

RXW TEROS-12 Soil Moisture EC Temp Sensor (RXW-T12-xxx) Quick Start

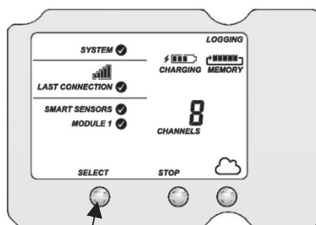
WARNING: Risk of personal injury is present. Sensor needle points are extremely sharp and will puncture skin. Handle with care.

Adding a Mote to the HOBOnet® Wireless Sensor Network

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

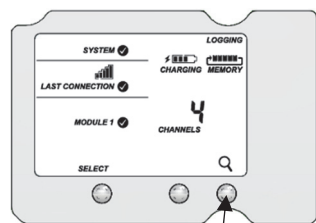
If you are setting up a new station, follow the instructions in the station quick start before setting up this mote (go to <https://www.onsetcomp.com/support/manuals/24380-man-rx2105-rx2106-qsg> for RX2105 and RX2106 stations or <http://www.onsetcomp.com/support/manuals/18254-MAN-QSG-RX3000> for RX3000 stations).

1



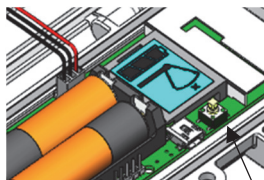
Press the Select button on the station to switch to the module with the manager (module 2 on RX2105 or RX2106 stations).

2



Press the Search button. The magnifying glass icon 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 the 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.



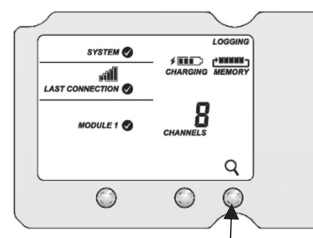
This network connection "x" icon blinks while the mote completes the registration process, which may take up to five minutes.

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 soil moisture, EC, and temperature, 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 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.

Sensor Mounting Guidelines

- Choose a borehole or trench installation method. See the product manual for details on both options at www.onsetcomp.com/support/manuals/24747-rxw-t12-manual or scan the QR code below.
- When creating the hole to install the sensor, avoid interfering objects. Installation near large metal objects can affect the sensor function and distort readings. Large objects like roots or rocks could potentially bend the needles.
- The sensor may be positioned in any direction. However, there is less restriction to water flow when the sensor body is placed in a vertical position as shown at right. A vertical position will also integrate more soil depth into the soil moisture measurement. Installing the sensor with the sensor body in a horizontal position will provide measurements at a more discreet depth.
- Do not touch the sensor needles with an ungloved hand or bring them in contact with any source of oil or other nonconducting residue. If the sensor needles are contaminated with oils from contact with skin or another source, follow the instructions in the product manual for cleaning the needles before installing the sensor.
- Avoid any metal located between the sensor and the ferrite core because it can interfere with VWC measurements.
- When installing sensors in rocky soils, use care to avoid bending sensor needles.
- Minimize air gaps around the sensor. Air gaps around the sensor needles will result in low readings of soil moisture.
- When backfilling the hole, be careful not to snag the ferrite core on the sensor cable.
- 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.



Sensor Installation Instructions

1. Auger or dig a hole to the desired sensor depth.
2. Carefully insert the sensor in the hole and push the sensor so that the needles are inserted into the undisturbed side of the soil. Check that the sensor is firmly seated.
3. Secure the cable to the mounting pole or tripod and install flexible conduit before backfilling the hole.
4. Carefully return the soil to the hole, packing it back to its native bulk density. Do not hit the ferrite core as this could potentially pull the sensor out of the soil.

For complete details on installing the sensor in a borehole or a trench, refer to the product manual at www.onsetcomp.com/support/manuals/24747-rxw-t12-manual.