

Engineering Specification

Total Organic Carbon Analyzer (Mettler-Toledo Thornton 550 TOC)

The Total Organic Carbon (TOC) Analyzer shall be capable of measuring Total Organic Carbon in sample water taken from a pure or ultrapure water source. The analyzer shall provide continuous measurement of a single sample stream with no interruption of sample flow or measurement. A pressurized water source will be required, as the analyzer shall have no mechanical means to introduce the sample into the analyzer.

A choice of three models shall be available to meet a broad range of applications within the pure water, ultrapure water, and other aqueous solutions processes: a standard model, a high temperature version, and an enhanced resolution model for analyzing UPW with particularly low concentrations of organics and minimal levels of dissolved gases.

Sample water pressure shall be controlled with the use of an integral pressure regulator, in order to protect the internal components of the analyzer. TOC measurement shall be determined by measuring temperature and conductivity at points in the flow stream before and after oxidizing the sample water with 185-nanometer ultraviolet radiation. The analyzer shall be capable of measuring TOC, Temperature, Resistivity or Conductivity (compensated or un-compensated) with response of less than one minute.

The TOC Analyzer shall operate from a power source of 100 to 240 VAC, 50/60 Hz, as specified. A 2 m (6 ft.) three-prong electrical power cord shall be provided with the analyzer. The analyzer shall provide an illuminated display, readable in sunlight and darkness as well as indicate (oxidized) sample flowrate in mL/min. The analyzer shall be assembled within a common laboratory-grade case, with an adjustable handle used for carrying and/or positioning the analyzer at an angle for better display visibility. All operational components shall be contained inside the analyzer case for safety and aesthetics.

The analyzer shall be provided with one 4-20mA output that is user-configurable to transmit the TOC, Temperature or Resistivity/Conductivity of the sample. Two alarm output relays shall be provided and will be user-configurable to energize upon reaching high or low setpoints for TOC, Temperature or Resistivity/Conductivity. The relay outputs shall also be capable of energizing upon an analyzer error, as defined by the manufacturer. The analyzer will be equipped to transmit operational, and configuration, data via a RS-232 serial interface port (using a sub-D 9-pin connector) and an accessory small-scale thermal serial port paper-feed printer. The analyzer shall provide low voltage DC power for this printer. An additional RS-232 serial interface port shall be provided to transmit operational, and configuration data to a third party device capable of receiving the serial communication data. Configuration settings for the RS-232 interface ports shall be defined by the manufacturer.

The analyzer shall be ISO9001 factory calibrated to NIST-traceable standards and be provided with a certificate of calibration. Accessory NIST-traceable factory-calibrated plug-in resistors, shall be available as a set, to permit routine calibration of input resistance and temperature measurements in order to verify circuit accuracy.

The (3) three analyzer models shall be a Mettler-Toledo Thornton, Inc. 550 TOC (standard model), 550-HT TOC (High Temperature model) or 550-SX TOC (Enhanced Resolution model) analyzer.

For the most current product information visit:

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