# Automate redox titrations for simple accuracy

Potentiometric titrator for accurate redox titrations with easily reportable results.

## Markets

- Food and Beverage
- Environmental
- Water
- Wastewater
- Industrial
- Consumer Products
- Academic
- Research

The Thermo Scientific™ Orion Star™ T920 redox titrators are designed to increase your laboratory productivity by automating titrations. Our core electrochemistry technology is integrated with a state-of-the-art reagent dispensing system to create modern, simplified automated titrators designed to make performing titrations easier, more reliable and more reproducible than manual titrations.

Use the Orion Star T920 redox titrator for dedicated redox titrations including:

- Sulfite/$SO_2$ in juice and wine
- Reducing sugar in juice and wine
- Ascorbic acid (vitamin C) in food products
- Peroxide value in food products
- Dissolved oxygen in wastewater by Winkler
- Organic matter in soil

Titration techniques include equivalence point titrations and preset mV endpoint titrations for versatile sample analysis. The automated titrant delivery system with high-accuracy burette and dispenser provides consistent results. Automatic results calculations simplifies analysis and reduces computational errors.

## This compact titrator is designed to:

- Offer easy-to-use navigation from setup to live titration analysis to data transfer
- Showcase titrations, onscreen instructions and help menus on a large color graphic touchscreen display
- Create and save up to ten user-defined methods
- Save up to 100 titration data sets with date/time stamp
- Facilitate data transfer to printer, computer or USB drive

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# Durable Titrators with Rugged Design

## Benefits of Orion Star T920 Redox Titrator:

- **Accurate, Reproducible Results:** Automating the titration workflow enables analysis to be run using the same setup parameters and calculations every time.
- **Fast Setup Time:** Setup and save electrode, titrant and titration parameters once using methods.
- **Prioritize Lab Throughput:** Start the titration, and let the instrument run unattended.
- **Minimal Cost and Downtime:** Easily replace titrator parts to minimize maintenance downtime while long lasting electrodes may reduce the cost of ownership.
- **Securely Document Test Results:** View results live, in the summary table and within the 100-point data log.
- **Applications Database:** Tested and validated preprogrammed methods can be easily loaded onto your titrator via USB flash drive.

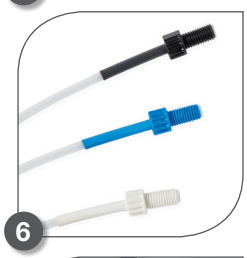
1 Titrator connections have clearly labeled functions, including three USB ports for printer, USB flash drive, and computer software connections.

2 Minimize downtime with easy-to-install and easy-to-replace burettes, tubing, dispenser and additional high-wear components.

3 Electrode holder provides secure, smooth electrode movement throughout the measurement process.

4 Pair with premium Orion redox electrode technology to provide a complete measurement system optimized for accurate, reproducible sample analysis.

5 Bottle holder helps secure titrant to prevent spills and can be easily disconnected from the titrator for flexible placement on the lab bench.



6 Color-coded tubing and connectors simplify tubing installation and maintenance.

7 Stirrer probe provides consistent sample mixing, helps prevent damage to electrodes and is easy to rinse between samples.

| Product Specifications | |
|---|---|
| **Orion Star T920 Redox Titrator** | |
| **Titration Technique** | Equivalence point or preset endpoint |
| **Equivalence Points** | 1 or 2 |
| **Preset Endpoints** | 1, 2 or 3 |
| **Titration Types** | Direct or back titration |
| **Blank Options** | Fixed value or variable value using titration |
| **Cycles Per Titration Run** | Up to 5 cycles with option to exclude cycles from average results and RSD calculations |
| **Titrant Determination** | Standardization titration or manual concentration input |
| **Titration Process Control** | Routine, quick, careful or user defined |
| **Titration Precision** | ±0.5 % RSD, dependent on environment and handling conditions |
| **Stirrer Probe Speeds** | 5 selectable speeds, 250 to 3700 RPM |
| **Sample ID** | Auto-incremental, manual or off |
| **Titration Setup Wizard** | Yes, using Start a New Titration workflow |
| **Methods** | Up to 10 customizable methods with optional password protection |
| **Methods Transfer** | Import/export via USB flash drive, summary to computer software or compact printer |
| **Data Logs** | Sample titration, titrant standardization, calibration, direct measure – 100 data sets each |
| **Data Log Export** | CSV or Report (PDF) file, short or long format |
| **Time and Date** | Yes, with nonvolatile battery backup |
| **Direct Measure Mode** | mV and temperature |
| **Calibration Mode** | 1 point relative mV |
| **mV Range / Resolution / Relative Accuracy** | -2000.0 to +2000.0 mV / 0.1 mV / ±0.2 mV |
| **Temperature Range / Resolution / Relative Accuracy** | -5.0 to 100.0 °C; 23.0 to 212 °F / 0.1 °C; 0.1 °F / ±0.2 °C |
| **Temperature Input** | Manual or automatic with optional 1 point ATC probe offset calibration |
| **Display Type** | 5.7” color capacitive touchscreen, 640 x 480 resolution, with lab glove compatibility |
| **Display Backlight** | Yes, adjustable |
| **Languages** | Chinese, English, French, German, Italian, Japanese, Korean, Portuguese, Spanish |
| **Titrator Setup Wizard** | Yes |
| **Audible Notifications** | Titration Cycle Complete, Maximum Titrant Volume, Data Log Full, Calibration Due, Maintenance Reminder |
| **Updateable Firmware** | Yes, using USB flash drive |
| **Burette Sizes** | 10 mL, 20 mL (included), 50 mL |
| **Burette Resolution** | Advanced micro-step technology provides 25,600 micro-steps per motor revolution for smooth and precise burette positioning (2 million micro-steps over full burette stroke range) |
| **Burette Dosing Accuracy** | Meets ISO8655-3 requirements |
| **Burette Functions** | Automatic rinse cycles for flushing and discrete dispense volume with continuous option |
| **Certifications** | CE, TUV 3-in-1, FCC, EN/EIC61326-1, IEC 61010, IP-51 |
| **Dimensions** | 10” x 16” x 14” (L x W x H); 25.4 cm x 40.6 cm x 35.6 cm (L x W x H) |
| **Weight** | 12.5 lbs; 5.67 kg |
| **Power Requirements** | 100 to 240 V, 50/60 Hz |
| **Warranty** | 1 year |

