

Making it easy to do two things at once - the Orion DUAL STAR combines the best of the Orion 720A+/920A+ and the Orion Star plus meters

Thermo Scientific Orion DUAL STAR™ Meter



Markets

- Wastewater
- Drinking Water
- Life Science Research
- Food and Beverage

Applications

- Discharge Permits
- Chemical or Reagent Manufacturing
- Process and Quality Checks
- Product Development
- Final Product Review

The Thermo Scientific Orion DUAL STAR meter shows the results of both input channels simultaneously. Screen prompts guide you through measurement and setup menus. The Thermo Scientific Orion EZ Startup™ option and shortcut keys quickly move the meter to key programs for fast startup and measuring.

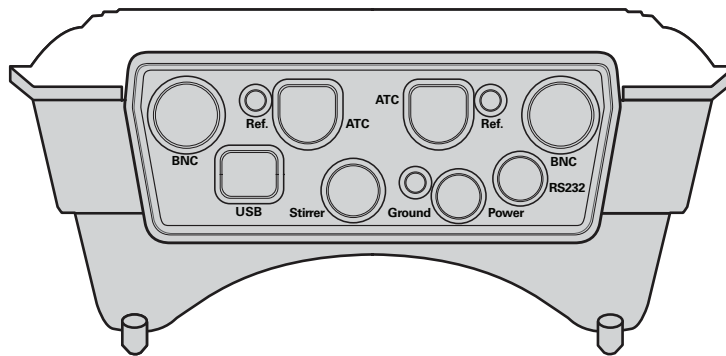
The Thermo Scientific Orion SMART STABILITY™ and SMART AVERAGING™ functions automatically compensate for measurement conditions, so the meter displays more accurate results faster. Additional meter programs include single and double known addition and subtraction methods and autosampler compatibility.

A variety of features make the DUAL STAR meter feel like it was built for you. Choose from the five available languages to customize the user interface – English, Spanish, French, German or Italian. The 10 methods stored per channel incorporate calibration data and password protection. GLP-compliant benefits include a 1000 point datalogging with time and date stamping, calibration alarm and calibration information with point-by-point and average electrode slope data. When transferring data through the RS232 or USB ports, the meter is able to send a defined data range or all the data.

Advantages

- Dual channel with simultaneous displayed measurements
- Low concentration range reading stability
- Known addition and subtraction incremental methods
- 5 language choices: English, Spanish, French, German and Italian
- 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
- Meter prompts and shortcut keys
- E_H ORP calibration capability
- 10 methods stored per channel – retains calibrations among multiple electrodes
- 1000 point datalogging with time and date stamping
- Calibration graph with slope data for viewing or printing
- Star stirrer probe controlled directly from the meter
- Autosampler compatibility*
- Meter software can be updated through the USB port

Description



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

Toggles display to show both channels simultaneously or just one.

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

Turns on/off the meter and the backlighting

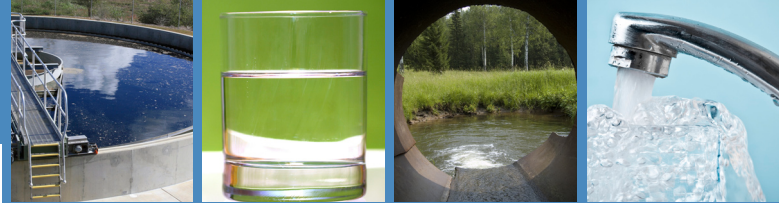
Function keys update according to the menu for easy selection

Shortcut keys for direct access to commonly used functions

Numeric keypad for select data entry in submenus



ORION DUALSTAR
pH/ISE Benchtop



CE | TUV | EPA

Specifications	
pH	
Range	- 2.000 to 19.999
Resolution	0.1, 0.01, 0.001
Relative Accuracy	± 0.002
Calibration Points	1 to 6
Buffer Recognition	USA, NIST, Euro, DIN, Custom
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-blank
mV • Rel mV • ORP	
Range	± 1999.9
Resolution	0.1
Relative Accuracy	± 0.2 mV or 0.05 %, whichever is greater
E _H Calibration Capability	Yes
Temperature	
Range	- 5 to 105 °C
Resolution	0.1 °C
Relative Accuracy	± 0.1 °C

Features	
LCD Display Type	Simultaneous dual channel or individual channel
Backlight (on/off)	5 adjustable levels
Sensor Inputs	Two BNC, two pin tip (reference), two 8 pin MiniDIN (ATC), stirrer jack
Method Storage	20 (10 per channel with calibration data)
Password Protection	Yes
Datalog Points	1000 with time/date stamp
GLP	Yes
Data Transfer	RS232, USB*
Regulatory and Safety	CE, CSA, TUV, FCC Class A, RoHS, China RoHS
Ambient Operating Temperature	5 to 45 °C
Relative Humidity	5 to 85 %, non-condensing
Power	Universal AC adapter (110 V / 220 V / 240 V) included with meter
Warranty	36 months replacement

* USB connectivity for data downloading and autosampler compatibility will be available for complimentary download at www.thermo.com/water by December 2009.



