluent water of sewage treatment plant
- Water quality monitoring in the treatment process of the sewage treatment plant
- Water quality monitoring of urban pipe network
- Basin, surface water, groundwater monitoring
- Industrial water monitoring

SPA-Hardness-S01 Hardness Water Analyzer

Overview

The hardness water analyzer is one that measures the hardness of water by titration and colorimetry. Automatically pumps reagents into the water sample for reaction, determines the endpoint of the reaction by colorimetry, and then determines the hardness concentration in the water based on the amount of reagent added. By selecting different reagents, the analyzer can measure different hardness concentrations.

Features

- Accurate and reliable fully automatic hardness analyzer.
- With self-diagnosis, abnormal alarm, data exceeding the standard alarm function
- Interval measurement optional, minimum 5min
- Supports Modbus RS485 and 4-20mA signal outputs
- Support 4G, WiFi wireless data transmission

Specifications

Dimension	300×300×180 mm (11.81×11.81×7.09 inch)	**Pressure**	0.2 ~ 2 bar
Power consumption	25 W	**Installation**	Wall-mounted
Power requirement	100-240 VAC, 50/60 Hz	**IP rating**	IP54
Operating temperature	5 to 45 °C	**Communication**	RS485(Modbus RTU), WiFi/Bluetooth, 4G, LoRa

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
Total hardness	SPA-Hardness	5.34-534.0 mg/L (ppm) $CaCO_3$ (see reagent type)	±5%	±5%

Reagent range

Reagent type	mg/L (ppm) $CaCO_3$	°dH	°f	mmol/L
WAR-Hardness-T04	5.34-53.4	0.3-3.0	0.534-5.340	0.053-0.534
WAR-Hardness-T05	16.02-160.2	0.9-9.0	1.602-16.02	0.160-1.602
WAR-Hardness-T06	26.7-267.0	1.5-15	2.670-26.70	0.267-2.670
WAR-Hardness-T06	26.7-267.0	3.0-30	5.340-53.40	0.534-5.340

Application

- Drinking water
- Raw water
- Boiler water
- Cooling water

SPA-Chlorine Free/Total Chlorine Water Quality Analyzer

Overview

The SPA-Chlorine is an on-line free/total chlorine analyzer that measures free/total chlorine in water using the DPD colorimetric method. The automatic DPD pumps reagents into the water sample for reaction and determines the water concentration by colorimetry. By selecting different reagents, the analyzer can measure either free or total chlorine.

Features

- With self-diagnosis, abnormal alarm, data exceeding the standard alarm function
- Interval measurement optional, minimum 5min
- Supports Modbus RS485 and 4-20mA signal outputs
- Support 4G, WiFi wireless data transmission

Specifications

Dimension	300×300×180 mm (11.81×11.81×7.09 inch)	**Pressure**	0.2 ~ 2 bar
Power consumption	25 W	**Installation**	Wall-mounted
Power requirement	100-240 VAC, 50/60 Hz	**IP rating**	IP54
Operating temperature	5 to 45 °C	**Communication**	RS485(Modbus RTU), WiFi/Bluetooth, 4G, LoRa

Parameter information

Reagent type	Model No.	Range	Resolution	Accuracy
Free chlorine	SPA-Chorine-F	0-2mg/L, 0-5mg/L, 0-10 mg/L	0.001mg/L	±5% or ±0.05 mg/L
Total chlorine	SPA-Chorine-T	0-2mg/L, 0-5mg/L, 0-10mg/L	0.001mg/L	±5% or ±0.05 mg/L

Application

- Pipe system
- Drink water
- Secondary water supply
- Sterilization process

SPA-Fe-T01 Total Iron Water Quality Analyzer

Overview

SPA-Fe-T01 is an on-line total iron analyzer that measures the concentration of dissolved iron (trivalent and divalent iron) in water by titration and colorimetric methods. Reagents are automatically pumped into the water sample for reaction, the end point of the reaction is determined by the colorimetric method, and then the total iron concentration in the water is determined based on the amount of reagent added. By selecting different reagents, the analyzer can measure different total iron concentrations.

