

Precip Sensor with Decoder

BL-5407-KIT

Thank you for purchasing the Baseline Precip Sensor and biSensor.

The Precip Sensor is a rainfall sensor that connects to your two-wire irrigation system. Inside the device is a small bucket that collects rainfall. When full, the bucket tips over, emptying accumulated rainfall. The bucket automatically turns upright again, so more rainfall can be measured. Each tip of the rain bucket will cause the decoder LED to blink. Each tip of the rain bucket is equal to 0.01 of an inch of rain. The process triggers a notification to your irrigation controller to adjust or stop irrigation.

The Precip Sensor is compatible with the BaseStation 3200 and the SubStation.



Materials Provided

- Precip Sensor Rain Gauge
- BL-5407 Precip Sensor Decoder
- IP68 Waterproof Splice Kit
- (2) DBRY-6 Waterproof Gel Tubes

Tools and Materials Needed

- Phillips Screwdriver
- Wire Strippers
- Micro Screwdriver

Overview

The installation process consists of installing the Precip Sensor then configuring the controller. Please read through this entire set of instructions before beginning.

Customer Support

If you have any questions about the installation and set-up process, please contact Baseline Customer Support at 866-294-5847 or by email at support@baselinesystems.com

Part 1: Mount the Precip Sensor

1

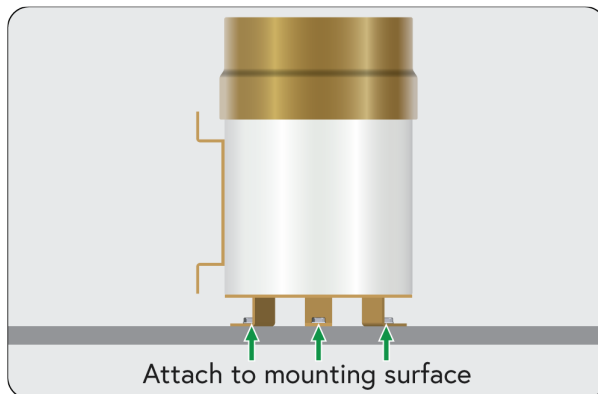
Select an Installation Location

Select a location that is clear and unobstructed. The Precip Sensor can be installed onto a platform or mast. Choose an installation method and follow the instructions below.

2

Platform Mounting

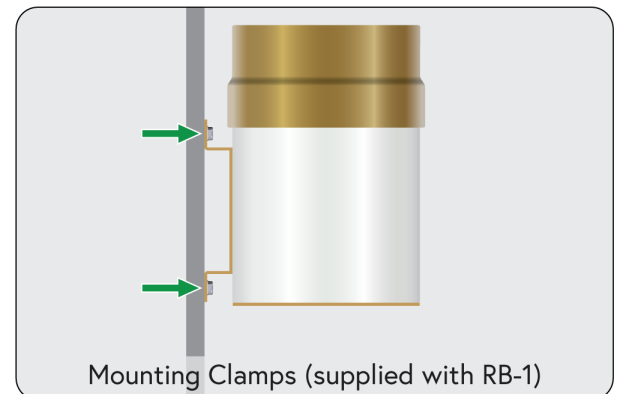
Place the Precip Sensor onto a platform and securely attach the 3 support legs to the platform.



Mast Mounting

Using a Phillips screwdriver, remove the platform mounting legs from the Tipping Bucket Rain Gauge. Set the legs aside as they are not needed for mast mounts.

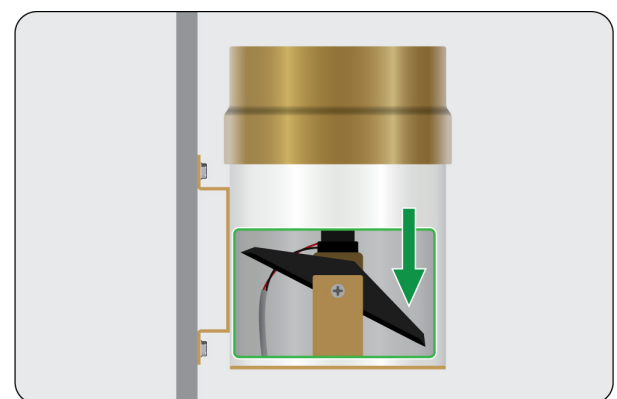
Use the supplied side bracket to secure the Precip Sensor to a stable vertical surface.



3

Verify Installation

1. Remove the rubber band that secures the interior bucket in place during shipping.
2. After mounting the Precip Sensor, it is important that you verify the position of the black tipping bucket inside the chamber. Observe the black tipping bucket. It should NOT be in a centered position. Press either end of the bucket down against the stop to be sure that it is not centered.



