

# USB-5100 Series

## Getting Started

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# Table of Contents

Introduction .....	3
System Requirements .....	3
USB-5100 Series Software Overview .....	4
Installing USB-5100 Series Software .....	4
Installing a USB-5100 Series Data Logger .....	4
Working with USB-5100 Series Data Loggers.....	5
Launching the Logger .....	5
Checking Logger Status.....	7
Testing the Logger and Sensors .....	7
Reading out the Logger.....	8
Plotting and Analyzing Data .....	8
Technical support .....	9

## Introduction

This guide is intended to help you become familiar with the basic functionality of using USB-5100 Series software with USB-5100 Series data loggers, including:

- Installing USB-5100 Series software on Windows® and Macintosh®
- Connecting USB-5100 Series data loggers
- Working with the loggers, including launching, reading out, and analyzing data

This guide applies to both Windows and Macintosh installations; differences in functionality are noted.

For detailed information on all software features, select **Help»USB-5100 Series Help** to open the *USB-5100 Series Software Help*. This document is also available at [www.mccdaq.com/PDFs/Manuals/USB-5100\\_Series\\_Help.pdf](http://www.mccdaq.com/PDFs/Manuals/USB-5100_Series_Help.pdf).

### Note

Windows screen captures in this document are English versions. If you have a version of the software in another language, refer to the software for screen renderings.

## System Requirements

- PC: Windows 10 (Home, Pro), Windows 8 and 8.1 (Core, Pro), Windows 7 (Pro, Ultimate and Home Premium)
- Mac: OS X Versions 10.9.x, 10.10.x and 10.11.x.
- Java Runtime Environment (Please note that version 1.6, also known as Java 6, is no longer supported) 1.7.0\_17 and above (32-bit or 64-bit on Windows)\*.
- Adobe Reader is required to view the USB-5100 Series *Data Logger Software Help* PDF
- Screen resolution 1024x768, minimum, 1280x800 or greater recommended
- 256+ colors
- Processor Speed, Memory and Disk Space

	High End	Mid Range	Low End	Lowest End
<b>CPU</b>	2.9 GHz dual core	2.0 GHz dual core	1.8 GHz single core	1.8 GHz single core
<b>RAM</b>	3 GB	2 GB	1.5 GB	1 GB
<b>Disk Space</b>	256 MB+ (see note)	256 MB+ (see note)	256 MB+ (see note)	300 MB
<b>User Model</b>	4	3	2	1

The User Model row suggests some guidelines for using the Processor Speed and Memory table:

- User Model 1 – Using USB-5100 Series data loggers only – traditional desktop user
- User Model 2 – Using USB-5100 Series data loggers and up to 20 sensors
- User Model 3 – Using USB-5100 Series data loggers and up to 100 sensors
- User Model 4 – Using USB-5100 Series data loggers and up to 200 sensors

Disk Space – Defining the disk space requirements for USB-5100 Series software depends on the proposed use. The table above describes the disk space needed for a traditional desktop user, allowing for installation of the program and storage of data files.

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\* JRE version 1.6 – also known as Java 6 – is no longer supported


## USB-5100 Series Software Overview

USB-5100 Series software combines fast, easy logger launch and readout functions with powerful data plotting capabilities for analyzing environmental conditions recorded with USB-5100 Series loggers. With USB-5100 Series software, you can view data, create graphs, perform analysis, and save projects for future use.

### Installing USB-5100 Series Software

#### Installing on Windows

You must be an administrator to install USB-5100 Series software.

1. Download the USB-5100 Series software for Windows from [www.mccdaq.com/software.aspx](http://www.mccdaq.com/software.aspx).  
The Java™ Runtime Environment is required. If the correct Java Runtime Environment version is not already installed on your computer, the setup program will ask if you want to install it. Click **Yes** and follow the prompts. After the Java Runtime Environment is installed, the software installation will continue.
2. Run the **USB-5100 Series\_Setup.exe** installer file and follow the onscreen instructions.
3. Launch the software by double-clicking the USB-5100 Series icon .

The software is installed by default to `\Measurement Computing\USB-5100 Series`.

