



Thermo Scientific Orion Sure-Flow pH Electrodes

Clog Free Long Lasting Junction

pH Electrodes

Sure-Flow® Junction

The unique, free-flowing liquid-to-liquid junction assures you of the most stable, drift-free measurements. The easy-to-clean junction never clogs, simply press the cap and flush the junction area. Release the cap and the junction is reset. Now even the most problematic, dirty or viscous samples can be easily measured without a clogged junction! The Sure-Flow junction has proven reliability and extends the electrode life.

ROSS electrodes provide unmatched accuracy and response to extreme temperature changes. They are compatible with samples containing organic compounds, proteins, heavy metals, and other compounds that react with silver such as bromides, iodides, cyanides and sulfides.

Silver chloride sure-flow electrodes can be used on tough samples that do not require a double junction electrode to prevent contact with silver.

ROSS Sure-Flows are also available as semi-micro pH and reference half cell electrodes on pages 75 and 80.

High performance in all samples



ROSS® Sure-Flow® combination pH electrode with glass body

- Sure-Flow junction prevents clogging
- For soil, sludge, colloids, viscous material and organic solvents

Fast response – even in difficult samples



ROSS® Sure-Flow® combination pH electrode with epoxy body

- Ideal for soil samples
- Durable epoxy design
- For TRIS, sulfides and proteins

For all samples including solvents



Sure-Flow® combination pH electrode with glass body

- For soil, sludge, colloids, and viscous material
- Chemical resistant glass body

Fast response in difficult samples & soils



Sure-Flow® combination pH electrode with epoxy body

- Rugged, durable epoxy design
- Has removable bulb guard

Cat. No.	8172BNWP	8165BNWP 8165DN	9172BNWP	9165BNWP
pH Range	0-14	0-14	0-14	0-14
pH Precision	0.01	0.01	0.02	0.02
Temp. Range	0-100 °C	0-100 °C	0-100 °C	0-100 °C
Internal Reference	ROSS	ROSS	Ag/AgCl	Ag/AgCl
Junction	Sure-Flow	Sure-Flow	Sure-Flow	Sure-Flow
Fill Solution (Cat. No.)	3 M KCl (810007)	3 M KCl (810007)	4 M KCl w/ Ag/AgCl (900011)	4 M KCl w/ Ag/AgCl (900011)
Dimension D (Dia) L (Length) T (Tip)	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm
Connector Type	BNC Waterproof	BNC Waterproof EDIN Waterproof	BNC Waterproof	BNC Waterproof

Cat. No.	Recommended Accessories
810001	ROSS storage solution
810007	ROSS fill solution
900011	Ag/AgCl fill solution
910001	Ag/AgCl storage solution



Key Information

ROSS electrodes are environmentally-safe mercury-free option for TRIS, protein and sulfide. All cap diameters are 16 mm at bottom of cap. All cable lengths are 1 meter.



Thermo Scientific Orion Triode pH Electrodes

Measures pH and Temperature with One Electrode

All Thermo Scientific Orion Triodes™ have built-in temperature sensors allowing you to measure pH and temperature with one electrode. There are a variety of electrodes based on your sample and application.

The ROSS Ultra Triodes offer such great stability and drift that the warranty period is double other electrodes. The refillable electrodes have a two year replacement warranty. The gel-filled ROSS Ultra Triode electrodes have an 18 month warranty.

Complex samples, such as biological media, foods and pharmaceuticals, can be measured easily. All ROSS Ultra electrodes can be used in samples that contain TRIS, sulfides or proteins.

ROSS Ultra electrodes offer the best temperature performance of all other electrodes in repeated, varying temperatures.

The AquaPro Triode has the advantage of having an open junction that does not clog and double junction reference. For use in samples with TRIS, protein and sulfides.

Ag/AgCl Triodes have good response and are ideal for routine measurements.

Top performance with glass body



ROSS Ultra® pH/ATC Triode with glass body

- High performance for QC and research
- Chemical resistant glass body

Low maintenance with extended life



ROSS Ultra® pH/ATC Triode with epoxy body, low maintenance gel

- Low maintenance gel
- Rugged epoxy body

Refillable, convenience and durable



ROSS Ultra® pH/ATC Triode with epoxy body

- General purpose, high performance
- Rugged epoxy body

	Cat. No. 8302BNUMD (Star)	8107BNUMD (Star)* 8107UWMMMD (Star)	8157BNUMD (Star)* 8157UWMMMD (Star)
pH Range	0-14	0-14	0-14
pH Precision	0.01	0.01	0.01
Temp. Range	0-100 °C	0-80 °C	0-100 °C
Temp. Accuracy	±1.0 °C	±1.0 °C	±1.0 °C
Internal Reference	ROSS	ROSS	ROSS
Junction	Ceramic	Glass capillary	Glass fiber
Fill Solution (Cat. No.)	3 M KCl (810007)	—	3 M KCl (810007)
Dimension D (Dia) L (Length) T (Tip)	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm
Connector Type	BNC Waterproof - MiniDIN (Star)	BNC Waterproof - MiniDIN (Star)* BNC Waterproof - MiniDIN (Star)* 3 m	BNC Waterproof - MiniDIN (Star)* BNC Waterproof - MiniDIN (Star)* 3 m

Cat. No.	Recommended Accessories
810001	ROSS storage solution
810007	ROSS fill solution
900001	Ag/AgCl fill solution
910001	Ag/AgCl storage solution



