



**Thermo Scientific  
Orion Benchtop and  
Portable Meters**

## the measure of confidence

Meters for pH, ion concentration with ISE, conductivity, dissolved oxygen and temperature analysis – in the lab and in the field

**Thermo**  
SCIENTIFIC

Thermo Scientific Orion Meters

# The Measure of Confidence



For more than 50 years, we have been a driving innovator and global leader in liquid sensing technology designed to make complex measurements routine, reliable, and accurate – in the lab, online and in the field.

High-quality meters are essential to the critical, routine tasks you perform every day.

Our portfolio of benchtop and portable meters are designed to help you meet your sample analysis challenges across a wide array of industries and applications.

We offer **simple, complete systems that are seamlessly integrated** to help address your measurement needs.

Our extensive portfolio of Thermo Scientific™ Orion™ benchtop and portable meters are designed to deliver the features and functionality you look for in a lab or field instrument:

- **Accurate, consistent results** – day after day
- Easy-to-use features that **maximize productivity and minimize training time**
- A wide selection of benchtop and portable meters **meet your application requirements and budget**
- Durable construction for **long product life**
- Modular meter designs for **maximum configuration flexibility and functional expandability** to help address your evolving requirements
- Integration with our line of Thermo Scientific™ ROSS™ electrodes - offering a complete solution with total confidence

PH | ORP | ION (ISE) | CONDUCTIVITY | TDS | SALINITY  
RESISTIVITY | DISSOLVED OXYGEN | TEMPERATURE



Perfectly designed to work together

Thermo Scientific Orion meters

+ sensors

+ calibration/maintenance solutions

+ accessories



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# How do I choose the best Thermo Scientific meter for me?

1 Select a **benchtop meter** for lab analysis or a **portable meter** for onsite measurements in the field.



2 Learn about our **premium, advanced** and **basic** meters and identify the best match based on your required features, performance specifications and budget. **Benchtop Meter Selection Guide Page 5 | Portable Meter Selection Guide Page 14**



3

From **single parameter pH meters to multi-parameter meters** capable of measuring pH, ISE, conductivity and dissolved oxygen simultaneously – discover the meter that helps address your measurement requirements.

4 Take a look at our **featured meter kits**, which provide what you need to start taking readings, protect your system and simplify sample analysis.



**Don't forget** to add sensors for specialized sample testing.

5

Complete your system with **seamlessly integrated accessories** for benchtop and portable meters.

6

Unique sample testing requires specialized sensors. Visit [thermoscientific.com/water](https://thermoscientific.com/water) for a complete line of pH, ORP, ion selective, conductivity, dissolved oxygen and temperature sensors. While there, try our digital pH electrode selection tool!

# Benchtop Meters At-a-Glance Selection Guide

Ensure accurate and reliable measurements in your laboratory and research locations.

Our Thermo Scientific™ Orion™ Versa Star™ and Thermo Scientific™ Orion Star™ A series benchtop meters are designed to address a variety of measurement requirements for dependable performance. Identify the best match based on your required features, performance specifications and budget.



**Premium**  
Benchtop Meters

**Advanced**  
Benchtop Meters

**Basic**  
Benchtop Meters

## FEATURES

Display Type	Adjustable color graphic LCD	Graphic LCD with backlight	Fixed segment LCD
Onscreen Text Prompts	Step-by-step calibration and guided setup instructions	Step-by-step calibration and guided setup instructions	Basic calibration and setup prompts
Keypad	Numeric with menu-specific function keys	Comprehensive with menu-specific function keys	Simple with highlighted measure key
Number of Channels	4, customizable with modules	1 to 2	1
Stirrer Probe Inputs	2	1	—
Measurement Read Modes	Auto-Read, Timed, Single-shot, Continuous	Auto-Read, Timed, Continuous	Auto-Read, Continuous
Methods	10 per channel	10 per channel	—
Data Log	2000 with date/time	2000 with date/time	50
Calibration Log	10 per mode	10	1
Identification Options	Electrode ID, Sample ID, User ID	Sample ID, User ID	—
Alarms	Set Point, High/Low Limit, Calibration Due	High/Low Limit, Calibration Due	—
External Device Output	USB (2), RS232	USB, RS232	—
Computer Software	Yes	Yes	—
Certifications	IP-54, CE, TUV 3-in-1, FCC Class A	IP-54, CE, TUV 3-in-1, FCC Class A	IP-54, CE, TUV 3-in-1, FCC Class A
Power Supply	Universal, 90-260 VAC, 50-60 Hz	Universal, 90-260 VAC, 50-60 Hz or 4 AA batteries	Universal, 90-260 VAC, 50-60 Hz or 4 AA batteries

## MEASUREMENT PARAMETERS

pH	Versa Star meter with pH or pH/LogR module	Star A211 pH meter	Star A111 pH meter
pH/Ion	Versa Star meter with one or two pH/ISE modules	Star A214 pH/ISE meter (Dual Star two channel pH/ISE meter also available)	—
Conductivity	Versa Star meter with conductivity module	Star A212 conductivity meter	Star A112 conductivity meter
Dissolved Oxygen	Versa Star meter with RDO/DO module	Star A213 RDO/DO meter	Star A113 DO meter
pH & Conductivity	Versa Star meter with pH & conductivity modules	Star A215 pH & conductivity meter	—
pH & Dissolved Oxygen	—	Star A216 pH & RDO/DO meter	—
pH, Ion, Conductivity & Dissolved Oxygen	Versa Star meter with pH/ISE, conductivity & RDO/DO modules	—	—
Expandable Measurement Modules	Select up to four modules per meter to customize parameters	—	—



IDEAL FOR APPLICATIONS IN:

- pharmaceuticals
- biotechnology
- food and beverage
- industrial

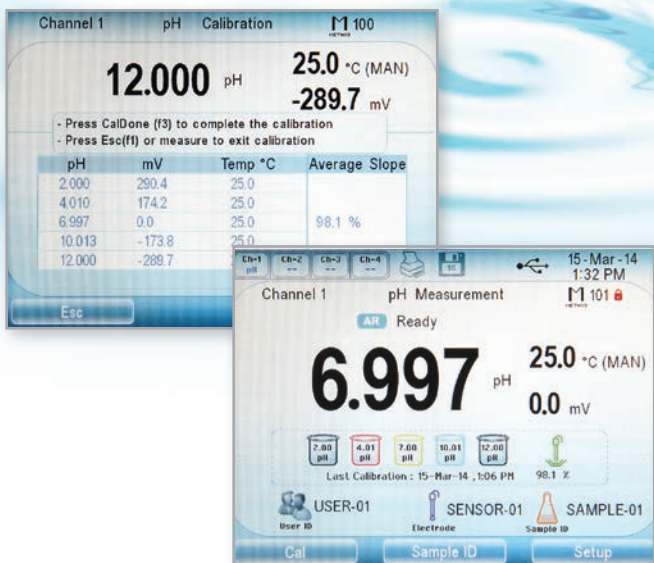
## Thermo Scientific Orion Versa Star Premium Benchtop Meters

### Versatile, High-Performance Laboratory Measurement System

Thermo Scientific Orion Versa Star benchtop meters are designed to meet your most challenging application with ease. Delivering rich functionality and features, you can optimally configure your meter system to meet changing requirements. The Orion Versa Star benchtop meters offer interchangeable measurement modules that allow multiple users to customize four separate channels to meet their specific requirements.

Easily view your measurements on a stunning color display with adjustable text sizes. Take the guesswork out of meter calibration and setup with onscreen instructions available in a variety of local languages. Enjoy quick and simple data entry using the numeric keypad.





## Measurement Modules

Select the measurement modules you need to best fit your application requirements.

The Versa Star meter is available without modules (VSTAR00), providing maximum flexibility for your meter configuration.

