Datasheet

Conductivity Digital Electrode

SUP-TDS-8001

Supmea®

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SUP-TDS-8001

The Cond salinity/conductivity sensor designed by our company for aquaculture, environmental protection water treatment, industrial processes and other industries, equipped with a two-pole graphite sensor, can be used to measure the conductivity and salinity value changes in the aqueous system within the range.It has a standard RS485 Modbus RTU protocol interface function and can communicate with the host computer remotely.

Applications

- Wastewater
- water quality testing
- Aquaculture
- information data collection
- Internet of Things water quality testing
- industrial process testing

Conductivity Digital Electrode

Features

- Isolated power supply design, data stability,
- Strong anti-interference ability
- Two-pole graphite conductivity/salinity sensor
- Shell material: PPS
- Corrosion resistance, high stability,
- suitable for continuous monitoring of fresh water and sea water
- Built-in temperature sensor

Principle

The principle of a conductivity digital electrode operates on the basis of measuring the electrical conductivity of a solution. It employs two or more electrodes, typically made of noble metals like platinum or gold, that are immersed in the solution to be tested. An electrical current is applied across these electrodes, and the electrode assembly measures the resistance encountered by this current as it flows through the solution. Conductivity, which is the reciprocal of resistivity, is then calculated based on Ohm's Law (V=IR, where V is voltage, I is current, and R is resistance). Advanced digital circuitry within the electrode processes this resistance measurement, converting it into a conductivity value that is displayed numerically on a connected meter or interface. The accuracy and precision of this measurement depend on factors such as the electrode's geometry, the purity and condition of the electrodes, and the temperature of the solution, which often necessitates temperature compensation to standardize the readings.

Sensor parameters	
Principle	Two-pole graphite sensor
Measuring range	Conductivity: 0-9999uS/cm 10.00- 100.00mS/cm TDS: 0-9999ppm Salinity: 0-40.00ppt
Resolution	1uS/cm; 0.01mS/cm; 1ppm; 0.01ppt
Accuracy	±2.5%
Sensor life	2–3years
Calibration period	＞3 months
Shell material	PPS
Cable length	5 meter (standard), other lengths are optional

Smart module parameters	
Measure	Salinity/conductivity/TDS in water
Measuring range	Conductivity: 0-9999uS/cm; 10.00- 100.00mS/cm; TDS: 0-9999ppm Salinity: 0-40.00ppt
Resolution	1uS/cm; 0.01mS/cm; 1ppm; 0.01ppt
Accuracy	±2.5%
Sensor life	2–3years
Calibration period	＞3 months

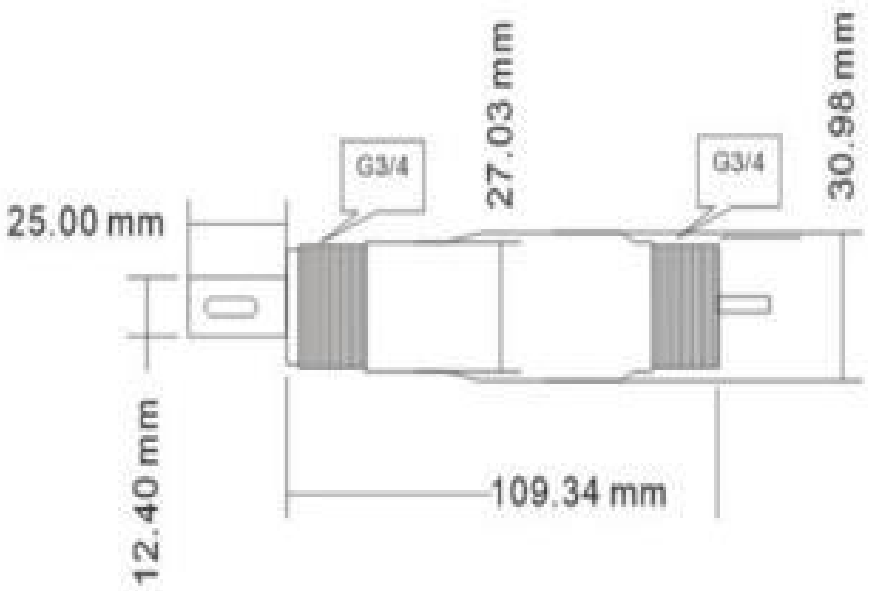
Shell material	PPS
Cable length	5 meter (standard), other lengths are optional
Resolution	1uS/cm; 0.01mS/cm; 1ppm; 0.01ppt
Temp rage	0-60.0℃
Temp resolution	0.1℃
Sensor type	Two-pole graphite sensor
Accuracy	±25％;±0.5℃
Data compensation	Default 25.0℃ compensation temperature, 2%/℃
Communication method	RS485 interface*1
Communication protocol	Standard MODBUS-RTU protocol
Communication method	Baud rate 9600, 8, 1, N
	ID: 1-255 Default ID: 1 (0x01)
Calibration and parameter setting	RS485 remote setting
Power supply	7 - 30VDC
Power consumption	30mA @12 VDC

