

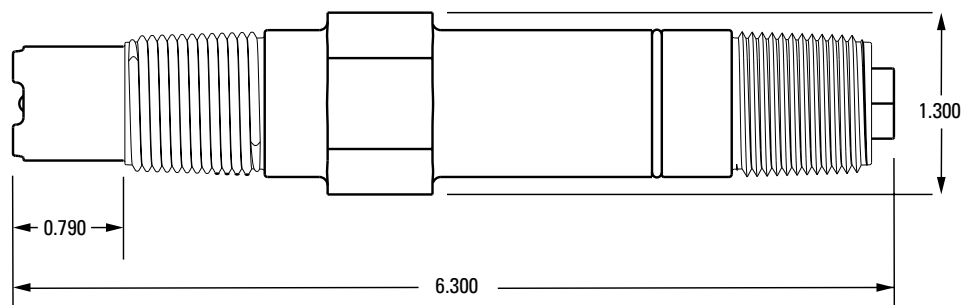
# Thermo Scientific Orion 2100R Series ROSS Ultra<sup>®</sup> Process Combination pH Electrodes

## General Information

The 2100R series ROSS Ultra process combination pH electrodes are industrial pH electrodes designed for accurate pH measurements in the harshest environments and samples. The 2100R series ROSS Ultra electrodes have a double junction, are non-refillable and include automatic temperature compensation and a solution ground. The four-pronged electrode guard protects the pH sensor from particulates and solids in a flowing sample. The electrode has 3/4" NPT threads on both ends for mounting within a pipe system or at the end of a conduit extension piece, for submersion applications. The 2100R series ROSS Ultra electrodes are compatible with the Thermo Scientific Orion process pH monitors.

Researchers, QA/QC and general lab technicians from around the world are discovering that the virtually drift-free ROSS Ultra electrode is the best electrode on the market today. The fast response time and equilibration provide faster sample throughput. The drift-free reference system assures fewer calibrations, providing faster throughput and cost savings. The 2100R series ROSS Ultra electrodes use a unique reference system that offers longer electrode life, greater stability and fast results, regardless of sample composition or temperature.

## Dimensions (inches)



## Recommendations

- Inspect the electrode for scratches, cracks, salts or other deposits on the sensing element and reference junction. Rinse off any precipitates with distilled water.
- To attach the electrode to the monitor and wire the stripped, unterminated ends to the monitor. Refer to the monitor user guide.
- The first time a new electrode is installed, condition the electrode in pH 7 buffer (Cat. No. 910107) for at least 1 hour.
- Put the electrode online and allow the electrode to equilibrate in the sample for a few hours prior to calibration.
- Always use fresh buffers when calibrating. Use Thermo Scientific Orion precision pH 4 buffer (Cat. No. 910104), pH 7 buffer (Cat. No. 910107) or pH 10 buffer (Cat. No. 910110). Choose buffers that bracket the expected sample pH. Check electrode slope by performing a two-point calibration. The slope should be 92 to 102 %. For calibration and temperature compensation procedures, refer to the monitor user guide.
- To maximize the life of the pH electrode, use the Thermo Scientific Orion pH electrode cleaning kits. After cleaning the electrode, soak it in pH 7 buffer (Cat. No. 910107) for at least 1 hour. Recalibrate the system before returning to online measurements.
- To optimize the ROSS Ultra electrode performance and life, use ROSS<sup>®</sup> pH electrode storage solution (Cat. No. 810001) for long term storage of the electrode.

## Specifications

<b>pH Range:</b>	0 to 14
<b>Temperature Range:</b>	-5 to 100 °C
<b>Pressure Range:</b>	0 to 100 psi
<b>Drift:</b>	≤ 0.5 pH units for 30 days
<b>Reproducibility:</b>	± 0.01 pH
<b>Slope:</b>	92 to 102 % (54.4 to 60.3 mV/dec)
<b>ATC Resistance:</b>	30 kΩ at 25 °C for 2130R10 and 2130R5 109.6 Ω at 25 °C for 2100R10 and 2100R5 1096 Ω at 25 °C for 21000R10 and 21000R5
<b>Reference System:</b>	ROSS Ultra combination with UHMWPE
<b>Reference Electrolyte:</b>	Non-refillable, ROSS polymer gel
<b>Wetted Materials:</b>	Ryton® body (glass-filled)
<b>Front Seal:</b>	Silicone
<b>Thread Size:</b>	¾ inch NPT on both ends
<b>Electrode Housing Diameter:</b>	1.3 inches (33 mm)
<b>Electrode Length:</b>	6.3 inches (160 mm)
<b>Cable:</b>	Offered in 5 meter and 10 meter lengths, zero halogen low smoke integral coaxial cable terminated with stripped and tinned wires

## Ordering Information

Cat. No.	Description
21000R10	2100R series ROSS Ultra combination pH electrode with PT1000 thermistor and 10 meter cable
21000R5	2100R series ROSS Ultra combination pH electrode with PT1000 thermistor and 5 meter cable
2100R10	2100R series ROSS Ultra combination pH electrode with PT100 thermistor and 10 meter cable
2100R5	2100R series ROSS Ultra combination pH electrode with PT100 thermistor and 5 meter cable
2130R10	2100R series ROSS Ultra combination pH electrode with 30 K thermistor and 10 meter cable
2130R5	2100R series ROSS Ultra combination pH electrode with 30 K thermistor and 5 meter cable
910104	pH 4.01 buffer, 475 mL bottle
910107	pH 7.00 buffer, 475 mL bottle
910110	pH 10.01 buffer, 475 mL bottle
810001	ROSS pH electrode storage solution, 475 mL bottle
900021	pH cleaning solution A for protein contaminants, 4 x 30 mL bottles
900022	pH cleaning solution B for bacterial contaminants, 4 x 60 mL bottles
900023	pH cleaning solution C for general cleaning, 4 x 30 mL bottles
900024	pH cleaning solution D for oil and grease contaminants, 4 x 60 mL bottles

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### Environmental Instruments Water Analysis Instruments

**North America**  
166 Cummings Center  
Beverly, MA 01915 USA  
Toll Free: 1-800-225-1480  
Tel: 1-978-232-6000  
Dom. Fax: 1-978-232-6015  
Int'l Fax: 978-232-6031

**Europe**  
Denmark House, Angel Drove  
Ely, Cambridgeshire  
England, CB7 4ET  
Tel: 44-1353-666111  
Fax: 44-1353-666001

**Asia Pacific**  
Blk 55, Ayer Rajah Crescent  
#04-16/24, Singapore 139949  
Tel: 65-6778-6876  
Fax: 65-6773-0836

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