### Collect, store, and export your critical data:

- Data log collects up to 2000 data points with time and date stamp; enhance data tracking using electrode ID, sample ID and user ID options
- Calibration log stores ten most recent calibrations per parameter with viewable graph for multipoint pH and ISE calibrations
- Ensure measurement integrity by viewing the active calibration log while taking readings
- Non-volatile memory preserves data and settings, even in the event of power loss
- Free Orion Star Com software facilitates data transfers to a computer via USB or RS232 connections

### Premium ease-of-use features:

- Onscreen measurement stability indicator lets you know exactly when your measurements are ready and is adjustable using custom stability and averaging settings
- Audible alarms automatically notify you when a set offset value, high/low limit value, and calibration time interval are reached
- Easily access, update and switch your preferred measurement settings, using ten password-protected methods per channel
- Uniformly mix solutions using meter-controlled stirrer probes that are easy to position and can be quickly rinsed between samples

Cat. No.	Module Function
VSTAR-PH	<b>Versa Star pH Module</b> measures pH, mV, relative mV, ORP and temperature
VSTAR-LR	<b>Versa Star pH/LogR Module</b> measures pH, mV, relative mV, ORP and LogR temperature
VSTAR-ISE	<b>Versa Star pH/ISE Module</b> measures pH, ion concentration (ISE), mV, relative mV, ORP and temperature
VSTAR-CND	<b>Versa Star Conductivity Module</b> measures conductivity, TDS, salinity, resistivity and temperature
VSTAR-RD	<b>Versa Star RDO/DO Module</b> measures dissolved oxygen using an RDO optical or polarographic DO probe and temperature
VSTAR00	<b>Versa Star Meter Without Modules</b> includes electrode stand, universal power adapter and computer interface cable







### Versa Star 10 pH Meter

Measure pH, mV, relative mV or ORP with temperature and perform up to a six point pH calibration with easy to follow onscreen instructions, automatic buffer recognition of NIST, DIN or user-defined buffer groups and calibration editing option to fix individual points without a full recalibration. Customize measurements to show calibration history and pH electrode condition or simplify to show an extra large pH reading.

### Versa Star 80 pH/LogR Meter

Includes all the benefits of the Versa Star pH meter plus LogR technology that uses the glass-bulb of most pH electrodes to measure both pH and temperature at the same location – ideal for small sample volumes and samples that are difficult to clean.

### Versa Star 40 pH/ISE Meters

Includes all the benefits of the Versa Star pH meter plus measure ion concentration (ISE) and perform up to a six point ISE calibration with fast entry of concentration values using the numeric keypad. Use advanced ISE features including single & double known addition & subtraction and analate addition & subtraction incremental techniques, non-linear auto-blank, low range stability and electrode ID with calibration verification. Select the VSTAR40B2 kit with two pH/ISE modules to measure multiple samples simultaneously.

### Versa Star 20 Conductivity Meter

Measure conductivity, TDS, salinity or resistivity with temperature and perform up to a six point calibration with onscreen instructions and calibration editing option. Auto-ranging conductivity values with linear, non-linear, EP (USP) or off temperature compensation settings and 5, 10, 15, 20 or 25 °C reference temperatures ensure accurate results.

### Versa Star 30 RDO/DO Meter

Measure dissolved oxygen in percent saturation or mg/L with temperature and flexibility using Orion polarographic or RDO optical DO sensors with automatic sensor recognition. Calibrate using water-saturated air, air-saturated water, custom value (Winkler) and zero point options. A built-in barometer automatically adjusts DO readings for barometric pressure.

### Versa Star 50 pH and Conductivity Meter

Includes all the benefits of the Versa Star pH and conductivity meters in one preconfigured system.

### Versa Star 90 pH/ISE, Conductivity and RDO/DO Meters

Includes all the benefits of the Versa Star pH/ISE, conductivity and RDO/DO meters in one preconfigured system. Select the VSTAR93 kit with two pH/ISE modules to measure up to four samples simultaneously.



Cat. No.	Description*	Included Electrode/Sensor Advantages
VSTAR12	<b>Versa Star meter with pH module kit</b> > 8302BNUMD ROSS Ultra Triode pH/ATC electrode > 096019 Orion Star stirrer probe > 810199 ROSS pH buffer and solution kit	<b>8302BNUMD ROSS Ultra pH/ATC electrode</b> > Simultaneously measure pH and temperature with one electrode > Robust glass body for chemical resistance in a variety of samples > Double junction for TRIS buffer, sulfide and protein compatibility with 2-year warranty**
VSTAR82	<b>Versa Star meter with pH/LogR module kit</b> > 8172BNWP ROSS Sure-Flow pH electrode > 927007MD Stainless steel ATC probe > 810199 ROSS pH buffer and solution kit > 810007 ROSS electrode fill solution	<b>8172BNWP ROSS Sure-Flow pH electrode</b> > Open reference junction stabilizes readings and prevents clogging in difficult, dirty, viscous or semi-solid samples > Easy-to-flush reference chamber simplifies electrode maintenance > Double junction for TRIS buffer, sulfide and protein compatibility
VSTAR40A2	<b>Versa Star meter with pH/ISE module kit</b> > 8102BNUWP ROSS Ultra pH electrode > 927007MD Stainless steel ATC probe > 096019 Orion Star stirrer probe > 810199 ROSS pH buffer and solution kit	<b>8102BNUWP ROSS Ultra pH electrode</b> > Designed to provide accurate, stable measurements in a wide range of samples and applications > Robust glass body for chemical resistance in a variety of samples > Double junction for TRIS buffer, sulfide and protein compatibility with 2-year warranty**
VSTAR40B2	<b>Versa Star meter with two pH/ISE modules kit</b> > Same kit contents as VSTAR40A2 plus second pH/ISE module and stand for additional pH or ion selective electrode	
VSTAR22	<b>Versa Star meter with conductivity module kit</b> > 013005MD Orion 4-cell conductivity sensor > 011007 Orion 1413 $\mu$ S conductivity standard	<b>013005MD conductivity sensor</b> > Designed to provide high accuracy across 1 $\mu$ S/cm to 200 mS/cm measurement range > Rugged epoxy/graphite body with built-in temperature sensor > 4-cell sensor designed to reduce errors from fringe field interferences and polarization
VSTAR32	<b>Versa Star meter with RDO/DO module kit</b> > 083005MD Orion polarographic DO sensor with calibration sleeve > 080513 DO probe maintenance kit > BOD adapter, funnel and stirrer	<b>083005MD polarographic DO sensor</b> > Designed to deliver precise dissolved oxygen readings across 0 to 90 mg/L measurement range > Durable epoxy body with built-in temperature sensor > Screw-on membrane caps for quick and easy maintenance
VSTAR52	<b>Versa Star meter with pH and conductivity modules kit</b> > 8157BNUMD ROSS Ultra Triode pH/ATC electrode > 013005MD Orion 4-cell conductivity sensor > 810199 ROSS pH buffer and solution kit > 011007 Orion 1413 $\mu$ S conductivity standard	<b>8157BNUMD ROSS Ultra pH/ATC electrode</b> > Simultaneously measure pH and temperature with one electrode and double junction for TRIS buffer, sulfide and protein compatibility > Durable epoxy body for break resistant operation, plus 2-year warranty**  <b>013005MD conductivity sensor</b> > Designed to provide high accuracy across 1 $\mu$ S/cm to 200 mS/cm measurement range > Rugged epoxy/graphite body with built-in temperature sensor
VSTAR92	<b>Versa Star meter with pH/ISE, conductivity and RDO/DO modules kit</b> > 8157BNUMD ROSS Ultra Triode pH/ATC electrode > 013005MD Orion 4-cell conductivity sensor > 083005MD Orion polarographic DO sensor with calibration sleeve > 096019 Orion Star stirrer probe > 810199 ROSS pH buffer and solution kit > 011007 Orion 1413 $\mu$ S conductivity standard > 080513 DO probe maintenance kit > BOD adapter, funnel and stirrer	<b>8157BNUMD ROSS Ultra pH/ATC electrode</b> > Simultaneously measure pH and temperature with one electrode and double junction for TRIS buffer, sulfide and protein compatibility > Durable epoxy body for break resistant operation, plus 2-year warranty**  <b>013005MD conductivity sensor</b> > Designed to provide high accuracy across 1 $\mu$ S/cm to 200 mS/cm measurement range > Rugged epoxy/graphite body with built-in temperature sensor
VSTAR93	<b>Versa Star meter with two pH/ISE, conductivity and RDO/DO modules kit</b> > Same kit contents as VSTAR92 plus second pH/ISE module for additional pH or ion selective electrode	<b>083005MD polarographic DO sensor</b> > Designed to provide precise dissolved oxygen readings across 0 to 90 mg/L measurement range > Durable epoxy body with built-in temperature sensor

