

Thermo Scientific Orion VERSA STAR™ Advanced Electrochemistry Meter

Thermo Scientific Orion
VERSA STAR advanced
electrochemistry meter is
your meter as you need it
– for now and later.



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

Features and Benefits

- Select from five modules to customize the 4 channels as you need it – 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, soft 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
- 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 5 point pH calibration with automatic recognition for USA/ NIST and DIN buffers
 - fixing of calibration errors without a complete recalibration with calibration editing
- **Use with 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 EP curve options for conductivity
 - choice of practical salinity or natural sea water curves for salinity readings
- **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
- **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

Description



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

This meter is the complete package – up to four channels to mix and match with easy-to-use key layouts and graphics.

Specifications



pH Module (VSTAR-PH) Specifications

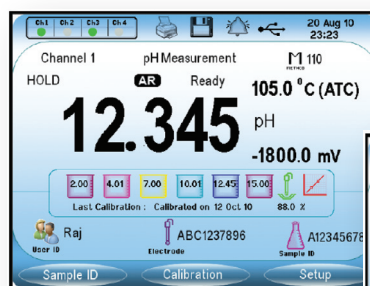
pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	±0.002
	Calibration Points	Up to 6
	Calibration Editing	Yes
	Adjustable ISO Point	Yes
mV/RmV	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E_H ORP Mode	Yes
Temperature	Range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

RDO/DO Module (VSTAR-RD) Specifications

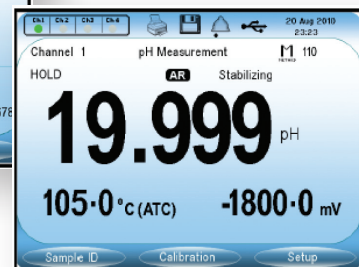
Dissolved Oxygen	Concentration - Polarographic	
	Range	0 to 90 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.2
	% Saturation - Polarographic	
	Range	0 to 600
	Resolution	0.1, 1
	Relative Accuracy	±2 %
	Concentration - RDO	
	Range	0 to 50 mg/L
	Resolution	0.01, 0.1
	Relative Accuracy	±0.1 mg/L up to 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	

pH/ISE Module (VSTAR-ISE) Specifications

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/RmV	Range	±2000.0 mV
	Resolution	0.1
	Relative Accuracy	±0.2 mV or ±0.05 % of reading whichever is greater
	E_H 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	



Orion VERSA STAR meters can be customized to display only the information that you need.





Conductivity Module (VSTAR-CND) Specifications

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, 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 practical salinity
	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
Input		8-pin mini-DIN

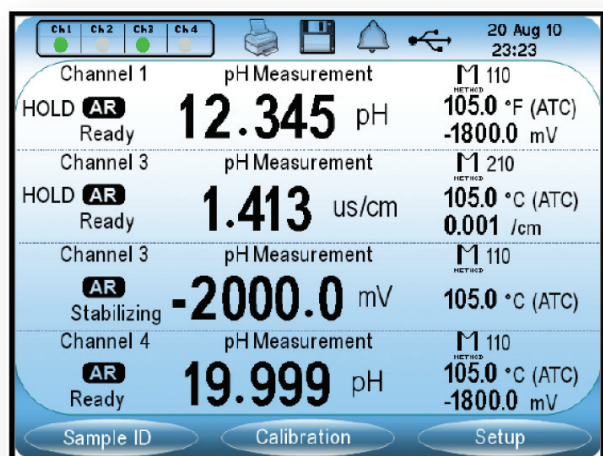
pH/LogR Module (VSTAR-LR) Specifications

pH	Range	-2.000 to 20.000
	Resolution	0.1, 0.01, 0.001
	Relative Accuracy	$\pm$ 0.002
	Calibration Points	Up to 6
	Calibration Editing	Yes
	Adjustable ISO Point	Yes
mV/RmV	Range	$\pm$ 2000.0 mV
	Resolution	0.1
	Relative Accuracy	$\pm$ 0.2 mV or $\pm$ 0.05 % of reading whichever is greater
	E_H ORP Mode	Yes
LogR Temperature	Range	0 to 100 $^{\circ}$ C, 32 to 212 $^{\circ}$ F
	Resolution	0.1
	Relative Accuracy	$\pm$ 0.5
	Resistance Range	0 to 6000 M Ω
	Resistance Resolution	0.1 M Ω up to 1999.9 M Ω , 1 M Ω above 1999.9 M Ω
	Offset Calibration	1 point
	Calibration Options	ATC probe, NIST reference
Temperature Measurement without LogR In-Use	Range	-5 to 105 $^{\circ}$ C, 23 to 221 $^{\circ}$ F
	Resolution	0.1
	Relative Accuracy	$\pm$ 0.1
	Offset Calibration	1 point
Inputs		pH: BNC, reference pin ATC: 8-pin mini-DIN

Orion VERSA STAR Meter Specifications

Maximum number of modules		4
Methods		Up to 10
Datalogging	Memory	2000 with time and date stamp
	Log Function	Manual, AUTO-READ™, timed interval, one timed reading
	Log Edit	Delete individual points, group of points or all
Communication Ports		One RS232, two USB ports (one client, one host)
Orion Star Stirrer Probe Ports		2
BOD Calculations		BOD, DOUR & SOUR with PC software
Power		Universal, AC power adapter, 90-260 VAC, 50-60 Hz

Meter display can show all four channels simultaneously or select the format of channels you wish to display.



Ordering Information

Cat. No.	Description
VSTAR00	Orion VERSA STAR Benchtop Meter - Electrode arm with redesigned holder - Universal power adapter
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
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 μ S, 5x60 mL - Electrode arm with redesigned holder - Universal power adapter
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
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 - 8102BNUMD 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 - 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 - 8102BNUMD 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
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
VSTAR52	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, 5x60 mL - 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 - 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 - 8172BNX 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, 5x60 mL - Electrode arm with redesigned holder - Universal power adapter
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 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 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 - 8157BNUMD Orion ROSS Ultra Triode pH/ATC probe - 013005MD Orion DuraProbe conductivity cell, K=0.475 - 083005MD Orion polarographic DO 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, 5x60 mL - Electrode arm with redesigned holder - Universal power adapter
VSTAR93	Orion VERSA STAR pH/ISE/Conductivity/RDO/ Dissolved Oxygen Ultimate 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 - 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, 5x60 mL - Two electrode arms with redesigned holders - Universal power adapter
Accessories	
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
8172BNX	Orion ROSS Sure-Flow pH electrode, 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, 5x60 mL bottles
011007	Orion conductivity standard, 1413 µS/cm, 5x60 mL bottles
011006	Orion conductivity standard, 12.9 mS/cm, 5x60 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

For more information, contact your local Thermo Scientific products dealer or call our customer and technical service experts at 1-800-225-1480 (for the US and Canada) or visit www.thermoscientific.com/water.

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