

# TECHNICAL DATA SHEET – ULTIMA UNIQ CONTROLLER



Aquarius ULTIMA UNIQ cooling tower controller is specifically designed for cooling tower systems requiring additional external monitoring devices, for example, corrosion, turbidity, fluorimeters, and many more.

The standard ULTIMA cooling tower controller monitors and controls the pH, ORP, conductivity, temperature and flow of cooling tower basin water, by inducing flow past the sensors in a purpose-designed manifold. The UNIQ provides an additional layer of software designed specifically for advanced industry applications which requires the addition of extra 4-20mA or 0-5V sensors, giving freedom to control, monitor and data-log up to 6 additional outputs.

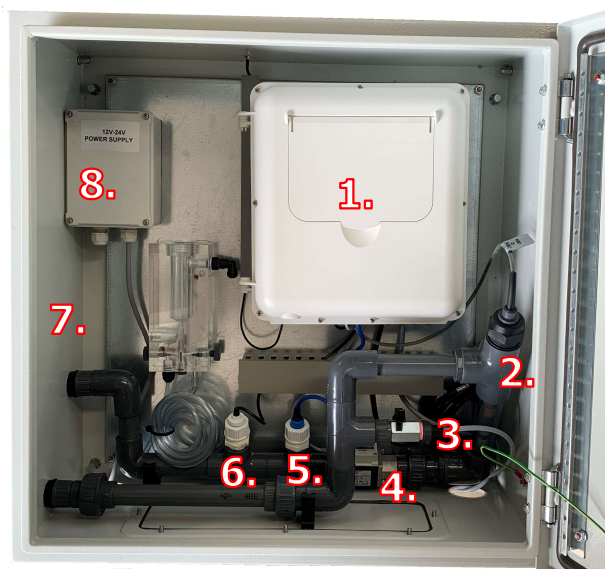
The UNIQ manifold allows easy installation of corrosion sensors and fluorimeters to control corrosion rates and inhibitor dosing. UniQ works with Aquarius peristaltic pumps or other brands via power supply to designated output or dry contact outputs within the controller box.

## Features:

- 7" touch screen with cutting-edge display, elegant styling
- User-friendly navigation
- UNIQ advanced controller firmware for allows additional 4-20mA/ 0-5V analog sensors to be accepted
- Dynamic and customizable to your application
- Remote monitoring and control: modem, WiFi, Ethernet
- 6-month data logging & historical trend charts

## Functions:

- General corrosion on two metals (standard is carbon steel + copper)
- Pitting tendency on two metals
- Conductivity/TDS
- ORP
- Inhibitor feed
- Single and dual pH
- Dispersant
- Biocide timers
- Cycle of Concentration is calculated via second conductivity sensor for measuring make-up water
- Backup ORP
- Backup conductivity
- Make-up conductivity
- Optional inhibitor control with optional addition of fluorometer sensor



## UNIQ Layout

1. UNIQ Controller
  2. Aquarius CS/Cu corrosion sensor
  3. Sample valve
  4. Inline flowmeter controls manifold flow and functions as flow switch
  5. FCT sensor
  6. pH/ORP sensor
  7. Powder coated metal cabinet
  8. External 24VDC power supply for 4-20mA sensors
- \*. Provision for fluorometer for inhibitor monitoring and control (must be ordered separately)

Features	
<b>7-day timers</b>	Outputs may be activated via 7-day timers set on selected days of the week, 4-week cycle.
<b>Accessory Timers</b>	4 x accessory timers link to each 7-day timer using "Before", "With" and "After" function.
<b>Fuzzy Control</b>	Configurable dynamic control for outputs controlling to a process value (sensor) set point. Adjusts control rate as process value approaches setpoint. Minimise overshoot & hysteresis.
<b>LSI</b>	Approximates system water Langelier Saturation Index based on input average calcium hardness.
<b>Alarms: User-Defined</b>	All controller probes and inputs have alarm mode capability. Alarm is triggered when value deviates outside range. Active alarm will be displayed on screen and via common-alarm relay.
<b>Alarms: Common</b>	1 x no-volt common alarm relay incorporated in all controllers for DDC operation. Common alarm to output 14 is standard for all SP22/SE22 models.
<b>Alarms: No-Flow</b>	No-Flow alarm function standard for all SP22/SE22 models.
<b>Data Logging</b>	Controller memory can log >6 months of data, exportable to USB memory device as CSV files or viewed on AquaReporter as graphs. Calibration data stored for troubleshooting.
<b>Settings</b>	Settings can be downloaded to USB, cloned to other SP22/SE22 controllers or stored on a PC.
<b>Password</b>	Three levels of access available using one password: Unlocked, Read Only, & Locked.

