HOBO RXW-GPxA Multi Depth Soil Moisture Sensor User Guide

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HOBO Data Loggers

HOBO RXW-GPxA Multi Depth Soil Moisture Sensor

Product Information

Specifications

- **Product Name:** RXW Multi-Depth Soil Moisture Sensor (RXW-GPxA-xxx)
- **Manufacturer:** Onset
- **Model Number:** RXW-GPxA-xxx

Frequently Asked Questions

- **Q:** How long does it take for the sensor node to join the network?
  - **A:** The registration process may take up to five minutes.
- **Q:** What tools are required to install the sensor?
  - **A:** You may need a slide hammer, pilot rod, two adjustable wrenches, tape, and water.

Product Usage Instructions

Setting Up the Sensor Node

1. Keep the sensor node near the station.
2. Press the Select button on the station to switch to the module with the manager.

3. Press the Search button on the station to initiate searching for sensor nodes.
4. Open the sensor node door, install rechargeable batteries, and press the button on the sensor node for 3 seconds.
5. Monitor the sensor node LCD for network joining process.

Mounting and Positioning the Sensor Node

Before installing the sensor node, consider the following:

- Follow the installation instructions for optimal performance.
- Ensure proper signal strength icon and network connection x icon indications.

Installing the Bracket and Sensor Node

1. Orient the bracket correctly.
2. Insert the sensor node into the bracket's retaining clips.
3. Secure the bracket to a wall or pole using appropriate screws or cable ties.
4. Fasten the sensor node to the bracket using the provided screw.
5. Close the sensor node and secure it with a padlock.

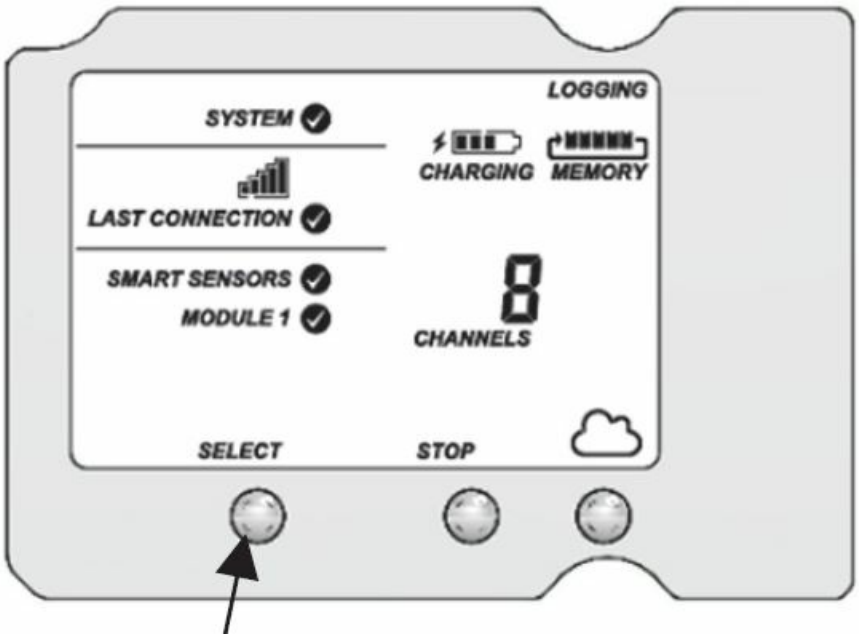
Installing the Sensor

1. Use a slide hammer and pilot rod to form a hole for inserting the sensor probe.
2. Tighten the pilot rod into the slide hammer using adjustable wrenches.

