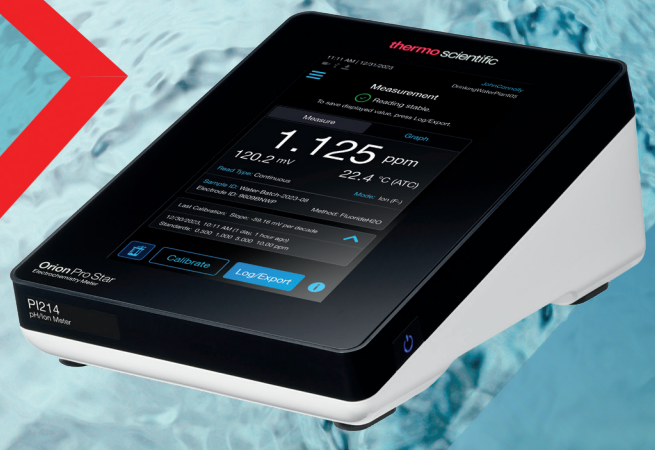
Modern design, advanced performance

Thermo Scientific Orion Pro Star PI214 pH/Ion Bench Meter



Benefits

- Large 7-inch, high-resolution color display
- Responsive capacitive touchscreen operable with gloves
- Angled display to help ensure ergonomic viewing
- Streamlined, easy to operate user interface
- Vertical meter orientation helps optimize bench space
- Supports GLP compliance
- Stores 20 calibration logs per parameter with date and time
- Stores 10,000 data log sets with date and time
- Outputs to a printer, computer, or USB flash drive for long-term data retention
- Inputs sample ID with optional USB barcode scanner, USB keyboard, or USB mouse
- Optional meter-controlled and meter-powered stirrer probe

Discover the Thermo Scientific™ Orion™ Pro Star PI214 pH/ion bench meter. Designed to help provide accurate, reliable electrochemistry testing, the Orion Pro Star PI214 is well suited for laboratories that require trustworthy measurement capabilities. Featuring an intuitive interface, enhanced data reporting and robust functionality, the Orion Pro Star PI214 delivers advanced performance in a modern and simplified package. The Orion Pro Star PI214 measurement parameter capabilities include:

- pH, mV, ORP or ion concentration with temperature

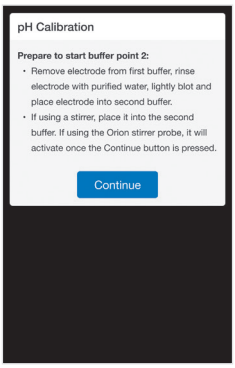
Easily control the expansive 7-inch color touchscreen display. The Orion Pro Star PI214 presents a thoughtfully designed interface to give you everything you need at your fingertips. Seamlessly navigate to view measurements, complete calibrations, export data, and more on the crystal clear, high-resolution screen. Equipped with an ergonomic angled display, users can view key details clearly and comfortably. A responsive touchscreen helps ensure optimal usability in a variety of environments, even when a gloved hand is required.

Built to help meet the needs of your testing preferences, the Orion Pro Star PI214 empowers flexibility. Measurements can be viewed in a basic, advanced or customized format. The basic format provides a streamlined look at measurements, whereas the advanced layout provides a more detailed view. Alternatively, users can opt to display or hide elements to their liking via a customized layout. Individual measurements can also be viewed in a graph with temperature for measurement versus time studies.

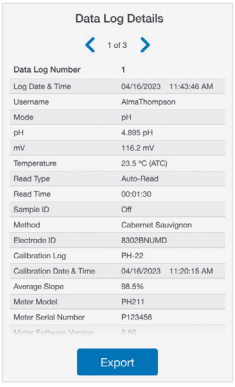
Enhance convenience and efficiency with the assistance of optional meter accessories. While conducting measurements, easily input sample identification details using a USB barcode scanner, USB keyboard, or USB mouse. Eliminate the need for magnetic stir plates and bars by adding a meter-controlled stirrer probe to help achieve uniform sample stirring.

Features designed with you in mind

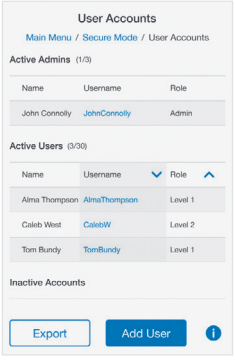
Calibration tour and guide



Guided calibration instructions



Detailed data log view



Secure mode user accounts

Seamless setup

First-time meter startup is made easy with the Orion Pro Star. The onscreen setup wizard guides users through important meter and measurement settings, providing onscreen meter tours and guides for calibration, measurements, meter connections, electrode stand assembly, and pH electrode usage.

