HOBO RX3000 Water Level Sensor Interface Instruction Manual

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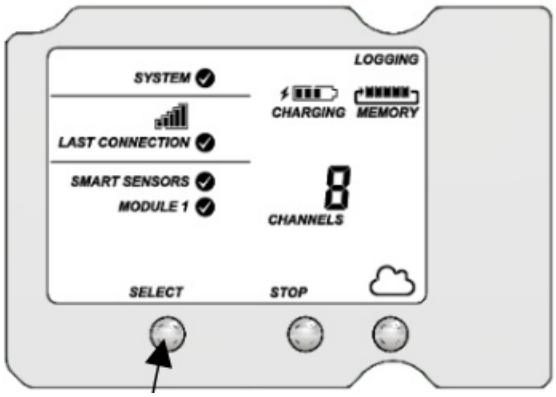
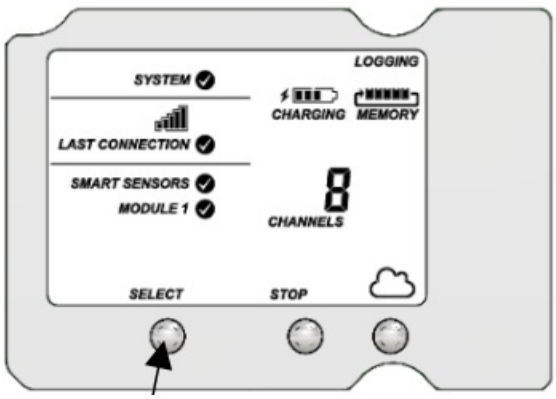
HOBO RX3000 Water Level Sensor Interface Instruction Manual

Adding a Sensor Node to the HOBOnet® Wireless Sensor Network

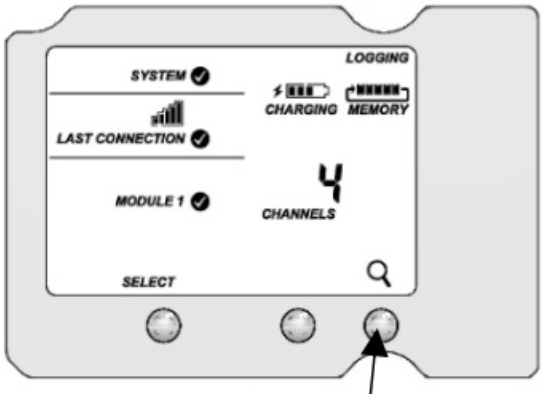
1. Press the Select button on the station to switch to the module with the manager (module 2 on RX2105 or RX2106 stations).



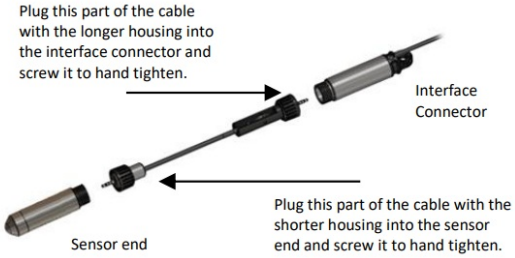
2. Press the Search button on the station. The magnifying glass icon blinks while the station is in search mode waiting for sensor nodes to join the network



3. Connect the interface connector to the sensor with the direct-read cable in between as shown here. The end of the cable with the longer housing connects to the interface connector as shown below.

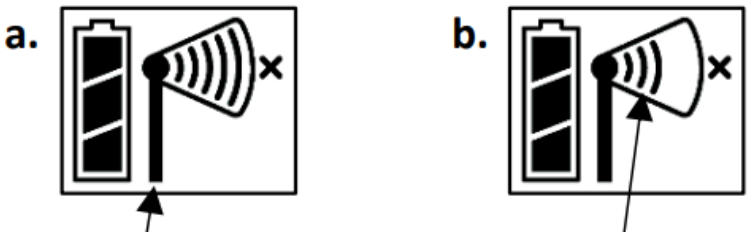


4. Open the door on the sensor node and install the rechargeable batteries. Press the button on the sensor node for 3 seconds.

