



BACKGROUND

Many industries use boilers to create steam and energy. The steam created from boilers can provide energy to many different processes. The importance of steam and boiler water is what makes conductivity a significant part of boiler water applications.

Conductivity plays a crucial role in monitoring impurities in boiler water. The ability of water to conduct electricity is measured through conductivity; the amount of solids dissolved in the water is related to the water's ability to conduct electricity. Dissolved solids or impurities in boiler water will cause corrosion in the boiler water treatment if left unwatched and unregulated. Conductivity helps monitor any addition of chemicals in the water, keeps track of the impurities, and measures solids dissolved in the water. Because the water used for boilers contain different levels of impurities, it is important that these impurities be removed to protect the boiler from corrosion and damage. Also, when dissolved solids are concentrated in the water, these impurities will eventually contaminate the different parts of the boiler and provide inaccuracies.

Since only pure water leaves the boiler when steam is made, impurities such as leftover deposits can build up and cause future problems for the boiler. One way to stop early corrosion and damage is through boiler blow down. Blowing down the water helps avoid boiler problems by preventing solids from building up.

By monitoring conductivity measurement, the water quality will be carefully watched and will help the meters produce accurate measurements. Using conductivity to measure boiler water offers many benefits such as the reduction of blow down, operating, maintenance, repair, and energy costs.

INDUSTRIAL CONTACTING CONDUCTIVITY SENSORS

These heavy duty electrodes are constructed with stainless steel bodies, making them great for boiler applications. Able to withstand high temperature and pressure, the electrodes are capable of submersion or in-line mounting applications.

Sensorex has designed special electrodes for boiler blow down. [The Industrial Contacting Conductivity Sensors](#) are designed to withstand extreme conditions of up to 200° Celsius and 250 psig. The boiler conductivity sensors (316 SS construction) are made with stainless steel and have thermally resistant PEEK insert and high temperature O-rings. With these capabilities, they are ideal for boiler water applications.

For general use sensors, Sensorex manufactures the CS675, CS676, and CS650 for conductivity measurements. These sensors are also available with ATC. For high pressure conductivity, the models CS675HP, CS676HP, and CS650HP can withstand pressures of up to 300 psig. These sensors are also available with ATC.