\* Note: Each meter kit includes meter-attached electrode stand, universal power adapter and computer interface cable.

\*\* Subject to terms of standard limited warranty.



IDEAL FOR APPLICATIONS IN:  
water  
wastewater  
chemical  
contract testing

## Thermo Scientific Orion A210 & Dual Star Series Advanced Benchtop Meters

### Easy to Use, Dependable Laboratory Meters

Perform your routine lab measurements quickly and easily with the Thermo Scientific Orion Star A210 series benchtop meters. Selectable read modes, hold function and measurement stability indicator give you flexibility and control over your testing. All critical data is shown with your measurements including temperature, date and time, read type, measurement stability, active calibration info, and power source. Onscreen calibration and setup instructions can be displayed in several local languages and new languages added through software updates.


Navigation is fast and simple due to the comprehensive keypad with menu-specific function keys, dual purpose scroll/shortcut keys, plus power, measure, log view and stirrer keys that ensure easy operation. All setup menus are in one location with direct access using a single shortcut key so you can quickly access, evaluate and change measurement and instrument settings.

#### Advanced ease-of-use features:

- Informative, easy-to-read backlit graphic display provides clear onscreen instructions for calibration and setup
- Includes measurement stability indicator and selectable read modes – Auto-Read holds a stable reading, Continuous shows changing readings with hold option, and Timed logs data at specific intervals
- Eliminate the need for magnetic stir bars using a meter-controlled stirrer probe to uniformly mix solutions

#### Dependable data collection, storage and exporting:

- Data log reliably collects and date/time-stamps up to 2000 measurement sets with option to add sample ID and user ID
- Calibration log stores ten most recent calibrations
- Non-volatile meter memory ensures your data and settings are protected, even with loss of power
- Free Orion Star Com software enables data transfer to a computer via USB or RS232 connections



Orion Star Com software makes it easy to transfer data from your meter to a computer.

### Star A211 pH Meter

Measure pH, mV, relative mV or ORP with temperature and perform up to a five point pH calibration with easy to follow onscreen instructions and automatic buffer recognition of NIST or DIN buffer groups with choice to manually enter custom buffer values. Calibration editing option allows individual points to be fixed without a full recalibration.

### Star A214 pH/ISE Meter

Measure pH, mV, relative mV, ORP or ion concentration (ISE) with temperature and perform up to a five point pH or ISE calibration with easy to follow onscreen instructions and calibration editing option. Advanced ISE features include non-linear auto-blank and low-range stability.

### Dual Star pH/ISE Meter

Measure pH, mV, relative mV, ORP or ion concentration (ISE) with temperature simultaneously on two channels. Perform up to a six point pH or ISE calibration on each channel with the numeric keypad or utilize incremental techniques for single & double known addition & subtraction.

### Star A212 Conductivity Meter

Measure conductivity, TDS, salinity or resistivity with temperature and perform up to a five point calibration with onscreen instructions and calibration editing option. Ensure accuracy using linear, non-linear, EP (USP) or off temperature compensation settings with 5, 10, 15, 20 or 25 °C reference temperatures and auto-ranging conductivity values.

### Star A213 RDO/DO Meter

Measure dissolved oxygen in percent saturation or mg/L with temperature using an Orion polarographic or RDO optical DO sensor and built-in barometer for pressure compensated DO readings. Calibrate using water-saturated air, air-saturated water, custom value (Winkler) and zero point options.

### Star A215 pH/Conductivity Meter

Includes the benefits of the Star A210 series pH and conductivity meters in one convenient system. Easily view individual measurements on a full screen display and quickly toggle to a split screen display to view multiple measurements simultaneously.

### Star A216 pH/RDO/DO Meter

Includes the benefits of the Star A210 series pH and RDO/DO meters in one convenient system. Easily view individual measurements on a full screen display and quickly toggle to a split screen display to view multiple measurements simultaneously.