- Pair the Orion Star T920 redox titrator with any premium Orion redox electrode or for a bundled discount, select a preconfigured titrator and electrode kit.

| Ordering Information | |
|---|---|
| **Cat. No.** | **Description** |
| **START9200** | Orion Star T920 redox titrator, includes 20 mL burette, stirrer probe, dispenser probe, standard tubing kit, 1 L plastic bottle, GL38 bottle cap with drying tube, computer cable, literature on USB drive, 110-240 V power supplies |
| **START9201** | Orion Star T920 redox titrator kit, includes 9778BNWP glass-body redox electrode, 20 mL burette, stirrer probe, dispenser probe, standard tubing kit, 1 L plastic bottle, GL38 bottle cap with drying tube, computer cable, literature on USB drive, 110-240 V power supplies |

Expand the functionality of your Orion Star T920 redox titrator with key accessories designed to help increase your lab productivity. Easy to install replacement parts minimize maintenance downtime and ensure your Orion Star T920 redox titrator is ready for sample analysis.

| Ordering Information | |
|---|---|
| **Cat. No.** | **Description** |
| **STARA-106** | Orion compact ink ribbon printer, 100-240 V |
| **START-B10** | Orion Star T900 series 10 mL burette |
| **START-B20** | Orion Star T900 series 20 mL burette |
| **START-B50** | Orion Star T900 series 50 mL burette |
| **START-TB1** | Orion Star T900 series standard tubing kit |
| **START-TB2** | Orion Star T900 series light blocking tubing kit |
| **START-TB4** | Orion Star T900 series burette tubing |
| **START-TB5** | Orion Star T900 series reagent bottle tubing |
| **START-TB6** | Orion Star T900 series dispenser tubing |
| **START-BT1** | Orion Star T900 series 1 L plastic bottle |
| **START-BT2** | Orion Star T900 series 1 L glass amber bottle |
| **START-BT3** | Orion Star T900 series 1 L plastic bottles, 12 pack |
| **START-BT4** | Orion Star T900 series 1 L glass amber bottles, 12 pack |
| **START-CP1** | Orion Star T900 series GL38 reagent bottle cap |
| **START-CP2** | Orion Star T900 series GL45 reagent bottle cap |
| **START-DS1** | Orion Star T900 series dispenser probe |
| **START-DVK** | Orion Star T900 series dispense verification kit |
| **START-B00** | Orion Star T900 series burette cover |
| **START-BT0** | Orion Star T900 series reagent bottle holder |
| **START-EH1** | Orion Star T900 series electrode holder assembly |
| **START-EH2** | Orion Star T900 series stopper for electrode holder |
| **START-EH3** | Orion Star T900 series cable management accessory |
| **START-PS1** | Orion Star T900 series 110 V US/Japan power supply |
| **START-PS2** | Orion Star T900 series 220 V Euro power supply |
| **START-PS3** | Orion Star T900 series 240 V UK/Singapore power supply |
| **START-PS4** | Orion Star T900 series 230 V Australia/ New Zealand power supply |
| **START-PS5** | Orion Star T900 series 220 V China power supply |
| **START-TB3** | Orion Star T900 series drying tube |
| **START-UM1** | Orion Star T900 series user manual on USB |
| **START-USB** | Orion Star T900 series USB computer cable |
| **START-VK1** | Orion Star T900 series valve replacement kit |

**Water and Lab Products**

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**Germany:** (49) 6184-90-6321 **India:** (91) 22-6716-2261/2247 **Japan:** (81) 045-453-9175
**North America:** 1-978-232-6000 Toll Free: 1-800-225-1480 **Singapore:** (65) 6778-6876

Find out more at **thermofisher.com/T900titratorseries**

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