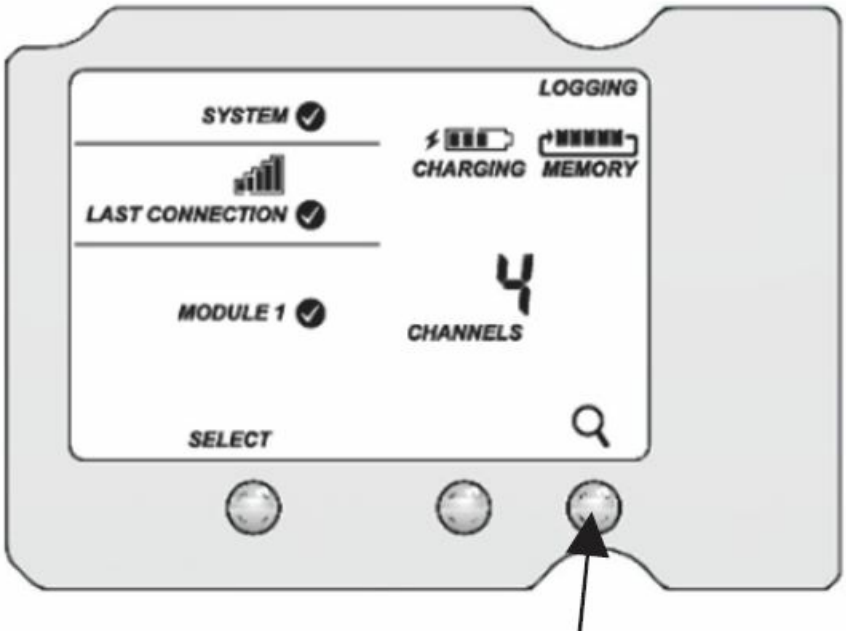
Adding a Sensor Node

Adding a Sensor Node to the HOBOnet® Wireless Sensor Network

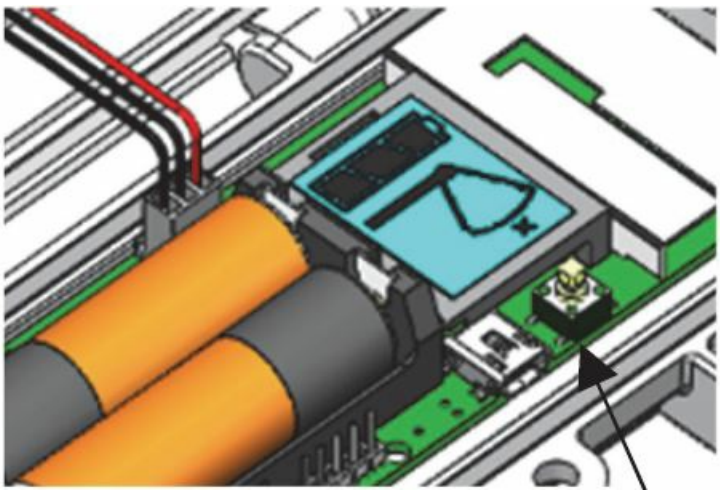
Important: Keep the sensor node near the station while completing these steps. If you are setting up a new station, follow the instructions in the station quick start guide before setting up this sensor node (go to **www.onsetcomp.com/resources/documentation/24380-man-rx2105-rx2106-qsg** for RX2105 and RX2106 stations or **www.onsetcomp.com/resources/documentation/18254-man-qsg-rx3000** for RX3000 stations).



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

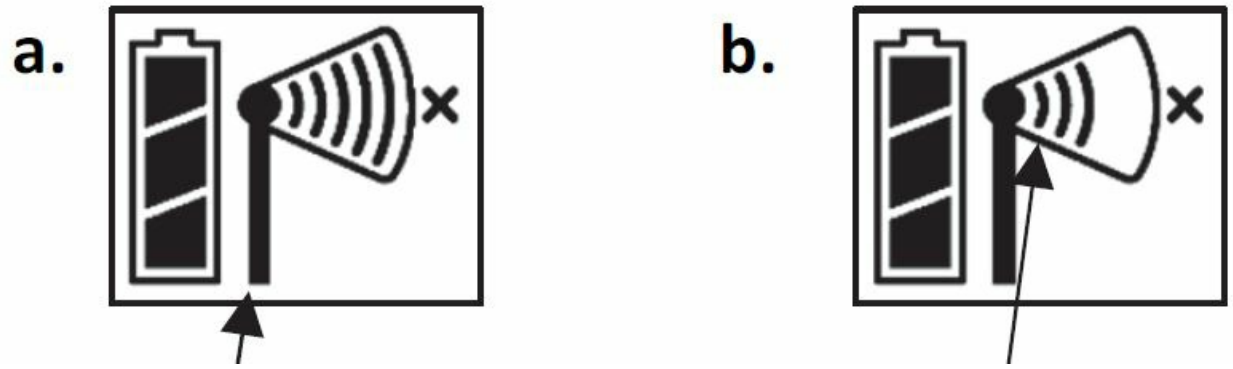


2. Press the Search button. The magnifying glass icon blinks while the station is in search mode waiting for sensor nodes to join the network.