Confident calibrations

Guided calibrations offer step-by-step instructions to assist users with performing calibrations correctly, helping to ensure accurate, reliable and reportable measurements. The meter's calibration log saves, displays and exports up to 20 calibrations per parameter with date and time stamps. Calibration logs are filterable by user and exportable by date range, or all at once.

Dependable data

Measurements can easily be saved to the data log for long-term data retention with the Orion Pro Star. The data log saves, displays and exports up to 10,000 data sets with date and time stamps. Individual data log sets offer extensive measurement information organized into an easy-to-read onscreen list format. Data log sets are filterable by user, date and time, or log number, and exportable by date and time range, log number range, or all at once.

Meaningful methods

Methods offer the option to save measurement settings to standardize your analyses and SOPs on the Orion Pro Star. Up to 10 methods can be saved per channel and methods can be imported and exported to and from other Orion Pro Star bench meters. Similarly, incremental techniques for determining ion concentration can be saved, imported and exported to standardize your known addition, known subtraction, analyte addition, and analyte subtraction analysis.

Reliable records

The secure mode feature included on the Orion Pro Star allows up to three administrators and 30 users individual account logins with password protection. Administrators can select from pre-defined user access levels to meter functions. Control access to date and time settings, instrument settings, data logs, and calibration logs, or customize each user's access level from full access to basic data collection only. Administrators can also export the user list and audit trail to help ensure digital data integrity.

Organized output

Output data logs, calibration logs and methods to a printer, computer, or USB flash drive for long-term data retention on the Orion Pro Star. Data can be saved as report files for easy viewing or comma separated value (CSV) files for import into programs like Microsoft Excel. Exported files can be customized to include all data, advanced data, intermediate data or basic data only, allowing each user to obtain the exact information they need. The Orion Pro Star also offers bidirectional communication with remote commands for meters interfacing with computer programs, including LIMS, HyperTerminal, PuTTY, and additional data collection software.

Custom calibrations

For pH calibrations, the Orion Pro Star provides the option to perform flexible one- to five-point calibrations or set a required number of calibration points from one to four. Users may also input adjustable slope guidance with the option to define Excellent, Fair and Bad slope ranges to facilitate an easier understanding of calibration results.

Hassle-free holder

The electrode stand included with the Orion Pro Star facilitates secure, smooth movement of electrodes into and out of solutions. A weighted base provides flexible placement of the stand in proximity to the meter. Numerous electrode holder options secure a wide range of electrode types. Built-in side channels allow electrode cables to be neatly organized inside of the stand.

Key features

Product specifications

pH	
Range	–2.000 to 20.000 pH
Resolution	0.1, 0.01 or 0.001 pH
Relative accuracy	± 0.002 pH
Calibration points	1 to 5 points
Calibration method	Automatic buffer recognition, manual entry option
Calibration buffer sets	USA (1.68, 4.01, 7.00, 10.01, 12.46); DIN (1.68, 4.01, 6.86, 9.18, 12.46); Pure Water Buffers (4.10, 6.97, 9.15); Standard (1.00, 3.00, 6.00, 8.00, 10.00, 13.00); up to 5 custom buffers
Slope type	Linear or segmented
Calibration summary	Slope and E_O offset, option to view as point-to-point graph
Isopotential point	7.000, user adjustable
Input impedance	$>10^{12}$ Ω
mV	
Range	–2000.0 to 2000.0 mV
Resolution	0.1 mV
Relative accuracy	±0.2 mV or ±0.05% of the reading, whichever is greater
Relative mV / ORP	
Range	–2000.0 to 2000.0 mV
Resolution	0.1 mV
Relative accuracy	±0.2 mV or ±0.05% of the reading, whichever is greater
Calibration points	1 point
Calibration method	ORP or E_H
Calibration offset	±250 mV
Ion	
Range	0.0001 to 19999
Resolution	0.0001 minimum, 1 to 5 digits
Relative accuracy	±0.2 mV or ±0.05% of the reading, whichever is greater

