Aqua TROLL® Sensors

THE FULL RANGE OF AQUA TROLL SENSORS ARE DESIGNED FOR SEAMLESS INTEGRATION WITH THE CUSTOMIZABLE AQUA TROLL 500, 600, 700, AND 800 MULTIPARAMETER SONDES.

These smart, interchangeable sensors deliver high-accuracy data across a wide range of water quality parameters and are optimized for simplified calibration, fast sensor swaps, and reliable performance in any monitoring environment.

Each sensor is automatically recognized by the sonde and the VuSitu® mobile app, enabling plug-and-play configuration, automated calibration tracking, and streamlined data collection and reporting. Whether you're spot-checking with a TROLL® Com Plus and smartphone, or deploying for continuous monitoring with VuLink® telemetry and HydroVu® cloud services, these sensors power a flexible, efficient workflow.

The Aqua TROLL 500 and 600 sondes accommodate up to four sensors, while the Aqua TROLL 700 and 800 support up to six—plus a central wiper port for antifouling protection. All sensors are compatible across vented and non-vented models and built to perform in the most challenging field conditions.

AQUA TROLL SENSORS

Available sensors include Rugged Dissolved Oxygen (RDO®), temperature, conductivity, pH/ORP, turbidity, chlorophyll a, phycocyanin (BGA-PC), phycoerythrin (BGA-PE), fluorescent dissolved organic matter (FDOM), crude oil, Rhodamine WT, Fluorescein WT, ammonium, chloride, and nitrate.

COMPLETE ANTIFOULING

In-Situ's patented flat-faced interlocking sensor design enables cleaning of all sensors with the wiper. Dual-sided wiper cleans sensors and restrictor. Interlocking sensors eliminate the growth of fouling on sensor bodies. Copper alloy restrictors can be used in high-fouling environments.

VUSITU CALIBRATION ASSISTANCE

The VuSitu mobile app provides step-by-step guidance for intuitive, consistent calibrations. Save time and solution by calibrating multiple sensors of the same type at once in our Aqua TROLL platforms with the built-in mini calibration cup. VuSitu's auto-compensation ensures calibration values are accurate. Instantly back calibration reports up to HydroVu and find them easily by sensor, instrument, or calibration date.

3D FACTORY CALIBRATION

In-Situ performs a multi-point factory calibration on every sensor, to ensure that the sensor is linear across its full range and simplify calibration for the user.

SENSOR	ACCURACY	RANGE	RESOLUTION/PRECISION	RESPONSE TIME	UNITS OF MEASURE	METHODOLOGY COMPLIANCE
TEMPERATURE[1]	± 0.1° C	-5 to 50° C (23 to 122° F)	0.001° C	T63<2s, T90<15s, 95<30s	Celsius or Fahrenheit	EPA 170.1
pH[2]	±0.1 pH unit or better	0 to 14 pH units	0.01 pH	T63<3s, T90<15s, 95<30s	pH, mV	Std. Methods 4500-H+/EPA 150.2
ORP[3]	±5 mV	±1,400 mV	0.1 mV	T63<3s, T90<15s, 95<30s	mV	Std. Methods 2580
CONDUCTIVITY[4]	±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	Conductivity (µS/cm, mS/cm); Specific conductivity (µS/cm, mS/cm); Resistivity (Ohms-cm); Density (g/cm^3)	Std. Methods 2510/ EPA 120.1 ±1,400 mV
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	Derived from Std. Methods 2520B PSS-78 available as an alternative method option
RUGGED DISSOLVED OXYGEN (RDO) WITH RDO-X[5] OR RDO FAST CAP	Concentration: ±0.1 mg/L ±5% of reading Saturation: 0-200% ± 1% of reading or ± 1% of air saturation, whichever is greater. 200-500%: ± 5% 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 Compliant with ASTM D888-18 Method C and ISO 17289 methods
TURBIDITY	±2% of reading or ±0.5 NTU, FNU, whichever is greater	0 - 4,000 NTU 0 - 1,500	0.01 NTU from 0-1000; 0.1 NTU from 1000-4000	T63<1s, T90<1s, T95<1s	NTU, FNU ppt, mg/L	ISO 7027
TSS (DERIVED FROM TURBIDITY)[6]	--	0 to 1,500 mg/L	0.1 mg/L	--	--	--
AMMONIUM (NH_4^+-N)[7,8] RATED TO 25 m 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_3^--N)[9] RATED TO 25 m DEPTH	±10% or ±2 mg/L w.i.g.	0 to 40,000 mg/L as N	0.01 mg/L	T63<1s, T90<10s, T95<30s	mg/L, ppm, mV	Std. Methods 4500 NO_3^- D
CHLORIDE (CL^-)[9]	±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