Features

- Accurate and reliable fully automatic hardness analyzer.
- With self-diagnosis, abnormal alarm, data exceeding the standard alarm function
- Interval measurement optional, minimum 5min
- Supports Modbus RS485 and 4-20mA signal outputs
- Support 4G, WiFi wireless data transmission

Specifications

Dimension	300×300×180mm (11.81×11.81×7.09 inch)	**Pressure**	0.2 ~ 2 bar
Power consumption	25W	**Installation**	Wall-mounted
Power requirement	100 - 240 VAC, 50/60 Hz	**IP rating**	IP54
Operating temperature	5 to 45 °C	**Communication**	RS485 (Modbus RTU), WiFi/Bluetooth, 4G, LoRa

Parameter information

Parameter	Model No.	Range	Resolution	Accuracy
Total iron (Fe^{3+}&Fe^{2+})	SPA-Fe-T01	0.01-0.5mg/L 0.2-6.0mg/L	± 5%	± 10%

Application

- Drinking water
- Raw water
- Boiler water
- Cooling water

SPA-Microscope Particle Counter Water Quality Analyzer

Overview

SPA-Microscope is an on-line microanalyzer.Adopting microscopic imaging analysis technology, it realizes the measurement of particles and microorganisms in the water body by analyzing the dynamic image of flowing water and combining it with AI image recognition technology. SPA-Microscope is widely used in drinking water, swimming pool, sewage, etc., providing customers with stable and reliable water quality monitoring data.

Features

- Adopting microscopic imaging analysis technology
- With self-diagnosis, abnormal alarm, data exceeding the standard alarm function
- No reagent consumption, fast measurement
- Supports Modbus RS485 and 4-20mA signal outputs
- Support 4G, WiFi wireless data transmission

Specifications

Dimension	300×300×180mm (11.81×11.81×7.09 inch)	**Pressure**	0.2 ~ 2 bar
Power consumption	25W	**Installation**	Wall-mounted
Power requirement	100-240 VAC, 50/60 Hz	**IP rating**	IP54
Operating temperature	5 to 45 °C	**Communication**	RS485 (Modbus RTU), WiFi/Bluetooth, 4G, LoRa

Parameter information

Parameter	Particle Counter
Measurement	Microscopic Method
Measurement period	30 sec.
Detection range	2-750 microns
Sizing range	2-127 microns

Application

- Drinking water
- Swimming Pool
- Sewage
- Fresh Water

MC-W-S Meter Controller

Overview

The meter controller uses a 7-inch color LCD screen and is a controller that can connect to multiple sensors at the same time. Users can quickly configure sensor information, connect to controller, and display data and graphs in real time. It supports wireless data output, can upload the collected data to the cloud, supports HTTP protocol, MQTT protocol.

Features

- Up to 4 sensors can be connected
- Support 4-20 mA output, IO output
- Strong compatibility, can be connected to all sensors of ours and other RS485 communication methods
- LCD touch screen, clear display, easy to operate
- Wireless communication, support 2G/4G, Wi-Fi

Specifications

Display	7-inch color LCD screen with touch function	**Pressure**	< 15 W (Unconnected sensor)
Dimension	230×154×68mm	**Installation**	Wall-mounted
Power requirement	DC24 V	**Data storage**	32GB
IP rating	IP65	**Communication**	RS485 (Modbus RTU)

Interface

Parameter	Output Interface	Input interface	Wireless communication
MC-W-S	1 channel RS485 output. 2 expansion ports (Each expansion port can support 2 channels of 4-20 mA or 4 channels of I/O)	4 channel RS485 input	WIFI, 4G (optional)

Application

- All probes or equipment of the company can be connected to display data
- It can be used as a display instrument for various sewage treatment, surface water monitoring, drinking water monitoring
- Can be connected to any sensor or device with RS485 communication
- Can be applied to scenarios where multiple sensors are connected at the same time

MC-BW-B Meter Controller

Overview

The meter controller can connect to multiple sensors at the same time. This series of controller supports a variety of power supply methods, and the built-in battery can be adapted to difficult scenarios of field power supply, providing customers with a complete field water quality monitoring data transmission program.
The meter controller supports RS485 bus communication, using standard Modbus RTU protocol, and can support up to 4 channels of sub-devices at the same time; through analog signal acquisition, using 4-20mA and 0-10V two channels can support each 1 Simultaneous access of road equipment. Users can quickly configure sensor information, connect to the controller, and transmit data in real time. The MC-BW-B meter controller supports wireless data output. Through Wi-Fi and 4G networks, users can upload the collected data to the cloud and support HTTP and MQTT protocols. Users can realize remote data viewing through SPS-Server (SPS cloud service). MC-BW-B also supports wired data output, through the RS485 host connection interface, users can read data through Modbus RTU protocol.

