

# Using the In-Situ® Aqua TROLL® 100/200 Conductivity Sensor with the HOBO® RX3000 Station



This application note describes how to connect and operate the In-Situ Aqua TROLL 100 or 200 (analog output) with the HOBO RX3000 station. The sensor is compatible with any RX3000 configuration (cellular, Ethernet, or Wi-Fi) that is equipped with the optional four-channel analog input module (RXMOD-A1). We suggest that you use a 6-watt solar panel to ensure that the RX3000 battery is kept charged properly. **You must connect some type of charging device to the RX3000 station when you are using external sensors or you will prematurely discharge the battery, which could cause the RX3000 station to stop recording or transmitting data.**

**Note:** This sensor is a multi-function device that can be configured in a variety of ways. This document explains how to configure this sensor to output a 4-20mA signal that represents salinity, which is logged by the HOBO RX3000 station for transmission to HOBOLink. For more information on this sensor, see the In-Situ product manual [Aqua TROLL 100/200 Operator's Manual](#).

For more information on the RX3000 station, see <http://www.onsetcomp.com/products/data-loggers/rx3000>.

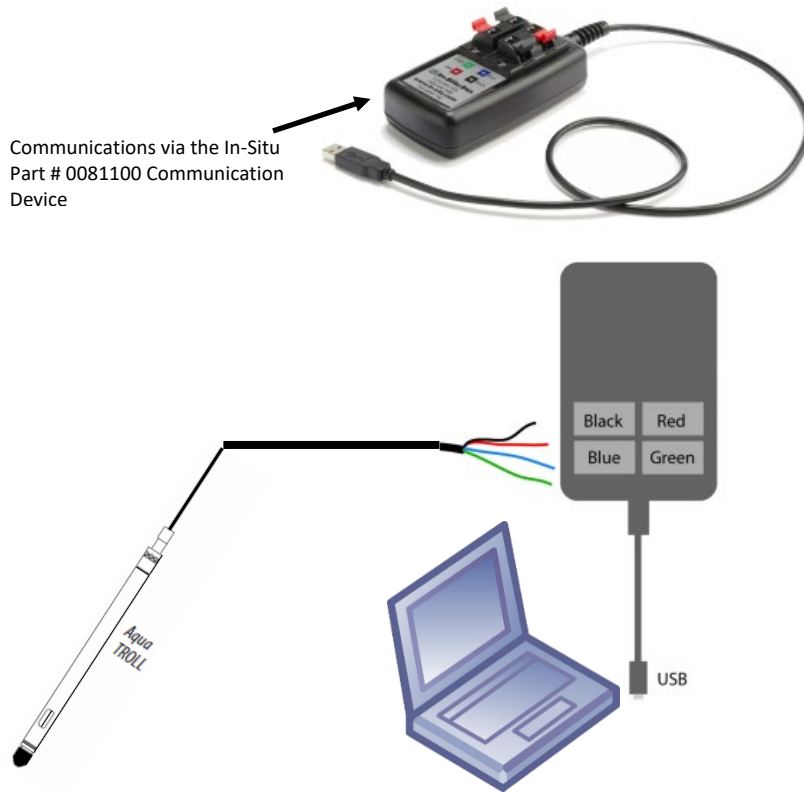
## Summary of Steps

The steps are summarized below; sections follow explaining each of the HOBO-specific steps in more detail.