Electrode maintains calibration for one year



- BEST
- TRIS COMPATIBLE
- SUPERIOR TEMPERATURE CONTROL

No Cal[®] combination pH electrode with epoxy body and built-in ATC

- Designed for stable, high performance pH analysis in the field
- Accurate to 0.1 pH without calibration

Rugged design with clog free open junction



- BETTER
- TRIS COMPATIBLE

AquaPro pH/ATC Triode™ with low maintenance polymer, epoxy body

- Low maintenance for Star meters

Low maintenance



- BETTER

pH/ATC Triode™ with epoxy body, low maintenance gel

- Low maintenance gel
- Epoxy body for ruggedness

Low maintenance



- BETTER

pH/ATC Triode™ with epoxy body, low maintenance

- Low maintenance gel
- Epoxy body for ruggedness

Refillable and durable



- BETTER

pH/ATC Triode™ with epoxy body, refillable

- Long-lasting
- Epoxy body for ruggedness

Low maintenance and reliable



- GOOD

pH/ATC Triode™ with epoxy body, low maintenance gel

- General purpose
- For Russell RL060P meter

5107BNMD (Star) 5107NC (A+ Series)	9107APMD (Star)	9107BNMD (Star)* 9107WMMMD (Star)* 9107WLMD (Star)* 9107BN (A+ Series) 9107WP†	9109WP 9109WL	9157BNMD (Star) 9157BN (A+ Series)	9147BN
0-14	0-14	0-14	0-14	0-14	0-14
0.01	0.02	0.02	0.02	0.02	0.1
0-100 °C	0-60 °C	0-80 °C	0-80 °C	0-90 °C	0-50 °C
±1.0 °C	±2.0 °C	±2.0 °C	±2.0 °C	±2.0 °C	±2.0 °C
Platinum	Ag/AgCl Double junction	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl
Ceramic	Open	Wick	Wick	Glass fiber	HDPE pin
No Cal (510011)	—	—	—	4 M KCl w/ Ag/AgCl (900011)	—
L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm Cap D - 22 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm
BNC - MiniDIN (Star) BNC - 8 Pin (A+ Series)	BNC - MiniDIN (Star)	BNC - MiniDIN (Star) BNC - 8 Pin (A+ Series)†	EDIN Waterproof Banana Plug	BNC - MiniDIN (Star) BNC - 8 Pin (A+ Series)	BNC 2.5 mm Phono Tip



Key Information

Cable lengths range from 1 to 6 meters
WMMMD = 3 meters, WLMD = 6 meters,
9109WL = 6 meters
9109 cap is for intrinsically safe meters



Thermo Scientific Orion Glass Refillable pH Electrodes

Chemical Resistant Glass Bodies

Glass body electrodes offer superior chemical resistance. They are also able to withstand higher temperatures than epoxy electrodes, with some models able to be used up to 100 °C. Glass electrodes are also easy to clean as they are compatible with most solvents and inorganic materials.

ROSS Ultra and ROSS electrodes provide unmatched ROSS accuracy and rapid response to temperature extremes. All are TRIS compatible. ROSS Ultra glass electrodes have an industry best 2 years warranty.

AquaPro refillable electrodes are TRIS compatible and have an open junction that does not clog.

Double junction electrodes are recommended for samples containing organic compounds, proteins, heavy metals and other compounds that interact with silver.

Single junction electrodes provide a reliable option for routine pH measurement.

Top performance for QC and research



ROSS Ultra® combination pH electrode with extended life

- For precise pH determinations
- General purpose, high performance

Precise yet durable, for QC and research



ROSS Ultra® combination pH electrode with rugged bulb, extended life

- Toughened bulb for rugged lab use

For precise and reproducible pH determinations



ROSS® combination pH electrode

- General purpose, high performance
- For QC and research applications

Durable, for precise pH analysis



ROSS® combination pH electrode with glass body, rugged bulb

- Toughened bulb for rugged lab use
- For QC and research applications

Cat. No.	8102BNUWP	8104BNUWP	8102BN 8102SC	8104BN 8104SC
pH Range	0-14	0-14	0-14	0-14
pH Precision	0.01	0.01	0.01	0.01
Temp. Range	0-100 °C	0-100 °C	0-100 °C	0-100 °C
Internal Reference	ROSS	ROSS	ROSS	ROSS
Junction	Ceramic	Ceramic	Ceramic	Ceramic
Fill Solution (Cat. No.)	3 M KCl (810007)			
Dimension D (Dia) L (Length) T (Tip)	L - 120 mm D - 12 mm			
Connector Type	BNC Waterproof	BNC Waterproof	BNC Screw Cap	BNC Screw Cap

Cat. No.	Recommended Accessories
910001	Ag/AgCl storage solution
900011	Ag/AgCl fill solution
910008-WA	3 M KCl double junction fill solution

Cat. No.	Recommended Accessories
810001	ROSS storage solution
810007	ROSS fill solution



