



# ORPSense

## Continuous Online ORP Meter

The ORPSense range of ORP Meters from Pi utilise the very latest and best ORP sensors available in the world today for measuring the online Redox potential of any aqueous solution. They are platinum based sensors with integral reference electrodes which use no reagents, are extremely stable, and have reduced maintenance and reduced whole life costs.

- **Up to 3 years continuous operation**
- **Stable and reliable - excellent process control**
- **Suitable for all potable and process waters**
- **Suitable for very low conductivity waters**
- **Suitable for use in AutoFlush (see separate brochure)**



*"The ORP sensors from Pi are much more reliable than others and they have a very long life."*

**Bhupendra Patel, Africa**

The ORPSense sensors and flow cells are available with different controllers giving you the same great performance with different communication, display, and control options. With the ORPSense range of redox controllers, you get everything that you need - and nothing that you don't.

### CRONOS® ORPSense



- High Quality - Lowest Cost
- Multilingual
- High resolution grayscale display
- 9 buttons for easy navigation
- Graphing and datalogging
- Enclosure; wall, panel, pipe or pole mounting. IP65/Nema 4x.
- Options:
  - **Modbus RS485/LAN**
  - **Profibus DPV 1**
  - **Up to 2 sensors**
  - **PID/flow proportional controls**
  - **Remote sensors**
  - **Colour display**
  - **Downloadable data logs**

### CRIUS® 4.0 ORPSense



- High Quality - Lowest Cost
- Multilingual
- High resolution colour display
- Intuitive user interface
- Downloadable data logs
- Customisable home pages
- All CRONOS® options plus:
  - **Up to 4 sensors**
  - **Remote access via LAN**
  - **Remote access via 3G/4G**
  - **Expandable to 16 sensors**

***For more information please see the individual brochures for CRONOS® and CRIUS® 4.0***

### Sensor Selection

#### ORP1

- Suitable for pools and spas
- Max. temp 80°C
- Flow cell mounting options



#### ORP2

- Suitable for potable and process waters
- Max. temp 80°C
- Flow cell, at line tee, AutoFlush flow cell and welding stub mounting options



#### ORP3

- Suitable for waste and process water
- Max. temp 80°C
- Flow cell, at line tee, AutoFlush flow cell, AutoClean immersion, handrail and welding stub mounting options



#### ORP5

- Suitable for potable, waste and process waters
- Max. temp 100°C
- Flow cell, at line tee, AutoFlush flow cell, handrail and welding stub mounting options



## Principle of Operation

At the heart of the ORPSense are the ORP electrodes. These electrodes are filled with a polymeric gel. This innovative design makes the electrodes more responsive and with a longer life than ordinary electrodes (up to 3 years).

ORP operates by measuring the potential between 2 electrodes. The potential tells operators the tendency of the water to oxidise (or reduce) pollutants. Tendency can be seen as a useful measure of the rate of oxidation.

Despite all of the additional functionality that this unit has to offer, the purchase costs are less than or comparable to, its competitors!

## Automatic Cleaning

As described in a separate brochure (ISB36 AutoFlush), the ORPSense can come equipped to automatically clean itself at user defined intervals. The AutoFlush is particularly useful in food preparation, pulp and paper, and many applications where there is likely to be a build up of solids in the sample. Automatic cleaning is available for at line, and in line versions including dip and screw in AutoClean pipe versions. Please see the AutoFlush brochure (ISB136) available on our website.

## Water Treatment

- Remote Sites
- Cooling Towers
- Food Preparation
- Paper Mills
- Chemical Process
- Mining

Anywhere you have a requirement to measure ORP is a suitable application for the ORPSense. The ORPSense ORP meter range is particularly suited to working in sites where reliability and ease of use are most important.

## Specification\*

Type:	ORP1	ORP2	ORP3	ORP5
	Combined reference, and measuring electrode		Combined reference, and measuring electrode	
<b>Reference Type:</b>	Ag/AgCl gel filled	Ag/AgCl gel filled	Ag/AgCl gel filled	Ag/AgCl gel filled
<b>ORP Range:</b>	-1200 to 1200mV	-1200 to 1200mV	-1200 to 1200mV	-1200 to 1200mV
<b>Pressure Range:</b>	0-7 Bar	0-7 Bar	0-7 Bar	0-7 Bar
<b>Response Time:</b>	Application specific, typically full response within 30-45 seconds			
<b>Temperature Range:</b>	0-80°C	0-80°C	0-80°C	0-100°C
<b>Conductivity:</b>	>100µS/cm	>100µS/cm	>100µS/cm	>100µS/cm**
<b>Wetted Surface:</b>	PVC/Glass/Pt	PVC/Glass/Pt	PVC/Glass/Pt	RYTON/Glass/Pt
<b>Junction:</b>	Single Gelled	Single Gelled	Double Gelled	Double Gelled
<b>Cable Length:</b>	1m	6m	6m	6m
<b>Shelf Life:</b>	12 months	12 months	12 months	12 months
<b>Estimated Life (Application Dependent):</b>	12-18 months	12-18 months	12-18 months	18 months
<b>Warranty:</b>	3 months	3 months	3 months	3 months

*\*All subject to change without notice*

*\*\*For applications below 100µS/cm, please contact Pi*

## Multi-Sensor Systems

The whole range of ORPSense ORP meters can be fitted with additional sensors such as chlorine or pH. Please ask your local distributor for more details.

*"Multi-sensor systems can save considerable sums without compromising measurement integrity"*

**Dr Craig Stracey, UK**

## Installation

The ORPSense can be installed in a variety of auxiliary flow cells and self-cleaning devices. Please see the ORP Selection guide (ISB157) available on our website.

## Recommended Reading

An ORP Selection Guide is available on our website.



**ORP2 sensor in a single open or closed flow cell**



**ORP2 sensor in a double open or closed flow cell with a chlorine sensor**