



Introducing the latest Thermo Scientific Orion Star Meters

Orion VERSA STAR and Star A Meters

The new Orion Star™ A and VERSA STAR™ meters are built on the quality and expertise you've come to expect from the Orion product line. The expanded offering combines the tried-and-true features relied on by many professionals with new features concentrated on making them easier to use and minimizing the time needed to train others or to refer to instructions.



Orion VERSA STAR Benchtop Series

The Orion VERSA STAR advanced benchtop meter and modules exemplify versatility. Four channels can be configured in any combination. Define the channels as you need them. Some suggestions are: four different parameters for complete multiparameter analysis, two sets of two different parameters for simultaneous dual-parameter testing or even four of the same for really high throughput. The versatility also shows in the large, customizable color display; ability to handle the testing spectrum from simple readings to advanced ISE applications; redesigned electrode holder head and exclusive auto-recognition capability for Orion optical RDO and polarographic DO probes. Orion VERSA STAR meters have all the best features and options to work with any application, even the unexpected.

To complement the new meters, we've kept our specialized, industry-proven meters. The Orion DUAL STAR meters are easy-to-use with two channels for simultaneous measurement. For environments that need non-sparking meters, the Orion Intrinsically-Safe Meters meet that criteria and are US intrinsically-safe rated.

Our 2012 Orion meter offering means no more settling for a meter – get the right fit for your application and testing needs.

Orion Star A320 and A200-series meters offer dependability and are an easy choice if you need a dedicated single or multiparameter meter for accurate and repeatable measurements every day. Built with the testing location in mind, the benchtop meters feature an Orion Star stirrer probe port and include the redesigned electrode holder head. The portable meters are waterproof with an IP67-rated housing and have the option to accept AC power. The large, backlit graphic display shows results with plain language prompts. Exclusive auto-recognition capability for Orion optical RDO and polarographic DO probes lets you choose the best probe for your application, not limiting your probe options. These meters are the ideal choice for any lab, for every sample, every day.

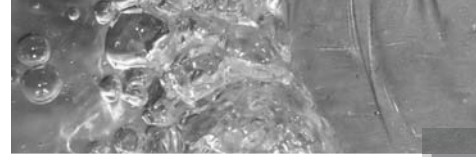
Orion Star A320 & A200 Series











Orion Star A100 Series



For simplicity and affordability without sacrificing accuracy, look no further than the Orion Star A100-series meters. These single parameter meters are available in benchtop and portable housings. The simple keypad layout combined with the dedicated onscreen messages help with calibration and setup. Orion Star A100-series meters provide just the core information you need.



Housing	Benchtop			
Model	Orion VERSA STAR	Orion DUAL STAR	Orion Star A210-Series	Orion Star A110-Series
Parameter	Catalog Numbers			
pH	Meter Set: VSTAR10, VSTAR40A, VSTAR40B, VSTAR50, VSTAR80, VSTAR90, VSTAR91 Kit: VSTAR12, VSTAR40A2, VSTAR40B2, VSTAR52, VSTAR82, VSTAR92, VSTAR93	Meter: 2115000 Kit: 2115001, 2115101, 2115102	Meter: STARA2110, STARA2140, STARA2150, STARA2160 Kit: STARA2115, STARA2116, STARA2145, STARA2155, STARA2165	Meter: STARA1110 Kit: STARA1115, STARA1116
ISE	Meter Set: VSTAR40A, VSTAR40B, VSTAR90, VSTAR91 Kit: VSTAR40A2, VSTAR40B2, VSTAR92, VSTAR93	Meter: 2115000 Kit: 2115001, 2115101, 2115102	Meter: STARA2140 Kit: STARA2145, STARA2146, STARA2147, STARA2148	
Conductivity/TDS	Meter Set: VSTAR20, VSTAR50, VSTAR90, VSTAR91 Kit: VSTAR22, VSTAR52, VSTAR92, VSTAR93		Meter: STARA2120, STARA2150 Kit: STARA2125, STARA2126, STARA2155	Meter: STARA1120 Kit: STARA1125
Resistivity/Salinity				
RDO	Meter Set: VSTAR30, VSTAR90, VSTAR91 Kit: VSTAR32, VSTAR92, VSTAR93		Meter: STARA2130, STARA2160 Kit: STARA2135, STARA2136, STARA2165	Meter: STARA1130 Kit: STARA1135
pH/ISE/Conductivity/RDO/DO	Meter Set: VSTAR90, VSTAR91 Kit: VSTAR92, VSTAR93			
Number of Channels	1 to 4	2	1 to 2	1
Orion Star Stirrer Probe Control	2	1	1	
Datalog	2000 with date/time	1000 with date/time	2000 with date/time	50
USB Output	2	1	1	
RS232 Output	1	1	1	
Methods	10 per channel	10 per channel	10	
Example Display				
Page Numbers	4-9, 14-15, 20-21, 26-27, 32-33, 38	10-11	12-13, 16-19, 22-23, 28-29, 34-35	24-25, 30-31, 36-37

Housing	Portable			
Model	Orion Star A320-Series	Orion Star A220-Series	Orion Star A120-Series	Orion Intrinsically Safe
Parameter	Catalog Numbers			
pH	Meter: STARA3210, STARA3240, STARA3250, STARA3260, STARA3290 Kit: STARA3215, STARA3245, STARA3255, STARA3265, STARA3295	Meter: STARA2210 Kit: STARA2215	Meter: STARA1210 Kit: STARA1215	Meter & Electrode: 0261S0, 0266S0 Kit: 0261S3, 0266S3
ISE	Meter: STARA3240, STARA3290 Kit: STARA3245, STARA3295			
Conductivity/TDS	Meter: STARA3220, STARA3250, STARA3290 Kit: STARA3225, STARA3255, STARA3295	Meter: STARA2220 Kit: STARA2225	Meter: STARA1220 Kit: STARA1225	Meter & Electrode: 0131S0, 0136S0 Kit: 0131S3, 0136S3
Resistivity/Salinity				
RDO	Meter: STARA3230, STARA3260, STARA3290 Kit: STARA3235, STARA3265, STARA3295	Meter: STARA2230 Kit: STARA2235	Meter: STARA1230 Kit: STARA1235	
DO				
pH/ISE/Conductivity/RDO/DO	Meter: STARA3290 Kit: STARA3295			
Number of Channels	1 to 3	1	1	1
Datalog	5000 with date/time	1000 with date/time	50	100 with date/time on select meters
USB Output	1	1	1	
RS232 Output	1	1		1
Methods	10			
Example Display				
Page Numbers	40-49, 52-53, 56-57	48-49, 52-53, 56-57	50-51, 54-55, 58	61

Meter configurations include the meter. Meter Set configurations apply to the Orion VERSA STAR and include the meter and appropriate module(s) for the measuring parameter(s). Kit configurations include meter (meter set for Orion VERSA STAR) with related electrode/probes, accessories and solutions.



Thermo Scientific Orion VERSA STAR

Advanced Electrochemistry Meter

Visible indicators to quickly show how each of the four channels are assigned

Calibration information with buffer points and electrode slope from last calibration

Function keys that update depending on your screen and shortcut keys on the keypad make this meter easy for anyone to use

Four channels to mix and match in any combination as you need

The large, color graphic display is easy on the eyes and can be seen from any angle

Display information can be customized to show only the information you need



More BIG surprises just for you! Find out on the following pages.

This versatile meter has a large, color graphic LCD display. The informative (and customizable) display shows readings, connections, time, date, sample ID, user ID and calibration information.

Features and Benefits

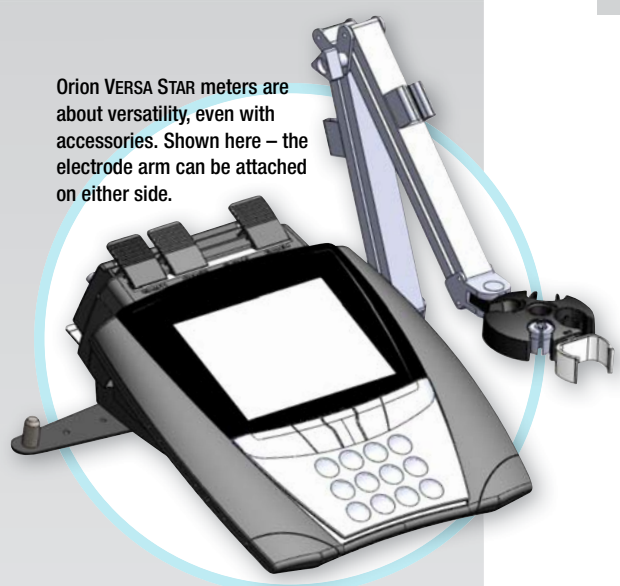
- Select from five modules to customize the four channels your way – it's versatile for you to configure how you need it for now or for later
- Anyone can use this meter with its plain language screen prompts, function keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Memory for up to 10 methods per channel allow for customized procedures to differentiate between tests and/or users
- Data transfer and updating meter software is easy with two USB and RS232 ports
- Includes data analysis software for transferring stored results or displaying readings in real-time
- Mix samples without a stir plate with direct control for two Orion Star stirrer probes (096019, sold separately)
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source with the included universal power adapter
- IP54-rated housing handles splashes
- 3 year meter replacement warranty



A variety of modules that you can place in any of the four channels.

- pH/Temperature Module Allows:**
 - Up to 6 point pH calibration with automatic recognition for USA/NIST and DIN buffers
 - Fixing of calibration errors without a complete recalibration with calibration editing
- Use the pH/ISE/Temperature Module for:**
 - All the benefits of the pH module
 - Fixing pH/ISE calibration errors without a complete recalibration with calibration editing
 - Advanced ISE benefits such as auto-blank, timed end point, linear point-to-point, non-linear selectable auto-blank, low-concentration range stability, ISE ID and incremental techniques
- Conductivity/Temperature Module Offers:**
 - Conductivity, TDS, salinity or resistivity capabilities
 - Selectable reading reference temperatures of 5, 10, 15, 20 or 25 °C with linear, non-linear, nLFu or USP/EP curve options for conductivity
 - Choice of practical salinity or natural sea water curves for salinity readings
 - Linear or ISO/EN 27888 curves for TDS
- Dissolved Oxygen/RDO/Temperature Module:**
 - Takes the worry out of DO probe compatibility – the meter accepts and automatically recognizes Orion polarographic and RDO optical/luminescence-based probes
 - Compensates automatically for temperature, salinity with manual input and barometric pressure (automatic or manual)
 - Allows for calibration using water-saturated air, air-saturated water, a Winkler titration or zero point
 - Calculates BOD/DOUR/SOUR readings when combined with the complimentary data analysis software
- Module Featuring LogR Technology:**
 - Includes all of the features of the pH module with the added benefits of:
 - The most advanced electrode diagnostics
 - No temperature sensor needed to get temperature-compensated pH readings

Orion VERSA STAR meters are about versatility, even with accessories. Shown here – the electrode arm can be attached on either side.



Orion VERSA STAR meters can be configured a variety of ways at any time. This example shows a meter with the pH/LogR module and a pH/ISE module.



No need to turn off your meter to switch modules – meter automatically recognizes module changes.





Thermo Scientific Orion VERSA STAR 90 and 91 pH/ISE/Conductivity/RDO/Dissolved Oxygen Benchtop Meters

Looking for the top-of-the-line, best meter you can find? Looking for something for everything and meeting all those testing needs? Whether it's one sample that needs a variety of testing or a variety of samples needing one test, the Orion VERSA STAR 90 and 91 advanced multiparameter meters are ready for the job. These meters come fully-loaded and ready to take on multiple measurements.

Highlighted Features Include:

- Display customization to show only the information you need
- Plain language screen prompts, function keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese make it easy for anyone to use this meter
- Non-volatile memory that holds up to 2000 data points with time and date stamp
- Stores up to 10 methods per channel allow for customized procedures to differentiate between tests and/or users
- Two USB and a RS232 port makes for easy data transfer and updating meter software
- Complimentary data analysis software for easy transferring of stored results, real-time viewing and calculation of BOD, DOUR and SOUR results
- Option to control sample mixing directly from the meter without a separate stir plate when using with the Orion Star stirrer probe
- Increase your productivity – two stirrer probe ports allow for simultaneous stirring and control for two separate samples at the same time
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Working with almost every AC power source through the included universal power adapter
- IP54-rated housing handles splashes and cleans up easily
- 3 year meter replacement warranty

Product Specifications – Orion VERSA STAR Meter

		CE TUV EPA
Maximum Number of Modules		4
Methods		Up to 10
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, AUTO-READ™, timed interval, single timed reading
Communication Ports		One RS232, two USB ports (one client, one host)
Orion Star Stirrer Probe Ports		2
Power		Universal, AC power adapter, 90-260 VAC, 50-60 Hz

Product Specifications – pH/ISE Module (VSTAR-ISE)

			CE TUV EPA
pH	Range	-2.000 to 20.000	
	Resolution	0.1, 0.01, 0.001	
	Relative Accuracy	±0.002	
	Calibration Points	Up to 6	
	Calibration Editing	Yes	
mV/Rel mV/ ORP	Range	±2000.0 mV	
	Resolution	0.1	
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater	
	E_n ORP Mode	Yes	
ISE	Range	0 to 19999	
	Resolution	Up to 4 significant digits	
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater	
	Units	ppm, M, mg/L, %, ppb, none	
	Calibration Points	Up to 6	
	Calibration Editing	Yes	
	Adjustable ISO Point	Yes	
	Calibration Features	Timed end point, linear point to point, non-linear selectable auto-blank, low concentration range stability	
	Incremental Techniques	Single known addition & subtraction, double known addition & subtraction, single analate addition & subtraction	
	Advanced Features	Displays electrode type, temperature compensation	
Temperature	Range	-5 to 105 °C, 23 to 221 °F	
	Resolution	0.1	
	Relative Accuracy	±0.1	
	Offset Calibration	1 point	
Inputs	pH/ISE	BNC, reference pin	
	ATC	8-pin mini-DIN	

Product Specifications – Conductivity Module (VSTAR-CND)

			CE TUV EPA
Conductivity	Range	0.001 µS to 3000 mS	
	Resolution	0.001 µS minimum; 4 significant figures minimum	
	Relative Accuracy	0.5 % reading ±1 digit	
	Reference Temperature	5, 10, 15, 20, 25 °C	
	Temperature Compensation	Linear (0 to 10.0 %/°C), nLn, nLFu, USP/EP	
	Compatible Cell Constants	0.001 to 199.9	
	Calibration Points	Up to 6 points	
	Calibration Editing	Yes	



Resistivity	Range	2 ohm to 100 meg-ohm
	Resolution	2 ohms-cm
	Relative Accuracy	0.5 % reading ±1 digit
Salinity	Type	Practical salinity or natural sea water
	Range	0.01 to 80.0 ppt NaCl equivalent; 0.01 to 42 ppt sea water
	Resolution	0.01
	Relative Accuracy	±0.1
TDS	Range	0 to 200 ppt
	Resolution	4 significant digits
	Relative Accuracy	±0.5 % reading ±1 digit
	TDS Factor Range	Linear 0.01 to 10.00
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Input	8-pin mini-DIN	

Product Specifications – RDO/DO Module (VSTAR-RD)

CE TUV EPA		
Dissolved Oxygen	Concentration - Polarographic	
	Range	0 to 90 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation - Polarographic	
	Range	0 to 600
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Concentration - RDO	
	Range	0 to 50 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.1 mg/L up to 8 mg/L; ±0.2 mg/L from 8 to 20 mg/L; 10 % of reading, 20 to 50 mg/L
	% Saturation - RDO	
	Range	0 to 500
	Resolution	0.1, 1
Relative Accuracy	±2 %	
Automatic Barometric Pressure Correction	450.0 to 850.0 mm Hg	
Salinity Factor Correction	Automatic when used with conductivity module and probe or manual; 0 to 45 ppt	
Calibration Features	Water saturated air, air saturated water, manual (Winkler) and zero point	
Probe Type	Polarographic or RDO	
Temperature	Range	0 to 50 °C, 32 to 122 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Input	9-pin mini-DIN	

Meter Ordering Information

Cat. No.	Description
VSTAR90	Orion VERSA STAR pH/ISE/Conductivity/RDO/Dissolved Oxygen Benchtop Multiparameter Meter Set - Orion VERSA STAR meter - Orion VERSA STAR pH/ISE/temperature module - Orion VERSA STAR conductivity/temperature module - Orion VERSA STAR dissolved oxygen/temperature module - Electrode arm with redesigned holder - Universal power adapter
VSTAR91	Orion VERSA STAR pH/ISE/Conductivity/RDO/Dissolved Oxygen Ultimate Benchtop Multiparameter Meter Set - Orion VERSA STAR meter - Two Orion VERSA STAR pH/ISE/temperature modules - Orion VERSA STAR conductivity/temperature module - Orion VERSA STAR dissolved oxygen/temperature module - Two 096019 Orion Star stirrer probes - Two electrode arms with redesigned holders - Universal power adapter
VSTAR92	Orion VERSA STAR pH/ISE/Conductivity/RDO/Dissolved Oxygen Benchtop Multiparameter Meter Kit - Orion VERSA STAR meter - Two Orion VERSA STAR pH/ISE/temperature modules - Orion VERSA STAR conductivity/temperature module - Orion VERSA STAR dissolved oxygen/temperature module - 8157BNUMD Orion ROSS Ultra Triode pH/ATC probe - 013005MD Orion DuraProbe conductivity cell, K=0.475 - 083005MD Orion polarographic DO probe - 096019 Orion Star stirrer probe - 080017 calibration sleeve for DO probe - 080513 DO probe maintenance kit - 970802 BOD funnel/stirrer - 080360 BOD adapter - 810199 ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - 011007 conductivity standard, 1413 µS, 5 x 60 mL - Electrode arm with redesigned holder - Universal power adapter
VSTAR93	Orion VERSA STAR pH/ISE/Conductivity/RDO/Dissolved Oxygen Ultimate Benchtop Multiparameter Meter Kit - Orion VERSA STAR meter - Two Orion VERSA STAR pH/ISE/temperature modules - Orion VERSA STAR conductivity/temperature module - Orion VERSA STAR dissolved oxygen/temperature module - 8157BNUMD Orion ROSS Ultra Triode pH/ATC probe - 013005MD Orion DuraProbe conductivity cell, K=0.475 - 083005MD Orion polarographic DO probe - Two 096019 Orion Star stirrer probes - 080017 calibration sleeve for DO probe - 080513 DO probe maintenance kit - 970802 BOD funnel/stirrer - 080360 BOD adapter - 810199 ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - 011007 conductivity standard, 1413 µS, 5 x 60 mL - Two electrode arms with redesigned holders - Universal power adapter



- pH
- ISE
- ORP
- Cond
- RDO
- DO
- Temp



Thermo Scientific Orion VERSA STAR 40

pH/ISE Benchtop Meters

Measuring pH/ISE has never looked so good or been so easy. The large color display is easy on to read and easy on the eyes. Prompts make accuracy and repeatability easy for even the most complicated testing. If you need to add more channels for more or obtain more parameters from the same, simply remove the protective individual channel cover and add the new module.

