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# Introduction

Please read the End User License Agreement (EULA).

LoggerNet Mobile Connect is a simple, yet powerful, tool that allows communication with any station in your LoggerNet network. It gives you access to the LoggerNet server anywhere your mobile device has a data connection. The app lets you perform field maintenance tasks such as viewing and collecting data, changing the value of variables, checking important status information about LoggerNet and the health of your stations, setting datalogger clocks, and sending datalogger programs.

# Requirements

LoggerNet Mobile Connect for Android runs on Android 4.1 or greater.

To use *LoggerNet Mobile Connect*, a licensed copy of *LoggerNet* version 4.4 or later or *LoggerNet Admin* version 4.0 or later needs to be running on a PC that is accessible via TCP/IP.

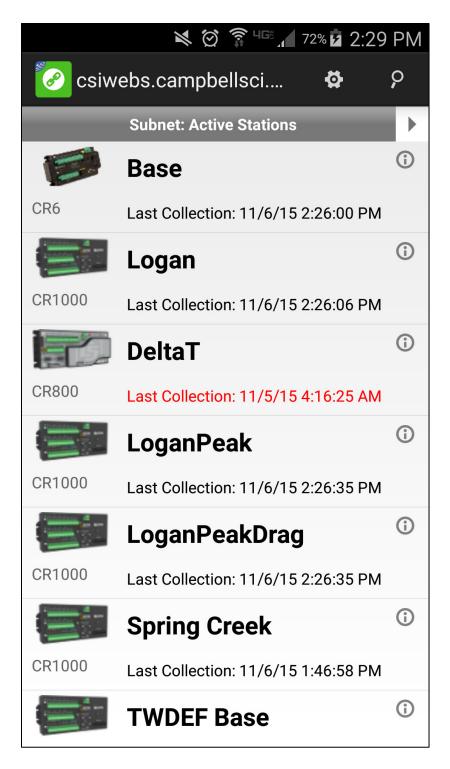
# **Getting Started**

When *LoggerNet Mobile Connect* is launched, you begin by tapping the button in the upper right corner of the screen.

Your Android device must be connected to a network through which you can reach your LoggerNet server, *LoggerNet* must be

running, and your LoggerNet server must have remote connections enabled.

On the **Log into Server** screen, type in the IP Address (or domain name) of the computer running *LoggerNet*. Enter the port used by *LoggerNet* for TCP/IP communications (default value is 6789). If LoggerNet security is enabled, enter the **Username** and **Password** to be used to log in to the LoggerNet server. After filling in the values, press **OK**. *LoggerNet Mobile Connect* will connect to your LoggerNet server, and the dataloggers in your network map will be displayed. If you have subnets set up in *LoggerNet Admin*, *All Stations* or the name of the current subnet will be shown at the top of datalogger list. You can tap the arrow to the right to select a different subnet or all stations.



The time of last collection from each datalogger will be displayed. The color of text used for the time of collection indicates the collection state. The text will be black when

collection state is normal. If the schedule is turned off, the text will be blue. All other states will be reflected by red. Tapping the "i" button next to a datalogger displays additional information about the collection state and provides a **Collect**Now button to trigger data collection. Collected data will be stored to the location specified in the LoggerNet server's **Setup** screen.

Note: Stations set up in the RWIS Administrator are not supported in *LoggerNet Mobile Connect* and will not show up in the list of stations.

## Connecting

To connect to a datalogger, simply tap on it in the list of dataloggers.

## Connected

After you have connected with your datalogger, a set of tabs will appear at the bottom of the screen. Tapping on these tabs will allow you to perform different operations on your datalogger such as viewing data in a tabular or graphical format, monitoring status, and collecting data.

If you leave *LoggerNet Mobile Connect* or your device goes to sleep while connected to a datalogger, you will be automatically disconnected from the datalogger 10 minutes after any background processes (such as data collection) complete. Note that if you have *Prevent Sleep* enabled (see the *LoggerNet* 

Mobile Connect Settings section) your device will not automatically go to sleep while you are connected to a datalogger. You must put the device to sleep manually or disconnect from the datalogger.

