

# Rain101A

## Rainfall Data Logging System



# PRODUCT USER GUIDE

To view the full MadgeTech product line, visit our website at [madgetech.com](http://madgetech.com).

## TABLE OF CONTENTS

2 Product Overview

2 Installation Guide

2 Device Operation

4 Device Maintenance

4 Need Help?



# PRODUCT USER GUIDE

## Product Overview

The Rain101A is a complete system to accurately measure and record rainfall over long periods of time. It comes complete with an Event101A data logger, weatherproof enclosure, tipping bucket rain gauge, 50 feet of cable and the IFC200 interface cable and software package.

## Installation Guide

### Installing the Interface Cable

**IFC200** — Insert the device into a USB port. The drivers will install automatically.

### Installing the Software

The Software can be downloaded from the MadgeTech website at [madgetech.com](http://madgetech.com). Follow the instructions provided in the Installation Wizard.

### Selecting a Location

It is necessary to shield the gauge from the wind to obtain an accurate measurement of precipitation. The following should be taken into consideration with placing the Rain101A:

- Trees, bushes, and shrubbery provide natural shields from the wind. If natural protection is unavailable, a wind shield should be constructed.
- The gauge must be clear of obstruction or surfaces that could splash water into the orifice.
- The gauge should be located in the center of a circle clear of obstructions.
- In locations where heavy snowfall occurs, the gauge 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 gauge.

### Installation of the Rain101A

When installing the Rain101A, refer to the following:

1. Remove the funnel from the top of the gauge and remove all packing material from it.
2. Verify that the bucket moves freely on its pivot.
3. The gauge must be level to operate properly. Use a carpenter's level to check that the gauge is level in all directions. Washers can be used under the feet as shims.
4. Attach it to the mounting platform with 1/4 inch bolts (3 locations on a 9.5 inch bolt hole circle).
5. Run the 50 feet 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 inch diameter spaced 2.5 inch square) on the water-resistant enclosure.

# PRODUCT USER GUIDE

## Device Operation

### Connecting and Starting the Data Logger

1. Once the software is installed and running, plug the interface cable into the data logger.
2. Connect the USB end of the interface cable into an open USB port on the computer.
3. The device will appear in the Connected Devices list, highlight the desired data logger.
4. For most applications, select **Custom Start** from the menu bar and choose the desired start method, reading rate and other parameters appropriate for the data logging application and click **Start**. (**Quick Start** applies the most recent custom start options, **Batch Start** is used for managing multiple loggers at once, **Real Time Start** stores the dataset as it records while connected to the logger.)
5. The status of the device will change to **Running**, **Waiting to Start** or **Waiting to Manual Start**, depending upon your start method.

6. 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

1. Connect the logger to the interface cable.
2. Highlight the data logger in the Connected Devices list. Click **Stop** on the menu bar.
3. Once the data logger is stopped, with the logger highlighted, click **Download**. You will be prompted to name your report.
4. Downloading will offload and save all the recorded data to the PC.

### LED Indicators



**Status:** Green LED blinks every 5 seconds to indicate the device is logging.



**Alarm:** Red LED blinks every 1 second to indicate an alarm condition is set.

### Multiple Start/Stop Mode Activation

- **To start device:** Press and hold the pushbutton for 5 seconds, the green LED will flash during this time. The device has started logging.
- **To stop the device:** Press and hold the pushbutton for 5 seconds, the red LED will flash during this time. The device has stopped logging.

### Set Password

To password protect the device so that others cannot start, stop or reset the device;

1. In the **Connected Devices** panel, click the device desired.
2. On the **Device** Tab, in the **Information** Group, click **Properties**. Or, right-click the device and select **Properties** in the context menu.
3. On the **General** Tab, click **Set Password**.
4. Enter and confirm the password in the box that appears, then select **OK**.

# NEED HELP?

## Device Maintenance

### Battery Replacement

**Materials:** Small Phillips Head Screwdriver, 3/32" HEX Driver and a Replacement Battery (LTC-7PN)

1. Remove the data logger from the Waterbox101A using the Allen Key.
2. Puncture the center of the back label with the screw driver and unscrew the enclosure.
3. Remove the battery by pulling it perpendicular to the circuit board.
4. Insert the new battery into the terminals and verify it is secure.
5. Screw the enclosure back together securely.

**Note:** Be sure not to over tighten the screws or strip the threads.

### Recalibration

The Rain101A system includes an Event101A data logger and a tipping bucket rain gauge. The data logger is programmed with engineering units to display in units of rainfall. The Event101A has a digital input signal and cannot be calibrated. A Certificate of Conformance can be provided.



### Product Support & Troubleshooting:

- Visit our Resources online at [madgetech.com/resources](http://madgetech.com/resources).
- Contact our friendly Customer Support Team at (603) 456-2011 or [support@madgetech.com](mailto:support@madgetech.com).



### MadgeTech 4 Software Support:

- Refer to the built-in help section of the MadgeTech 4 Software.
- Download the MadgeTech 4 Software Manual at [madgetech.com](http://madgetech.com).
- Contact our friendly Customer Support Team at (603) 456-2011 or [support@madgetech.com](mailto:support@madgetech.com).