Wiring

Color	Description
Red	V+
Black	GND
Green	485A
White	485B

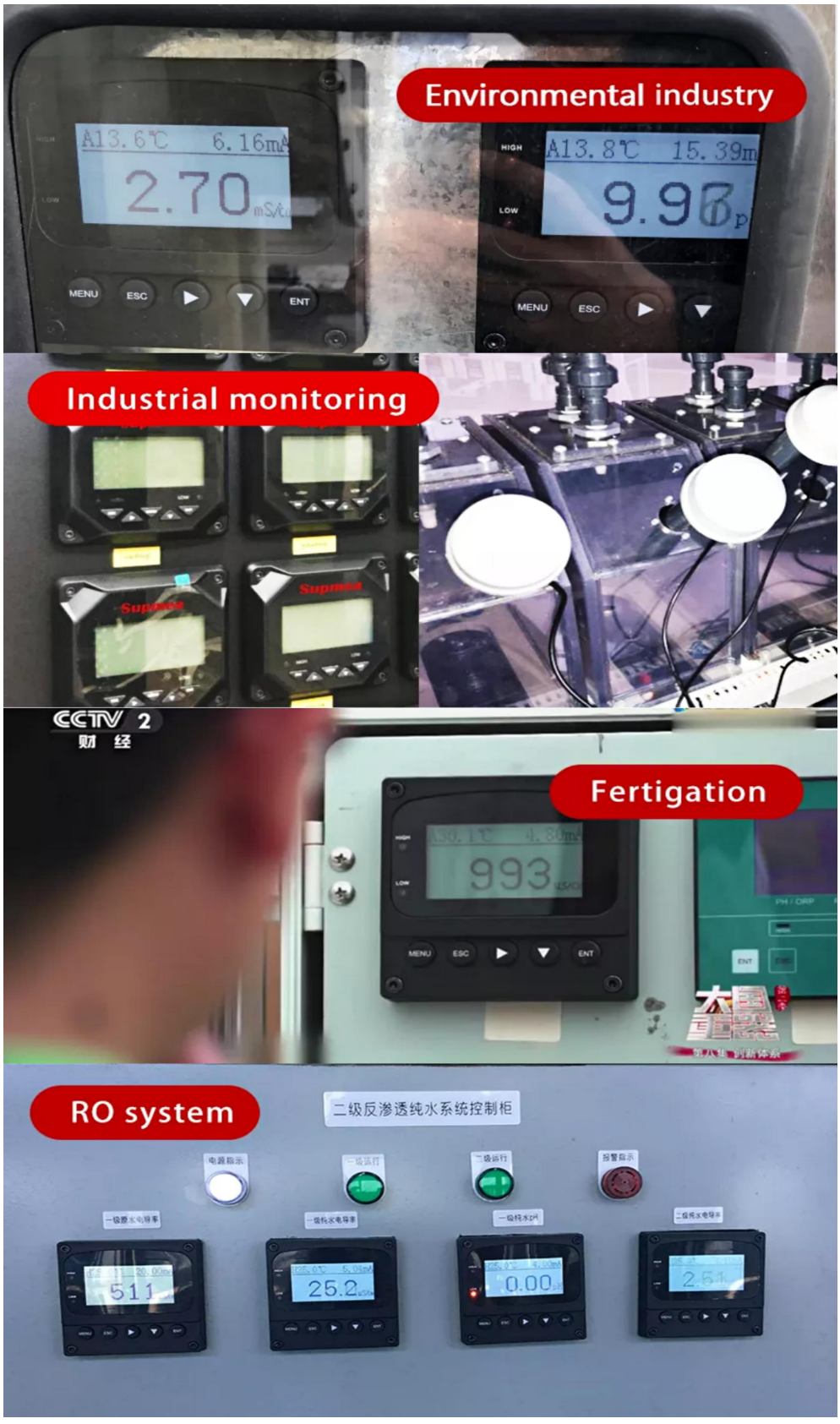
Note: Please carefully check the color and wiring definition before wiring, if the wrong wiring may cause damage to the sensor.

Dimension



Applications

■ Beverage　应用工况



Ordering code

SUP-TDS-8001 -DE-NB-2-A-B-05-GA								Description
SUP-TDS-8001	-	-	-	-	-	-	-	
Measurement Range	DE							0-70mS/cm
Electrode Material		NB						Graphite
Temperature Compensation Type			2					NTC 22K
Output				A				RS485
Power Supply					B			12VDC
Cable Length						05		5m
						10		10m
						15		15m
						20		20m
						30		30m
						XX		Others
Housing Material and Thread Type							GA	Engineering Plastic，G3/4 Thread