## **Disconnecting**

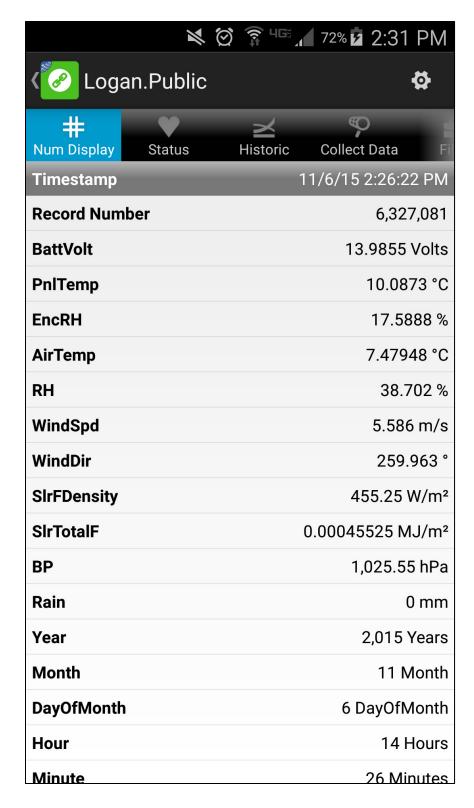
When you are finished interacting with your datalogger, tap your devices's **Menu** button and select Disconnect (or simply tap your device's **Back** button) to disconnect and return to the list of dataloggers.

# Connecting

To connect to a datalogger, simply tap on the datalogger in your LoggerNet network map. When connecting to a datalogger, a clock check is sent to see if communications can be established.

# **Numeric Display**

The **Numeric Display** page displays the current data record for the selected table.



Tap the icon in the upper right corner to select and configure a different table.



Values are formatted based on type and, by default, include the units defined in the datalogger program.

Touch and hold a settable value to open a page that allows you to change the value.

## **Numeric Display Setup**

#### **Selected Table**

Select the table that will be displayed.

## **Select Fields**

Select the fields that will be displayed.

## **Polling Interval**

Select the interval at which the data will be updated. The *LoggerNet Mobile Connect* App will never poll faster than 1 time per second.

#### **Show Units**

Use the check box to specify whether or not units are displayed.

## **Field Options**

Each field may be edited. Tap the button to the right of the field name. This will display customization options for that particular field. These options include:

#### **Title**

The name that will be displayed for the field.

#### Units

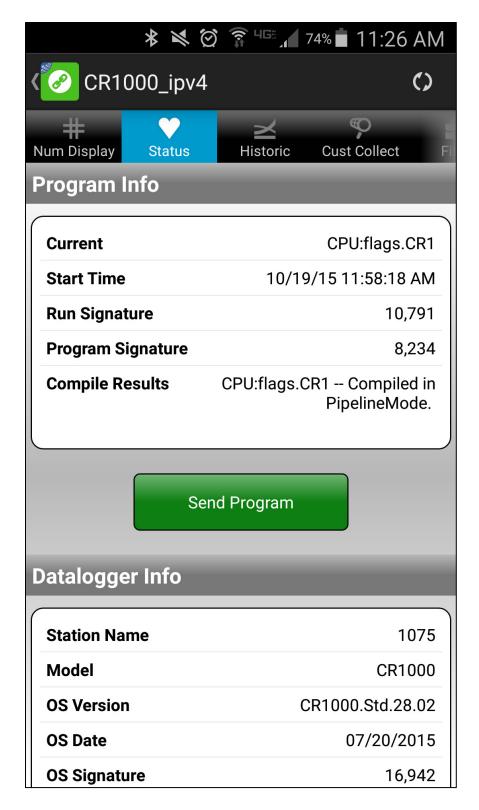
The measurement units that will be displayed for the field.

#### **Precision**

The number of digits of precision used. (Only displayed if the field value is floating point type.)

# **Status**

The **Status** page shows important information about your datalogger, the current program, the errors, the card status, the battery, and the clock. It also allows you to send a program to your datalogger.



Note: Not all status fields listed below apply to array-based dataloggers (i.e., CR10X, CR510, CR23X, etc.).

## **Program Info**

#### **Current**

The program currently running in the datalogger.

#### **Start Time**

The date the currently running program was started.

## Run Signature

Signature of the compiled binary data structure for the current program. This value is independent of comments added or non-functional changes to the program. Often changes with operating system changes.

## **Program Signature**

Signature of the currently running program file including comments. Does not change with operating system changes.

## **Compile Results**

The results reported by the datalogger when it compiled the currently running program.

## **Send Program**

Click to send a new program file to the datalogger. The program file must be accessible to the *LoggerNet Mobile Connect* App. (Programs to be sent to your datalogger must be stored on your device in the Campbellsci/LNMobile folder or a subfolder of that folder. With your device connected to a computer as a disk drive, you can navigate to this folder to copy files to your device from the computer.) When **Send Program** is clicked, a browser window is displayed allowing you to browse to the desired program file. When a file is selected, it will be sent, compiled, and

assigned the **Run Options** of *Run Now* and *Run on Power-up*.

