Solinst®

Bluetooth®

Levelogger 5 App Interface User Guide

October 21, 2020

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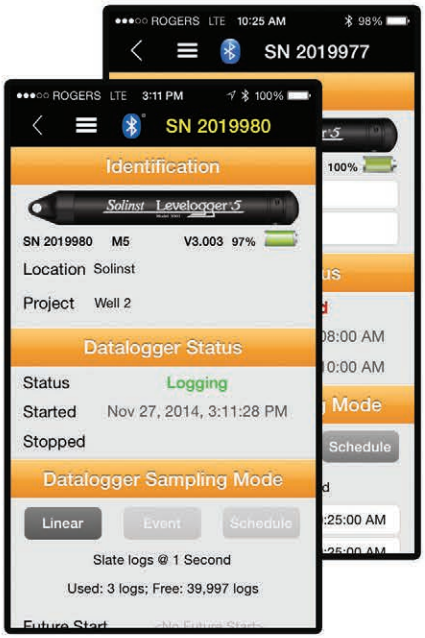


High Quality Groundwater and Surface Water Monitoring Instrumentation

1.0 Introduction

The purpose of this User Guide is to describe the operation of the Levelogger® 5 App Interface, as well as the functionality of the Solinst Levelogger App.

The Levelogger 5 App Interface uses *Bluetooth*® wireless technology to connect a Solinst datalogger to your smart device. Once connected, you can use the Solinst Levelogger App on your device to communicate with the datalogger. The Solinst Levelogger App allows you to view and save real time data from the connected datalogger, as well as download, view, transfer and e-mail logged readings. You can program the datalogger or apply a saved Setting. The Levelogger App also provides the ability to obtain diagnostic information from a connected datalogger, as well as perform a conductivity calibration for a Levelogger LTC.

1.1 Compatibility

The Levelogger 5 App Interface is compatible with the Levelogger 5, Barologger 5, Levelogger 5 Junior, Levelogger 5 LTC, Rainlogger 5, LevelVent 5 and AquaVent 5, as well as Levelogger Edge Series dataloggers, LevelVent and AquaVent using the following firmware versions (or higher):

Datalogger	Firmware Version
Levelogger 5	1.001
Barologger 5	1.001
Levelogger 5 Junior	1.001
Levelogger 5 LTC	1.001
Rainlogger 5	1.001
LevelVent 5	1.001
AquaVent 5	1.001/1.000
Levelogger Edge	3.004
Barologger Edge	3.004
Levelogger Junior Edge	3.004
LTC Levelogger Edge	1.003
Rainlogger Edge	3.001
LevelVent	1.000
AquaVent	1.000/1.000

Table 1-1 Compatible Datalogger Firmware Versions

Note: If you connect a Levelogger that has an older version of firmware to the Solinst Levelogger App, a warning message will appear in the App (see Section 4.5.1).

Note: The AquaVent 5 Loggers and Wellheads have separate firmware versions, 1.001/1.000 (or higher) respectively.

1.1.1 Apple® Devices

The Solinst Levelogger App can be downloaded from the Apple App Store℠ to an Apple smart device that is running iOS 11.2, or later.

Made for:

- iPhone
- iPad

1.1.2 Android™ Devices

The Solinst Levelogger App is available for download on Google Play™. The Solinst Levelogger App and Interface are compatible with tablets and smartphones running Android Version 9.0 or higher.

Tested on the following devices:

- Samsung S9 - Model SM-G960W
- Google Pixel 3 - Model G013A

2.0 Levelogger 5 App Interface

Figure 2-1 Levelogger 5 App Interface

2.1 Specifications

Levelogger 5 App Interface Specifications	
IP Rating:	IP 64 (dust and splash resistant)
Materials:	Black Delrin®, 316 stainless steel, Viton®
Operating Temperature:	-20ºC to +50ºC
Batteries:	4 x 1.5V AA replaceable lithium (or alkaline)
Size:	ø 57 mm x 124 mm (ø 2.25" x 4.875")
Weight:	388 grams (13.7 oz.) (with lithium batteries)
Typical Bluetooth Comm. Range:	up to 10 m (30 ft)
Auto-off:	10 minutes of inactivity

Table 2-1 Levelogger 5 App Interface Specifications

2.2 Installing Batteries

The Levelogger 5 App Interface comes with four 1.5V AA replaceable lithium batteries that can be easily changed when required.

Note: Regular alkaline batteries can also be used, but the battery gauge estimates will not be accurate.

To install/replace the batteries:

1. Unscrew the top of the Levelogger 5 App Interface to access the battery holder.
2. Carefully, remove the battery holder from the Levelogger 5 App Interface.
3. Ensure proper polarity when replacing the batteries. Please pay attention to the positive {+} and negative [–] symbols etched in the holder/housing.
4. Ensure proper alignment, and slide the battery holder back into the Levelogger 5 App Interface housing.

Note: The Levelogger 5 App Interface LED will flash yellow to indicate proper battery installation.

5. Screw the top of the Levelogger 5 App Interface back onto the housing.

Figure 2-2 Installing/Replacing Levelogger 5 App Interface Batteries

1.5V Lithium AA Battery Life Estimates	
Datalogger Downloads	500 full downloads @ 21°C
Sleep Time	~10 years @ 21°C

Table 2-2 Levelogger 5 App Interface Battery Life Estimates

2.3 Power Button

To turn the Levelogger 5 App Interface on, press and hold the power button for 1 second. To turn the Levelogger 5 App Interface off, press and hold the power button for 3 seconds.

The Levelogger 5 App Interface has an auto-off after 10 minutes of inactivity to help conserve the batteries.

2.4 LED Status

The Levelogger 5 App Interface has an LED light that indicates its status when it is turned on.

Green light flashing every second: Ready/waiting for a Bluetooth connection to be made from your smart device.

Blue light flashing every 3 seconds: Bluetooth connection has been made.

Note: On an Android device, the light will not flash blue until the Bluetooth connection is made **and** the Solinst Levelogger App is open.

Yellow light: Levelogger 5 App Interface is turning off while the power button is held pressed.

Red light flashing every 10 seconds: Batteries are low. Replace the batteries.

2.5 Deployment

2.5.1 Levelogger Deployment

The Levelogger 5 App Interface connects to the top end of an L5 Direct Read Cable, which has a connected Levelogger at the optical end. To connect the Levelogger 5 App Interface to the Direct Read Cable, simply hold on to the top end of the Direct Read Cable, and thread the coupling of the Levelogger 5 App Interface onto the Direct Read Cable connector. The threaded connection is designed to be stable when installed in a Solinst 2" Well Cap Assembly. For more information on the L5 Direct Read Cable and the 2" Well Cap Assembly, please see the Levelogger User Guide.

Figure 2-3 Connecting the Levelogger 5 App Interface to an L5 Direct Read Cable

Note: L5 Threaded and Slip Fit Adaptors are available for connecting your Levelogger 5 App Interface directly to a datalogger.

2.5.2 LevelVent Deployment

The Levelogger 5 App Interface connects to the top end of a LevelVent 5 Wellhead. To connect the Levelogger 5 App Interface to the Wellhead, simply hold on to the Wellhead and thread the coupling of the Levelogger 5 App Interface onto the Wellhead. The threaded connection is designed to be stable when installed in a Solinst 2" Well Cap Assembly. For more information on the LevelVent Wellhead and 2" Well Cap Assembly, please see the Vented Dataloggers User Guide.

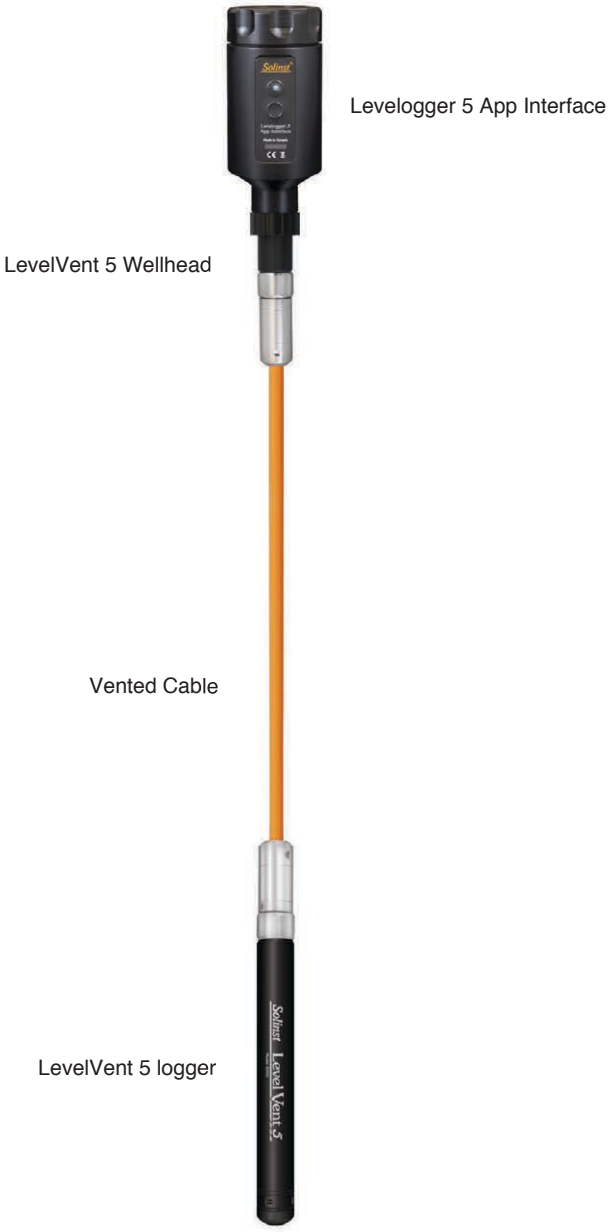


Figure 2-4 Connecting the Levelogger 5 App Interface to the LevelVent 5 Wellhead

2.5.3 AquaVent Deployment

The Levelogger 5 App Interface connects to the App Connector Cable, which is connected to an AquaVent 5 Wellhead. To connect the Levelogger 5 App Interface to the Connector Cable, simply hold on to the top end of the Connector Cable, and thread the coupling of the Levelogger 5 App Interface onto the Connector Cable. The other end of the Connector Cable connects to the 10-pin (Solinst Protocol) connection on the AquaVent Wellhead. See the Vented Dataloggers User Guide for more details.

Note: While the AquaVent is communicating with the Levelogger App, an SPX Wellhead will ignore or provide time-out responses to any requests if connected to a MODBUS or SDI-12 network at the same time.

Figure 2-5 Connecting the Levelogger 5 App Interface to the AquaVent 5 Wellhead

3.0 Activating the System

1. Download the Solinst Levelogger App on your smart device. The Solinst Levelogger App is available from the Apple App Store and on Google Play. See Section 4.1.
2. Connect the Levelogger 5 App Interface to the top end of your Levelogger's L5 Direct Read Cable or Adaptor, LevelVent 5 Wellhead, or the AquaVent 5 Wellhead Connector Cable. Turn the Levelogger 5 App Interface on by pressing and holding the power button for 1 second.
3. Enable (turn on) Bluetooth on your smart device by going to Settings > (General) > Bluetooth.
4. Pair the Levelogger 5 App Interface to your smart device by selecting it from the list of Bluetooth devices (the Levelogger 5 App Interface will be identified in the list by "Solinst-BT" and its serial number).

Note: You will only have to pair your Levelogger 5 App Interface to your smart device once. Your Levelogger 5 App Interface will be added to your list of paired devices.

5. Go to the home screen on your iOS device and tap to launch the Solinst Levelogger App, or swipe through your Apps on your Android smart device and tap to launch the Solinst Levelogger App.

4.0 Solinst Levelogger App

The Solinst Levelogger App is streamlined and very intuitive, making it effortless and easy to use.

The Solinst Levelogger App provides information about a connected datalogger, including battery level, serial number, and location. The Solinst Levelogger App allows you to immediately check real time readings from a connected datalogger, as well as view saved data logs in a graph or list format.

The logged data can be downloaded to your smart device. You can e-mail the downloaded data logs right from the Solinst Levelogger App, or you can connect your smart device to your computer and transfer data logs.

The Solinst Levelogger App provides all major programming options available with the Solinst Levelogger PC Software. You can save up to 10 customized Settings that can be applied to dataloggers when required.

The Solinst Levelogger App also provides the ability to obtain diagnostic information from a connected datalogger, as well as perform a conductivity calibration for a Levelogger LTC.

Figure 4-1 Solinst Levelogger App Home Screen on iOS - No Datalogger Connected

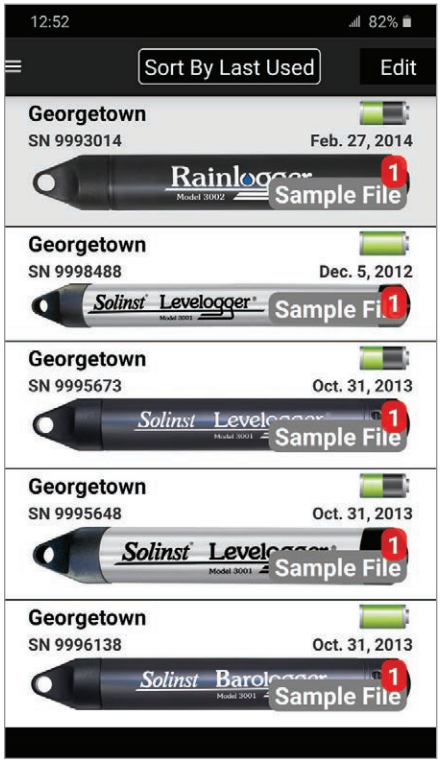


Figure 4-2 Solinst Levelogger App Home Screen on Android - No Datalogger Connected

Note: When first launching the Solinst Levelogger App, there will be Sample Files available to view for each datalogger type.

4.1 Downloading the App

4.1.1 iOS App

The Solinst Levelogger App can be downloaded from the Apple App Store to an Apple smart device that is running iOS 11.2, or later. See Section 1.1.1 for compatible devices.

1. To access the Apple App Store, tap the "App Store" icon from the home screen of your Apple smart device. You must be connected to strong Wi-Fi or mobile data (3G/4G).
2. Tap the "Search" button, and type in "Solinst". The Solinst Levelogger App should be displayed.
3. Tap the Solinst Levelogger App listing, then tap "free" to download the App.
4. You will be prompted to enter your iTunes password (if you do not already have an iTunes account, you will need to create one). You will automatically leave the App Store.
5. The Solinst Levelogger App icon will be displayed on your home screen, along with a progress bar. Once the download is complete, the App is ready to use.

