



WaterTechw² Redox8000

Redox/ORP Dip Sensor

PRODUCT DATASHEET

APPLICATIONS

Intake Protection
Activated Sludge Control
Disinfection Control
Industrial Effluent Control

MEASUREMENT PRINCIPLE

Combination Double Junction ERP
Redox Electrode

FEATURES

Built-In Temperature Compensation
Self Cleaning Flat Surface Electrode
Enhanced ERP Reference System
Mercury (Calomel) Free

BENEFITS

Improved Effluent Quality
Reduced Operating Costs
Longer Time Between Calibration

INSTALLATION OPTIONS

Self Cleaning Flexible Coupling for Dip
Assemblies

COMPATIBLE MONITORS

7300w² Monitor

ALTERNATIVE SENSORS

WaterTechw² Redox8000 Flowcell
Version



Measurement of Redox or ORP is useful in many water, wastewater and industrial water processes, for example the control of disinfection processes such as chlorination in cooling towers. The electrode design is very similar to the equivalent pH electrode (WaterTechw² pH8000), the difference being that the pH glass is replaced with a Platinum band.

The measurement of the oxidation-reduction potential (Redox or ORP) of an aqueous solution is a broad, non-specific indicator of the chemical activity of the solution. In drinking water processes Redox measurement is a highly effective tool for controlling chlorine and ozone treatment, it provides an excellent indicator of the ability of the disinfectant to remove contaminants from the water.

In wastewater processes Redox measurement has the ability to provide an indication of the condition of the anoxic and anaerobic zones within an activated sludge (ASP) plant's aeration tanks, this is beyond what is possible with the far more commonly used Dissolved Oxygen measurements. The measurement can also be used as an indicator of the load entering a processing plant, giving an early warning of potential control problems.

For installation in applications where fouling is anticipated we recommend that the sensor is installed using our specially designed mounting system, with a flexible joint in the mounting shaft. The flexible joint moves the sensor in the process, reducing bio-fouling and allowing rags to fall away from the assembly. This motion is similar to that achieved by using a floating ball assembly, with the added advantage of placing the sensor below the surface of the liquid. In applications where fouling is not expected or where there is insufficient space alternative mounting arrangements are available.

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WaterTechw² Redox8000

Electrode Details

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New ERP Reference
Extended length reference path to
slow contaminants

Flat Surface Self Cleaning
Electrode resists coating and fouling

Acryl-2 Gel
Heavy Duty Gel resists chemical attack

Increased Gel Capacity
For longer sensor life

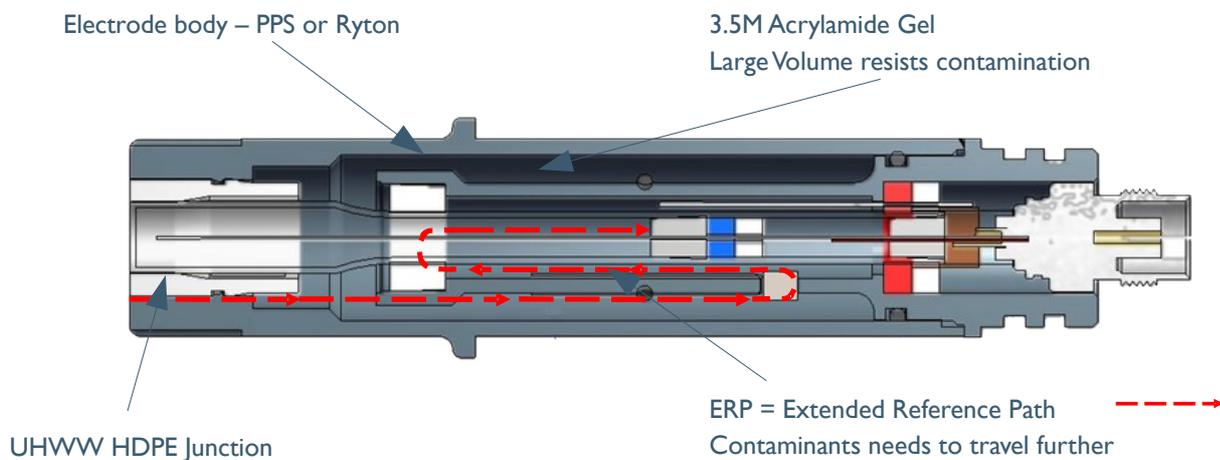
Double Junction Reference
Greater durability in harsh
environments

PPS (Ryton) Construction
Improved chemical and temperature
performance



The WaterTechw² Redox8000 Sensor has been designed to provide highly reliable Redox and Temperature measurements. The sensor uses a flat surfaced electrode which includes an extended reference path, these features combine to provide an extremely robust Redox measurement, suitable for use in surface water, waste water and drinking water applications.

The electrode uses field proven flat surface, self-cleaning technology. The reference system is enhanced by the Extended Path Reference (ERP) design which provides a complex path to protect the reference in the presence of interacting ions such as proteins, silver and sulphides.



