

# Orion 2230XP Silica Analyzer

## Early, accurate online 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, increased damage, and costly downtime.

The Thermo Scientific™ Orion™ 2230XP Silica Analyzer is designed for continuous and online measurement of reactive silica to protect mission critical systems. The optimized design of the Orion 2230XP Analyzer helps reduce the reagent consumption and overall cost of ownership.

### Features

- State of the art design is optimized to allow for low reagent consumption
- Wide range of detection from 0 to 5000 ppb, provides a more complete picture of silica intrusion in the process
- Large, easy to read display enables easy viewing in all types of lighting conditions
- Simplified operation and intuitive menu allows easy-to-use navigation
- Compact size is capable of being panel- or wall-mounted
- Intelligent sample awareness senses the sample to keep the analyzer in a ready state, while offline, for up to 30 days



### Markets

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

### Applications

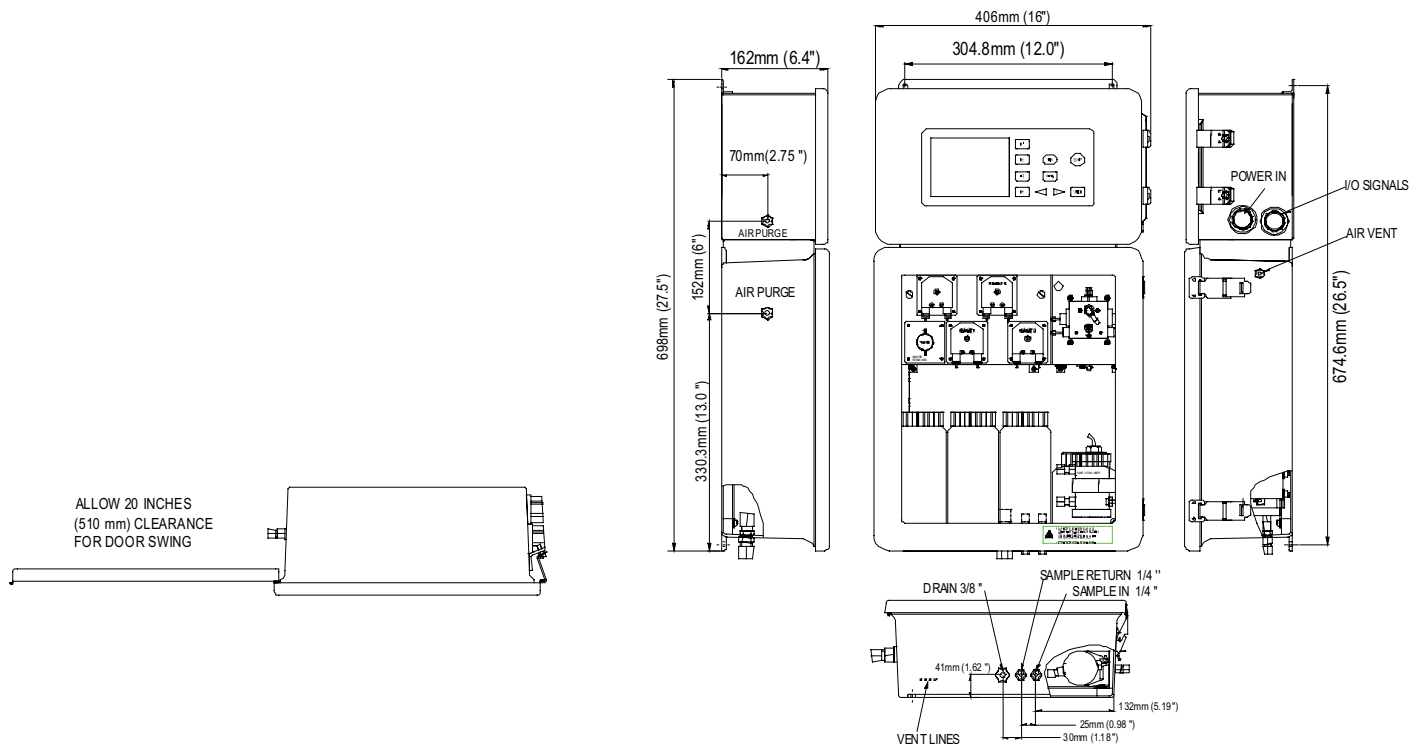
- Demineralizer
- Boiler water



Orion 2230XP Silica Analyzer

## Engineering specifications

1. The silica analyzer measures silica concentrations using a Heteropoly-molybdenum blue colorimetric method.
2. Measurement is semi continuous and is <15 minutes.
3. The range of measurement is between 0 and 5000 ppb or  $\mu\text{g/L}$ .
4. The detection limit is  $\pm 5$  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 is  $\pm 2$  % or  $\pm 5$  ppb, whichever is greater, in the range of 0 – 500 ppb and  $\pm 5$  % or range from 500 – 5000 ppb.
6. Analyzer is capable of auto ranging and auto calibration.
7. Analyzer takes blank samples before every measurement and compares and corrects the measurement against the blank sample.
8. Analyzer provides 2 isolated 4/20 mA outputs and 4 programmable alarm relays. Relays are rated for 2 A @ 240 V AC.
9. Analyzer has an hourly and daily maintenance mode that will move solutions and purge lines to keep the analyzer ready while offline for up to 30 days.
10. Analyzer has a heated sample cell with sample presence detection.
11. Display is a digital graphics LCD with backlight.
12. Sample delivery requirement is between 50 and 100 mL/min.
13. Analyzer is capable of grab sample analysis.
14. Analyzer can be wall or panel mounted.
15. Analyzer fluidics cabinet is constructed to NEMA 4X/IP65. Enclosure is constructed of fiberglass with clear poly windows.
16. Power requirement is 100 – 240 V AC, 110 W, 50/60 Hz, auto-detection.
17. Analyzer has cTUVus approvals to meet UL61010-1 and CSA C22.2 No. 61010-1 certifications and FCC Class A requirement.