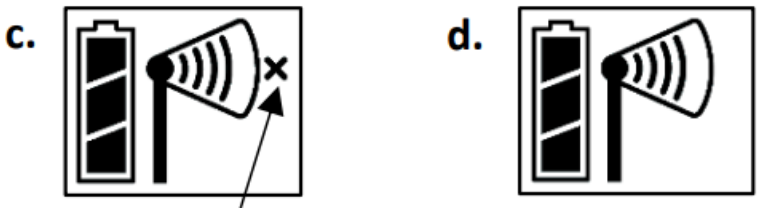


5. Watch the sensor node LCD while it joins the network:

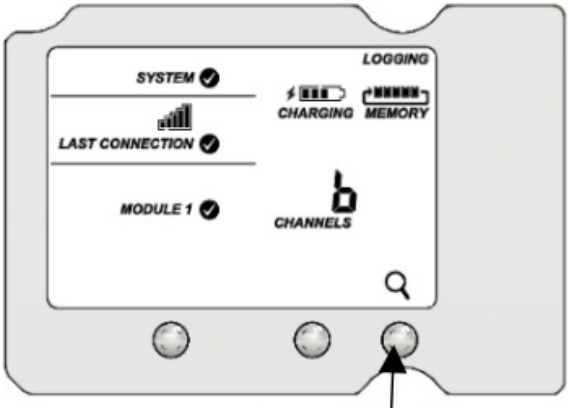
This signal strength iconblinks while the sensor node searches for a network.
Once the sensor node finds a network, the icon stops blinking and the bars cycle from left to right.



This network connection “x” icon blinks while the sensor node completes the registration process, which may take up to five minutes.
Once the sensor node has finished joining the network, the “x” icon no longer appears. The channel count on the station LCD increases by four.



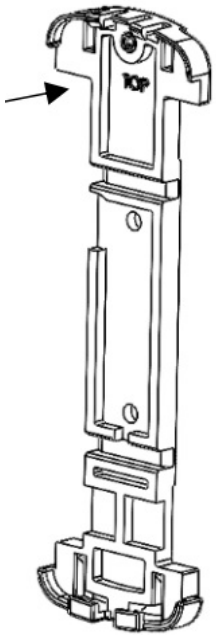
Press the Search button on the station again to stop the search for sensor nodes.



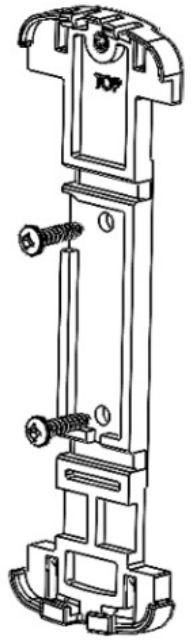
Go to www.hobolink.com to monitor the status and health of the sensor node. See the HOBOlink Help for details.

Installing the Bracket and Sensor Node

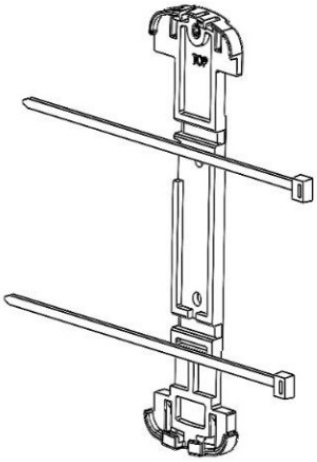
1. Orient the bracket so the text TOP is facing upwards.



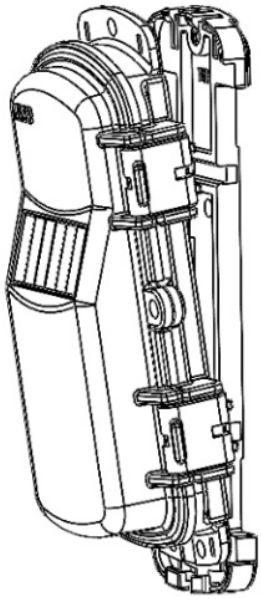
2. To install the bracket onto a wall, use the two long screws included in the package. Screw the bracket to a wall using the two holes on the mid-section of the bracket.