Cat. No.	Description*	Included Electrode/Sensor Advantages:
STARA2115	<b>Star A211 pH meter kit</b> <ul style="list-style-type: none"> <li>&gt; 8302BNUMD ROSS Ultra Triode pH/ATC electrode</li> <li>&gt; 810199 ROSS pH buffer and solution kit</li> </ul>	<b>8302BNUMD ROSS Ultra pH/ATC electrode</b> <ul style="list-style-type: none"> <li>&gt; Simultaneously measure pH and temperature with one electrode</li> <li>&gt; Robust glass body for chemical resistance in a variety of samples</li> <li>&gt; Double junction for TRIS buffer, sulfide and protein compatibility with 2-year warranty**</li> </ul>
STARA2145	<b>Star A214 pH/ISE meter kit</b> <ul style="list-style-type: none"> <li>&gt; 8102BNUWP ROSS Ultra pH electrode</li> <li>&gt; 927007MD Stainless steel ATC probe</li> <li>&gt; 096019 Orion Star stirrer probe</li> <li>&gt; 810199 ROSS pH buffer and solution kit</li> </ul>	<b>8102BNUWP ROSS Ultra pH electrode</b> <ul style="list-style-type: none"> <li>&gt; Designed to provide accurate, stable measurements in a wide range of samples and applications</li> <li>&gt; Robust glass body for chemical resistance in a variety of samples</li> <li>&gt; Double junction for TRIS buffer, sulfide and protein compatibility with 2-year warranty**</li> </ul>
2115001	<b>Dual Star pH/ISE meter kit</b> <ul style="list-style-type: none"> <li>&gt; 8102BNUWP ROSS Ultra pH electrode</li> <li>&gt; 927007MD Stainless steel ATC probe</li> <li>&gt; 096019 Orion Star stirrer probe</li> <li>&gt; pH 4, 7, 10 buffers and ROSS storage solution</li> </ul>	<b>8102BNUWP ROSS Ultra pH electrode</b> <ul style="list-style-type: none"> <li>&gt; Designed to provide accurate, stable measurements in a wide range of samples and applications</li> <li>&gt; Robust glass body for chemical resistance in a variety of samples</li> <li>&gt; Double junction for TRIS buffer, sulfide and protein compatibility with 2-year warranty**</li> </ul>
STARA2125	<b>Star A212 conductivity meter kit</b> <ul style="list-style-type: none"> <li>&gt; 013005MD Orion 4-cell conductivity sensor</li> <li>&gt; 011007 Orion 1413 <math>\mu</math>S conductivity standard</li> </ul>	<b>013005MD conductivity sensor</b> <ul style="list-style-type: none"> <li>&gt; Designed to provide high accuracy across 1 <math>\mu</math>S/cm to 200 mS/cm measurement range</li> <li>&gt; Rugged epoxy/graphite body with built-in temperature sensor</li> <li>&gt; 4-cell sensor designed to reduce errors from fringe field interferences and polarization</li> </ul>
STARA2135	<b>Star A213 RDO/DO meter kit</b> <ul style="list-style-type: none"> <li>&gt; 083005MD Orion polarographic DO sensor with calibration sleeve</li> <li>&gt; 080513 DO probe maintenance kit</li> <li>&gt; BOD adapter, funnel and stirrer</li> </ul>	<b>083005MD polarographic DO sensor</b> <ul style="list-style-type: none"> <li>&gt; Designed to provide precise dissolved oxygen readings across 0 to 90 mg/L measurement range</li> <li>&gt; Durable epoxy body with built-in temperature sensor</li> <li>&gt; Screw-on membrane caps for quick and easy maintenance</li> </ul>
STARA2155	<b>Star A215 pH/conductivity meter kit</b> <ul style="list-style-type: none"> <li>&gt; 8157BNUMD ROSS Ultra Triode pH/ATC electrode</li> <li>&gt; 013005MD Orion 4-cell conductivity sensor</li> <li>&gt; 810199 ROSS pH buffer and solution kit</li> <li>&gt; 011007 Orion 1413 <math>\mu</math>S conductivity standard</li> </ul>	<b>8157BNUMD ROSS Ultra pH/ATC electrode</b> <ul style="list-style-type: none"> <li>&gt; Simultaneously measure pH and temperature with one electrode and double junction for TRIS buffer, sulfide and protein compatibility</li> <li>&gt; Durable epoxy body for break-resistant operation, plus 2-year warranty**</li> </ul> <b>013005MD conductivity sensor</b> <ul style="list-style-type: none"> <li>&gt; Designed to provide high accuracy across 1 <math>\mu</math>S/cm to 200 mS/cm measurement range</li> <li>&gt; Rugged epoxy/graphite body with built-in temperature sensor</li> </ul>
STARA2165	<b>Star A216 pH/RDO/DO meter kit</b> <ul style="list-style-type: none"> <li>&gt; 8157BNUMD ROSS Ultra Triode pH/ATC electrode</li> <li>&gt; 083005MD Orion polarographic DO sensor with calibration sleeve</li> <li>&gt; 810199 ROSS pH buffer and solution kit</li> <li>&gt; 080513 DO probe maintenance kit</li> <li>&gt; BOD adapter, funnel and stirrer</li> </ul>	<b>8157BNUMD ROSS Ultra pH/ATC electrode</b> <ul style="list-style-type: none"> <li>&gt; Simultaneously measure pH and temperature with one electrode and double junction for TRIS buffer, sulfide and protein compatibility</li> <li>&gt; Durable epoxy body for break resistant operation, plus 2-year warranty**</li> </ul> <b>083005MD polarographic DO sensor</b> <ul style="list-style-type: none"> <li>&gt; Designed to provide precise dissolved oxygen readings across 0 to 90 mg/L measurement range</li> <li>&gt; Durable epoxy body with built-in temperature sensor</li> </ul>

\* Note: Each meter kit includes meter-attached electrode stand, universal power adapter and computer interface cable.

\*\* Subject to terms of standard limited warranty.



Orion meters and Orion ROSS electrodes:

The ideal combination for outstanding results.



IDEAL FOR APPLICATIONS IN:  
 academic  
 environmental  
 power

## Thermo Scientific Orion Star A110 Series Basic Benchtop Meters

### Economical, Simplified Laboratory Meters

Looking for a budget-friendly basic benchtop meter that doesn't compromise on reliability and quality? Our Thermo Scientific Orion Star A110 series meters are a simple, economical solution for your basic routine measurements.

Featuring an emphasized measure key, selectable read modes and measurement stability indicator, our basic meter series is designed to deliver measurements you can trust.

- Simplified, easy-to-read display
- User-friendly operation with basic calibration text prompts
- Power using batteries, or included power adapter

#### Star A111 pH Meter

Measure pH, mV or relative mV with temperature. Perform up to a three point pH calibration with automatic buffer recognition of NIST or DIN buffer groups or manual buffer entry.

#### Star A112 Conductivity Meter

Measure conductivity or TDS with temperature with auto-ranging conductivity values, linear temperature compensation, 20 or 25 °C reference temperatures and one point automatic or manual conductivity calibration.

#### Star A113 DO Meter

Measure dissolved oxygen in percent saturation or mg/L with temperature and calibrate using water-saturated air or custom value using a Winkler titration.

Cat. No.	Description*	Included Electrode/Sensor Advantages
STARA1115	<b>Star A111 pH meter kit</b> > 9157BNMD Orion Triode pH/ATC electrode > 916099 Orion 60 mL pH buffer kit	<b>9157BNMD Orion Triode pH/ATC electrode</b> > Simultaneously measure pH and temperature with one electrode > Durable epoxy body for break resistant operation
STARA1125	<b>Star A112 conductivity meter kit</b> > 011050MD Orion 2-cell conductivity sensor > 011007 Orion 1413 µS conductivity standard	<b>011050MD conductivity sensor</b> > Designed to provide high accuracy across 1 µS/cm to 20 mS/cm measurement range > Durable epoxy/platinum body with built-in temperature sensor
STARA1135	<b>Star A113 DO meter kit</b> > 083005MD Orion polarographic DO sensor with calibration sleeve > 080513 DO probe maintenance kit	<b>083005MD polarographic DO sensor</b> > Designed to provide precise dissolved oxygen readings across 0 to 20 mg/L measurement range > Durable epoxy body and screw-on membrane caps for quick and easy maintenance

\* Note: Each meter kit includes meter-attached electrode stand and universal power adapter.



# Portable Meters At-a-Glance Selection Guide

## Take your measurements into the great outdoors.

Our Thermo Scientific Orion Star A series portable meters are built rugged and waterproof for dependable performance. Take advantage of one-hand operation and easy portability for any remote application without sacrificing the accuracy and reliability of your measurements. Identify the best match based on your required features, performance specifications and budget.



**Premium**  
Portable Meters

**Advanced**  
Portable Meters

**Basic**  
Portable Meters

### FEATURES

Display Type	Graphic LCD with backlight	Graphic LCD with backlight	Fixed segment LCD
Onscreen Text Prompts	Step-by-step calibration and guided setup instructions	Step-by-step calibration and guided setup instructions	Basic calibration and setup prompts
Keypad	Comprehensive with menu-specific function keys	Comprehensive with menu-specific function keys	Simple with highlighted measure key
Number of Channels	1 to 3	1	1
Measurement Read Modes	Auto-Read, Timed, Continuous	Auto-Read, Continuous	Auto-Read, Continuous
Methods	10 per channel	—	—
Data Log	5000 with date/time	1000 with date/time	50
Calibration Log	10 per channel	10	1
Identification Options	Sample ID, User ID	—	—
Alarms	High/Low Limit, Calibration Due	Calibration Due	—
External Device Output	USB, RS232	USB, RS232	—
Computer Software	Yes	Yes	—
Enclosure Rating	IP67 waterproof	IP67 waterproof	IP67 waterproof
Certifications	CE, TUV 3-in-1, FCC Class A	CE, TUV 3-in-1, FCC Class A	CE, TUV 3-in-1, FCC Class A
Power Supply	Four AA batteries or universal 90-260 VAC, 50-60 Hz wall adapter	Four AA batteries or universal 90-260 VAC, 50-60 Hz wall adapter	Four AA batteries or universal 90-260 VAC, 50-60 Hz wall adapter
Average Battery Life	800 hours	800 hours	2000 hours

### MEASUREMENT PARAMETERS

pH	Star A321 pH meter	Star A221 pH meter	Star A121 pH meter
Conductivity	Star A322 conductivity meter	Star A222 conductivity meter	Star A122 conductivity meter
Dissolved Oxygen	Star A323 RDO/DO meter	Star A223 RDO/DO meter	Star A123 DO meter
pH/Ion	Star A324 pH/ISE meter		
pH & Conductivity	Star A325 pH & conductivity meter		
pH & Dissolved Oxygen	Star A326 pH & RDO/DO meter		
pH, Ion, Conductivity & Dissolved Oxygen	Star A329 pH/ISE, conductivity & RDO/DO meter		





IDEAL FOR APPLICATIONS IN:

- contract testing
- environmental
- food and beverage
- industrial

## Thermo Scientific Orion Star A320 Series Premium Portable Meters

### Rugged, Easy-to-Use Field Meters

Take your measurements at the source with our premium line of portable meters. Whether you need single, dual or multi-parameter measurement capabilities, our Orion Star A320 series portable meters offer an information-rich screen and user-friendly operation. This rugged, waterproof portable meter is ready to tackle the elements with you.