4.1.2 Android App

The Solinst Levelogger App can be downloaded on Google Play to your smart device running Android 9.0 or higher.

1. Tap to open the Google Play store app on your Android device. You must be connected to strong Wi-Fi or mobile data (3G/4G).
2. Tap "Apps", then the search icon, and type in "Solinst". The Solinst Levelogger App should be listed.
3. Tap the Solinst Levelogger App listing, then tap "Install" to download the App.
4. Tap "Accept", after reviewing the App's permissions.
5. The Solinst Levelogger App icon will be displayed with the other Apps on your device. Once the download is complete, the App is ready to use.

4.2 Navigation Menu

Access to the Navigation Menu appears at the top left of every screen . Tap again to hide the Navigation Menu.

Note: There will also be "back" arrows at the top left to take you to the previous screen, where applicable.

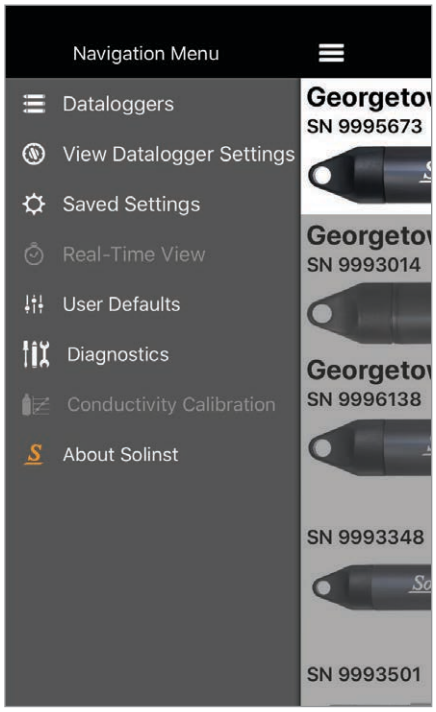


Figure 4-3 Solinst Levelogger App Main Navigation Menu on iOS - No Datalogger Connected

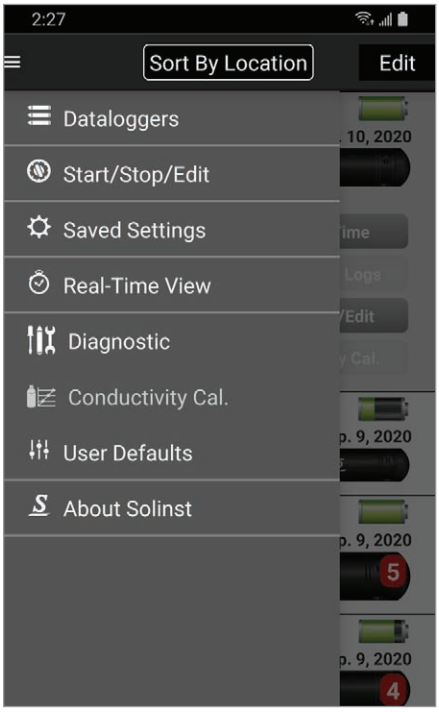


Figure 4-4 Solinst Levelogger App Main Menu on Android - Datalogger Connected

Tap to get the following options in the Navigation Menu:

Dataloggers: Takes you to the Home Screen that shows the connected, and previously connected dataloggers. You can connect a datalogger, download data, program and start/stop a connected datalogger, apply a saved Setting, or view real-time data. You can view data from previously connected dataloggers (see Section 4.6).

Start/Stop/Edit Settings: Program the connected datalogger's settings, and start or stop the datalogger recording (see Section 6.0).

Note: If there is no datalogger connected, the Start/Stop/Edit Settings menu item will change to View Datalogger Settings. This allows you to view the settings of previously connected dataloggers in the list.

Saved Settings: Program and save up to 10 Settings that can be applied to a connected datalogger (see Section 7.0).

Real-Time View: View readings from the connected datalogger as they are logged (see Section 8.0).

Diagnostics: Obtain information about the connected datalogger that can help identify and fix any problems you may encounter with your datalogger (see Section 11.0).

Conductivity Calibration: Perform a conductivity calibration for an attached Levelogger 5 LTC or LTC Levelogger Edge (see Section 12.0).

User Defaults (Section 4.3) and **About Solinst** (Section 4.4) are also options.

Note: Swiping across to the left when viewing the Navigation Menu will take you to the last screen you were viewing.

4.3 User Defaults

Selecting **User Defaults** from the Navigation Menu, will allow you to set defaults for the Application.

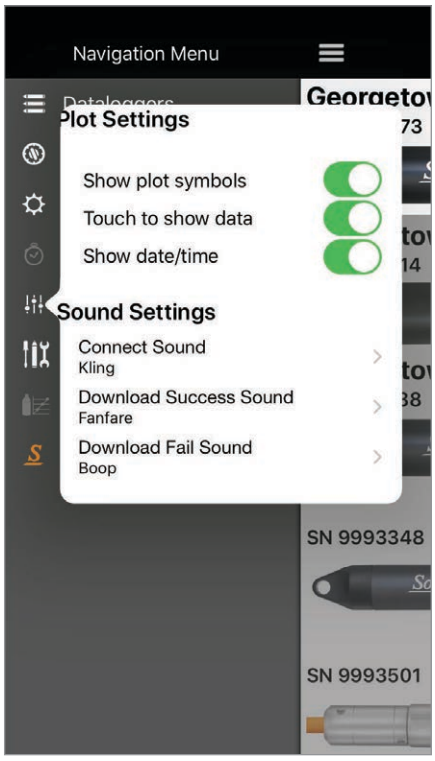


Figure 4-5 Solinst Levelogger App User Defaults - iOS

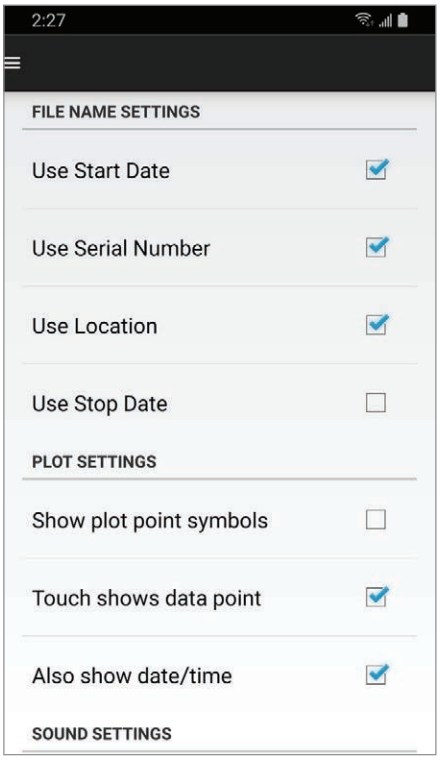


Figure 4-6 Solinst Levelogger App User Defaults - Android

File Name Settings: The *.xle data file names are generated based on the items you select.

Note: To access the File Name Settings and allow automatic time synchronization on an iOS device, go to iOS Settings App > Solinst.

Plot Settings: These settings allow you to select how much information is shown when viewing graphed data.

Sound Settings: You have the option to play sounds to alert when a datalogger is successfully connected and when data from the connected datalogger has been downloaded completely (or if the data download fails).

Automatically Sync Time: When this default is selected, the clock in each connected datalogger is automatically synchronized to your device clock as it is started logging. This can also be done manually (see Section 6.5).

4.4 App Information

Selecting **About Solinst** from the Navigation Menu, displays information about the Solinst Levelogger App, including version number, and Solinst company contact information with a link to the Solinst website. If using a smartphone, you can also call Solinst for support.

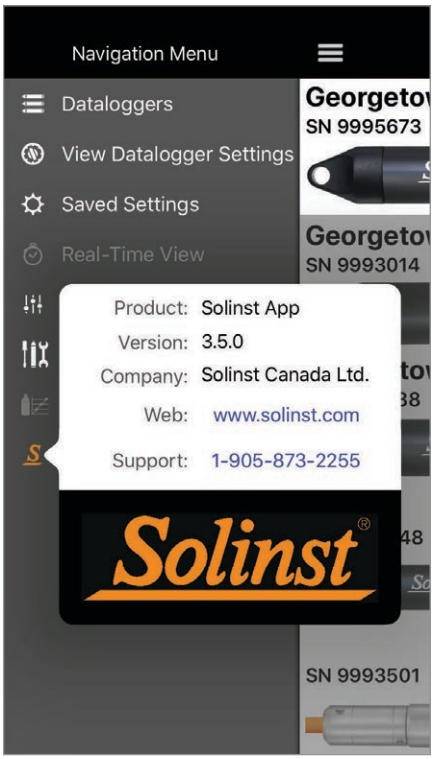


Figure 4-7 Solinst Levelogger App Information - iOS

Figure 4-8 Solinst Levelogger App Information - Android

4.5 Connecting Dataloggers

When the Solinst Levelogger App is launched, if a connected datalogger is detected, a message at the top of the App will indicate "Connected datalogger was detected." It will automatically connect.

Note: When a datalogger is successfully connected, a user-selected tone will sound from the smart device, if enabled in User Defaults (Section 4.3).

If no datalogger is connected/detected, the message "Connect" will appear at the bottom of the Dataloggers Screen. Connect or check the datalogger, and tap the message to connect the datalogger.

Note: The Levelogger App Interface has to be powered on and paired with your smart device in order for the "Connect" message to appear.

Note: The datalogger list can be "pulled" when switching dataloggers to both disconnect the old datalogger and reconnect the new datalogger.

Figure 4-9 Connecting a Datalogger from the Dataloggers Screen - iOS

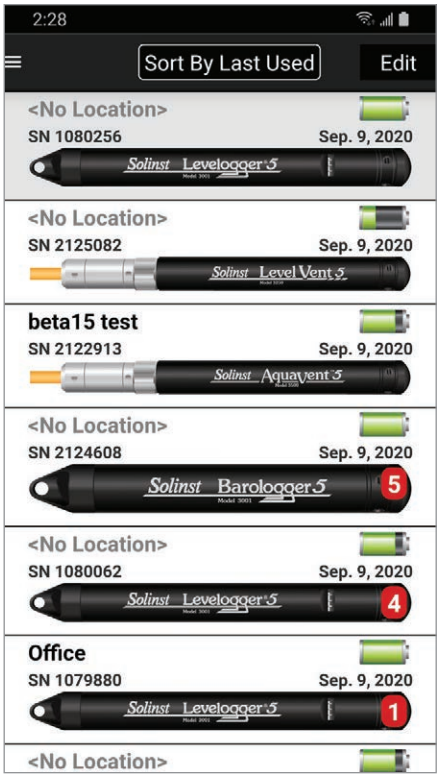


Figure 4-10 Connecting a Datalogger from the Dataloggers Screen - Android

To disconnect a datalogger at any time, tap the Bluetooth symbol, and select "Disconnect".

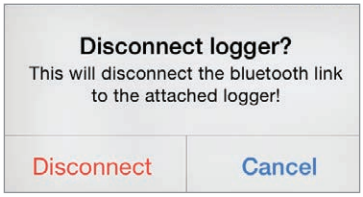


Figure 4-11 Disconnecting a Datalogger

Note: After you have disconnected the datalogger, the Levelogger 5 App Interface will still be paired with your smart device. You can connect another datalogger as described, or turn off the Levelogger 5 App Interface.

Note: The Levelogger 5 App Interface has an auto-off after 10 minutes of inactivity.

4.5.1 Datalogger Firmware

If a connected datalogger has outdated firmware, a message will appear above the datalogger image.

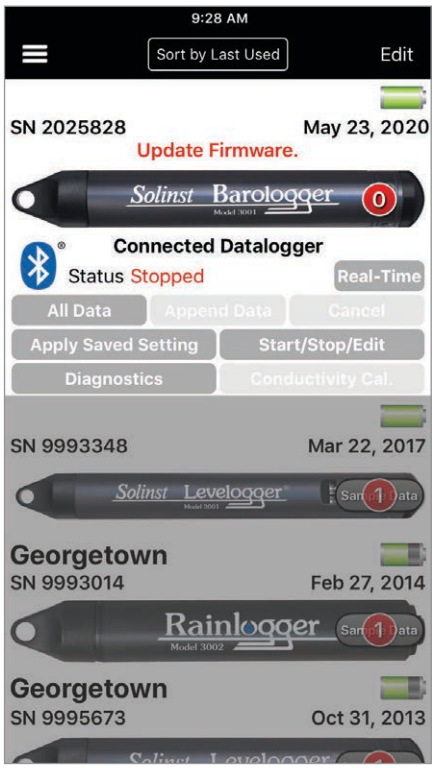


Figure 4-12 Datalogger with Outdated Firmware Message - iOS

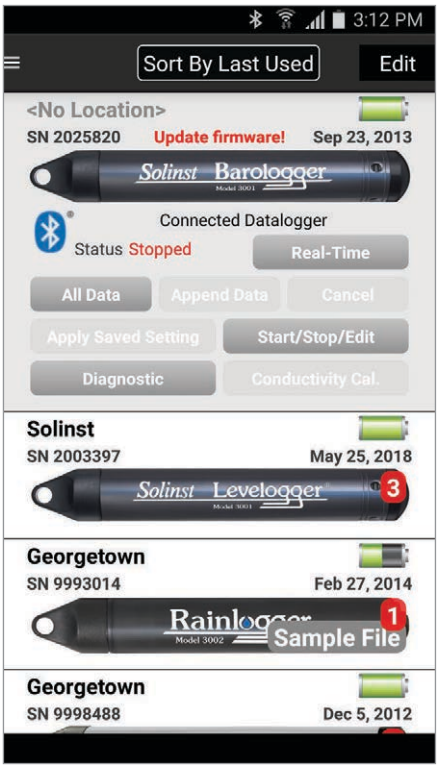


Figure 4-13 Datalogger with Outdated Firmware Message - Android

To update your datalogger with the most recent firmware version, go to www.solinst.com/downloads to download the required firmware and instructions. You will require the Firmware Upgrade Utility that is packaged with the latest Levelogger PC Software Version. Follow the instructions to update the datalogger's firmware.