#### Installing on Macintosh

1. Oracle Java is available from [www.java.com](http://www.java.com). Download a disk image for the Java Runtime Environment (JRE) for Java 7 or higher and install it before installing the USB-5100 Series software.
2. Download the USB-5100 Series software for Mac OS X from [www.mccdaq.com/software.aspx](http://www.mccdaq.com/software.aspx).
3. Launch the **USB-5100 Series.pkg** package file, and follow the onscreen instructions.
4. Click **Restart** when you reach the final screen of the installation program. The software does not recognize your logger until you restart.
5. After restarting, launch the software by double-clicking on the USB-5100 Series icon in the computer **Applications** folder.

### Installing a USB-5100 Series Data Logger

Perform the following steps to connect a USB-5100 Series data logger:

1. Launch the USB-5100 Series software.
2. Plug the large end of the mini-USB cable into a USB port on the computer.
3. Plug the small end of the mini-USB cable into the port on the data logger. Refer to the logger hardware user guide if you need help finding the port.

**Windows:** When connecting a device for the first time, it may take several seconds to detect the new device and report that it has connected successfully. A message may display indicating that you need to reboot before you can use the device – this is optional; you do not need to reboot at this time.

The device name appears in the status bar once it is recognized by the software. The status bar also lists the total number of devices connected. At this point, you can access the device using the software.


To disconnect the device, unplug it from the USB cable.

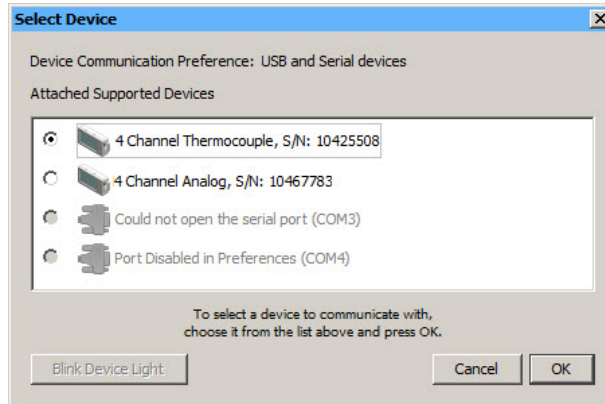
## Working with USB-5100 Series Data Loggers

This section covers the basics of working with USB-5100 Series data loggers, including launching, checking the status, reading out data, and plotting data. MCC recommends that you perform a trial launch and readout as described in this section to familiarize yourself with the procedures before you deploy your logger.

### Launching the Logger

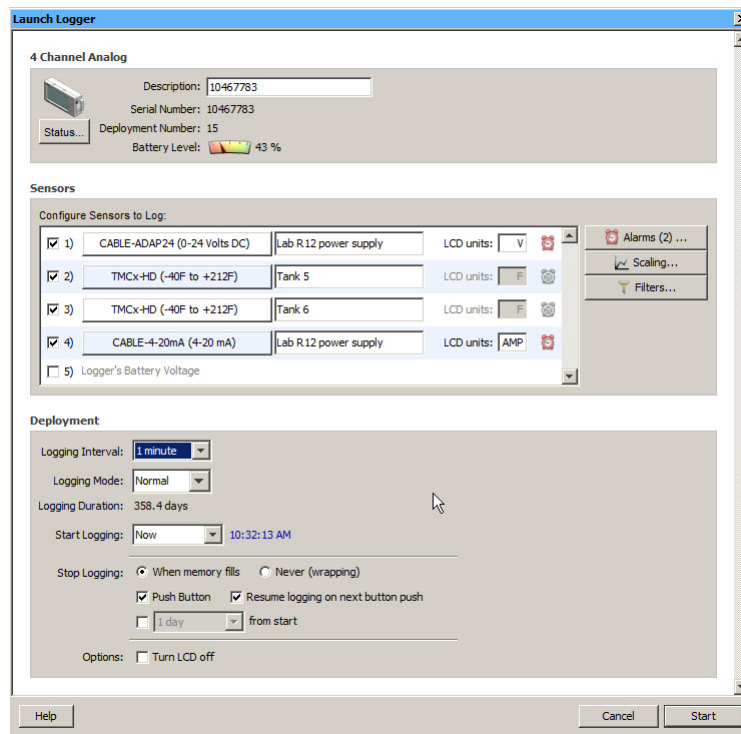
To launch the logger, complete the following steps:

