

Thermo Scientific Orion 2230 Silica Analyzer

Early online detection of low level silica

Thermo Scientific products provide fast, accurate and reliable online Silica detection – optimized for any application that requires early detection of low level Silica.



When system efficiency is paramount, silica monitoring is a critical measurement. High silica levels can coat internal process components, leading to decreased efficiency, diminished safety, damage, and costly downtime.

Our Thermo Scientific™ Orion™ 2230 Silica Analyzer provides continuous and online measurement of reactive silica to protect mission critical systems.

Thanks to the optimized design of the Orion 2230 analyzer, reagent consumption is drastically reduced as compared to other systems, thus reducing the overall cost of ownership.

Advantages:

Low reagent consumption – thanks to a highly optimized, state of the art design.

Wide range of detection – 0 to 5000 PPB provides a more complete picture of silica intrusion in the process.

Large, easy to read display – allows for easy viewing in all types of lighting conditions.

Simple menu navigation – an easy to read and understand menu structure.

Compact size – smallest total system footprint on the market today, capable of being panel or wall mounted.

Markets:

- Power
- Semiconductor
- Pharmaceutical
- Pulp and Paper
- Chemical

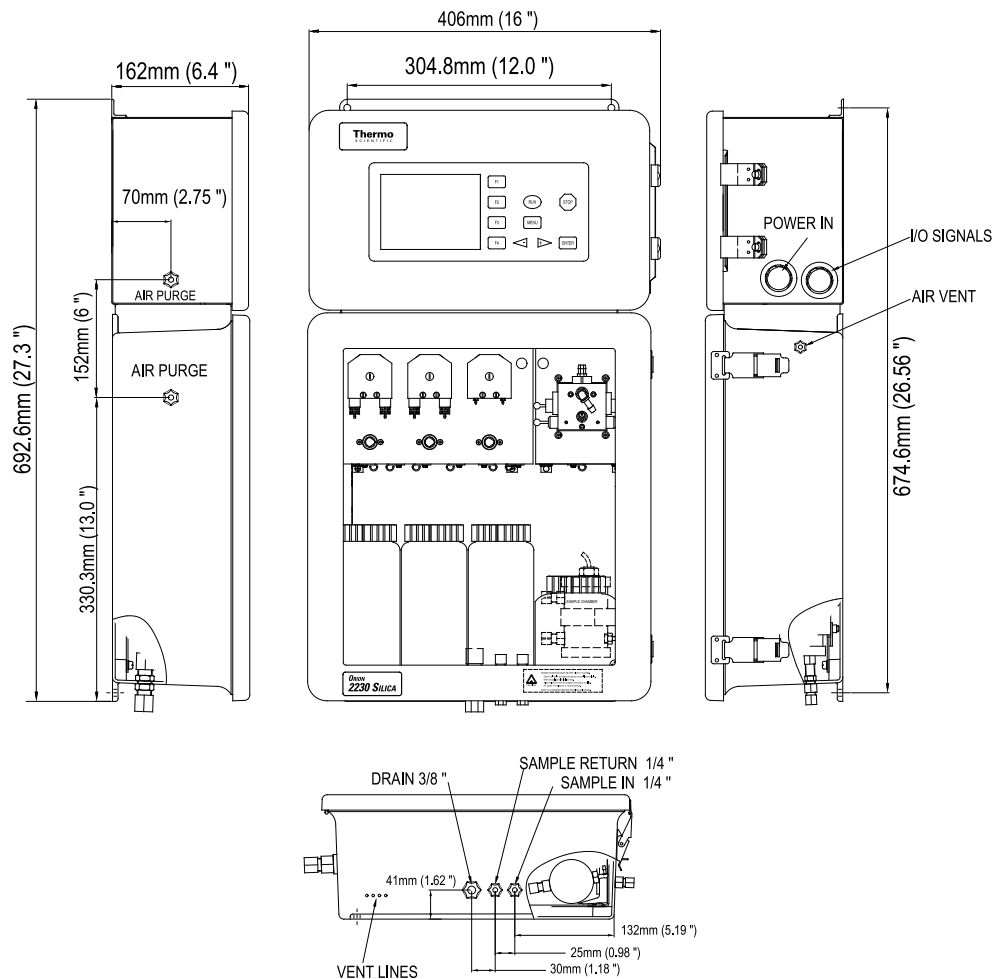
Applications:

