

C Series

Conductivity Sensor

Operating Manual



Preface

Please read this manual carefully before use.

When receiving the instrument, please open the package carefully, check to ensure the instrument and accessories have not been damaged during transportation. If any issues are found, please contact our after-sales service department or regional customer service center. Ensure item is returned in the original packaging.

Only properly skilled authorized personnel should carry out installation, setup and operation. Ensure that the power cable is physically separated from the power supply during the initial wiring connection or repair.

For example,

1. Apparent damage to the sensor
2. The sensor does not work properly or provides specified measurements
3. The sensor has been stored for a long time in an environment where the temperature exceeds 70°C

The sensor must be installed by licensed professionals in accordance with relevant local specifications, and instructions are included in the operation manual. Comply with the technical specifications and input requirements of the controller.

Preparation before measurement

Important

The conductivity sensor has been factory calibrated. Initial on-site calibration should not be necessary.

When measuring high-purity water, avoid pollution, correctly select the constant of conductivity electrode, and preferably adopt the sealed and flowing measurement method. Otherwise, the conductivity value will increase quickly, because the carbon dioxide in the air will become conductive carbonate ions after being dissolved in high-purity water, which will affect the measured value.

If calibration is required, please follow these steps:

4. The conductivity electrode shall be rinsed twice with deionized water [or distilled water] less than 0.5us/cm before use, and then rinsed with the tested sample before measurement.
5. The value displayed by the instrument after measurement has been converted to the measured value at 25°C. If no compensation is needed, unplug the temperature electrode and the instrument displays 25°C. The measured value is the conductance value of the solution at that time.
6. The conductivity standard provides the simplest and most accurate method for calibrating conductivity sensors. Select a conductivity standard whose concentration is close to or higher than the expected sample concentration.
7. The conductivity standard can be used to verify whether the conductivity sensor responds correctly.

Re-calibration Procedure

1. Prepare a calibrated beaker of appropriate size, which will allow you to completely immerse the conductivity sensor tip.
2. Check to determine if there are any deposits on the electrode sensing area. If the sensing surface (platinum black) is coated, clean the sensor before continuing. Flush the sensor reaction area with distilled water.
3. Rinse the calibration beaker with some standard solutions, and then pour the selected conductivity standard solution into the calibration beaker.
4. Immerse the electrode and ensure that the sensing area of the electrode is completely immersed in water. If there is a vent hole in the sensing area, the electrode must be submerged under the vent hole. Shake sensor to ensure that trapped air bubbles are released from sensing area

Important

- a) Bubbles in the control area of the conductivity electrode will cause serious interference to the ion flow and will lead to erroneous readings.
 - b) When measuring high-purity water, avoid exposure to CO₂, correctly select the constant of conductivity electrode.
 - c) The recommended procedure is to adopt the sealed and flowing measurement method.
5. Enter the standard value of the standard used from the menu.
 6. Start calibration. Wait for the reading to stabilize, and then adjust the reading to the temperature compensation value of the conductivity standard.

NOTE:

- a) Please refer to supporting instruments for specific calibration process.
 - b) Repeat the process to ensure that the calibration is correct.
7. Ensure sensor is flushed with DI water prior to storage.

Wiring

4-20mA 2-wire

- ❶ Blue: mA-
- ❷ Brown: mA+



4-20mA 4-wire

- ❶ Transparent: 4-20mA
- ❷ Black (thick): Ref
- ❸ Red: Temperature
- ❹ Black: Temperature

Connects directly to ProCon® controller

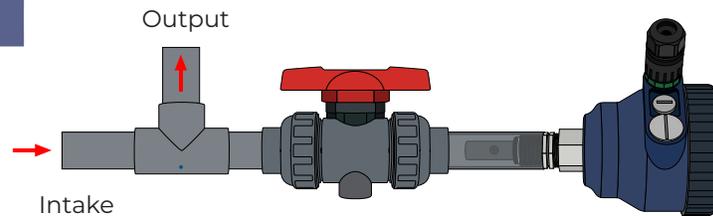


4-20mA + RS485 Output

- ❶ Red: 9-24VDC +
- ❷ Black: 9-24VDC -
- ❸ Transparent: 4-20mA
- ❹ Black (thick): Ref
- ❺ Green: RS 485 A
- ❻ White : RS 485 B



Typical Installation



Maintenance of conductive electrode

Cleaning of conductive electrode

1. The organic component contamination on the electrode can be cleaned with warm water containing detergent, or it can be cleaned with alcohol.
2. Calcium and magnesium precipitates are best cleaned with 10% citric acid.
3. The bright platinum electrode can be mechanically cleaned with a soft brush. Ensure that no nicks or scratches are made on the electrode sensor.

⚠ Do Not use a screwdriver or sharp object to clean the electrode surface ⚠

4. The platinum electrode plated with platinum black should only be cleaned using the chemical method. The coating (platinum black) on the electrode surface will be damaged if cleaning with a soft brush.

Warranty

Icon Process Controls warrants this product to be free from significant deviations in material and workmanship for a period of one year from the date of purchase. If repair is necessary and has not been the result of abuse or misuse within the warranty period, please return to **Icon Process Controls** and amendment will be made without any charge. **Icon Process Controls** Customer Service Center will determine if product problem is due to deviations or customer abuse. Out of warranty products will be repaired on a charge basis.

Authorization must be obtained from **Icon Process Controls** Customer Service Center to issue a RIR number before returning items for any reason. When applying for authorization, please include date requiring the reason of return. Instruments must be carefully packed to prevent damage in shipment and insured against possible damage or loss. **Icon Process Controls** will not be responsible for any damage resulting from careless or insufficient packing.

Warning: Damage as a result of inadequate packaging is the User / distributor's responsibility. Please follow the guidelines below before transporting.

Use the original packaging material if possible, when transporting back the unit for repair. Otherwise wrap it with bubble pack and use a corrugated box for better protection. Include a brief description of any faults suspected for the convenience of Customer Service Center, if possible. If there are any questions, feel free to contact our Customer Service Center or distributors.



Need a great Controller?

Pair your C Series sensor with the industry's most innovative and standard feature rich controllers

iconprocon.com

Use with any of the following controllers — **NO PREAMP REQUIRED**



SINGLE INPUT



DUAL INPUT



FIVE INPUT