## **Datalogger Info**

#### **Station Name**

A name assigned to this datalogger. Note that this is the station name internal to the datalogger. It is not the name given to the datalogger in *LoggerNet*.

#### Model

The type of datalogger.

## **OS** Version

Specifies the version of the operating system currently in the datalogger.

#### **OS Date**

The date of the current operating system.

## **OS Signature**

The signature of the current operating system.

## **Panel Temperature**

Current panel temperature measurement. This measurement is made in the background calibration.

## **Memory Free**

The amount of unallocated memory on the CPU (SRAM). All free memory may not be available for data tables. As memory is allocated and freed, holes of unallocated memory, which are unusable for final storage, may be created.



## Memory

The total amount of SRAM in the datalogger.

#### **Serial Number**

Specifies the datalogger serial number assigned by the factory when the datalogger was calibrated.

#### **Errors**

## **Watchdog Errors**

The number of internal watchdog errors that have occurred while running the current program.

## **Skipped Records**

The number of records that have been skipped for a given table. Skipped records are normally caused by skipped scans.

## **Low 12V Count**

The number of occurrences of the 12VLow signal being asserted. When this condition is detected, the datalogger ceases measurements and goes into a low power mode until proper system voltage is restored.

#### Low 5V Count

The number of occurrences of the 5VExtLow signal being asserted.

## **Skipped Scans**

The number of skipped scans that have occurred while running the current program. Does not include scans intentionally skipped as may occur with the use of *ExitScan* and *Do...Loop* instructions.

## **Skipped System Scans**

The number of scans skipped in the background calibration.

## **Skipped Slow Scans**

The number of scans skipped in a SlowSequence.

#### Variable Out of Bounds

The number of times an array was accessed out of bounds.

## **Battery Info**

## **Battery Voltage**

The current value of the battery voltage. This measurement is made in the background calibration.

## **Lithium Battery**

The current voltage of the lithium battery. This measurement is updated in background calibration.

#### **Card Info**

#### **Card Status**

Reports the status of the CF card.

## **Bytes Free**

The amount of space still available on the CF card.

#### **Clock Info**

## **System**

The local time of your device the last time the datalogger clock was checked.

## Logger

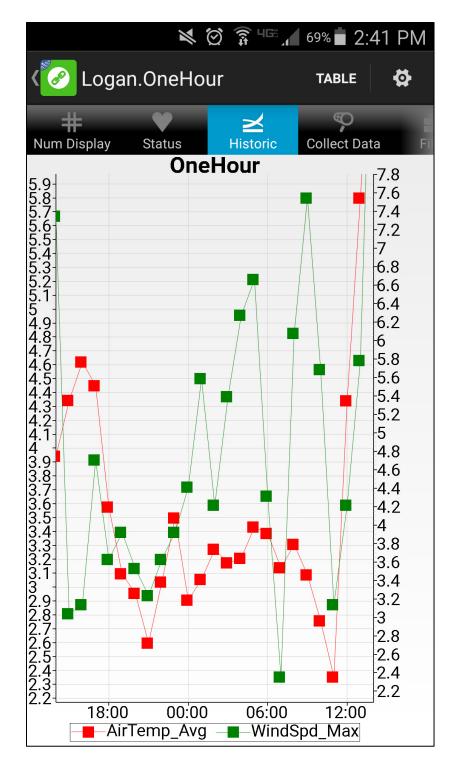
The time reported by the datalogger the last time its clock was checked.

## **Set Clock**

Click to set the datalogger clock. You can choose to either manually set the datalogger clock or to set the datalogger clock to your device's clock. An attempt will be made to set the clock as closely as possible to the desired time, but there may be some difference due to delay in the communication link. This option should be used with caution, since it could result in missing or duplicate timestamps when the datalogger clock is changed.

# **Historic**

The **Historic** page displays data from a single datalogger table in graph or tabular form.



The data displayed on the **Historic** page comes directly from the datalogger and is "cloned" on the PC running *LoggerNet*. It does

not affect the data displays or data collection occurring in *LoggerNet*.

From the main **Historic** screen, tap **Graph** or **Table** at the top to choose how to display your data.

Tap the icon in the upper right corner to go to **Historic Setup**. This allows you to select the table and fields to be displayed. An option for showing the legend is also available. You can tap *Data Range* to change the data range that will be displayed. (The default data range is one hour.) You can tap *Polling Interval* to specify how often the datalogger is polled for new data. (The default *Polling Interval* for a data table is the table interval, or one second if the table interval is less than one second. The default *Polling Interval* for the **Public**, **Status**, and **DataTableInfo** tables is one second. The minimum *Polling Interval* for any table is one second.) Once fields have been selected, you can tap on the name of a field to set the display options for that field as described below. After completing the setup, tap **Save** to display your selected data.