4.6 Dataloggers Home Screen

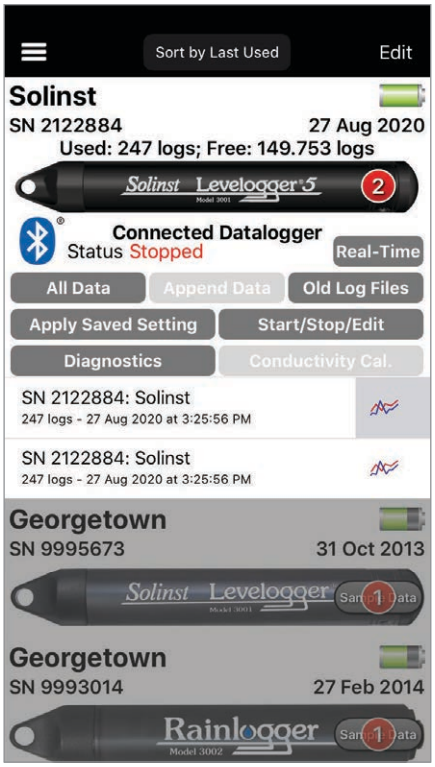


Figure 4-14 Dataloggers Screen with Connected Datalogger - iOS

Figure 4-15 Dataloggers Screen with Connected Datalogger - Android

Information about the currently connected datalogger will automatically be retrieved and displayed at the top of the Dataloggers Screen. Information includes the datalogger location (if previously programmed), serial number, battery level, the date the datalogger was last connected, and the Status (e.g. Logging or Stopped).

You can download logged data (Section 5.0), edit the datalogger's settings and start/stop the datalogger (Section 6.0), apply a saved Setting (Section 7.0), view and save real time readings (Section 8.0), view saved data files (Section 9.0), obtain diagnostic information (Section 11.0), and perform a conductivity calibration (Section 12.0). You can also zero a vented datalogger to the current atmospheric pressure (Section 6.7).

The Dataloggers Screen will also show dataloggers that were previously connected. You can select to sort this list of dataloggers by log start date, last used, file name, or location. The datalogger that is currently connected will always be shown first, and will have the Bluetooth symbol and "Connected Datalogger" below the image, to indicate that it is connected. A red number on a datalogger image indicates that there is that number of saved data files available to view from that datalogger. See Section 9.0 for viewing data files.

Note: For iOS devices, to remove dataloggers from the list, swipe the datalogger image to the left and select "Delete", or select "Edit" at the top of the list and tap the red icon next to the datalogger to remove it from the list.

Note: For Android devices, to remove dataloggers from the list, select and hold the datalogger image until a check box appears, or select "Edit" at the top of the list. Check the datalogger(s) that you want to delete, then click the trash can icon to delete the datalogger(s).

5.0 Downloading Data

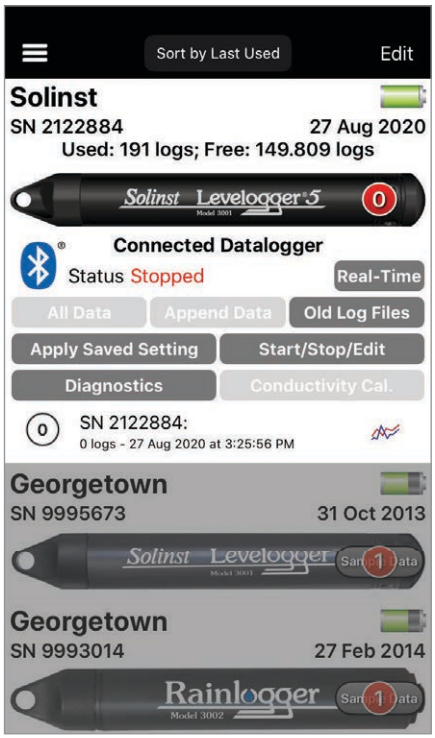


Figure 5-1 Downloading Data - iOS

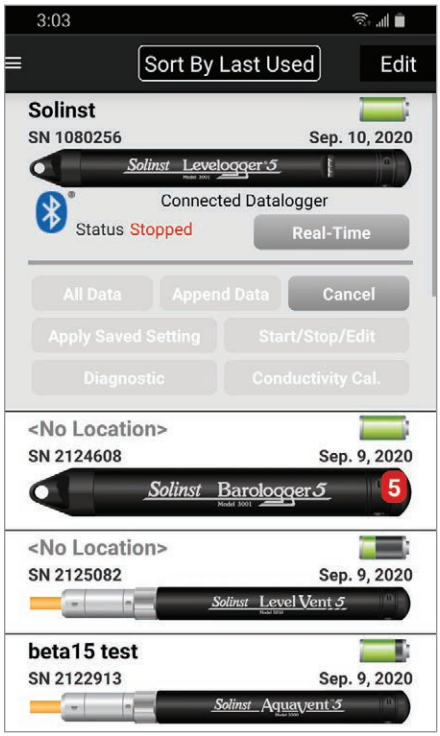


Figure 5-2 Downloading Data - Android

To download data from a connected datalogger, select from the download options on the Dataloggers Screen.

For Levelogger 5 Series dataloggers, there will be the options to download **All Data**, **Append Data,** or download and/or delete **Old Log Files**. For Levelogger Edge Series dataloggers, there will be the options to download **All Data** or **Append Data**.

Note: For Levelogger Edge Series dataloggers, you can recover and download data from the previous logging session using the Diagnostic Utility (see Section 11).

Selecting **All Data** will create a data log of all the data from the most recent logging session.

Selecting **Append Data** will automatically append the data to a data log from that same datalogger stored in the App. The stored data log and the attached datalogger should have the same serial number and start time, otherwise an error will occur (see Section 9.0 for viewing/opening previously saved data logs).

For Levelogger 5 Series dataloggers, selecting **Old Log Files** brings up a window with a list of all logging sessions currently stored in the datalogger's memory. Select the files that you want to download.

To access the full memory, select Delete All Files. This will free-up memory before starting a Levelogger 5 Series datalogger (See Section 6.8).

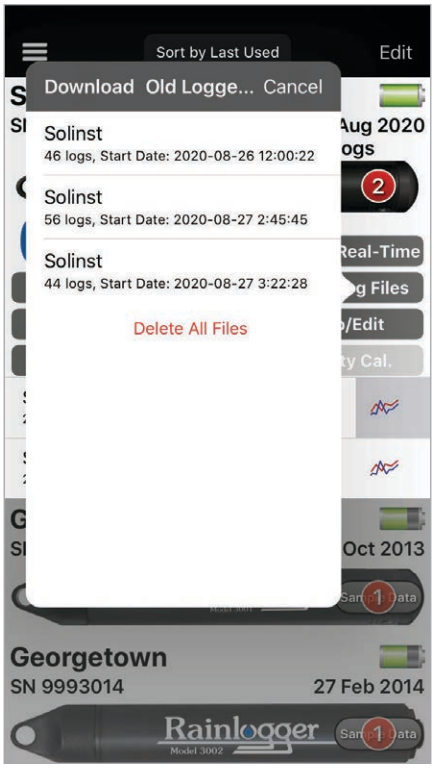


Figure 5-3 Old File Logs – iOS

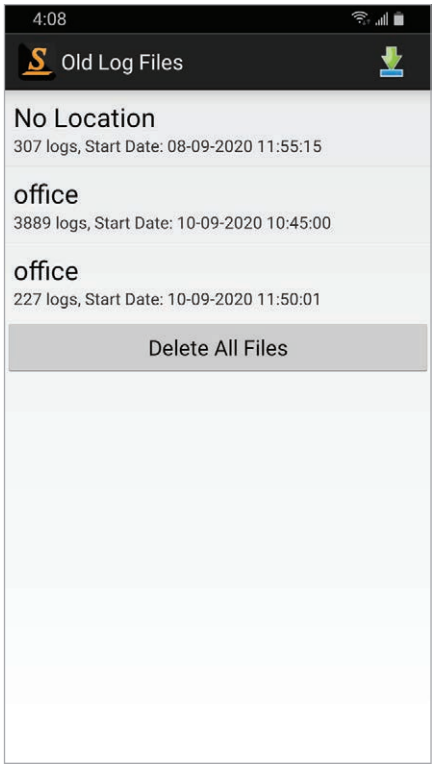


Figure 5-4 Old Log Files – Android

A tone from the smart device will sound when the data has been successfully downloaded (if enabled in User Defaults (Section 4.3)).

Note: Downloads and Real-Time readings can occur at the same time. You can place the App in the background (e.g. answer a phone call) while waiting for a download to complete.

A red number "1" will appear on the connected datalogger image, or it will update/increase if there were previously downloaded data logs from that datalogger.

Note: See Section 9.0 for viewing saved data logs, and Section 10.0 for e-mailing or transferring data logs.

6.0 Edit Datalogger Settings

To program the settings of a connected datalogger, select **Start/Stop/Edit Settings** from the Navigation Menu, or select **Start/Stop/Edit** from the options on the Dataloggers Screen.

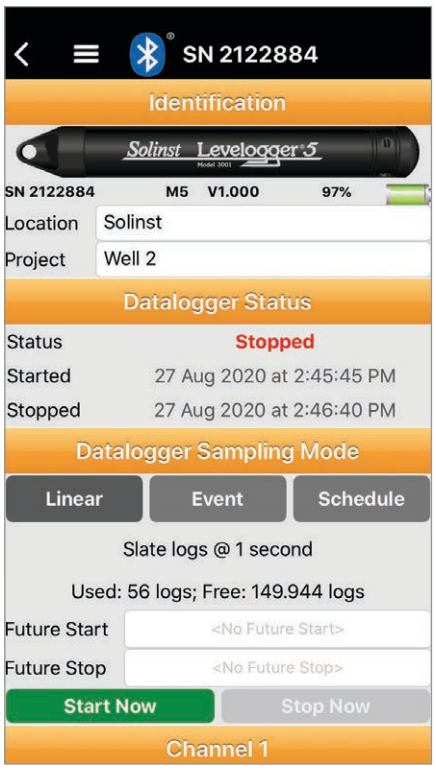


Figure 6-1 Edit Datalogger Settings - iOS

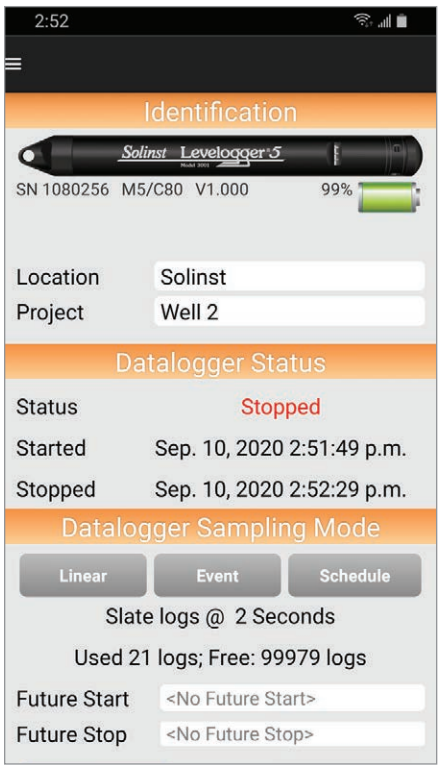


Figure 6-2 Edit Datalogger Settings - Android

Note: The connected datalogger will be identified by its serial number at the top of the screen on an iOS device.

Settings include location and project identification, channel information, sampling and memory modes, and synchronizing the datalogger time to your smart device time. You can start and stop a datalogger immediately, or at a programmed future time.

Note: On an iPad, tapping  will expand the Settings screen to full screen.

Note: Tapping on the white input fields will activate the keyboard, or enable scrolling to enter the desired settings.

Once you change a setting, that field will be highlighted in yellow. The fields will not be highlighted once the datalogger has started logging, and you have refreshed the settings.

Note: To refresh the settings, pull down/swipe the top of the Solinst Levelogger App screen (from the Identification title bar).

6.1 Datalogger Identification

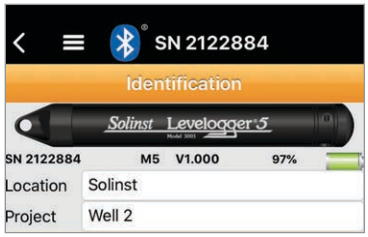


Figure 6-3 Datalogger Identification - iOS

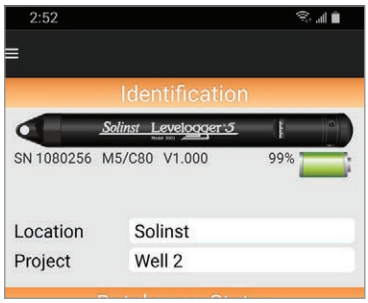


Figure 6-4 Datalogger Identification - Android

Identification displays the following:

Serial Number (SN): The unique serial number of the connected Solinst datalogger.

Instrument Type: The model of the attached datalogger (i.e. M30, Rainlogger, etc.).

Firmware Version: The firmware version of the connected datalogger (i.e. V1.000).

Battery Level: Shows the percentage battery level remaining.

You can tap the fields to enter the following:

Location: Input specific site/location information.

Note: Do not include a "/" (slash) in your location. This will cause an error when transferring or e-mailing data.

Project: Input your own identification system.

Note: Tapping on the white input fields will activate the keyboard to enter the desired settings.

6.2 Datalogger Status

Figure 6-5 Datalogger Status - iOS

Figure 6-6 Datalogger Status - Android

Datalogger Status displays the following:

Status: Indicates if the datalogger is "Logging", "Stopped", or if it has been set with a future start time: "Waiting to Start".

Started: Indicates the date and time the datalogger was last started.

Stopped: Indicates the last date and time the datalogger was stopped.

Note: To refresh the settings, pull down/swipe the top of the Solinst Levelogger App screen (from the Identification title bar).

6.3 Datalogger Sampling Mode

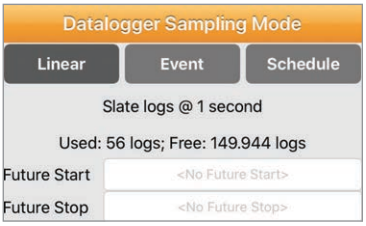


Figure 6-7 Datalogger Sampling Mode - iOS

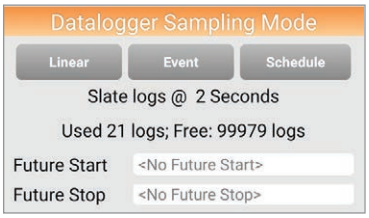


Figure 6-8 Datalogger Sampling Mode - Android

The Datalogger Sampling Mode section allows you to choose the sampling measurement type. Options are Linear, Event, or Schedule. The final sampling mode that is **Saved** for the connected datalogger will be displayed. The number of used and free logs in the datalogger memory will also be displayed. Please refer to Table 6-1 for a summary of the available sampling and memory options for each datalogger type (See the Levelogger User Guide for older Levelogger models).

