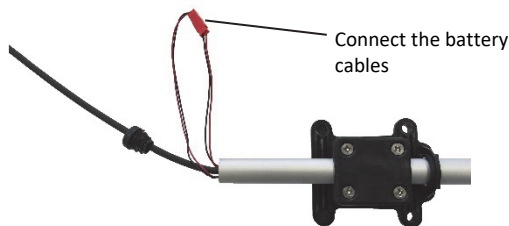## Connecting the Sensor Battery

Important: It is recommended that you only connect the battery when you are ready to deploy the sensor because it will require regular, direct sunlight to remain charged. Once the battery is connected, it will lose its charge after 10 days if it does not receive any sunlight. **In addition, you must place the sensor under a light source for at least one minute after the battery is connected to activate the sensor.**

1. Connect the two battery cables.

Connect the battery cables

2. Insert the connected battery cables into the sensor rod tube and then push and twist the cap into place at the end of the sensor rod.

Insert cables into sensor rod
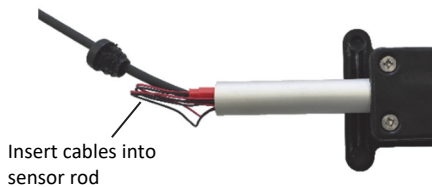
3. Push and twist the cap into place so that it is fully seated in the sensor rod without any gaps as shown below. If there is a gap, remove the cap and push the battery cables further in the sensor rod to make more room for the cap.

Push cap in place
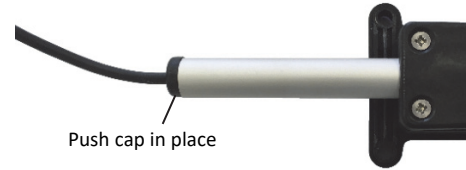
4. Slide the sensor rod up so that the bottom is flush with the bottom of the sensor base. Loosely tighten the four screws to keep the sensor rod in place.

Sensor rod flush with bottom of sensor base

5. Place the solar panel on the top of the sensor under a light source (a bright lamp or direct sunlight) for at least one minute to activate the sensor.

Adding a Mote to the HOBOnet® Wireless Sensor Network

Important: Keep the mote near the station while completing these steps.

If you are setting up a new station, follow the instructions in the station quick start before setting up this mote (go to www.onsetcomp.com/manuals/24500-rx2105-and-rx2106-manual for RX2105 and RX2106 stations or www.onsetcomp.com/manuals/rx3000-qsg for RX3000 stations).
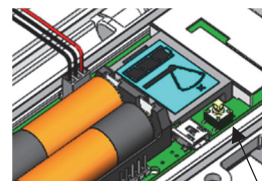
1
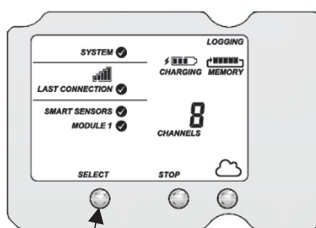
Press the Select button on the station to switch to the module with the manager (module 2 on RX2105 or RX2106 stations).

2
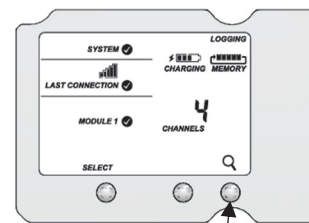
Press the Search button. The magnifying glass icon will blink while the station is in search mode waiting for motes to join the network.

3

Open the mote door and Install the rechargeable batteries. Press this button on the mote for 3 seconds.

4 Watch the mote LCD during the process of joining the network:

a.

This signal strength icon blinks while searching for a network.

b.

Once a network is found, the icon will stop flashing and the bars will cycle from left to right.
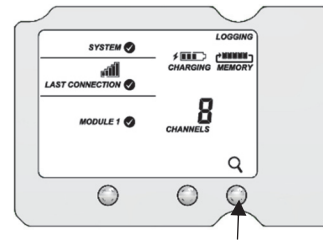
c.

This network connection "x" icon blinks while the mote completes the registration process, which may take up to five minutes.

d.