SENSOR	LINEARITY	INSTRUMENT DETECTION LIMIT	RANGE	DISPLAY RESOLUTION	RESPONSE TIME	DEFAULT UNIT(S)	DERIVED PARAMETERS[6]
Chlorophyll a	R^2>0.999 for serial dilutions of Chl a in MeOH across full range	0.1 µg/L Chl a in MeOH	0-100 RFU 0-1000 µg/L	0.001 RFU	T63<1s, T90<1s, T95<1s	RFU	Chlorophyll a concentration Chlorophyll a cell count
Phycocyanin (BGA-PC)	R^2>0.999 for serial dilutions of PC standard across full range	1.0 µg/L PC standard	0-100 RFU 0-1000 µg/L	0.001 RFU	T63<1s, T90<1s, T95<1s	RFU	Phycocyanin Concentration
Phycoerythrin (BGA-PE)	R^2>0.999 for serial dilutions of PE standard across full range	0.5 µg/L PE standard	0-100 RFU 0-1000 µg/L	0.001 RFU	T63<1s, T90<1s, T95<1s	RFU	Phycoerythrin Concentration
FDOM	R^2>0.999 for serial dilutions of Quinine Sulfate across full range	0.5 µg/L Quinine Sulfate	0-100 RFU 0-3000 µg/L	0.001 RFU	T63<1s, T90<1s, T95<1s	RFU	FDOM Concentration CDOM Concentration
Crude Oil	R^2>0.999 for serial dilutions of PTSA across full range	1.0 µg/L PTSA	0-100 RFU 0-3000 µg/L	0.001 RFU	T63<1s, T90<1s, T95<1s	RFU	Crude Oil Concentration
Rhodamine WT	R^2>0.999 for serial dilutions of RWT across full range	0.5 µg/L Rhodamine WT	0-100 RFU 0-1000 µg/L	0.001 RFU	T63<1s, T90<1s, T95<1s	RFU, µg/L	
Fluorescein WT	R^2>0.999 for serial dilutions of FWT across full range	0.2 µg/L Fluorescein WT	0-100 RFU 0-500 µg/L	0.001 RFU	T63<1s, T90<1s, T95<1s	RFU, µg/L	

NOTES: [1] Typical system response with instrument, sensors and restrictor when changing approximately 15°C in moderate flow. Resolution as displayed in HydroVu. [2]Response time at thermal equilibrium. [3]Accuracy from calibration standard @ 25C, response-at thermal equilibrium immediately following calibration measuring from air to +400 mV. [4]Accuracy at calibration points. [5]RDO sensor full range 0-60 mg/L, 0-600% sat. EPA-approved method under the Alternate Test Procedure Process. [6]User-defined reference. [7]Between 2 calibration points immediately following proper conditioning and calibration. Varies on site conditions and environmental interferents. See instrument manual for potential interferences. [8]Average response; can be longer with increasing concentrations of ammonium. [9]Typical performance across full temperature and pressure calibrated range.

See the instrument specification sheet for sonde specifications. Specifications are subject to change without notice.

WARRANTY: 2 year – RDO and Sensor Cap, Temperature/Conductivity, Temperature Only, Turbidity, Chlorophyll a, pH/ORP, Phycocyanin (BGA-PC), Phycoerythrin (BGA-PE), Rhodamine WT.
1 year - Chloride ISE. 90 days - Nitrate and Ammonium ISE Sensors. See warranty policy (www.in-situ.com/warranty) for full details.

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