

BaseStation 3200 Irrigation Controller Keeping a Pond or Cistern Full

If you have a pond or a cistern that is fed from an external water source, you can use a Baseline biSensor moisture sensor with your Baseline controller to monitor the water level in a pond or cistern and turn on a valve when the water drops below a specified level. Then, simply program the controller for the run time required to refill the pond or a cistern from a depleted level.

An overview of the steps:

Step 1 – Determine the acceptable depleted level in the reservoir, and then calculate how much time is needed to refill the reservoir.

Step 2 – Install the biSensor in the reservoir at the depleted level and wire it to the controller.

Step 3 – Assign the biSensor and take the depleted level reading.

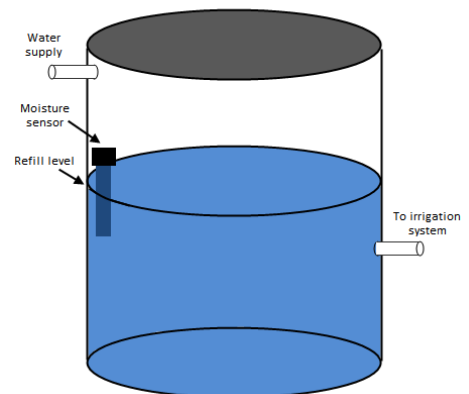
Step 4 – When the controller detects the depleted level reading, program the controller to open the valve for the water supply and allow it to run for the specified refill time.

Step 1 – Determining the acceptable depleted level in the reservoir and calculating refill time

Determine how low you want the water level to be when it needs to start refilling. Use the height of the water in the reservoir rather than a measured quantity. You will position the biSensor in the tank at this level.

When the reservoir is at the refill level, turn on the water supply and record the amount of time that it takes to fill the reservoir up to the top.

Note: If you are irrigating from reservoir while it is filling, refer to our recommendations in [Baseline Solutions for Irrigating from a Pond or Cistern](#).



Step 2 – Installing the biSensor in the Reservoir

Take note of the serial number of the biSensor that you are installing in the reservoir. You will need this number when you program the controller.

For best results, position the biSensor vertically in the reservoir. It doesn't matter which end is up, but mount the biSensor so the wires can be routed out of the reservoir. Make sure that at least half of the biSensor blade is below the water at the depletion level.

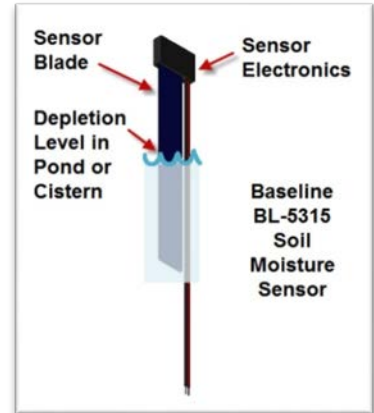
IMPORTANT! When mounting the biSensor, do not drill or nail through any part of the biSensor; it will void the biSensor warranty. A suggested method for mounting the biSensor is to install a pole in the reservoir and attach the biSensor to the pole with zip ties.

Mount the biSensor securely so it does not move. Variations in the position of the biSensor will result in erratic behavior.

Follow the wiring instructions in the biSensor installation guide to connect the biSensor to the two-wire path or to the biSensor ports on the controller or on the powered biCoder.

Make sure that you maintain polarity on the wire connections.

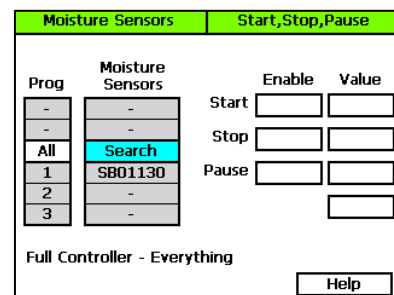
Fasten the wiring with wire nuts, and then test communication with the controller before you complete the installation with waterproof connectors.



Step 3 – Assigning the biSensor and Taking the Depleted Level Reading

Assign the biSensor

1. On the BaseStation 3200 controller, turn the dial to the **Start, Stop, Pause** position.
2. Press the **Next** or **Previous** button to highlight the **Moisture Control Setup** option.
3. Press the **Enter** button. The Moisture Sensors screen displays.
4. In the **Program** column, press the **+** button to move to the program number that you assigned to the biCoder for the valve that fills the reservoir.
5. Press the **Next** button to highlight **Search**.
6. Press the **Enter** button to search for biSensors. The serial numbers of the biSensors are shown in the Moisture Sensors column.
7. Press the **+** or **-** button to highlight the serial number of the biSensor that you installed in the reservoir.



Take a biSensor Reading

1. When the reservoir is at the level where it should be refilled, turn the dial on the controller to the **Self Test** position.
2. Press the **Next** or **Previous** button to select **Test Single Two-wire Device**, and then press the **Enter** button.
3. In the **Device to Test** column, press the + or – button to select the serial number of the biSensor that you installed in the reservoir.
4. Press the **Enter** button to test the biSensor. The test results display the moisture percentage.
5. Write down the moisture reading.
6. Turn the dial to the **RUN** position.