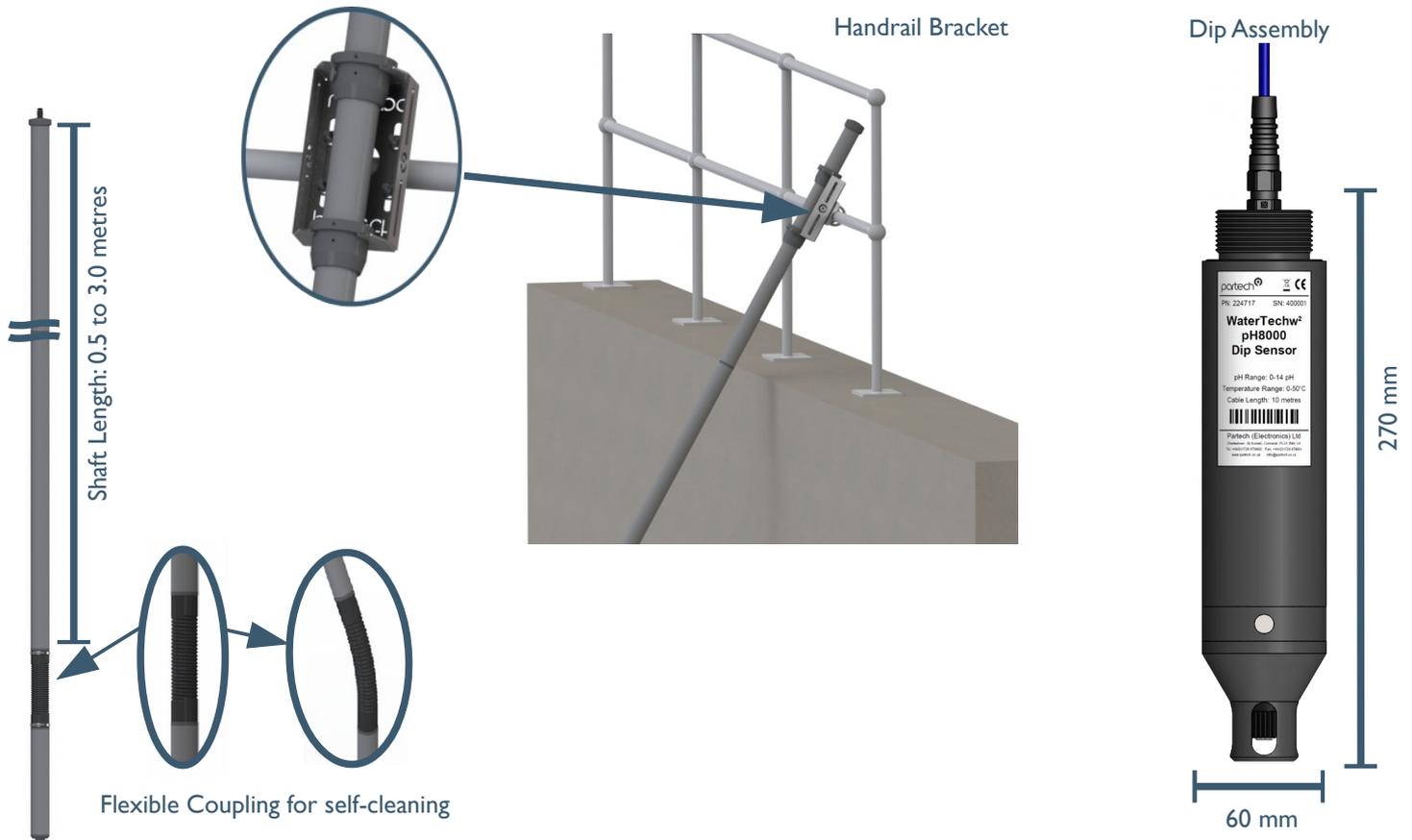
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WaterTechw² Redox8000

Dip Assembly

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Shaft Assemblies

When used in dip format the WaterTechw² Redox8000 sensor can be supplied with a shaft assembly and accompanying handrail/wall brackets. These parts have been designed to suit the majority of installations, alternatives and bespoke solutions can be supplied if necessary. Shaft lengths up to 3 metres are offered as standard with longer lengths being catered for when required subject to safety and shipping considerations.

Self-Cleaning Flexible Coupling

In applications where fouling is likely we offer a flexible coupling in the mounting shaft, as illustrated above. This coupling allows the sensor to move in the flow, this means that fouling does not get a chance to build up on the electrodes flat face. Ragging is also swept away from the assembly by the flow rather than wrapping round the shaft. This method of cleaning has consistently proven effective and at a much lower cost than complex air purge or water jet cleaning alternatives.

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Redox/ORP Dip Sensor

PRODUCT SPECIFICATION

Measurement

Accuracy
Resolution
Range
Measurement Principle

Service Requirement

Electrical

Power Supply
Interface to Monitor
Cable Entries
Cable Type

Environmental Data

Operating Temperature
Storage Temperature
Pressure
Location

Physical (Dip excluding shaft)

Dimensions
Weight
Protection Class
Enclosure Material
Electrode body
Cable Length

Mounting

Installation Type
Mounting Shaft
Handrail attachment

Redox

+/- 2mV pH
1 mV
-1999 to +1999 mV
Redox:

Temperature:

Electrode Replacement

Periodic calibration and cleaning are required at a frequency determined by the application

12 Volts from Monitor

RS485

Integral Cable Gland

4 core, Polyurethane Coated

0 to 70°C

0 to 70°C

7.5 Bar, de-rated at higher temperature

Indoor/Outdoor

60 mm diameter x 270 mm long

0.95 kg (inc 10 metres of cable)

IP68

Black PVC with Nylon Cable Gland

PPS (Ryton)

10 metres standard, 100 metres maximum

Dip

1 to 3 metres in 1 metre increments

See documents 223980DS, 224567DS, 132582DS, 132570DS for options

Order Codes

Part No	Description
224731	WaterTechw ² Redox8000 Dip Assembly includes Redox Electrode and Temperature Sensor (Redox Range: -1,999 to + 1,999 mV, Temperature Range: 0-50°C, Cable Length: 10 metres)
224732	WaterTechw ² Redox8000 Dip Assembly includes Redox Electrode and Temperature Sensor -1,999 to + 1,999 mV, Temperature Range: 0-50°C, Cable Length: 20 metres)

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The company reserves the right to alter the specification without prior notice. E&OE

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