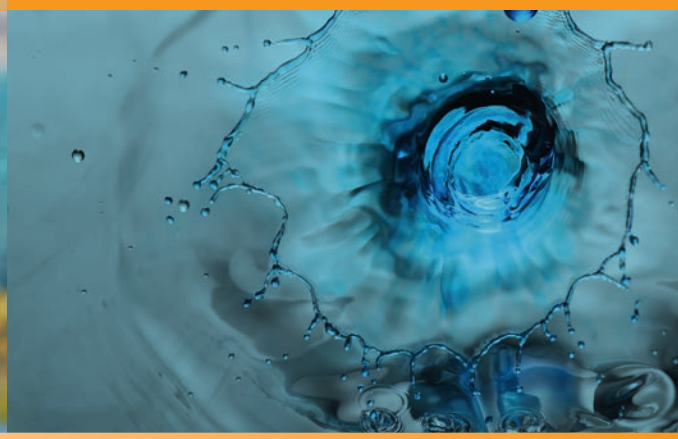
Thermo Scientific Orion
ROSS pH Electrodes



Have confidence
in your pH measurements

Proven electrodes for accurate and reproducible pH measurements

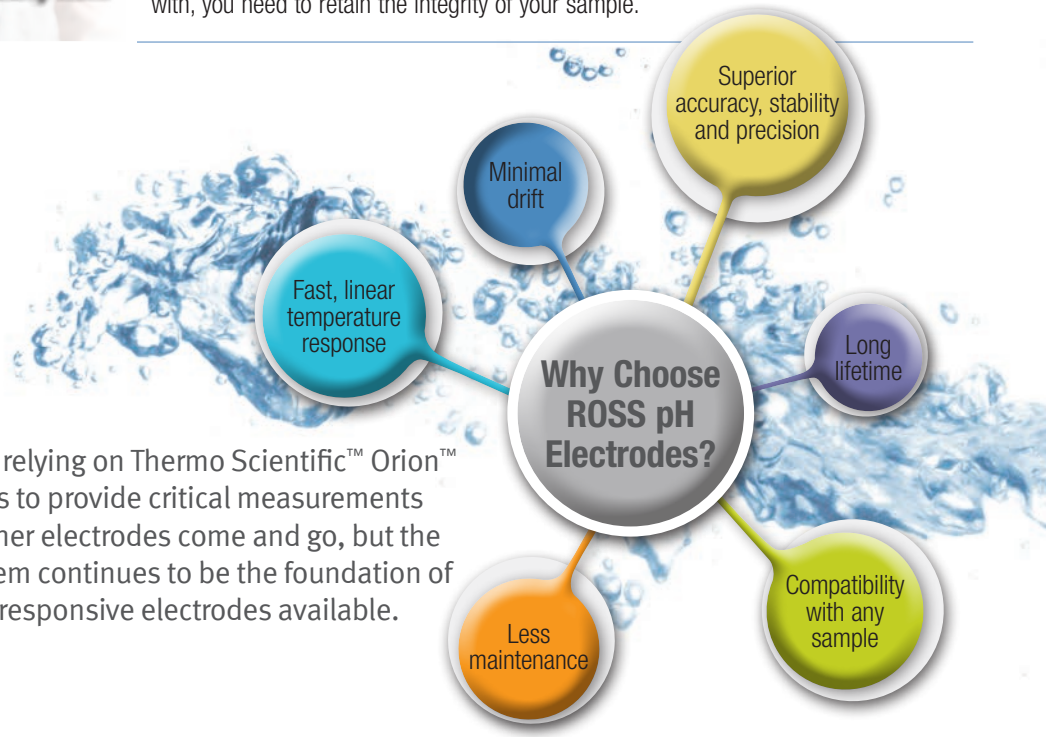
Thermo
SCIENTIFIC

Thermo Scientific Orion ROSS pH Sensors

Not all pH Electrodes are Created Equal

It is critical that the electrochemical measurements you perform day-to-day are accurate and reproducible. You rely on your pH electrodes to measure your samples quickly and precisely, making them an essential part of your lab. Whether you're testing samples in pharmaceuticals, food or general lab work, one incorrect reading can have devastating effects. Why take chances with a low quality electrode?