Self Test	
Device to Test	Test Results
6: Q006643	Sensor: SB01130
MV1: D003329	06/11/2012 09:01
SB01130	-----
FM1: 00W0268	Moisture: 0.0%
ED: P000116	Soil Temperature: 77.0
-	Two-wire Drop: 0.6
	Help

Step 4 - Programming the Controller to Open the Valve for the Water Supply

Designate a Valve and a Program to Fill the Reservoir

1. On the BaseStation 3200 controller, with the dial in the **Assign** position and the biCoders list displayed, press the + or – button to select the serial number of the biCoder for the valve that fills the reservoir.
2. Press the **Next** or **Previous** button to move to the **Zone Assignments** column and select an available zone number.
3. Press the **Enter** button to assign the selected biCoder to that zone number. Make sure that you remember the zone number.
Tip: If you are a BaseManager user, you can add a description to this zone, which will make it easier to identify in the controller.
4. Turn the dial to the **Zones** position. The Zones screen displays for the first zone.
5. In the **Zone** field, press the + or – button to select the zone for the valve that fills the reservoir.
6. Press the **Previous** button to move to the **Program** field. Select a program number that is not used for any other watering.
Note: Make sure the zone does not have a water time in any other program. If it does, select that program number and set the water time to 0:00.
7. Press the **Next** button to move to the **Zone Mode** field, and then press the + or – button until **Timed** displays in the field.

Maintaining the Water Level in a Pond or Cistern with a Start Condition

8. Press the **Next** button to move to the **Water Time** field. Enter enough time for the valve to fill the reservoir.
 - To change the value in the hours place, press the + button.
 - To change the value in the minutes place, press the **Next** button, and then press the + or – button.
9. Press the **Next** button to move to the **Cycle Time** field. Make sure this field is set to 0:00.
10. Press the **Next** button to move to the **Soak Time** field. Make sure this field is set to 0:00.
11. Press the **Next** button to move to the **Flow** field. If you know the gallons per minute flow for this zone, you can press the + or – button to enter it in this field. If you don't know the flow, you can learn flow for the zone. Refer to Learning Flow in the BaseStation 3200 User Manual.
12. Press the **Next** button to move to the **Enabled** field, and then press the + or – button to toggle between YES and NO. Set the value to **YES**.
13. When you have finished making changes, turn the dial to the **RUN** position.

Configure the Start Condition

1. On the BaseStation 3200 controller, turn the dial to the **Start, Stop, Pause** position.
2. Press the **Next** or **Previous** button to highlight the **Moisture Control Setup** option.
3. Press the **Enter** button. The Moisture Sensors screen displays.
4. In the **Program** column, press the + button to highlight the program number that you assigned to the biCoder for the valve that fills the reservoir.
5. Press the **Next** button to move to the **Moisture Sensors** column. Press the + button to highlight the serial number of the biSensor that you installed in the reservoir.
6. Press the **Next** button to move to the **Enable** column of the **Start** field. Press the + button to set the value to **Below**.
7. Press the **Next** button to move to the **Value** column of the **Start** field. Press the + button to enter the **refill moisture reading** that you wrote down from the biSensor test.
8. Press the **Next** button to move to the **Enable** column of the **Stop** field. Make sure the value is set to **OFF**.
9. Press the **Next** button to move to the **Enable** column of the **Pause** field. Make sure the value is set to **Off**.
10. When you have finished making changes, turn the dial to the **RUN** position.

Moisture Sensors		Start, Stop, Pause	
Prog	Moisture Sensors	Moisture 0.0%	Enable Value
99	-	Start	Below 26.0%
All	Search	Stop	Off
1	SB01130	Pause	Off
2	-	Pause Time	
3	-		
4	-		
{Program 1}			
{Moisture Sensor Description}			
Help			

When the biSensor reading matches the value that you entered in the Start field, the controller will start the valve that fills the reservoir and display a message on the Run Status screen.

Troubleshooting

If you set up your BaseStation 3200 controller according to these instructions and your system is not working as expected, review the following issues:

Issue: The moisture sensor is behaving erratically.

Make sure that the moisture sensor is securely mounted in the reservoir. If the water movement in the reservoir causes the sensor to move, the sensor will behave erratically.

Issue: The reservoir is over filling.

Make sure that the run time for the zone is accurate based on the fill rate.

Make sure that the zone does not have a run time in another program.

Issue: The reservoir is going dry.

Make sure that the moisture sensor didn't move.

Make sure the zone that is designated to fill the reservoir is enabled.

If there is a master valve on the water source used to fill the reservoir, make sure that the master valve turns on when the zone runs.

Make sure that enough water remains in the reservoir below the depletion level to allow time for the controller to read the sensor and respond. The required quantity of reserved water will vary depending on the following factors:

- Whether the moisture sensor is connected over two-wire or conventional wire
- Whether water is being drawn from the reservoir while it is being filled
- The flow rate for the fill and the flow rate for the depletion (if applicable)