

# Thermo Scientific Orion 2395 Phosphate Analyzer

Online detection of dissolved phosphate

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



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

Our Thermo Scientific™ Orion™ 2395 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 2395 Phosphate Analyzer, leads to drastically reduced reagent consumption and a lower cost of ownership.

#### 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 and light weight – small footprint supports panel or wall mounting.
- Simplified operation – intuitive menu simplifies navigation.
- Low operating costs – minimal maintenance with low power consumption.

#### Markets:

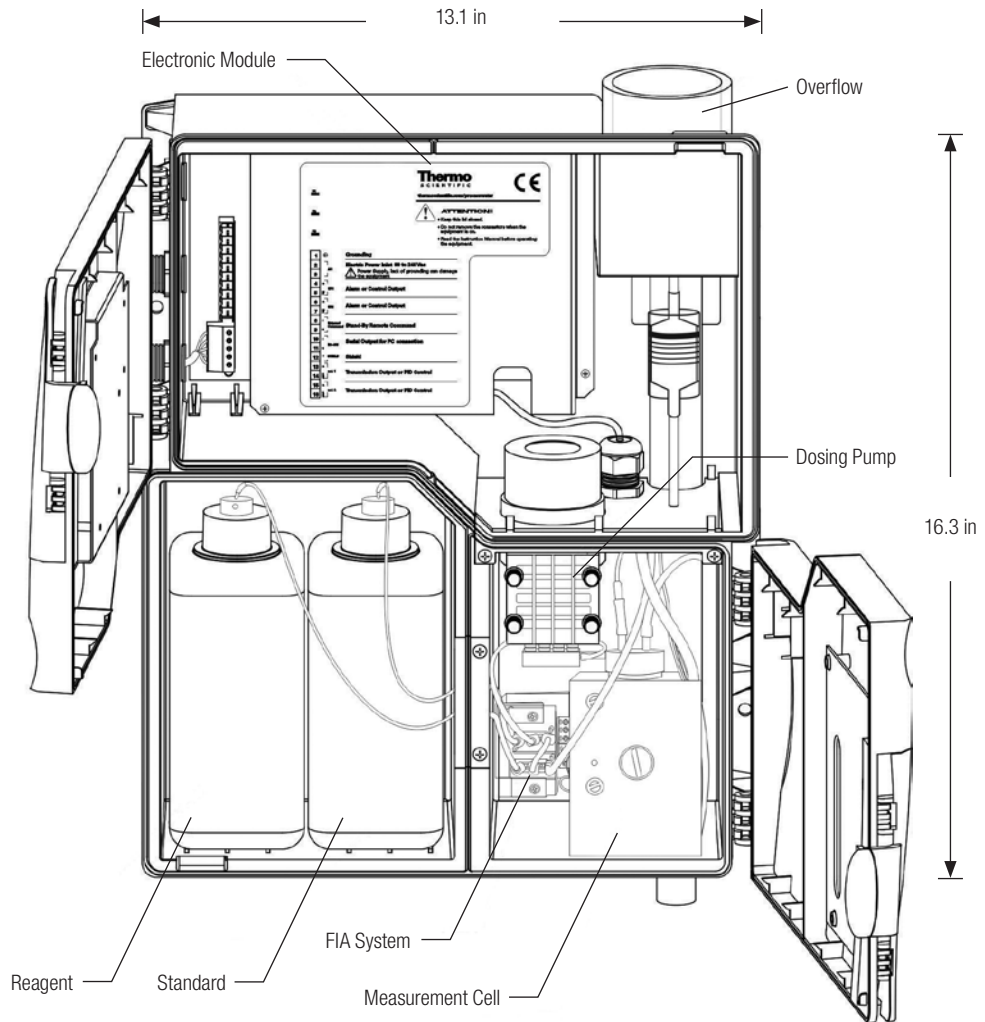
- Power
- Semiconductor
- Pharmaceutical
- Pulp and Paper
- Chem/Petrochemical

#### Applications:

- Demineralizer effluent
- Boiler water

## Engineering Specifications

1. The phosphate analyzer measures phosphate concentrations using a vanadomolybdate colorimetric method.
2. Measurement is continuous and takes 15 minutes.
3. The range of the measurement is between 0.2 and 50 ppm or mg/L.
4. The detection limit is  $\pm 0.2$  ppm in the range of 0.2-50 ppm.
5. Repeatability is  $< \pm 3\%$  of reading or  $\pm 0.1$  ppm, whichever is greater from 0.2 - 50 ppm.
6. Analyzer is capable of autocalibration.
7. Analyzer provides two 4-20mA outputs and two alarm thyristor (solid state) or relay. The contacts are rated for 1 A @250VAC.
8. Display is a digital graphics LCD with backlight.
9. Analyzer can be wall or panel mounted.
10. Analyzer is in a fiberglass IP-56 enclosure.
11. Power requirement is 100-240 VAC, 2.5 W, 50/60 Hz.
12. Analyzer is approved to meet CE: EN/IEC61010-1.



## Product Specifications

Measurement Performance	Measuring Range:	0.2 to 50.0 ppm PO <sub>4</sub> <sup>3-</sup>
	Accuracy:	5% or 0.1 ppm
	Resolution:	0.1 ppm
	Response Time:	15 minutes
	Precision:	3% or 0.1 ppm
	Limit of Detection:	0.2 ppm
	Method:	Optical absorption at 460 nm
Environmental	Ambient Operating Temperature:	5 to 45°C (41 to 113°F)
	Maximum Humidity:	45 - 70% (sample temperature must not vary by more than 5°C)
Sample Requirements	Sample Flow:	70 mL/min
	Sample Pressure:	10 - 120 psi
	Sample Supply:	Continuous
	Sample Temperature Range:	15 to 45°C (59 - 113°F)
	Turbidity:	< 20 NTU
	Sample Inlet/Outlet Connections:	1/2 in OD flexible tubing - Polypropylene or similar material - Uses 1/2 inch NPT fitting to connect to "overflow" cell
	Drain:	Fitting on drain allows venting to atmosphere. Connect a 1 inch hose to take fluid to drain.
Construction	Sample Streams:	One
	Enclosure Integrity:	IP-56
	Enclosure Dimensions (W x H x D):	13.1 in x 16.3 in x 5.7 in (333 mm x 413 mm x 145 mm)
	Shipping Weight:	30.9 lbs (14 kg)
Electrical	Power Requirements:	90 - 240V AC, 2.5 Watts, 50/60Hz
Data and Control	Current Loops:	Two 4-20 mA. Maximum 850 ohm load
	Relays:	2 contacts, 1A @ 250VAC
	Digital Comms:	RS-485
Regulatory	Safety:	CE: EN/IEC61010-1, cTUVus
	EMC:	CE: EN61326



## Orion 2395 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 [www.thermoscientific.com/processwater](http://www.thermoscientific.com/processwater).

Cat. No.	Description
239500	Model 2395 Phosphate Analyzer

Cat. No.	Reagent and Standards
2395REC	Phosphate reagent
239505	Phosphate standard, 5 ppm
239520	Phosphate standard, 20 ppm
239540	Phosphate standard, 40 ppm

Cat. No.	Maintenance and Service Items
2395MK6	Semi-annual maintenance kit - 6 months
2395MK12	Annual maintenance kit - 12 months
2395MK24	Biannual maintenance kit - 24 months