



Digital Tipping Bucket Rain Collector

PRODUCT MANUAL

Item # 3665RD



Spectrum[®]
Technologies, Inc.

THANK YOU for purchasing a Digital Rain Collector to use with your WatchDog Sensor Pups. This manual will aid you in placement and mounting of the rain collector. Read it thoroughly to insure proper and effective use of the sensor.

This rain collector measures rainfall in 1/100th inch increments. The self-emptying, tipping bucket design is accurate and reliable. The rain collector will be accurate to $\pm 2\%$ at < 2 in (5 cm) per hour.

The rain collector includes a 6 foot cable that is connected into any port on a WatchDog Sensor Pup. Once the sensor is positioned in a representative “micro-climate”, connect the cable into an available port on a Sensor Pup to log rainfall data.

Use the Retriever & Pups Launch Utility software to program the Sensor Pup to log rainfall. Refer to the Retriever & Pups Instruction Manual for detailed configuration instructions.

Note: The Digital Rain Collector is NOT compatible with WatchDog 1000 and 2000 series stations.

POSITIONING SENSOR

When choosing a location for your rain collector keep the following in mind:

- Mount the collector on a 1" to 1¼" mast (pipe) using the u-bolt. Make sure the collector is level when positioning the mast mount. Use a bubble leveler to check that the collector's base is level.
- The rain collector contains a magnet-operated switch which may not operate correctly if you mount the rain collector on or near any object which attracts a magnet.
- Choose a location that is easily accessible for normal cleaning and is distant from trees and other sources of pollen or debris.

Locate the rain collector in an open area which is within reach of the Sensor Pup. Up to four rain collectors may be connected per Sensor Pup.



TROUBLESHOOTING

If rain collector is not reading correctly, or not giving any readings at all, the following procedure outlines some steps that can remedy many common problems.

1. Clean and level the meter (see pages 2-3)
2. Connect your Retriever to a PC using the included USB-to-Serial cable and open the Retriever & Pups Launch Utility (RPLU) software. Click on the Current Conditions tab.
3. Remove the rain bucket from the base. Manually move the tipping spoon back and forth several times. After the Current Conditions in the RPLU have updated (Depending on the logging interval, this may take several minutes), check to see if these tips have been recorded by the Pup. Do this several times.

Retriever & Pups Launch Utility

File Device Help

Connection Status: Connected on COM1 COM1 :: Communications Port. Disconnect Load from Retriever Save to Retriever

Retriever Pups Sensor Pup Current Data

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Metric Units

Serial Number	Pup Name	Port	Sensor Name	Subsensor Name	Channel Type	Data Value	Units
20140027	WatchDog Sensor Pup	A	Digital Anemometer (3305ADD)	Wind Direction	Current	40.00	Degrees
20140027	WatchDog Sensor Pup	A	Digital Anemometer (3305ADD)	Wind Gust	High	0.00	mph
20140027	WatchDog Sensor Pup	A	Digital Anemometer (3305ADD)	Wind Speed	Average	0.00	mph
20140027	WatchDog Sensor Pup	A	Digital Rain Collector (3665RD)		Current	0.05	in

4. If the tips are being counted, skip to step 5.

If RPLU is not showing all of the manual tips of the spoon, it may be that the magnetic sensor on the tipping spoon is too far from the reed switch or that the sensor cable is bad. There are 2 cams on the base of the rain collector that can be rotated to move the tipping spoon closer to or further away from the read switch. Make this adjustment and check if the RPLU shows that the Pup can detect manual tips of the spoon. If so, proceed to step 5. If not, the sensor may need to be sent in for service.

5. If all the tips are being counted, replace the rain bucket and trickle a known amount of water into the bucket. 84 ml of water should register 0.1 inches of water (2.5 mm). This is equivalent to 10 tips of the tipping spoon. The best results are attained when the water is added slowly. It is recommended that the water be put in a ziplock bag which is then punctured with a pin to allow the water to slowly enter the rain bucket.

If the reading in the RPLU is slightly high or slightly low, the sensor can be calibrated. When the spoon tips, it lands on screws on either side. If sensor is reading high, lower the screws. If it is reading low, raise the screws. It is recommended to adjust the screws a quarter turn and again run a known amount of water through the bucket to determine if additional adjustment is necessary.

SENSOR MAINTENANCE

For greatest accuracy, thoroughly clean the rain collector at least once or twice a year. Disconnect the Sensor Pup from the rain collector to avoid any inadvertent counts on the Pup while the rain collector is being cleaned.

Check the inside of the rain bucket for debris (such as leaves) that may be blocking the grid at the bottom of the bucket. Remove the rain bucket from the base and check for any obstacles (spider webs, debris, etc.) that may be preventing the tipping spoon from moving freely. If the hole beneath the grid gets clogged with dirt, the cotter key can be removed to allow it to be cleared. The rain collector can be cleaned using a mild detergent.

Finally, inspect the base to make certain they it is still level.

WARRANTY

This product is warranted to be free from defects in material or workmanship for one year from the date of purchase. During the warranty period Spectrum will, at its option, either repair or replace products that prove to be defective. This warranty does not cover damage due to improper installation or use, lightning, negligence, accident, or unauthorized modifications, or to incidental or consequential damages beyond the Spectrum product. Before returning a failed unit, you must obtain a Returned Materials Authorization (RMA) from Spectrum. Spectrum is not responsible for any package that is returned without a valid RMA number or for the loss of the package by any shipping company.

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