Features and Benefits

- Versatility is the name of the game
 - Change out modules to create the meter you need at any time
 - Customize the display to show only the information you need
- Up to 6 point pH calibration with automatic recognition for USA/NIST and DIN buffers and electrode identification
- This meter features advanced ISE capabilities to work with all ISE testing applications, even the most complex
 - Up to 6 point ISE calibration with timed end point and point-to-point or linear regression slope
 - Non-linear selectable auto-blank and low-concentration range stability
 - Incremental techniques for known or analyte addition and subtraction
 - Adjustable isopoint for temperature-compensated ISE results
- Fix errors without a complete recalibration with the calibration editing function
- Anyone can use this meter with its plain language screen prompts, function keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals or just once with single-shot mode
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods per channel allow for customized procedures to differentiate between tests and/or users
- Two USB and a RS232 port makes for easy data transfer and updating meter software
- Includes data analysis software for easy transferring of stored results or real-time viewing
- Increase your productivity – two Orion Star stirrer probe ports allow for simultaneous stirring and control for two separate samples at the same time
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source through the included universal power adapter
- IP54-rated housing handles splashes and cleans up easily
- 3 year meter replacement warranty

Product Specifications – Orion VERSA STAR Meter

		CE TUV EPA
Maximum Number of Modules		4
Methods		Up to 10
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, AUTO-READ™, timed interval, single timed reading
Communication Ports		One RS232, two USB ports (one client, one host)
Orion Star Stirrer Probe Ports		2
Power		Universal, AC power adapter, 90-260 VAC, 50-60 Hz

Product Specifications – pH/ISE Module (VSTAR-ISE)

			CE TUV EPA
pH	Range		-2.000 to 20.000
	Resolution		0.1, 0.01, 0.001
	Relative Accuracy		±0.002
	Calibration Points		Up to 6
	Calibration Editing		Yes
	Adjustable ISO Point		Yes
mV/Rel mV/ ORP	Range		±2000.0 mV
	Resolution		0.1
	Relative Accuracy		±0.2 mV or ±0.05 % of reading whichever is greater
	E_n ORP Mode		Yes
ISE	Range		0 to 19999
	Resolution		Up to 4 significant digits
	Relative Accuracy		±0.2 mV or ±0.05 % of reading whichever is greater
	Units		ppm, M, mg/L, %, ppb, none
	Calibration Points		Up to 6
	Calibration Editing		Yes
	Adjustable ISO Point		Yes
	Calibration Features		Timed end point, linear point to point, non-linear selectable auto-blank, low concentration range stability
	Incremental Techniques		Single known addition & subtraction, double known addition & subtraction, single analyte addition & subtraction
	Advanced Features		Displays electrode type, temperature compensation
Temperature	Range		-5 to 105 °C, 23 to 221 °F
	Resolution		0.1
	Relative Accuracy		±0.1
	Offset Calibration		1 point
Inputs	pH/ISE		BNC, reference pin
	ATC		8-pin mini-DIN



Meter Ordering Information

Cat. No.	Description
VSTAR40A	Orion VERSA STAR pH/ISE Benchtop Meter Set - Orion VERSA STAR meter - Orion VERSA STAR pH/ISE/temperature module - Electrode arm with redesigned holder - Universal power adapter
VSTAR40A2	Orion VERSA STAR pH/ISE Benchtop Meter Kit - Orion VERSA STAR meter - Orion VERSA STAR pH/ISE/temperature module - 8102BNUWP Orion ROSS Ultra pH electrode - 096019 Orion Star stirrer probe - 927007MD ATC probe, stainless steel - ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - Electrode arm with redesigned holder - Universal power adapter
VSTAR40B	Orion VERSA STAR Benchtop Meter with Two pH/ISE Modules Set - Orion VERSA STAR meter - Two Orion VERSA STAR pH/ISE/temperature modules - Electrode arm with redesigned holder - Universal power adapter
VSTAR40B2	Orion VERSA STAR Benchtop Meter with Two pH/ISE Modules Kit - Orion VERSA STAR meter - Two Orion VERSA STAR pH/ISE/temperature modules - 8102BNUWP Orion ROSS Ultra pH electrode - 096019 Orion Star stirrer probe - 927007MD ATC probe, stainless steel - ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - Two electrode arms with redesigned holders - Universal power adapter

Accessories

Cat. No.	Description
VSTAR-PH	Orion VERSA STAR pH/temperature module
VSTAR-ISE	Orion VERSA STAR pH/ISE/temperature module
VSTAR-CND	Orion VERSA STAR conductivity/temperature module
VSTAR-RD	Orion VERSA STAR RDO/DO/temperature module
VSTAR-LR	Orion VERSA STAR pH/temperature with LogR technology module
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
STARA-PWR	Replacement universal power adapter for Orion VERSA STAR meters
096019	Orion Star stirrer probe
8102BNUWP	Orion ROSS Ultra pH electrode, refillable, glass body
8172BNWP	Orion ROSS Sure-Flow pH electrode, glass body
8156BNUWP	Orion ROSS Ultra refillable pH electrode, epoxy body
8157BNUMD	Orion ROSS Triode pH/ATC electrode, refillable, epoxy body
8302BNUMD	Orion ROSS Triode pH/ATC electrode, refillable, glass body
8611BNWP	Orion ROSS sodium combination ISE
927007MD	Orion ATC probe, stainless steel body
927005MD	Orion ATC probe, epoxy body
013005MD	Orion DuraProbe conductivity cell, 4-cell, K=0.475
013016MD	Orion conductivity cell, flow through, K=0.1
083005MD	Orion dissolved oxygen probe, polarographic
086030MD	Orion auto-stir DO/BOD probe, polarographic
087010MD	Orion RDO optical DO probe, 3 m cable
810199	Orion ROSS all-in-one pH buffer kit
910104	Orion pH 4.01 buffer, 475 mL
910107	Orion pH 7.00 buffer, 475 mL
910110	Orion pH 4.01 buffer, 475 mL
011008	Orion conductivity standard, 100 µS/cm, 5 x 60 mL bottles
011007	Orion conductivity standard, 1413 µS/cm, 5 x 60 mL bottles
011006	Orion conductivity standard, 12.9 mS/cm, 5 x 60 mL bottles
1010001	Orion conductivity calibration resistor kit
9512HPBNWP	Orion high-performance ammonia ISE
9512BNWP	Orion standard ammonia ISE
951007	Ammonia standard, 1000 ppm, 475 mL
951210	Low-level ammonia ISA
951211	Ammonia ISA, 475 mL
951209	Fill solution for Orion high-performance ammonia ISE, 60 mL
951202	Fill solution for standard ammonia ISE, 60 mL
951213	Ammonia ISE storage solution
9609BNWP	Orion fluoride combination ISE
040906	Fluoride standard, 1 ppm with TISAB II, 475 mL
040907	Fluoride standard, 2 ppm with TISAB II, 475 mL
040908	Fluoride standard, 10 ppm with TISAB II, 475 mL
940909	TISAB II, 1 gallon
8611BNWP	Orion ROSS sodium combination ISE



- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion DUAL STAR™

Dual Channel pH/ISE Benchtop Meter

Display shows results, electrode status, ATC temperature and channel settings. If a method is selected, the number shows as well

Power key turns on/off the meter and adjusts backlighting

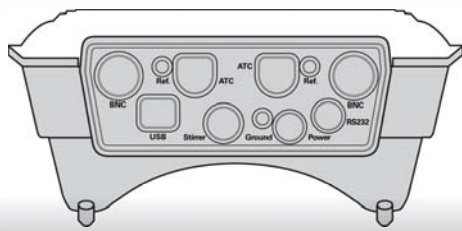
Shortcut keys for direct access to commonly used functions

Channel key toggles display to show both channels simultaneously or just one

Single channel display also shows electrode serial number, sample ID, date and time

Function keys update according to the menu for easy selection

Numeric keypad for easy data entry in submenus



Features and Benefits

- Dual channel with simultaneously displayed measurements
- Low concentration range reading stability
- Known addition and subtraction incremental methods
- 5 language choices: English, Spanish, French, German and Italian
- Meter prompts and shortcut keys
- Thermo Scientific Orion EZ Startup™ for quick and easy meter set-up
- Thermo Scientific Orion SMART STABILITY™ and SMART AVERAGING™ for accurate and fast results
- E_H ORP calibration capability
- 10 methods stored per channel – retains calibrations among multiple electrodes
- 1000 point datalogging with time and date stamping
- Calibration, high point and low point alarms
- Calibration graph with slope data for on-screen viewing
- Star stirrer probe controlled directly from the meter
- Autosampler compatibility
- 3 year meter replacement warranty



Product Specifications

CE TUV EPA		
pH	Range	-2.000 to 19.999
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	1 to 6
	Auto-Buffer Recognition	USA/NIST and EURO/DIN
ISE	Range	0 to 19999
	Resolution	1, 2 or 3 significant digits
	Relative Accuracy	±0.2 mV or 0.05 %, whichever is greater
	Units	ppm, ppb, M, % or unitless
	Technique Options	Single known addition and subtraction Double known addition and subtraction
	Calibration Points	2 to 6
	Calibration Options	Linear, point to point, non-linear selectable auto-bank
mV/ Rel mV/ ORP	Range	±1999.9
	Resolution	0.1
	Relative Accuracy	±0.2 or 0.05 %, whichever is greater
	E_n Calibration Capability	Yes
Temperature	Range	-5 to 105 °C
	Resolution	0.1
	Relative Accuracy	±0.1 °C

Features

Backlight	5 adjustable levels
Method Storage	20 (10 per channel with calibration data)
Password Protection	Yes
Datalog Points	1000 with time/date stamp
Data Transfer	RS232, USB
IP Rating	IP54
Power	Universal AC adapter (110V/220V/240V) included with meter
Warranty	36 months replacement

Meter Ordering Information

Cat. No.	Description
2115000	- Orion DUAL STAR pH/ISE meter - Stainless steel ATC probe (927007MD) - Swing arm electrode stand (090043) - RS232 cable (1010053) - Universal power adapter - User guide
2115101	- Orion DUAL STAR pH/ISE meter - 8102BNUWP ROSS Ultra [®] pH electrode - Stainless steel ATC probe (927007MD) - RS232 cable (1010053) - Swing arm electrode stand (090043) - Universal power adapter - User guide
2115102	- Orion DUAL STAR pH/ISE meter - 8157BNUMD ROSS Ultra pH/ATC Triode [™] refillable electrode - RS232 cable (1010053) - Universal power adapter - User guide
2115001	- Orion DUAL STAR pH/ISE meter - 8102BNUWP ROSS Ultra pH electrode - Stainless steel ATC probe (927007MD) - RS232 cable (1010053) - Swing arm electrode stand (090043) - Pint of pH 4.01 buffer (910104) - Pint of pH 7.00 buffer (910107) - Pint of pH 10.01 buffer (910110) - Pint of ROSS [®] electrode storage solution (810001) - Universal power adapter - User guide

Accessories

Cat. No.	Description
096019	Thermo Scientific Orion stirrer probe with paddle
910104	pH 4.01 buffer, 475 mL
910107	pH 7.00 buffer, 475 mL
910110	pH 10.01 buffer, 475 mL



- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A214 pH/ISE Benchtop Meter

The Thermo Scientific Orion Star A214 pH/ISE Benchtop Meter is the ideal choice for dedicated ISE analysis. Whether you use ISE infrequently or have multiple samples every day, get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows pH/mV/RmV/ISE results and temperature along with electrode status, time, date, sample ID, user ID and calibration points. For advanced users, features such as stability and averaging choices provide additional options.

Keep turning the pages for more great finds.



Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers
- Up to 5 point ISE calibration with advanced features such as timed end point, linear point-to-point, non-linear selectable auto-blank and low-concentration range stability
- Fix errors without a complete recalibration with the calibration editing function
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Mix samples without a stir plate with direct control of the Orion Star stirrer probe (096019, sold separately)
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source with the included universal power adapter, or use four AA batteries (sold separately) to run the meter on DC power
- IP54-rated housing handles splashes and is wall-mountable if table space is a problem
- 3 year meter replacement warranty



Product Specifications

CE TUV FCC		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 5
	Calibration Editing	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E_s ORP Mode	Yes
ISE	Range	0 to 19999
	Resolution	Up to 3 significant digits
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	Units	ppm, M, mg/L, %, ppb, none
	Calibration Points	Up to 5
	Calibration Editing	Yes
	Calibration Features	Timed end point, linear point to point, non-linear selectable auto-blank, low concentration range stability
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, ready (include AUTO-READ™), timed
Inputs	pH Electrode	BNC, reference pin
	ATC Probe	8-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Included – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA2140	Orion Star A214 pH/ISE Benchtop Meter - Electrode arm with redesigned holder - Universal power adapter
STARA2145	Orion Star A214 pH/ISE Benchtop Meter Kit - 8102BNUWP Orion ROSS Ultra pH electrode - 927007MD ATC probe, stainless steel - 096019 Orion Star stirrer probe - 810199 ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - Electrode arm with redesigned holder - Universal power adapter
STARA2146	Orion Star A214 pH/ISE Benchtop Meter Kit for Ammonia - 8102BNUWP Orion ROSS Ultra pH electrode - 9512HPBNWP Orion high-performance Ammonia ISE - 927007MD ATC probe, stainless steel - 096019 Orion Star stirrer probe - 951007 Orion Ammonia 1000 ppm standard, 475 mL - 951210 Orion Low-level Ammonia ISA - 951213 Ammonia ISE storage solution - Electrode arm with redesigned holder - Universal power adapter
STARA2147	Orion Star A214 pH/ISE Benchtop Meter Kit for Fluoride - 8102BNUWP Orion ROSS Ultra pH electrode - 9609BNWP Orion fluoride ISE - 927007MD ATC probe, stainless steel - 096019 Orion Star stirrer probe - 040906 Orion fluoride standard, 1 ppm with TISAB II, 475 mL - 040907 Orion fluoride standard, 2 ppm with TISAB II, 475 mL - 040908 Orion fluoride standard, 10 ppm with TISAB II, 475 mL - 940909 Orion TISAB II solution, 1 gallon - Electrode arm with redesigned holder - Universal power adapter
STARA2148	Orion Star A214 pH/ISE Benchtop Meter Kit for Sodium - 8102BNUWP Orion ROSS Ultra pH electrode - 8611BNWP Orion ROSS sodium ISE - 927007MD ATC probe, stainless steel - 096019 Orion Star stirrer probe - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
810199	Orion ROSS All-in-One pH buffer kit
951007	Ammonia standard, 1000 ppm, 475 mL
951210	Low-level ammonia ISA
951211	Ammonia ISA, 475 mL
040906	Fluoride standard, 1 ppm with TISAB II, 475 mL
040907	Fluoride standard, 2 ppm with TISAB II, 475 mL
040908	Fluoride standard, 10 ppm with TISAB II, 475 mL
940909	TISAB II, 1 gallon

pH

ISE

ORP

Cond

RDO

DO

Temp



Thermo Scientific Orion VERSA STAR 50

pH/Conductivity Benchtop Meters

Ideal for checking solution conductivity and follow-up pH testing. The large color display is easy to read and easy on the eyes. Prompts make accuracy and repeatability easy for even the most complicated testing. If you need to add more channels for more or obtain more parameters from the same, simply remove the protective individual channel cover and add the new module.