Note: To refresh the settings, pull down/swipe the top of the Solinst Levelogger App screen (from the Identification title bar).

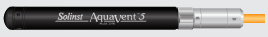
Datalogger Programming Options			
Datalogger Type	**Sampling Options**	**Memory Capacity**	**Battery Life**
Levelogger 5 	Linear (0.125 second to 99 hours), Event Based, Schedule, Repeat Schedule, Real Time View, Future Start/Stop	1500,000 sets of readings in Slate or Continuous Mode	10 years based on 1 reading per minute
Barologger 5 	Linear (0.125 second to 99 hours), Event Based, Schedule, Repeat Schedule, Real Time View, Future Start/Stop	1500,000 sets of readings in Slate or Continuous Mode	10 years based on 1 reading per minute
Levelogger 5 Junior 	Linear (0.5 second to 99 hours), Real Time View, Future Start	75,000 sets of readings in Slate or Continuous Mode	5 years based on 1 reading per minute
Levelogger 5 LTC 	Linear (2 seconds to 99 hours), Event Based, Schedule, Repeat Schedule, Real Time View, Future Start/Stop	100,000 sets of readings in Slate or Continuous Mode	8 years based on 1 reading every 5 minutes
Rainlogger 5 	Event Based (records tips from tipping-bucket rain gauge), Real Time View, Future Start	Up to 100,000 tip time logs in Slate or Continuous Mode	10 years based on 2 parameters logged every 10 minutes
LevelVent 5 	Linear (0.125 second to 99 hours), Event Based, Schedule, Repeat Schedule, Real Time View, Future Start/Stop	1500,000 sets of readings in Slate or Continuous Mode	10 years based on 1 reading per minute
AquaVent 5 	Linear (0.125 second to 99 hours), Event Based, Schedule, Repeat Schedule, Real Time View, Future Start/Stop	1500,000 sets of readings in Slate or Continuous Mode	8 years based on 1 reading per minute

Table 6-1 Solinst Datalogger Programming Options

6.3.1 Linear Sampling

Tap **Linear**. Linear refers to a set time interval between collections of readings. You can select to record in seconds, minutes, hours, or days.

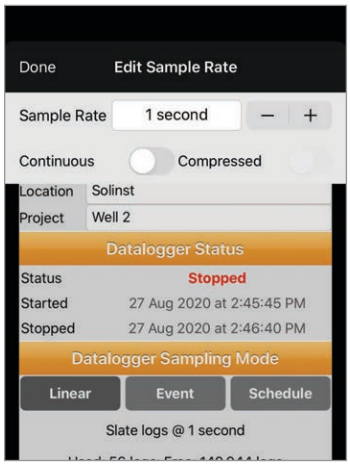


Figure 6-9 Edit Linear - iOS

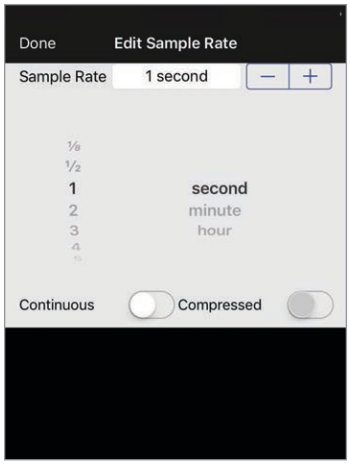


Figure 6-10 Edit Linear -Android

Note: Tap on the "Sample Rate" field to show the time scroll wheel to enter the desired setting. Tap "Done" on your iPhone or iPod. Tap anywhere out of the Edit Linear screen to save the setting on your iPad. Tap "Done", then "Save" on an Android device.

Continuous logging means the new log is started at the end of any previous log and continues logging, eventually recording over the first logged data.

If Continuous logging is not enabled, **Slate** logging is the default memory mode. With slate logging, the new log is also started at the end of any previous log, but will stop recording after the memory is full, so that the beginning of the current log will not be written over.

6.3.2 Event Sampling

Tap **Event**. In Event sampling mode, the datalogger will be activated at every defined **Check** to see if readings have varied by the selected **Change/Offset** from the last recorded reading. You can **Use** "Level", "Temperature", etc., as the monitored parameter.

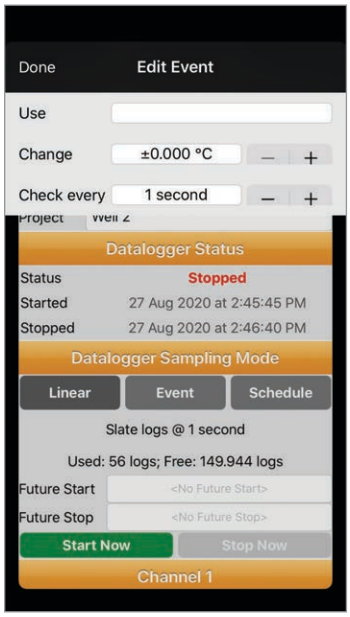


Figure 6-11 Edit Event - iOS

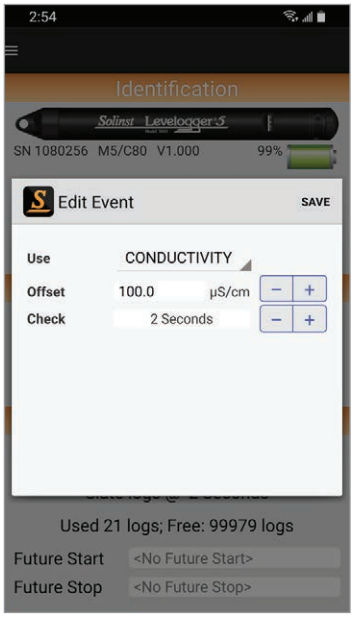


Figure 6-12 Edit Event - Android

Note: Tapping on the white input fields will show the time/number scroll wheel to enter the desired settings.

The datalogger will record a new reading only if the specified change in the parameter has occurred, when the datalogger is "checked".

A default reading will also be stored in the datalogger memory, every 24 hours from the last recording, if no change occurs.

6.3.3 Schedule Sampling

Tap **Schedule**. Schedule sampling allows you to select a logarithmic style sampling schedule adapted to the needs of each application.

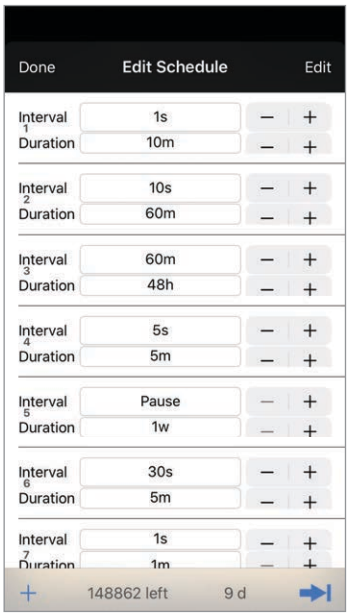


Figure 6-13 Edit Schedule - iOS

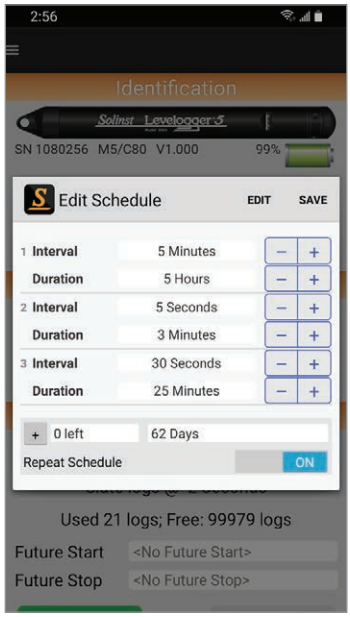


Figure 6-14 Edit Schedule - Android

Schedule sampling is set by using the plus [+] symbol at the bottom left to add line items to the schedule.

The maximum number of line items in a schedule is 30, each with its own sampling **Interval** of seconds, minutes or hours and **Duration** of seconds, minutes, hours, days or weeks. A "Pause" interval can also be selected, which stops the datalogger from recording for the specified duration.

Note: Tapping on the white input fields will show the time scroll wheel to enter the desired settings.

For iOS devices, select **Edit** at the top right, to remove line items. Check-off the items you want to remove, and tap **Delete** at the top left. You can change the order of the line items by swiping the item up or down at the right of the plus/minus [+/-] symbols.

For Android devices, select **Edit** at the top right, to move or delete line items. You can change the order of the line items by swiping the item up or down at the right of the plus/minus [+/-] symbols. You can swipe the line items to the left/right to delete them.

Running totals of the number of readings still available from the total possible, and the run time are shown at the bottom of the Edit Schedule screen.

By enabling **Repeat Schedule**, the datalogger will continue to run through the schedule until its memory is full, or it is stopped. To enable this on an iPhone, iPod, or iPad tap  so it displays the Repeat Schedule icon:  .

6.4 Datalogger Channels

6.4.1 Channel 1: Level

Figure 6-15 Channel 1: Level - iOS

Figure 6-16 Channel 1: Level - Android

Channel 1 for dataloggers is the "Level" channel. The channel can be re-named to suit your project.

You can change the units that this channel will be recorded in. For example, there are six unit options when using a Levelogger 5, Levelogger 5 Junior, and Levelogger 5 LTC; m (default), cm, ft, kPa, bar, and psi. When using a Barologger 5, the options are kPa (default), mbar, and psi.

Note: Tapping on the white input fields will activate the keyboard, or show the scroll wheel to enter the desired settings.

There is the option to include an **Offset** in Channel 1. Offset refers to an adjustment, such as the distance between the tip of the datalogger and the monitoring well cap or static water level. It is recommended that the value of 0.00 be used, as this keeps all subsequent readings relative to the tip of the datalogger. The reference range is -300 m to 5000 m or -1000 to 16,400 ft.

Note: Levelogger 5 and Edge Series dataloggers and Solinst vented dataloggers data can be adjusted for Altitude and Density post data collection using Levelogger PC Software. See Section 10.2 for information on transferring data to your PC.

6.4.2 Channel 2: Temperature

Figure 6-17 Channel 2: Temperature - iOS

Figure 6-18 Channel 2 : Temperature - Android

Channel 2 for dataloggers is the "Temperature" channel. The channel can be re-named to suit your project.

You can change the units that this channel will be recorded in. For example, for the Levelogger 5, Barologger 5, Levelogger 5 Junior and Levelogger 5 LTC the temperature channel can be set to °C (default) or °F.

Note: Tapping on the white input fields will activate the keyboard, or show the scroll wheel to enter the desired settings.

6.4.3 Channel 3: Conductivity

Figure 6-19 Channel 3: Conductivity - iOS

Figure 6-20 Channel 3: Conductivity - Android

Channel 3 for the Levelogger 5 LTC or LTC Levelogger Edge is the "Conductivity" channel. The channel can be re-named to suit your project. There are two units of measure available to select: mS/cm or µS/cm.

Note: Tapping on the white input fields will activate the keyboard, or show the scroll wheel to enter the desired settings.

6.4.4 Rainlogger Channel

Figure 6-21 Rainfall Channel - iOS

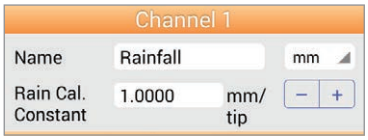


Figure 6-22 Rainfall Channel - Android

There is one channel (**Channel 1**) of measurement for the Solinst Rainlogger 5 or Rainlogger Edge. The "Rainfall" channel records each tip time by the connected tipping-bucket and outputs the amount of rainfall per tip. The channel can be re-named to suit your project. There are two units of measure available to select: mm or in.

Note: Tapping on the white input fields will activate the keyboard, or show the scroll wheel to enter the desired settings.

The **Scaling/Rain Cal. Constant** field allows you to enter the calibration factor for the tipping-bucket you will be using. The calibration factor is the amount of rainfall depth (mm, in) per tip. The calibration factor should be indicated on a label on the tipping-bucket device or in the manufacturer's documentation.

6.5 Datalogger Time

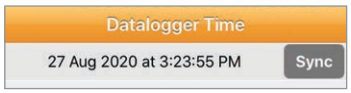


Figure 6-23 Datalogger Time - iOS

Figure 6-24 Datalogger Time - Android

The datalogger's internal date and time will be displayed. Select **Sync** to synchronize the datalogger's clock to your device clock. This is useful to synchronize the time for all dataloggers being used in the same project.

Note: Automatic time synchronization can be set to occur each time a connected datalogger is started, by selecting the setting in the User Defaults for each app (see Section 4.3).

6.6 Data Set Geographic Location

Note: The Data Set Geographic Location will only be visible when viewing a disconnected datalogger's settings.

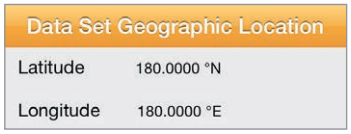


Figure 6-25 Data Set Geographic Location - iOS

Figure 6-26 Data Set Geographic Location - Android

If you allow the Solinst Levelogger App to access your current location, the GPS coordinates will automatically be recorded in the downloaded file.

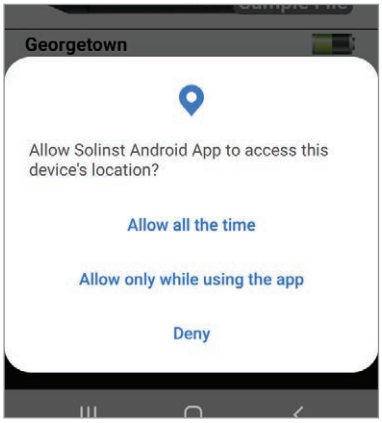


Figure 6-27 Access Location Permission

Note: You can also allow access to your current location by going to your Application Settings on your smart device.

6.7 Vented Dataloggers Zero

In the Dataloggers Screen, there is a **Zero Barometric** option to zero a LevelVent 5 or AquaVent 5 vented datalogger to current atmospheric pressure. This will ensure that it is reading 0 in air for the level reading.