- Demineralizer
- Boiler water

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Engineering Specifications

1. The silica analyzer shall measure silica concentrations using a Heteropoly-molybdenum blue colorimetric method.
2. Measurement shall be semi continuous and be <15 minutes.
3. The range of measurement shall be between 0 and 5000 ppb or µg/L.
4. The detection limit shall be ± 0.5 ppb or 5% of reading, whichever is greater, in the range of 0 – 300 ppb and 10% of range from 300 – 5000 ppb.
5. Repeatability shall be $\leq \pm 2\%$ or ± 0.5 ppb, whichever is greater, in the range of 0 – 500 ppb and $\leq \pm 5\%$ or range from 500 – 5000 ppb.
6. Analyzer shall be capable of auto ranging and auto calibration.
7. Analyzer shall take blank samples before every measurement and shall compare and correct the measurement against the blank sample.
8. Analyzer shall provide 2 isolated 4/20mA outputs and 4 programmable alarm relays. Relays shall be rated for 5A @ 240V AC.
9. Analyzer shall have a heated sample cell with sample presence detection.
10. Display shall be a digital graphics LCD with backlight.
11. Sample delivery requirement shall be between 50 and 100 mL/min.
12. Analyzer shall be capable of grab sample analysis.
13. Analyzer shall be wall or panel mounted.
14. Analyzer fluidics cabinet shall be constructed to NEMA 4X/IP65. Enclosure shall be constructed of fiberglass with clear poly windows.
15. Power requirement shall be 100 – 240V AC, 100W, 50/60 Hz, auto-detection.
16. Analyzer shall have cTUVus approvals to meet UL61010-1 and CSA C22.2 No. 61010-1 certifications and FCC Class A requirement.
17. Analyzer shall meet EC Directives 2006/95/EC and 2004/108/EC.



Product Specifications

Measurement Performance	Measuring Range:	0 – 5000 ppb auto-ranging or user programmable
	Accuracy Error:	Less than 5% of reading or +/-0.5 ppb, whichever is greater, from 0 to 300 ppb. Less than 10% of reading from 300 to 5000 ppb.
	Resolution Error:	0.5 ppb in all ranges
	Response Time:	Less than 15 minutes per analysis
	Repeatability Error:	Less than +/-2% of reading or +/-0.5 ppb, whichever is greater from 0 to 300 ppb. Less than +/-5% of reading from 300 ppb to 5000 ppb.
	Limit of Detection:	0.5 ppb
	Method:	Optical absorption at 810 nm
Environmental	Ambient Operating Temperature:	0 to 45 °C (32 to 113 °F)
	Maximum Humidity:	90% at 40 °C (104 °F)
Sample Requirements	Sample Flow:	50 – 1000ml/min
	Sample Pressure:	5 psi max
	Sample Supply:	Continuous
	Sample Temperature Range:	5 to 40 °C (41 to 113 °F)
	Suspended Solids:	Less than 60 microns
	Sample Inlet/Outlet Connections:	1/4 inch OD flexible tubing - Polypropylene or similar material
	Drain Tubing:	3/8 inch OD flexible tubing - Polypropylene or similar material
Construction	Sample Streams:	One
	Enclosure Integrity:	NEMA12 (Electronics cabinet), NEMA4X (Fluidics cabinet)
	Enclosure Dimensions:	27 inches x 15 inches x 6 inches (695mm x 395mm x 158mm)
Electrical	Shipping Weight:	18kg (40 lbs)
	Power Requirements:	100-240V AC, 100W, 50/60Hz
Data and Control	Current Loops:	Two 0/4-20 mA - Direct or Reverse Acting (Isolated). Maximum 900 ohm load.
	Relays:	Four SPDT, 5A @240V - Programmable
	Digital Comms:	RS232 ASCII protocol for data reporting
Regulatory	Safety:	CE: EN/IEC61010-1, cTUVus
	EMC:	CE: EN61326
	FCC:	Class A



Orion 2230 Silica Analyzer

Global support — with experience that comes from supporting our customers for over 35 years throughout the world, our water quality specialists and customer support teams offer a quick, thorough and professional response to any problem encountered.

Focus on user benefits — we work closely with you to define your needs, and ensure you are using the analyzer in a way that improves your bottom line. For more information, contact your local water quality specialists, call 1-800-225-1480 or visit www.thermoscientific.com/processwater.

Cat. No.	Description
223000	Model 2230 Silica Analyzer

Cat. No.	Reagent and Standards
2230RE	Reagents 1, 2, and 3. Boxed separately, 1 liter each, 45 day supply
223002	20 ppb Calibration Standard, 0.5 L
223010	100 ppb Calibration Standard, 0.5 L
223020	200 ppb Calibration Standard, 0.5 L
223030	1000 ppb Calibration Standard, 0.5 L

Cat. No.	Maintenance and Service Items
2230MK	Maintenance Kit - sample tubing harness, and tubing lubricant
2230PA	3 ea. Pump Head Tubing Covers
2230PS	Power Supply Assembly
2230FS	Power Fuses
2230PI	Air Purge Fittings
2230TK	Main Tubing Kit
2230BC	Empty Auto Cal Bottle (Validation Sample Bottle)
2230SF	Fittings, Sample In, Sample Out and Drain
2230RC	Reagent Bottle Cap - includes fittings
2230SC	Cal Bottle Cap - includes fittings
2230SAC	Sample Chamber



Thermo Fisher Scientific
Water Analysis Instruments
Chelmsford, MA USA
Quality Management System
Registered to ISO 9001

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