

## Volt101A & Volt101A-160

Description	Volt101A	Volt101A-160mV
Range	*See Table for Details	±160 mVDC
Resolution		5 µV
Accuracy		±0.01 %FSR
Memory	1,000,000 readings 330,000 in enhanced start/stop mode	
Wrap Around	Yes	
Reading Rate	4 readings every second (4Hz) to 1 every 24 hours	
LED Indicator	Red & Green	
Channels	1	
Required Interface Package	IFC200	
Baud Rate	115,200	
Typical Battery Life	10 years at a 15 minute reading rate	
Operating Environment	-40 °C to +80 °C (-40 °F to +176 °F), 0 to 95%RH non-condensing	
Material	ABS plastic	
Dimensions	1.4 in x 2.5 in x 0.6 in (36 mm x 64 mm x 16 mm)	
Weight	0.9 oz (24 g)	
Approvals	CE	

\*Volt101A Range, Resolution and Calibrated Accuracy

Range	2.5 V	15 V	30 V
Measurement Range (VDC)	-3 to +3 V	-8 to +24 V	-8 to +32 V
Accuracy	±0.05%FSR		
Resolution (mV)	0.1 mV	0.5 mV	1.0 mV
Overload Protection	±50 V, indefinitely		

### 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).**

*Specifications subject to change.*

See MadgeTech's terms and conditions at [www.madgetech.com](http://www.madgetech.com)



**Volt101A-2.5V**  
2.5VDC Voltage Data Logger

**Volt101A-15V**  
15VDC Voltage Data Logger

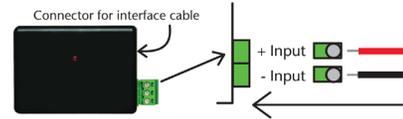
**Volt101A-30V**  
30VDC Voltage Data Logger



**Volt101A-160mV**  
±160mVDC Differential Voltage Data Logger

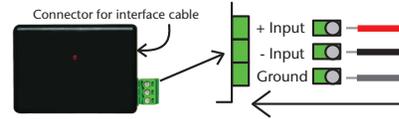
## Wiring the Data Logger

### Volt101A, 2.5V, 15V and 30V 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.

## Product Notes

### LEDs

- 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

### Engineering Units

Native measurement units can be scaled to display measurement units of another type. This is useful when monitoring voltage outputs from different types of sensors such as temperature, CO2, flow rate and more. Please refer to the application note "Engineering Units", found on the MadgeTech website, for information on how to manage Engineering Units. Also view the Engineering Units Video for step-by-step setup instructions.

### Password Protection

An optional password may be programmed into the device to restrict access to configuration options. Data may be read out without the password.

### 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.

### Alarm

User selectable high and low voltage limits.

## 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 the following link: [www.madgetech.com/software-download](http://www.madgetech.com/software-download). Unzip the downloaded file and follow the steps to complete the download

## Device Operation

### Starting the data logger

- Once the software is installed and running, plug the interface cable into the data logger.
- Connect the USB end of the interface cable into an open USB port on the computer.
- The device will appear in the Connected Devices list, highlight the desired data logger.
- 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.)
- The status of the device will change to "Running", "Waiting to Start" or "Waiting to Manual Start", depending upon your start method.
- 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

- Highlight the data logger in the Connected Devices list. Click "Stop" on the menu bar.
- Once the data logger is stopped, with the logger highlighted, click "Download". You will be prompted to name your report.
- Downloading will offload and save all the recorded data to the PC.

## Device Maintenance

### Battery Replacement

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

- 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.

### Recalibration

The Volt101A and Volt101A-160 standard calibration depends on the range.

Voltage	160 mV	2.5 V	15 V	30 V
Range	0 V and 90-160 mV	0 V and 2.25-2.5 V	0 V and 13.5-15 V	0 V and 27-30 V

### Additional Services:

Custom calibration and verification point options available, please call for pricing.

*Call for custom calibration options to accommodate specific application needs.*

*Prices and specifications subject to change. See MadgeTech's terms and conditions at [www.madgetech.com](http://www.madgetech.com)*

*To send devices to MadgeTech for calibration, service or repair, please use the MadgeTech RMA Process by visiting [www.madgetech.com](http://www.madgetech.com), then under the services tab, select RMA Process.*