For accurate pH analysis and titrations



- BEST
- TRIS COMPATIBLE
- SUPERIOR TEMPERATURE CONTROL

ROSS® combination pH electrode with 14/15 standard taper

- For titrators or vessels that require a standard taper joint

Accurate and reliable



- BETTER
- TRIS COMPATIBLE

Double Junction combination pH electrode

- General purpose
- Easy-to-clean design

General purpose for everyday use



- BETTER
- BETTER

Combination pH electrode

- For routine or research applications

Durable and reliable

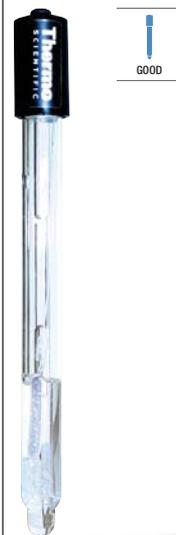


- BETTER
- BETTER

Combination pH electrode with rugged bulb

- Toughened bulb for rugged lab use

General purpose and reliable



- GOOD

Combination pH electrode

- General purpose
- Easy-to-clean design

8162SC	9102DJWP	9102BNWP 9102SC	9104BNWP 9104SC	9142BN
0-14	0-14	0-14	0-14	0-14
0.01	0.02	0.02	0.02	0.1
0-100 °C	0-60 °C	0-90 °C	0-90 °C	0-90 °C
ROSS	Ag/AgCl Double junction	Ag/AgCl	Ag/AgCl	Ag/AgCl
Sleeve	Ceramic	Ceramic	Ceramic	Ceramic
3 M KCl (810007)	3 M KCl (910008-WA)	4 M KCl w/ Ag/AgCl (900011)	4 M KCl w/ Ag/AgCl (900011)	4 M KCl w/ Ag/AgCl (900011)
L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm
Screw Cap	BNC Waterproof	BNC Waterproof Screw Cap	BNC Waterproof Screw Cap	BNC



Key Information

All cap diameters are 16 mm
All cable lengths are 1 meter



Thermo Scientific Orion Epoxy Refillable pH Electrodes

Rugged Epoxy Body Prevents Breakage

Epoxy body electrodes are ideal for field measurements or situations where they will be exposed to rugged handling. The electrode body surrounds the glass pH bulb providing further protection.

ROSS Ultra and ROSS electrodes exhibit unmatched accuracy and rapid response to extreme temperature variations. All are TRIS compatible. The ROSS Ultra electrode has an unprecedented 2 year warranty.

Green electrodes are the first lab electrode to contain no lead, mercury or other hazardous substances and are completely ROHS compliant. They are available in single or double junction designs.

Silver chloride epoxy electrodes provide excellent response and performance in routine samples.

Top performance – precise pH analysis with durability



- BEST
- TRIS COMPATIBLE
- SUPERIOR TEMPERATURE CONTROL

ROSS Ultra® combination pH electrode with epoxy body

- Top accuracy and rapid response to temperature extremes
- General purpose, high performance
- Extended life

Durable for precise pH applications



- BEST
- TRIS COMPATIBLE
- SUPERIOR TEMPERATURE CONTROL

ROSS® combination pH electrode with epoxy body

- Top accuracy and rapid response to temperature extremes
- General purpose, high performance

Refillable, double junction



- BETTER
- TRIS COMPATIBLE
- LEAD FREE

Green combination double junction refillable pH electrode with epoxy body

- Ideal for routine or research applications
- Use in dirty water or TRIS, sulfide and protein samples
- Contains no lead

Refillable, rugged epoxy body



- BETTER
- LEAD FREE

Green combination refillable pH electrode with epoxy body

- Ideal for routine or research applications
- Contains no lead

General purpose and reliable



- BEST

Combination pH electrode with epoxy body

- For routine or research applications
- Reliable and durable

Cat. No.	8156BNUWP	815600 8155SC	GD9156BNWP	GS9156BNWP	9156BNWP 9156SC
pH Range	0-14	0-14	0-14	0-14	0-14
pH Precision	0.01	0.01	0.02	0.02	0.02
Temp. Range	0-100 °C	0-100 °C	0-90 °C	0-90 °C	0-90 °C
Temp. Accuracy	–	–	–	–	–
Internal Reference	ROSS	ROSS	Ag/AgCl Double junction	Ag/AgCl	Ag/AgCl
Junction	Glass fiber	Glass fiber	Glass fiber	Glass fiber	Glass fiber
Fill Solution (Cat. No.)	3 M KCl (810007)	3 M KCl (810007)	3 M KCl (910008-WA)	4 M KCl w/ Ag/AgCl (900011)	4 M KCl w/ Ag/AgCl (900011)
Dimension D (Dia) L (Length) T (Tip)	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm			
Connector Type	BNC Waterproof	BNC Screw Cap	BNC Waterproof	BNC Waterproof	BNC Waterproof Screw Cap

Cat. No.	Recommended Accessories
900011	Ag/AgCl fill solution
810007	ROSS fill solution
910008-WA	3M KCl double junction fill solution





Thermo Scientific Orion Micro pH Electrodes

Delicate Electrode for Small Volumes, Fits 384 Microwell Plates

Micro electrodes are designed to measure small volumes down to 0.5 μL . These are extremely delicate electrodes because of their size and should be treated as such. The small stem and bulb diameter allow the electrode to be inserted into small devices such as 384 microwell plates. There are a variety to choose from based on your measurement needs.

The ROSS 8220BNWP micro electrode provides the best accuracy and response time of the micro electrodes. It can be used in biological samples. The 8220BNWP is more durable than the silver chloride electrodes.

Silver chloride micro electrodes are single junction electrodes. They are available to measure samples as small as 0.5 μL , for use in NMR tubes and available with a stainless steel needle tip over the glass stem and bulb.