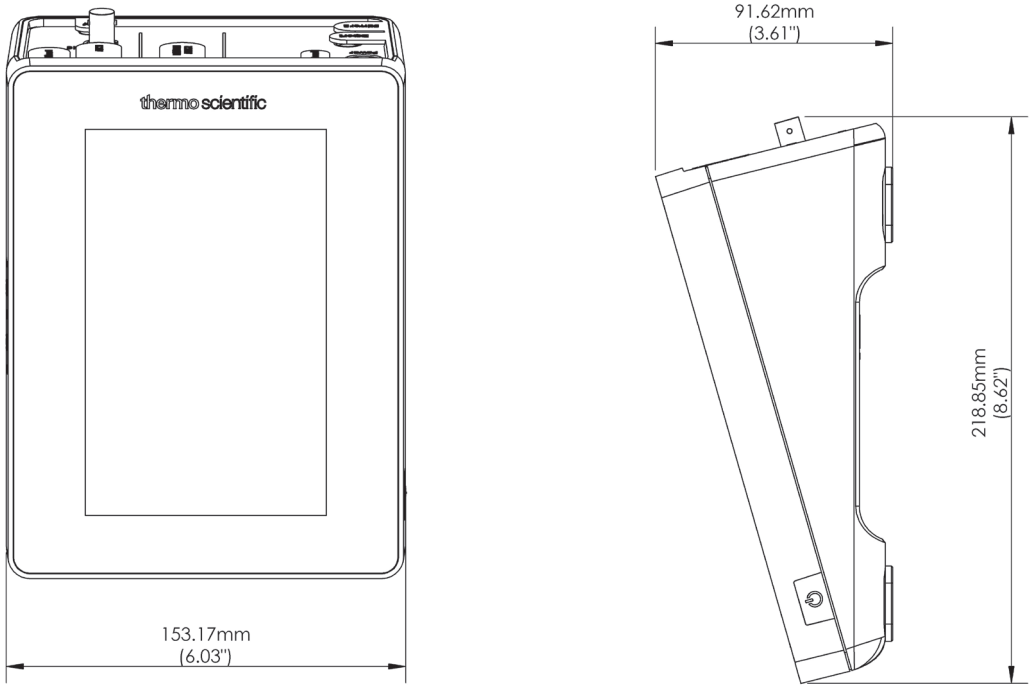
Units	ppt, ppm, ppb, mg/L, M, mM, %, none or user-defined
Calibration points	1 to 5 points
Calibration method	Automatic standard recognition, manual entry option
Calibration standards	1.000, 10.00, 100.0, 1000, 10000 or up to 5 custom standards
Slope type	Linear or segmented
Calibration summary	Slope and E_o offset, option to view as point-to-point graph
Isopotential point	1.000, user adjustable
Blank correction	Yes
Low level stability	Yes
Incremental techniques	Single known addition, single known subtraction, double known addition, double known subtraction, analyte addition and analyte subtraction
Temperature	
Range	–30.0 to 130.0°C, –22.0 to 266.0°F
Resolution	0.1°C, 0.1 °F
Relative accuracy	±0.3°C, ±0.5°F
Calibration points	1 or 2 points
Offset adjustment	Up to ±5.0°C
Temperature source	Automatic with ATC sensor, ambient with built-in meter temperature sensor or manual entry
Measurement functions	
Measurement channels	1
Measurement parameters	pH, mV, ORP or ion concentration with temperature
Read types	Continuous, Auto-Read or Timed
Timed reading intervals	3 seconds to 2 hours
Measurement layout	Customizable options for basic, advanced or user-defined

Measurement stability	Automatic, fast, medium or slow
Sample ID	Auto-incremental or manual, up to 25 alphanumeric characters
Electrode ID	Up to 20 alphanumeric characters
Graph/chart view	Single parameter with temperature
Set value alarm	1 high and 1 low value per parameter
Last calibration details	Calibration summary with date and time
Meter features	
Display	7-inch, high-resolution color graphic LCD
Touchscreen type	Capacitive with lab glove compatibility
Onscreen prompts	On-demand information screens; onscreen user guide and step-by-step calibration guidance
Time and date	Yes
Time format	12 or 24 hour
Date format	Selectable as MM-DD-YYYY, DD-MM-YYYY or DD-MMM-YYYY
Instrument name	Up to 20 alphanumeric characters
Secure mode	3 administrator and 30 user accounts with individual password protection, custom user access permissions and audit trail
Username	Up to 20 alphanumeric characters
Methods	10
Data outputs	USB flash drive, computer or compact ink printer

