



Datasheet

Conductivity Sensor

SUP-ADE3300



TOTAL
**PRESSURE
SOLUTIONS**

Datasheet

Conductivity Sensor

SUP-ADE3300

Conductivity electrodes are specifically designed for measuring the conductivity of pure water and water treatment processes, and are particularly suitable for conductivity measurement in thermal power plants and the water treatment industry.

Electrode type	Diode type (stainless steel electrode)		
	K=0.01	K=0.1	K=1.0
Application	pure water industry	regular water deal with	tap water

Measuring principle

The operating principle of conductivity measurement is as follows:

Two electrodes (or cylindrical electrodes) are placed in parallel and at a fixed distance L apart in the solution under test. When the voltage is applied across the electrodes, ions in the solution move under the influence of the electric field: anions migrate toward the anode, and cations toward the cathode.

The ionic movement enables the solution to conduct electricity. By measuring the resulting current (I) between the electrodes, the conductivity (γ) of the solution can be determined.



Conductivity Sensor

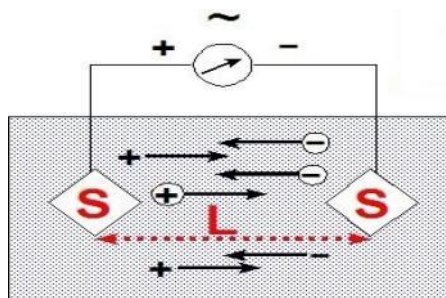


Fig. 1 Measurement principle diagram

$$R = \frac{U}{I}; \quad G = \frac{1}{R}; \quad \gamma = K \times G = \frac{L}{S} \times \frac{1}{R}$$

Where:

R—solution resistance, Ω

G—solution resistivity, S

L—distance between metal plates, cm

S—effective cross-sectional area of the conductive solution, cm^2

Parameters

Performance parameters		
Measured variables	conductivity, temperature	
Measuring range and electrode constant	Electrode constant	Conductivity measurement range
	K= 0.1	(0.1~200) μS/cm
	K=1.0	(10 ~ 8000) μS / cm
	Temperature measurement range: (0~50)°C or (0~100)°C	
Accuracy	Conductivity: ±2%FS	
	Temperature: ±0.5°C	
Temperature compensation	Built-in automatic temperature compensation (NTC10K/NTC22K)	
Protection level	IP68	
Process conditions		
Process temperature	Normal temperature: (0~50)°C High temperature: (0~100)°C	
Process pressure	≤1MPa (electrode constant 0.1, 1.0)	
Mechanical structure		
Housing material	304 stainless steel	
Process connection	G3/4 threaded connection or clamp connection	
Weight	205g (excluding leads)	

Wiring

(1) Wiring

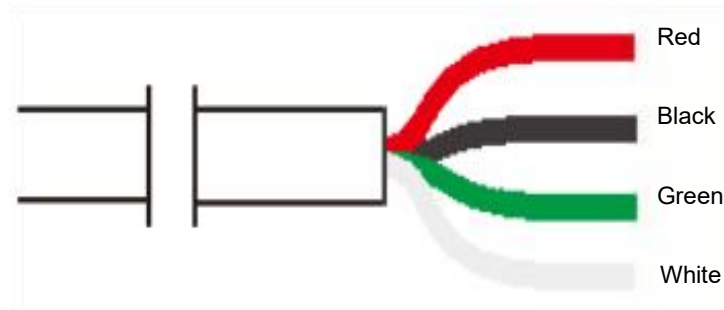


Table 1 Cable definition

Line color	Definition
Red	Power supply (VCC)
Black	GND
White	RS 485 output B
Green	RS 485 output A

(2) Wiring Precautions

- Before powering on, please check the wiring definitions, power supply, and communication interface methods.
 - To avoid accidents, do not power on the device until all wiring is complete.
 - Please ensure that electrical interfaces are waterproofed.
 - Extending the wiring is prohibited.
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Dimensions and Structure

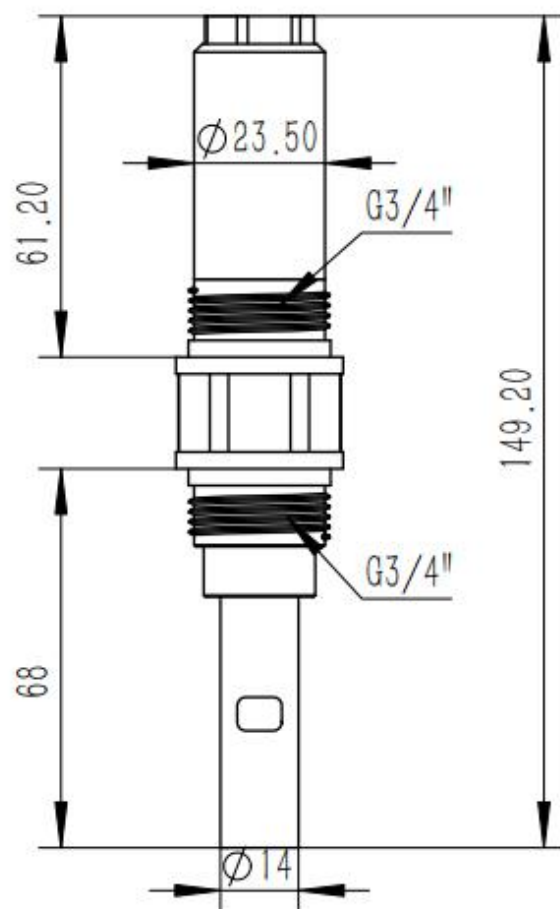


Fig 1 Thread type dimensions (unit: mm)

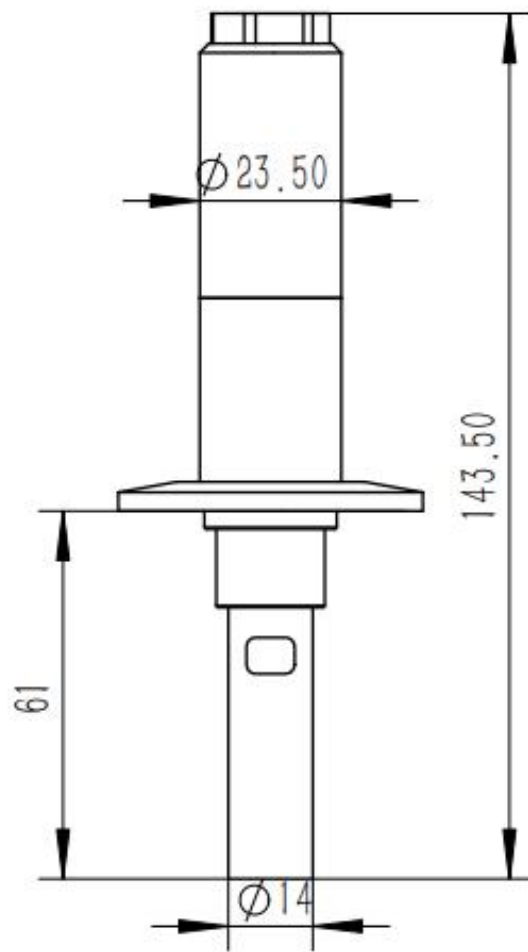


Fig. 2 Clamp type dimensions (unit: mm)