The double junction micro electrode is for moderate size samples. The double junction design is good for use when measuring TRIS samples, proteins, sulfides or biologicals.

Accurate in extremely small samples



PerpHecT[®] ROSS[®] combination pH electrode with glass body, micro

- Measures samples as small as 15 μL in 384 well plates
- Minimum depth of immersion is 4.5 mm
- Durable tip design

Measure samples as small as 0.5 μL



Micro combination pH electrode with glass body, small tip

- Designed for gels and small sample volumes
- Measure samples as small as 0.5 μL

For use in NMR tubes



Micro combination pH electrode with glass body, long length

- Ideal for measurements in extremely small vessels

For piercing septa



Micro combination pH electrode with needle tip

- 16 gauge stainless steel bevel tip

For samples with size limitations



Double Junction combination pH electrode with glass body, semi-micro tip

- Measure samples as small as 0.2 mL
- Easy-to-clean refillable design

Cat. No.	8220BNWP	9810BN	9826BN	9863BN	9110DJWP
pH Range	0-14	0-14	0-14	0-14	0-14
pH Precision	0.01	0.02	0.02	0.02	0.02
Temp. Range	0-100 °C	0-80 °C	0-80 °C	0-80 °C	0-60 °C
Temp. Accuracy	±0.5 °C	–	–	–	–
Internal Reference	ROSS	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl Double junction
Junction	Sleeve	Ceramic	Ceramic	Ceramic	Ceramic
Fill Solution (Cat. No.)	3 M KCl (810007)	4 M KCl w/ Ag/AgCl (900011)	4 M KCl w/ Ag/AgCl (900011)	4 M KCl w/ Ag/AgCl (900011)	3 M KCl (910008-WA)
Dimension D (Dia) L (Length) T (Tip)	L - 155 mm T - 3 mm x 40 mm L	L - 120 mm T - 1.3 mm x 37 mm L	L - 228 mm T - 2.5 mm x 2.5 mm L	L - 137 mm T - 1.7 mm x 40 mm L	L - 150 mm T - 4.5 mm x 90 mm L
Depth of Immersion	4.5 mm	1 mm	2 mm	3 mm	–
Connector Type	BNC Waterproof	BNC	BNC	BNC	BNC Waterproof



Key Information

All cap diameters are 16 mm at bottom of cap except 9810BN, 9826BN & 9863BN
All cable lengths are 1 meter



Thermo Scientific Orion Glass Semi Micro pH Electrodes

Measures Samples As Small As 0.2 mL. Fits Test Tubes and Small Containers

Glass body semi-micro pH electrodes provide superior chemical resistance and can withstand high temperatures extremes. There are a variety of options to choose from.

ROSS Ultra and ROSS semi-micro pH electrodes provide optimum accuracy and unmatched response in samples of varying temperatures. They are available in chemical resistant glass bodies. All ROSS electrodes are TRIS compatible.

AquaPro semi-micro electrodes have a clog free open junction and are TRIS compatible.

Silver chloride semi-micro electrodes are durable and provide reliable and accurate measurements of routine samples.

Ideal for QC samples with size limitations



ROSS Ultra® combination pH electrode with glass body, semi-micro tip

- Extended life
- TRIS compatible
- Fast response at temperature extremes

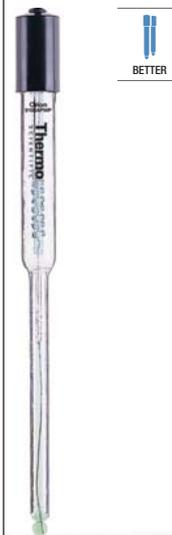
Fast, reliable results in small samples



ROSS® combination pH electrode with glass body, semi-micro tip

- TRIS compatible
- Fast response at temperature extremes

Fast response in small samples



AquaPro combination pH electrode with low maintenance polymer, glass body, semi-micro tip

- TRIS compatible
- Open junction prevents clogging

For samples with size constraints



Combination pH electrode with glass body, semi-micro tip

- For routine or research applications

Cat. No.	8103BNUWP	8103BN 8103SC	9103APWP	9103BNWP 9103SC
pH Range	0-14	0-14	0-14	0-14
pH Precision	0.01	0.01	0.02	0.02
Temp. Range	0-100 °C	0-100 °C	0-60 °C	0-90 °C
Internal Reference	ROSS	ROSS	Ag/AgCl Double junction	Ag/AgCl
Junction	Ceramic	Ceramic	Open	Ceramic
Fill Solution (Cat. No.)	3 M KCl (810007)	3 M KCl (810007)	-	4 M KCl w/ Ag/AgCl (900011)
Dimension D (Dia) L (Length) T (Tip)	L - 165 mm T - 6 mm x 95 mm L	L - 165 mm D - 6 mm x 95 mm L	L - 165 mm T - 6.5 mm x 100 mm L	L - 165 mm T - 6.5 mm x 100 mm L
Connector Type	BNC Waterproof	BNC Screw Cap	BNC Waterproof	BNC Waterproof Screw Cap

Cat. No.	Recommended Accessories
910001	Electrode storage solution
900011	Ag/AgCl fill solution
810001	ROSS storage solution
810007	ROSS fill solution



Screw Cap



BNC Waterproof



BNC

Key Information

All cap diameters are 16 mm
All cable lengths are 1 meter



Thermo Scientific Orion Epoxy Semi Micro pH Electrodes

Rugged Body for Small Samples or Narrow Containers

Epoxy body semi-micro pH electrodes provide a rugged design. They are available in double junction or single junction designs as well as refillable or low-maintenance options.