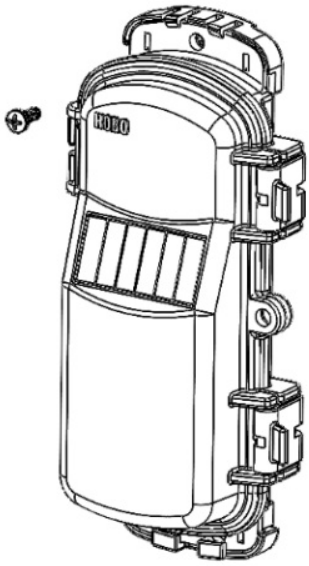
3. To install the bracket onto a pole, slip a cable tie through each of the channels on the bracket and fasten the tie around the pole.



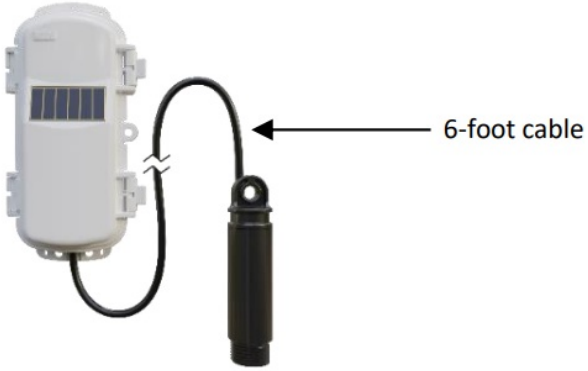
4. Insert the bottom of the sensor node into the retaining clips on the bottom of the bracket then press the top of the sensor node into the clips at the top of the bracket.



5. Use the short screw included in the package to fasten the sensor node to the bracket.



6. Close the sensor node and use a padlock to keep it secure.



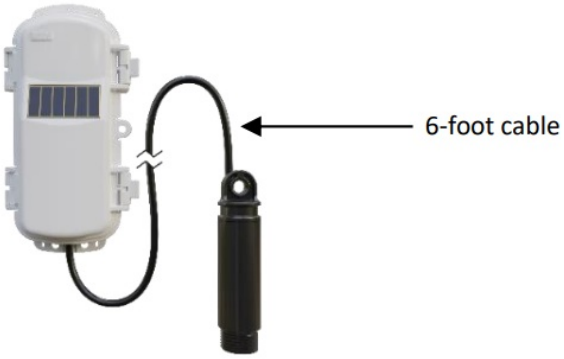
Note: Ensure that the node seal is clean from foreign debris

Mounting and Positioning the Sensor Node

- Position the sensor node towards the sun, making sure the solar panel is oriented so that it receives optimal sunlight throughout each season. You may need to periodically adjust the position of the sensor node as the path of the sunlight changes throughout the year or if tree and leaf growth alters the amount of sunlight reaching the solar
- Make sure the sensor node is mounted a minimum of 1.8 m (6 feet) from the ground or vegetation to help maximize distance and signal
- Consider using plastic poles such as PVC to mount the sensor node as certain types of metal could decrease the signal strength.
- Place the sensor node so there is full line of sight with the next sensor node. Use a repeater if there is an obstruction between sensor nodes.
- There should not be more than five sensor nodes in any direction from a repeater or the manager. Data from sensor nodes travels or “hops” across the network and may not reach the station if the sensor node is more than five hops

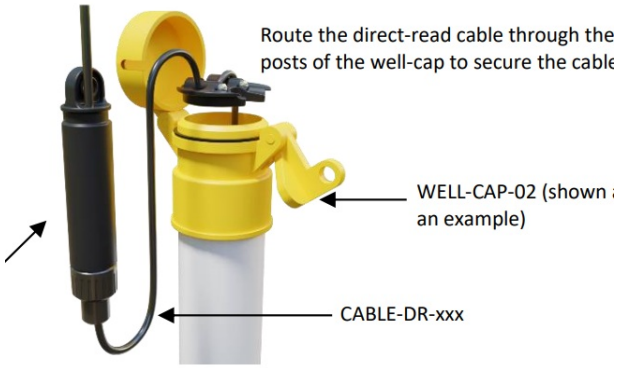
Deploying the Water Level Sensor

Warning: Do not suspend anything from the 6-foot cable. The 6-foot cable is not designed to support the weight of the direct-read cable and sensor



Suspending the direct-read cable and water level sensor

- **Option 1 (preferred): Using the long direct-read cable (CABLE-DR-xxx) and a compatible well-cap**



