R7 Series
Process ORP Sensor

Industrial
Analytical
Equipment

ProCon®
Sensing Tomorrow's Innovations Today

ICON™
PROCESS CONTROLS
Corrosion-Free
Instrumentation Equipment

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.

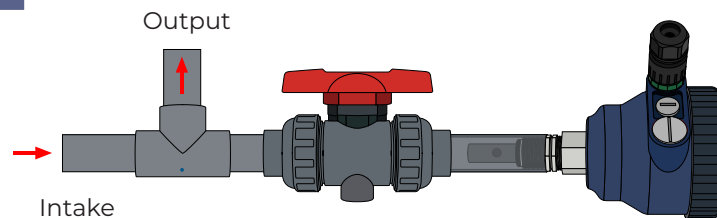## Preparation before measurement

Important

Be sure to calibrate your sensor prior to use.
For calibration details, please refer to the operating instructions of your ProCon® Controller

Sensor Installation

Connect the sensor wires to the ProCon® controller.
Remove the protective cap.

Typical Installation

Output

Intake

ORP Sensor Calibration

Use a standard buffer reference solution with known ORP value. (always use a fresh buffer solution).

Prior to calibration please ensure that the sensor tip is cleaned with DI water.

Carefully wipe any excess water with a soft paper towel and gently wipe the platinum sheet to keep it clean.

Immerse the sensing electrode into ORP buffer for calibration. Please follow SimplCal® instructions on your ProCon® controller.

If the sensor has not been used over a long period of time the electrode will be passivated, whichreduces the sensitivity and reaction time of the sensor.

To restore sensor performance please follow these steps:

1. Immerse the platinum electrode into a solution of 0.1 M diluted HCL for a period of 24 hours. at the end of the electrode can be soaked with 0.1 M diluted hydrochloric acid for 24 hours

2. Diluted hydrochloric acid 0.1 M preparation: 9ml hydrochloric acid diluted added to 1000ml distilled water

3. After 24 hours soak the sensor tip in 3 M KCl solution for several hours, so that its performance is restored.

4. Always keep the electrode cables and connectors clean and dry.

Electrode Use and Maintenance

The ProCon® ORP electrode consists of a platinum or gold tipped sensing plate. The sensing tip should always be kept clean and bright. If the platinum/gold plate of the electrode becomes rough or coated after measurement the sensor should be cleaned with appropriate solution.

Please clean it as follows: (for reference)

Contaminents:

Inorganic Metal Oxide: Less than 1m dilute (hydrochloric acid)

Organic Oil and Grease thin detergent: Weak alkali

Resin: high molecular substance: Dilute alcohol, acetone, hexyl ether

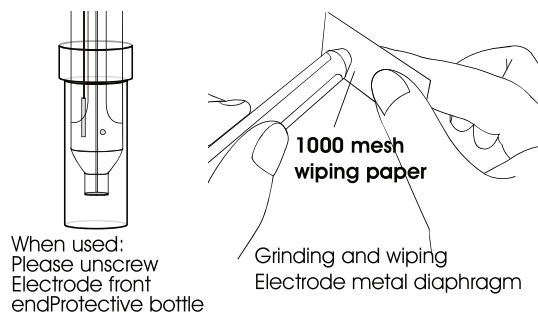Protein blood cell precipitate acidic: Enzyme solutioon (pepsin)

Pigment substances: Bleaching solution, hydrogen peroxide

Inorganic Contamination: Immerse the electrode in 0.1 M dilute hydrochloric acid for 15 minutes, gently wipe the platinum/gold surface of the electrode with a cotton swab, and then clean it with tap water.

Organic Matter or Oil: Immerse the electrode in tap water with a small amount of detergent, and thoroughly clean the sensing surface of the electrode sensor. Gently wipe the platinum/gold surface of the electrode with a cotton swab, and then t=rince it with tap water.

The cleaning is completed.

If the platinum sheet of the electrode has formed an oxide film, please polish the sensing surface with toothpaste or 1000 mesh fine sandpaper, and then clean it with tap water. (see below) The platinum sheet is connected with the glass. Please handle it carefully when polishing.

1000 mesh wiping paper

When used:
Please unscrew
Electrode front
endProtective bottle

Grinding and wiping
Electrode metal diaphragm

ORP Process Sensor	
R7G	General Environment
R7C	Complex Environment

Wiring

4-20mA 2-wire
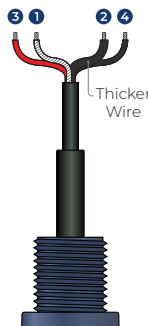
❶ Blue: mA-

❷ Brown: mA+

4-20mA 4-wire
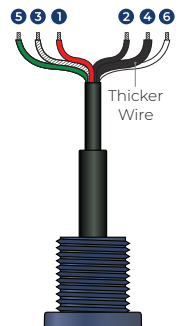
❶ Transparent: 4-20mA

❷ Black (thick): Ref

❸ Red: Temperature

❹ Black: Temperature

Connects directly to ProCon® controller

Thicker Wire

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

Thicker Wire

Blind Display

Cable Grip Wire Connector Combo

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.

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by

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Need a great Controller?

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

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Use with any of the following controllers — NO PREAMP REQUIRED

SINGLE INPUT

DUAL INPUT

FIVE INPUT

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