Get the most out of your Orion DUAL STAR meter and ion selective electrode.

Visit www.thermo.com/waterapps for Quick Start Notes - start-up and procedural information all in one.

Thermo Scientific Orion DUAL STAR™ Meter and Accessories

Cat. No.	Description
2115000	Orion DUAL STAR pH/ISE meter, stainless steel ATC probe (927007MD), swing arm electrode stand (090043), RS232 cable (1010053), mini-USB to USB cable, universal power adapter and user guide
2115001	Orion DUAL STAR pH/ISE meter, 8102BNUWP ROSS Ultra pH electrode, stainless steel ATC probe (927007MD), RS232 cable (1010053), mini-USB to USB cable, swing arm electrode stand (090043), pint of pH 4 buffer (910104), pint of pH 7 buffer (910107), pint of pH 10 buffer (910110), pint of ROSS® electrode storage solution (810001), universal power adapter and user guide
2115101	Orion DUAL STAR pH/ISE meter, 8102BNUWP ROSS Ultra® pH electrode, stainless steel ATC probe (927007MD), RS232 cable (1010053), mini-USB to USB cable, swing arm electrode stand (090043), universal power adapter and user guide
2115102	Orion DUAL STAR pH/ISE meter, 8157BNUMD ROSS Ultra pH/ATC Triode™ refillable electrode, RS232 cable (1010053), universal power adapter, swing arm electrode stand (090043) and user guide
096019	Orion stirrer probe with paddle
8102BNUWP	ROSS Ultra pH electrode
8157BNUMD	ROSS Ultra pH/ATC Triode refillable electrode
927007MD	Stainless steel ATC probe

Thermo Scientific Orion Ion Selective Electrodes

Cat. No.	Species	Measurement Range	Calibration Standards	Required ISA
9512HPBNWP	Ammonia (NH ₃) High-Performance	5 x 10 ⁻⁷ to 1.0 M 0.01 to 17,000 ppm	0.1 M NH ₄ Cl / 951006	Low-level ISA / 951011 or ISA / 951211
9512BNWP	Standard Ammonia	5 x 10 ⁻⁷ to 1.0 M 0.01 to 17,000 ppm	0.1 M NH ₄ Cl / 951006	ISA / 951211
9617BNWP	Chloride (Cl ⁻) ionplus® Design	5 x 10 ⁻⁵ to 1.0 M 1.8 to 35,500 ppm	0.1 M NaCl / 941706 100 ppm Cl ⁻ / 941707 1000 ppm Cl ⁻ / 941708	ISA / 940011 or CISA / 941709
9609BNWP	Fluoride (F ⁻) ionplus Design	10 ⁻⁶ M to saturated 0.02 ppm to saturated	0.1 M NaF / 940906 100 ppm F ⁻ / 940907 1 ppm F ⁻ w/TISAB II / 040906 2 ppm F ⁻ w/TISAB II / 040907 10 ppm F ⁻ w/TISAB II / 040908	TISAB II / 940909 or TISAB III / 940911
9707BNWP	Nitrate (NO ₃ ⁻) ionplus Design	7 x 10 ⁻⁶ to 1.0 M, 0.1 to 14,000 ppm as N	0.1 M NaNO ₃ / 920706 1000 ppm as N / 920707 100 ppm N / 930707	ISA / 930711 or Nitrate ISS / 930710
9616BNWP	Silver/Sulfide (Ag ⁺ / S ²⁻) ionplus Design	10 ⁻⁷ to 1.0 M 0.01 to 107,900 ppm as Ag ⁺ 0.003 to 32,100 ppm as S ²⁻	Consult instruction manual	940011 for Ag ⁺ 941609 for S ²⁻
8611BNWP	Sodium (Na ⁺) ROSS Sure-Flow Design	10 ⁻⁶ M to saturated, 0.02 ppm to saturated	10 ppm Na ⁺ / 941105 100 ppm Na ⁺ / 941107 1000 ppm Na ⁺ / 841108 KA kit, 1 M NaCl w/ ISA / 650700, 0.1 M NaCl / 941706	ISA / 841111 Reconditioning solution / 841113

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