18. Analyzer meets EC Directives 2014/30/EU and 2014/35/EU.
19. Analyzer is aware of sample availability.



Orion 2230XP Silica Analyzer installation dimensions shown without optional protective enclosure.

## Global support

With experience that comes from supporting our customers for over 50 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.



Reagents and standards

## Product Specifications

Specification	Description
<b>Measurement performance</b>	
Range	0 – 5000 ppb auto-ranging or user programmable
Resolution	0.5 ppb in all ranges
Response time	Less than 15 minutes per analysis
Accuracy	Less than 5% of reading or $\pm 0.5$ ppb, whichever is greater, from 0 to 300 ppb. Less than 10 % of reading from 300 to 5000 ppb.
Repeatability error	Less than $\pm 2\%$ of reading or $\pm 0.5$ ppb, whichever is greater from 0 to 300 ppb. Less than $\pm 5\%$ of reading from 300 ppb to 5000 ppb.
Limit of detection	0.5 ppb
Method	Optical absorption at 810 nm
<b>Environmental</b>	
Ambient operating temperature	0 to 45°C (32 to 113°F)
Maximum humidity	90% at 40°C (104°F)
<b>Sample requirements</b>	
Flow	50 – 1000 mL/min
Pressure	5 psi max
Supply	Continuous
Temperature range	5 to 45°C (41 to 113°F)
Suspended solids	Less than 60 microns
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
Sample streams	One
<b>Construction</b>	
Enclosure integrity	NEMA12 (Electronics cabinet), NEMA4X (Fluidics cabinet)
Enclosure dimensions	27.5 inches x 16 inches x 6.4 inches (698 mm x 406 mm x 162 mm)
Shipping weight	18 kg (40 lbs)
<b>Power</b>	
	100-240 V AC, 100 W, 50/60 Hz
<b>Data and control</b>	
Safety	Two 0/4-20 mA – Direct or Reverse Acting (Isolated). Maximum 900 ohm load
Relays	Four SPDT, 2 A @250 V – Programmable
Digital comms	RS232 ASCII protocol for data reporting
<b>Regulatory</b>	
Safety	CE: EN/IEC61010-1, cTUVus
EMC	CE: EN61326
Class	Class A

## Ordering information

Product	Cat. No.
Orion 2230XP Silica Analyzer	2230XP
<b>Reagents and standards</b>	
Reagents 1, 2, and 3. Boxed separately, 1 liter each, 45 day supply	2230RE
20 ppb Calibration Standard, 0.5 L	223002
100 ppb Calibration Standard, 0.5 L	223010
200 ppb Calibration Standard, 0.5 L	223020
1000 ppb Calibration Standard, 0.5 L	223030
Sample Chamber	2230SAC
<b>Maintenance and service items</b>	
Maintenance Kit for 2230XP – sample tubing harness, and tubing lubricant	2230XPMK
3 ea. Pump Head Tubing Covers	2230PA
Power Supply Assembly	2230PS
Power Fuses	2230FS
Air Purge Fittings	2230PI
Main Tubing Kit – for 2230XP	2230XPTK
Empty Auto Cal Bottle (Validation Sample Bottle)	2230BC
Reagent Bottle Cap – includes fittings	2230RC
Sample Chamber	2230SAC



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