Input Sensor Modules	pH	ORP mV	Conductivity µS/cm	Temperature °C	Corrosion mpy
<b>Operating Range</b>	4 – 10	0 – 999	0 – 99,999	0 – 100	0 – 40
<b>Resolution</b>	0.01	1	1	0.1	0.01
<b>Alarm Range (plus/minus)</b>	0.3 – 3	25 – 400	200 – 1,000	0.5 – 40	+/- 1
<b>Dead Band</b>	N/A	N/A	1.5% of set point	N/A	N/A
<b>Control Type</b>	APL	APL	On/Off	N/A	On/Off
<b>Control Modes</b>	Disabled, Flow-Dependent or Continuous				
<b>Sensor Press. Rating kPa</b>	280	280	280	280	280
<b>Sensor Temp. Rating °C</b>	45	45	60	60	50

Specifications	
<b>Electrical Supply</b>	Dual input 240VAC power supply. Requires 230VAC +10%/-6% 10A continuous clean supply.
<b>Touchscreen Display</b>	Resistive 7" touchscreen + heavy duty Autotext XE screen protector resists UV & chemicals.
<b>Programmable Outputs</b>	14 programmable outputs, configurable via input value, timer, accessory, or manual control. 50V/240V outputs available to suit variety of applications.
<b>Input Sensor Modules</b>	Conductivity/TDS, pH/pHB, ORP/ORPB, Temperature and FAC/FACB (Free Available Chlorine). FAC option requires additional accessories.
<b>Additional Generic Inputs</b>	6 x 4-20mA/0-5V additional signal inputs from external sensors and devices. Configure to desired parameters, outputs and alarms, display on screen, trend & log data.
<b>Communications Port</b>	2 x USB ports for use with WiFi or Ethernet, or for importing/exporting settings/data. Modem connection port for 4G internet connectivity.

## Ordering Guide

### UNIQ

Inline corrosion monitoring system in metal box. Includes: ULTIMA Advanced controller, ring type corrosion sensors (two metals), flow/conductivity/temperature probe, pH/ORP probe, inline flow meter, inline strainer, location for fluorimeters. Select more options from list below.

### UNIQ\_PACK

UNIQ controller in metal cabinet with 2 pumps (inhibitor + secondary biocide), 15mm solenoid, injection manifold and 4G modem for remote access through web. (Add WEB\_ACCESS: \$300 per year). Select more options from list below.

### UNIQ\_BASIC

ULTIMA Advanced controller for corrosion monitoring + probes and fixtures (no cabinet or manifold).

**Standard Shipping Dim. & Weight - UNIQ only: 62cm x 62cm x 30cm, 36kgs**

## Optional Communications Packages

<b>Communications Bundle</b>	4G modem, WiFi and Ethernet to enable remote access to the controller to see live data, change settings, receive alarms via SMS or e-mail, see and download trend charts.
<b>AquaReporter</b>	AquaReporter website is designed for remote access to the controllers. Settings and Data can be viewed/changed as if you were at the controller.
<b>BMS Communication</b>	UNIQ is supplied with MODBUS RTU included for communications with BCMS/DDS systems. Current version of UNIQ doesn't accept 4-20mA output boards.

## Optional Accessories

<b>Dosing Pumps</b>	Peristaltic: Available in 1 & 3 L/hr @ 300kPa. Designed for use with APL control. High Pressure Pulse/Diaphragm: 2, 5, 10 & 20 L/hr with variable control.
<b>Solenoid Valves</b>	Options of 15mm, 20mm, 25mm, 40mm & 50mm available.
<b>BCD Solenoid Kits</b>	15mm, 20mm or 25mm to suit BCD size, c/w non-return valve.
<b>BCD Feeders</b>	4kg, 12kg, 25kg or 100kg available.
<b>Ext. Solenoid Cable</b>	2.5m/5.0m, 240VAC extension cable for remote bleed solenoids.
<b>Impulse Water Meter</b>	Provides pulses proportional to flow. Enables dosage proportional to a flow rate.
<b>Tank Level Switch</b>	Provides alarm when chemical tank is near empty. 500mm & 1000mm available.
<b>External Sensors</b>	External sensors outputting 4-20mA or 0-5V can be accepted. Options include: Free Available Chlorine/ Total Chlorine membrane sensors, Turbidity sensors, fluorimeters, tank level sensors, etc.