Features

- Supports use in field and other unpowered environments
- Support 4-20 mA or 0-10 V analog input, I/O input and output
- Wireless communication, supports 2G/4G, Wi-Fi.
- Strong compatibility, can connect to all our sensors and other RS485 communication mode sensors.
- Compact size, easy to install

Specifications

Dimension	170 × 170 × 90mm	**Power**	< 2W (Unconnected sensor)
External power supply	DC12V to DC24V	**Installation**	Wall-mounted
Internal power supply	4 x 3.6VD - type power battery or 16.8 V rechargeable lithium battery pack (optional)	**Data storage**	32GB
IP rating	IP65	**Communication**	RS485 (Modbus RTU), WiFi, 4G

Interface

Model	Output Interface	Input interface	Wireless communication
MC-BW-B	1 channel RS485 output. 2 channels of low output are valid, 2 channels of high output are valid	4 RS485 (ModbusRTU protocol) interface 1 channel 4-20 mA analog input 1 channel 0-10 V analog input	RS485 (ModbusRTU protocol). 4G, WIFI (HTTP, MQTT protocol). BLE (App private protocol)

Application

- All our sensors or devices
- Data acquisition and signaling for pipe network equipment
- Signal transmission or relay

Sewage and Surface Water Applications

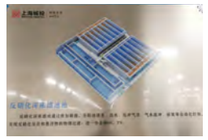
Sewage treatment process monitoring

Pain points

- Unknown status of biochemical operating system
- Abnormalities cannot be handled in time
- High cost of operation and maintenance of chemical online equipment
- Equipment operation energy consumption and chemical consumption cost are high and uncontrollable


Solution

- Real-time monitoring of the whole process
- Optical sensor online monitoring, low operating cost and easy to use
- Add intelligent control system to make aeration and dosing precise and controllable




Sewage network monitoring

Pain points

- High-concentration sewage enters the sewage treatment system and cannot be treated in time, causing impact on the system



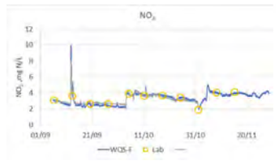
Solution

- Real-time monitoring of pipeline network and pre-pumping station

Surface water monitoring

Installation

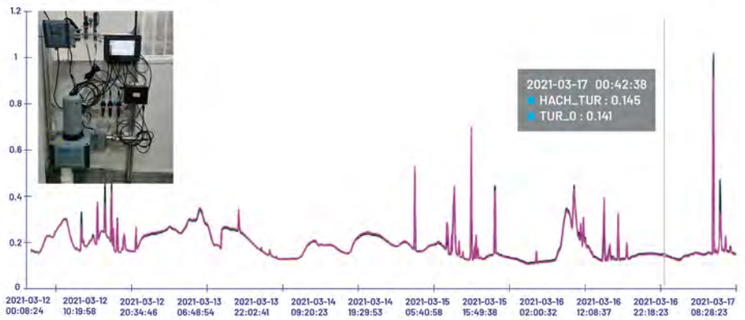
- Location: Southern Finland
- The sensors are battery-powered and collect data every half hour. The following is a comparison of sensor measurements for the period September 6 through November 28, 2023.




The data from both sensors performed well in comparison to the laboratory results.

