

Early online detection of phosphate



Phosphates are widely found in industrial water treatments, fertilizers, biological treatments, heat exchangers and other applications.

Our Thermo Scientific™ Orion™ 2295 Phosphate Analyzer is designed to provide continuous and online measurement of phosphates. Monitoring and control of phosphate levels reduces the formation of scaling, microorganisms and other effects that decrease equipment efficiency.

The optimized design of the Orion 2295 Phosphate Analyzer, leads to a reduced reagent consumption and a lower cost of ownership.

Thermo Scientific™ products are designed to provide fast, accurate and reliable online phosphate detection—optimized for applications that require early detection of dissolved phosphates.

Markets

- Power
- Semiconductor
- Pharmaceutical
- Pulp and paper
- Chemical

Applications

- Demineralizer
- Boiler water

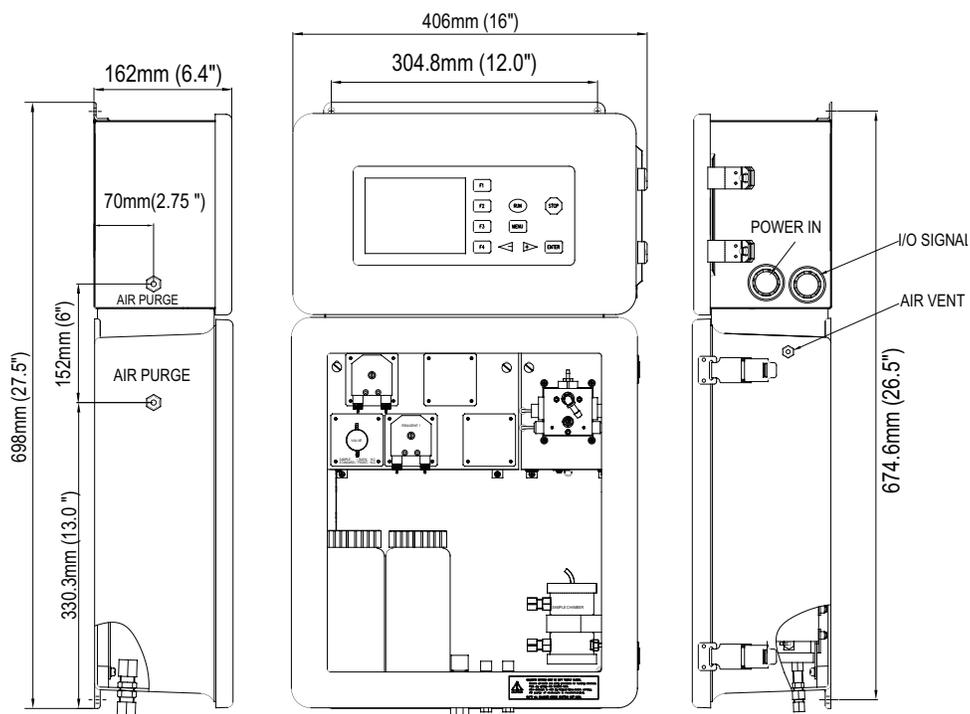


Advantages

- Optimized reagent consumption – is designed to allow for 45 days between reagent changes
- Designed to provide accurate and precise measurements – allowing for fine control of the phosphate dosing process
- Compact size – small footprint supports panel or wall mounting
- Simplified operation – intuitive menu simplifies navigation
- Low operating costs – minimal maintenance with low power consumption
- On-demand mode for non-continuous operation – allows analyzer to be returned to on-line mode rapidly after a plant is started up

Engineering Specifications

- The phosphate analyzer measures phosphate concentrations using a vanadomolybdate colorimetric method.
- Measurement is continuous and takes 8 minutes.
- The range of the measurement is between 0.2 and 50 ppm or mg/L.
- The detection limit is ± 0.2 ppm in the range of 0.2-50 ppm.
- Repeatability is $< \pm 3\%$ of reading or ± 0.1 ppm, whichever is greater from 0.2-50 ppm.
- Analyzer is capable of auto ranging and auto calibration.
- Analyzer takes blank samples before every measurement and compares and corrects the measurement against the blank sample.
- Analyzer provides 2 isolated 4/20 mA outputs and 4 programmable alarm relays. Relays are rated for 2 A @ 250 V AC.
- 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.
- Analyzer has a heated sample cell with sample presence detection.
- Display is a digital graphics LCD with backlight.
- Sample delivery requirement is between 50 and 100 mL/min.
- Analyzer is capable of grab sample analysis.
- Analyzer can be wall or panel mounted.
- Analyzer fluidics cabinet is constructed to NEMA 4X/ IP65. Enclosure is constructed of fiberglass with clear poly windows.
- Power requirement is 100-240 V AC, 110 W, 50/60 Hz, auto-detection.
- Analyzer has cTUVus approvals to meet UL61010-1 and CSA C22.2 No. 61010-1 certifications and FCC Class A requirement.
- Analyzer shall meet EC Directives 2014/30/EU and 2014/35/EU.
- Analyzer has sample flow sensing.



Product Specifications

Measurement Performance	Measuring Range	0.2-50 ppm auto-ranging
	Accuracy	Less than 5% of reading or ± 0.5 ppm, whichever is greater from 0.2-50 ppm
	Resolution	0.1 ppm in all ranges
	Response Time	Less than 10 minutes per analysis
	Precision	Less than $\pm 3\%$ of reading or ± 0.1 ppm, whichever is greater from 0.2-50 ppm
	Limit of Detection	0.2 ppm
	Method	Optical absorption at 470 nm
Environmental	Ambient Operating Temperature	5 to 45 °C (41 to 113 °F)
	Maximum Humidity	90 % at 40 °C (104 °F)
Sample Requirements	Sample Flow	50-1000 mL/min
	Sample Pressure	5 psi max
	Sample Supply	Continuous
	Sample Temperature Range	5 to 50 °C (41 to 122 °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	27.5 inches x 16 inches x 6.4 inches (698 mm x 406 mm x 162 mm)
Electrical	Shipping Weight	18 kg (40 lbs)
	Power Requirements	100-240 V AC, 110 W, 50/60 Hz
Data and Control	Current Loops	Two 0/4-20 mA – Direct or reverse acting (isolated). Maximum 900 ohm load.
	Relays	Four SPDT, 2 A @250 V – Programmable
	Digital Communications	RS232 ASCII protocol for data reporting
Regulatory	Safety	CE: EN/IEC61010-1, cTUVus
	EMC	CE: EN61326-1
	FCC	Class A

Orion 2295 Phosphate 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 thermofisher.com/process.

Ordering Information

Cat. No.	Description
229500	Model 2295 Phosphate Analyzer
2295REC	Reagents 1, 1 liter, 45 day supply
229510	10ppm calibration standard, 1 L
229530	30ppm calibration standard, 1 L
229550	50ppm calibration standard, 1 L
Maintenance and Service Items	
2295MK	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
2295TK	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

Find out more at thermofisher.com/process

Water and Lab Products

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Germany: (49) 6184-90-6321 **India:** (91) 22-6716-2261/2247 **Japan:** (81) 045-453-9175
North America: 1-978-232-6000 Toll Free: 1-800-225-1480 **Singapore:** (65) 6778-6876

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