### Features that help you bring the lab outdoors:

- Waterproof, IP67 meter housing
- Informative, easy-to-read backlit graphic display provides clear onscreen instructions for calibration and setup
- Data log reliably collects and date/time-stamps up to 5000 measurement sets with sample ID and user ID for reliable data tracking

### Premium portable meter features:

- Comprehensive keypad with menu-specific function keys and shortcut keys for quick and efficient meter navigation and control
- Designed to deliver fast and reliable measurements with Auto-Read, continuous and timed read modes and measurement stability indicator
- Non-volatile memory preserves data, even with loss of power
- Free Orion Star Com software facilitates data transfer to a computer via USB or RS232 connections
- Multilanguage interface with new languages added through software updates



### Star A321 pH Meter

Measure pH, mV, relative mV or ORP with temperature and perform up to a five point pH calibration with easy to follow onscreen instructions, automatic buffer recognition of NIST or DIN buffer groups with choice to manually enter custom buffer values plus calibration editing option allows individual points to be fixed without a full recalibration.

### Star A322 Conductivity Meter

Measure conductivity, TDS, salinity or resistivity with temperature and perform up to a five point calibration with onscreen instructions and calibration editing option. Conductivity features include auto-ranging measurements and temperature compensation for 5, 10, 15, 20 or 25 °C reference temperatures and linear, non-linear, EP (USP) or off temperature curves.

### Star A323 RDO/DO Meter

Measure dissolved oxygen in percent saturation or mg/L with temperature using Orion polarographic or RDO optical DO sensors with automatic sensor recognition. Calibrate using water-saturated air, air-saturated water, custom value (Winkler) and zero point options. A built-in barometer automatically adjusts DO readings for barometric pressure.

### Star A324 pH/ISE Meter

Measure pH, mV, relative mV, ORP or ion concentration (ISE) with temperature and perform up to a five point pH or ISE calibration with easy to follow onscreen instructions and calibration editing option. Advanced ISE features include non-linear auto-blank and low-range stability.

### Star A325 pH/Conductivity Meter

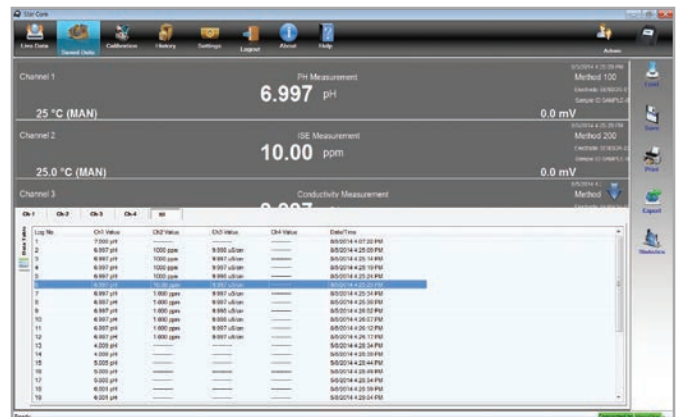
Includes the benefits of the Star A320 series pH and conductivity meters in one convenient system. Easily view individual measurements on a full screen display and quickly toggle to a split screen display to view multiple measurements simultaneously.

### Star A326 pH/RDO/DO Meter

Includes the benefits of the Star A320 series pH and RDO/DO meters in one convenient system. Easily view individual measurements on a full screen display and quickly toggle to a split screen display to view multiple measurements simultaneously.

### Star A329 pH/ISE/Conductivity/RDO/DO Meter

Includes the benefits of the Star A320 series pH/ISE, conductivity and RDO/DO meters in one convenient system. Easily view individual measurements on a full screen display and quickly toggle to a split screen display to view multiple measurements simultaneously.



Easily transfer your measurement data to a computer using free Orion Star Com software\*.

\* Star Com software has been designed to work with Microsoft® Windows® XP, Windows Vista® and Windows 7 operating systems (computer must have latest Windows updates installed and .NET framework version 4.0). Although we are continuously striving to ensure the compatibility of our software with most operating systems, we cannot ensure compatibility.