Consumer Health Products	People's safety is of the upmost importance, so you need to be confident in the validity of your pH measurements.
Pharmaceuticals	You need highly reproducible pH measurements to comply with strict GLP and GMP operating procedures.
Food/Beverage Quality Tests	The critical control point (CCP) pH measurement needs to keep up with your manufacturing process.
Field Water Testing	Efficient field testing requires rapid and reproducible pH measurements at any temperature to keep up with the workload and keep your facility EPA compliant.
Quality Control Purposes	When budgets are constrained and throughput is critical, you want a reliable and long-lasting electrode that does not require frequent calibration and maintenance.
Contract Testing Laboratory Work	When you need to run multiple tests but have a limited amount of sample to work with, you need to retain the integrity of your sample.



Chemists have been relying on Thermo Scientific™ Orion™ ROSS™ pH electrodes to provide critical measurements for over 35 years. Other electrodes come and go, but the ROSS reference system continues to be the foundation of the most stable and responsive electrodes available.

Stable reference system and unique design features

Orion ROSS pH Electrodes Deliver Best-in-Class Performance

Choose from a wide variety of Thermo Scientific™ Orion™ ROSS™ glass or epoxy body electrodes, such as: refillable, gel-filled, Sure-Flow™, Triode™, semi-micro, micro, flat bulb, spear tipped, and Ultra™ for extended warranty (18 months for gel / 24 months for refillable). ROSS electrode connectors are also available to fit most titrators.

ROSS Reference System

- Superior measurement stability
- Fast response
- High accuracy and precision in samples with varying temperatures
- No long-term drift

Double Junction Design

- Reference system is isolated from the sample by an intermediate fill solution to make the electrode compatible with samples such as those that contain TRIS, proteins and sulfides
- Electrode can be filled with a variety of solutions which are compatible with various sample types

Proprietary pH Sensitive Glass Bulb

- Optimized for sensitive response and wide dynamic range at all sample temperatures

Unique Coil Reference Design

- Path from junction to reference wire is 3 to 4 times longer than in conventional sensors minimizing dispersion of outer fill solution to the reference wire which increases reference stability
- Reference part of the electrode is maximally protected from the sample and lasts longer than in electrodes with conventional design

Inert Platinum Wire

- Does not introduce metal ions into sample
- Does not deplete over time

The Difference is in the Unique ROSS Reference System	
$[I_3^-]/[I^-]$ iodide/triiodide ion pair chemistry with platinum wire	**Produces no metal ions to contaminate samples**
Attains thermal and chemical equilibrium quickly	**Fast to stabilize**
Ions are soluble over a broad temperature range	**Stable at all temperatures**
Chemical equilibrium is completely reversible	**Does not deplete reference material**

ROSS Electrode Specifications	
Slope	92-102 % of theoretical Nernst slope
Isopotential Point	pH 7
Accuracy of Measuring a pH 6.86 Buffer after Standardization at 25 ºC	±0.03 pH for buffer at any temperature between 0-100 ºC using automatic temperature compensation
Speed of Response in 6.86 Buffer Going from 25 to 75 ºC	Stable to 0.01 pH within 30 seconds
Speed of Response between 6.86 and 4.01 Buffers at 25 ºC	Stable to 0.005 pH within 30 seconds
Considerations	Silver free, TRIS, protein and sulfide compatible
Temperature Ranges	0 ºC up to 100 ºC 0 ºC to 80 ºC for gel filled triodes models
Junction Types	Sure-Flow (clog-free), ceramic, glass capillary, glass fiber, sleeve
Body Materials	Glass or epoxy
Body Styles	Standard, semi-micro, micro, rugged bulb, spear tip, flat surface
Dimensions	Total length: 120 mm, 155 mm (micro), 165 mm (semi-micro) Diameter: 12 mm Tip dimensions (D x L): 3 mm x 40 mm (micro); 6 mm x 95 mm (glass semi-micro), 8 mm x 95 mm (epoxy semi-micro)
Connectors	BNC, BNC waterproof, EDIN waterproof, MiniDin, screw cap, RCA
Cable Lengths	1 m, 3 m (select models)

For help in choosing a ROSS electrode, refer to our interactive Thermo Scientific Electrode Selection Guide.
www.thermoscientific.com/orionelectrodes

Select a Star-performance Thermo Scientific™ Orion™ pH meter to display your ROSS electrode measurements.
www.thermoscientific.com/orionmeters

Find out more at **thermofisher.com.au**

thermoscientific.com/water

In Australia:
For customer service, call 1300-735-292
For service and calibration, call 1300-736-767
To email an order, AUinfo@thermofisher.com

In New Zealand:
For customer service, call 0800-933-966
To fax an order, use 0800-329-246
To email an order, NZinfo@thermofisher.com

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Water Analysis Instruments

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