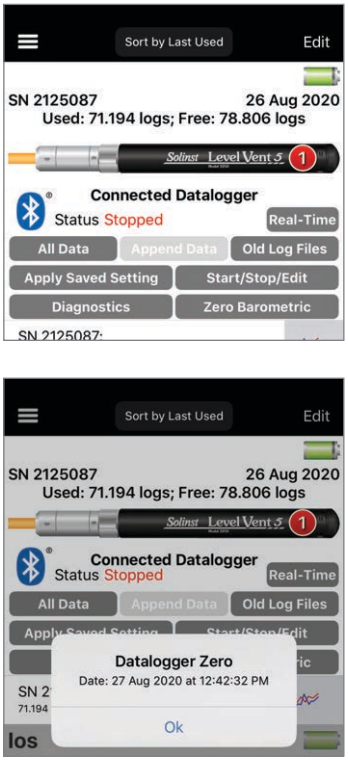


Figure 6-28 Zero Barometric – iOS

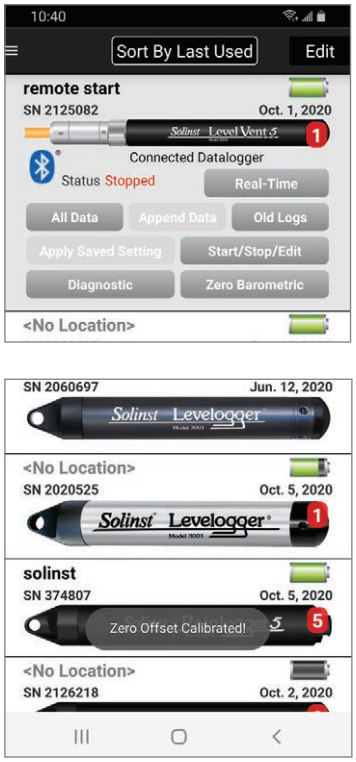


Figure 6-29 Zero Barometric – Android

On an iOS device, after selecting **Zero Barometric** and clicking "OK", the current date and time will be displayed as the **Datalogger Zero Date** in the Dataloggers Settings screen. You can also select Zero Barometric in the Dataloggers Settings screen to zero the datalogger.

On an Android device, after selecting **Zero Barometric** a message will appear stating "Zero Offset Calibrated" and the current date and time will be displayed as the **Zero Offset** in the Diagnostic Utility (See Section 11).

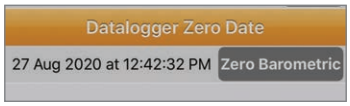


Figure 6-30 Datalogger Zero Date – iOS

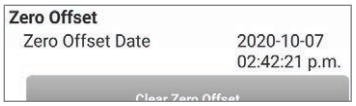


Figure 31 Zero Offset Date – Android

Note: You can not perform a Datalogger Zero while the datalogger is running.

The **Datalogger Zero** can be cleared using the Diagnostic Utility. See Section 11.

6.8 Starting and Stopping Solinst Dataloggers

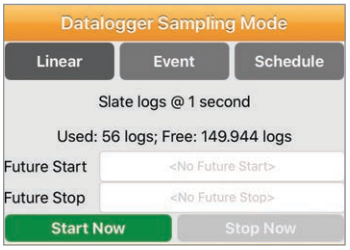


Figure 6-32 Starting and Stopping Dataloggers - iOS

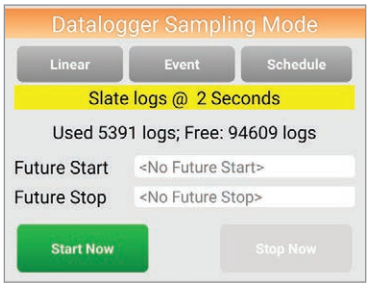


Figure 6-33 Starting and Stopping Dataloggers - Android

After adjusting all the desired settings, dataloggers can be started and stopped immediately, or at a set future time for certain datalogger models.

Note: Settings are not saved to an attached datalogger until it is started.

6.8.1 Starting Solinst Dataloggers

Note: Starting a Levelogger Edge Series datalogger will erase any previous recorded readings from its memory.

Select **Start Now** to start the datalogger recording immediately.

Before starting a Levelogger 5 Series datalogger, a pop-up window will indicate how much memory is available. Selecting "Yes" ignores the message and starts the datalogger immediately with the remaining available memory. Selecting "No" gives you the chance to access **Old Log Files** (option on Dataloggers Screen) to download and/or delete data files to free-up more memory (see Section 5).

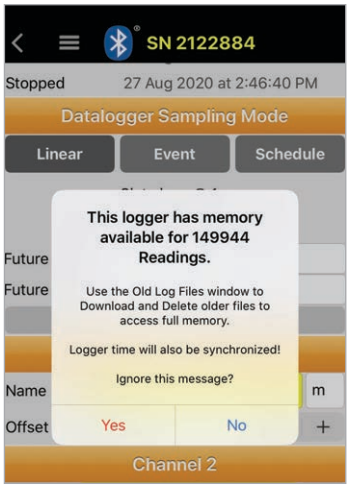


Figure 6-34 Datalogger Memory Warning – iOS

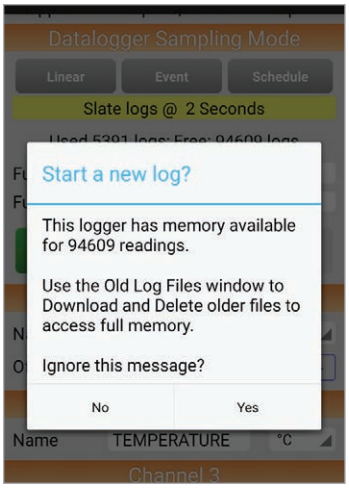


Figure 6-35 Datalogger Memory Warning – Android

After "Yes" is selected, the programmed settings will be applied automatically when the datalogger is started. The Logger Status will update from "Stopped" to "Logging".

Note: To refresh the settings, pull down/swipe the top of the App screen (from the Identification title bar).

To program a **Future Start** time, tap the date and time field and scroll to enter the desired Future Start time. Tap the field again, to set the date and time. Once you have entered all the desired settings, including an optional Future Stop time (see Section 6.8.2), tap **Future Start or Future Start/Stop**.

The Logger Status will update from "Stopped" to "Waiting to start". Once the datalogger reaches the programmed Future Start time, the programmed settings will be applied, the datalogger will begin recording, and the Datalogger Status will update to "Logging" (once the Status is refreshed).

Note: To refresh the settings, pull down/swipe the top of the App screen (from the Identification title bar).

Note: To undo a Future Start, edit the date to one before the current day's date.

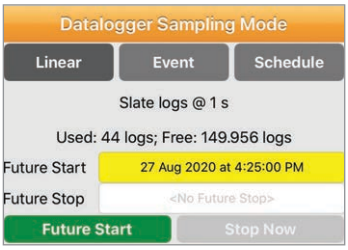


Figure 6-36 Setting a Future Start Time - iOS

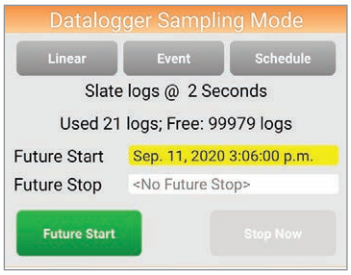


Figure 6-37 Setting a Future Start Time - Android

6.8.2 Stopping Solinst Dataloggers

To stop a Solinst datalogger from recording immediately, at any time, select **Stop Now**. The Datalogger Status will update from "Logging" to "Stopped" (once the settings are refreshed).

Note: To refresh the settings, pull down/swipe the top of the Solinst Levelogger App screen (from the Identification title bar).

Note: You can not set a Future Stop time for the Levelogger 5 Junior, Rainlogger 5, Levelogger Junior Edge or Rainlogger Edge dataloggers.

To set a **Future Stop** time, tap the date and time field and scroll enter the desired Future Stop time. Tap the field again to set the date and time. Start the datalogger as described in Section 6.8.1.

Note: A warning message will appear, to ensure you want to set the Future Stop time.

Note: To undo a Future Stop, edit the date to one before the current day's date.

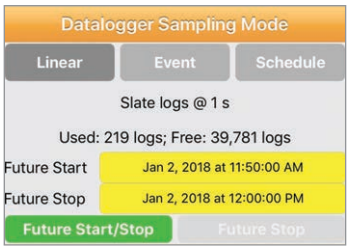


Figure 6-38 Setting a Future Stop Time - iOS

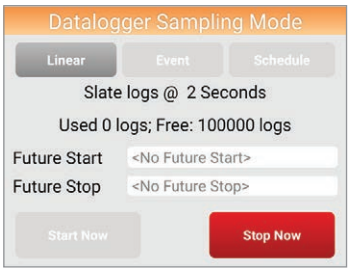


Figure 6-39 Stop a Logging Datalogger - Android

7.0 Saved Settings

Up to 10 Settings can be can be customized and saved in the Solinst Levelogger App, which can then be applied to a connected Solinst datalogger.

7.1 Program Settings

To program a Setting, tap **Saved Settings** from the Navigation Menu.

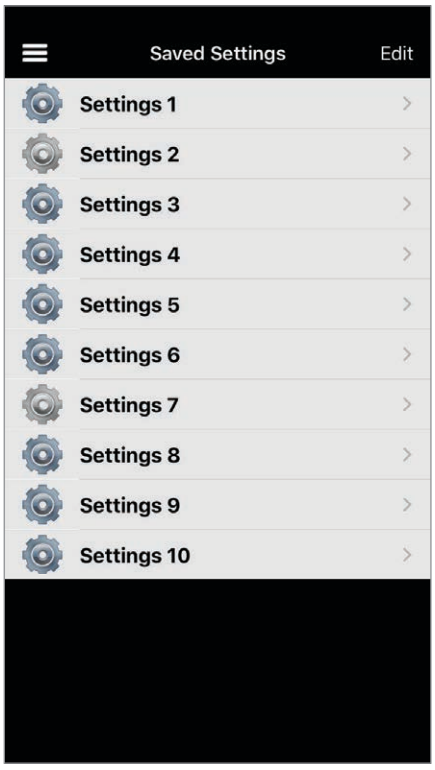


Figure 7-1 Settings Screen - iOS

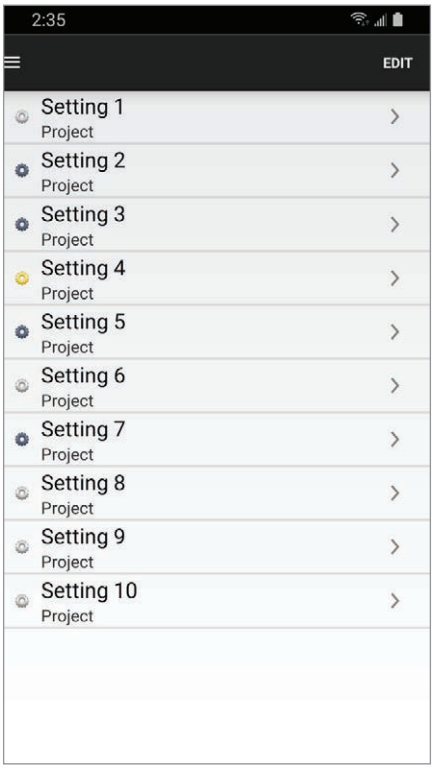


Figure 7-2 Settings Screen - Android

Selecting **Edit** at the top right of the screen allows you to shuffle the order that the Settings appear by swiping the Setting up or down at the right of the bar. Select **Done** when finished shuffling.

Note: The colour of the icon next to the Setting name corresponds to the type of Solinst datalogger that the Setting is programmed for, i.e. the blue/black icon shows a Setting that can be applied to a Levelogger 5, the silver icon shows a Setting for a Levelogger 5 Junior .

Select one of the listed Settings to customize, by tapping the icon next to it. You can customize the following for each Settings:

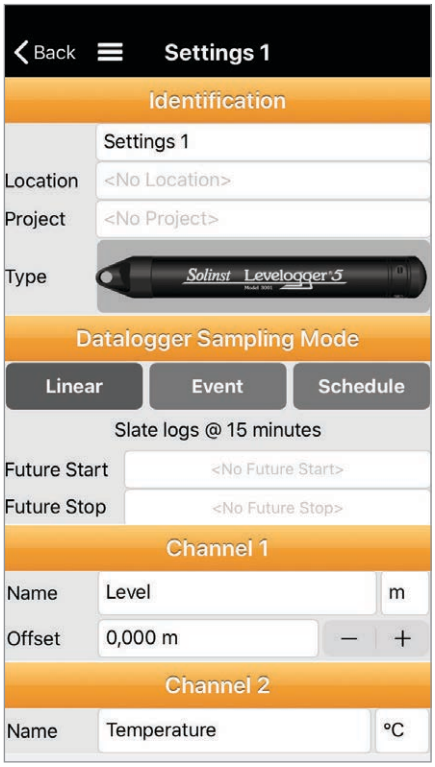


Figure 7-3 Customizing a Setting - iOS

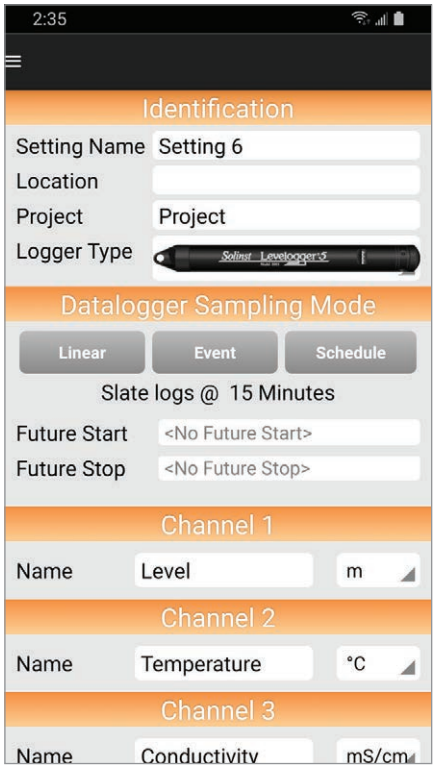


Figure 7-4 Customizing a Setting - Android

Note: Tapping on the white input fields will activate the keyboard, or enable scrolling to enter the desired settings.

Note: On an iPad, tapping  will expand the Setting screen to full screen.

