In-Situ Aquaculture™

Healthy water
Healthy fish
Healthy profits

Aqua **TROLL®** 400 Multiparameter Instrument

Designed for aquaculture facilities, the Aqua TROLL 400 Instrument eliminates complicated setup and provides instant access to water quality data. By leveraging proven technologies, like the optical RDO® Sensor, the instrument simplifies installation, calibration, and maintenance. The durable probe continuously measures 12 parameters: actual conductivity, specific conductivity, dissolved oxygen, ORP, pH, resistivity, salinity, temperature, total dissolved solids, density, water level, and water pressure.

Improved Risk Management

- Instrument continuously monitors and reports results in real time. You can respond quickly to changing conditions and maintain high operating efficiencies.
- Operations can minimize fish stress, disease, and mortality by consistently controlling water quality.
- By connecting to a SCADA/PLC system, you will receive alarm notifications when water quality conditions deteriorate.
- DO readings are automatically compensated for salinity and barometric pressure with a controller.

Increased Productivity

- One easy-to-use probe automates monitoring.
- Long-lasting calibrations reduce maintenance.
- Simplified installation reduces errors and training time.

Seamless Integration

- With open communication protocols, the instrument easily interfaces with your current system. Connect the instrument to a SCADA/PLC system or controller.
- For a local display, controller, and data logger, use the Con TROLL® PRO System (AC and DC models available).
- To power the probe, use a SCADA/PLC system or the Con TROLL PRO System.

Outstanding Customer Service

- Free application and deployment guidance
- Free, 24/7 technical support provides peace of mind
- Seven-day service for maintenance and calibration (U.S.A. only)

Applications

- Fresh water and saltwater production
- Hatchery operations
- Open pen production systems
- Raceways
- Recirculating, partial reuse, and flow-through systems

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Specifications

General	*Aqua **TROLL** 400 Water Quality Instrument*						
Operating temp.	-5 to 50° C (23 to 122° F)						
Storage temp.	-40 to 65° C (-40 to 140° F)						
Dimensions & weight	Dimensions: 4.7 cm (1.85 in) OD x 26.9 cm (10.6 in) with restrictor installed (does not include connector). Weight: 694 g (1.53 lbs)						
Wetted materials	PVC, 316 stainless steel, titanium, Acetal, Viton®, PC/PMMA						
Environmental rating	IP68 with all sensors and cable attached. IP67 with sensors removed and cable detached.						
Max. pressure rating	112 m (368 ft); 160 psi						
Output options	Modbus/RS485 and SDI-12						
Probe reading rate	1 reading every 5 seconds (no internal logging)						
Power	Required: 8-36 VDC (no internal battery). Measurement current: 16 mA @ 24 VDC. Sleep current: 40 µA @ 24 VDC						
Interface	In-Situ® Con TROLL® PRO System; In-Situ TROLL® Link Telemetry 101 or 201 System; SCADA/PLC; and third-party data loggers, samplers, controllers, and telemetry systems						
Cable	Customizable, non-vented (absolute) RuggedCable® System is available in either Tefzel® or polyurethane.						
Standard Sensors	*Accuracy*	*Range*	*Resolution*	*Sensor Type*	*Response Time*	*Units of Measure*	*Methodology*
Level, Depth, Pressure	Typical ±0.1% FS @ 15° C; ±0.3% FS max. from 0 to 50° C	76 m (250 ft); absolute (non-vented)	±0.01 FS or better	Fixed	Instantaneous in thermal equilibrium	Pressure: psi, kPa, bar, mbar, mmHg Level: mm, cm, m, in, ft	Piezoresistive; ceramic
Conductivity	Typical ±0.5% + 1 µS/cm; ±1% max.	5 to 100,000 µS/cm	0.1 µS/cm	Fixed	Instantaneous in thermal equilibrium	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^3)	Std. Methods 2510 EPA 120.1
Dissolved Oxygen Optical RDO® Sensor	±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 Full operating range: 0 to 50 mg/L	0.01 mg/L	Fixed with replaceable RDO Classic Sensor Cap	T90: <45 sec. T95: <60 sec.	mg/L, % saturation, ppm, ppO$_2$	*EPA-approved In-Situ Methods* 1002-8-2009 1003-8-2009 1004-8-2009
ORP	±5.0 mV	±1400 mV	0.1 mV	Replaceable pH/ORP combo sensor	<15 sec.	mV	Std. Methods 2580
pH	±0.1 pH unit	0 to 12 pH units	0.01 pH unit	Replaceable pH/ORP combo sensor	<15 sec., pH 7 to pH 4	pH units, mV	Std. Methods 4500-H$^+$ EPA 150.2
Temperature	±0.1° C	-5 to 50° C (23 to 122° F)	0.01° C or better	Fixed	<30 sec.	Celsius, Fahrenheit	EPA 170.1
Warranty	2 years						

EPA Approved

Specifications are subject to change without notice. NIST is a registered trademark of the National Institute of Standards and Technology. Tefzel is a registered trademark of E.I. du Pont de Nemours & Co. Viton is a registered trademark of DuPont Performance Elastomers L.L.C.

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