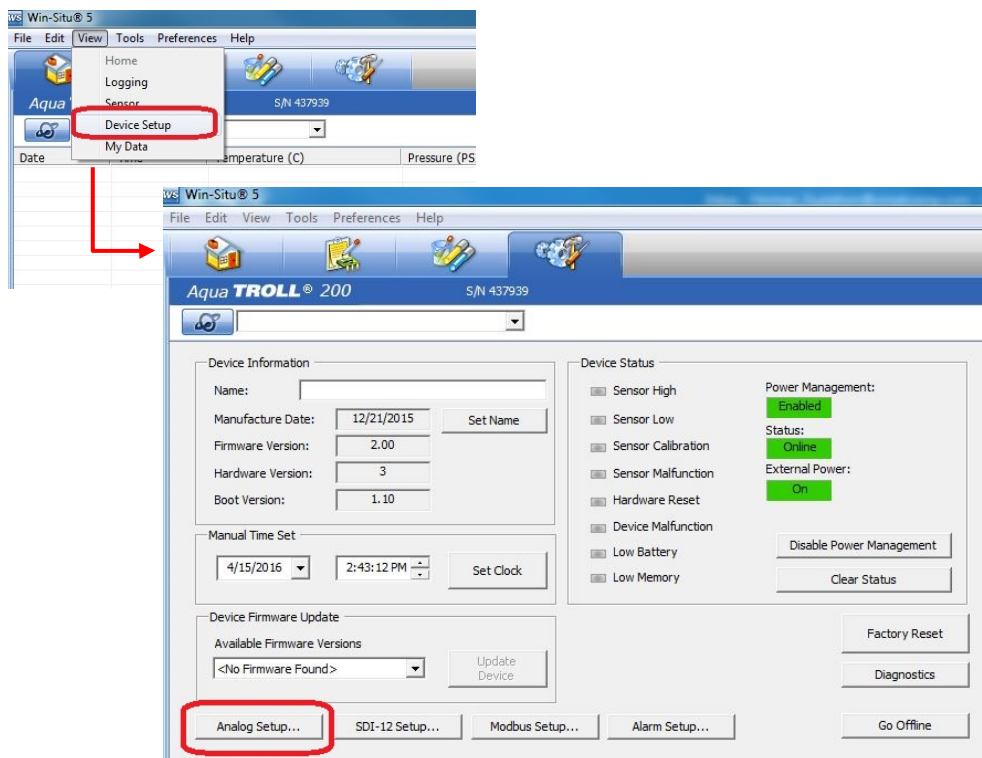
1. Install the Win-Situ® software. Follow the sensor manufacturer's instructions at [https://in-situ.com/pub/media/support/documents/Aqua\\_TROLL\\_100-200\\_Manual.pdf](https://in-situ.com/pub/media/support/documents/Aqua_TROLL_100-200_Manual.pdf)  
If you need to download the Win-Situ software, you can find it here:  
<https://in-situ.com/support/documents/win-situ-5-software/>
2. Establish communications between the sensor and the computer and then configure the sensor for analog output of the desired parameter. We use the optional In-Situ Communications Device Kit to communicate between the sensor and computer, which you can find her:.  
[https://in-situ.com/pub/media/support/documents/Con\\_TROLL\\_Pro\\_Install\\_Manual\\_-\\_After\\_May\\_2012.pdf](https://in-situ.com/pub/media/support/documents/Con_TROLL_Pro_Install_Manual_-_After_May_2012.pdf)
3. If sensor calibration is required, follow the In-Situ sensor calibration procedure as described in the Aqua TROLL Quick Start Guide.
4. Disconnect the sensor cable from the communication device and connect the cable to the RX3000 as shown in the next sections.
5. Configure the HOBO RX3000 for use with the sensor via HOBOLink as shown in the next sections.

## Establishing Communications and Configuring Win-Situ

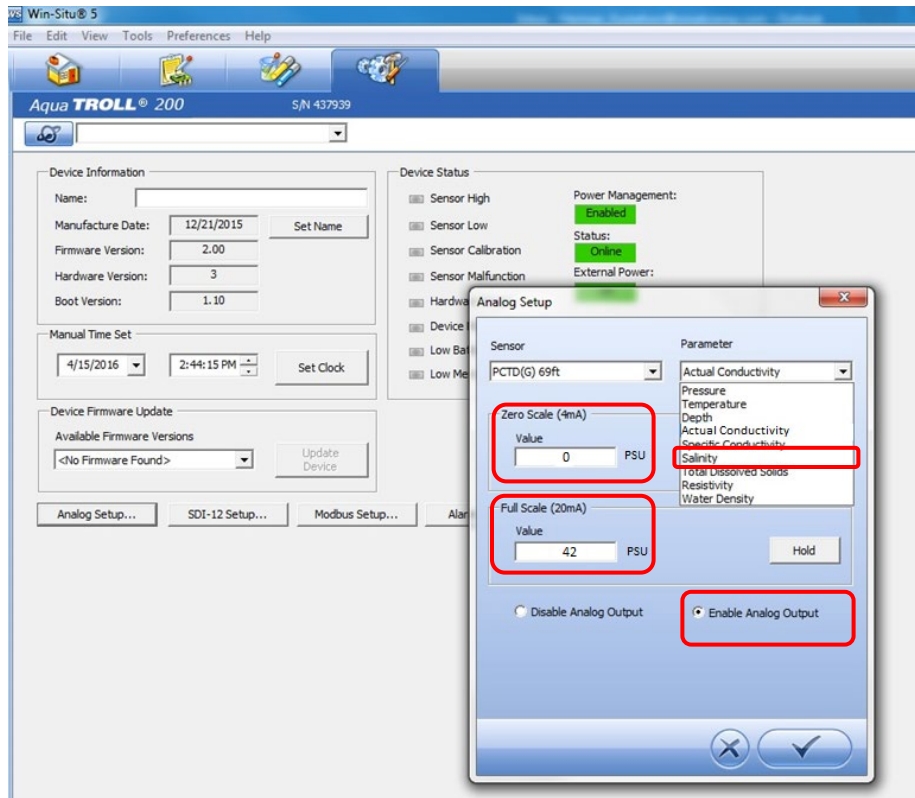
Follow the In-Situ Communication Device Instruction Sheet to establish communication between the sensor and the Win-Situ software.