Once the mote has finished joining the network, the "x" icon is removed and the channel count on the station LCD increases by four (three for wind speed, wind direction, and gust speed, and one for the mote battery).

5

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

6

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

Mounting and Positioning the Mote

- Close the mote and use a padlock to keep it secure.
- Mount the mote vertically using cable ties or screws.
- Position the mote towards the sun, making sure the solar panel is oriented so that it receives optimal sunlight throughout each season. It may be necessary to periodically adjust the mote position as 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 mote is mounted a minimum of 1.8 m (6 feet) from the ground or vegetation to help maximize distance and signal strength.

- Consider using plastic poles such as PVC to mount the mote as certain types of metal could decrease the signal strength.
- Place the mote so there is full line of sight with the next mote. Use a repeater if there is an obstruction between motes.
- There should not be more than five motes in any direction from a repeater or the manager. Data from sensor motes travels or "hops" across the network and may not reach the station if the mote is more than five hops away.
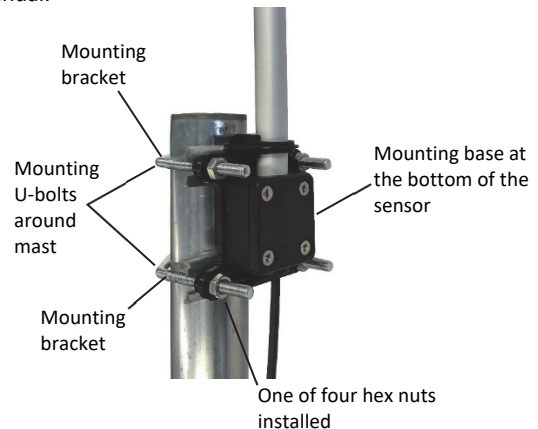
Mounting the Sensor on a Mast

1. Place the mounting U-bolt around the mast and slide the bracket over the threaded U-bolt ends as shown in this example. Make sure the flat part of the bracket is facing out.

Mounting bracket, flat side facing out
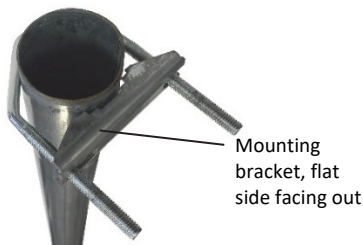
2. Repeat step 2 with the other U-bolt and bracket.

3. Insert the ends of the U-bolts through the four holes in the square sensor base at the bottom of the sensor rod. Loosely install the hex nuts on the four bolt ends with a 10 mm wrench.

4. Raise the sensor to the desired height on the mast.

5. Use the wrench to tighten the hex nuts until the sensor is firmly fastened on the mast.

6. Use the alignment tool to align the sensor to true north. For details on north alignment, see the sensor manual at www.onsetcomp.com/support/manuals/23964-rxw-wcg-manual.

Mounting bracket

Mounting U-bolts around mast

Mounting base at the bottom of the sensor

Mounting bracket

One of four hex nuts installed

Mounting the Sensor on a Cross Arm

1. Attach the cross arm to the mast before installing the sensor.

2. Use a 10 mm wrench to install two hex nuts at the base of the threaded end of the U-bolts as shown. Tighten the hex nuts all the way down to the end of the threads. Repeat with the other U-bolt.

3. Insert the threaded bolt end through the hole in the bracket so that the bracket rests on top of the hex nut with the flat end facing out. Place a spacer on top of the bracket. Repeat for the other threaded bolt end and for both ends of the other U-bolt.

4. Insert both bolt assemblies through the bottom of the mounting base and secure with finger-tightened lock nuts.

Hex nut   Bracket   Spacer
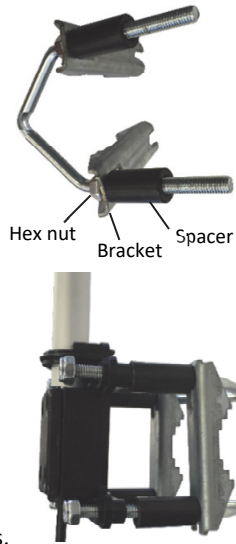
5. Slide the assembly above over the end of the cross arm as shown below. Make sure the hole in the cross arm is centered on the sensor mounting base as shown.