ROSS electrodes offer optimum accuracy and temperature response. AquaPro electrodes provide maintenance-free use. Silver chloride electrodes are for routine measurements.

For difficult samples with size limitations



ROSS® Sure-Flow® combination pH electrode with epoxy body, semi-micro tip

- Sure-Flow junction prevents clogging
- Measure samples as small as 0.2 mL

For aqueous samples with size constraints



ROSS Ultra® combination pH electrode with epoxy body, semi-micro tip

- Measures samples as small as 0.2 mL
- Epoxy body for ruggedness and durability

Dependable results in small samples



ROSS® combination pH electrode with epoxy body, semi-micro tip

- Epoxy body for ruggedness and durability
- Measures samples as small as 0.2 mL

Fast response in small samples



AquaPro combination pH electrode with low maintenance polymer, epoxy body, semi-micro tip

- TRIS compatible
- Open junction prevents clogging

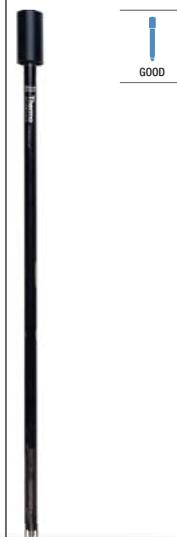
For everyday use in small samples



Combination pH electrode with epoxy body, low maintenance gel, semi-micro tip

- Measure samples as small as 0.2 mL

For everyday use in tall containers



Combination pH electrode with epoxy body, low maintenance gel, flask length

- Designed for use in long-necked flasks

Cat. No.	8175BNWP	8115BNUWP	8115BN 8115SC	9115APWP	911600	912600
pH Range	0-14	0-14	0-14	0-14	0-12	0-12
pH Precision	0.01	0.01	0.01	0.02	0.1	0.1
Temp. Range	0-100 °C	0-100 °C	0-100 °C	0-60 °C	0-80 °C	0-80 °C
Internal Reference	ROSS	ROSS	ROSS	Ag/AgCl Double junction	Ag/AgCl	Ag/AgCl
Junction	Sure-Flow	Glass fiber	Glass fiber	Open	Wick	Wick
Fill Solution (Cat. No.)	3 M KCl (810007)	3 M KCl (810007)	3 M KCl (810007)	–	–	–
Dimension D (Dia) L (Length) T (Tip)	L - 165 mm T - 8 mm x 95 mm L	L - 165 mm T - 8 mm x 95 mm L	L - 165 mm T - 8 mm x 95 mm L	L - 160 mm T - 8 mm x 90 mm L	L - 145 mm D - 6 mm	L - 305 mm D - 8 mm
Connector Type	BNC Waterproof	BNC Waterproof	BNC Screw Cap	BNC Waterproof	BNC	BNC



Screw Cap



BNC Waterproof



BNC

Key Information

All cap diameters are 16 mm except 911600
All cable lengths are 1 meter



Thermo Scientific Orion Low Maintenance pH Electrodes

Never Requires Fill Solution

Low maintenance pH electrodes are easy to use and require minimal maintenance. Since the reference chamber is sealed, you never need to replace fill solution or clean and rinse the reference chamber. You may choose from many styles such as AquaPro, Green electrodes, double junction or silver chloride electrodes to suit your measurement needs.

AquaPro low maintenance pH electrodes offer open junctions that do not clog. Choose between chemical resistant glass bodies or durable epoxy bodies. All AquaPro electrodes are TRIS compatible.

Green electrodes contain no hazardous substances such as mercury or lead and are ROHS compliant.

Double junction electrodes are TRIS compatible and you do not have to worry about interfering substances.

Silver chloride electrodes offer low maintenance as well as reliable measurements for everyday use.

Reliable and accurate



AquaPro combination pH electrode with low maintenance polymer, glass body

- General purpose, high performance

Precise and durable



AquaPro combination pH electrode with low maintenance polymer, glass body, rugged bulb

- Toughened bulb for rugged lab use

Rugged and accurate



AquaPro combination pH electrode with low maintenance polymer, epoxy body

- General purpose, high performance

Low maintenance, double junction



Green combination double junction pH electrode, gel with epoxy body

- Ideal for education, plant or field use
- Use in dirty water or TRIS, sulfide and protein samples
- Contains no lead

Cat. No.	9102AP	9104APWP	9156APWP	GD9106BNWP
pH Range	0-14	0-14	0-14	0-14
pH Precision	0.02	0.02	0.02	0.02
Temp. Range	0-60 °C	0-60 °C	0-60 °C	0-90 °C
Internal Reference	Ag/AgCl Double junction	Ag/AgCl Double junction	Ag/AgCl Double junction	Ag/AgCl Double junction
Junction	Open	Open	Open	Glass capillary
Dimension D (Dia) L (Length) T (Tip)	L - 120 mm D - 12 mm			
Connector Type	BNC	BNC Waterproof	BNC Waterproof	BNC Waterproof

Cat. No.	Recommended Accessories
910001	Electrode storage solution
910199	All-in-one pH buffer kit



