



Daruifuno

Online Salinity Sensor

User Manual



Model: DEC351

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Introduction

Dear user

Thank you very much for using the salinity sensor of our company. Before you use it, please read this manual in detail, it will be of great help to the use and maintenance of this instrument, and can avoid unnecessary troubles due to improper operation and maintenance.

Please follow the operating procedures and precautions of this manual.

To ensure that the after-sales protection provided by this instrument is effective, please do not use and maintain this instrument by methods other than those specified in this manual.

Any failures and losses caused by non-compliance with the precautions specified in this manual are not covered by the manufacturer's warranty, and the manufacturer does not assume any related responsibilities. Please keep all documents in a safe place. If you have any questions, please contact our after-sales service department.

When receiving the instrument, please carefully open the package and check whether the instrument and accessories are damaged due to transportation. If any damage is found, please contact our after-sales service department and save the packaging for return processing.

When the instrument fails, please do not repair it by yourself, please contact our after-sales service department.

1 Product Overview



The new generation of salinity sensor adopts the international leading four-electrode technology, RS485 digital interface, supports MODBUS protocol, and environmentally friendly design. The new generation of salinity sensor not only has higher accuracy, wider measuring range and excellent stability. It also has unique advantages of large quantity: first, it completely solves the polarization problem in high conductivity test; second, it solves the problem of inaccurate reading caused by electrode contamination.

Sensor Features:

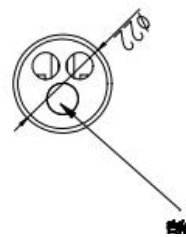
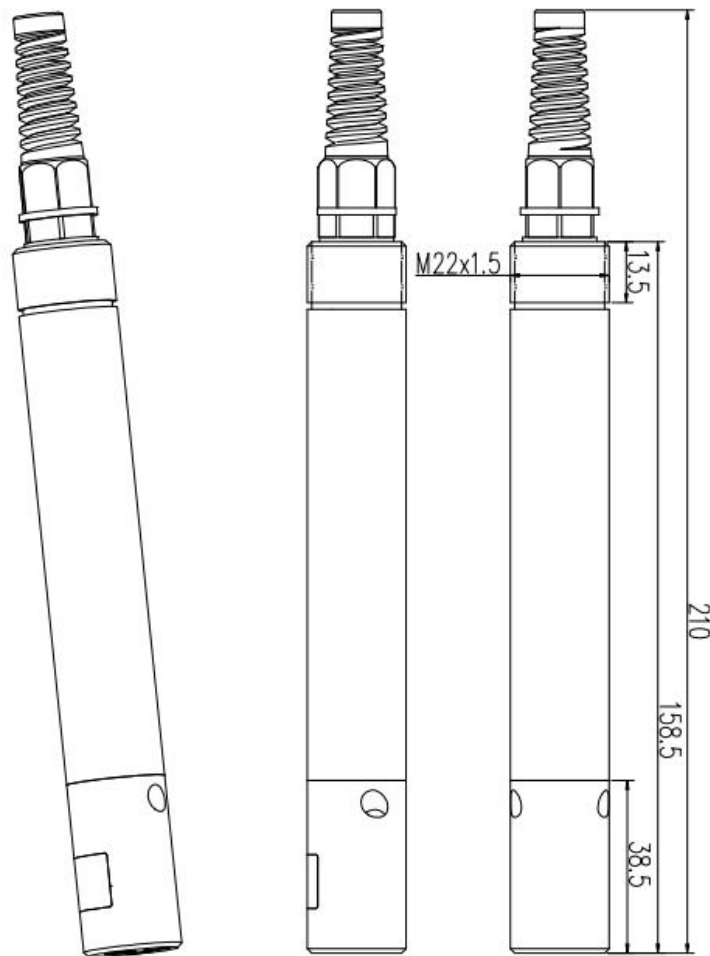
- ◆ 0~80ppt, accuracy ± 1 ppt
- ◆ RS485 output, support Modbus, open communication protocol
- ◆ 0~50°C, protection grade IP68, maximum pressure 6bar
- ◆ Will not be polarized, can be used online continuously
- ◆ Extremely wide measuring range, wider application
- ◆ Very resistant to pollution and strong anti-interference ability
- ◆ The measurement is very stable and the accuracy is higher

1.1 Product Introduction

Structure Diagram:

Dimensions

22x210 mm (Φ xL)



