

Water Quality Meters

In-Situ Aqua TROLL® 500 Multiparameter Sonde

Whether you're spot checking a tank or conducting long-term monitoring at remote sites, the Aqua TROLL® 500 has you covered. This cost-effective multiprobe enables wireless data collection when used as a handheld, plus easy integration with control systems and telemetry for long-term installation.

With interchangeable sensors, the Aqua TROLL® 500 replaces multiple instruments and saves time in the field to reduce overall monitoring costs. Highly stable sensors need minimal maintenance and calibration, giving you confidence in your data. Just plug the sonde into a Wireless TROLL Com, datalogger, control system or telemetry and you're ready to go!

FEATURES

- Base sensor configuration includes: RDO Optical Dissolved Oxygen, pH/ORP, Turbidity, Conductivity, Temperature and Pressure, Salinity, Resistivity, Total Dissolved Solids (TDS) and Density
- Ammonium, Chloride, and Nitrate Ion-Selective Electrode (ISE) available
- Interchangeable sensors, wet-mateable
- Sub 2" antifouling wiper cleans all sensors for higher quality data in long-term deployments
- Wireless Mobile Bluetooth® connection for Android (VuSitu app), and Win-Situ 5 for PC laptop
- Site tagging and GPS coordinates functions available via mobile app
- LCD display gives a snapshot of instruments health and wireless connectivity
- Wide sensor range for performance in a variety of applications
- Automatic environmental compensation eliminates data post-processing
- Easy integration with PLC/SCADA control systems, data loggers, and telemetry — no adapters or confusing proprietary communication protocols
- Redesigned pH and ISE reference for 3X sensor stability
- Corrosion-resistant housing and abrasion-resistant RDO sensor
- Compatible with Low-Flow system (sold separately)



APPLICATIONS

- Surface water spot sampling and profiling
- Remote monitoring via telemetry
- Long-term drinking water, wastewater or stormwater monitoring
- Aquaculture
- Low-flow groundwater sampling and remediation
- Ideal for wired or wireless water quality networks

CALL GEOTECH TODAY (800) 833-7958

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BENEFITS

- **Reduces monitoring costs:** The Aqua TROLL 500 adapts to monitoring needs without extra field equipment. With ultra-stable sensors that minimize calibration and maintenance needs, the multiprobe reduces total cost of ownership.
- **Saves hours on fieldwork:** VuSitu (Android) mobile app records data directly from the probe for spot checks or low-flow sampling. Telemetry integration with HydroVu platform provides real-time access to remote monitoring data without having to download data in the field.
- **Delivers higher quality data:** Drift-resistant sensors with simplified calibration provide accurate, reliable data — no messy field notebooks required. When using the instrument as a handheld, the mobile app walks you through SOPs to minimize errors. Rugged design with unique antifouling wiper ensures performance in harsh environments for longer deployments.
- **Ease of use:** Streamlined data collection and automatic environmental compensation mean zero post-processing, while our mobile app lets you tag sites and track GPS coordinates. The probe easily integrates with control systems and telemetry, as well as In-Situ's online HydroVu data management platform for remote monitoring.
- **24/7 Support:** Get free tech support and help with your application anytime, even in the field. U.S. customers also get a 7-day turnaround on maintenance.

SPECIFICATIONS

General

Operating Temperature <i>(non-freezing)</i>	-5° to 50°C (23° to 122°F) ISE: Ammonium & Nitrate 0° to 40°C; Chloride 0° to 50°C	Output Options	RS-485/MODBUS, SDI-12, Bluetooth®
Storage Temperature	Components without fluid -40°C to 65°C (<i>non-freezing water</i>); pH/ORP Sensors: -5°C to 65°C; Ammonium/Nitrate: 0° to 40 °C; Chloride: 0° to 50°C	External Power Voltage	8-36 VDC (<i>required for normal operation</i>)
Dimensions	Length: 46 cm (18.145") (<i>includes connector</i>). With bail: 59 cm (23.25") Diameter: 4.7 cm (1.860")	External Power Current ¹	Sleep: < 0.2 mA typical; Measurement: 40 mA typical, 75 mA Max
Weight	0.978 kg/2.15 lbs. (<i>instrument, sensors, restrictor and bumpers</i>)	Internal Memory & Data Logging	Use external datalogger or telemetry
Wetted Materials <i>(Sonde & Sensors)</i>	PC, PC alloy, Delrin™, Santoprene™, Inconel™, Viton™, Titanium, Platinum, Ceramic, Nylon, PVC, Graphite	Reading Rates	1 reading every 2 seconds
Sensor Hex Screw Driver	0.050, 1.3 mm	Communication Device	Wireless TROLL Com
Environmental Rating	IP-68 with all sensors and cable attached IP-67 without the sensors or cable attached	Cable Options	Vented or non-vented polyurethane or vented Tefzel®
Max Pressure Rating	Up to 150 PSI Ammonium/Nitrate up to 30 PSI	LCD Display	Integrated display shows status of sonde, sensor ports, power voltage and connectivity, enable/disable BT.
		Software	Android™: <i>VuSitu through Google Play™</i> , Windows®: <i>Win-Situ 5</i> , Data Services: <i>HydroVu</i>
		Interface	Android 4.4, requires Bluetooth 2.0
		Certifications	CE, FCC, WEEE, RoHS Compliant
		Notes	¹ External power current dependent on display and wiping.