On a graph, tap a point on the graph to display the data value and timestamp at that point. You can zoom in on a part of the graph by touching the screen with two fingers and then sliding your fingers apart. You can zoom out by pinching your fingers together. You can pan the graph by using one finger to drag the graph to the desired location. A zoomed or panned graph can be restored by selecting the **Restore** icon at the top.

On the table, the current data will be displayed in tabular format. You may sort the data by time simply by tapping the *Time* column heading.

## **Historic Setup**

#### Select Table/Fields

Select the table and fields that will be displayed in the graph and table.

## **Show Legend**

Determines whether a legend is shown on the graph.

## **Data Range**

The range of data to be displayed in the graph and table.

## **Polling Interval**

The interval at which the datalogger is polled for new data.

## **Field Options**

#### **Field Title**

The title used in the graph legend and the table column heading.

## **Graph Axis**

Each series can be displayed using the left or right axis of the graph.

## **Graph Line Width**

The width of the line used for the graph series.

## **Graph Line Color**

The color of the line used for the graph series.



## **Graph Line Style**

The style of the line used for the graph series.

## **Graph Symbol Size**

The size of the symbol used for the graph series.

## **Graph Symbol Color**

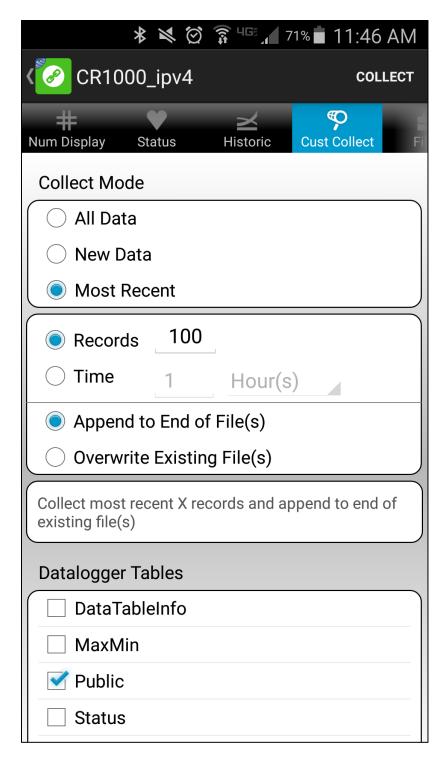
The color of the symbol used for the graph series.

## **Graph Symbol Style**

The style of the symbol used for the graph series.

# **Custom Collect**

The **Custom Collect** page is used to download data from your datalogger and store it in data files on your device. These data files can then be viewed, emailed from your device, or opened in another application.



Collected data files are stored on your device in the Campbellsci/LNMobile/server\_IP\_address/datalogger\_name directory where server\_IP\_address is the IP address (or domain

name) of the LoggerNet server and *datalogger\_name* is the name of the datalogger in the LoggerNet network map. With your device connected to a computer as a disk drive, you can navigate to this directory to copy your data files to the computer.

Note: **Custom Collect** is not supported for array-based dataloggers (i.e., CR10X, CR510, CR23X, etc.).

#### **Collect Mode**

The **Collect Mode** allows you to control how data is collected to your device.

- All Data: Collect all data and overwrite existing data files on your device.
- New Data: Collect data logged since your last data collection and append new data to existing data files.
- Most Recent:
  - Records: Allows you to specify how many of the most recent records you would like to collect.
  - o Time: Allows you to specify a time interval from the current time from which to collect records.
  - Append to End of File(s)/Overwrite Existing File(s):
    Gives you the option to append to existing data files or overwrite existing data files.

## **Datalogger Tables**

A list of all the datalogger tables that can be selected for data collection. Select the table(s) you wish to collect and tap the

Collect button. You can view collected data files by tapping the Eye icon next to the table name. While viewing a data file, tap the Information icon at the top to get information about the datalogger that generated the data, the datalogger program, and the data fields. Tap the Historic icon at the top to graph your data. You will be asked to select the fields and data range to graph. Tap the Share icon at the top to share the file through email or a file-sharing application such as DropBox. Tap your device's Menu button and then select Delete File to delete the data file.

# **Files**

The **Files** page is used to view the drives on your datalogger as well as pause/resume the currently running program. You can also view and edit files on your datalogger, send files to your datalogger, get files from your datalogger, or set the run options for a program file on your datalogger.