Features and Benefits

- Versatility is the name of the game
 - Customize the display to show only the information you need
 - Change out modules to create the meter you need at any time
- Up to 6 point pH calibration with automatic recognition for USA/NIST and DIN buffers and electrode identification
- Fix errors without a complete recalibration with the calibration editing function
- Conductivity, TDS, salinity or resistivity capabilities
 - Selectable reading reference temperatures of 5, 10, 15, 20 or 25 °C
 - Linear, non-linear, nLFu or USP/EP curve options to get the most accurate conductivity result for your sample and temperature
 - Choice of practical salinity or natural sea water curves for salinity readings
 - Linear or ISO/EN 27888 curves for TDS
- Anyone can use this meter with its plain language screen prompts, function keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals or just once with the single-shot mode
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods per channel allow for customized procedures to differentiate between tests and/or users
- Two USB and a RS232 port makes for easy data transfer and updating meter software
- Includes data analysis software for easy transferring of stored results or real-time viewing
- Control sample mixing directly from the meter without a separate stir plate when using with the Orion Star stirrer probe (cat. no. 096019, sold separately)
- Increase your productivity – with two stirrer probe ports, add stirrers and modules to analyze two separate samples at the same time
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source through the included universal power adapter
- IP54-rated housing handles splashes and cleans up easily
- 3 year meter replacement warranty

Product Specifications – Orion VERSA STAR Meter

CE TUV EPA		
Maximum Number of Modules	4	
Methods	Up to 10	
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, AUTO-READ™, timed interval, single timed reading
Communication Ports	One RS232, two USB ports (one client, one host)	
Orion Star Stirrer Probe Ports	2	
Power	Universal, AC power adapter, 90-260 VAC, 50-60 Hz	

Product Specifications – pH Module (VSTAR-PH)

CE TUV EPA		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 6
	Calibration Editing	Yes
	Adjustable ISO Point	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E _r ORP Mode	Yes
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
	Inputs	pH/ISE
	ATC	8-pin mini-DIN



Product Specifications – Conductivity Module (VSTAR-CND) Meter Ordering Information

CE TUV EPA		
Conductivity	Range	0.001 μ S to 3000 mS
	Resolution	0.001 μ S minimum; 4 significant figures minimum
	Relative Accuracy	0.5 % reading \pm 1 digit
	Reference Temperature	5, 10, 15, 20, 25 $^{\circ}$ C
	Temperature Compensation	Linear (0 to 10.0 $\%$ / $^{\circ}$ C), nLn, nLFu, USP/EP
	Compatible Cell Constants	0.001 to 199.9
	Calibration Points	Up to 6 points
	Calibration Editing	Yes
Resistivity	Range	2 ohm to 100 meg-ohm
	Resolution	2 ohms-cm
	Relative Accuracy	0.5 % reading \pm 1 digit
Salinity	Type	Practical salinity or natural sea water
	Range	0.01 to 80.0 ppt NaCl equivalent; 0.01 to 42 ppt sea water
	Resolution	0.01
	Relative Accuracy	\pm 0.1
TDS	Range	0 to 200 ppt
	Resolution	4 significant digits
	Relative Accuracy	\pm 0.5 % reading \pm 1 digit
	TDS Factor Range	Linear 0.01 to 10.00
Temperature	Range	-5 to 105 $^{\circ}$ C, 23 to 221 $^{\circ}$ F
	Resolution	0.1
	Relative Accuracy	\pm 0.1
	Offset Calibration	1 point
Inputs	8-pin mini-DIN	

Cat. No.	Description
VSTAR50	Orion VERSA STAR pH/Conductivity Benchtop Meter Set - Orion VERSA STAR meter - Orion VERSA STAR pH/temperature module - Orion VERSA STAR conductivity/temperature module - Electrode arm with redesigned holder - Universal power adapter
	Orion VERSA STAR pH/Conductivity Benchtop Meter Kit - Orion VERSA STAR meter with pH/temperature module - Orion VERSA STAR conductivity/temperature module - 8157BNUMD Orion ROSS Ultra Triode pH/ATC probe - 013005MD Orion DuraProbe conductivity cell, K=0.475 - 810199 ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - 011007 conductivity standard, 1413 μ S, 5 x 60 mL - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
VSTAR-PH	Orion VERSA STAR pH/temperature module
VSTAR-ISE	Orion VERSA STAR pH/ISE/temperature module
VSTAR-CND	Orion VERSA STAR conductivity/temperature module
VSTAR-RD	Orion VERSA STAR RDO/DO/temperature module
VSTAR-LR	Orion VERSA STAR pH/temperature with LogR technology module
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
STARA-PWR	Replacement universal power adapter for Orion VERSA STAR meters
096019	Orion Star stirrer probe
8102BNUWP	Orion ROSS Ultra pH electrode, refillable, glass body
8172BNWP	Orion ROSS Sure-Flow pH electrode, glass body
8156BNUWP	Orion ROSS Ultra refillable pH electrode, epoxy body
8157BNUMD	Orion ROSS Triode pH/ATC electrode, refillable, epoxy body
8302BNUMD	Orion ROSS Triode pH/ATC electrode, refillable, glass body
927007MD	Orion ATC probe, stainless steel body
927005MD	Orion ATC probe, epoxy body
013005MD	Orion DuraProbe conductivity cell, 4-cell, K=0.475
013016MD	Orion conductivity cell, flow through, K=0.1
810199	Orion ROSS all-in-one pH buffer kit
910104	Orion pH 4.01 buffer, 475 mL
910107	Orion pH 7.00 buffer, 475 mL
910110	Orion pH 4.01 buffer, 475 mL
011008	Orion conductivity standard, 100 μ S/cm, 5 x 60 mL bottles
011007	Orion conductivity standard, 1413 μ S/cm, 5 x 60 mL bottles
011006	Orion conductivity standard, 12.9 mS/cm, 5 x 60 mL bottles
1010001	Orion conductivity calibration resistor kit



- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A215 pH/Conductivity Benchtop Meter

The Thermo Scientific Orion Star A215 pH/Conductivity Benchtop Meter is the ideal choice for any pharmacology lab. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows individual pH/mV/RmV or conductivity/TDS/salinity/resistivity results with temperature, or all results at once. Additional helpful information includes electrode status, time, date, sample ID, user ID and calibration. For advanced users, features such as stability and averaging choices provide additional options.



Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers and calibration editing to fix errors without a complete recalibration
- Selectable cell constant allows for use with 2- or 4-cell conductivity cells
- For accurate conductivity results, selectable reading reference temperatures of 5, 10, 15, 20 or 25 °C with linear, non-linear, nLFu or USP/EP curve options
- Choice of practical salinity or natural sea water curves for salinity readings
- Linear or ISO/EN 27888 curves for TDS
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Mix samples without a stir plate with direct control of the Orion Star stirrer probe (096019, sold separately)
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source with the included universal power adapter, or use four AA batteries (sold separately) to run the meter on DC power
- IP54-rated housing handles splashes and is wall-mountable if table space is a problem
- 3 year meter replacement warranty



Product Specifications

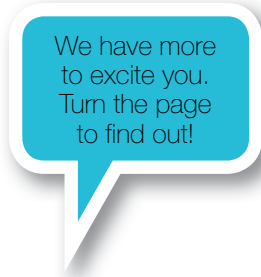
CE TUV FCC		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 5
	Calibration Editing	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E _r ORP Mode	Yes
Conductivity	Range	0.001 µS to 3000 mS
	Resolution	0.001 µS minimum; 4 significant figures minimum
	Relative Accuracy	0.5 % reading ±1 digit
	Reference Temperature	5, 10, 15, 20, 25 °C (default)
	Temperature Compensation	Linear (0 to 10.0 %/°C), nLn, nLFu, USP/EP
	Compatible Cell Constants	0.001 to 199.9
	Calibration Points	Up to 5 points
	Calibration Editing	Yes
Resistivity	Range	2 ohm to 100 meg-ohm
	Resolution	2 ohms-cm
	Relative Accuracy	0.5 % reading ±1 digit
Salinity	Type	Practical salinity or natural sea water
	Range	0.01 to 80.0 ppt NaCl equivalent; 0.01 to 42 ppt sea water
	Resolution	0.01
	Relative Accuracy	±0.1
TDS	Range	1 to 200 ppt
	Resolution	4 significant digits
	Relative Accuracy	0.5 % reading ±1 digit
	TDS Factor Range	Linear 0.01 to 10.00, default 0.49
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, ready (include AUTO-READ™), timed
Inputs	pH Electrode	BNC, reference pin
	Conductivity with Temperature Probe or ATC Probe	8-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Included – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA2150	Orion Star A215 pH/Conductivity Benchtop Multiparameter Meter - Electrode arm with redesigned holder - Universal power adapter
STARA2155	Orion Star A215 pH/Conductivity Benchtop Multiparameter Meter Kit - 8157BNUMD Orion ROSS Ultra Triode pH/ATC electrode - 013005MD Orion DuraProbe conductivity cell - ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - 011007 Orion 1413 µS conductivity standard, 5 x 60 mL - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
096019	Orion Star stirrer probe
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
8302BNUMD	Orion ROSS Triode 3-in-1 pH/ATC probe, refillable, glass body
8102BNUWP	Orion ROSS Ultra refillable pH electrode, glass body
927007MD	Orion ATC probe, stainless steel
810199	Orion ROSS All-in-One pH buffer kit
910104	Orion pH 4.01 buffer, 475 mL
910107	Orion pH 7.00 buffer, 475 mL
910110	Orion pH 4.01 buffer, 475 mL
013005MD	Orion DuraProbe conductivity cell, 4-cell, K=0.475
013016MD	Orion 2-electrode conductivity cell with flow cell, K=0.1
011008	Orion conductivity standard, 100 µS/cm, 5 x 60 mL bottles
011007	Orion conductivity standard, 1413 µS/cm, 5 x 60 mL bottles
011006	Orion conductivity standard, 12.9 mS/cm, 5 x 60 mL bottles
1010001	Orion conductivity calibration resistor kit



We have more to excite you. Turn the page to find out!

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A216 pH/RDO/Dissolved Oxygen Benchtop Meter

The Thermo Scientific Orion Star A216 pH/RDO/Dissolved Oxygen Benchtop Meter is great for checking pH and dissolved oxygen levels at the same time from various wastewater samples. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows individual pH/mV/RmV result, dissolved oxygen in percent saturation or concentration results with temperature, or all results at once. Additional helpful information includes electrode status, time, date, sample ID, user ID and calibration. For advanced users, features such as stability and averaging choices provide additional options.



Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers and calibration editing to fix errors without a complete recalibration
- No need to worry about DO probe compatibility – the meter accepts and automatically recognizes Orion polarographic and RDO optical/luminescence-based probes
- Accurate DO results are easier with automatic temperature, manual salinity and automatic/manual barometric pressure compensation
- Calibrate DO by using water-saturated air, air-saturated water, a Winkler titration or zero point calibration
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- To mix samples without a stir plate or for faster BOD readings, meter can directly control the 096019 Orion Star stirrer or 086030MD Orion AUTO-STIR™ DO probes (each sold separately)
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source with the included universal power adapter, or use four AA batteries (sold separately) to run the meter on DC power
- IP54-rated housing handles splashes and is wall-mountable if table space is a problem
- 3 year meter replacement warranty



Product Specifications

CE TUV FCC		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 5
	Calibration Editing	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E _a ORP Mode	Yes
Dissolved Oxygen	Concentration - Polarographic	
	Range	0 to 90 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation - Polarographic	
	Range	0 to 600
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Concentration - RDO	
	Range	0 to 50 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.1 mg/L up to 8 mg/L; ±0.2 mg/L from 8 to 20 mg/L; 10 % of reading from 20 to 50 mg/L
	% Saturation - RDO	
	Range	0 to 500
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Manual Barometric Pressure Correction	450.0 to 850.0 mm Hg
	Manual Salinity Factor Correction	0 to 45 ppt
	Calibration Features	Water-saturated air, air saturated water, manual (Winkler) and zero point
	Probe Characteristics	Polarographic or RDO
Temperature	Range	0 to 50 °C, 32 to 122 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, ready (includes AUTO-READ™), timed
Inputs	pH Electrode	BNC, reference pin
	DO with Temp. Probe	9-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Optional – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA2160	Orion Star A216 pH/Dissolved Oxygen Benchtop Multiparameter Meter - Electrode arm with redesigned holder - Universal power adapter
STARA2165	Orion Star A216 pH/Dissolved Oxygen Benchtop Multiparameter Meter Kit - 8157BNUMD Orion ROSS Ultra Triode pH/ATC electrode - 083005MD Orion polarographic DO probe with calibration sleeve - 080513 polarographic DO probe maintenance kit - 970802 BOD funnel/stirrer - 080360 BOD adapter - 810199 ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
096019	Orion Star stirrer probe
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
8302BNUMD	Orion ROSS Triode 3-in-1 pH/ATC probe, refillable, glass body
8102BNUWP	Orion ROSS Ultra refillable pH electrode, glass body
927007MD	Orion ATC probe, stainless steel
810199	Orion ROSS All-in-One pH buffer kit
910104	Orion pH 4.01 buffer, 475 mL
910107	Orion pH 7.00 buffer, 475 mL
910110	Orion pH 4.01 buffer, 475 mL
083005MD	Orion polarographic DO probe, 1.5m cable
086030MD	Orion polarographic AUTO-STIR DO/BOD probe, 1.5m cable
087010MD	Orion RDO optical DO probe, 3m cable with stainless steel guard and calibration sleeve
970802	Orion BOD funnel and stirrer for use with polarographic probes
080360	Orion BOD bottle adapter for use with polarographic probes

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion VERSA STAR 10 & 80 pH and pH with LogR™ Technology Benchtop Meters

Routine pH measurements are quick and easy with the Orion VERSA STAR 10 and 80 pH benchtop meters. The large color display is easy on to read and easy on the eyes. Prompts make accuracy and repeatability easy for even the most complicated testing. If you need to add more channels for more or obtain more parameters from the same, simply remove the protective individual channel cover and add the new module.