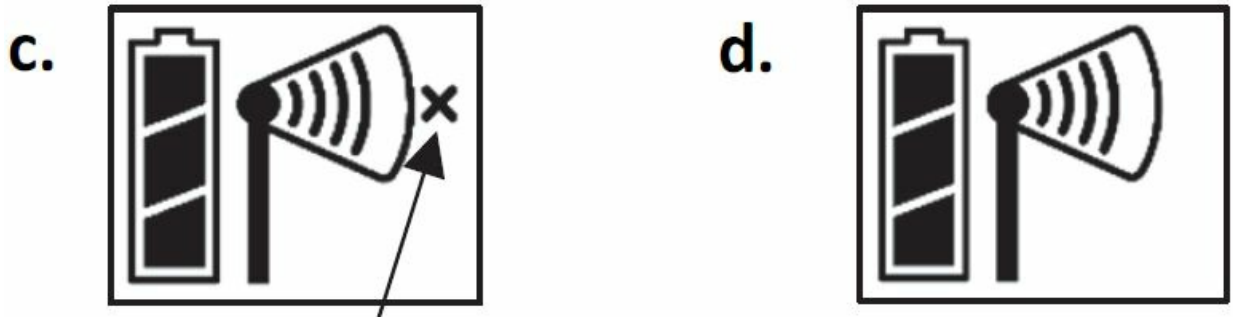


3. Open the sensor node door and install the rechargeable batteries. Press the button on the sensor node for 3 seconds.

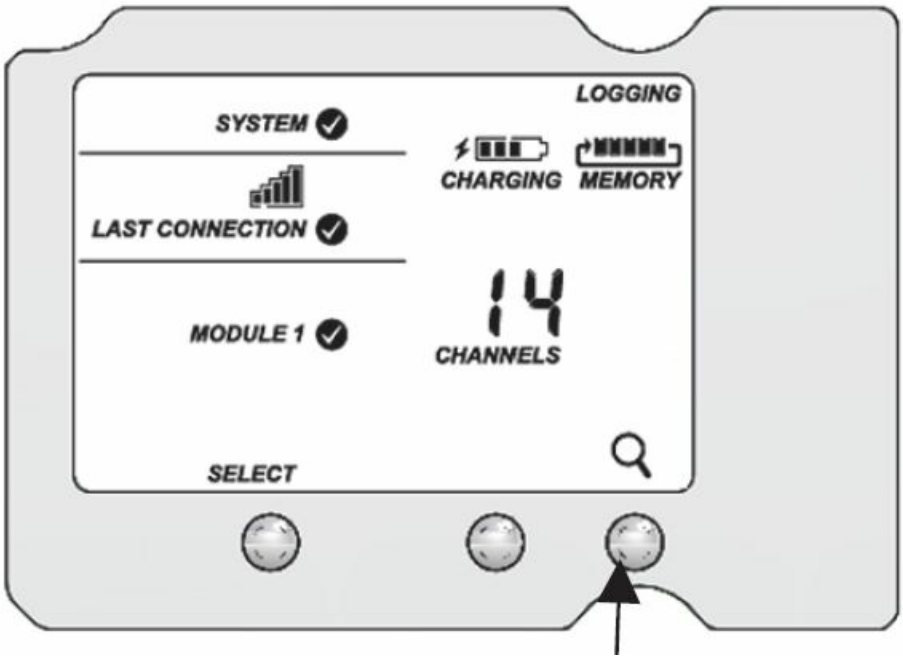
4. Watch the sensor node LCD during the process of joining the network:



- This signal strength icon blinks while searching for a network.
- Once a network is found, the icon stops flashing 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 and the channel count on the station LCD increases by the total channel count for that sensor model.



5. Press the Search button on the station again to stop the search for sensor nodes.
6. Go to www.hobolink.com to monitor sensor node status and health. See the HOBOlink® Help for details.

Important: Set the logging interval for wireless sensors in HOBOlink to the following minimum settings. See the product manual for more details (link on back).

Mounting and Positioning the Sensor Node

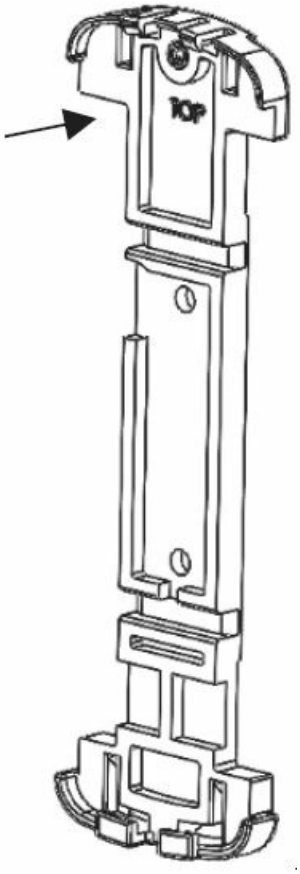
Note: We recommend that you follow these installation instructions to realize the expected performance of the

sensor node.