Setting Name: Input a name for the settings file.

Location: Input specific site/location information.

Project: Input your own identification system.

Datalogger Type: Select the datalogger type by tapping the datalogger image and scrolling through the image options. Select **Done** at the top right, after you have selected the datalogger.

Datalogger Sampling Mode: choose between Linear, Event, or Schedule sampling mode (see Section 6.3), and set a Future Start and Future Stop time, if desired.

Channels: program "Level", "Temperature", "Conductivity", and "Rainfall" Channels. See Section 6.4.

7.2 Apply Settings

To apply a Setting to a connected datalogger, select **Apply Saved Setting** from the options on the Dataloggers Screen.

Figure 7-5 Apply a Saved Setting - iOS

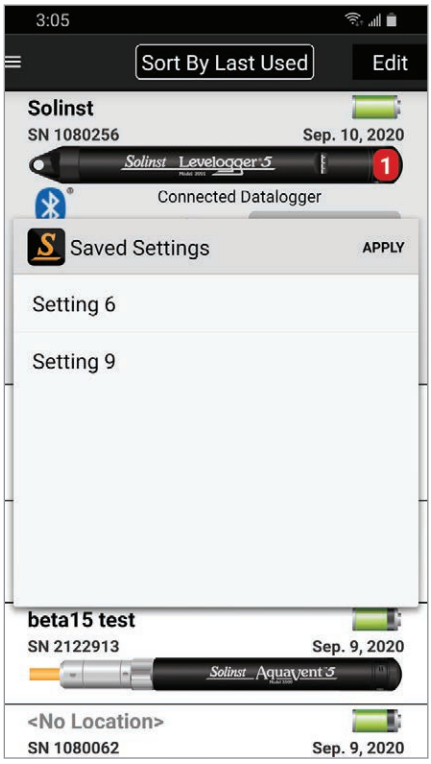


Figure 7-6 Apply a Saved Setting - Android

Select, and tap **Apply** to apply the desired Setting from the list. Start the datalogger from the Dataloggers Screen, or as described in Section 6.8.

Note: Only Settings that are applicable for the connected datalogger will show up in the list.

8.0 Real-Time View

To view real-time readings from a connected datalogger, select **Real-Time View** from the Navigation Menu, or **Real-Time** from the options on the Dataloggers Screen.

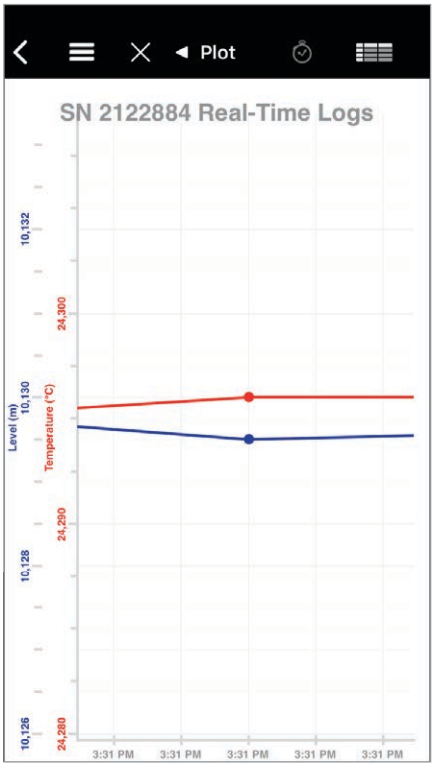


Figure 8-1 Real-Time View Screen - iOS

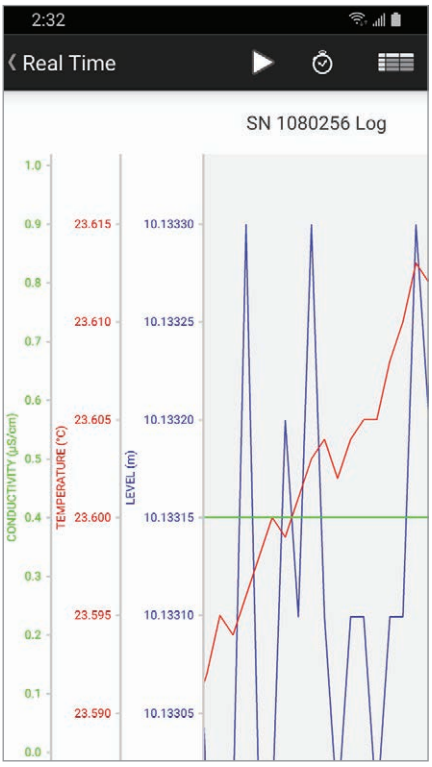


Figure 8-2 Real-Time View Screen - Android

Select  to enter the non-logged view sample rate.

This rate can be set independently of the programmed logging period of the connected datalogger, and does not interfere with any logging taking place in the datalogger itself.

On an iOS device, the  button re-enables/re-starts the automatic plot scrolling, after you have re-sized the plot by pinching in or out in either the horizontal or vertical directions while taking real-time readings.

Note: On an iPad, tapping  will expand the Plot screen to full screen.

Note: You can place the App in the background, while Real-Time readings are being recorded.

Note: Real-Time readings do not interfere with any programmed logging taking place in the datalogger itself.

Note: Downloads and Real-Time readings can occur at the same time.

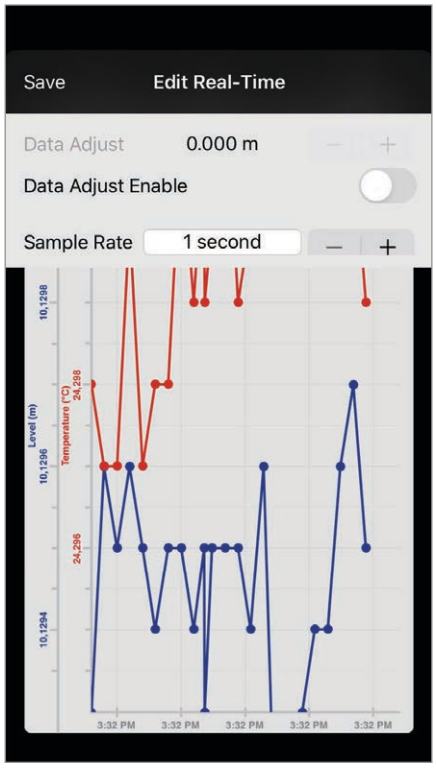


Figure 8-3 Edit Real Time Parameters - iOS

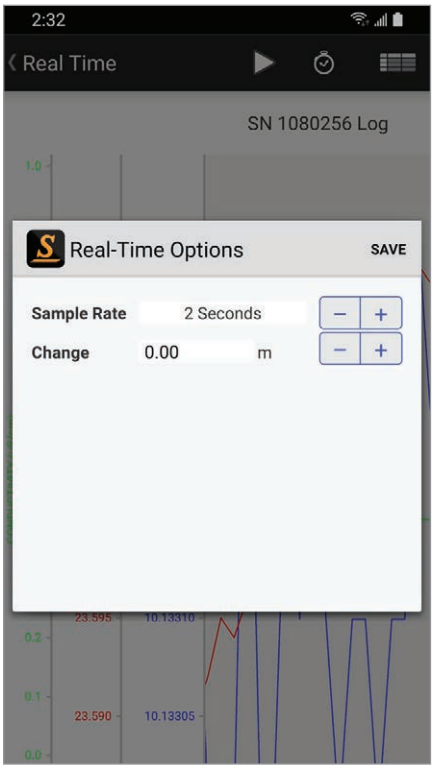


Figure 8-4 Edit Real-Time Parameters - Android

You can set the non-logged **Sample Rate** from 1 second to 99 minutes. You can also enable a **Data Adjust** (Change) to offset real-time readings by the entered value.

Note: Tapping on the white input fields will show the scroll wheels to enter the desired settings.

Select the start symbol ▶ at the top left of the Solinst Levelogger App to start recording real-time readings. Select the stop symbol ✖ to stop recording real-time readings.

Note: It is possible to change the non-logged Sample Rate, while still recording real-time readings; the graph and data list will be updated dynamically.

To view the real-time data in list view, select ☰.

Real-time logging sessions are automatically saved to the Saved Logs list, when the datalogger is disconnected from the App.

Note: See Section 9.0 for viewing saved data logs, and Section 10.0 for e-mailing or transferring data logs.

Plot Datalogger Data List

Log	Date/Time	Level	Temperature
1	27/08/20 3:31:43 PM	10.13m	24.29°C
2	27/08/20 3:31:44 PM	10.13m	24.30°C
3	27/08/20 3:31:45 PM	10.13m	24.30°C
4	27/08/20 3:31:46 PM	10.13m	24.30°C
5	27/08/20 3:31:47 PM	10.13m	24.30°C
6	27/08/20 3:31:48 PM	10.13m	24.30°C
7	27/08/20 3:31:49 PM	10.13m	24.30°C
8	27/08/20 3:31:50 PM	10.13m	24.30°C
9	27/08/20 3:31:51 PM	10.13m	24.30°C
10	27/08/20 3:31:52 PM	10.13m	24.30°C
11	27/08/20 3:31:53 PM	10.13m	24.29°C
12	27/08/20 3:31:54 PM	10.13m	24.30°C
13	27/08/20 3:31:55 PM	10.13m	24.30°C
14	27/08/20 3:31:56 PM	10.13m	24.30°C
15	27/08/20 3:31:57 PM	10.13m	24.30°C
16	27/08/20 3:31:58 PM	10.13m	24.30°C
17	27/08/20	10.13m	24.30°C

Figure 8-5 Real-Time Data List - iOS

2:32

Datalogger Data List

Log	Date/Time	LEVEL	TEMPERAT...	CONDUCTI...
11	Sep. 10, 2020 2:31:24 p.m.	10.1330 m	23.600 °C	0.4 µS/cm
12	Sep. 10, 2020 2:31:26 p.m.	10.1332 m	23.599 °C	0.4 µS/cm
13	Sep. 10, 2020 2:31:28 p.m.	10.1331 m	23.601 °C	0.4 µS/cm
14	Sep. 10, 2020 2:31:30 p.m.	10.1333 m	23.603 °C	0.4 µS/cm
15	Sep. 10, 2020 2:31:32 p.m.	10.1331 m	23.604 °C	0.4 µS/cm
16	Sep. 10, 2020 2:31:34 p.m.	10.1330 m	23.602 °C	0.4 µS/cm
17	Sep. 10, 2020 2:31:36 p.m.	10.1331 m	23.604 °C	0.4 µS/cm
18	Sep. 10, 2020 2:31:38 p.m.	10.1331 m	23.605 °C	0.4 µS/cm
19	Sep. 10, 2020 2:31:40 p.m.	10.1330 m	23.605 °C	0.4 µS/cm
20	Sep. 10, 2020 2:31:42 p.m.	10.1331 m	23.608 °C	0.4 µS/cm
21	Sep. 10, 2020 2:31:44 p.m.	10.1331 m	23.610 °C	0.4 µS/cm
22	Sep. 10, 2020 2:31:46 p.m.	10.1333 m	23.613 °C	0.4 µS/cm
23	Sep. 10, 2020 2:31:48 p.m.	10.1332 m	23.612 °C	0.4 µS/cm
24	Sep. 10, 2020 2:31:50 p.m.	10.1333 m	23.613 °C	0.4 µS/cm
25	Sep. 10, 2020	10.1330 m	23.615 °C	0.4 µS/cm

Figure 8-6 Real-Time Data List - Android

Note: The scroll bar at the right of the screen, when touched and dragged, can be used to reposition the data window anywhere in very large log files.

9.0 Viewing Saved Data Logs

To view data from a connected Solinst datalogger, or previously connected datalogger, select the datalogger image from the Dataloggers Screen. A list of all saved data logs for that datalogger will be shown. Tap the plot icon beside the data log that you want to view (double tap on a phone).

On an iOS device, tapping the area to the left of the plot icon (showing serial number and number of logs), will bring up the settings the datalogger used during that logging session.

On an Android phone, tapping the settings icon , will bring up the settings the datalogger used during that logging session.

Note: The red number on the datalogger image indicates the number of saved data logs. This includes downloaded logs and real-time logs.

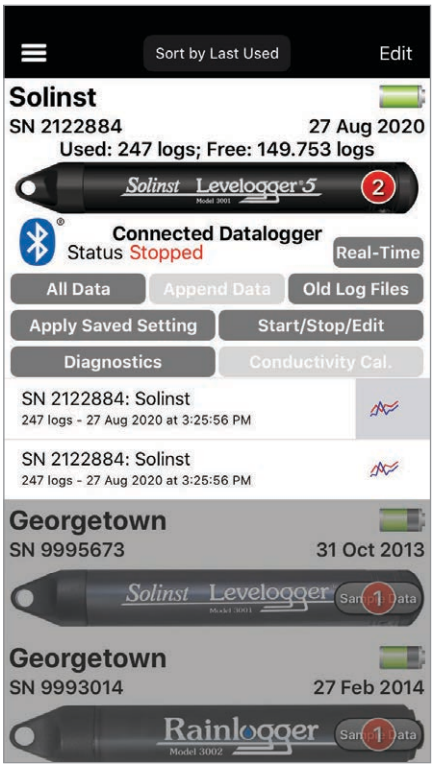


Figure 9-1 Viewing Saved Logs - iOS

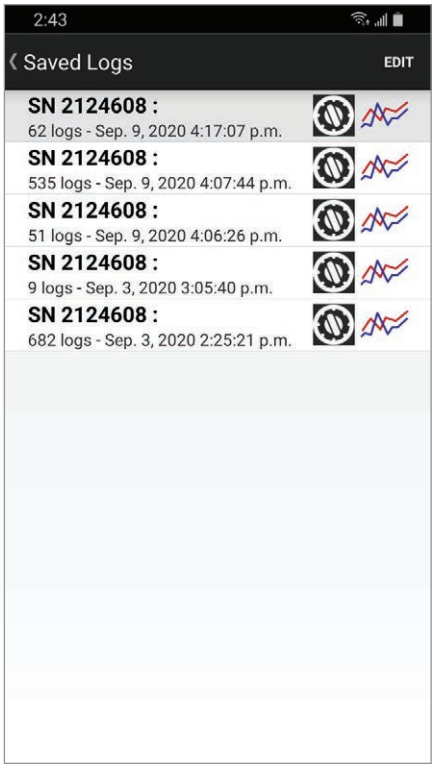


Figure 9-2 Viewing Saved Logs - Android

On an iOS device, you can only delete Saved Logs when that datalogger is disconnected from the App. Delete logs from the list by swiping left.