AQUA TROLL 500 INCLUDES:

- Aqua TROLL 500 Multiparameter Sonde configured for your specific application
- Sensor installation tools
- Maintenance supplies
- NIST Factory Calibration Report for guaranteed accuracy
- Win-Situ 5 Software, User Manual, and Quick Start Guide

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Standard Sensors	Accuracy	Range	Resolution / Precision	Response Time	Units of Measure	Method
Temperature²	± 0.1°C	-5° to 50°C (23° to 122°F)	0.01°C	T63<2s, T90<15s, T95<30s	Celsius or Fahrenheit	EPA 170.1
Barometric Pressure <i>(Vented Models Only)</i>	± 1.0 mBars	300 to 1,100 mBar	0.1 mBar	T63<1s, T90<1s, T95<1s	Pressure: psi, kPa, bar, mBar, inHg, mmHg	Silicon strain gauge
pH³	±0.1 pH unit or better	0 to 14 pH	0.01 pH	T63<3s, T90<15s, T95<30s	pH, mV	Std. Methods 4500-H+, EPA 150.2
ORP⁴	±5 mV	±1,400 mV	0.1 mV	T63<3s, T90<15s, T95<30s	mV	Std. Method 2580
Conductivity⁵ -TDS <i>(Total Dissolved Solids)</i> -SALINITY	±0.5% of reading plus 1 µS/cm from 0 to 100,000 µS/cm; ±1.0% of reading from 100,000 to 200,000 µS/cm	0 to 350,000 µS/cm 0-350 ppt 0-350 PSU	0.1 µS/cm 0.1 ppt 0.1 PSU	T63<1s, T90<3s, T95<5s	Actual conductivity (µS/cm, mS/cm); Specific conductivity (µS/cm, mS/cm); Salinity (PSU, ppt); Total dissolved solids (ppt, ppm); Resistivity (Ohms-cm); Density (g/cm ³)	Std. Methods 2510, EPA 120.1 Std. Method 2520A
Salinity <i>(derived from conductivity and temp)</i>	–	0 to 350 PSU	0.1 PSU	–	PSU, ppt	Std. Methods 2520A
Rugged Dissolved Oxygen (RDO) with RDO-X OR FAST CAP⁶	±0.1 mg/L ±0.2 mg/L ±10% of reading	0 to 8 mg/L 8 to 20 mg/L 20 to 50 mg/L	0.01 mg/L	RDO-X: T63<15s, T90<45s, T95<60s Fast Cap: T63<1s, T90<15s, T95<30s	mg/L, % saturation, ppm	EPA-approved In-Situ Methods 1002-8-2009, 1003-8-2009, 1004-8-2009
Turbidity – TSS <i>(Total Suspended Solids)⁷</i>	±2% of reading or ±2 NTU, FNU, w.i.g. ¹²	0 to 4,000 NTU 0-1,500 mg/L	0.01 NTU (0 to 1,000); 0.1 NTU (1,000 to 4,000) 0.1 mg/L	T63<1s, T90<1s, T95<1s	NTU, FNU ppt, mg/L	ISO 7027
Ammonium (NH₄⁺ - N)^{8,9} <i>(Rated to 25 m Depth)</i> -Unionized Ammonia, Total Ammonia <i>(requires salinity, temperature and pH)</i>	±10% or ±2 mg/L w.i.g. ¹²	0 to 10,000 mg/L as N	0.01 mg/L	T63<1s, T90<10s, T95<30s	mg/L, ppm, mV	–
Nitrate (NO₃⁻ - N)⁸ <i>(Rated to 25 m Depth)</i>	±10% or ±2 mg/L w.i.g. ¹²	0 to 40,000 mg/L as N	0.01 mg/L	T63<1s, T90<1s, T95<1s	mg/L, ppm, mV	Std. Method 4500 NO3-D
Chloride (Cl⁻ -)⁸	±10% or ±2 mg/L w.i.g. ¹²	0 to 150,000 mg/L	0.01 mg/L	T63<1s, T90<10s, T95<30s	mg/L, ppm, mV	Std. Methods 4500 Cl-D
Pressure <i>(Optional)¹⁰</i>	±0.1% full scale (FS)	Non-Vented or Vented 9.0 m (30 ft.) Burst: 27 m (90 ft.) 30 m (100 ft.) Burst: 40 m (130 ft.) 76 m (250 ft.) Burst: 107 m (350 ft.) 100 m (325 ft.) Burst: 200 m (650 ft.)	0.01% full scale	T63<1s, T90<1s, T95<1s	Pressure: psi, kPa, bar, mBar, inHg, mmHg Level: in., ft., mm, cm, m	Piezoresistive; Ceramic

Warranty¹¹

2 year - Sonde, RDO and sensor cap, temperature/conductivity, temperature only, turbidity (excluding pH/ORP);
1 year - pH/ORP, chloride ISE, accessories
90 Days - Nitrate and Ammonium ISE sensors; See warranty policy (www.in-situ.com/warranty)

Notes

- 2 Typical system response with instrument, sensors and restrictor when changing approximately 15°C in moderate flow.
- 3 pH sensor Response time at thermal equilibrium.
- 4 ORP sensor Accuracy from calibration standard @ 25C, response-at thermal equilibrium immediately following calibration in ZoBell's measuring from air to +400 mV.
- 5 Conductivity Accuracy at calibration points.
- 6 RDO sensor full range 0-50mg/L, 0-500% sat. EPA-approved under the Alternate Test Procedure process.
- 7 TSS User defined reference.
- 8 ISE Between 2 calibration points immediately following proper conditioning and calibration. Varies on site conditions and environmental interferents. See sensor summary sheet for potential interferences.
- 9 Ammonia Average response, can be longer with increasing concentrations of ammonium.
- 10 Pressure Typical performance across full temperature and pressure calibrated range.
- 11 Extended warranty option for sonde only (1-3 year extension for up to 5 years total).
- 12 Whichever is greater.

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