Low maintenance, rugged epoxy body



Green combination pH electrode, gel with epoxy body

- Ideal for education, plant or field use
- Contains no lead

GS9106BNWP

0-14
0.05
0-90 °C
Ag/AgCl
Glass capillary
L - 120 mm D - 12 mm
BNC Waterproof

Durable and low maintenance



Double Junction combination pH electrode with epoxy body, low maintenance gel

- Low maintenance gel with durable epoxy body

9156DJWP

0-14
0.02
0-60 °C
Ag/AgCl Double junction
Wick
L - 120 mm D - 12 mm
BNC Waterproof

For rugged, everyday use



Combination pH electrode with epoxy body, low maintenance gel

- Ideal for field, plant, or educational applications

9106BNWP

0-14
0.05
0-80 °C
Ag/AgCl
Wick
L - 120 mm D - 12 mm
BNC Waterproof

Reliable every day use



Combination pH electrode with epoxy body, low maintenance gel

- General purpose use
- Removable bulb guard makes cleaning easy

9146BN

0-14
0.1
0-80 °C
Ag/AgCl
Wick
L - 120 mm D - 12 mm
BNC



Key Information

All cap diameters are 16 mm
All cable lengths are 1 meter



Thermo Scientific Orion Flat Surface pH Electrodes

Measure Moist Surfaces Such As Agar Gel Plates, Meats and Cheese

Flat surface electrodes are epoxy body electrodes with a flat pH bulb that allow you to measure moist solid samples or small volumes. They can be used on samples such as meats, cheese or in agar gel plates. Flat surface pH electrodes are available in single or double junction designs allowing you to measure samples such as TRIS buffers or samples containing protein, sulfides or other compounds that react with silver. You may also choose from refillable or low maintenance designs.

Thermo Scientific Orion ROSS Ultra and ROSS flat surface electrodes provide optimum accuracy and stability while being TRIS compatible. The ROSS Ultra flat surface electrode has a 2 year warranty.

The AquaPro flat surface electrode is TRIS compatible and has an open junction that does not clog. The 9135APWP AquaPro flat surface electrode is a low maintenance model never requiring fill solution.

The silver chloride 913600 flat surface electrode is a low maintenance electrode that is ideal for routine measurements.

Ideal for soft solid and semi-solid samples



ROSS Ultra® combination pH electrode with epoxy body, flat surface

- Extended life and 2 year warranty
- Rapid response to temperature extremes

For soft solid and semi-solid samples



ROSS® combination pH electrode with epoxy body, flat surface

- Premium performance
- Rapid response to temperature extremes

For soft solids and semi-solids



AquaPro combination pH electrode with low maintenance polymer, epoxy body, flat surface

- Clog free junction for tough samples

For solids and semi-solids



Combination pH electrode with epoxy body, low maintenance gel, flat surface

- For routine flat surface measurements

Cat. No.	8135BNUWP	8135BN 8135SC	9135APWP	913600
pH Range	0-14	0-14	0-14	0-12
pH Precision	0.01	0.01	0.02	0.1
Temp. Range	0-100 °C	0-100 °C	0-60 °C	0-80 °C
Internal Reference	ROSS	ROSS	Ag/AgCl Double junction	Ag/AgCl
Junction	Glass fiber	Glass fiber	Open	Wick
Fill Solution (Cat. No.)	3 M KCl (810007)	3 M KCl (810007)	–	–
Dimension D (Dia) L (Length) T (Tip)	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 110 mm D - 12 mm
Connector Type	BNC Waterproof	BNC Screw Cap	BNC Waterproof	BNC

Cat. No.	Recommended Accessories
910001	Electrode storage solution
900011	Ag/AgCl fill solution
810007	ROSS fill solution
910008-WA	3 M KCl fill solution



Key Information

All cable lengths are 1 meter



Thermo Scientific Orion Spear Tip pH Electrodes

For Piercing Fruits, Cheese and Meats

Spear tip pH electrodes can be used for piercing soft samples like cheese or fruit or cutting through tougher samples such as meat. All have refillable designs. They are available in single junction or double junction designs which can be used with TRIS samples, proteins or sulfides.

The ROSS spear tip electrode offers the proven accuracy and response that ROSS electrodes are known for and is a double junction electrode. It is suited for semi-solid samples.

The 9163SC is suited for routine measurements and is for use in semi-solid samples.

The KNiPHE electrode has a glass electrode that is encased in a stainless steel housing with a cutting blade at the tip. It is used for tough samples such as meat. It has a double junction design.

The 9162BNWP can be used for soft samples or routine clean water measurements. It has a single junction design.

For piercing semi-solid samples



ROSS® combination pH electrode with glass body, spear tip

- For cheese, meat, and fruit samples
- Measure samples as small as 100 µL
- Double junction for TRIS samples

For piercing soft samples



Combination pH electrode, glass body, spear tip

- For cheese, meat, and fruit samples
- Measure samples as small as 100 µL

For meat, cheese and sludge samples



KNiPHE® Double Junction combination pH electrode with stainless steel cutting blade

- For meat, cheese and sludge where glass alone may break
- Replacement electrode Cat. No. 9121APWP
- Replacement blade Cat. No. 712001
- Replacement sheath Cat. No. 712002