Note: The **Files** page is not supported for array-based dataloggers (i.e., CR10X, CR510, CR23X, etc.).

## **Current Program**

#### Resume

The **Resume** button restarts the paused program while preserving data files.

#### **Pause**

The **Pause** button pauses the currently running program and preserves data files.

#### **Drives**

The drives on the datalogger. Selecting one of the drives displays a list of all the files on the drive.

#### File List

You can refresh the list of all drives and files from the datalogger by tapping the icon in the upper right corner.

Other functions are available by tapping your device's **Menu** button. (If your device does not have a **Menu** button, the functions can be accessed by using the **Menu** button in the upper right corner.) If no files are selected, you have the option to format the drive or send files to the datalogger from your device. If you have selected files, you can delete the selected files from the datalogger or get the selected files from the datalogger and save them to your device. If only a single file is selected, you also have the option to view the selected file. If only a single program file is selected, you also have the options.

#### **Format Drive**

Formatting an individual drive on the datalogger will permanently delete all the files on that drive.

## Send File(s)

Files can be sent from your device to the datalogger. The file(s) must be accessible to the *LoggerNet Mobile Connect* App. (Files to be sent to your datalogger must be stored on your device in the Campbellsci/LNMobile folder or a subfolder of that folder. With your device connected to a computer as a disk drive, you can navigate to this folder to copy files to your device from the computer.) When **Send Files** is selected, a browser window is displayed allowing you to browse to the desired file(s).

## **Delete File(s)**

After selecting files from the datalogger file list, you can delete the files from the datalogger.

## Get File(s)

After selecting files from the datalogger file list, you can get the files from the datalogger and store them on your device. Retrieved files are stored on your device in the Campbellsci/LNMobile/server\_IP\_address/datalogger\_name directory where server\_IP\_address is the IP address (or domain name) of the LoggerNet server and datalogger\_name is the name of the datalogger in the LoggerNet network map. With your device connected to a computer as a disk drive, you can navigate to this directory to copy data files to the computer.

#### View File

After selecting a file from the datalogger file list, you can view the file. While viewing a file, you can make edits. You can then tap the **Disk** icon on the upper right to save the file to your device or to the datalogger. This allows you to edit a program on your datalogger. Note that if you edit the running program and save it to your datalogger, it will cause the program to be recompiled. While viewing a file, you can also tap the **Share** icon on the upper right to share the file. This will show a list of installed applications that are registered to handle the current file type. This can be used to email the file, or, if you have a file-sharing application, such as Dropbox, this option can be used to get the file to your computer.

## **Run Options**

When *Run Now* is selected, the program will be compiled and run in the datalogger. You may also choose to preserve existing data tables on the datalogger, if there are no changes to the table structure of the new program. *Run On Power-up* will set this program file to run when the datalogger loses power and then powers back up.

# **Disconnect**

When you are finished interacting with your datalogger, tap your devices's **Menu** button and select **Disconnect** (or simply tap your device's **Back** button) to disconnect. Disconnecting from a

datalogger will end the communication session and will return you to the LoggerNet network map.

# **Offline Files**

Pressing the **Menu** button and selecting *Manage Files* (i.e., when you are not connected to a datalogger) will display the files on your device that are associated with *LoggerNet Mobile Connect*. Tapping a server and then the device sub-folder will display the files downloaded from that device.

Clicking the **Eye** icon next to a file allows you to view that file. While viewing a program file, you can edit the file and then tap the **Disk** icon in the upper right corner to save the file to your device. While viewing a data file, tap the **Historic** icon at the top to graph your data or the **Share** icon at the top to share the file through email or a file-sharing application such as DropBox.

Pressing your device's **Menu** button with file(s) selected in a list of files allows you to delete the file(s) or share the file(s) through email or a file-sharing application such as DropBox. If only one file is selected, you also have the option to rename the file or view the file

# LoggerNet Mobile Connect Settings

The following settings for the *LoggerNet Mobile Connect* App can be viewed and/or set by tapping your device's **Menu** button from the main **LoggerNet Mobile Connect** screen (i.e., when you are not connected to a datalogger) and selecting **Settings**.

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## **Settings: Prevent Sleep**

The *Prevent Sleep* setting will prevent your device from going to sleep when connected to a datalogger.

# **About LoggerNet Mobile Connect: Version**

The version of LoggerNet Mobile Connect.

## **About LoggerNet Mobile Connect: Legal**

The copyright for LoggerNet Mobile Connect.

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