Suspending the direct-read cable and water level sensor

- **Option 1 (preferred): Using the long direct-read cable (CABLE-DR-xxx) and a compatible well-cap**

- **Option 2: Using the mounting hole on the endcap**

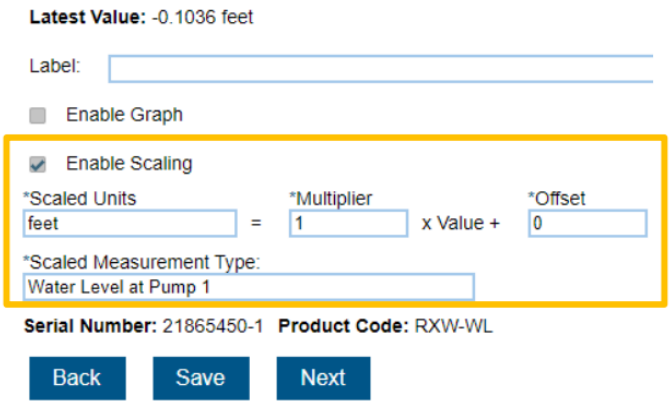
The endcap contains a loop that allows you to use a carabiner (rated to 50 lbs. or grater) or some other reliable method to suspend the interface connector.

Water Level Scaling in HOBOlink

The following sections provide information on how to measure the reference water level and account for water density.

Scenario 1: Setting a Reference Water Level

1. Deploy the water level sensor in water and secure it in position (for example, hang it in a well).
2. Make sure your RX Station is logging and connecting fast enough for you to see the current water depth readings. (Press connect on the RX Station to see the latest logged value).
3. Enable Scaling for the HOBOnet water level In HOBOlink:
    1. Select Devices, RX Devices, then select your
    2. Select the wrench at the top of the page and select Module/Sensor Configuration from the
    3. Select Water Level for the appropriate On the right side of the page, ensure that *Enable Scaling* is selected.



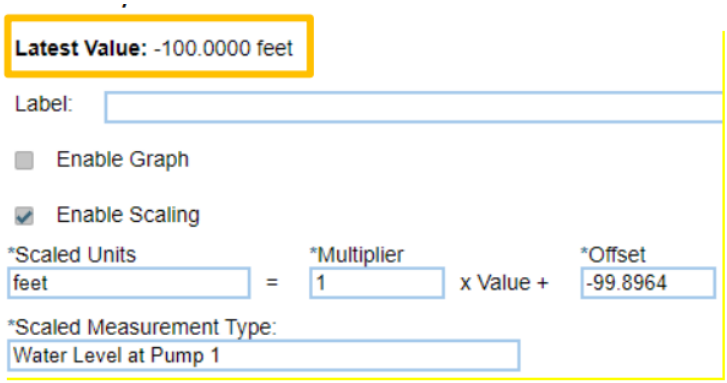
1. Enter the scaling values:
    1. Enter the Scaled Units: for example meters or This should match the units shown in Latest Value, or you will need to adjust the multiplier to convert.
    2. Enter the multiplier in the Multiplier

Multiplier*	
Fresh water	1
Brackish water	0.99
Salt water	0.9765

1. Enter 0 in the Offset field for
2. Enter the Scaled Measurement Type, for example " *Pond Water Level*".

2. Click save and note the Latest
3. Take a reference water level

- Note this as a negative number if the water level surface is *below* the reference point, such as groundwater level referenced to the top of the well (**Figure 1**).



- Note this as a positive number if the water level surface is *above* the reference point, such as the bottom of the stream or the zero on a staff gauge (**Figure 2**).

4. Calculate the offset, which is equal to the reference water level reading (from step 6) minus the current water depth reading (from HOBOlink in step 5).
5. Enter the calculated offset in the Offset
6. Click
7. Verify latest value matches the correct water

1. Enter the scaling values:
    1. Enter the Scaled Units: for example meters or This should match the units shown in Latest Value, or you will need to adjust the multiplier to convert.
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2. Enter the Scaled Measurement Type, for example " *Pond Water Level*".

2. Click save and note the Latest

3. Take a reference water level

- Note this as a negative number if the water level surface is *below* the reference point, such as groundwater level referenced to the top of the well (**Figure 1**).
- Note this as a positive number if the water level surface is *above* the reference point, such as the bottom of the stream or the zero on a staff gauge (**Figure 2**).

