Datasheet

Conductivity 4-Pole Digital Electrode

SUP-TDS-8002

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Our company has designed four electrode conductivity and salinity digital sensors for industries such as aquaculture, river sewage, seawater salinity, and environmental engineering. These sensors are equipped with a dedicated four pole alloy sensor for aquaculture and can be used to measure changes in conductivity and salinity values in aqueous solution systems within a range of (0-500) mS/cm.
It has a standard RS485 Modbus RTU protocol interface function and can communicate remotely with the upper computer.

Applications

- Drinking water monitoring
- Wastewater treatment monitoring
- Chemical reaction process monitoring
- Raw material and finished product testing
- Surface and groundwater monitoring

Conductivity 4-Pole Digital Electrode

Features

- Isolation power supply design, data stability, strong anti-interference ability
- 4-pole stainless steel, corrosion-resistant alloy conductivity/salinity sensor
- Shell material: POM (liquid contact part material)
- Corrosion resistant, high stability, suitable for continuous monitoring of freshwater and seawater
- Built in temperature sensor

Principle

The four - pole digital conductivity electrode operates based on the principle that when an electrical current is passed through a solution, the conductivity of the solution is related to the concentration and mobility of ions present. The four - pole design helps to more accurately measure the potential difference caused by the ion - facilitated current flow through the solution. This allows for a more precise determination of the solution's conductivity by minimizing the effects of electrode polarization and other interference factors, providing a digital output for easy reading and further data processing.

Parameters	
Principle	Quadrupole Conductivity Sensor
Measurement Range	Conductivity：（100~60000）uS/cm; （0.1~500.00）mS/cm; TDS: （0~9999）ppm Salinity: （0~100.00）ppt
Resolution	1uS/cm; 0.01mS/cm; 1ppm; 0.01ppt
Accuracy	1.5%FS
Calibration Cycle	More than 3 months
Shell Material	POM（Liquid Connection Material）
Cable Length	Comes standard with 5 meters, other lengths are optional.

Wiring

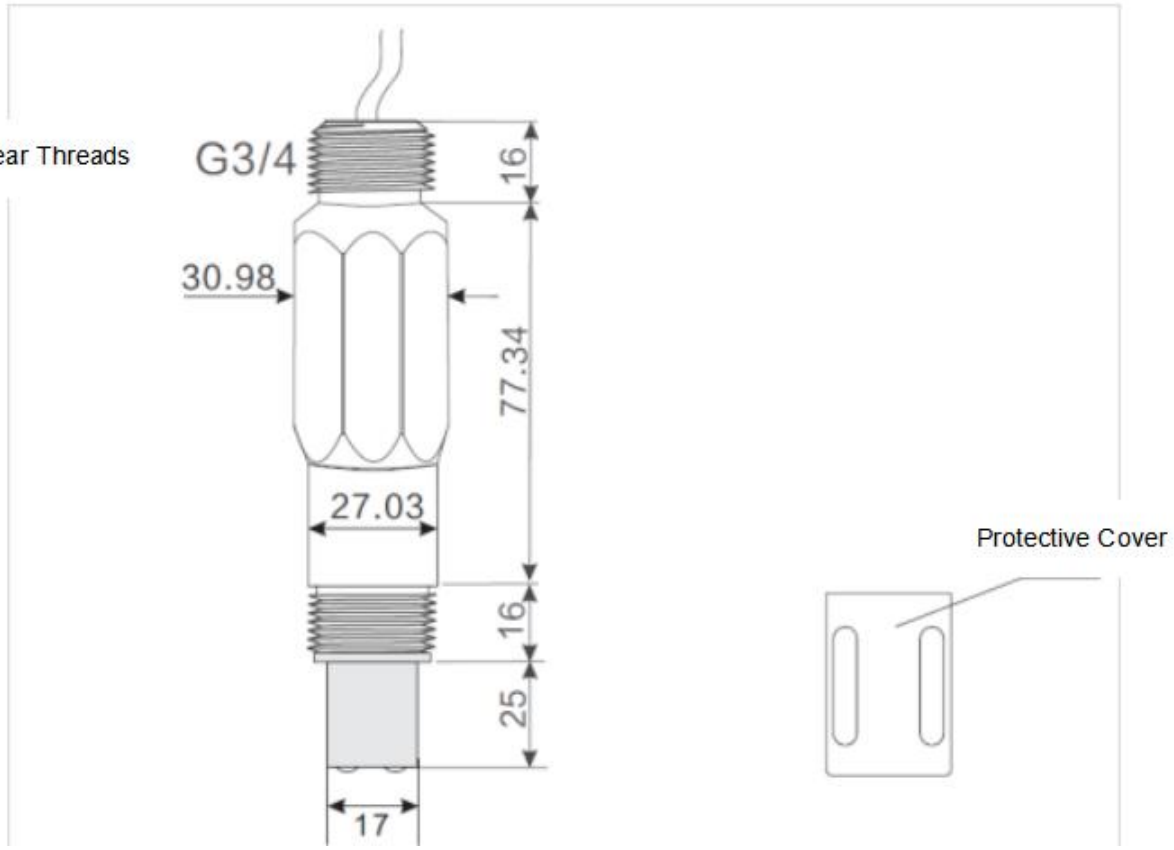
Sensor Supply	12VDC
Working Current	25mA
Communication Interface	RS485
Communication Format	N8 1
Baud Rate	9600
Communication Protocol	Modbus-RTU

