

# Water Quality Meters

## *In-Situ Aqua TROLL® 600 Multiparameter Sonde*

The Aqua TROLL 600 water quality platform is rugged in groundwater and corrosion-resistant in surface water. It delivers accurate, reliable data in an easy-to-use, flexible instrument that performs for years! Base sensor configurations include EPA-approved optical dissolved oxygen, pH/ORP, turbidity, conductivity, temperature, and pressure. Integrate with In-Situ telemetry systems and HydroVu™ Data Services for real-time feedback on your remote monitoring sites.

### FEATURES

#### Be Mobile

- **Use the Aqua TROLL 600 anywhere:** Titanium components and vented or non-vented options make it perfect for challenging environments and long-term deployments in fresh and salt water. Every detail has been engineered to be easy, reliable, and cost effective.
- **Save time in the field:** Intuitive software simplifies instrument configuration, data analysis, and reporting. No training required, and no waiting for sensor warm-up or set-up.
- **Streamline data management:** Set up logs and manage data from the field using VuSitu™ Mobile App. Consolidate all site information on your mobile device and tag sites with photos and GPS coordinates. Log data to your smartphone and download results in a standard file format for profiling, low-flow sampling.

#### Be Smart

- **Status in an instant:** LCD display gives you an instant visual indication of sensor status, data log, battery life, and overall functionality to give confidence during deployment. The on-board SD card allows for quick and easy data backup and transfer.
- **No fuss antifouling:** Antifouling to protect all sensors. The only multiparameter sonde to have a sub-2 inch active anti-fouling system with cleanable conductivity.
- **Get accurate results:** Self-compensating turbidity/RDO/level, smart diagnostics, and stable sensor technology provide minimal drift and increased accuracy with NIST traceable factory calibration report. Smart sensors store information internally, maintaining data and calibration within the sensor for traceable results.



### APPLICATIONS

- Lake, stream and wetland monitoring
- Stormwater management
- Coastal deployments
- Dam monitoring
- Low-flow groundwater sampling
- Remediation and mine water monitoring

**CALL GEOTECH TODAY (800) 833-7958**

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## In-Situ Aqua TROLL® 600 Multiparameter Sonde

### SPECIFICATIONS

#### General

<b>Operating Temperature</b> <i>(non-freezing)</i>	-5° to 50°C (23° to 122°F) ISE: Ammonium & Nitrate 0° to 40°C; Chloride 0° to 50°C
<b>Storage Temperature</b>	Components w/o fluid: -40°C to 65°C (non-freezing water); pH/ORP: -5°C to 65°C; Ammonium/Nitrate: 0° to 40 °C; Chloride: 0° to 50°C
<b>Dimensions</b>	4.7 cm (1.85 in.) OD x 59.2 cm (23.3 in.) <i>(includes connector)</i> With bail: 72.9 cm (28.7 in.)
<b>Weight</b>	1.45 kg /3.2 lbs. (includes all sensors, batteries, and bail)
<b>Wetted Materials</b>	PC, PC alloy, Delrin™, Santoprene™, Inconel™, Viton™, Titanium, Platinum, Ceramic, Nylon
<b>Environmental Rating</b>	IP-68 with all sensors and cable attached IP-67 without the sensors, battery cover or cable attached
<b>Max Pressure Rating</b>	Up to 350 PSI
<b>Output Options</b>	RS-485/MODBUS, SDI-12, Bluetooth®
<b>Internal Memory<sup>1</sup> ; Micro SD Card<sup>2</sup></b>	16 MB; 8+ GB micro SD card included, user replaceable Logs in .csv file format.
<b>Internal Power Battery Life<sup>3</sup></b>	2 internal user-replaceable Alkaline D batteries >6 months typical with wiping >9 months typical with no wiping
<b>External Power Voltage</b>	8-36 VDC (not required for normal operation) Sleep: 0.10 mA typical
<b>External Power Current<sup>4</sup></b>	Measurement: 16 mA typical, 45 mA max
<b>Reading Rates</b>	1 reading every 2 seconds
<b>Data Logging</b>	50 logs (defined, scheduled to run, or stored)
<b>Logging Modes</b>	Linear, Linear Average, Event
<b>Logging Rate</b>	1 minute to 99 hours
<b>Hex Screw Driver</b>	0.050, 1.3 mm
<b>Communication Device</b>	TROLL Com or Wireless TROLL Com
<b>Cable Options</b>	Vented or non-vented polyurethane or vented Tefzel®
<b>LCD Display</b>	Integrated display shows status of sonde, sensor ports, data log, battery, and connectivity
<b>Software</b>	Android™: VuSitu through Google Play™ or Amazon® App Store; iOS: VuSitu through Apple® App Store; Windows®: Win-Situ 5; Data Services: HydroVu
<b>Interface</b>	Android 4.4: requires Bluetooth 2.0; iOS: 11.0 or later; Windows: Win-Situ 5 PC software
<b>Certifications</b>	CE, FCC, WEEE, RoHS Compliant

#### Notes

- 1) For 30 parameters >100,000 data records, > 3 years at 15 min. interval. A single data record includes timestamp, temperature, RDO, pH, ORP, turbidity and conductivity logged in Linear or Linear Average mode.
- 2) Log data recorded to SD card in comma delimited variable (CSV) file format. Greater than 32 GB not supported.
- 3) Logging all sensors at 15 min interval on 2 D Alkaline batteries. Battery life dependent on site conditions and wiping.
- 4) Dependent on display and wiping.