Part 2: Wire the Precip Sensor

1

Power Off the Two-Wire

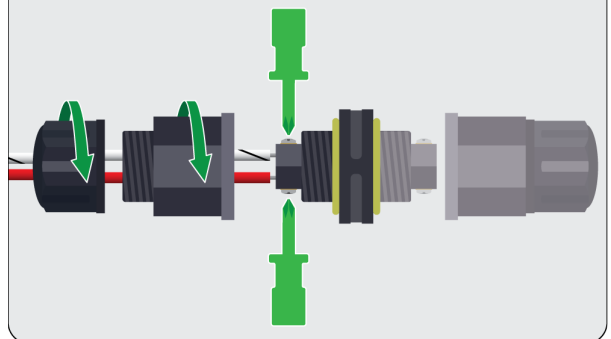
Power off the two-wire before the installation of any two-wire device.

2

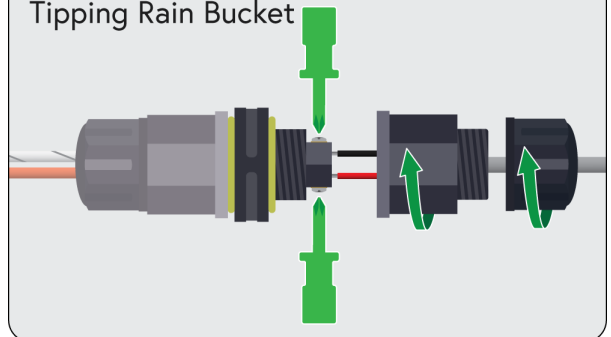
Connect the Precip Sensor

1. Slip the ends from the wires coming from the decoders.
2. Disassemble the connector.
3. Thread one strain relief through the red/black and white/black striped wires, followed by the feeding through barrel then the junction box. The orientation of the junction box does not matter.
4. Thread the other strain relief through the wire coming from the Precip Sensor side.
5. Using a micro screwdriver, connect red to red with black stripe and black to white with black stripe. Check connections to make sure they are secure.
6. Slide the junction box into the barrel.
7. Tighten one strain relief nut until the gasket is compressed.
8. Repeat on the other side.

Wires from decoder



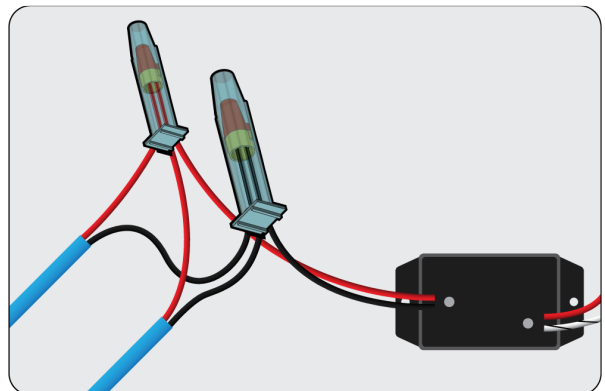
Wires from Tipping Rain Bucket



3

Connect the Decoder to the Two-Wire Path

1. Connect the red and black wires from the decoder to the red and black wires from the two-wire field. Be sure to maintain polarity by connecting red to red and black to black.
2. Use 3M™ DBR/Y-6 or equivalent moisture-resistant connectors for these connections. Leave 24 to 36 inches of slack on the two-wire to allow for easy installation and maintenance.



Part 3: Configure the Precip Sensor

1

Configure the Precip Sensor

1. Turn the dial to the **Assign** position.
2. Press **Next** or **Previous** to move to the option for the BL-5407 decoder and its serial number starting with TRG.
3. Press **+** or **-** to select **Search** in the left column of the Assign screen.
4. Press **Enter** to search for devices. The search may take several minutes to complete. You will see a status screen like the one shown here while the search is in progress. The display shows the number of devices found and the number of ports or addresses available.
Note: To cancel a search in progress, press the Back button.
5. After the search has finished and the device serial numbers display in the left column, press **+** or **-** to select any unassigned device serial number.
6. Press **Next** or **Previous** to move to the Assignments column and select an available number.
7. Press **Enter** to assign the selected device to that number.
8. When you have finished making changes, turn the dial to the **RUN** position.

Assign		Top Menu	
biCoders [minus plus]		Rain Assignments [previous next]	
-		7	-
Help		8	-
Search	Press ENTR To Search for Devices	1	BR00000
Unassign		2	-
-		3	-
-		4	-

