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Ease of use and reliability
Fundamentals in chemistry control

Pure water analysis and online monitoring products

ThermoFisher
SCIENTIFIC

Power plant water analysis

Pure water & online monitoring

Reliable long-term operation of a modern power plant requires large quantities of ultrapure makeup water, in addition to recycled water that is almost perfectly conditioned. The reason is simple:
Mineral deposits and particulate matter in the boiler feed water and steam generator shorten the life of the turbines, resulting in expensive repairs or replacement.

Ensuring ultra high quality water requires precise measurement of trace impurities at the parts-per-billion level, as well as the tight monitoring and control of conditioning chemicals normally added to avoid corrosion of the turbines, boilers and pipes within the plant.

The key to deposition and corrosion prevention is non-stop, real-time monitoring of trace cations, anions and dissolved gases that can contaminate high-purity water.

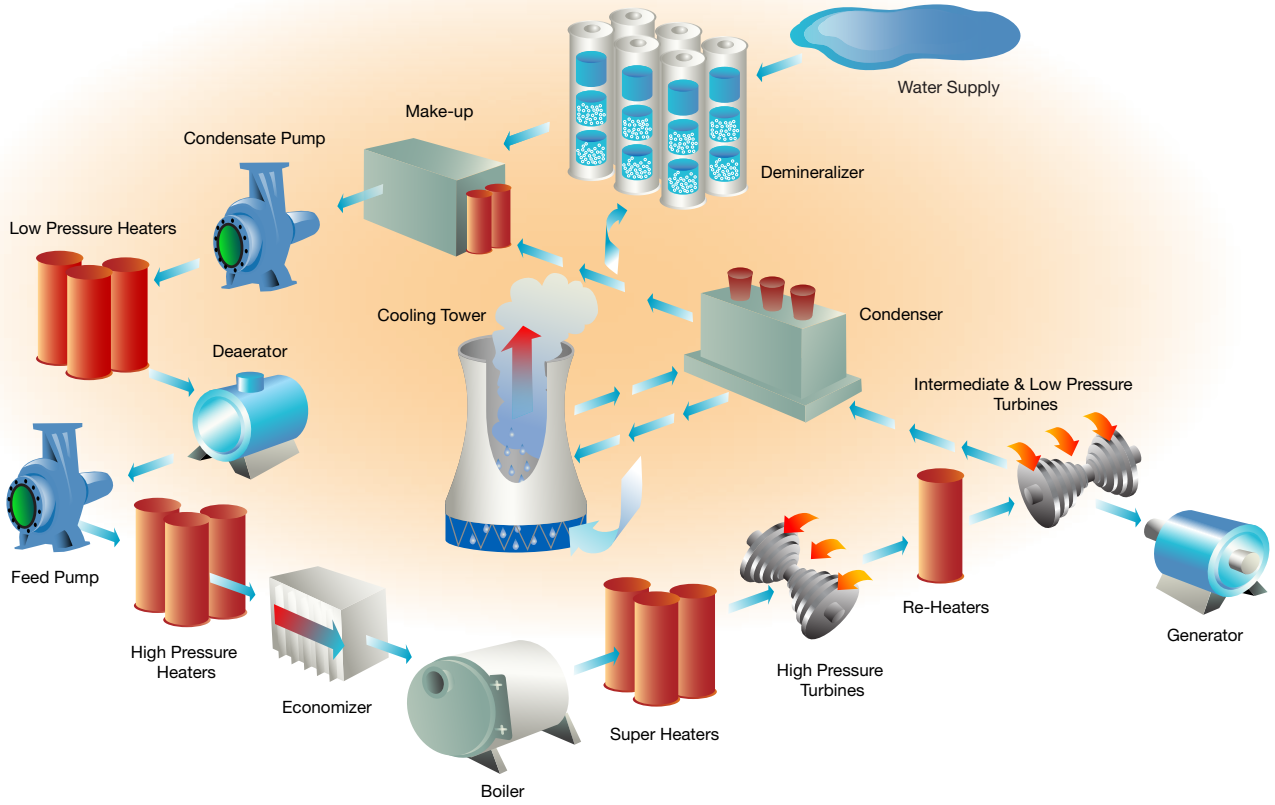
Thermo Scientific™ sensors and online water analyzers meet your needs for water purification, boiler water control, condensate, and effluent applications. Proper chemistry management such as minimization of trace salt and silica contamination, control of dissolved gases like oxygen and ammonia, and maintenance of pH ranges not only prevent costly and unscheduled outages, but also greatly extend the useful lifetime of the plant.