On an Android device, you can delete Saved Logs from the list by tapping **Edit** at the top right of the list, then selecting the logs you want to delete.

The data log will be shown in a graphical format (**Plot**). If allowed in User Defaults (Section 4.3), tapping the screen in an iOS device, will show you the value of that data point, including the date and time. Tap and hold to show the value on an Android device. You can use gestures to scroll through the data, and zoom in and out.

Note: On an iPad, tapping  will expand the Plot screen to full screen.

Note: Viewing the data plot in a horizontal orientation is also an option.

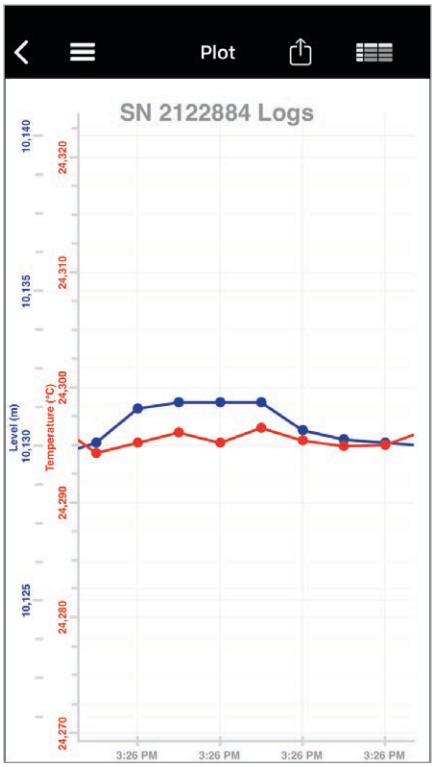


Figure 9-3 Viewing Saved Data Log Plot - iOS

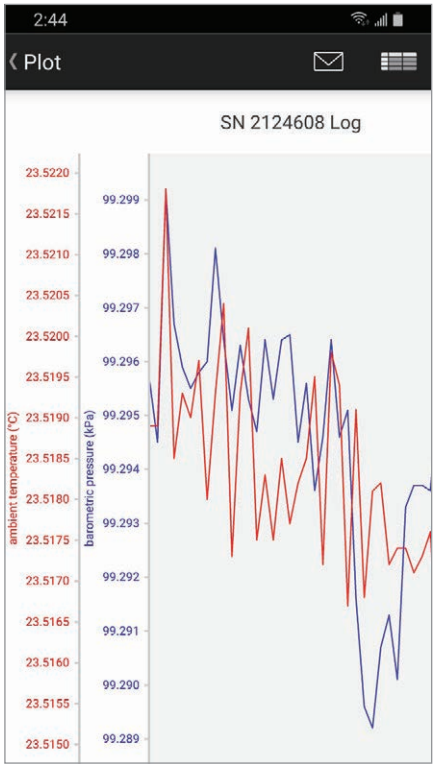


Figure 9-4 Viewing Saved Data Log Plot - Android

Note: When viewing Solinst Rainlogger data, you can select the time "Interval" at which you would like the data shown, from 1 to 99 seconds, minutes, hours, days, or weeks (this acts like a zoom function).

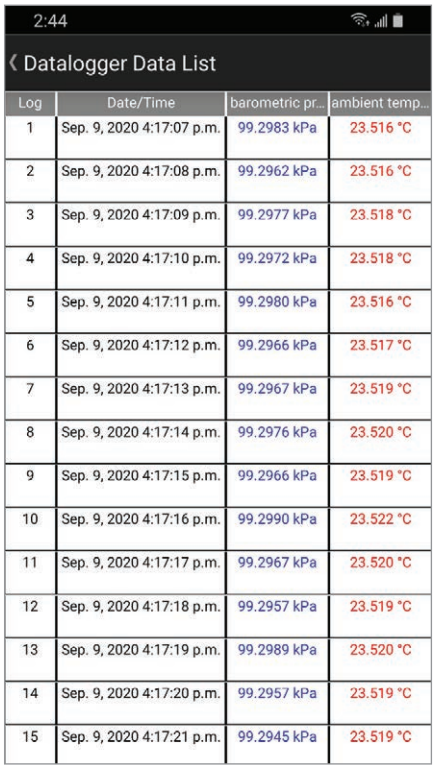
When viewing data you have the option to e-mail the data log. See Section 10.1 for e-mailing data.

You can select  to view the saved data log in a list format.

Note: User Defaults (see Section 4.3) allows adjustment of how the plot symbols are shown and whether the data pop-up appears when a plot point is touched.

Log	Date/Time	Level	Temperature
1	27/08/20 3:25:56 PM	10.13m	24.30°C
2	27/08/20 3:25:57 PM	10.13m	24.30°C
3	27/08/20 3:25:58 PM	10.13m	24.30°C
4	27/08/20 3:25:59 PM	10.13m	24.30°C
5	27/08/20 3:26:00 PM	10.13m	24.30°C
6	27/08/20 3:26:01 PM	10.13m	24.30°C
7	27/08/20 3:26:02 PM	10.13m	24.30°C
8	27/08/20 3:26:03 PM	10.13m	24.30°C
9	27/08/20 3:26:04 PM	10.13m	24.30°C
10	27/08/20 3:26:05 PM	10.13m	24.30°C
11	27/08/20 3:26:06 PM	10.13m	24.30°C
12	27/08/20 3:26:07 PM	10.13m	24.30°C
13	27/08/20 3:26:08 PM	10.13m	24.29°C
14	27/08/20 3:26:09 PM	10.13m	24.30°C
15	27/08/20 3:26:10 PM	10.13m	24.30°C
16	27/08/20 3:26:11 PM	10.13m	24.29°C
17	27/08/20	10.13m	24.30°C

Figure 9-5 Viewing Saved Data Log List - iOS



Log	Date/Time	barometric pr...	ambient temp...
1	Sep. 9, 2020 4:17:07 p.m.	99.2983 kPa	23.516 °C
2	Sep. 9, 2020 4:17:08 p.m.	99.2962 kPa	23.516 °C
3	Sep. 9, 2020 4:17:09 p.m.	99.2977 kPa	23.518 °C
4	Sep. 9, 2020 4:17:10 p.m.	99.2972 kPa	23.518 °C
5	Sep. 9, 2020 4:17:11 p.m.	99.2980 kPa	23.516 °C
6	Sep. 9, 2020 4:17:12 p.m.	99.2966 kPa	23.517 °C
7	Sep. 9, 2020 4:17:13 p.m.	99.2967 kPa	23.519 °C
8	Sep. 9, 2020 4:17:14 p.m.	99.2976 kPa	23.520 °C
9	Sep. 9, 2020 4:17:15 p.m.	99.2966 kPa	23.519 °C
10	Sep. 9, 2020 4:17:16 p.m.	99.2990 kPa	23.522 °C
11	Sep. 9, 2020 4:17:17 p.m.	99.2967 kPa	23.520 °C
12	Sep. 9, 2020 4:17:18 p.m.	99.2957 kPa	23.519 °C
13	Sep. 9, 2020 4:17:19 p.m.	99.2989 kPa	23.520 °C
14	Sep. 9, 2020 4:17:20 p.m.	99.2957 kPa	23.519 °C
15	Sep. 9, 2020 4:17:21 p.m.	99.2945 kPa	23.519 °C

Figure 9-6 Viewing Saved Data Log List - Android

Note: Touching a data point in the list will highlight the same point in the plot view.

10.0 Sharing Data Logs

10.1 E-mailing and Sharing Data Logs

Open the data log as described in Section 9.0. On an iOS device tap the share icon  . On an Android device tap the e-mail icon  .

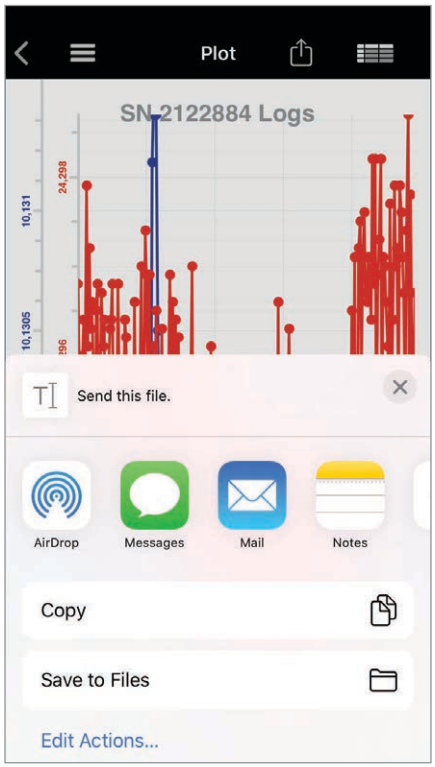


Figure 10-1 Data Log Sharing - iOS

On an iOS device you will be provided with multiple options for sharing the *.xle file, including e-mail, AirDrop, or the Files App for bulk cloud transfers.

Note: If other cloud-sharing apps are installed (e.g. Dropbox) they will also appear as file sharing options.

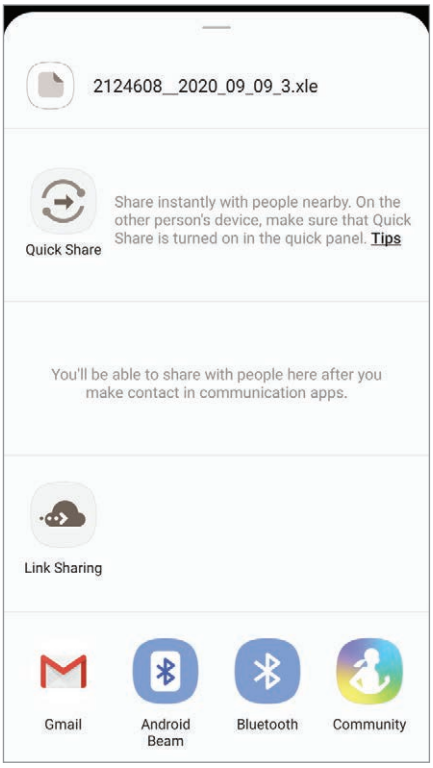


Figure 10-2 Data Log Sharing - Android

On an Android device you will be provided with multiple options for sharing the *.xle file, including e-mail.

Once shared via your preferred method, the *.xle files can be opened with Solinst Levelogger PC Software. For more information on Levelogger PC Software, please see the Model 3001 Levelogger Series User Guide.

10.2 Transferring Data Logs

The *.xle data files can be opened using Levelogger PC Software, to perform a barometric compensation and other data compensations. For more information on Levelogger PC Software and data compensations, please see the Model 3001 Levelogger Series User Guide.

Note: Data logs can also be e-mailed directly from the Solinst Levelogger App to any e-mail address, or shared using other applications on an iOS device.

10.2.1 Transfer from iOS

To transfer data from the Solinst Levelogger App directly to your PC Computer, follow these steps:

1. Plug your smart device into your PC using the cable supplied with your device.
2. Open iTunes.
3. Select your device, which should be shown next to the eject icon on the top right (in iTunes 12.7 or later, it will be top left).
4. Select "Apps" (in iTunes 12.7 or later, select "File Sharing").
5. Scroll down to find the list of Apps that allow File Sharing.
6. Select the Solinst Levelogger App.
7. A list of Solinst Documents should be displayed.
8. Select the data file you want to save to your PC, select "Save to…", and choose the location you want to save the file. You can also drag the file to your desktop or other location.

10.2.2 Transfer from Android

Note: Depending on your device, you may have to check your device settings to ensure it is set to allow USB transfer.

Note: If you are asked to select a USB connection, choose Media device (MTP).

To transfer data from the Solinst Levelogger App directly to your PC Computer, follow these steps:

1. Make sure your smart device's screen is unlocked.
2. Plug your smart device into your PC using the USB cable supplied with your device.
3. Your device will appear as a new drive. Open the File Explorer (My Computer), where you can drag and drop files like you would from a USB flash drive or other external device.
4. Double-click on your device (twice). Data files are located in your device's internal memory: Files>Download>Solinst.
5. When you are finished transferring data, eject your device, then unplug the USB cable.

Note: To transfer data from some Samsung devices, you will first need to download Samsung Kies on your computer. The application can be downloaded here: http://www.samsung.com/ca/support/usefulsoftware/KIES/

11.0 Diagnostics

To view diagnostic information from a connected datalogger, select **Diagnostics** from the Navigation Menu or from the options on the Dataloggers Screen. The Diagnostics Utility can be used to run self-tests, recover a previous data log (Edge Series only), create and email reports, regenerate data files, and reset a vented datalogger.

The following will be displayed once **Diagnostics** is selected:

1) Datalogger Serial Number
2) Levelogger App Interface Serial Number
3) Datalogger Model Number
4) Datalogger Firmware Version
5) Datalogger Battery Voltage
6) Datalogger Battery Charge Level
7) Current Level Reading
8) Current Temperature Reading
9) Current Conductivity Reading (Levelogger LTCs only)
10) Max/Min Temperature Reading
11) Max Pressure Reading
12) Max Conductivity Reading (Leveloggers LTCs only)
13) Total Number of Logs

This information can be used to identify firmware, battery and/or temperature/pressure/conductivity sensor problems.