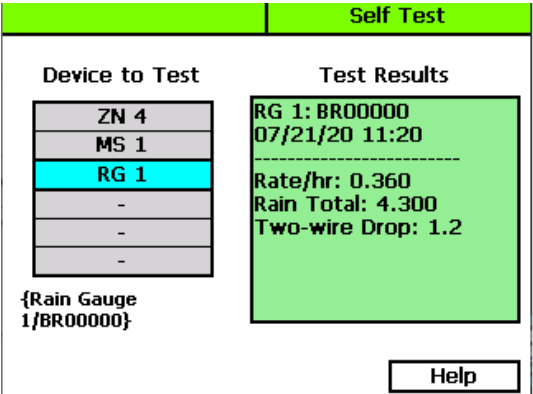
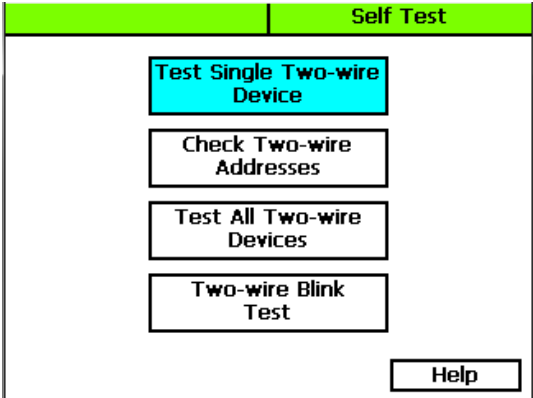
Part 4: Test the Precip Sensor

1

Test the Precip Sensor

After installation and configuration, it is important to test the Precip Sensor. When you test a two-wire device, the controller verifies the communication between the controller and the device. The controller activates the device and measures the current and voltage. It deactivates the device, and measures the voltage drop between the controller and the device.

1. Turn the dial to the **Self Test** position.
2. Press **Next** or **Previous** to select **Test Single Two-wire Device**, and then press **Enter**.
3. In the **Device to Test** column, press **+** or **-** to select the device that you want to test.
4. Press **Enter** to test the device.
5. The device will activate for less than a second to measure the voltage and current through the device. This test will return information related to the type of device that was tested.
6. When you have finished viewing the test results, turn the dial to the **RUN** position.



Optional: Initiating a Start, Stop, or Pause Condition

You can assign the Precip Sensor to initiate a Start, Stop or Pause condition based on real-time rain data. You can trigger the system to start, stop or pause based on rain that has fallen during the last hour, rain that has fallen during the last day, or rain that has fallen the last time it was measured. Follow the instructions below to get started.

1

1. Turn the dial to the **Start, Stop, Pause position**.
2. Press **Next** or **Previous** to select the **Device Start, Stop, or Pause Condition** option.
3. Press **Enter**. The Start, Stop, Pause screen displays.
4. In the Program field, press **+** to select the program that you want to set-up the start, stop or pause condition for.

Device Start	Start,Stop,Pause	
Program	1	
Device	RG 1	0.000 in
R-Value	100	pulses/in.
Enabled	X	1 of 8
Limit	0.25 in	
Trigger	Hourly	
{Program 1} Rain Gauge 1/BR00000		
		Help

2

1. Press **Next** to move to the **Devices** field. Find the abbreviation and number of the device that you want to use for the start condition in the Devices column. Press **+** to select the device (RG1), and then press **Enter**.
2. Press **Next** to move to the **Limit** field. You will need to set a value. For example - If you are initiating a stop condition and you want to stop irrigating when rainfall has reached 1/4", you would enter in 0.25in.
3. Press **Next** to move to the **R-Value** field. The default R-rate (rain rate) on the 3200 controller is 100. This means that for each tip of the bucket 0.01 inches of precipitation is measured. If the R-rate is changed (for example to 1) then each tip of the rain bucket would equal 1-inch. Please note that if this happens, the accumulation and rate displayed on the controller will be much higher. In this example, the R-rate would be 100 times higher than expected.

Device Stop	Start,Stop,Pause	
Program	All	
Device	RG 1	0.000 in
R-Value	100	pulses/in.
Enabled	X	1 of 8
Limit	0.25 in	
Trigger	Hourly	
{B53200 3K90009} TRG0001 Rain Gauge 1/BR00000		
		Help

Optional: Initiating a Start, Stop or Pause condition, cont...

3

- Press **Next** to move to to the **Trigger** field. Choose one of the following:
 - To trigger the Precip Sensor to stop irrigating based on data collected during the last hour, select **Hourly**.
 - To trigger the Precip Sensor to stop irrigating based on data collected during the last day select **Daily**.
 - To trigger the Precip Sensor to stop irrigating based on data collected since the last time data was collected, select **Rate**.
- Press **Next** to move to the Pause field (if applicable) If setting a Pause condition, enter in the amount of time you would like to pause the system for.
- Press **RUN** to finish.

Device Pause	Start,Stop,Pause
Program	All
Device	RG 3 0.00
R-Value	100 pulses/in.
Enabled	X 1 of 8
Limit	0.25 in
Trigger	Hourly
Pause Time	1:00
{Dev Test} Rain Gauge #3	
Help	

Device Stop	Start,Stop,Pause
Program	All
Device	RG 1 0.00
R-Value	100 pulses/in.
Enabled	X 1 of 8
Limit	0.85 in
Trigger	Daily
{Dev Test} Rain Gauge West Field	
Help	

Device Start	Start,Stop,Pause
Program	1
Device	RG 1 0.000
R-Value	100 pulses/in.
Enabled	X 1 of 8
Limit	0.400 in/hr
Trigger	Rate
{Program 1} Rain Gauge West Field	
Help	



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