Water analysis concerns:

- Boiler water chemistry
- Boiler water and feed water treatment
- Steam carryover and contamination by sodium
- Sodium in condensate
- Deaerator outlet for oxygen concentration
- Sodium and silica breakthrough on demineralizers or calcium hardness breakthrough on softeners
- pH and conductivity at various points

Thermo Scientific™ Orion™ 7070iX TRO Analyzer

- Electrode based measurement technology that is not subject to interferences observed in the DPD method (color and turbidity)
- Utilizes a bead cleaning technology
- Designed to provide accurate and precise measurements – to meet low level regulatory requirements
- Simplified operation – intuitive menu simplifies navigation
- Analyzer can operate in continuous or simulated batch mode



Thermo Scientific products for power plant water treatment by process

	Pure Water Production	*Condensate*	*Deaerator*	*Boiler Feed Water*	*Boiler Water/ Blowdown*	*Cooling Water Effluent*
Thermo Scientific™ AquaSensors™ DataStick™ AquaTrace™ Dissolved Oxygen System	●			●		
AquaSensors DataStick pH Measurement System		●				
Thermo Scientific™ Orion™ AQUAfast™ AQ4500 Turbidity Meter		●				
Orion AQUAfast AQ3700 and AQ3170 Colorimeters						●
Orion 2110XP Ammonia Analyzer				●		
Orion 2118XP Oxygen Scavenger Analyzer			●	●		
Orion 2111LL Low Level Sodium Analyzer	●	●		●		
Orion 2111XP Sodium Analyzer	●					
Orion 8030cX Silica Analyzer	●				●	
Orion™ ROSS™ 2001SC High Purity pH Electrode and Low Level Conductivity Cells	●	●	●	●	●	
Orion 7070iX TRO Analyzer						●
Orion 2295 Phosphate Analyzer					●	
Orion 2117LL Low Level and Orion 2117XP Chloride Analyzers					●	

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Featured Products

Thermo Scientific™ Orion™ 2111XP Sodium Analyzer

- Application packages available: Ammonia, Diisopropylamine (DIPA) and Cation/High Acid
- Stable, drift-free measurements are designed to eliminate the need for frequent calibration

Thermo Scientific™ Orion™ 8030cX Silica Analyzer

- Wide measurement range – 0 to 5000 ppb – covers a variety of analytical needs
- Reduces operational supervision through automatic features, including: calibration, validation, measurement, and cleaning
- Intuitive, full-color touchscreen interface
- Minimal maintenance and low operating cost – only replace reagents every 100 days

Thermo Scientific™ Orion™ 2295 Phosphate Analyzer

- Standard colorimetric method for 0.2 to 50 ppm detection range
- Helps save costs with low reagent consumption
- Simplified fluidics system designed to provide reliable and accurate measurements
- Compact footprint

Thermo Scientific™ Orion™ 2001SC High Purity ROSS™ pH Electrode

- Drift-free proprietary ROSS reference system, with precision of 0.02 pH
- Designed to provide reliable, reproducible results in high purity samples
- Fast response for online pH electrodes

Thermo Scientific™ Orion™ 2117LL Low Level Chloride Analyzer

- Detects chloride in real-time – providing accurate & reliable results
- One of the few real-time monitors on the market capable of reading down to 5 ppb
- Simple operation and minimal maintenance required – no moving parts

Leaders in sensing technology

From supplying safe drinking water or reliably controlling wastewater treatment processing, to delivering significant value to industrial water treatment providers – our water experts can help you meet your application challenges. Thermo Scientific process water analysis measurement products are designed for flexibility, ease of use, and low cost of operation in water treatment, offering accuracy you can trust with confidence year after year. Select from our digital plug-and-play systems, advanced optical DO sensors, and a broad portfolio of differential and analog measurement capabilities to build your water quality solution.

Find out more at **thermofisher.com/processwater**

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