1. Click the **Launch device** toolbar icon.  If more than one USB-5100 Series device is connected to the computer, the **Select Device** dialog box opens:



2. Select the device you want to launch and click **OK**.

The **Launch Logger** dialog box opens:



This dialog box is divided into three panes:

- **Logger Information:** The name of the logger currently selected appears at the top of this pane, which also includes the serial number, deployment number, and current battery level.

Use the **Description** field to enter up to a 40-character name for the logger deployment. This value is used as the default file name when you read out the logger and save the data, and is the default title on the plot. The description is set to the serial number by default.

Click the **Status** button to see the current status of the logger and the settings used on the previous launch.

- **Sensors:** This pane displays the type of sensor connected to each input channel.

Select the checkbox for each thermocouple sensor to log in this deployment, and enter an optional description if desired.

If you are logging analog data, you can enter a custom three-character unit that displays on the LCD.

- Click the **Alarms** button to set an alarm to trip when a sensor reading rises above or falls below a specified value.
- Click the **Filters** button to create a filtered series for any of the channels you configured. The filtered series is automatically calculated when data is read out and plotted.
- Click the **Scaling** button (if available) to open the **Data Assistant** dialog box. You can run the Linear Data Assistant to convert a data series from a compatible sensor to some other measurement by entering two raw values and their corresponding measurement values. The conversion must be based on a linear relationship. Nonlinear scaling is not available.


- **Deployment:** Use this pane to set the logging interval, the logging mode (Normal, Burst, or Statistics), and the start/stop logging options. Select the **Turn LCD off** checkbox to turn off the logger LCD.

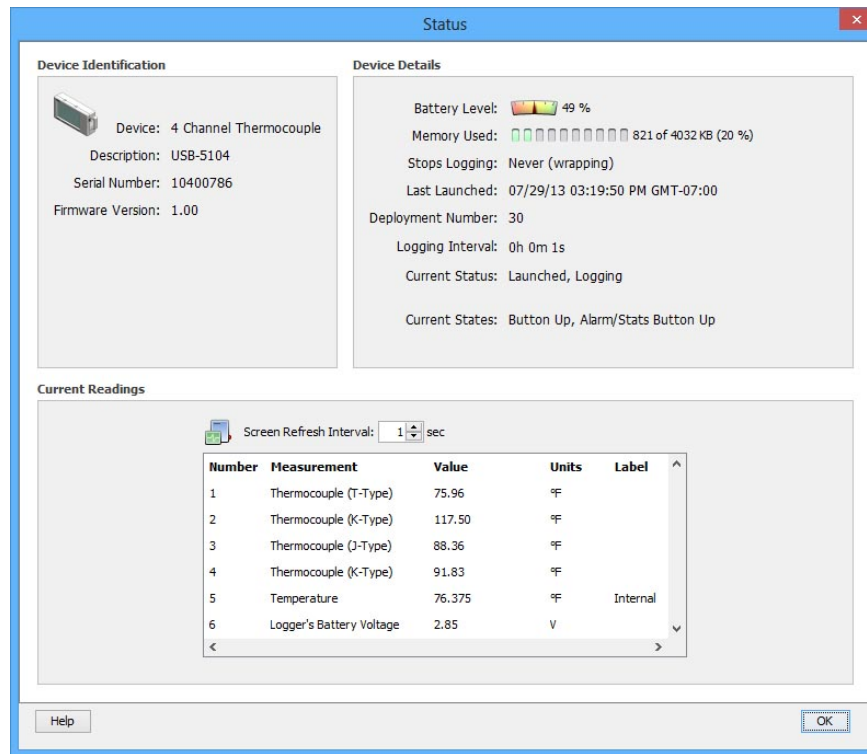
This pane also displays the logging duration, which is the approximate time it takes to fill the logger memory based on the logging interval, sensors, and other settings currently selected.