Drinking Water Applications

Comparative test

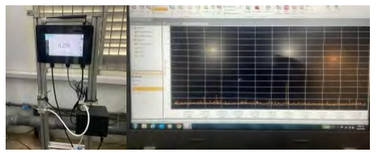


Comparative test

Product comparison test: US/UK company
Long-term reliability test: 3 months

Product Comparison Test: USA
Long-term reliability test: 3 months

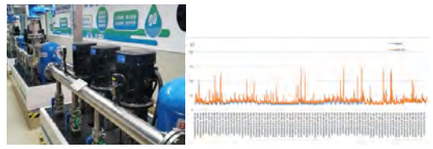
Secondary water supply monitoring



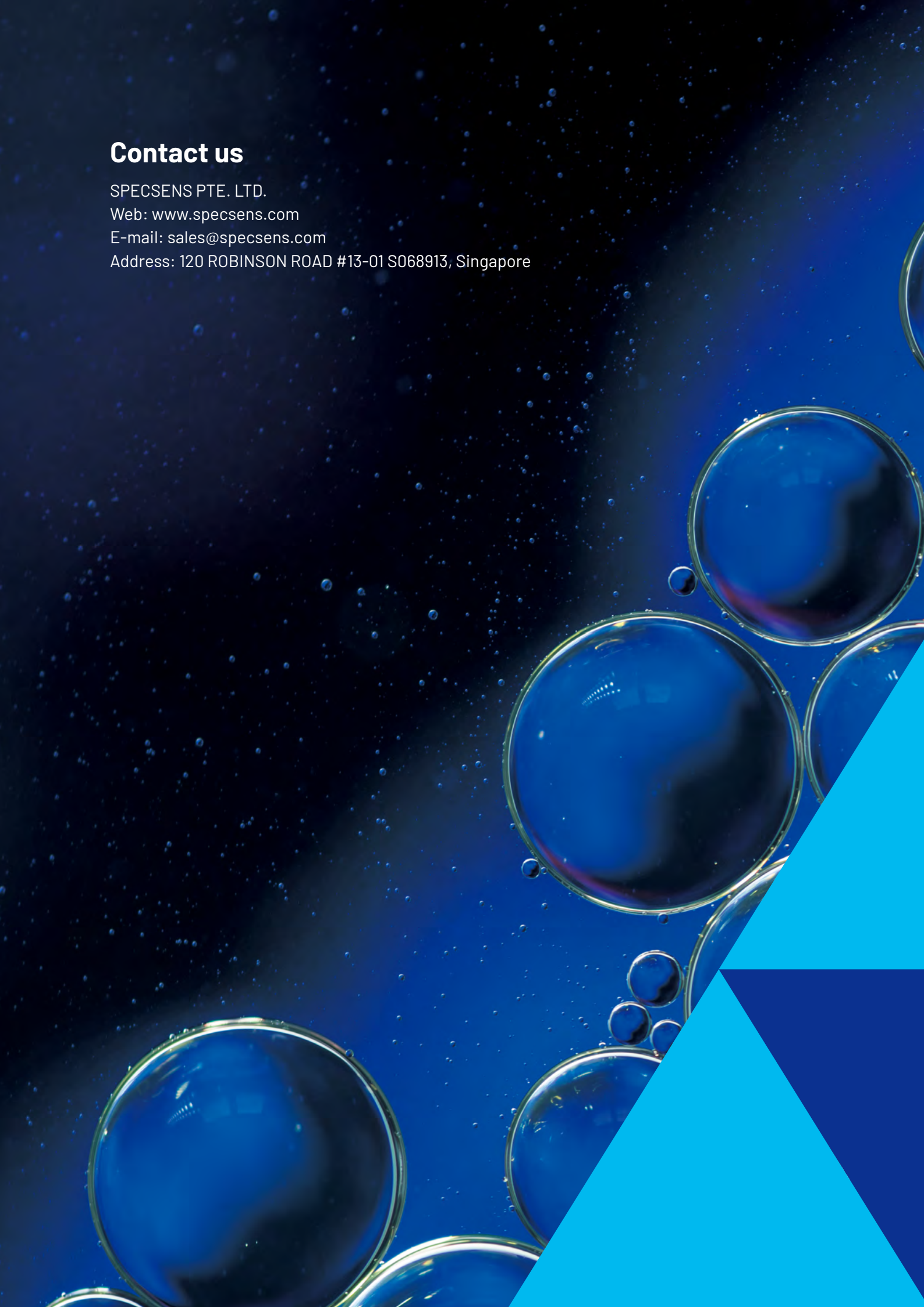
Singapore Projects
Long-term reliability test: 3 months

Korea Projects
Long-term reliability test: 3 months

Product Comparison Test: USA
Long-term reliability test: 3 months



Product comparison test: UK company
Long-term reliability test: 3 months



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