AquaWiz to HYDROS Integration Guide

Alkalinity Data Bridging via Voltage Emulation Handshake

Because there is no native cloud API or direct digital software integration between AquaWiz and CoralVue HYDROS controllers, bridging the two systems requires a hardware-level workaround. This document details how to configure the AquaWiz to mimic a standard pH probe signal via its physical BNC connection, allowing a HYDROS controller to interpret automated alkalinity data natively for charts, alerts, and control logic.

1. Hardware Requirements & Setup

- **Physical Connection:** A standard **BNC Male-to-Male coaxial cable** (such as an RG58 50-ohm cable).
- **Port Assignment:** Connect one end to the AquaWiz `KH to PH output` port and the other end directly into an available, light-blue **HYDROS pH/ORP Probe Port**.
- **Electrical Isolation:** No third-party isolators or adapter cables are necessary. The native HYDROS light-blue probe ports feature built-in Digital Galvanic Isolation (DGI), which automatically shields the emulated voltage signal from aquarium interference.

2. Sequential Step-by-Step Handshake Sequence

The calibration handshake mapping must be performed sequentially so that the HYDROS interface accurately translates emulated millivolts into matching dashboard values.

STEP 1

Initialize the Input in the HYDROS Mobile App

Open the HYDROS mobile app. Navigate to **INPUTS**, add a new input, and configure the properties exactly as follows:

- **Type:** `Probe Port`
- **Probe Mode:** `pH`
- **Port:** Select the physical light-blue port where your BNC cable is connected.

Tap the yellow status bar at the bottom to save and upload the configuration to the cloud.

STEP 2

Output Simulated pH 7.00 Voltage from the AquaWiz Hardware

Put aside your mobile app and locate the physical AquaWiz controller unit. Use the onboard physical buttons and built-in LCD screen to navigate the setup:

- Press any button to access the main configuration menu.
- Scroll down and select the `[Other]` menu, then press Enter.
- Locate the option labeled `[KH to PH output]`.
- Use the adjustment buttons to change the target value to read exactly `7.00`.

Leave the AquaWiz sitting on this menu screen; it will continuously transmit a fixed neutral pH voltage profile.

STEP 3

Calibrate the 7.00 Reference Point in HYDROS

Return to your HYDROS mobile app. Tap your newly created input tile and select **Calibrate**. Choose the `7.00 Calibration Point`. Watch the live voltage readout on screen; once the numbers completely stabilize, tap **Accept**/**Confirm**.

STEP 4

Output Simulated pH 10.00 Voltage from the AquaWiz Hardware

Return to the physical AquaWiz unit. While still inside the `[KH to PH output]` sub-menu, use the physical buttons to change the value directly from 7.00 up to exactly `10.00`. The unit instantly alters its analog output stream to match a high-pH reference scale.

STEP 5

Calibrate the 10.00 Reference Point in HYDROS

Return to the HYDROS mobile app calibration screen. Select the `10.00 Calibration Point`. Allow the numbers to settle, then tap **Accept**/**Confirm**. Immediately press the yellow status bar to upload and finalize the calibration parameters within the HYDROS ecosystem.

STEP 6

Exit Hardware Simulation Mode

Return to the physical AquaWiz unit buttons. Exit out of the `[Other]` menu back to the normal standby/home screen. Within 30 seconds, the device drops its fixed calibration signals and begins outputting real live test results over the BNC line.

3. Data Interpretation & Automation Logic

How Data Reads on the Dashboard

Because the HYDROS relies on analog probe logic, the measurement tile unit label will permanently display `pH` instead of `dKH`. However, the data maps perfectly at a 1:1 numerical scale:

- A dashboard display of **7.55 pH** correlates precisely to **7.55 dKH**.
- A dashboard display of **8.10 pH** correlates precisely to **8.10 dKH**.

Automation Controls: You can utilize standard HYDROS input rules to configure critical fail-safes. For example, you can assign high/low alarm thresholds directly to the input to receive dynamic push alerts or automatically cut power to a calcium reactor or dosing pump if the tracked values drift outside your chosen boundaries.