To configure a test launch, select *Now* from the **Start Logging** list, select a fast logging interval (such as *30 seconds*), change any other settings as desired, and then click **Start**. The software displays the progress of the launch and warns you not to unplug the logger while it is being configured.

Normally, when the launch is finished, you unplug and deploy the logger. For this test, leave the logger plugged in so you can become familiar with checking the status, reading it out, and plotting data.

## Checking Logger Status

To check the logger status, click the **Device Status** toolbar icon.  The **Status** dialog box opens:



- **Device Identification:** This pane displays the device type, the description entered at launch time, the serial number, and the firmware version for the logger currently connected.
- **Device Details:** This pane displays specifics about the device, including battery level, memory used, when it is scheduled to stop logging (if applicable), date of the last launch, the deployment number, logging interval, current status and current state (if applicable).
- **Current Readings:** This pane shows the latest readings for configured sensors and derived series.  
**Important:** If you frequently check the status during a deployment, battery power is drained more rapidly. You can significantly reduce the demand on the battery by adjusting the **Screen Refresh Interval** to five seconds or higher.

## Testing the Logger and Sensors

Perform the following steps to verify that the logger and sensors are working and recording data properly. When you plot the data, you should see the results of these tests in the graph.


1. Force a change in the physical condition you are measuring. For example, if you are measuring temperature, hold the sensor in your hands for a minute or two.
2. Observe that the **Current Readings** in the **Status** dialog box update as the temperature changes.

## Reading out the Logger

To retrieve data recorded by a logger, read out the logger. When reading out, data is copied from the logger to a computer. You can save the data to a file and view the plot.

During readout, the logger continues to record data unless the logger is stopped or the memory is full.

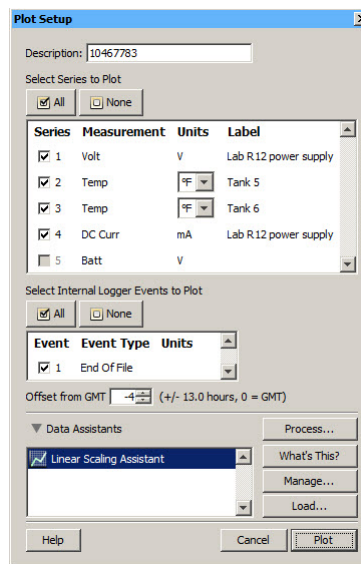
Complete the following steps to read out the logger:

1. Click the **Readout device** toolbar icon. 
2. Select the logger to readout from the **Select Device** dialog box.  
A warning message appears indicating the logger is currently logging.
3. Click **Don't Stop** to continue logging, or **Stop** to end logging before reading out.
4. After reading out the logger, you are prompted to save the data to file. Type a name, select a location for the file, and click **Save**.

The **Plot Setup** dialog box opens, which is described in the next section.

## Plotting and Analyzing Data

After you read out a logger and save the data to file, or any time you open an existing file, the **Plot Setup** dialog box opens. Even if you only intend to export the data to another format, you must plot the data first.