Rugged with an easy-to-clean bulb



Low resistance combination pH electrode with glass body, rugged bulb

- For routine or clean water measurements
- For soft samples

Cat. No.	8163BNWP 8163SC	9163SC	9120APWP	9162BNWP
pH Range	0-14	0-14	0-14	0-14
pH Precision	0.01	0.02	0.02	0.02
Temp. Range	0-100 °C	0-90 °C	0-60 °C	0-90 °C
Internal Reference	ROSS	Ag/AgCl	Ag/AgCl Double junction	Ag/AgCl
Junction	Ceramic	Ceramic	Ceramic	Ceramic
Fill Solution (Cat. No.)	3 M KCl (810007)	4 M KCl w/ Ag/AgCl (900011)	3 M KCl (910008-WA)	4 M KCl w/ Ag/AgCl (900011)
Dimension D (Dia) L (Length) T (Tip)	L - 110 mm T - 4.5 mm x 20 mm L	L - 95 mm D - 6.5 mm x 25 mm L	L - 215 mm D - 16 mm	L - 120 mm D - 12 mm
Connector Type	BNC Waterproof Screw Cap	Screw Cap	BNC Waterproof	BNC Waterproof

Cat. No.	Recommended Accessories
900011	Ag/AgCl fill solution
810007	ROSS fill solution
910008	3M KCl fill solution



Screw Cap



BNC Waterproof

Key Information

All cap diameters are 16 mm
All cable lengths are 1 meter



Thermo Scientific Orion pH Half Cell and Reference Half Cell Electrodes

pH half cells require the use of a reference half cell electrode.

Reference half cells are for use with either a pH half cell sensing electrode or an ISE half cell reference electrode. They are available as single or double reference designs. Clog free Sure-flow junctions are also available extending the life of your electrode.

Ross half cells should be paired together. 900100 and 900200 are silver chloride references for pH and ISE electrodes.

Accurate, ROSS rapid response in a half-cell design



ROSS® pH half-cell with glass body

- Use with 800300 ROSS Sure-Flow or 800500U ROSS Ultra reference electrodes

Accurate results in a half-cell



pH half-cell with glass body

- Use with 900100 single junction or 900200 double junctions reference electrodes

Top performance and long life



ROSS Ultra® reference half-cell with glass body

- Use with 8101BNWP or 8101SC ROSS pH half-cell or 8411BN ROSS sodium half-cell electrodes

For all samples including solvents



ROSS® Sure-Flow® reference half-cell with glass body

- Sure-Flow junction prevents clogging
- Use with 8101BNWP or 8101SC ROSS pH half-cell or 8411BN ROSS sodium half-cell electrodes

For use with ISE half-cell or pH electrodes



Double Junction Sure-Flow® reference half-cell with epoxy body

- Sure-Flow junction prevents clogging
- Double junction allows a variety of filling solutions to be used

For routine pH and many ISE measurements



Single Junction Sure-Flow® reference half-cell with epoxy body

- Use with 9101BN and 9101SC pH half-cell electrodes
- Compatible with several ISEs

Cat. No.	8101BNWP 8101SC	9101BN 9101SC	800500U	800300	900200	900100
pH Range	0-14	0-14	0-14	0-14	0-14	0-14
pH Precision	0.01	0.02	–	–	–	–
Temp. Range	0-100 °C	0-90 °C	0-100 °C	0-100 °C	0-100 °C	0-100 °C
Internal Reference	ROSS	Ag/AgCl	ROSS	ROSS	Ag/AgCl Double junction	Ag/AgCl
Junction	–	–	Ceramic	Sure-Flow	Sure-Flow	Sure-Flow
Fill Solution (Cat. No.)	–	–	3 M KCl (810007)	3 M KCl (810007)	Equitransferent solution (900002) outer (900003)	Equitransferent solution w/ Ag/AgCl (900001)
Dimension D (Dia) L (Length) T (Tip)	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 110 mm D - 13 mm	L - 110 mm D - 13 mm
Connector Type	BNC Waterproof Screw Cap	BNC Screw Cap	Pin Tip	Pin Tip	Pin Tip	Pin Tip

Cat. No.	Recommended Accessories
810007	ROSS fill solution
900001	Single junction reference fill solution
900002	Double junction reference inner fill solution
900003	Double junction reference outer fill solution



Key Information

All cap diameters are 16 mm at bottom of cap
All cable lengths are 1 meter



Thermo Scientific Orion ATC Probes

Accurate Temperature Measurement

ATC probes will measure the temperature of your sample quickly and accurately. They are extremely durable. There are a variety of options available to you to use depending on your application. Choose from a micro ATC probe, stainless steel, glass or epoxy body probe. The connector must be compatible with the meter you are using.

Fastest temperature response



Micro ATC probe with stainless steel tip and epoxy body

- For critical temperature monitoring
- Measures samples as small as 10 µL
- Minimum depth of immersion is 3 mm

Rugged stainless steel



ATC probe with stainless steel body

- Extremely durable body
- For field, plant, and food applications

Solvent-resistant glass



ATC probe with glass body

- For solutions that contain organic solvents

Durable epoxy



ATC probe with epoxy body

- General purpose
- For aqueous samples, intermittent use in methanol or ethanol

Small diameter rugged stainless steel



ATC probe with stainless steel body

- Extremely durable body
- For field, plant, and food applications
- For use with Russell meters