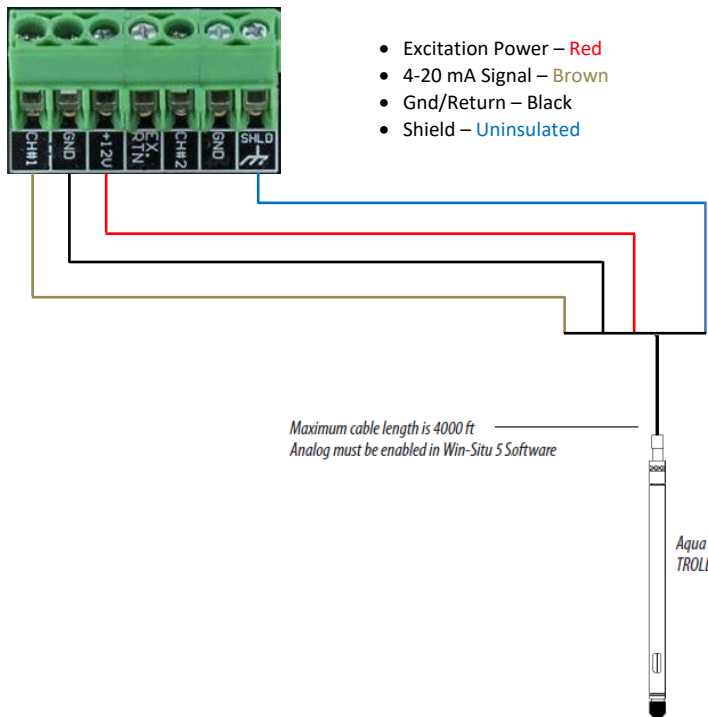
Once you have established communication, in the Win-Situ software, select Device Setup from the View menu. Click Analog Setup to configure the sensor for use with the RX3000 station via the RXMOD-A1 analog input module.



Select the measurement you want to monitor and the range of measurement for your application (for this example, we used Salinity with a range of 0 - 42 PSU). You can enter a tighter measurement range to get better resolution. If sensor calibration is required, follow the In-Situ sensor calibration procedure as described in the Aqua TROLL Quick Start Guide.



### Wiring to the RX3000 Analog Module (RXMOD-A1)



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## HOBOLink Analog Module Configuration

Register the RX3000 station in HOBOLink as described in the [HOBOLink RX3000 Remote Monitoring Station Quick Start Guide](#). Choose a logging interval for the analog module that meets the needs of your application and is supported by your RX3000 data plan. Also be sure to use a warm-up time of at least one second, which saves battery power and allows the sensor enough time to stabilize for each logged data point. To do so:

1. In HOBOLink, select Devices.
2. Tap the wrench icon on the tile for the device.
3. Select Analog Sensors Logging.
4. Enter the Logging Interval.
5. Tap Use Excitation Power, select Warmup, and enter a warmup time greater than one second.

Next, configure the analog channel:

1. Select Enable Channel to turn on the analog channel.
2. Name the channel as you prefer.
3. Select a valid sensor type, i.e., RAW-C 20.
4. Select Enable Scaling.
5. Enter the Current Units and the Scaled Current Units.

**Note:** If you decide to use a different measurement range for your application, be sure the analog channel scaling entered here matches the range selected in the Win-Situ software sensor configuration.