Cat. No.	Description*	Included Electrode/Sensor Advantages
STARA3215	<b>Star A321 pH meter kit</b> <ul style="list-style-type: none"> <li>8107UWMMMD ROSS Ultra Triode pH/ATC electrode</li> <li>Orion pH 4, 7, 10 buffers and rinse solution pouches (10 pack each) and ROSS storage solution</li> </ul>	<b>8107UWMMMD ROSS Ultra pH/ATC electrode</b> <ul style="list-style-type: none"> <li>Measure pH and temperature with one low-maintenance gel-filled electrode</li> <li>Durable epoxy body and 3-meter cable for simple use in the field</li> <li>TRIS buffer, sulfide and protein compatible with 18-month warranty**</li> </ul>
STARA3225	<b>Star A322 conductivity meter kit</b> <ul style="list-style-type: none"> <li>013010MD Orion 4-cell conductivity sensor</li> <li>Orion 1413 <math>\mu</math>S conductivity standard and rinse solution pouches (10 pack each)</li> </ul>	<b>013010MD Orion 4-cell conductivity sensor</b> <ul style="list-style-type: none"> <li>Designed to provide high accuracy across 1 <math>\mu</math>S/cm to 200 mS/cm measurement range and 4-cell sensor designed to reduce interference</li> <li>Rugged epoxy/graphite body with built-in temperature sensor and 3 meter cable for flexible positioning</li> </ul>
STARA3235	<b>Star A323 RDO/DO meter kit</b> <ul style="list-style-type: none"> <li>087010MD Orion RDO optical DO sensor with calibration sleeve and stainless steel probe guard</li> </ul>	<b>087010MD Orion RDO optical DO sensor</b> <ul style="list-style-type: none"> <li>Designed to provide precise dissolved oxygen readings across 0 to 50 mg/L measurement range</li> <li>Durable epoxy body and built-in temperature sensor</li> <li>Optical sensor requires no warm up, maintenance solutions or stirring</li> </ul>
STARA3245	<b>Star A324 pH/ISE meter kit</b> <ul style="list-style-type: none"> <li>8107UWMMMD ROSS Ultra Triode pH/ATC electrode</li> <li>Orion pH 4, 7, 10 buffers and rinse solution pouches (10 pack each) and ROSS storage solution</li> </ul>	<b>8107UWMMMD ROSS Ultra pH/ATC electrode</b> <ul style="list-style-type: none"> <li>Measure pH and temperature with one low-maintenance gel-filled electrode</li> <li>Durable epoxy body and 3-meter cable for simple use in the field</li> <li>TRIS buffer, sulfide and protein compatible with 18-month warranty**</li> </ul>
STARA3255	<b>Star A325 pH/conductivity meter kit</b> <ul style="list-style-type: none"> <li>8107UWMMMD ROSS Ultra Triode pH/ATC electrode</li> <li>013010MD Orion 4-cell conductivity sensor</li> <li>Orion pH 4, 7, 10 buffers and rinse solution pouches (10 pack each) and ROSS storage solution</li> <li>Orion 1413 <math>\mu</math>S conductivity standard pouches (10 pk)</li> </ul>	<b>8107UWMMMD ROSS Ultra pH/ATC electrode</b> <ul style="list-style-type: none"> <li>Measure pH and temperature with one low-maintenance gel-filled electrode</li> <li>Durable epoxy body and 3-meter cable for simple use in the field</li> </ul> <b>013010MD Orion 4-cell conductivity sensor</b> <ul style="list-style-type: none"> <li>Designed for high accuracy across 1 <math>\mu</math>S/cm to 200 mS/cm measurement range</li> <li>Rugged epoxy/graphite body with built-in temperature sensor and 3-meter cable for flexible positioning</li> </ul>
STARA3265	<b>Star A326 pH/RDO/DO meter kit</b> <ul style="list-style-type: none"> <li>8107UWMMMD ROSS Ultra Triode pH/ATC electrode</li> <li>087010MD Orion RDO optical DO sensor with calibration sleeve and stainless steel probe guard</li> <li>Orion pH 4, 7, 10 buffer pouches (10 pack each) and ROSS storage solution</li> </ul>	<b>8107UWMMMD ROSS Ultra pH/ATC electrode</b> <ul style="list-style-type: none"> <li>Measure pH and temperature with one low-maintenance gel-filled electrode</li> <li>Durable epoxy body and 3-meter cable for simple use in the field</li> </ul> <b>087010MD Orion RDO optical DO sensor</b> <ul style="list-style-type: none"> <li>Designed to provide precise dissolved oxygen readings across 0 to 50 mg/L measurement range</li> <li>Optical sensor requires minimal maintenance and no warm up or stirring</li> </ul>
STARA3295	<b>Star A329 pH/ISE/conductivity/RDO/DO meter kit</b> <ul style="list-style-type: none"> <li>8107UWMMMD ROSS Ultra Triode pH/ATC electrode</li> <li>013010MD Orion 4-cell conductivity sensor</li> <li>087010MD Orion RDO optical DO sensor with calibration sleeve and stainless steel probe guard</li> <li>Orion pH 4, 7, 10 buffers and rinse solution pouches (10 pack each) and ROSS storage solution</li> <li>Orion 1413 <math>\mu</math>S conductivity standard pouches (10 pk)</li> </ul>	<b>8107UWMMMD ROSS Ultra pH/ATC electrode</b> <ul style="list-style-type: none"> <li>Measure pH and temperature with one low-maintenance gel-filled electrode</li> <li>Durable epoxy body and 3-meter cable for simple use in the field</li> </ul> <b>013010MD Orion 4-cell conductivity sensor</b> <ul style="list-style-type: none"> <li>Designed for high accuracy across 1 <math>\mu</math>S/cm to 200 mS/cm measurement range with epoxy/graphite body, built-in temperature sensor and 3-meter cable</li> </ul> <b>087010MD Orion RDO optical DO sensor</b> <ul style="list-style-type: none"> <li>Designed to provide precise dissolved oxygen readings across 0 to 50 mg/L measurement range</li> <li>Optical sensor requires minimal maintenance and no warm up or stirring</li> </ul>

\* **Note:** Each meter kit includes protective armor, a hard-sided field case, four AA batteries and computer interface cable.

\*\* Subject to terms of standard limited warranty.



IDEAL FOR APPLICATIONS IN:  
chemical  
environmental  
water  
wastewater



## Thermo Scientific Orion Star A220 Series Advanced Portable Meters

### Easy to Use, Dependable Field Meters

Don't leave your measurements to chance when analyzing samples outside the lab. Our Orion Star A220 series portable meters offer the reliability you need in a user-friendly package for your dedicated pH, conductivity or dissolved oxygen testing needs. All critical data is shown with your measurement including temperature, date and time, read type, measurement stability, active calibration info, and power source status.

### Features that help you bring the lab outdoors:

- Waterproof, IP-67 meter housing
- Easy to read, backlit graphic display
- User-friendly operation with onscreen calibration and setup instructions

### Advanced portable meter features:

- Comprehensive keypad with menu-specific function keys and shortcut keys for quick and efficient navigation and control
- Auto-Read and continuous read modes and measurement stability indicator
- Data log collects up to 1000 measurement sets with time and date stamp and non-volatile memory preserves data
- Free Orion Star Com software facilitates data transfer to a computer via USB or RS232 connections
- Multilanguage interface with new languages added through software updates



**Star A221 pH Meter**

Measure pH, mV, relative mV or ORP with temperature and perform up to a five point pH calibration with easy to follow onscreen instructions and automatic buffer recognition of NIST or DIN buffer groups with choice to manually enter custom buffer values.

**Star A222 Conductivity Meter**

Measure conductivity, TDS, salinity or resistivity with temperature and perform up to a five point calibration with onscreen instructions. Improve readings using linear, non-linear or off temperature compensation settings with 15, 20 or 25 °C reference temperatures and auto-ranging conductivity values.

**Star A223 RDO/DO Meter**

Measure dissolved oxygen in percent saturation or mg/L with temperature using an Orion polarographic or RDO optical DO sensor and built-in barometer for pressure compensated readings. Calibrate using water-saturated air, air-saturated water, custom value (Winkler) and zero point options.

Cat. No.	Description*	Included Electrode/Sensor Advantages
STARA2215	<p><b>Star A221 pH meter kit</b></p> <ul style="list-style-type: none"> <li>➢ 8107UWMMMD ROSS Ultra Triode pH/ATC electrode</li> <li>➢ Orion pH 4, 7, 10 buffers and rinse solution pouches (10-pack each) and ROSS storage solution</li> </ul>	<p><b>8107UWMMMD ROSS Ultra pH/ATC electrode</b></p> <ul style="list-style-type: none"> <li>➢ Measure pH and temperature with one low-maintenance gel-filled electrode</li> <li>➢ Durable epoxy body and 3-meter cable for simple use in the field</li> <li>➢ TRIS buffer, sulfide and protein compatible with 18-month warranty**</li> </ul>
STARA2225	<p><b>Star A222 conductivity meter kit</b></p> <ul style="list-style-type: none"> <li>➢ 013010MD Orion 4-cell conductivity sensor</li> <li>➢ Orion 1413 μS conductivity standard and rinse solution pouches (10-pack each)</li> </ul>	<p><b>013010MD Orion 4-cell conductivity sensor</b></p> <ul style="list-style-type: none"> <li>➢ Designed to provide high accuracy across 1 μS/cm to 200 mS/cm measurement range and 4-cell design reduces interference</li> <li>➢ Rugged epoxy/graphite body with built-in temperature sensor and 3-meter cable for flexible positioning</li> </ul>
STARA2235	<p><b>Star A223 RDO/DO meter kit</b></p> <ul style="list-style-type: none"> <li>➢ 087010MD Orion RDO optical DO sensor with calibration sleeve and stainless steel probe guard</li> </ul>	<p><b>087010MD Orion RDO optical DO sensor</b></p> <ul style="list-style-type: none"> <li>➢ Designed to provide precise dissolved oxygen readings across 0 to 50 mg/L measurement range</li> <li>➢ Durable epoxy body and built-in temperature sensor</li> <li>➢ Optical sensor requires no warm up, maintenance solutions or stirring</li> </ul>

\* Note: Each meter kit includes protective armor, a hard-sided field case, four AA batteries and computer interface cable.

\*\* Subject to terms of standard limited warranty.