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### SPECIFICATIONS CONTINUED

Standard Sensors	Accuracy	Range	Resolution/Precision	Response Time	Units of Measure	Method
Temperature <sup>5</sup>	± 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	±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
pH <sup>6</sup>	±0.1 pH unit or better	0 to 14 pH units	0.01 pH	T63<3s, T90<15s, T95<30s	pH, mV	Std. Methods 4500-H+/EPA 150.2
ORP <sup>7</sup>	±5 mV	±1,400 mV	0.1 mV	T63<3s, T90<15s, T95<30s	mV	Std. Methods 2580
Conductivity <sup>8</sup>	±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; ±2.0% of reading from 200,000 to 350,000 µS/cm	0 to 350,000 µS/cm	0.1 µS/cm	T63<1s, T90<3s, T95<5s	Actual conductivity (µS/cm, mS/cm); Specific conductivity (µS/cm, mS/cm); Salinity (PSU); Total dissolved solids (ppt, ppm); Resistivity (Ohms-cm); Density (g/cm <sup>3</sup> )	Std. Methods 2510/ EPA 120.1
TDS (derived from conductivity and temp)	—	0 to 350 ppt	0.1 ppt	—	ppt, ppm	—
Salinity (derived from conductivity and temp)	—	0 to 350 PSU	0.1 PSU	—	PSU, ppt	Std. Methods 2520A
Rugged Dissolved Oxygen (RDO) with RDO-X <sup>9</sup>	±0.1 mg/L ±2% of reading	0 to 20 mg/L 20 to 60 mg/L	0.01 mg/L	RDO-X: T63<15s, T90<45s, T95<60s Fast Cap: T63<3s, T90<30s, T95<45s	mg/L, % saturation, ppm	EPA-approved In-Situ Methods: 1002-8-2009, 1003-8-2009, 1004-8-2009
Turbidity	±2% of reading or ±2 NTU, FNU, whichever is greater	0 to 4,000 NTU	0.01 NTU (0 to 1,000); 0.1 NTU (1,000 to 4,000)	T63<1s, T90<1s, T95<1s	NTU, FNU	ISO 7027
TSS (derived from turbidity) <sup>10</sup>	—	0 to 1,500 mg/L	0.1 mg/L	—	ppt, mg/L	—
Ammonium (NH <sub>4</sub> <sup>+</sup> - N) <sup>11,12</sup> Rated to 25m depth	±10% or ±2 mg/L w.i.g.	0 to 10,000 mg/L as N	0.01 mg/L	T63<1s, T90<10s, T95<30s	mg/L, ppm, mV	—
Unionized Ammonia, Total Ammonia (derived from Ammonium & pH sensor)	—	0 to 10,000 mg/L as N	0.01 mg/L	—	mg/L, ppm	—
Nitrate (NO <sub>3</sub> <sup>-</sup> - N) <sup>11</sup> Rated to 25m depth	±10% or ±2 mg/L w.i.g.	0 to 40,000 mg/L as N	0.01 mg/L	T63<1s, T90<1s, T95<1s	mg/L, ppm, mV	Std. Methods 4500 NO <sub>3</sub> D
Chloride (Cl) <sup>11</sup>	±10% or ±2 mg/L w.i.g.	0 to 150,000 mg/L as Cl	0.01 mg/L	T63<1s, T90<10s, T95<30s	mg/L, ppm, mV	Std. Methods 4500 Cl-D
Pressure <sup>13</sup> (Optional)	±0.1% FS from -5 to 50°C	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.) 200 m (650 ft.) (Burst: 229 m; 750 ft.)	0.01% full scale	T63<1s, T90<1s, T95<1s	Pressure: psi, kPa, bar, mbar, inHg, mmHg Level: in., ft., mm, cm, m, cmH <sub>2</sub> O, inH <sub>2</sub> O	Piezoresistive; Ceramic
Fluorometer	Linearity	Range	Resolution	Response Time*	Units of Measure	
Chlorophyll a	R <sup>2</sup> >0.999 for serial dilutions of Chl. a in MeOH across full range	0-100 RFU 0-1,000 µg/L	0.001 RFU 0.01 µg/L Chl. a	T63<1s, T90<1s, T95<1s	RFU, µg/L	—
Phycocyanin (BGA-PC)	R <sup>2</sup> >0.999 for serial dilutions of PC Standard across full range	0-100 RFU 0-1,000 µg/L	0.001 RFU 0.01 µg/L PC	T63<1s, T90<1s, T95<1s	RFU, µg/L	—
Phycocerythrin (BGA-PE)	R <sup>2</sup> >0.999 for serial dilutions of PE Standard across full range	0-100 RFU 0-1,000 µg/L	0.001 RFU 0.01 µg/L PE	T63<1s, T90<1s, T95<1s	RFU, µg/L	—
Rhodamine WT	R <sup>2</sup> >0.999 for serial dilutions of Rhodamine WT across full range	0-100 RFU 0-1,000 µg/L	0.001 RFU 0.01 µg/L	T63<1s, T90<1s, T95<1s	RFU, µg/L	—

**Warranty<sup>14</sup>**  
 2 year – RDO and Sensor Cap, Temperature/Conductivity, Temperature only, Turbidity (excluding pH/ORP), Wiper, Fluorometer Sensors;  
 1 year – pH/ORP, Chloride ISE, Accessories;  
 90 days – Nitrate and Ammonium ISE sensors; Other: see warranty policy ([www.in-situ.com/warranty](http://www.in-situ.com/warranty))

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 Specifications are subject to change without notice. Apple, iPhone, iPod touch, and iPad are trademarks of Apple Inc. registered in U.S. and other countries. Android is a trademark of Google Inc., Viton® is a registered trademark of DuPont Performance Elastomers L.L.C.