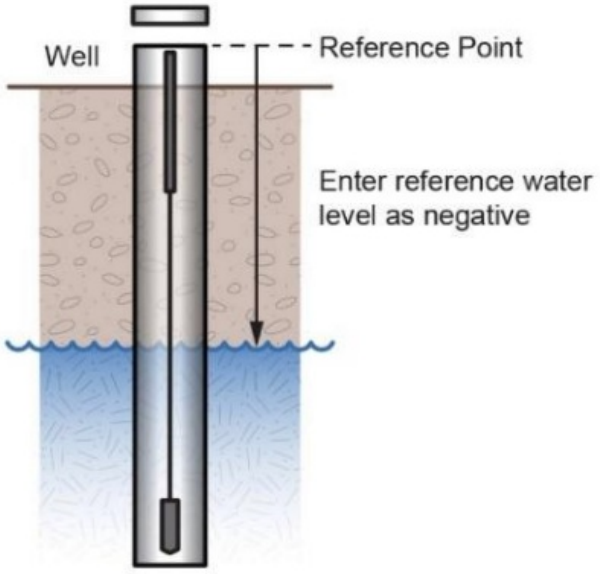

Figure 1: Water level is below reference point

4. Calculate the offset, which is equal to the reference water level reading (from step 6) minus the current water depth reading (from HOBOlink in step 5).

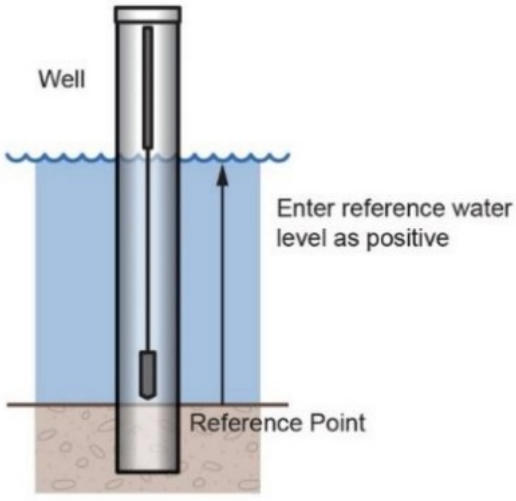

Figure 2: Water level is above reference point

5. Enter the calculated offset in the Offset
6. Click
7. Verify latest value matches the correct water

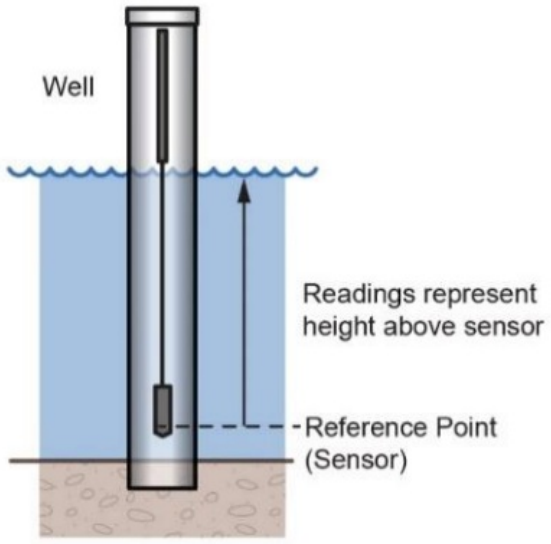

Figure 3: Water level is above pressure sensor

For specifications, complete mounting guidelines, and other details about this sensor node, refer to the full product manual. Scan the code at left or go to:
www.onsetcomp.com/resources/documentation/28084-User- *Guide-RXW-WL*

*The **Multiplier** represents the density of the water, which is a function of its salinity. This is equal to 1 divided by the true density of the water in g/cm^3 (e.g., 1/1.025 for typical salt water).

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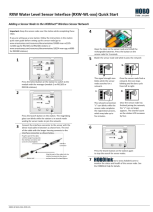	HOBO RX3000 Water Level Sensor Interface [pdf] Instruction Manual RX3000 Water Level Sensor Interface, RX3000, Water Level Sensor Interface, Level Sensor Interface, Sensor Interface, Interface

References

- HOBOlink
- Onset HOBO and InTemp Data Loggers
- User Manual

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