

# Volt101A

DC Voltage Data Logger

# Volt101A-160

Differential DC Voltage Data Logger



## PRODUCT USER GUIDE

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# PRODUCT USER GUIDE

## Product Overview

MadgeTech's Volt101A data loggers are versatile data logging devices with many uses and applications. Connect negative and positive wire leads directly to the terminal port on the Volt101A to monitor and measure voltage levels. The Volt101A is commonly used to assess battery efficiencies or photovoltaic studies to identify how much energy is being created from solar cells.

The MadgeTech Volt101A-160mV data logger is a low cost, state-of-the-art data logger for measuring a voltage range of  $\pm 160$  mV. The range and resolution of this particular data logger makes it ideal for low level signal monitoring, battery studies, current shunts and photovoltaic studies.

## Installation Guide

### Installing the Interface Cable

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

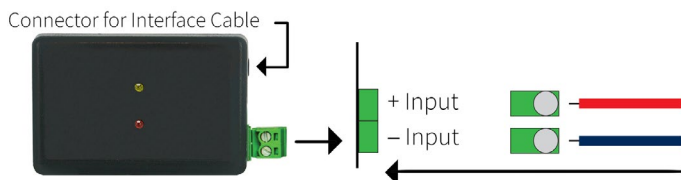
### Installing the Software

The Software can be downloaded from the MadgeTech website at [madgetech.com](http://madgetech.com). Follow the instructions provided in the Installation Wizard. Compatible with Standard Software version 2.03.06 or later and Secure Software version 4.1.3.0 or later.

## Wiring the Data Logger

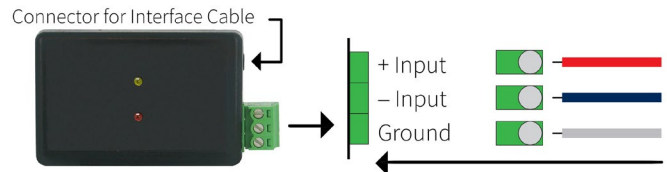
### Volt101A, 2.5 V, 15 V and 30 V models Single Ended Wiring

Two-position removable screw terminal connections; accepts 2-wire configurations.



### Volt101A-160mVDC Differential Wiring

Three position removable screw terminal connections, accepts 3 wire configurations.



**Warning:** Note the polarity instructions. Do not attach wires to the wrong terminals.

## 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.

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## 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.

## Alarm Settings

To change the settings for the alarm:

1. Select **Alarm Settings** from the **Device Menu** in the MadgeTech Software. A window will appear allowing to set the high and low alarms and warning alarms.
2. Press **Change** to edit the values.
3. Check **Enable Alarm Settings** to enable the feature and check each high and low, warn and alarm box to activate it. The values can be entered in the field manually or by using the scroll bars.
4. Click **Save** to save the changes. To clear an active alarm or warn, press the **Clear Alarm** or **Clear Warn** button.
5. To set an alarm delay, enter the duration of time into the **Alarm Delay** box in which the readings can be outside of the alarm parameters.

## Trigger Settings

The device can be programmed to only record based off user configured trigger settings.

1. In the **Connected Devices** panel, click the device desired.
2. On the **Device** Tab, in the Information Group, click **Properties**. Users can also right-click the device and select **Properties** in the context menu.
3. Select Trigger Settings from the Device Menu: Start Device or Identify Device and Read Status.

**Note:** Trigger formats are available in Window and Two Point (bi-level) mode. Window allows for one range of monitoring and two point mode allows for two ranges of monitoring.

## Set Password

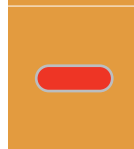
To password protect the device so that others cannot start, stop or reset the device:

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**.

## LED Indicators



**Green LED blinks:** 10 seconds to indicate logging and 15 seconds to indicate delay start mode.



**Red LED blinks:** 10 seconds to indicate low battery and/or memory and 1 second to indicate an alarm condition.

## 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 the this time. The device has stopped logging.

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## Device Maintenance

### Battery Replacement

**Materials:** Small Phillips Head Screwdriver and a Replacement Battery (LTC-7PN)

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

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

### Recalibration

Recalibration is recommended annually. To send devices back for calibration, visit [madgetech.com](http://madgetech.com).

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