IDEAL FOR APPLICATIONS IN:  
academic  
power

## Thermo Scientific Orion Star A120 Series Basic Portable Meters

### Budget-Friendly, Simplified Field Meters

Get started with outdoor sample analysis in the field with our Orion Star A120 series economical portable meters. Enjoy a rugged design and user-friendly features at an affordable price.

#### Basic portable meter features:

- Simplified, easy to read display
- User-friendly operation with basic calibration text prompts
- Uncomplicated, reliable measurements with emphasized measure key, selectable read modes and measurement stability indicator

Cat. No.	Includes*	Included Electrode/Sensor Advantages
STARA1215	<b>Star A121 pH meter kit</b> <ul style="list-style-type: none"> <li>➢ 9107BNMD Orion Triode pH/ATC electrode</li> <li>➢ 916099 Orion 60 mL pH buffer kit</li> <li>➢ Orion rinse solution pouches (10-pack)</li> </ul>	<b>9107BNMD Orion Triode pH/ATC electrode</b> <ul style="list-style-type: none"> <li>➢ Measure pH and temperature with one low-maintenance gel-filled electrode</li> <li>➢ Durable epoxy body for break resistant operation</li> </ul>
STARA1225	<b>Star A122 conductivity meter kit</b> <ul style="list-style-type: none"> <li>➢ 011050MD Orion 2-cell conductivity sensor</li> <li>➢ 011007 Orion 1413 <math>\mu\text{S}</math> conductivity standard</li> <li>➢ Orion rinse solution pouches (10-pack)</li> </ul>	<b>011050MD conductivity sensor</b> <ul style="list-style-type: none"> <li>➢ Designed to provide high accuracy across 1 <math>\mu\text{S}/\text{cm}</math> to 20 <math>\text{mS}/\text{cm}</math> measurement range</li> <li>➢ Durable epoxy/platinum body with built-in temperature sensor</li> </ul>
STARA1235	<b>Star A123 DO meter kit</b> <ul style="list-style-type: none"> <li>➢ 083005MD Orion polarographic DO sensor with calibration sleeve</li> <li>➢ 080513 DO probe maintenance kit</li> </ul>	<b>083005MD polarographic DO sensor</b> <ul style="list-style-type: none"> <li>➢ Designed to provide precise dissolved oxygen readings across 0 to 20 <math>\text{mg}/\text{L}</math> measurement range</li> <li>➢ Durable epoxy body and screw-on membrane caps for quick and easy maintenance</li> </ul>

\* Note: Each meter kit includes protective armor, a hard-sided field case and four AA batteries.

#### Star A121 pH Meter

Measure pH, mV or relative mV with temperature and perform up to a three point pH calibration with automatic buffer recognition of NIST or DIN buffer groups.

#### Star A122 Conductivity Meter

Measure conductivity or TDS with temperature with temperature compensation options and auto-ranging conductivity readings and perform a one point automatic or manual conductivity calibration.

#### Star A123 DO Meter

Measure dissolved oxygen in percent saturation or  $\text{mg}/\text{L}$  with temperature and calibrate using water-saturated air or custom value using a Winkler titration.





## Orion Versa Star Benchtop Meters

Cat. No.	Key Specifications Range   Relative Accuracy
VSTAR12 VSTAR52	-2.000 to 20.000 pH   $\pm 0.002$ pH -2000.0 to 2000.0 mV   $\pm 0.2$ mV or $\pm 0.05\%$ reading -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
VSTAR22 VSTAR52 VSTAR92 VSTAR93	Conductivity: 0.001 $\mu\text{S}$ to 3000 mS (auto-ranging)   0.5% reading $\pm 0.01$ $\mu\text{S}$ $\leq 3$ $\mu\text{S}$ , 0.5% reading $\pm 1$ digit $> 3$ $\mu\text{S}$ TDS: 0.001 to 200.0 ppt (0.02 to 9.99 factor), Salinity: 0.06 to 80.00 psu, 0.05 to 42.00 ppt, Resistivity: 2 ohm to 100.0 meg-ohm   0.5% reading $\pm 1$ digit -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
VSTAR32 VSTAR92 VSTAR93	Polarographic: 0.00 to 90.00 mg/L, 0.0 to 600.0 % saturation   $\pm 0.2$ mg/L or $\pm 2\%$ reading RDO: 0.00 to 50.00 mg/L, 0.0 to 500.0 % saturation   $\pm 0.1$ mg/L to 8, $\pm 0.2$ mg/L to 20, $\pm 10\%$ reading to 50 mg/L 450.0 to 850.0 mmHg   $\pm 6$ mmHg (internal barometer) 0.0 to 50.0°C, 32.0 to 122.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
VSTAR40A2 VSTAR40B2 VSTAR92 VSTAR93	-2.000 to 20.000 pH   $\pm 0.002$ pH -2000.0 to 2000.0 mV   $\pm 0.2$ mV or $\pm 0.05\%$ reading 0.0001 to 19990 ISE (ppm, M, mg/L, %, ppb or none)   $\pm 0.2$ mV or $\pm 0.05\%$ reading -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
VSTAR82	-2.000 to 20.000 pH   $\pm 0.002$ pH -2000.0 to 2000.0 mV   $\pm 0.2$ mV or $\pm 0.05\%$ reading -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution) LogR Temperature: 0.0 to 100.0°C, 32.0 to 212.0°F   $\pm 0.5^\circ\text{C}$ (1 to 3 point LogR temperature calibration)
All Versa Star Meters	Up to 6 point calibration, 1 point temperature offset, adjustable isopotential point (pH and ISE) Data log 2000 measurement sets with date/time stamp USB (2) and RS232 external device outputs 100-240 VAC, 50/60 Hz universal power adapter

## Orion Star A320 Portable Meters

Cat. No.	Key Specifications Range   Relative Accuracy
STARA3215 STARA3255 STARA3265	-2.000 to 20.000 pH   $\pm 0.002$ pH -2000.0 to 2000.0 mV   $\pm 0.2$ mV or $\pm 0.05\%$ -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
STARA3225 STARA3255 STARA3295	Conductivity: 0.001 $\mu\text{S}$ to 3000 mS (auto-ranging)   0.5% reading $\pm 0.01$ $\mu\text{S}$ $\leq 3$ $\mu\text{S}$ , 0.5% reading $\pm 1$ digit $> 3$ $\mu\text{S}$ TDS: 0.001 to 200.0 ppt (0.02 to 9.99 factor), Salinity: 0.06 to 80.00 psu, 0.05 to 42.00 ppt, Resistivity: 2 ohm to 100.0 meg-ohm   0.5% reading $\pm 1$ digit -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
STARA3235 STARA3265 STARA3295	Polarographic: 0.00 to 90.00 mg/L, 0.0 to 600.0 % saturation   $\pm 0.2$ mg/L or $\pm 2\%$ reading RDO: 0.00 to 50.00 mg/L, 0.0 to 500.0 % saturation   $\pm 0.1$ mg/L to 8, $\pm 0.2$ mg/L to 20, $\pm 10\%$ reading to 50 mg/L 450 to 850 mmHg   $\pm 6$ mmHg (internal barometer) 0.0 to 50.0°C, 32.0 to 122.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
STARA3245 STARA3295	-2.000 to 20.000 pH   $\pm 0.002$ pH -2000.0 to 2000.0 mV   $\pm 0.2$ mV or $\pm 0.05\%$ reading 0.0001 to 19990 ISE (ppm, M, mg/L, %, ppb or none)   $\pm 0.2$ mV or $\pm 0.05\%$ reading -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
All Star A320 Meters	Up to 5 point calibration, 1 point temperature offset Data log 5000 measurement sets with date/time stamp USB and RS232 external device outputs 4 AA batteries (included) or universal power adapter

