

# Sodium Analyzer



## THORNTON

Leading Pure Water Analytics

2300Na Sodium Analyzer

Fully automatic calibration

Trace sodium sensitivity

Reagent addition confirmation

Grab sample capability

Low maintenance



## Automated Sodium Measurement

Sensitive and Reliable

METTLER TOLEDO



# 2300Na Sodium Analyzer for Water Treatment & Contamination Detection

**The Thornton 2300Na Sodium Analyzer offers a new design for a traditional measurement for pure water treatment and power cycle chemistry monitoring. This Analyzer provides assurance of water purity to maximize water production and minimize corrosion. Early detection of trace contamination is enabled with minimal operator supervision.**

## Features

- Fully automatic, unattended calibration
- Reagent addition confirmation by pH
- Convenient grab sample measurement
- Slow and complete reagent consumption
- Simultaneous display of sodium, adjusted pH, temperature and calibration progress
- Automated electrode conditioning with each calibration
- Four analog outputs for sodium, pH and temperature with choice of scaling
- Choice of two enclosures

## Benefits

- Assures reliable operation while saving technician time
- Assures consistent measurement results
- Additional samples and QC checks for other areas of the plant
- Saves reagent costs and eliminates waste disposal issues
- Provides convenient analyzer and sample status at a glance, saving operator time
- Minimizes the need for electrode etching
- Enables full integration into data acquisition or control systems
- Fully enclosed for dirty plant environments or with controls conveniently accessible for clean sample rooms

## Applications

**Ultrapure water monitoring** at sub-ppb sodium levels can assure the highest quality water is being delivered. Sodium breakthrough of a polisher cation resin is immediately detected at sub-ppb levels and contaminated water can be diverted before it reaches critical areas.



**Pure water treatment cation exchange monitoring** detects the first breakthrough of sodium to trigger regeneration before contamination reaches subsequent treatment stages. The 2300Na Analyzer has sufficient reagent delivery capacity to handle the acidic samples from cation exchanger effluent.

**Power steam quality monitoring** protects turbines from sodium attack that would result in stress corrosion cracking and other failures. Sodium measurement and control help to meet turbine manufacturer warranty requirements.

**Power condensate monitoring** can detect very small leaks early to allow time to plan corrective action before the leaks grow and require shutdown. Condensate polishers can also be monitored for breakthrough.



# 2300Na Sodium Analyzer

## Straightforward Operation

### Operation

The sample passes through an overflow assembly that assures precise pressure and flow regulation. The flowrate is set by a needle valve and rotameter at only 40 mL/min, saving pure water and reagent. Diisopropylamine vapor diffuses into the sample without contamination through gas-permeable tubing.

The reagent raises the pH of the sample to approximately 11 pH to enable the ion-selective electrode to respond only to sodium ion concentration. The sample passes through the sodium sensor flow tube and into the larger flow chamber containing a combination probe including the reference electrode, a pH electrode and temperature compensator. The pH electrode measurement provides confirmation that the correct amount of reagent has been added to the sample. The reference and temperature

compensator are shared with the sodium measurement. The sample then passes to drain.

Electrodes incorporate Intelligent Sensor Management™ capability which stores all identification, calibration and real-time predictive maintenance data within the sensor. The measuring circuit is also built into the sensor which eliminates high impedance connections and potential signal loss.

### Calibration

The 2300Na offers both automatic and manual calibration options.

Automatic calibration is accomplished at concentrations close to the operating range. The 2300Na uses robust, relatively concentrated standard solution which is less vulnerable to contamination. This standard is automatically diluted to lower concentrations using the

double known addition method. The automatic calibration timer schedules periodic unattended calibration or calibration can be initiated from the keypad.

The manual calibration mode uses one or two standard solutions and directly calibrates at those concentrations. The standards have high enough concentration that trace contamination is minimized.

### Installation

The analyzer is provided with either a partially enclosed case for easy access to controls for use in a clean sample room, or with a full dust and water resistant lockable door for plant floor installation.

The 2300Na complies with ASTM Test Method D2791.