The Orion VERSA STAR 10 pH benchtop meter comes complete with a single channel pH module, offering:

- Up to 6 point pH calibration with automatic recognition for USA/NIST and DIN buffers and electrode identification
- The time-saving option to fix errors without a complete recalibration with the calibration editing function

The Orion VERSA STAR 80 pH with LogR technology benchtop meter includes one LogR module, which fits easily into two channel slots. This technology allows for:

- Having all the features of the VERSA STAR 10 pH benchtop meter
- Preventing wasted efforts and time from bad electrodes by offering the most advanced electrode diagnostics
- Using even less of those expensive samples for testing and still getting accurate pH results since LogR technology allows for temperature-compensated pH readings without a temperature sensor

Features and Benefits

- Versatility is the name of the game
 - Customize the display to show only the information you need
 - Change out modules to create the meter you need at any time
- Anyone can use this meter with its plain language screen prompts, function keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals or just once with single-shot mode
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods per channel allow for customized procedures to differentiate between tests and/or users
- Two USB and a RS232 port makes for easy data transfer and updating meter software
- Includes data analysis software for easy transferring of stored results or real-time viewing

- Control sample mixing directly from the meter without a separate stir plate when using with the Orion Star stirrer probe (cat. no. 096019, sold separately)
- Increase your productivity – with two Orion stirrer probe ports, add stirrers and modules to analyze two separate samples at the same time
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source through the included universal power adapter
- IP54-rated housing handles splashes and cleans up easily
- 3 year meter replacement warranty

Product Specifications – Orion VERSA STAR Meter

		CE TUV EPA
Maximum Number of Modules		4
Methods		Up to 10
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, AUTO-READ™, timed interval, single timed reading
Communication Ports		One RS232, two USB ports (one client, one host)
Orion Star Stirrer Probe Ports		2
Power		Universal, AC power adapter, 90-260 VAC, 50-60 Hz





Product Specifications – pH Module (VSTAR-PH)

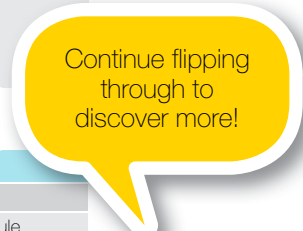
CE TUV EPA		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 6
	Calibration Editing	Yes
	Adjustable ISO Point	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E _n ORP Mode	Yes
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Inputs	pH/ISE	BNC, reference pin
	ATC	8-pin mini-DIN

Product Specifications – pH/LogR Module (VSTAR-LR)

CE TUV EPA		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 6
	Calibration Editing	Yes
	Adjustable ISO Point	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E _n ORP Mode	Yes
LogR Temperature	Range	0 to 100 °C, 32 to 212 °F
	Resolution	0.1
	Relative Accuracy	±0.5
	Resistance Range	0 to 6000 MΩ
	Resistance Resolution	0.1 MΩ up to 1999.9 MΩ, 1 MΩ above 1999.9 MΩ
	Offset Calibration	Up to 3 points
	Calibration Options	ATC probe, NIST reference
Temperature Measurement without LogR In-Use	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Inputs	pH	BNC, reference pin
	ATC	8-pin mini-DIN

Meter Ordering Information

Cat. No.	Description
VSTAR10	Orion VERSA STAR pH Benchtop Meter Set - Orion VERSA STAR meter with pH/temperature module - Electrode arm with redesigned holder - Universal power adapter
VSTAR12	Orion VERSA STAR pH Benchtop Meter Kit - Orion VERSA STAR meter with pH/temperature module - 8302BNUMD Orion ROSS Triode pH/ATC probe - 096019 Orion Star stirrer probe - 810199 ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - Electrode arm with redesigned holder - Universal power adapter
VSTAR80	Orion VERSA STAR pH with LogR Benchtop Meter Set - Orion VERSA STAR meter - Orion VERSA STAR pH/temperature with LogR technology module - 927007MD ATC probe, stainless steel - Electrode arm with redesigned holder - Universal power adapter
VSTAR82	Orion VERSA STAR pH Benchtop Meter Kit - Orion VERSA STAR meter - Orion VERSA STAR pH/temperature with LogR technology module - 8172BNWP Orion ROSS Sure-Flow pH electrode - 927007MD ATC probe, stainless steel - ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - 810007 ROSS fill solution, 5 x 60 mL - Electrode arm with redesigned holder - Universal power adapter



Accessories

Cat. No.	Description
VSTAR-ISE	Orion VERSA STAR pH/ISE/temperature module
VSTAR-CND	Orion VERSA STAR conductivity/temperature module
VSTAR-RD	Orion VERSA STAR RDO/DO/temperature module
096019	Orion Star stirrer probe
8102BNUWP	Orion ROSS Ultra pH electrode, refillable, glass body
8172BNWP	Orion ROSS Sure-Flow pH electrode, glass body
8156BNUWP	Orion ROSS Ultra refillable pH electrode, epoxy body
8157BNUMD	Orion ROSS Triode pH/ATC electrode, refillable, epoxy body
8302BNUMD	Orion ROSS Triode pH/ATC electrode, refillable, glass body
927007MD	Orion ATC probe, stainless steel body
927005MD	Orion ATC probe, epoxy body
810199	Orion ROSS all-in-one pH buffer kit
910104	Orion pH 4.01 buffer, 475 mL
910107	Orion pH 7.00 buffer, 475 mL
910110	Orion pH 4.01 buffer, 475 mL

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A211 pH Benchtop Meter

The Thermo Scientific Orion Star A211 pH Benchtop Meter is the ideal choice for dedicated pH testing in water, process, research and QA/QC samples. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows pH/mV/RmV and temperature along with electrode status, time, date, sample ID, user ID and calibration points. For advanced users, features such as stability and averaging choices provide additional options.



Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers
- Fix calibration errors without a complete recalibration with calibration editing
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Mix samples without a stir plate with direct control of the Orion Star stirrer probe (096019, sold separately)
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source with the included universal power adapter, or use four AA batteries (sold separately) to run the meter on DC power
- IP54-rated housing handles splashes and is wall-mountable if table space is a problem
- 3 year meter replacement warranty





Product Specifications

CE TUV FCC		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 5
	Calibration Editing	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E_s ORP Mode	Yes
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, ready (includes AUTO-READ™), timed
Inputs	pH Electrode	BNC, reference pin
	ATC Probe	8-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Included – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA2110	Orion Star A211 pH Benchtop Meter - Electrode arm with redesigned holder - Universal power adapter
STARA2115	Orion Star A211 pH Benchtop Meter Kit - 8302BNUMD Orion ROSS Triode 3-in-1 pH/ATC probe - 810199 ROSS solution kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; cleaning solution; and pH electrode storage bottle) - Electrode arm with redesigned holder - Universal power adapter
STARA2116	Orion Star A211 pH Benchtop Meter Kit with pH/ATC Triode Electrode - 8157BNUMD Orion ROSS Ultra pH/ATC Triode electrode with epoxy body, refillable - 810199 All-in-One pH Buffer Kit (475 mL each of pH 4, 7 and 10 buffers; storage solution; and pH electrode storage bottle) - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
096019	Orion Star stirrer probe
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
8302BNUMD	Orion ROSS Triode 3-in-1 pH/ATC probe, refillable, glass body
8102BNUWP	Orion ROSS Ultra refillable pH electrode, glass body
927007MD	Orion ATC probe, stainless steel
810199	Orion ROSS All-in-One pH buffer kit
910199	Orion Standard All-in-One pH buffer kit
910104	Orion pH 4.01 buffer, 475 mL
910107	Orion pH 7.00 buffer, 475 mL
910110	Orion pH 4.01 buffer, 475 mL

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A111 pH Benchtop Meter

Thermo Scientific Orion Star A111 pH Benchtop Meters combine simplicity with accuracy for dedicated pH applications. A large LCD displays pH or mV readings along with temperature. Icons provide quick updates on battery life, electrode status and calibration information. Simple button layout and onscreen messages help with calibration and setup menu choices.

Features and Benefits

- Large, informative screen clearly shows the main information, including pH or mV reading, temperature in °C or °F, meter mode, calibration information and power source
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen and ready indicator alerts when readings are stable
- Up to 3 point pH calibration
- Automatic recognition of USA/NIST and DIN buffers
- Easily recall calibration slope data for procedure checks
- Non-volatile memory holds up to 50 data points
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Plug the meter into almost any power outlet with the included universal power adapter, or use four AA batteries (sold separately) to run the meter on DC power
- The IP54-rated housing can handle splashes and can be wall-mounted if table space is a problem
- 3 year meter replacement warranty





Product Specifications

CE TUV FCC		
pH	Range	-2.00 to 16.00
	Resolution	0.1, 0.01
	Relative Accuracy	±0.01
	pH Calibration Points	Up to 3
mV/Rel mV/ ORP	Range - mV	±1600.0 mV
	Range - RmV	±1999.9 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E _a ORP Mode	No
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Temperature Compensation	Automatic or manual
	Temperature Offset Calibration	Yes
Datalogging	Number of Datalogs	50
	Log Function	Manual, Automatic with AUTO-READ™
Inputs	pH Electrode	BNC
	ATC Probe	8-pin mini-DIN
Power	AC Adapter	Included – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	2000 hrs

Meter Ordering Information

Cat. No.	Description
STARA1110	Orion Star A111 pH Benchtop Meter - Electrode arm with redesigned holder - Universal power adapter
STARA1115	Orion Star A111 pH Benchtop Meter Kit - 9157BNMD Orion Triode 3-in-1 pH/ATC probe - Solution kit (60 mL each of pH 4, 7 and 10 buffers; storage solution and cleaning solution) - Electrode arm with redesigned holder - Universal power adapter
STARA1116	Orion Star A111 pH Benchtop Meter Kit with TRIS-compatible Electrode - GD9156BNWP Orion Green combination double-junction refillable pH electrode with epoxy body - 927007MD stainless steel ATC probe - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
9157BNMD	Orion Triode 3-in-1 pH/ATC probe, refillable, epoxy body
9107BNMD	Orion Triode 3-in-1 pH/ATC probe, gel-filled, epoxy body
910199	Orion Standard All-in-One pH buffer kit - 475 mL each of 4.01, 7.00 and 10.01 buffers and pH electrode storage solution with pH electrode storage bottle
810199	Orion ROSS All-in-One pH buffer kit
910104	Orion pH 4.01 buffer, 475 mL
910107	Orion pH 7.00 buffer, 475 mL
910110	Orion pH 10.01 buffer, 475 mL
910001	Orion pH electrode storage solution, 475 mL
916099	Orion pH buffer assortment pack – 60 mL each of pH 4, 7 and 10 buffers; storage solution and cleaning solution D



- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion VERSA STAR 20

Conductivity Benchtop Meters

Conductivity tests can be as clear as ultrapure water samples. The large color display is easy on to read and easy on the eyes. Prompts make accuracy and repeatability easy for even the most complicated testing. If you need to add more channels for more or obtain more parameters from the same, simply remove the protective individual channel cover and add the new module.



Features and Benefits

- Versatility is the name of the game
 - Customize the display to show only the information you need
 - Change modules to create the meter you need at any time
- Selectable reading reference temperatures of 5, 10, 15, 20 or 25 °C
- Linear, non-linear, nLFu or USP/EP curve options to get the most accurate conductivity result for your sample and temperature
- Choice of practical salinity or natural sea water curves for salinity readings
- Linear or ISO/EN 27888 curves for TDS
- Anyone can use this meter with its plain language screen prompts, function keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals or just once with single-shot mode
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods per channel allow for customized procedures to differentiate between tests and/or users
- Two USB and a RS232 port makes for easy data transfer and updating meter software
- Includes data analysis software for easy transferring of stored results or real-time viewing
- Control sample mixing directly from the meter without a separate stir plate when using with the Orion Star stirrer probe (cat. no. 096019, sold separately)
- Increase your productivity – with two Orion stirrer probe ports, add stirrers and modules to analyze two separate samples at the same time
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source through the included universal power adapter
- IP54-rated housing handles splashes and cleans up easily
- 3 year meter replacement warranty



Product Specifications – Orion VERSA STAR Meter

CE TUV EPA		
Maximum Number of Modules	4	
Methods	Up to 10	
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, AUTO-READ™, timed interval, single timed reading
Communication Ports	One RS232, two USB ports (one client, one host)	
Orion Star Stirrer Probe Ports	2	
Power	Universal, AC power adapter, 90-260 VAC, 50-60 Hz	

Meter Ordering Information

Cat. No.	Description
VSTAR20	Orion VERSA STAR Conductivity Benchtop Meter Set - Orion VERSA STAR meter - Orion VERSA STAR conductivity/temperature module - Electrode arm with redesigned holder - Universal power adapter
VSTAR22	Orion VERSA STAR Conductivity Benchtop Meter Kit - Orion VERSA STAR meter - Orion VERSA STAR conductivity/temperature module - 013005MD Orion DuraProbe conductivity cell, K=0.475 - 011007 conductivity standard, 1413 µS, 5 x 60 mL - Electrode arm with redesigned holder - Universal power adapter

Product Specifications – Conductivity Module (VSTAR-CND)

CE TUV EPA		
Conductivity	Range	0.001 µS to 3000 mS
	Resolution	0.001 µS minimum; 4 significant figures minimum
	Relative Accuracy	0.5 % reading ±1 digit
	Reference Temperature	5, 10, 15, 20, 25 °C
	Temperature Compensation	Linear (0 to 10.0 %/°C), nLn, nLFu, USP/EP
	Compatible Cell Constants	0.001 to 199.9
	Calibration Points	Up to 6 points
	Calibration Editing	Yes
Resistivity	Range	2 ohm to 100 meg-ohm
	Resolution	2 ohms-cm
	Relative Accuracy	0.5 % reading ±1 digit
Salinity	Type	Practical salinity or natural sea water
	Range	0.01 to 80.0 ppt NaCl equivalent; 0.01 to 42 ppt sea water
	Resolution	0.01
	Relative Accuracy	±0.1
TDS	Range	0 to 200 ppt
	Resolution	4 significant digits
	Relative Accuracy	±0.5 % reading ±1 digit
	TDS Factor Range	Linear 0.01 to 10.00
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Input	8-pin mini-DIN	

Accessories

Cat. No.	Description
VSTAR-PH	Orion VERSA STAR pH/temperature module
VSTAR-ISE	Orion VERSA STAR pH/ISE/temperature module
VSTAR-CND	Orion VERSA STAR conductivity/temperature module
VSTAR-RD	Orion VERSA STAR RDO/DO/temperature module
VSTAR-LR	Orion VERSA STAR pH/temperature with LogR technology module
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
STARA-PWR	Replacement universal power adapter for Orion VERSA STAR meters
096019	Orion Star stirrer probe
013005MD	Orion DuraProbe conductivity cell, 4-cell, K=0.475
013016MD	Orion conductivity cell, flow through, K=0.1
011008	Orion conductivity standard, 100 µS/cm, 5 x 60 mL bottles
011007	Orion conductivity standard, 1413 µS/cm, 5 x 60 mL bottles
011006	Orion conductivity standard, 12.9 mS/cm, 5 x 60 mL bottles
1010001	Orion conductivity calibration resistor kit

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A212 Conductivity Benchtop Meter

The Thermo Scientific Orion Star A212 Conductivity Benchtop Meter is the ideal choice to help meet USP requirements. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows conductivity/TDS/salinity/resistivity and temperature along with time, date, sample ID, user ID and calibration information. For advanced users, features such as stability and averaging choices provide additional options.



Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Selectable cell constant allows for use with 2- or 4-cell conductivity cells
- For accurate results, selectable reading reference temperatures of 5, 10, 15, 20 or 25 °C with linear, non-linear, nLFu or USP/EP curve options
- Choice of practical salinity or natural sea water curves for salinity readings
- Linear or ISO/EN 27888 curves for TDS
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Mix samples without a stir plate with direct control of the Orion Star stirrer probe (096019, sold separately)
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source with the included universal power adapter, or use four AA batteries (sold separately) to run the meter on DC power
- IP54-rated housing handles splashes and is wall-mountable if table space is a problem
- 3 year meter replacement warranty



Product Specifications

CE TUV FCC		
Conductivity	Range	0.001 μ S to 3000 mS
	Resolution	0.001 μ S minimum; 4 significant figures minimum
	Relative Accuracy	0.5 % reading \pm 1 digit
	Reference Temperature	5, 10, 15, 20, 25 $^{\circ}$ C
	Temperature Compensation	Linear (0 to 10.0 %/ $^{\circ}$ C), nLn, nLFu, USP/EP
	Compatible Cell Constants	0.001 to 199.9
	Calibration Points	Up to 5 points
	Calibration Editing	Yes
Resistivity	Range	2 ohm to 100 meg-ohm
	Resolution	2 ohms-cm
	Relative Accuracy	0.5 % reading \pm 1 digit
Salinity	Type	Practical salinity or natural sea water
	Range	0.01 to 80.0 ppt NaCl equivalent; 0.01 to 42 ppt sea water
	Resolution	0.01
	Relative Accuracy	\pm 0.1
TDS	Range	1 to 200 ppt
	Resolution	4 significant digits
	Relative Accuracy	\pm 0.5 % reading \pm 1 digit
	TDS Factor Range	Linear, 0.01 to 10.00
Temperature	Range	-5 to 105 $^{\circ}$ C, 23 to 221 $^{\circ}$ F
	Resolution	0.1
	Relative Accuracy	\pm 0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, ready (includes AUTO-READ [™]), timed
Inputs	Conductivity with Temperature Probe	8-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Included – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA2120	Orion Star A212 Conductivity Benchtop Meter - Electrode arm with redesigned holder - Universal power adapter
STARA2125	Orion Star A212 Conductivity Benchtop Meter Kit - 013005MD Orion DuraProbe conductivity probe, K=0.475 - 011007 conductivity standard, 1413 μ S, 5 x 60 mL - Electrode arm with redesigned holder - Universal power adapter
STARA2126	Orion Star A212 Conductivity Benchtop Meter Kit for Ultrapure Water - 013016MD Orion conductivity probe with flow-through cell, K=0.1 - 011008 conductivity standard, 100 μ S, 5 x 60 mL - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
013005MD	Orion DuraProbe conductivity probe, 4-cell, K=0.475
013016MD	Orion 2-electrode conductivity probe with flow cell, K=0.1
011008	Orion conductivity standard, 100 μ S/cm, 5 x 60 mL bottles
011007	Orion conductivity standard, 1413 μ S/cm, 5 x 60 mL bottles
011006	Orion conductivity standard, 12.9 mS/cm, 5 x 60 mL bottles
1010001	Orion conductivity calibration resistor kit



- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A112 Conductivity Benchtop Meter

Thermo Scientific Orion Star A112 Conductivity Benchtop Meters combine simplicity with accuracy for dedicated conductivity measurements. A large LCD displays conductivity or TDS readings along with temperature. Icons provide quick updates on battery life and completed calibration status. Simple button layout and onscreen messages help with calibration and setup menu choices.

