

Sodium Analyzer

METTLER TOLEDO Thornton 2300Na Series

Engineering Specification EN-0120

The sodium analyzer shall use ion-selective electrode technology to provide continuous, on-line measurement of sodium ion concentration. The analyzer shall use diisopropylamine reagent to suppress both hydrogen ion and ammonium ion (in power plant samples) concentrations to prevent interference and allow measurement down to ppt levels. The analyzer shall not use more than 5 liters of diisopropylamine per year in normal operation mode. The analyzer shall be able to accurately measure sodium ion concentration in samples at sample temperatures up to 50 °C.

To further ensure reliable low level measurements the analyzer shall continuously measure the pH of the conditioned sample as a check on reagent delivery and provide an alarm on low pH. The pH sensor shall incorporate a reference electrode used for both sodium and pH measurements.

The sodium analyzer shall provide unattended, automatic calibration at a user-selectable interval. Automatic calibration shall use the double known addition method with a relatively high concentration standard solution that can be made up and used reliably. The standard solution shall be automatically diluted during calibration to achieve low concentrations approaching the range of measurement.

For measuring off-line samples from remote locations, the analyzer design shall include a grab-sample bottle and selector valve to enable convenient grab sample measurement.

The sodium/pH/reference electrode system with temperature compensators shall include built in measuring circuits that transmit robust digital signals to the included readout transmitter. The electrodes shall also contain internal memory of identification and full calibration data to simplify recordkeeping and prevent calibration mix-ups when electrodes are changed.

The analyzer readout shall have the capability to display sodium concentration, conditioned pH, sample temperature and time to next auto calibration simultaneously or it may display fewer parameters, as selected by the user. The display shall be illuminated for clear viewing in darkness or direct sunlight. The analyzer shall provide four 0/4-20 mA analog output signals, user-assigned to desired parameters with fully adjustable scaling as linear, logarithmic, bi-linear or auto ranging, as selected. A USB port shall also be provided for data acquisition and remote configuration. The USB port shall also be used for convenient firmware upgrade. The analyzer shall provide an instrument alarm plus limit alarm, each with a SPDT relay.

The analyzer shall be supplied in a partially enclosed case with easy access to all controls for clean environments, or it shall be supplied in a fully protected drip and dust resistant case with lockable door for plant floor installation, as specified. The analyzer shall operate from 100-240 VAC without modification. The analyzer shall be cULus listed and CE approved.

The sodium analyzer shall be METTLER TOLEDO Thornton 2300Na series.



Engineering Specification

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Subject to Technical Changes
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