Temperature insert

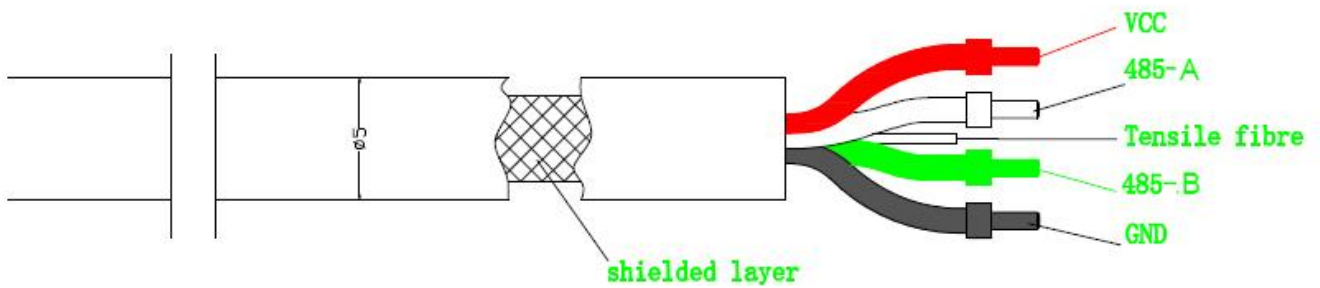
1.2 Cable Definition

- Power

The power supply must be DC 5~12V ±5%, current <50mA

- Sensor Cable

4 wire AWG-24 or AWG-26 shielding wire. OD=5mm



1. Red wire—Power(VCC)
2. White wire—485_A
3. Green wire—485_B
4. Black wire—Ground wire (GND)
5. Bare wire—Shield

1.3 Technical Parameter

Measuring Range	0~80ppt
Response Time	<10 sec
Housing IP Rating	IP68
Accuracy	±1ppt
Body Material	Ti
Temperature Range	0 ~ 50°C
Interface	Support RS-485, MODBUS
Power	DC 5~12V, Current <50mA
Temperature Sensor Type	NTC
Dimension	22x210 mm(Φ xL)
Cable Length	10m standard
Calibrations	One point and two points

Note:

1. The above technical parameters are the data under the laboratory standard solution environment.
2. The life of the sensor and the frequency of maintenance and calibration are related to the actual field conditions.

2 Installation

2.1 Configuration Table

Standard Configuration	Quantity	Unit	Remark
Salinity sensor	1	Piece	
Cable	1	Stick	10m
Small brush	1	Piece	

2.2 Sensor Installation

- Wiring and Power Supply

1) Do not use the sensor cable to hoist the sensor. It is recommended to install a cable protective cover to ensure good power supply and water tightness of the cable.

2) Make sure that the wire sequence and power supply voltage are accurate before powering on.

- Sensor Installation

1) The sensor needs to be installed vertically with the electrode facing downwards, not horizontal or even with the electrode facing upwards;

2) Considering the influence of water level, the sensor needs to be installed below the lowest water level line 30cm

note: the electrode is exposed to the air, there is a risk of damaging the electrode.

It is also recommended that the installation depth should not exceed 2 meters to facilitate subsequent disassembly and maintenance.

3) The sensor needs to be fixedly installed to avoid the probe bumping caused by factors such as water flow.

3 Calibration

3.1 Brief Introduction

Calibration method: use Smart PC software to calibrate

Note: If secondary development is involved, please contact our technical staff.

3.2 Standard Solution Configuration

10g NaCl dissolved in 1L deionized water to get 10ppt

20g NaCl dissolved in 1L deionized water to get 20ppt

50g NaCl dissolved in 1L deionized water to get 50ppt

80g NaCl dissolved in 1L deionized water to get 80ppt

4 Maintenance Schedule and Method

4.1 Maintenance Cycle

The salinity probe has strong anti-pollution ability, will not be polarized, and does not need to be cleaned frequently (except when used in viscous liquids)

Maintenance Task	Recommended maintenance frequency
Wash the sensor	Clean every 30 days
Calibrate the sensor	According to the maintenance schedule required by the competent authority

4.2 Maintenance Method

1) Clean the surface of the sensor

Clean the outer surface of the sensor with tap water. If there are still debris remaining, wipe it with a moist soft cloth. For some stubborn dirt, you can add some household detergent to the tap water to clean.

2) Sensor inlet and outlet holes

Wipe with a cotton swab or soft cloth. For some stubborn dirt, add household detergent to the tap water to clean.

3) Cable inspection

The cable should not be taut during normal work, otherwise the wires inside the cable may break, causing the sensor to fail to work normally;

4) Shell inspection

Check whether the housing of the sensor is damaged due to corrosion or other reasons.

4.3 Precautions

The probe contains sensitive optical and electronic components. Make sure that the probe is not subject to severe mechanical shocks. There are no parts inside the probe that need user maintenance.

5 Frequently Asked Questions

Table 5-1 lists the possible problems of the ammonia nitrogen sensor and the solutions. If your problem is not listed or the solution cannot handle your problem, please contact us.

Fault	Possible reasons	Solution
The operation interface cannot be connected	Controller and cable connection error	Reconnect the controller and cables
The measurement result is not displayed	Cable failure	Please contact us

Table 5-1

6 Warranty Description

This quality guarantee does not cover the following situations:

1. Damage caused by force majeure, natural disasters, social unrest, war (announced or unannounced), terrorism, civil war or any government coercion
2. Damage caused by improper use, negligence, accident or improper application and installation
3. Freight for returning the goods to our company
4. Expedited or express freight for parts or products within the scope of warranty
5. Travel expenses for local warranty repairs

This quality assurance includes all the content of the quality assurance provided by its products.

This quality assurance constitutes a final, complete and exclusive statement about the terms of the quality assurance. No one or agent is authorized to formulate other warranties in the name of our company.

The above-mentioned remedial measures such as repair, replacement or refund of the purchase price are special cases that do not violate this warranty, and the remedial measures such as replacement or refund of the purchase price are all for the company's product itself. Based on strict liability obligations or other legal theories, the company is not liable for any other damage caused by product defects or negligence in operation, including subsequent damages that have a causal relationship with these conditions.



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