Features and Benefits

- Large, informative screen clearly shows the main information, including conductivity or TDS reading, temperature in °C or °F, meter mode and power source
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen and ready indicator alerts when readings are stable
- Selectable cell constant
- Selectable reading reference temperatures of 20 °C or 25 °C for an accurate result
- Included electrode arm and newly-designed holder make it easier to maintain and place probes into samples
- Plug the meter into almost any power outlet with the included universal power adapter, or use four AA batteries (sold separately) to run the meter on DC power
- Non-volatile memory holds up to 50 data points
- The IP54-rated housing can handle splashes and can be wall-mounted if table space is a problem
- 3 year meter replacement warranty





Product Specifications

CE TUV FCC		
Conductivity	Range	0.1 $\mu\text{S}/\text{cm}$ to 200 mS/cm
	Resolution	0.01 μS minimum; 3 significant figures minimum
	Relative Accuracy	0.5 % reading ± 1 digit
	Reference Temperature	20, 25 $^{\circ}\text{C}$ (default)
	Temperature Compensation	Linear (0.0 to 10.0 $\%/^{\circ}\text{C}$)
	Compatible Cell Constants	0.001 to 10
	Calibration Points	1
TDS	Range	1 to 19,999 mg/L
	Resolution	4 significant digits
	Relative Accuracy	0.5 % reading ± 1 digit
	TDS Factor Range	Linear, 0.01 to 10.00, default 0.49
Temperature	Range	-5 to 105 $^{\circ}\text{C}$, 23 to 221 $^{\circ}\text{F}$
	Resolution	0.1
	Relative Accuracy	± 0.1
Datalogging	Offset Calibration	Yes
	Number of Datalogs	50
Inputs	Log Function	Manual, Automatic with AUTO-READ™
	Conductivity with Temperature Probe	8-pin mini-DIN
Power	AC Adapter	Included – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	2000 hrs

Meter Ordering Information

Cat. No.	Description
STARA1120	Orion Star A112 Conductivity Benchtop Meter - Electrode arm with redesigned holder - Universal power adapter
STARA1125	Orion Star A112 Conductivity Benchtop Meter Kit - 011050MD orion conductivity cell, K=1.0 - 011007 conductivity standard, 1413 μS , 5 x 60 mL - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
011050MD	Orion 2-electrode conductivity cell, K=1.0
013016MD	Orion 2-electrode conductivity cell with flow cell, K=0.1
011008	Orion conductivity standard, 100 $\mu\text{S}/\text{cm}$, 5 x 60 mL bottles
011007	Orion conductivity standard, 1413 $\mu\text{S}/\text{cm}$, 5 x 60 mL bottles
011006	Orion conductivity standard, 12.9 mS/cm , 5 x 60 mL bottles
1010001	Orion conductivity calibration resistor kit



- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion VERSA STAR 30

RDO/Dissolved Oxygen Benchtop Meters

BOD testing is complicated enough – no need for the meter to add to the confusion. The large color display is easy on to read and easy on the eyes. Prompts make accuracy and repeatability easy for even the most complicated testing. If you need to add more channels for more or obtain more parameters from the same, simply remove the protective individual channel cover and add the new module.

Discover the most advanced features in our new Orion VERSA STAR meters.



Features and Benefits

- Versatility is the name of the game
 - Customize the display to show only the information you need
 - Change modules to create the meter you need at any time
- Takes the worry out of DO probe compatibility – the meter accepts and automatically recognizes Orion polarographic and RDO optical/luminescence-based probes
- Compensates automatically for temperature, salinity with manual input and barometric pressure (automatic or manual)
- Allows for calibration using water-saturated air, air-saturated water, a Winkler titration or zero point
- Anyone can use this meter with its plain language screen prompts, function keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals or just once with single-shot mode
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods per channel allow for customized procedures to differentiate between tests and/or users
- Two USB and a RS232 port makes for easy data transfer and updating meter software
- Complimentary data analysis software for easy transferring of stored results, real-time viewing and calculation of BOD, DOUR and SOUR results
- Control sample mixing directly from the meter without a separate stir plate when using with the Orion Star stirrer probe (cat. no. 096019, sold separately)
- Increase your productivity – with two Orion Star stirrer probe ports, add stirrers and modules to analyze two separate samples at the same time
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source through the included universal power adapter
- IP54-rated housing handles splashes and cleans up easily
- 3 year meter replacement warranty



Product Specifications – Orion VERSA STAR Meter

CE TUV EPA		
Maximum Number of Modules	4	
Methods	Up to 10	
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, AUTO-READ™, timed interval, single timed reading
Communication Ports	One RS232, two USB ports (one client, one host)	
Orion Star Stirrer Probe Ports	2	
Power	Universal, AC power adapter, 90-260 VAC, 50-60 Hz	

Meter Ordering Information

Cat. No.	Description
VSTAR30	Orion VERSA STAR RDO/Dissolved Oxygen Benchtop Meter Set - Orion VERSA STAR meter - Orion VERSA STAR dissolved oxygen/temperature module - Electrode arm with redesigned holder - Universal power adapter
VSTAR32	Orion VERSA STAR RDO/Dissolved Oxygen Benchtop Meter Kit - Orion VERSA STAR meter - Orion VERSA STAR dissolved oxygen/temperature module - 083005MD Orion polarographic DO probe - 080017 calibration sleeve for DO probe - 080513 DO probe maintenance kit - 970802 BOD funnel/stirrer - 080360 BOD adapter - Electrode arm with redesigned holder - Universal power adapter

Product Specifications – RDO/DO Module (VSTAR-RD)

CE TUV EPA		
Dissolved Oxygen	Concentration - Polarographic	
	Range	0 to 90 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation - Polarographic	
	Range	0 to 600
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Concentration - RDO	
	Range	0 to 50 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.1 mg/L up to 8 mg/L; ±0.2 mg/L from 8 to 20 mg/L; 10 % of reading, 20 to 50 mg/L
	% Saturation - RDO	
	Range	0 to 500
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Automatic Barometric Pressure Correction	450.0 to 850.0 mm Hg
	Salinity Factor Correction	Automatic when used with conductivity module and probe or manual; 0 to 45 ppt
	Calibration Features	Water saturated air, air saturated water, manual (Winkler) and zero point
	Probe Type	Polarographic or RDO
Temperature	Range	0 to 50 °C, 32 to 122 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Input	9-pin mini-DIN	

Accessories

Cat. No.	Description
VSTAR-PH	Orion VERSA STAR pH/temperature module
VSTAR-ISE	Orion VERSA STAR pH/ISE/temperature module
VSTAR-CND	Orion VERSA STAR conductivity/temperature module
VSTAR-RD	Orion VERSA STAR RDO/DO/temperature module
VSTAR-LR	Orion VERSA STAR pH/temperature with LogR technology module
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
STARA-PWR	Replacement universal power adapter for Orion VERSA STAR meters
096019	Orion Star stirrer probe
083005MD	Orion dissolved oxygen probe, polarographic
086030MD	Orion auto-stir DO/BOD probe, polarographic
087010MD	Orion RDO optical DO probe, 3 m cable
080513	Maintenance kit, includes electrolyte solution, polishing disk, and two membrane caps for 083005MD and 086030MD
080514	Polarographic electrolyte solution for 083005MD and 086030MD
086021A	Replacement calibration chamber/stand for 086030MD
087001	Replacement optical/luminescence-based cap

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A213

RDO/Dissolved Oxygen Benchtop Meter

The Thermo Scientific Orion Star A213 RDO/Dissolved Oxygen (DO) Benchtop Meter is the ideal choice to ensure proper oxygen levels. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows dissolved oxygen in percent saturation or concentration and temperature along with time, date, sample ID, user ID and calibration information. For advanced users, features such as stability and averaging choices provide additional options.



Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- No need to worry about DO probe compatibility – the meter accepts and automatically recognizes Orion polarographic and RDO optical/luminescence-based probes
- Accurate results are easy with automatic temperature, manual salinity and your choice of automatic or manual barometric pressure compensation
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Calibrate using water-saturated air, air-saturated water, a Winkler titration or zero point calibration
- Non-volatile memory holds up to 2000 data points with time and date stamp
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- For faster BOD readings, control the Orion AUTO-STIR™ polarographic DO probe (086030MD, sold separately) directly from the meter
- Included electrode arm and newly-designed probe holder make it easier to maintain and place probes into samples
- Works with almost every AC power source with the included universal power adapter, or use four AA batteries (sold separately) to run the meter on DC power
- IP54-rated housing handles splashes and is wall-mountable if table space is a problem
- 3 year meter replacement warranty



Product Specifications

		CE TUV FCC
Dissolved Oxygen	Concentration - Polarographic	
	Range	0 to 90 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation - Polarographic	
	Range	0 to 600
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Concentration - RDO	
	Range	0 to 50 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.1 mg/L up to 8 mg/L; ±0.2 mg/L from 8 to 20 mg/L; 10 % of reading from 20 to 50 mg/L
	% Saturation - RDO	
	Range	0 to 500
Resolution	0.1, 1	
Relative Accuracy	±2 %	
Automatic Barometric Pressure Correction		
	450.0 to 850.0 mm Hg	
Manual Salinity Factor Correction		
	0 to 45 ppt	
Calibration Features		
	Water-saturated air, air saturated water, manual (Winkler) and zero point	
Probe Characteristics		
	Polarographic or RDO	
Temperature	Range	0 to 50 °C, 32 to 122 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	2000 with time and date stamp
	Log Function	Manual, ready (includes AUTO-READ™), timed
Inputs	DO with Temperature Probe	9-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Included – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA2130	Orion Star A213 Dissolved Oxygen Benchtop Meter - Electrode arm with redesigned holder - Universal power adapter
STARA2135	Orion Star A213 Dissolved Oxygen Benchtop Meter Kit - 083005MD Orion polarographic DO probe with calibration sleeve - 080513 polarographic DO probe maintenance kit - 970802 BOD funnel/stirrer - 080360 BOD adapter - Electrode arm with redesigned holder - Universal power adapter
STARA2136	Orion Star A213 Dissolved Oxygen Benchtop Meter Kit with Self-Stirring Probe - 086030MD Orion polarographic AUTO-STIR DO/BOD probe - 080513 DO probe maintenance kit - 080514 polarographic DO probe electrolyte solution - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
083005MD	Orion polarographic DO probe, 1.5m cable
086030MD	Orion polarographic AUTO-STIR DO/BOD probe, 1.5m cable
087010MD	Orion RDO optical DO probe, 3m cable with stainless steel guard and calibration sleeve
080513	Orion polarographic DO probe maintenance kit
080514	Orion polarographic DO probe electrolyte solution, 60 mL
080017	Calibration sleeve for Orion polarographic DO probes
087003	Replacement calibration sleeve for Orion RDO optical probes
087001	Replacement optical cap for Orion RDO probes
970802	Orion BOD funnel and stirrer for use with polarographic probes
080360	Orion BOD bottle adapter for use with polarographic probes

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A113

Dissolved Oxygen Benchtop Meter

Thermo Scientific Orion Star A113 Dissolved Oxygen Benchtop Meters combine simplicity with accuracy for dedicated DO testing. Icons provide quick updates on battery life and completed calibration status. Simple button layout and onscreen messages help with calibration and setup menu choices.

Features and Benefits

- Large, informative screen clearly shows the main information, including DO reading in mg/L or % saturation, temperature in °C or °F, meter mode and power source
- Automatic temperature, manual salinity input and manual barometric pressure compensation for an accurate result
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen and ready indicator alerts when readings are stable
- Two calibration options to meet your requirements: water-saturated air method or a Winkler titration
- Accepts Thermo Scientific Orion polarographic dissolved oxygen probes
- Non-volatile memory holds up to 50 data points
- Included electrode arm and newly-designed holder make it easier to maintain and place probes into samples
- Plug the meter into almost any power outlet with the included universal power adapter, or use four AA batteries (sold separately)
- The IP54-rated housing can handle splashes and can be wall-mounted if table space is a problem
- 3 year meter replacement warranty





Product Specifications

CE TUV FCC		
Dissolved Oxygen	Concentration	
	Range	0 to 20 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation	
	Range	0 to 200
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Manual Barometric Pressure Correction	450.0 to 850.0 mm Hg
	Manual Salinity Factor Correction	0 to 45 ppt
Calibration Features	Water-saturated air, manual (Winkler)	
Sensor Type	Polarographic	
Temperature	Range	0 to 50 °C, 32 to 122 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	Yes
Datalogging	Number of Datalogs	50
	Log Function	Manual, Automatic with AUTO-READ™
Inputs	DO with Temperature Probe	9-pin mini-DIN
Power	Power Cord	Included – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	2000 hrs

Meter Ordering Information

Cat. No.	Description
STARA1130	Orion Star A113 Dissolved Oxygen Benchtop Meter - Electrode arm with redesigned holder - Universal power adapter
STARA1135	Orion Star A113 Dissolved Oxygen Benchtop Meter Kit - 083005MD Orion polarographic DO probe - 080017 calibration sleeve for DO probe - 080513 DO probe maintenance kit - Electrode arm with redesigned holder - Universal power adapter

Accessories

Cat. No.	Description
STARA-BEA	Benchtop electrode arm for Orion Star A-series meters
STARA-HB	Freestanding base for use with Orion Star A-series benchtop electrode arm
083005MD	Orion polarographic DO probe, 1.5m cable
080513	Orion polarographic DO probe maintenance kit
080017	Calibration sleeve for Orion polarographic DO probes
970802	Orion BOD funnel and stirrer for use with polarographic probes
080360	Orion BOD bottle adapter for use with polarographic probes

For accurate testing outside the lab, check out the Orion Star A portable meters on the following pages.

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion VERSA STAR Advanced Electrochemistry Benchtop Meter & Modules

Don't see the benchtop meter parameter combination you need for your application? No problem – simply order the Orion VERSA STAR meter and choose the modules you need.

With versatility being the name of the game, you can also choose modules to add or change your existing Orion VERSA STAR meter to meet your latest testing needs. Simply swap out the modules when you need to and no need to wait to power down. The meter automatically recognizes the changes and datalogs remain unchanged and stored in the meter.

Each module includes the necessary probe connections for the measurement parameter. The meter includes two Orion Star stirrer probe ports, one RS232 port, two USB ports, power port and grounding port. Included with the meter are the benchtop electrode arm and individual channel covers to protect the channels not in use.

Meter and Module Ordering Information

Cat. No.	Description
VSTAR00	Orion VERSA STAR Benchtop Meter - Electrode arm with redesigned holder - Universal power adapter
VSTAR-PH	Orion VERSA STAR pH/temperature module
VSTAR-ISE	Orion VERSA STAR pH/ISE/temperature module
VSTAR-CND	Orion VERSA STAR conductivity/temperature module
VSTAR-RD	Orion VERSA STAR RDO/DO/temperature module
VSTAR-LR	Orion VERSA STAR pH/temperature with LogR technology module
STARA-BEA	Benchtop electrode arm
STARA-HB	Free-standing, weighted base for use with benchtop electrode arm (sold separately)



No need to turn off your meter to switch modules – meter automatically recognizes module changes.

- pH
- ISE
- ORP
- Cond
- RDO
- DO
- Temp



Thermo Scientific Orion Star A320, A220 and A120-Series Portable Meters

Outside the laboratory, testing brings enough of its own challenges from getting the sample to taking the reading. Just because you test outside the laboratory doesn't mean your testing accuracy or quality needs to suffer. The new Orion Star A series of portable meters features a variety of advantages to handle testing in difficult environments.



Protective plugs cover RS232 and USB ports to prevent corrosion

Bright, backlit LCD display clearly shows results on those bright, sunny days as well as the dark, rainy ones and in dark areas of the plant

IP-67 waterproof housing

Ergonomic design allows for one-handed operation and features a recessed groove in the back of the meter to fit fingers easily wrapping around the meter

Keypad texture works well with gloved and wet hands

Advanced meter design prevents water ingress through all connector ports.