Cat. No.	928007MD (Star)	927007MD (Star) 917007 (A+ Series) 927007 (PerpHecT)	927006MD (Star) 917006 (A+ Series) 927006 (PerpHecT)	927005MD (Star) 917005 (A+ Series) 927005 (PerpHecT) 917001 (Older Orion Meters)	917004
Temp. Range	0-100 °C	0-100 °C	0-100 °C	0-80 °C	0-100 °C
Temp. Accuracy	±1 °C	±2 °C	±2 °C	±2 °C	±2 °C
Dimension D (Dia) L (Length) T (Tip)	L - 117 mm D - 5 mm D - 1 mm x 38 mm L	L - 120 mm D - 6 mm	L - 120 mm D - 8 mm	L - 120 mm D - 6 mm	L - 120 mm D - 3 mm
Connector Type	MiniDIN for Star	MiniDIN (Star) 8 Pin DIN (A+ Series) [†] Phono Tip (PerpHecT)	MiniDIN (Star) 8 Pin DIN (A+ Series) [†] Phono Tip (PerpHecT)	MiniDIN (Star) 8 Pin DIN (A+ Series) [†] Phono Tip (PerpHecT) Dual Banana Plug (Older Orion Meters)	2.5 mm Phono Jack for Russell meters



2.5 mm Phono Tip



Dual Banana Plug



Phono Tip (PerpHecT)



MiniDIN (Star)



8 Pin DIN (A Series)

Key Information

All cap diameters are 16 mm except 928007MD
All cable lengths are 1 meter



Thermo Scientific Orion Redox/ORP and ORP Triode Electrodes

Reliable Redox Measurements

ORP measurements are easily made with your choice of ORP electrodes. Use our reliable ORP standard and compare your results to the Standard Hydrogen Electrode.

The 9678BNWP is a durable epoxy body electrode with a non-clog Sure-Flow junction. The 9778BNWP offers a chemical resistant glass body. ORP triodes have a durable epoxy body and can measure temperature also. They are available in refillable design or low-maintenance gel filled styles.

Durable and clog-free



Sure-Flow[®] combination redox/ORP electrode with epoxy body

- For use in water, wastewater, metal plating, and biotech samples
- Sure-Flow junction prevents clogging

Solvent-resistant glass body



Combination redox/ORP electrode with glass body

- For use in water, wastewater, metal plating and organic solvent samples

Easy-to-clean with built-in ATC



ORP/ATC Triode[™] with epoxy body, refillable

- For use in water and wastewater
- Epoxy body for ruggedness and durability

Low maintenance with built-in ATC



ORP/ATC Triode[™] with epoxy body, low maintenance gel

- For use in water and wastewater
- Epoxy body for ruggedness and durability

	Cat. No. 9678BNWP	9778BNWP	9180BNMD (Star) 9180BN (A+ Series)	9179BNMD (Star) 9179BN (A+ Series)
pH Range	–	–	–	–
Temp. Range	0-90 °C	0-100 °C	0-90 °C	0-80 °C
Temp. Accuracy	–	–	±2.0 °C	±2.0 °C
Internal Reference	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl
Junction	Sure-Flow	Ceramic	Glass Fiber	Wick
Fill Solution (Cat. No.)	4 M KCl w/ Ag/AgCl (900011)	4 M KCl w/ Ag/AgCl (900011)	4 M KCl w/ Ag/AgCl (900011)	–
Dimension D (Dia) L (Length) T (Tip)	L - 110 mm D - 13 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm	L - 120 mm D - 12 mm
Connector Type	BNC Waterproof	BNC Waterproof	BNC Waterproof - MiniDIN (Star) BNC Waterproof - 8 Pin (A+ Series)	BNC Waterproof - MiniDIN (Star) BNC Waterproof - 8 Pin (A+ Series)

Cat. No.	Recommended Accessories
900011	Ag/AgCl fill solution
967901	ORP standard 475 mL
967961	ORP standard 5 x 60 mL



BNC Waterproof



MiniDIN (Star)



8 Pin DIN (A Series)

Key Information

All cap diameters are 16 mm at bottom of cap

All cable lengths are 1 meter



Thermo Scientific Orion Silver Billet and Karl Fischer Electrodes

Electrodes for Titrations and Speciality Applications

The 977900 is a double platinum chemical resistant glass electrode for use with Karl Fischer titrations. It has a ground glass joint on the body to fit into titration vessels.

The 9780SC is a glass silver billet electrode used in halide titrations.

Thermo Scientific Orion Storage Sleeve and Base

If you ever have had an electrode drop on a lab bench and break you will want to use the storage sleeve and base, 810017.

Features and Benefits

- Protects electrode from breakage when not in use
- Covers entire glass body of standard size pH electrodes (12 x 120 mm)
- pH bulb stays conditioned when not in use
- Weighted base prevents electrode from tipping
- Sleeve can be removed from base to store in electrode holder



Storage Sleeve and Base 810017

For Karl Fischer titrations



For halide titrations



Karl Fischer double platinum electrode with glass body

- For accurate Karl Fischer titrations

Silver Billet combination electrode

- For accurate and reliable halide titrations

Cat. No.	977900	9780SC
pH Range	Endpoint Indicator	Endpoint Indicator
Temp. Range	0-40 °C	0-80 °C
Internal Reference	Platinum	Ag/AgCl
Junction	–	Ceramic
Fill Solution (Cat. No.)	–	4 M KCl w/ Ag/AgCl (900011)
Dimension D (Dia) L (Length) T (Tip)	L - 120 mm D - 12 mm	L - 150 mm D - 12 mm
Connector Type	Dual Pin Tip	Screw Cap



Screw Cap



Dual Pin Tip

Key Information

Environmentally-safe mercury-free
All cap diameters are 16 mm at bottom of cap
All cable lengths are 1 meter