

# BRIDGE101A

Bridge/Strain Gauge Data Logger



## PRODUCT USER GUIDE

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## Product Overview

The Bridge101A Data Logger measures and records voltage, typically used in conjunction with strain gauges, load cells or other low-level DC voltage sources. This device is designed to accurately measure and record the output of the gauge to determine parameter levels such as stress, torque, strain, and pressure on a structure or item over a period of time.

Available in three different measurement ranges ( $\pm 32$  mV,  $\pm 160$  mV or  $\pm 1200$  mV), the Bridge101A offers a reading rate of up to 4 Hz with memory capacity of over 2,000,000 readings (memory wrap optional). The device can be configured to start at a specified date and time up to 24 months in advance and the push-button start/stop feature allows the user to initiate or cease logging data in the field if desired.

*\*MadgeTech recommends using 350 or 1000  $\Omega$  strain gages. 120  $\Omega$  strain gauges can be used with the Bridge101A but it is not recommended as it will reduce the battery life, potentially increase noise level and limit the low end temperature operation.*

## 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.

## 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**.
4. Downloading will offload and save all the recorded data to the PC.

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## Device Operation (cont'd)

### 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.

### 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



**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.

### 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**. Or, right-click the device and select **Properties** in the context menu.
3. Select **Trigger** in the Properties window.
4. Trigger formats are available in **Window** or **Two Point Mode**. Window mode allows a high and/or low trigger set point, and a trigger sample count or “window” of time recorded when set points are exceeded to be defined. Two point allows for different Start and Stop setpoints to be defined for both the high and low triggers.

Refer to the **Trigger Settings - MadgeTech 4 Data Logger Software** video on [madgetech.com](http://madgetech.com) for instructions on how to configure Trigger Settings.

## 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).

# NEED HELP?