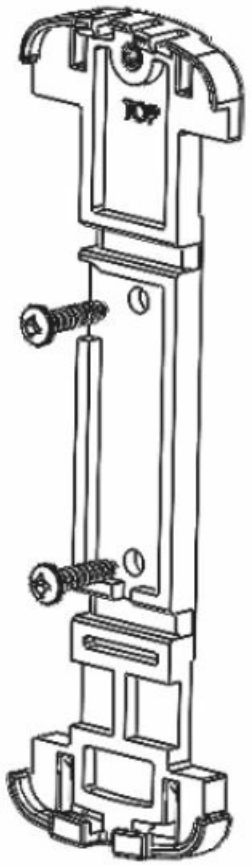
Before installing the sensor node, consider the following when determining where and how to place it:

- Position the sensor node facing the sun, making sure the solar panel is oriented so that it receives optimal sunlight throughout each season. You may need to periodically reposition the sensor node because the path of the sunlight changes throughout the year or if tree and leaf growth alters the amount of sunlight reaching the solar panel.
- Make sure the sensor node is mounted a minimum of 1.8 m (6 feet) from the ground or vegetation to maximize distance and signal strength.
- Consider using plastic poles such as PVC to mount the sensor node because certain types of metal may 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 nodes.
- There should be no more than five sensor nodes in any direction from a repeater or the manager. Data from sensors travels or “hops” across the network and may not reach the station if the sensor node is more than five hops away.

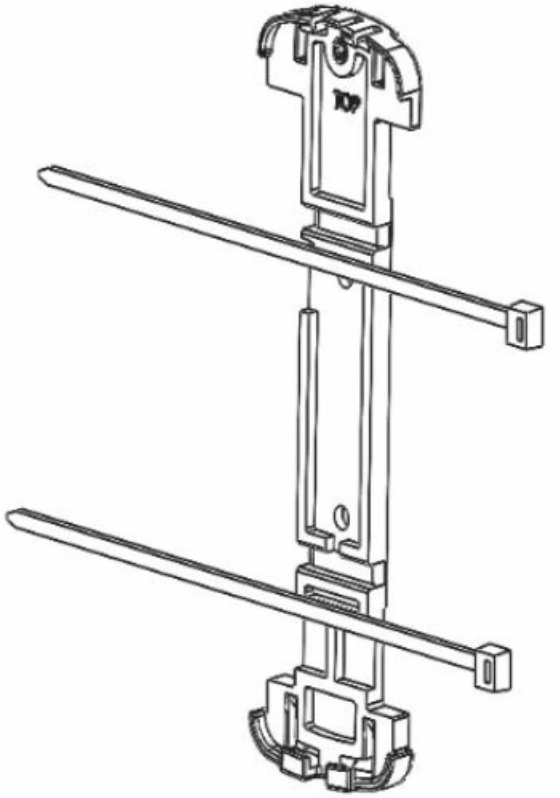
Installing the Bracket and Sensor Node



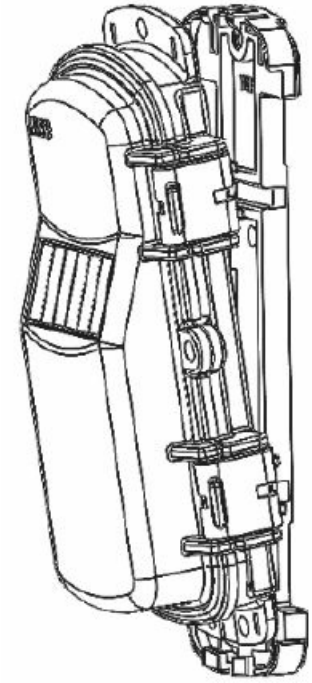
1. Orient the bracket so the text TOP is facing upwards.



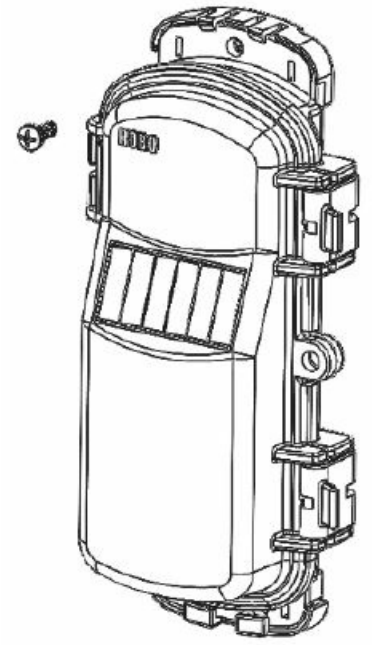
2. To install the bracket onto a wall, use the two long screws included in the package. Screw the bracket to a wall using the two holes on the mid-section of the bracket.