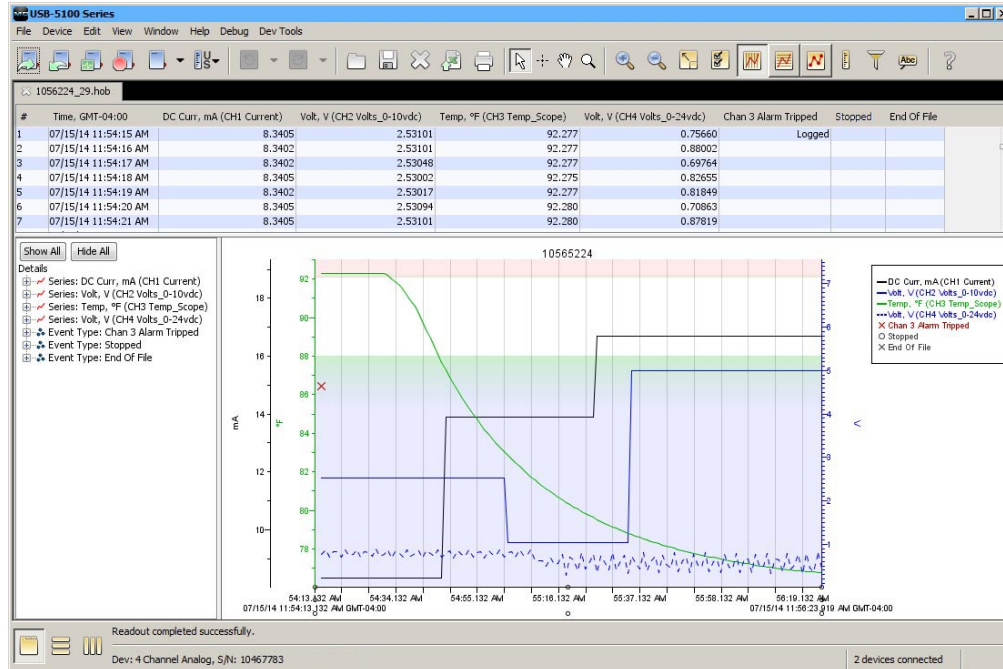


The **Plot Setup** dialog box contains the following information:

- **Description:** This field shows the description you entered at launch time. Keep this description or enter a new one. The description is used for the title of the plot.
- **Select Series to Plot:** Select the checkbox for each series that you want to plot on the graph. Use the **All** and **None** buttons to select or deselect all series at one time.
- **Select Internal Logger Events to Plot:** Select the checkbox for each event that you want to plot on the graph, if applicable. Use the **All** and **None** buttons to select or deselect all events at one time.
- **Offset from GMT:** This field shows the offset from Greenwich Mean Time (GMT), also known as UTC, used at launch. Keep the offset shown or change it to a different value.
- **Data Assistants** (if available). You can create new data series by converting logged data to other useful formats with Data Assistants. Only the Data Assistants supported by that logger type are available in this dialog box. Select **Help»USB-5100 Series Help** for more information about using Data Assistants.
- **Plot Button:** Click **Plot** to display the selected sensor data on a graph.

After you click the **Plot** button in the Plot Setup dialog box, the data appears in a graph along with other information described below.





- **Points Table:** The table above the plot. This table lists all logged data points, including any internal events if they were selected in the Plot Setup dialog box.
- **Details Pane:** The pane on the left shows detailed information about the series and events currently displayed, including device information, deployment information, and series statistics.
- **Graph:** The plot displays the series and (if applicable) events selected in the **Plot Setup** dialog box. If you ran the test described in *Testing the Logger and Sensors* on page 7, you should see the variances in sensor readings and changes in internal state on the plot.
- **Legend:** The legend shows to the right of the plot and displays the key for each sensor, state, and event series as well as any internal events.

Click the toolbar icons to experiment with the export, print, viewing, and customization tools. Hover the mouse cursor over each icon to show a description.

### IMPORTANT

Make sure you change any test launch settings to your preferred launch settings before deploying the logger.

Select **Help»USB-5100 Series Help** to open the *USB-5100 Series Software Help* document that is installed with the software for more information about the features in this guide and for additional details about the software. This document is also available at [www.mccdaq.com/PDFs/Manuals/USB-5100 Series Help.pdf](http://www.mccdaq.com/PDFs/Manuals/USB-5100 Series Help.pdf).

## Technical support

Additional information about USB-5100 Series software is available on our website at [www.mccdaq.com](http://www.mccdaq.com). You can also contact Measurement Computing Corporation by phone, fax, or email with specific questions.

- Knowledgebase: [kb.mccdaq.com](http://kb.mccdaq.com)
- Phone: 508-946-5100 and follow the instructions for reaching Tech Support
- Fax: 508-946-9500 to the attention of Tech Support
- Email: [techsupport@mccdaq.com](mailto:techsupport@mccdaq.com)

Customers outside of the U.S. should contact their local Measurement Computing distributor for support. Refer to [www.mccdaq.com/sales.asp](http://www.mccdaq.com/sales.asp) to locate the distributor near you.

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