## Orion Star A210 & Dual Star Benchtop Meters and Orion Star A220 Portable Meters

Cat. No.	Key Specifications Range   Relative Accuracy
STARA2115 STARA2155 STARA2165 STARA2215	-2.000 to 20.000 pH   $\pm 0.002$ pH -2000.0 to 2000.0 mV   $\pm 0.2$ mV or $\pm 0.05\%$ reading -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
STARA2125 STARA2155 STARA2225	Conductivity: 0.001 $\mu\text{S}$ to 3000 mS (auto-ranging)   0.5% reading $\pm 0.01$ $\mu\text{S}$ $\leq 3$ $\mu\text{S}$ , 0.5% reading $\pm 1$ digit $> 3$ $\mu\text{S}$ TDS: 0.001 to 200.0 ppt (0.02 to 9.99 factor), Salinity: 0.06 to 80.00 psu, 0.05 to 42.00 ppt (Star A210), Resistivity: 2 ohm to 100.0 meg-ohm   0.5% reading $\pm 1$ digit -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
STARA2135 STARA2165 STARA2235	Polarographic: 0.00 to 90.00 mg/L, 0.0 to 600.0 % saturation   $\pm 0.2$ mg/L or $\pm 2\%$ reading RDO: 0.00 to 50.00 mg/L, 0.0 to 500.0 % saturation   $\pm 0.1$ mg/L to 8, $\pm 0.2$ mg/L to 20, $\pm 10\%$ reading to 50 mg/L 450 to 850 mmHg   $\pm 6$ mmHg (internal barometer) 0.0 to 50.0°C, 32.0 to 122.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
STARA2145	-2.000 to 20.000 pH   $\pm 0.002$ pH -2000.0 to 2000.0 mV   $\pm 0.2$ mV or $\pm 0.05\%$ 0.0001 to 19900 ISE (ppm, M, mg/L, %, ppb or none)   $\pm 0.2$ mV or $\pm 0.05\%$ -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
2115001	-2.000 to 19.999 pH   $\pm 0.002$ pH -1999.9 to 1999.9 mV   $\pm 0.2$ mV or $\pm 0.05\%$ 0.0001 to 19900 ISE (ppm, M, %, ppb or none)   $\pm 0.2$ mV or $\pm 0.05\%$ -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$ (0.1° resolution)
All Star A210 and Star A220 Meters	Up to 5 point calibration, 1 point temperature offset Data log 2000 (Star A210) or 1000 (Star A220) measurement sets with date/time stamp USB and RS232 external device outputs Universal power adapter or 4 AA batteries
Dual Star Meter	Up to 6 point calibration, 1 point temperature offset Data log 1000 measurement sets with date/time stamp USB and RS232 external device outputs 100-240 VAC, 50/60 Hz universal power adapter

## Orion Star A110 Series Benchtop Meters and Orion Star A120 Series Portable Meters

Cat. No.	Key Specifications Range   Relative Accuracy
STARA1115 STARA1215	-2.00 to 16.00 pH   $\pm 0.01$ pH -1600.0 to 1600.0 mV   $\pm 0.2$ mV or $\pm 0.05\%$ -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$
STARA1125 STARA1225	Conductivity: 0.01 $\mu\text{S}$ to 200.0 mS   0.5% $\pm 1$ digit TDS: 0 to 19990 mg/L   0.5% $\pm 1$ digit -5.0 to 105.0°C, 23.0 to 221.0°F   $\pm 0.1^\circ\text{C}$
STARA1135 STARA1235	0.00 to 20.00 mg/L, 0.0 to 200.0 % sat.   $\pm 0.2$ mg/L 450 to 450 to 850 mmHg   manual input 0.0 to 50.0°C, 32.0 to 122.0°F   $\pm 0.1^\circ\text{C}$
All Star A110 and Star A120 Meters	Up to 3 point calibration, 1 point temperature offset Data log 50 measurement sets Universal power adapter or 4 AA batteries

**3**year  
WARRANTY

on ALL Thermo Scientific Orion Versa Star, Star A series and Dual Star meters and Orion Versa Star measurement modules\*

\* Subject to terms of standard limited warranty.

# Meter Accessories

Increase your productivity by adding accessories to your benchtop or portable meter.

## Benchtop Meter Accessories

Complement your benchtop meter with key accessories that make you more productive.



### Stirrer Probes

Uniformly mix solutions using five selectable stirring speeds with the meter-controlled Orion Star stirrer probe. Designed to be easily positioned and quickly rinsed between samples. The stirrer probe is designed to fit into benchtop electrode stands.

Our premium Versa Star benchtop meters can operate two stirrer probes simultaneously, so you can measure your samples faster.

### Meter-Attached Electrode Stand

Included with every Thermo Scientific Orion Star A and Versa Star Benchtop meter, the electrode stand holds a variety of sensors for easy placement in and out of samples, as well as consolidated rinsing between samples.

### Benchtop Meter Accessories

Cat. No.	Description
096019	Orion Star stirrer probe
STARA-BEA	Orion Star A and Versa Star benchtop meter-attached electrode stand, includes electrode arm, holder and meter bracket
1010006	Orion Star series inkjet printer, 110V/220V, with RS232 printer cable
1010003	Universal power adapter for Star A series meters
STARA-PWR	Universal power adapter for Versa Star meters
IQOQ-VSTAR	Versa Star meter IQ/OQ documentation, valid for all Versa Star configurations
IQOQ-STARA	Star A series meter IQ/OQ documentation, valid for all Star A210 series benchtop meters

## Portable Meter Accessories

Protection and organization for your portable meter.



### Portable Meter Armor

Because anything can happen in the field, add extra protection with durable portable meter armor.

Included with all Orion Star A portable meter kits, the armor features dedicated holders for pH, conductivity and dissolved oxygen sensors. An adjustable wrist/belt strap can secure the meter to fixtures such as pipes, or converts into a built-in meter stand.



### Hard-sided Field Case

Our field case is specially designed to efficiently transport everything you need for field measurements. Sensors can stay connected with the meter while in the case. A removable door makes it easy to use the cable management system.

The field case, which is included with all Orion Star A portable meter kits, helps you stay organized while protecting your instrumentation.

### Portable Meter Accessories

Cat. No.	Description
STARA-AR	Orion Star A portable meter armor with pH electrode holder, conductivity and DO sensor holder, stand and adjustable hand-strap
STARA-CS	Orion Star A portable meter hard-sided field case
1010006	Orion Star series inkjet printer, 110V/220V, with RS232 printer cable
1010003	Universal power adapter for Star A series meters
IQOQ-STARA	Star A series meter IQ/OQ documentation, valid for all Star A320 and Star A220 series portable meters







## Resources for Electrochemistry and Water Analysis Equipment

### Thermo Scientific Orion Meters

Visit [www.thermoscientific.com/OrionMeters](http://www.thermoscientific.com/OrionMeters) for a complete listing of all Thermo Scientific Orion meters and kits plus application notes, software updates and free Thermo Scientific Orion Star Com data transfer software.

### Thermo Scientific Orion Lab, Field and Online Products

Visit [www.thermoscientific.com/water](http://www.thermoscientific.com/water) for information on all of the Thermo Scientific Orion laboratory, field and online equipment for pH, ISE, conductivity and dissolved oxygen analysis plus Thermo Scientific Orion UV-Vis spectrophotometry, colorimetry and turbidity products.

[thermoscientific.com/water](http://thermoscientific.com/water)

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#### Water and Lab Products

##### North America

Toll Free: 1-800-225-1480  
Tel: 1-978-232-6000  
[info.water@thermofisher.com](mailto:info.water@thermofisher.com)

##### Germany

Tel: (49) 6184-90-6000  
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