Data output format	Report, CSV or print
Data log	10,000 data sets with time and date
Data log export	Customizable options for basic (short), intermediate, advanced or all data
Calibration log	20 per channel and parameter with time and date
Calibration log export	Customizable options for basic (short), intermediate, advanced or all data
Calibration reminder	1 alarm per parameter
Calibration alarm interval	1 hour to 30 days or off
Audible signal	User set for notifications and alarms, stable reading
Maintenance reminder	Up to 5 electrode maintenance reminders and up to 5 solution maintenance reminders
Sleep mode	Selectable time interval of 5, 10, 20, 30, 60 minutes or off
Meter tests	Self-test, stability test and pH electrode check
Meter tours and guides	Calibration modes, measurement mode, meter connections, electrode stand assembly and pH electrode maintenance
Stirrer probe inputs	1
Stirrer probe speeds	5 selectable speeds: from 250 RPM to 3600 RPM
Electrode inputs	BNC, 8-pin MiniDIN (ATC), reference pin-tip
Data outputs	1 USB-A port for USB flash drive; 1 export port for computer or compact ink printer
Accessory input	1 USB-A port for USB mouse, USB keyboard or USB barcode scanner
Memory	Non-volatile, to preserve data and settings in case of power loss
Display languages	Chinese, English, French, German, Italian, Japanese, Korean, Portuguese or Spanish
Meter warranty	2 years
Certifications	CE, TUV 3-1, FCC Class A
Enclosure	IP-54
Power	100-240 VAC, 50-60Hz, 9 DC adapter, 2.0A
Dimensions (L x W x H)	218.9 x 153.2 x 91.62 mm, 8.62 x 6.03 x 3.61 in.
Weight	1.00 kg, 2.20 lbs.

Specifications subject to change without notice. All relative accuracy values are influenced by the displayed least significant digit and should include ±1 LSD for all relative accuracy calculations.

Meter dimensions



Ordering information

Description	Cat. No.
Orion Pro Star PI214 pH/ion bench meter with electrode stand, includes USB flash drive, computer cable, 100-240V 50/60Hz universal power adapter (purchase electrodes separately)	PSTAR2140
Orion Pro Star PI214 pH/ion bench meter pH kit; includes meter with stand (PSTAR2140); ROSS Ultra Triode refillable epoxy-body pH/ATC electrode (8157BNUMD); stirrer probe (096019-WA); pH 4, 7, 10 buffers and rinse solution pouches; pH electrode storage solution and cleaning solution; pH electrode storage sleeve and base	PSTAR2145
Orion Pro Star PI214 pH/ion bench meter ammonia kit, includes meter with stand (PSTAR2140), high-performance ammonia ion selective electrode (9512HPBNWP), stainless steel ATC temperature probe (927007MD), stirrer probe (096019-WA), ammonia 1000 ppm standard, ammonia ISA, ammonia electrode storage solution	PSTAR2146
Orion Pro Star PI214 pH/ion bench meter fluoride kit; includes meter with stand (PSTAR2140); fluoride ion selective electrode (9609BNWP); stainless steel ATC temperature probe (927007MD); stirrer probe (096019-WA); fluoride 100 ppm standard; fluoride 0.5, 1 and 5 ppm standards premixed with TISAB II; TISAB II solution	PSTAR2147
Orion Pro Star PI214 pH/ion bench meter sodium kit, includes meter with stand (PSTAR2140), ROSS sodium ion selective electrode (8611BNWP), stainless steel ATC temperature probe (927007MD), stirrer probe (096019-WA), sodium 1000 ppm standard, sodium ISA, sodium electrode conditioning solution, sodium electrode storage solution	PSTAR2148
Orion bench meter stirrer probe	096019-WA
Orion compact ink printer, includes meter cable, paper, ink ribbon, 100-240V 50/60Hz power adapter	STARA-106
Orion Pro Star series USB flash drive	PSTAR-UFD
Orion Pro Star series USB mouse	PSTAR-UMS
Orion Pro Star series USB keyboard	PSTAR-UKB
Orion Pro Star series USB barcode scanner	PSTAR-UBS
Orion Pro Star series electrode stand with base	PSTAR-ARM
Orion Pro Star series universal power supply, 100-240V, 50/60 Hz	PSTAR-PWR
Orion Pro Star series USB computer cable	PSTAR-USB
Orion Pro Star series standard protective display cover	PSTAR-PCS
Orion Pro Star series rugged protective display cover	PSTAR-PCR

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