Wiring Definition

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

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

Dimension

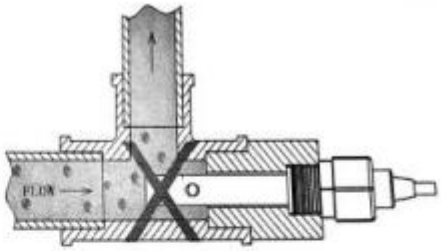

Front and Rear Threads
G3/4
16
30.98
77.34
27.03
Protective Cover
16
25
17

Installation

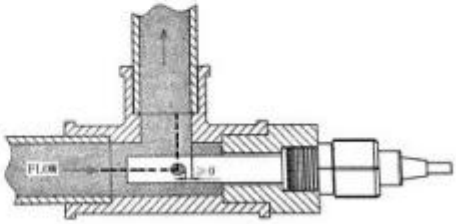
Installation

Installing a conductivity cell is a very important task, and abnormal installation methods cannot obtain satisfactory measurement data. Please carefully select the installation location when installing the conductivity cell to avoid distortion of measurement data.

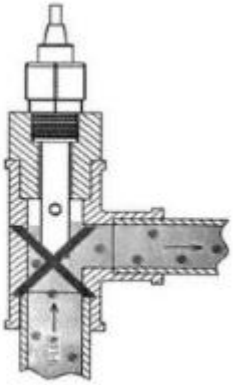
Error: The installation seat of the conductivity cell is too long, resulting in a short extension of the conductivity cell, which prevents the formation of active fluid renewal inside the conductivity cell and causes measurement errors.



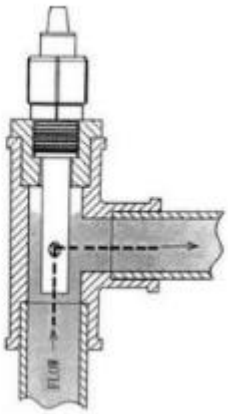
Correct Method: Some fluid in the pipeline flows through the conductivity pool and is constantly updated, so the measurement is accurate, and the opening of the sensor must face the flow.



Error: An air dead space is formed in the upper part of the pipeline, and although the opening of the conductivity pool affects the flow, there is still no fluid flowing through the conductivity pool, resulting in worthless and unstable measurement data.



Correct Method: The waist hole of the conductivity cell is located in the fluid, and part of the fluid flows through the conductivity cell to be continuously updated, ensuring accurate measurement.



Error: The water flow in the pipeline cannot be guaranteed to be full, and the discharged water flow will form excess gas. The conductivity pool constant is an unknown variable, and the data is invalid and unstable.

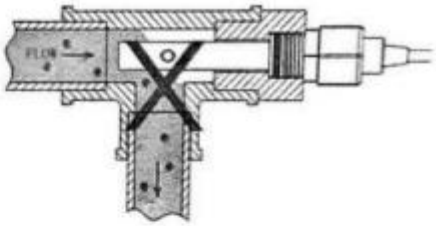


Fig. 6

Error: The water flow in the angled installation of the conductivity cell cannot pass through the measuring waist hole, and the accumulation of air inside the conductivity cell causes the measurement value to be invalid and unstable.

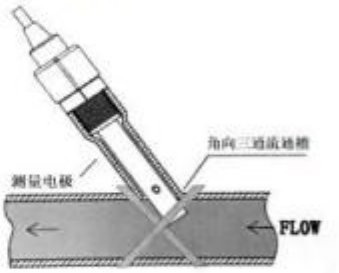
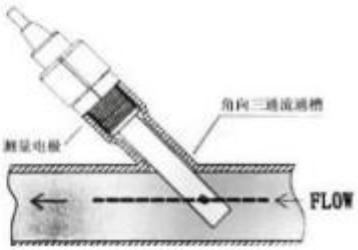


Fig. 7

Correct Method: Part of the FLOW flows through the waist hole of the conductivity cell and is continuously updated, with accurate and stable measurement data.



Ordering code

SUP-TDS-8002 -DG-NB-2-A-B-05-GA								Description
SUP-TDS-8002	-	-	-	-	-	-	-	
Measurement Range	DG							0-500mS/cm
	DM							0-40ppt
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