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.

Installing the Sensor

To install the sensor, use a slide hammer and pilot rod to form a hole to insert the sensor probe. You may also need two adjustable wrenches, tape, and water.

WARNING: Follow these important safety guidelines when working with a slide hammer and pilot rod:

- Be careful when carrying and using the slide hammer as the bottom part of the slide may drop down, potentially causing injury. Steel-toed work shoes are recommended to prevent possible injury to toes and feet.
- Eye and ear protection are recommended at all times when using the slide hammer. When in use, the slide

hammer generates harmful levels of acoustic energy. Hearing protection with a Noise Reduction Rating of 20 decibels should always be worn.
- Wear work gloves and keep both hands on the slide hammer when driving the pilot rod. Be careful to avoid getting fingers caught in the slide mechanism.

These are basic guidelines and instructions for installing the sensor node. More detailed guidelines and instructions as well as alternate installation methods are available in the product manual (see the link at the end of these instructions).

- Install the sensor probe vertically. Always maintain control of the slide hammer with a firm grip to avoid wobbling or moving the hammer side-to-side.
- Check that the pilot rod is tightly screwed to the slide hammer during the insertion process as the threads may loosen during repeated impacts.
- Insert the pilot rod only as far as needed for the length of probe being used.
- When extracting the pilot rod, make sure it remains vertical so the hole does not become enlarged.
- Once the pilot rod is removed, insert the probe as soon as possible so that moisture or water does not affect the size of the hole.
- Secure the sensor cable to the mounting pole or tripod with cable ties.
- Use conduit to protect the cable against damage from animals, lawn mowers, exposure to chemicals, etc.

To install the sensor:

1. For assembled pilot rods, skip to step 2. For disassembled pilot rods, select the appropriate number of middle rod segments based on the length of your probe: two segments for RXW-GP3 and RXW-GP4 models, or three for the RXWGP6 model. Assemble the pilot rod by screwing one segment into the other, connecting each rod segment together to form the body of the pilot rod, making sure all edges are aligned. Screw in the pilot rod tip to one end of the pilot rod body and the top cap to the other end.
2. Lay the pilot rod down next to the sensor probe, with both tips aligned. Wrap a piece of tape around the pilot rod at the depth the rod should be driven into the soil (which should line up with the top of the sensor).

3. Screw the pilot rod into the slide hammer. Use two adjustable wrenches to make sure the threads are tight between the slide hammer and pilot rod.

4. Use a repetitive up-then-down motion on the slide hammer to vertically drive the pilot rod into the soil.
5. Once the pilot rod reaches the desired depth, extract the pilot rod by using the slide hammer in reverse, lifting it rapidly to hammer upwards.
6. Clear away any loose soil at the top edges of the hole.
7. Insert the sensor probe into the hole, pressing it in as far as possible by hand. Pour a bit of water around the probe at the top of the hole if the soil is very tightly packed to help it slide more smoothly into the hole.

- **Important:** Do not use a hammer or other tools to push in the sensor because they may damage the sensor.

8. Pack the soil around the top of the sensor to prevent water from entering the hole. The sensor should be completely covered with soil and only the sensor cable visible.

For specifications 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/28373-RXWGPxA-User-Guide

- **U.S. and International Sales:** 1-508-759-9500
- **www.onsetcomp.com/contact/support**

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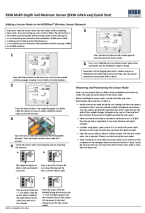
Documents / Resources

	**HOBO RXW-GPxA Multi Depth Soil Moisture Sensor** [pdf] User Guide RXW-GPxA Multi Depth Soil Moisture Sensor, RXW-GPxA, Multi Depth Soil Moisture Sensor, Depth Soil Moisture Sensor, Soil Moisture Sensor, Moisture Sensor, Sensor

References

- HOBOlink
- Onset HOBO and InTemp Data Loggers
- Technical Support | Onset's HOBO and InTemp Data Loggers
- HOBO RX3000 Remote Monitoring Station Quick Start Guide | Onset's HOBO and InTemp Data Loggers
- User Manual

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