

Device Maintenance

Battery Replacement

- Materials:
 Small Phillips Head Screwdriver
 3/32" HEX Driver (Allen Key)
 Replacement Battery (LTC-7PN)

- Remove the Data Logger from the Waterbox110C using the Allen Key.
 - Puncture the center of the back label with the screw driver and unscrew the enclosure.
 - Remove the battery by pulling it perpendicular to the circuit board.
 - Insert the new battery into the terminals and verify it is secure.
 - Screw the enclosure back together securely.
- Note: Be sure not to over tighten the screws or strip the threads.**

Battery Warning

WARNING: FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT SHORT CIRCUIT, CHARGE, FORCE OVER DISCHARGE, DISASSEMBLE, CRUSH, PENETRATE OR INCINERATE. BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 80°C (176°F).

Recalibration

The Rain110 system includes an Event110 data logger and a tipping bucket rain gauge. The data logger is programmed with engineering units to display in units of rainfall.

The Event110 has a digital input signal and cannot be calibrated. A Certificate of Conformance can be provided.

To send the devices back, visit www.madgetech.com, select Services then RMA Process.

Part Number	Rain110
Accuracy	±4% over range of 1" to 6" per hour
Orifice	8" dia. (204mm dia.)
Reed Switch Contact Rating	3W, 28VAC
Rainfall Per Bucket Tip	0.01" (0.254mm)
Operating Temperature Range	0 to 60°C (32 to 140°F)
Construction Materials	Funnel: anodized aluminum; Base, body, bracket, tipping bucket: PVC
Mounting	(3) 1/4" (6mm) dia. holes on 9.5" (241mm) dia. circle
Tripod/Mast Kit	Contact factory for availability
Rain Gauge Dimensions	12.0" x 8.4" dia. (305mm x 214mm dia.)
Shipping Weight	10lbs (4.5kg)
Data Memory	13,107 samples / 131" (332 cm) of rain
Baud Rate	57,600
Typical Battery Life	10 years
Enclosure Dimensions	2.9" x 4.0" x 1.1" (74mm x 102mm x 28mm)



Rain110
Rainfall Recording System

Specifications subject to change.

See MadgeTech's terms and conditions at www.madgetech.com

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Product Notes

Selecting a Location

It is necessary to shield the gage from the wind to obtain an accurate measurement of precipitation. The following should be taken into consideration with placing your Rain110 logger;

- Trees, bushes, and shrubbery provide natural shields from the wind. If natural protection is unavailable, a wind shield should be constructed.
 - The gage must be clear of obstruction or surfaces that could drip or splash water into the orifice.
 - The gage should be located in the center of a circle clear of obstructions.
 - In locations where heavy snowfall occurs, the gage should be mounted on a tower high above the average snow level.
- Note: This unit does not measure snowfall, this is a precaution to avoid burial.**

- A stable, level mounting platform is required to attach the rain gage.

Installation of the Rain110

- Remove the funnel from the top of the gage and remove all packing material from it.
- Verify that the bucket moves freely on its pivot.
- The gage must be level to operate properly. Use a carpenter's level to check that the gage is level in all directions. Washers can be used under the feet as shims.
- Attach it to the mounting platform with ¼" bolts (3 locations on a 9-1/2" bolt hole circle).
- Run the 50' (ft.) of provided cable to the location where the data logger will be mounted, securing it roughly every 2 feet. There are 4 mounting holes (0.2 in. diameter spaced 2.5 in. square) on the water-resistant enclosure.

Interpreting the Data

For information on how to interpret the downloaded data, please refer to the document "Rain110 Wind speed Recorder quick setup guide" on the MadgeTech website.

Installation Guide

Installing the Interface cable

- IFC200, IFC202 or IFC300
Refer to the "Quick Start Guide" included in the package.
- IFC110, IFC102 or IFC103
Plug the serial cable into the port and verify it is secure.
- USB-1 or USB-101
Install the USB drivers from the CD provided in the kit, then plug the USB cable into the computer and the serial cable into the serial port.

Installing the software

Insert the Software CD in the CD-ROM Drive. If the autorun does not appear, locate the drive on the computer and double click on **Autorun.exe**. Follow the instructions provided in the Wizard.

Connecting the data logger

- Once the software is installed and running, plug the interface cable into the data logger.
- Click the **Communication Menu**, then **Auto Configure Port**.
- After a moment, a box similar to the following will appear;



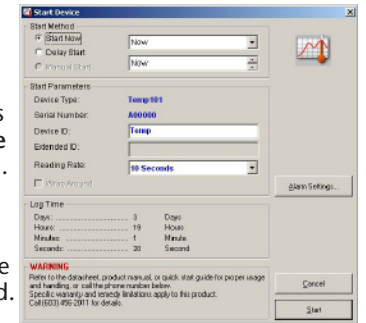
- Click **OK**. The **Device Status** box will appear. Click **OK**.
- At this point, communications have been configured for your logger. These settings can be found under the **Communication Menu**.

Note: For additional installation instructions refer to your "Data Logger & Software Operating Manual".

Device Operation

Starting the data logger

- Click **Device Menu** then **Start Device**.
- Choose the start parameters by selecting a **Reading Rate** suitable for your application.
- Enter in any other desired parameters and click **Start**.
- A box will appear stating the data logger has been started. Click **OK**.



- Disconnect the data logger from the interface cable and place it in the environment to measure.

Note: The device will stop recording data when the end of memory is reached or the device is stopped. At this point the device cannot be restarted until it has been re-armed by the computer.

Downloading data from a data logger

- Connect the data logger to the interface cable.
- Click the **Device Menu** then **Read Device Data**. This will offload all recorded data onto the PC.

Technical Support

Visit www.madgetech.com, or call (603) 456-2011. Technical support is also available by e-mailing support@madgetech.com

Additional product information is available by e-mailing info@madgetech.com.