

## SENSOREX FLAT SURFACE OPERATING PRINCIPLES

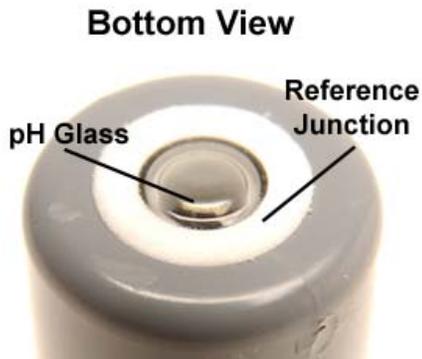
Sensorex pioneered the development of the Flat pH Sensitive Glass Electrodes and has been the leader in supplying this design to industry for 20 years. All of Sensorex Flat Surface Electrodes are combination pH/Reference (or ORP/Reference) electrodes with double reference junction for added protection against contamination.

All pH and REDOX (ORP) electrodes in this series are easy maintenance, cartridge-type combination electrodes with quick disconnect BNC connectors. Electrode installation and removal can be done in just a few seconds and no tools are needed.

Built into the electrode's body is a sealed, gel-filled double junction reference half cell. This design provides an extra barrier against reference side contamination. Also, it allows the electrodes to be used in applications where sulfides, mercaptans, heavy metal ions, and similar materials are present.



In the center of the measuring surface is the pH-responsive flat glass surface. This surface is surrounded by the flat porous reference junction. The large area of this porous junction has thousands of pores that provide excellent sample contact.

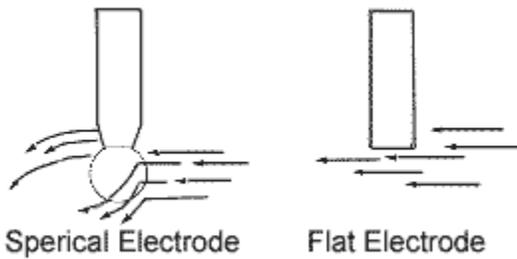


The junction is enclosed by the electrode body. At the top of the electrode body is the quarter-turn, quick disconnect BNC connector and the leak-tight O-ring seals. All replacement electrodes are supplied complete with O-rings.

The flat sensing surface is rugged, abrasion resistant, and self-cleaning. In both coating and abrasive applications these cartridge-type electrodes can improve measurement accuracy, reduce maintenance, prolong electrode life and virtually eliminate breakage. Typical applications for this type of electrode include:

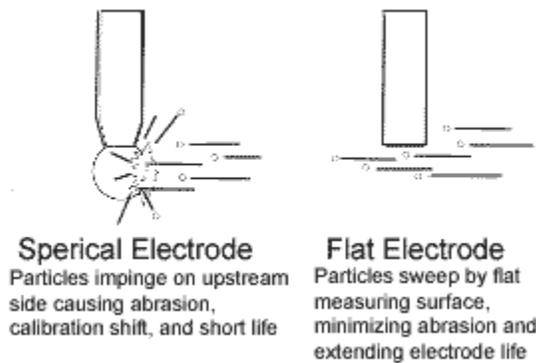
- Oily Waste Water
- Lime Slurries
- Sugar Refining
- Head Box Pulp pH
- Emulsions
- Gas Wet Scrubbers
- Flocculent Coagulation
- And many more

## Self Cleaning Operation



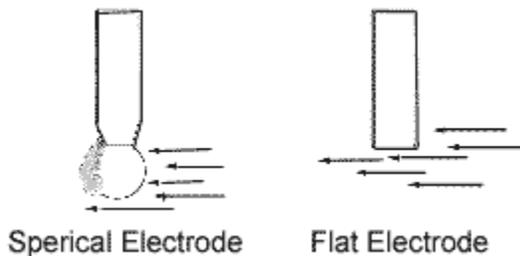
This simple, but effective system has no moving parts and requires no power. When the electrode's flat measuring surface is exposed to turbulent flow, the resulting scrubbing action provides a self-cleaning effect in most applications. For the typical spherical electrode, the downstream side is shielded from the flow; coating forms on this dead flow area, causing sluggish and drifting signals.

## Abrasion Free Operation



Particles sweep by the electrode's flat, non-protruding surface without impinging on or abrading it--extending electrode life. The non-protruding design virtually eliminates electrode breakage. Particles impinge on the upstream side of the spherical bulb, causing abrasion, calibration shift, and short life.

## Viscous Material Operation



Viscous materials flow by the electrode's flat measuring surface in shear. Flow in shear causes new material to uniformly displace the old material. Having fresh material at the electrode's surface is essential for measurement accuracy. Downstream side of a spherical electrode is shielded from the flow; old sample is not displaced--giving inaccurate readings.