Do you have access to an AC power source while testing?
Save battery life by running the meter off AC power with the optional adapter





Thermo Scientific Orion Star A329

pH/ISE/Conductivity/RDO/Dissolved Oxygen Portable Meter

The Thermo Scientific Orion Star A329 pH/ISE/Conductivity/RDO/Dissolved Oxygen Portable Meter is the top choice for advanced multiparameter measurements on location. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display can show each parameter with temperature individually or all three with temperature on one screen. Additional helpful icons include electrode status, time, date, sample ID, user ID and calibration points. Advanced features such as stability and averaging options provide additional options allowing for laboratory accuracy everywhere you need it.

Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers
- Fix pH and ISE calibration errors without a complete recalibration with calibration editing
- No need to worry about DO probe compatibility – the meter accepts and automatically recognizes Orion polarographic and RDO optical/luminescence-based probes
- It's easy to get accurate DO results with automatic temperature, automatic/manual barometric pressure and automatic salinity compensation when used with simultaneously with conductivity
- Calibrate for DO using water-saturated air, air-saturated water, a Winkler titration or zero point calibration
- Selectable cell constant allows for use with 2- or 4-cell conductivity cells
- For advanced accuracy in conductivity readings, selectable reading reference temperatures of 5, 10, 15, 20 or 25 °C with linear, non-linear, nLFu or USP/EP curve options
- Choice of practical salinity or natural sea water curves for salinity readings
- Linear or ISO/EN 27888 curves for TDS
- Whether you use ISE infrequently or have multiple samples every day – up to 5 point ISE calibration with advanced features such as timed end point, linear point-to-point, non-linear selectable auto-blank and low-concentration range stability
- Non-volatile memory holds up to 5000 data points with time and date stamp

- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- User and sample ID fields for additional data accuracy
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty

Product Specifications

		CE TUV FCC
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 5
	Calibration Editing	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E _s ORP Mode	Yes
ISE	Range	0 to 19999
	Resolution	Up to 3 significant digits
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	Units	ppm, M, mg/L, %, ppb, none
	Calibration Points	Up to 5
	Calibration Editing	Yes
	Calibration Features	Timed end point, linear point to point, non-linear selectable auto-blank, low concentration range stability
Conductivity	Range	0.001 µS to 3000 mS
	Resolution	0.001 µS minimum; 4 significant figures minimum
	Relative Accuracy	0.5 % reading ±1 digit
	Reference Temperature	5, 10, 15, 20, 25 °C (default)
	Temperature Compensation	Linear (0 to 10.0 %/°C), nLn, nLFu, USP/EP
	Compatible Cell Constants	0.001 to 199.9
	Calibration Points	Up to 5 points
	Calibration Editing	Yes
	Calibration Features	Timed end point, linear point to point, non-linear selectable auto-blank, low concentration range stability
Resistivity	Range	2 ohm to 100 meg-ohm
	Resolution	2 ohms-cm
	Relative Accuracy	0.5 % reading ±1 digit





Please turn the page...
this is just the
beginning of the
portable meters.

Product Specifications (Continued)

CE TUV FCC		
Salinity	Type	Practical salinity or natural sea water
	Range	0.01 to 80.0 ppt NaCl equivalent; 0.01 to 42 ppu sea water
	Resolution	0.01
	Relative Accuracy	±0.1
TDS	Range	1 to 200 ppt
	Resolution	4 significant digits
	Relative Accuracy	±0.5 % reading ±1 digit
	TDS Factor Range	Linear 0.01 to 10.00, default 0.49
Dissolved Oxygen	Concentration - Polarographic	
	Range	0 to 90 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation - Polarographic	
	Range	0 to 600
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Concentration - RDO	
	Range	0 to 50 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.1 mg/L up to 8 mg/L; ±0.2 mg/L from 8 to 20 mg/L; 10 % of reading from 20 to 50 mg/L
	% Saturation - RDO	
	Range	0 to 500
	Resolution	0.1, 1
	Relative Accuracy	±2 %
Automatic Barometric Pressure Correction	450.0 to 850.0 mm Hg	
Salinity Factor Correction	Automatic with separate conductivity probe or manual; 0 to 45 ppt	
Calibration Features	Water-saturated air, air saturated water, manual (Winkler) and zero point	
Probe Characteristics	Polarographic or RDO	
Temperature	Range	-5 to 105 °C, 23 to 221 °F (0 to 50 °C, 32 to 122 °F with RDO)
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	5000 with time and date stamp
	Log Function	Manual, ready (includes AUTO-READ™), timed
Inputs	pH Electrode	BNC, reference pin
	Conductivity with Temperature Probe or ATC Probe	8-pin mini-DIN
	DO with Temperature Probe	9-pin mini-DIN
Output	RS232, USB	
Power	AC Adapter	Optional – universal, 100-240 VAC
	Battery Power	Included – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA3290	Orion Star A329 pH/ISE/Conductivity/Dissolved Oxygen Portable Multiparameter Meter - Four AA batteries (installed)
STARA3295	Orion Star A329 pH/ISE/Conductivity/Dissolved Oxygen Portable Multiparameter Meter Kit - 8107UWMD Orion ROSS Triode 3-in-1 pH/ATC probe, 3m cable - 013010MD Orion DuraProbe conductivity cell, 3m cable - 087010MD Orion RDO optical/luminescence-based probe with 3m cable, stainless steel guard, calibration sleeve and optical/luminescence-based cap - 910410 Orion pH 4.01 buffer, 10 pouches - 910710 Orion pH 7.00 buffer, 10 pouches - 911010 Orion pH 10.01 buffer, 10 pouches - 810001 Orion ROSS electrode storage solution, 475 mL - 01100710 Orion 1413 µS conductivity standard, 10 pouches - 911110 rinse solution, 10 pouches - Protective armor with probe holders - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
1210005	Soft carrying case for Orion Star, Star Plus and Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESPH	pH electrode holder for Orion Star A-series armor
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz
8107UWMD	Orion ROSS Triode 3-in-1 pH/ATC probe, gel-filled, 3m cable
910410	Orion pH 4.01 buffer pouches, 10/pk
910710	Orion pH 7.00 buffer pouches, 10/pk
911010	Orion pH 10.01 buffer pouches, 10/pk
911110	Orion pH rinse solution pouches, 10/pk
013010MD	Orion DuraProbe conductivity cell with 3m cable, 4-cell, K=0.475
013020MD	Orion DuraProbe conductivity cell with 6m cable, 4-cell, K=0.475
013025MD	Orion DuraProbe conductivity cell with 10m cable, 4-cell, K=0.475
011008	Orion conductivity standard, 100 µS/cm, 5 x 60 mL bottles
01100710	Orion conductivity standard pouches, 1413 µS/cm, 10/pk
01100610	Orion conductivity standard pouches, 12.9 mS/cm, 10/pk
1010001	Orion conductivity calibration resistor kit
087010MD	Orion RDO optical DO probe, 3m cable with stainless steel guard and calibration sleeve
087020MD	Orion RDO optical DO probe, 6m cable with stainless steel guard and calibration sleeve
087030MD	Orion RDO optical DO probe, 10m cable with stainless steel guard and calibration sleeve
087050MD	Orion RDO optical DO probe, 15m cable with stainless steel guard and calibration sleeve
087100MD	Orion RDO optical DO probe, 30m cable with stainless steel guard and calibration sleeve
083005MD	Orion polarographic DO probe, 1.5m cable
080513	Orion polarographic DO probe maintenance kit
080514	Orion polarographic DO probe electrolyte solution, 60 mL
080017	Calibration sleeve for Orion polarographic DO probes
087003	Replacement calibration sleeve for Orion RDO optical probes
087001	Replacement optical cap for Orion RDO probes

- pH
- ISE
- ORP
- Cond
- RDO
- DO
- Temp



Thermo Scientific Orion Star A324 pH/ISE Portable Meter

The Thermo Scientific Orion Star A324 pH/ISE Portable Meters is the top choice for advanced pH/ISE measurements on location. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows pH/mV/RmV and temperature along with electrode status, time, date, sample ID, user ID and calibration points. Advanced features such as stability and averaging options provide additional options allowing for laboratory accuracy everywhere you need it.



Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers
- Whether you use ISE infrequently or have multiple samples every day – up to 5 point ISE calibration with advanced features such as timed end point, linear point-to-point, non-linear selectable auto-blank and low-concentration range stability
- Fix errors without a complete recalibration with the calibration editing function
- Non-volatile memory holds up to 5000 data points with time and date stamp
- User and sample ID fields for additional data accuracy
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty



Product Specifications

CE TUV FCC		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 5
	Calibration Editing	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E_s ORP Mode	Yes
ISE	Range	0 to 19999
	Resolution	Up to 3 significant digits
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	Units	ppm, M, mg/L, %, ppb, none
	Calibration Points	Up to 5
	Calibration Editing	Yes
	Calibration Features	Timed end point, linear point to point, non-linear selectable auto-blank, low concentration range stability
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	5000 with time and date stamp
	Log Function	Manual, ready (include AUTO-READ™), timed
Inputs	pH Electrode	BNC, reference pin
	ATC Probe	8-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Optional – universal, 100-240 VAC
	Battery Power	Included – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA3240	Orion Star A324 pH/ISE Portable Meter - Four AA batteries (installed)
STARA3245	Orion Star A324 pH/ISE Portable Meter Kit - 8107UWMMMD Orion ROSS Triode 3-in-1 pH/ATC Probe - Orion pH 4, 7 and 10 buffers, 10 pouches of each value - 810001 Orion ROSS electrode storage solution - 911110 Rinse solution, 10 pouches - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
1210005	Soft carrying case for Orion Star, Star Plus and Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESPH	pH electrode holder for Orion Star A-series armor
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
8107UWMMMD	Orion ROSS Triode 3-in-1 pH/ATC probe, gel-filled, 3m cable
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz
910410	Orion pH 4.01 buffer pouches, 10/pk
910710	Orion pH 7.00 buffer pouches, 10/pk
911010	Orion pH 10.01 buffer pouches, 10/pk
911110	Orion pH rinse solution pouches, 10/pk
9512HPBNWP	Orion high-performance ammonia ISE
9512BNWP	Orion standard ammonia ISE
951007	Ammonia standard, 1000 ppm, 475 mL
951210	Low-level ammonia ISA
951211	Ammonia ISA, 475 mL
951209	Fill solution for Orion high-performance ammonia ISE, 60 mL
951202	Fill Solution for standard ammonia ISE, 60 mL
951213	Ammonia ISE storage solution
9609BNWP	Orion fluoride combination ISE
040906	Fluoride standard, 1 ppm with TISAB II, 475 mL
040907	Fluoride standard, 2 ppm with TISAB II, 475 mL
040908	Fluoride standard, 10 ppm with TISAB II, 475 mL
940909	TISAB II, 1 gallon
8611BNWP	Orion ROSS sodium combination ISE

pH

ISE

ORP

Cond

RDO

DO

Temp



Thermo Scientific Orion Star A325 pH/Conductivity Portable Meter

The Thermo Scientific Orion Star A325 pH/Conductivity Portable Meter is the top choice for advanced pH and conductivity measurements on location. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows individual pH/mV/RmV or conductivity/TDS/salinity/resistivity results with temperature, or all results at once. Additional helpful information include electrode status, time, date, sample ID, user ID and calibration points. Advanced features such as stability and averaging options provide additional options allowing for laboratory accuracy everywhere you need it.

Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers
- Fix pH calibration errors without a complete recalibration with calibration editing
- Selectable cell constant allows for use with 2- or 4-cell conductivity cells
- For advanced accuracy in conductivity readings, selectable reading reference temperatures of 5, 10, 15, 20 or 25 °C with linear, non-linear, nLFu or USP/EP curve options
- Choice of practical salinity or natural sea water curves for salinity readings
- Linear or ISO/EN 27888 curves for TDS
- Non-volatile memory holds up to 5000 data points with time and date stamp
- User and sample ID fields for additional data accuracy
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty





Product Specifications

CE TUV FCC		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 5
	Calibration Editing	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E _r ORP Mode	Yes
Conductivity	Range	0.001 µS to 3000 mS
	Resolution	0.001 µS minimum; 4 significant figures minimum
	Relative Accuracy	0.5 % reading ±1 digit
	Reference Temperature	5, 10, 15, 20, 25 °C (default)
	Temperature Compensation	Linear (0 to 10.0 %/°C), nLn, nLFu, USP/EP
	Compatible Cell Constants	0.001 to 199.9
	Calibration Points	Up to 5 points
	Calibration Editing	Yes
Resistivity	Range	2 ohm to 100 meg-ohm
	Resolution	2 ohms-cm
	Relative Accuracy	0.5 % reading ±1 digit
Salinity	Type	Practical salinity or natural sea water
	Range	0.01 to 80.0 ppt NaCl equivalent; 0.01 to 42 ppt sea water
	Resolution	0.01
TDS	Relative Accuracy	±0.1
	Range	0 to 200 ppt
	Resolution	4 significant digits
	Relative Accuracy	±0.5 % reading ±1 digit
Temperature	TDS Factor Range	Linear 0.01 to 10.00, default 0.49
	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
Datalogging	Offset Calibration	1 point
	Number of Datalogs	5000 with time and date stamp
Inputs	Log Function	Manual, ready (include AUTO-READ™), timed
	pH Electrode	BNC, reference pin
	Conductivity with Temperature Probe or ATC Probe	8-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Optional – universal, 100-240 VAC
	Battery Power	Included – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA3250	Orion Star A325 pH/Conductivity Portable Multiparameter Meter - Four AA batteries (installed)
STARA3255	Orion Star A325 pH/Conductivity Portable Multiparameter Meter Kit - 8107UWMMMD Orion ROSS Triode 3-in-1 pH/ATC probe, 3m cable - 013010MD Orion DuraProbe conductivity cell, 3m cable - 910410 Orion pH 4.01 buffer, 10 pouches - 910710 Orion pH 7.00 buffer, 10 pouches - 911010 Orion pH 10.01 buffer, 10 pouches - 810001 Orion ROSS electrode storage solution, 475 mL - 01100710 Orion 1413 µS conductivity standard, 10 pouches - 911110 rinse solution, 10 pouches - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESPH	pH electrode holder for Orion Star A-series armor
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
8107UWMMMD	Orion ROSS Triode 3-in-1 pH/ATC probe, gel-filled, 3m cable
013010MD	Orion DuraProbe conductivity cell with 3m cable, 4-cell, K=0.475
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz
910410	Orion pH 4.01 buffer pouches, 10/pk
910710	Orion pH 7.00 buffer pouches, 10/pk
911010	Orion pH 10.01 buffer pouches, 10/pk
911110	Orion pH rinse solution pouches, 10/pk
011008	Orion conductivity standard, 100 µS/cm, 5 x 60 mL bottles
01100710	Orion conductivity standard pouches, 1413 µS/cm, 10/pk
01100610	Orion conductivity standard pouches, 12.9 mS/cm, 10/pk
1010001	Orion conductivity calibration resistor kit



- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A326

pH/RDO/Dissolved Oxygen Portable Meter

The Thermo Scientific Orion Star A326 pH/RDO/Dissolved Oxygen Portable Meter is the top choice for advanced pH and dissolved oxygen measurements on location. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows individual pH/mV/RmV or dissolved oxygen in percent saturation or concentration results with temperature, or all results at once. Additional helpful information include electrode status, time, date, sample ID, user ID and calibration points. Advanced features such as stability and averaging options provide additional options allowing for laboratory accuracy everywhere you need it.



Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers
- Fix pH calibration errors without a complete recalibration with calibration editing
- No need to worry about DO probe compatibility – the meter accepts and automatically recognizes Orion polarographic and RDO optical/luminescence-based probes
- Easily get accurate DO results with automatic temperature, manual salinity and automatic/manual barometric pressure correction
- Calibrate DO using water-saturated air, air-saturated water, a Winkler titration or zero point calibration
- Non-volatile memory holds up to 5000 data points with time and date stamp
- User and sample ID fields for additional data accuracy
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use on AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty



Product Specifications

CE TUV FCC		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 5
	Calibration Editing	Yes
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E_r ORP Mode	Yes
Dissolved Oxygen	Concentration - Polarographic	
	Range	0 to 90 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation - Polarographic	
	Range	0 to 600
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Concentration - RDO	
	Range	0 to 50 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.1 mg/L up to 8 mg/L; ±0.2 mg/L from 8 to 20 mg/L; 10 % of reading from 20 to 50 mg/L
	% Saturation - RDO	
	Range	0 to 500
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Manual Barometric Pressure Correction	450.0 to 850.0 mm Hg
	Manual Salinity Factor Correction	0 to 45 ppt
	Calibration Features	Water-saturated air, air saturated water, manual (Winkler) and zero point
	Probe Characteristics	Polarographic or RDO
	Temperature	Range
Resolution		0.1
Relative Accuracy		±0.1
Offset Calibration		1 point
Datalogging		Number of Datalogs
	Log Function	Manual, ready (includes AUTO-READ™), timed
Inputs	pH Electrode	BNC, reference pin
	DO with Temp. Probe	9-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Optional – universal, 100-240 VAC
	Battery Power	Optional – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA3260	Orion Star A326 pH/RDO/Dissolved Oxygen Portable Multiparameter Meter - Four AA batteries (installed)
STARA3265	Orion Star A326 pH/RDO/Dissolved Oxygen Portable Multiparameter Meter Kit - 8107UWMMD Orion ROSS Triode 3-in-1 pH/ATC probe, 3m cable - 087010MD Orion RDO optical/luminescence-based probe with 3m cable, stainless steel guard, calibration sleeve and optical/luminescence-based cap - 910410 Orion pH 4.01 buffer, 10 pouches - 910710 Orion pH 7.00 buffer, 10 pouches - 911010 Orion pH 10.01 buffer, 10 pouches - 810001 Orion ROSS electrode storage solution, 475 mL - 01100710 Orion 1413 µS conductivity standard, 10 pouches - 911110 rinse solution, 10 pouches - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESPH	pH electrode holder for Orion Star A-series armor
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
8107UWMMD	Orion ROSS Triode 3-in-1 pH/ATC probe, gel-filled, 3m cable
087020MD	Orion RDO optical DO probe, 6m cable with stainless steel guard and calibration sleeve
087030MD	Orion RDO optical DO probe, 10m cable with stainless steel guard and calibration sleeve
087050MD	Orion RDO optical DO probe, 15m cable with stainless steel guard and calibration sleeve
087100MD	Orion RDO optical DO probe, 30m cable with stainless steel guard and calibration sleeve
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz
910410	Orion pH 4.01 buffer pouches, 10/pk
910710	Orion pH 7.00 buffer pouches, 10/pk
911010	Orion pH 10.01 buffer pouches, 10/pk
911110	Orion pH rinse solution pouches, 10/pk
087010MD	Orion RDO optical DO probe, 3m cable with stainless steel guard and calibration sleeve
083005MD	Orion polarographic DO probe, 1.5m cable

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A321 & Star A221 pH Portable Meters

Orion Star A321

The Thermo Scientific Orion Star A321 pH Portable Meter is the top choice for advanced pH measurements on location. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows pH/mV/RmV and temperature along with electrode status, time, date, sample ID, user ID and calibration points. Advanced features such as stability and averaging options provide additional options allowing for laboratory accuracy everywhere you need it.

Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers
- Fix errors without a complete recalibration with calibration editing
- Non-volatile memory holds up to 5000 data points with time and date stamp
- User and sample ID fields for additional data accuracy
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty



Orion Star A221

Get the readings that you need where you need them with the Thermo Scientific Orion Star A221 pH Portable Meter. The large, backlit graphic LCD display shows pH/mV/RmV and temperature along with electrode status, time, date and calibration points.

Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen and ready indicator alerts when readings are stable
- Up to 5 point pH calibration with automatic recognition for USA/NIST and DIN buffers
- Non-volatile memory holds up to 1000 data points with time and date stamp
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty



Product Specifications (Orion Star A321 & Star A221)

CE TUV FCC		
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 5
	Calibration Editing	Orion Star A321: Yes Orion Star A221: No
mV/Rel mV/ ORP	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E_r ORP Mode	Yes
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	Orion Star A321: 5000 with time and date stamp Orion Star A221: 1000 with time and date stamp
	Log Function	Orion Star A321: Manual, ready (includes AUTO-READ™), timed Orion Star A221: Manual, Automatic with AUTO-READ™
Inputs	pH Electrode	BNC, reference pin
	ATC Probe	8-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Optional – universal, 100-240 VAC
	Battery Power	Included – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA3210	Orion Star A321 pH Portable Meter - Four AA batteries (installed)
STARA3215	Orion Star A321 pH Portable Meter Kit - 8107UWMMD Orion ROSS Triode 3-in-1 pH/ATC probe - 910410 Orion pH 4.01 buffer, 10 pouches - 910710 Orion pH 7.00 buffer, 10 pouches - 911010 Orion pH 10.01 buffer, 10 pouches - 810001 Orion ROSS electrode storage solution, 475 mL - 911110 rinse solution, 10 pouches - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)
STARA2210	Orion Star A221 pH Portable Meter - Four AA batteries (installed)
STARA2215	Orion Star A221 pH Portable Meter Kit - 8107UWMMD Orion ROSS Triode 3-in-1 pH/ATC probe - 910410 Orion pH 4.01 buffer, 10 pouches - 910710 Orion pH 7.00 buffer, 10 pouches - 911010 Orion pH 10.01 buffer, 10 pouches - 810001 Orion ROSS electrode storage solution, 475 mL - 911110 rinse solution, 10 pouches - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESPH	pH electrode holder for Orion Star A-series armor
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
8107UWMMD	Orion ROSS Triode 3-in-1 pH/ATC probe, gel-filled, 3m cable
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz
910410	Orion pH 4.01 buffer pouches, 10/pk
910710	Orion pH 7.00 buffer pouches, 10/pk
911010	Orion pH 10.01 buffer pouches, 10/pk
911110	Orion pH rinse solution pouches, 10/pk

We told you we've expanded the line. The new Orion Star A series line still has more options on the following pages.

- pH
- ISE
- ORP
- Cond
- RDO
- DO
- Temp



Thermo Scientific Orion Star A121 pH Portable Meter

Thermo Scientific Orion Star A121 pH Portable Meters combine simplicity with accuracy. A large LCD displays pH or mV readings along with temperature. Icons provide quick updates on battery life, electrode status and calibration information. Simple button layout and onscreen messages help with calibration and setup menu choices.



Features and Benefits

- Large, informative screen clearly shows the main information, including pH or mV reading, temperature in °C or °F, meter mode, calibration information and battery life
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen and ready indicator alerts when readings are stable
- Up to 3 point pH calibration
- Automatic recognition of USA/NIST and DIN buffers
- Easily recall calibration slope data for procedure checks
- Non-volatile memory holds up to 50 data points
- Four AA batteries (included) provide over 2000 hours of operation or purchase the universal power adapter (sold separately) to run meter on AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty





Product Specifications

CE TUV FCC		
pH	Range	-2.00 to 16.00
	Resolution	0.1, 0.01
	Relative Accuracy	±0.01
	pH Calibration Points	Up to 3
mV/Rel mV/ ORP	Range - mV	±1600.0 mV
	Range - RmV	±1999.9 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E _s ORP Mode	No
Temperature	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Temperature Compensation	Automatic or manual
	Temperature Offset Calibration	Yes
Datalogging	Number of Datalogs	50
	Log Function	Manual, Automatic with AUTO-READ™
Inputs	pH Electrode	BNC
	ATC Probe	8-pin mini-DIN
Power	AC Adapter	Optional – universal, 100-240 VAC
	Battery Power	Included – 4 AAs
	Battery Life	2000 hrs

Meter Ordering Information

Cat. No.	Description
STARA1210	Orion Star A121 pH Portable Meter - Four AA batteries (installed)
STARA1215	Orion Star A121 pH Portable Meter Kit - 9107BNMD Orion Triode 3-in-1 pH/ATC probe - Solution kit (60 mL each of pH 4, 7 and 10 buffers; storage solution and cleaning solution) - 911110 rinse solution, 10 pouches - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESPH	pH electrode holder for Orion Star A-series armor
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
9157BNMD	Orion Triode 3-in-1 pH/ATC probe, refillable, epoxy body
9107BNMD	Orion Triode 3-in-1 pH/ATC probe, gel-filled, epoxy body
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz
910410	Orion pH 4.01 buffer pouches, 10/pk
910710	Orion pH 7.00 buffer pouches, 10/pk
911010	Orion pH 10.01 buffer pouches, 10/pk
911110	Orion pH rinse solution pouches, 10/pk
916099	Orion pH buffer assortment pack - 60 mL each of pH 4, 7 and 10 buffers; storage solution and cleaning solution D

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A322 & Star A222

Conductivity Portable Meters

Orion Star A322

The Thermo Scientific Orion Star A322 Conductivity Portable Meter is the top choice for advanced measurements on location. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows conductivity/TDS/salinity resistivity and temperature along with electrode status, time, date, sample ID, user ID and calibration points. Advanced features such as stability and averaging options provide additional options allowing for laboratory accuracy everywhere you need it.

Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Selectable cell constant allows for use with 2- or 4-cell conductivity cells
- For advanced accuracy, selectable reading reference temperatures of 5, 10, 15, 20 or 25 °C with linear, non-linear, nLFu or USP/EP curve options
- Choice of practical salinity or natural sea water curves for salinity readings
- Linear or ISO/EN 27888 curves for TDS
- Non-volatile memory holds up to 5000 data points with time and date stamp
- User and sample ID fields for additional data accuracy
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty

Orion Star A222

Get the readings that you need where you need them with the Thermo Scientific Orion Star A222 Conductivity Portable Meter. The large, backlit graphic LCD display shows conductivity/TDS/salinity/resistivity and temperature along with electrode status, time, date and calibration points.

Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen and ready indicator alerts when readings are stable
- Selectable cell constant allows for use with 2- or 4-cell conductivity cells
- Selectable reading reference temperatures of 15, 20 or 25 °C with linear or non-linear curve options
- Includes the standard practical salinity curve for salinity readings
- Linear or ISO/EN 27888 curves for TDS
- Non-volatile memory holds up to 1000 data points with time and date stamp
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty





Product Specifications (Orion Star A322 & Star A222)

CE TUV FCC		
Conductivity	Range	0.001 µS to 3000 mS
	Resolution	0.001 µS minimum; 4 significant figures minimum
	Relative Accuracy	0.5 % reading ±1 digit
	Reference Temperature	Orion Star A322: 5, 10, 15, 20, 25 °C Orion Star A222: 15, 20, 25 °C
	Temperature Compensation	Orion Star A322: Linear (0 to 10.0 %/°C), nLn, nLFu, USP/EP Orion Star A222: Linear (0 to 10.0 %/°C), nLn
	Compatible Cell Constants	0.001 to 199.9
	Calibration Points	Up to 5 points
	Calibration Editing	Orion Star A322: Yes Orion Star A222: –
Resistivity	Range	2 ohm to 100 meg-ohm
	Resolution	2 ohms-cm
	Relative Accuracy	0.5 % reading ±1 digit
Salinity	Type	Orion Star A322: Practical salinity or natural sea water Orion Star A222: Practical salinity
	Range	0.01 to 80.0 ppt NaCl equivalent; 0.01 to 42 ppt sea water
	Resolution	0.01
TDS	Relative Accuracy	±0.1
	Range	0 to 200 ppt
	Resolution	4 significant digits
	Relative Accuracy	±0.5 % reading ±1 digit
Temperature	TDS Factor Range	Linear, 0.01 to 10.00
	Range	-5 to 105 °C, 23 to 221 °F
	Resolution	0.1
	Relative Accuracy	±0.1
Datalogging	Offset Calibration	1 point
	Number of Datalogs	Orion Star A322: 5000 with time and date stamp Orion Star A222: 1000 with time and date stamp
	Log Function	Orion Star A322: Manual, ready (includes AUTO-READ™), timed Orion Star A222: Manual, Automatic with AUTO-READ™
Inputs	Conductivity with Temperature Probe	8-pin mini-DIN
Output		RS232, USB
Power	AC Adapter	Optional – universal, 100-240 VAC
	Battery Power	Included – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA3220	Orion Star A322 Conductivity Portable Meter - Four AA batteries (installed)
STARA3225	Orion Star A322 Conductivity Portable Meter Kit - 013010MD Orion DuraProbe conductivity cell with 3m cable, K=0.475 - 01100710 conductivity standard pouches, 1413 µS, pack of 10 - 911110 rinse solution, pack of 10 - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)
STARA2220	Orion Star A222 Conductivity Portable Meter - Four AA batteries (installed)
STARA2225	Orion Star A222 Conductivity Portable Meter Kit - 013010MD Orion DuraProbe conductivity cell with 3m cable, K=0.475 - 01100710 conductivity standard pouches, 1413 µS, pack of 10 - 911110 rinse solution, pack of 10 - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
1210005	Soft carrying case for Orion Star, Star Plus and Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
STARA-ESPH	pH electrode holder for Orion Star A-series armor
013005MD	Orion DuraProbe conductivity cell with 1.5m cable, 4-cell, K=0.475
013010MD	Orion DuraProbe conductivity cell with 3m cable, 4-cell, K=0.475
013020MD	Orion DuraProbe conductivity cell with 6m cable, 4-cell, K=0.475
013025MD	Orion DuraProbe conductivity cell with 10m cable, 4-cell, K=0.475
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz
011008	Orion conductivity standard, 100 µS/cm, 5 x 60 mL bottles
01100710	Orion conductivity standard pouches, 1413 µS/cm, 10/pk
01100610	Orion conductivity standard pouches, 12.9 mS/cm, 10/pk
911110	Orion rinse solution pouches, 10/pk
1010001	Orion conductivity calibration resistor kit

That's not all. We have more new meters on the following pages.

- pH
- ISE
- ORP
- Cond
- RDO
- DO
- Temp



Thermo Scientific Orion Star A122

Conductivity Portable Meter

Thermo Scientific Orion Star A122 Conductivity Portable Meters combine simplicity with accuracy. A large LCD displays conductivity or TDS readings along with temperature. Icons provide quick updates on battery life and completed calibration status. Simple button layout and onscreen messages help with calibration and setup menu choices.

Features and Benefits

- Large, informative screen clearly shows the main information, including conductivity or TDS reading, temperature in °C or °F, meter mode and battery life
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen and ready indicator alerts when readings are stable
- Selectable cell constant
- Manual calibration or automatic calibration when using a Thermo Scientific Orion conductivity standard (sold separately)
- Selectable reading reference temperatures of 20 °C or 25 °C for an accurate result
- Non-volatile memory holds up to 50 data points
- Four AA batteries (included) provide over 2000 hours of operation or purchase the universal power adapter (sold separately) to run meter on AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty





Product Specifications

CE TUV FCC		
Conductivity	Range	0.1 μ S/cm to 200 mS/cm
	Resolution	0.01 μ S minimum; 3 significant figures minimum
	Relative Accuracy	0.5 % reading \pm 1 digit
	Reference Temperature	20, 25 $^{\circ}$ C (default)
	Temperature Compensation	Linear (0.0 to 10.0 %/ $^{\circ}$ C)
	Compatible Cell Constants	0.001 to 10
	Calibration Points	1
TDS	Range	1 to 19,999 mg/L
	Resolution	4 significant digits
	Relative Accuracy	0.5 % reading \pm 1 digit
	TDS Factor Range	Linear, 0.01 to 10.00, default 0.49
Temperature	Range	-5 to 105 $^{\circ}$ C, 23 to 221 $^{\circ}$ F
	Resolution	0.1
	Relative Accuracy	\pm 0.1
	Offset Calibration	Yes
Datalogging	Number of Datalogs	50
	Log Function	Manual, Automatic with AUTO-READ™
Inputs	Conductivity	8-pin mini-DIN
Power	AC Adapter	Optional – universal, 100-240 VAC
	Battery Power	Included – 4 AAs
	Battery Life	2000 hrs

Meter Ordering Information

Cat. No.	Description
STARA1220	Orion Star A122 Conductivity Portable Meter - Four AA batteries (installed)
STARA1225	Orion Star A122 Conductivity Portable Meter Kit - 011050MD Orion conductivity cell, K=1.0 - 011007 conductivity standard, 1413 μ S, 5 x 60 mL - 911110 rinse solution, 10 pouches - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
STARA-ESPH	pH electrode holder for Orion Star A-series armor
011050MD	Orion 2-electrode conductivity cell, K=1.0
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz
011008	Orion conductivity standard, 100 μ S/cm, 5 x 60 mL bottles
01100710	Orion conductivity standard pouches, 1413 μ S/cm, 10/pk
01100610	Orion conductivity standard pouches, 12.9 mS/cm, 10/pk
911110	Rinse solution, 10/pk
1010001	Orion conductivity calibration resistor kit

- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A323 & Star A223

RDO/Dissolved Oxygen Portable Meters

Orion Star A323

The Thermo Scientific Orion Star A323 RDO/Dissolved Oxygen Portable Meter is the top choice for ensuring proper oxygen levels for maximum process control on location. Get the information you need quickly and easily from the large, backlit graphic LCD display. Informative display shows dissolved oxygen in percent saturation or concentration with temperature and electrode status, time, date, sample ID, user ID and calibration points. Advanced features such as stability and averaging options provide additional options allowing for laboratory accuracy everywhere you need it.

Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- No need to worry about DO probe compatibility – the meter accepts and automatically recognizes Orion polarographic and RDO optical/luminescence-based probes
- Accurate results are easy with automatic temperature, manual salinity and automatic/manual barometric pressure compensation
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen, ready indicator alerts when readings are stable and timed reading gathers data in specific time intervals
- Calibrate using water-saturated air, air-saturated water, a Winkler titration or zero point calibration
- Non-volatile memory holds up to 5000 data points with time and date stamp
- User and sample ID fields for additional data accuracy
- Stores up to 10 methods allow for customized procedures to differentiate between tests and/or users
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty



Orion Star A223

Get the readings that you need where you need them with the Thermo Scientific Orion Star A223 RDO/Dissolved Oxygen Portable Meter. The large, backlit graphic LCD display shows dissolved oxygen in percent saturation or concentration with temperature and electrode status, time, date and calibration points.

Features and Benefits

- Anyone can use this meter with its plain language screen prompts, soft keys that update for easy selection and a multilanguage interface that supports English, Spanish, French, Italian, German and Chinese
- No need to worry about DO probe compatibility – the meter accepts and automatically recognizes Orion polarographic and RDO optical/luminescence-based probes
- Accurate results are easy with automatic temperature, manual salinity and automatic/manual barometric pressure compensation
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen and ready indicator alerts when readings are stable
- Calibrate using water-saturated air, air-saturated water, a Winkler titration or zero point calibration
- Non-volatile memory holds up to 1000 data points with time and date stamp
- Easily transfer data and keep meter software up-to-date with the USB and RS232 ports and complimentary data analysis software
- Four AA batteries (included) provide over 800 hours of operation or purchase the universal power adapter (sold separately) to use AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty



Product Specifications (Orion Star A323 & Star A223)

CE TUV FCC		
Dissolved Oxygen	Concentration - Polarographic	
	Range	0 to 90 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation - Polarographic	
	Range	0 to 600
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Concentration - RDO	
	Range	0 to 50 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.1 mg/L up to 8 mg/L; ±0.2 mg/L from 8 to 20 mg/L; 10 % of reading from 20 to 50 mg/L
	% Saturation - RDO	
	Range	0 to 500
Resolution	0.1, 1	
Relative Accuracy	±2 %	
Manual Barometric Pressure Correction	450.0 to 850.0 mm Hg	
Manual Salinity Factor Correction	0 to 45 ppt	
Calibration Features	Water saturated air, air saturated water, manual (Winkler) and zero point	
Probe Characteristics	Polarographic or RDO	
Temperature	Range	0 to 50 °C, 32 to 122 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	1 point
Datalogging	Number of Datalogs	Orion Star A323: 5000 with time and date stamp Orion Star A223: 1000 with time and date stamp
	Log Function	Orion Star A323: Manual, automatic (with Auto-Read™), timed Orion Star A223: Manual, automatic (with Auto-Read™)
Inputs	DO with Temperature Probe	9-pin mini-DIN
Output		RS232, USB
Power	Power Cord	Optional – universal, 100-240 VAC
	Battery Power	Included – 4 AAs
	Battery Life	800 hrs

Meter Ordering Information

Cat. No.	Description
STARA3230	Orion Star A323 Dissolved Oxygen Portable Meter - Four AA batteries (installed)
STARA3235	Orion Star A323 Dissolved Oxygen Portable Meter Kit - 087010MD Orion RDO optical/luminescence-based probe with 3m cable, stainless steel guard, calibration sleeve and optical/luminescence-based cap - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)
STARA2230	Orion Star A223 RDO/Dissolved Oxygen Portable Meter - Four AA batteries (installed)
STARA2235	Orion Star A223 RDO/Dissolved Oxygen Portable Meter Kit - 087010MD Orion RDO optical/luminescence-based probe with 3m cable, stainless steel guard, calibration sleeve and optical/luminescence-based cap - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
STARA-ESPH	pH electrode holder for Orion Star A-series armor
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz
087010MD	Orion RDO optical DO probe, 3m cable with stainless steel guard and calibration sleeve
087020MD	Orion RDO optical DO probe, 6m cable with stainless steel guard and calibration sleeve
087030MD	Orion RDO optical DO probe, 10m cable with stainless steel guard and calibration sleeve
087050MD	Orion RDO optical DO probe, 15m cable with stainless steel guard and calibration sleeve
087100MD	Orion RDO optical DO probe, 30m cable with stainless steel guard and calibration sleeve
083005MD	Orion polarographic DO probe, 1.5m cable
080513	Orion polarographic DO probe maintenance kit
080514	Orion polarographic DO probe electrolyte solution, 60 mL
080017	Calibration sleeve for Orion polarographic DO probes
087003	Replacement calibration sleeve for Orion RDO optical probes
087001	Replacement optical cap for Orion RDO probes



- pH ■
- ISE ■
- ORP ■
- Cond ■
- RDO ■
- DO ■
- Temp ■



Thermo Scientific Orion Star A123 Dissolved Oxygen Portable Meter

Thermo Scientific Orion Star A123 Dissolved Oxygen Portable Meters combine simplicity with accuracy. A large LCD displays dissolved oxygen readings along with temperature. Icons provide quick updates on battery life and completed calibration status. Simple button layout and onscreen messages help with calibration and setup menu choices.

Features and Benefits

- Large, informative screen clearly shows the main information, including DO reading in mg/L or % saturation, temperature in °C or °F, meter mode and battery life
- Automatic temperature, manual salinity input and manual barometric pressure compensation for an accurate result
- Don't miss a reading – AUTO-READ™ locks in the stable reading on your screen and ready indicator alerts when readings are stable
- Two calibration options to meet your procedural requirements: water-saturated air method or a Winkler titration
- Accepts Thermo Scientific Orion polarographic dissolved oxygen probes
- Non-volatile memory holds up to 50 data points
- Four AA batteries (included) provide over 2000 hours of operation or purchase the universal power adapter (sold separately) to run meter on AC power
- Perfectly portable, waterproof and protected to take anywhere with a IP67-rated housing
- 3 year meter replacement warranty



- pH
- ISE
- ORP
- Cond
- RDO
- DO
- Temp

Product Specifications

		CE TUV FCC
Dissolved Oxygen	Concentration	
	Range	0 to 20 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation	
	Range	0 to 200
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Manual Barometric Pressure Correction	450.0 to 850.0 mm Hg
	Manual Salinity Factor Correction	0 to 45
Calibration Features	Water-saturated air, manual (Winkler)	
Sensor Type	Polarographic	
Temperature	Range	0 to 50 °C, 32 to 122 °F
	Resolution	0.1
	Relative Accuracy	±0.1
	Offset Calibration	Yes
Datalogging	Number of Datalogs	50
	Log Function	Manual, Automatic with AUTO-READ™
Inputs	DO with Temperature Probe	9-pin mini-DIN
Power	Power Cord	Optional – universal, 100-240 VAC
	Battery Power	Included – 4 AAs
	Battery Life	2000 hrs

Meter Ordering Information

Cat. No.	Description
STARA1230	Orion Star A123 Dissolved Oxygen Portable Meter - Four AA batteries (installed)
STARA1235	Orion Star A123 Dissolved Oxygen Portable Meter Kit - 083005MD Orion polarographic DO probe - 080017 calibration sleeve for DO probe - 080513 DO probe maintenance kit - Protective armor with electrode holder - Hard carrying case - Four AA batteries (installed)

Accessories

Cat. No.	Description
STARA-CS	Hard carrying case for Orion Star A-series portable meters
STARA-AR	Armor for Orion Star A-series portable meters, includes electrode holders for pH, conductivity and DO probes
STARA-ESCD	Conductivity and DO probe holder for Orion Star A-series armor
STARA-ESPH	pH electrode holder for Orion Star A-series armor
083005MD	Orion polarographic DO probe, 1.5 m cable
080513	Orion polarographic DO probe maintenance kit
080017	Calibration sleeve for Orion polarographic DO probes
1010003	Optional universal power adapter, 100-240 V, 50/60 Hz



Thermo Scientific Orion Meter Accessories

For Orion Star A and VERSA STAR Series

With the new Orion meters, no details were too small. Even our accessories have undergone a redesign.

Accessories

Cat. No.	Description
STARA-CS	Hard field case
1210005	Soft field case
STARA-AR	Armor for Orion Star A portable meters (includes pH electrode storage sleeve and holders for pH, conductivity and DO probes)
STARA-ESPH	Replacement pH electrode storage sleeve holder (for use with armor)
STARA-ESCD	Replacement conductivity and DO storage sleeves holder (for use with armor)
STARA-BEA	Orion Star A electrode arm and holder head
STARA-HB	Weighted, detached base for electrode arm and holder head
STARA-ELHD	Orion Star A electrode holder head (attaches to existing Orion Star electrode arm)
1010003	Universal power adapter (for Orion Star A benchtop and portable meters)
STARA-PWR	Replacement universal power adapter for Orion VERSA STAR
1010004	RS232 computer and printer cable set
1010006	Star series inkjet printer, 110V/220V and cable
1010008	Ink cartridge for Orion Star series printer
1010009	Paper for Orion Star series printer
1010053	RS232 computer cable
096019	Orion Star stirrer probe (automatic stirrer probe with paddle for benchtop Orion Star series meters)
096021	Replacement paddles for 096019 - 3 pack
090045	BNC shorting cap



Armor (cat. no. STARA-AR) adds extra meter protection. The strap can attach to a belt or pipe to keep the meter close to the tester or test site. The built-in stand in the armor works great for additional hands-free operation.



The redesigned electrode holder head (cat. no. STARA-ELHD, sold separately or included with cat. no. STARA-BEA) reduces the amount of sample needed for testing since the probe heights are adjustable.



Thermo Scientific Orion Meter Accessories

For Orion Star, Star Plus, Aplus and PerpHecT Meter Series

To make sure you have everything you need to attain accurate results for your applications, we offer a multitude of accessories for both field and lab applications. From printers to field cases, electrode stands and stirrers, we have it all. Below are the top selling accessories – for complete details, please visit www.thermoscientific.com/water.

Aplus™ and PerpHecT® Meter Accessories

Cat. No.	Description
020125	110 V power adapter
020130	220 V power adapter
020135	240 V power adapter
090043	Swing arm electrode stand
090070	Basic electrode stand and holder
910002	Universal electrode holder for basic electrode stand
090045	BNC shorting cap
0900A0	900A thermal printer for Aplus meters, 110 V
0900A1	900A thermal printer for Aplus meters, 220 V
0900A7	900A thermal printer for Aplus meters, 240 V
0900A4	Paper for 900A printer
0900A6	Battery pack for 900A printer
PRT300	PRT300 ink printer and cable for Aplus and PerpHecT meters, 110 V
PRT301	PRT300 ink printer and cable for Aplus and PerpHecT meters, 220 V
PRT302	Ink ribbon for PRT300 printer
OACBLO	RS232 computer cable for Aplus and PerpHecT meters
OPBLSK	Aplus portable meter starter kit – includes field case, field stand, beaker, 2 x 60 mL bottles each of pH 4.01, 7.00, and 10.01 buffers, and 1 x 60 mL bottle of pH storage solution
OBCHSK	Aplus benchtop meter starter kit – includes basic electrode stand and holder, 917005 epoxy ATC probe, and 1 x 475 mL bottle each of pH 4.01, 7.00, and 10.01 buffers and pH storage solution
0607CA	607 multi-channel electrode switchbox and cables, 110 V
0607CI	607 multi-channel electrode switchbox and cables, 220 V

Orion Star Stirrer Probe, Cat. No. 096019
and Swing Arm Stand, Cat. No. 090043



Orion Star Stirrer Probe in action –
sample mixing without separate stirrer



Hard Field Case, Cat. No. 1210004



Soft Field Case, Cat. No. 1210005

Orion Star™ Series Meter Accessories

Cat. No.	Description
1010003	Universal power adapter
1010004	RS232 computer and printer cable set
1010005	RS232 to USB cable adapter
1010006	Orion Star series inkjet printer, 110 V/220 V and cable
1010008	Ink cartridge for Orion Star series printer
1010009	Paper for Orion Star series printer
1010053	RS232 computer cable
1210001	Portable star series electrode stand
1210002	Meter impact jacket and electrode storage chamber
1210003	Electrode storage chamber (for meter impact jacket)
1210004	Hard field case
1210005	Soft field case
096019	Orion Star stirrer probe (automatic stirrer probe with paddle for benchtop Orion Star series meters)
096021	Replacement paddles for 096019 – 3 pack
090043	Swing arm electrode stand
090044	Electrode holder head with 15mm dia cond cell slot, for use with 090043
090045	BNC shorting cap
1010050	Adapter – MiniDIN ATC probe to 3.5 mm phono tip meters (310, 320, 330, 350, 370, 555A, 550A, 535A, and 162A)
1010051	Adapter – MiniDIN ATC probe to 8 pin DIN meters (210Aplus, 230Aplus, 250Aplus, 290Aplus, 410Aplus, 420Aplus, 520Aplus, 525Aplus, 710Aplus, 720Aplus, and 920Aplus)
1010800	Adapter – MiniDIN DO probe to 8 pin waterproof DIN DO meters (830A, 835A and 862A)
1010801	Adapter – MiniDIN DO probe to 8 pin DIN DO meters (805Aplus, 810Aplus, and 850Aplus)
1010900	Adapter – MiniDIN conductivity probe to 8 pin waterproof DIN conductivity meters (1230, 555A, 550A, 162A, 135A, and 130A)
1010901	Adapter – MiniDIN conductivity probe to 8 pin DIN conductivity meters (150Aplus, 145Aplus, 125Aplus, 115Aplus, and 105Aplus)



Thermo Scientific Orion Intrinsicly Safe* Meters



Features and Benefits

- For use where non-sparking equipment is desired, these carry US intrinsically safe approval rating by Factory Mutual (FM)*
- Waterproof, portable models for basic field measurements
- 266S and 136S meters include RS232 output, advanced GLPdoc 100 point datalogger with time and date stamp and includes software program for simplified data collection and remote operation on a computer
- Accepts Waterproof DIN, dual banana plug connections
- Units use 3 AA batteries
- 131S and 136S meters offer linear and non-linear temperature compensation for natural and ultrapure water applications
- 3 year meter warranty

* Does not meet European Intrinsicly Safe specification.

Accessories

Cat. No.	Description
013655	Electrode clip

Product Specifications

		266S/261S	136S/131S
pH	Range	-2.00 to 16.00	—
	Resolution	0.1, 0.01	—
	Relative Accuracy	±0.01	—
	Auto-Buffer Recognition	Dependent on buffer set (7 pre-programmed sets)	—
	Calibration Points	3	—
mV	Range	±1300.0	—
	Resolution	±0.1	—
	Relative Accuracy	±0.1 % of value +0.3 mV	—
Cond	Range	—	0.00 to 500 mS
	Resolution	—	0.01 up to 99.99 µS/cm 0.1 above 99.99 µS/cm
	Relative Accuracy	—	±0.5 % of measured value + 1 count
	Calibration Points	—	1
Salinity	Cell Constants	—	0.010 to 199.0 cm ⁻¹
	Range	—	0 to 45.0 (10 to 30 °C) g/kg
TDS	Resolution	—	0.1
	Range	—	0 to 1999 mg/L (10 to 40 °C)
Temp	Resolution	—	1
	Range	-20 to 120 °C	-20 to 120 °C
	Relative Accuracy	±0.1	±0.1
	Relative Accuracy	±0.3 °C	±0.3 °C

Portable Meter and Electrode

Cat. No.	Meter	Sensor (s)
0261S0	261S	9109WHP low maintenance pH/ATC Triode™
0266S0	266S	9109WHP low maintenance pH/ATC Triode
0131S0	131S	013010A DuraProbe™ conductivity cell
0136S0	136S	013010A DuraProbe conductivity cell

Portable Meter, Electrode and Field Kit

Cat. No.	Meter	Sensor (s)	Accessories & Solutions
0261S3	261S	9109WHP low maintenance pH/ATC Triode	Neck strap, field case, stand, electrode holder, beakers, 4, 7 and 10 buffers
0266S3	266S	9109WHP low maintenance pH/ATC Triode	Neck strap, field case, stand, electrode holder, beakers, 4, 7 and 10 buffers, RS232 cable and software
0131S3	131S	013010A DuraProbe conductivity cell	Beakers, standards
0136S3	136S	013010A DuraProbe conductivity cell	Beakers, standards, RS232 cable and software

We have more to present in our newly revamped electrodes & accessories sections. Keep going!



Orion Intrinsicly Safe Meters

- pH
- ISE
- ORP
- Cond
- DO
- Temp