Make sure hole in cross arm is oriented as shown

6. Make sure the cross arm is positioned as shown at right. Tighten the locknuts with a wrench.

7. Use the alignment tool to align the sensor to true north. For details on north alignment, see the sensor manual at www.onsetcomp.com/support/manuals/23964-rxw-wcg-manual.
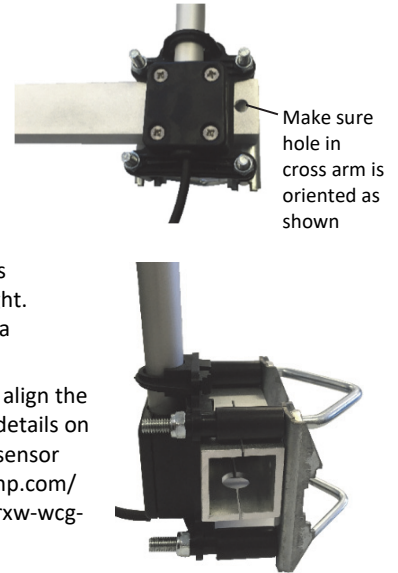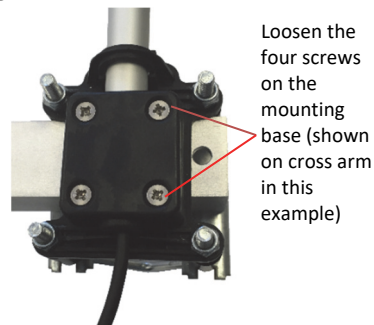
North Alignment

The sensor must be oriented to true north to obtain meaningful wind direction data.

Tools required:

- Alignment tool (included)
- GPS or compass
- Flag, cone, or other temporary marker
- Phillips-head screwdriver

1. Use a Phillips-head screwdriver to slightly loosen the four screws on the sensor rod mounting base so that the sensor rod can be adjusted. (If the rod already moves freely, you do not need to loosen the screws any further.)

Loosen the four screws on the mounting base (shown on cross arm in this example)

2. Clip the alignment tool on the sensor tube and slide it so that it snaps into the dedicated slots. Do not tamper with the slots. The tool must gently find its place.

Alignment tool clipped in place

3. Using your GPS or a magnetic compass, go to a point that is directly north of the station and at least 100 m (328 ft) away from the station. To determine this point, move until the station is directly south of you. Refer to the product manual for details on using GPS or a compass and using a flag or cone to establish a waypoint.

4. Use the alignment tool to align the sensor so it is pointing north.

5. Once the sensor is aligned to north, tighten the screws and remove the alignment tool.
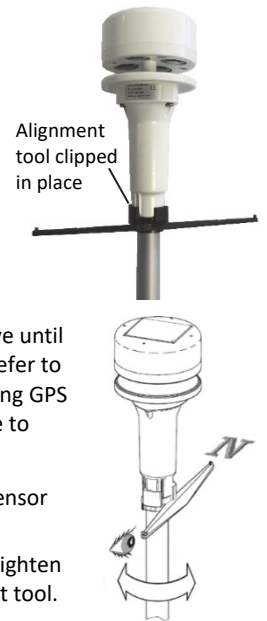
Sensor Deployment Guidelines

- Mount the sensor in the sunlight within 10 days of connecting the battery to prevent it from losing all charge.
- Mount the sensor in a location that receives direct sunlight for several hours a day to ensure the built-in solar panel is charged regularly. Make sure the sensor is positioned in the sun and not under the forest canopy or obstructions.

For additional deployment guidelines, specifications, and other details about this mote, refer to the full product manual. Scan the code at left or go to www.onsetcomp.com/support/manuals/23964-rxw-wcg-manual.

ONSET

1-800-LOGGERS (564-4377) • 508-759-9500
www.onsetcomp.com/support/contact