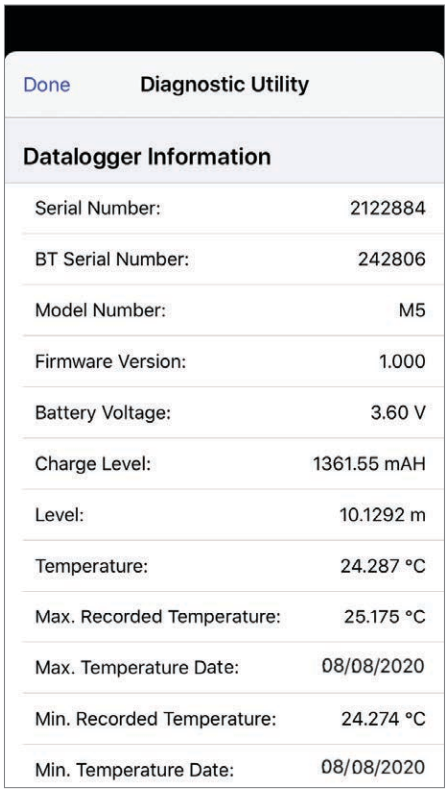


Figure 11-1 Diagnostics Utility - iOS

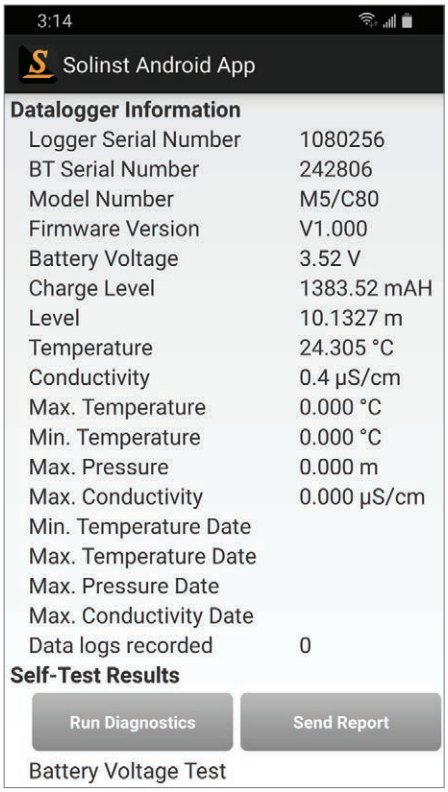


Figure 11-2 Diagnostics Utility - Android

11.1 Run Diagnostics

Selecting **Run Diagnostics** performs a series of self-tests on the datalogger to check for problems with the battery, memory, pressure/temperature/conductivity sensors. If a Levelogger LTC fails the Conductivity Sensor Test, this could mean that you have not calibrated your LTC in a while (~1 year). It is recommended that you perform a conductivity calibration, then 'Run Diagnostics' again. If any of these tests fail then a report should be created and emailed to Solinst Technical Support.

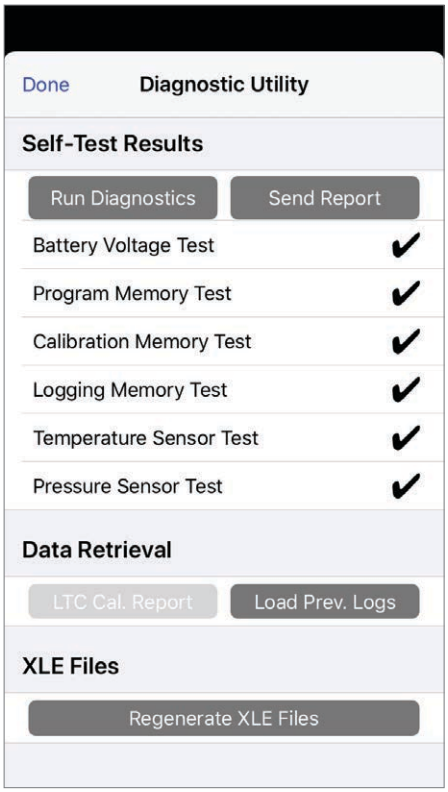


Figure 11-3 Run Diagnostics - iOS

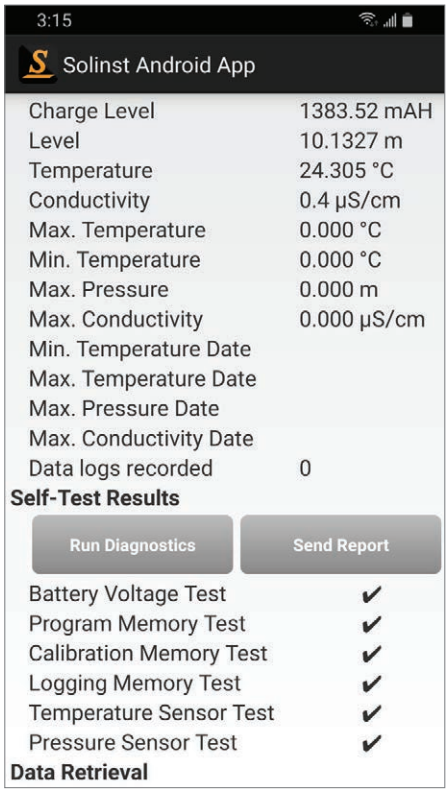


Figure 11-4 Run Diagnostics - Android

11.2 Send Report

Selecting **Send Report** creates a text file containing the information obtained from the **Run Diagnostics** function. When you tap Send Report, a screen will pop up asking you to fill out your company information. Fill this out, select "Continue" or "OK" and the resulting report can be saved or sent to Solinst Technical Support for troubleshooting. If creating a report for an Levelogger LTC, the LTC Calibration History Report will be included.

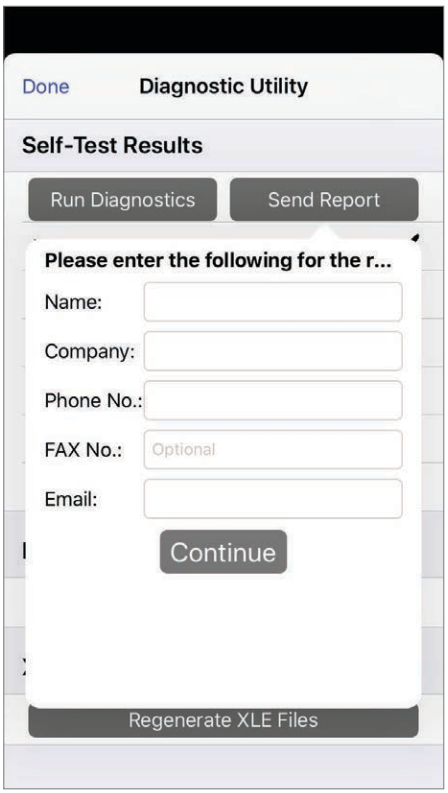


Figure 11-5 Send Report - iOS

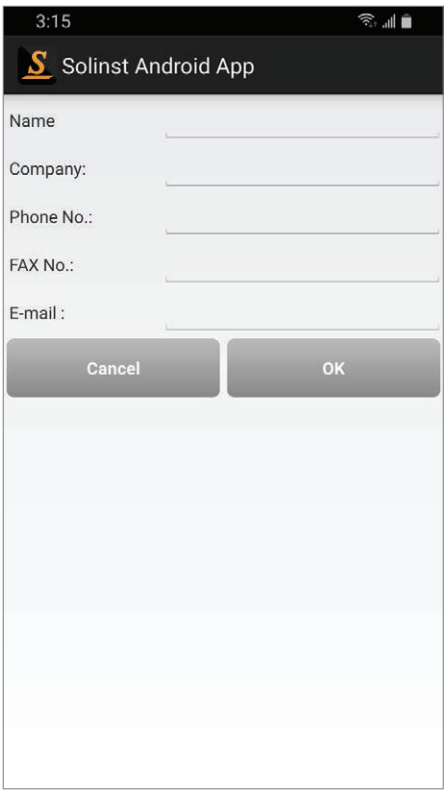


Figure 11-6 Send Report - Android

11.3 Load Previous Logs

For Levelogger Edge Series dataloggers, selecting **Load Prev. Logs** attempts to recover data from the previous logging session. If successful, you can view the log by selecting "View log" or by going to the Dataloggers screen after selecting "Ok". There will be a warning stating that "previous logs may be corrupt and/or contain invalid data." In the Dataloggers screen, the previous data log will be identified by a caution symbol.

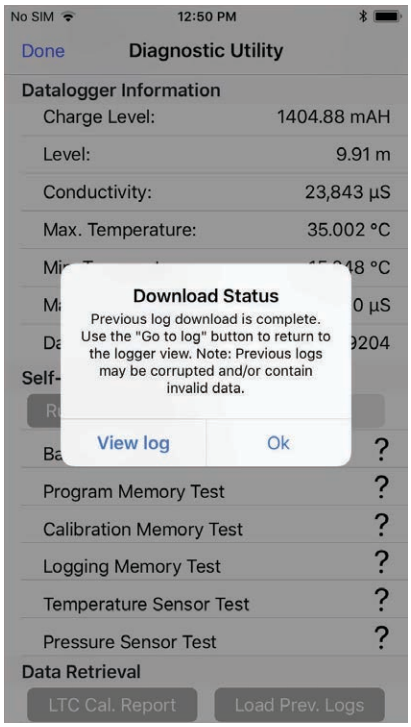


Figure 11-7 Loading Previous Log - iOS

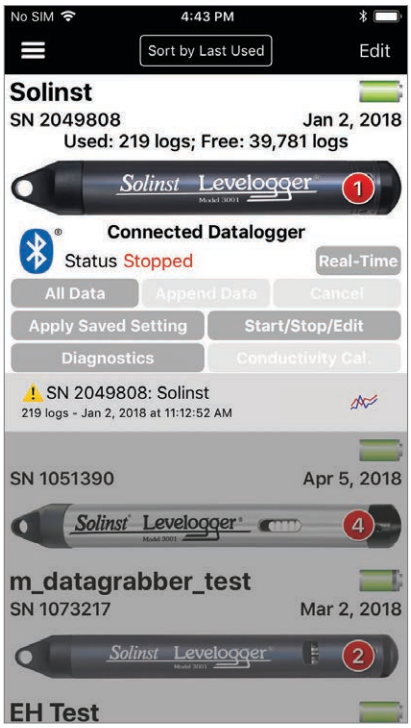


Figure 11-8 Previous Data Log - iOS

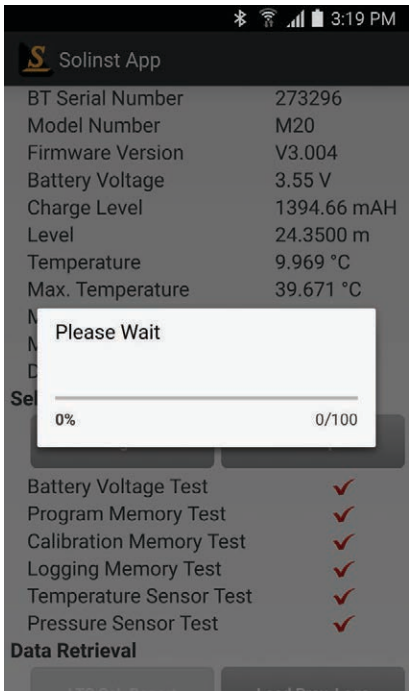


Figure 11-9 Loading Previous Log - Android

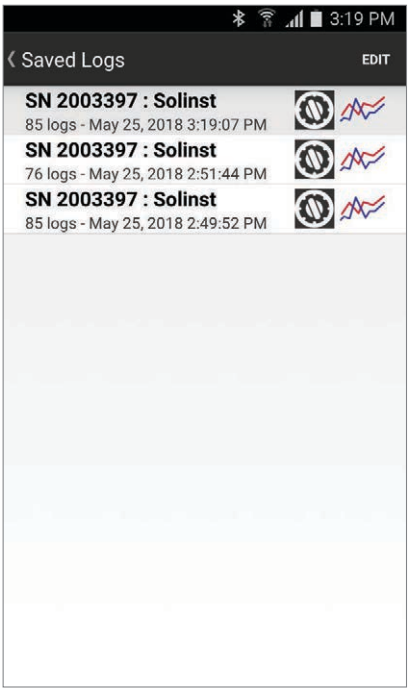


Figure 11-10 Previous Data Log - Android

11.4 LTC Calibration History Report

This function creates a report of all previous user calibrations performed on the Levelogger LTC. Use it to send a history report to Solinst for analysis if the Levelogger LTC readings are irregular and/or the unit does not maintain its calibration. To execute this function select **LTC Cal. Report**. This creates a text file that can be sent to Solinst Technical Support.

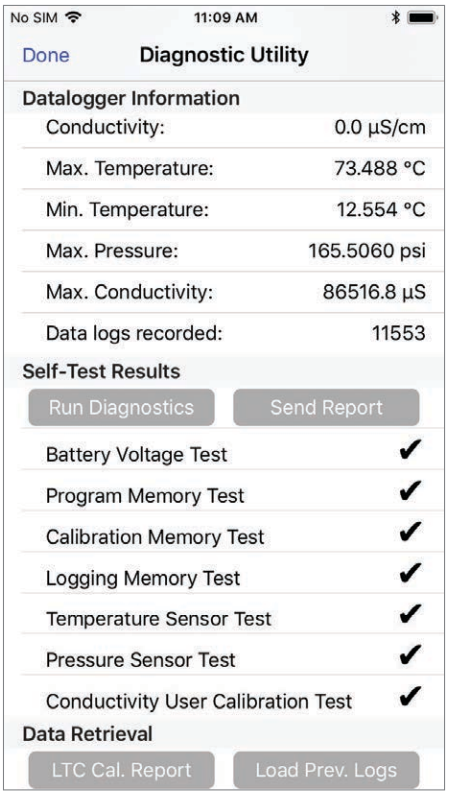


Figure 11-11 LTC Calibration Report - iOS

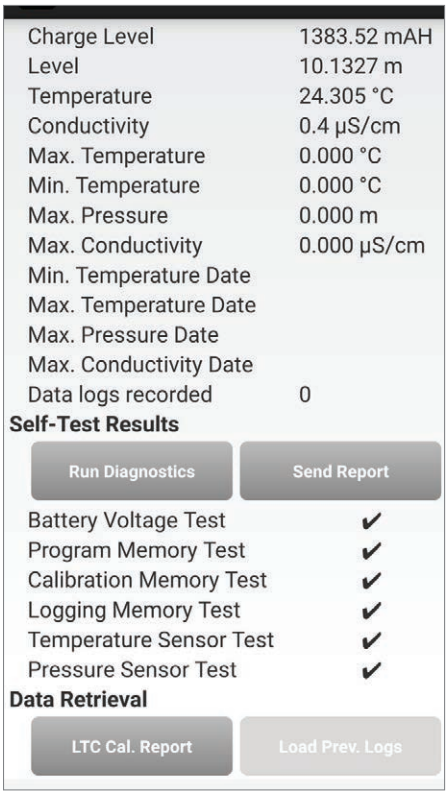


Figure 11-12 LTC Calibration Report - Android

11.5 Regenerate Data Files

In the iOS App, selecting **Regenerate XLE Files** creates an .xle file for each of the data logs currently listed/ saved in the App. The copies of the .xle are saved to your smart device in the Files > Solinst folder. From the folder, you can email the data files or transfer the data to your computer.

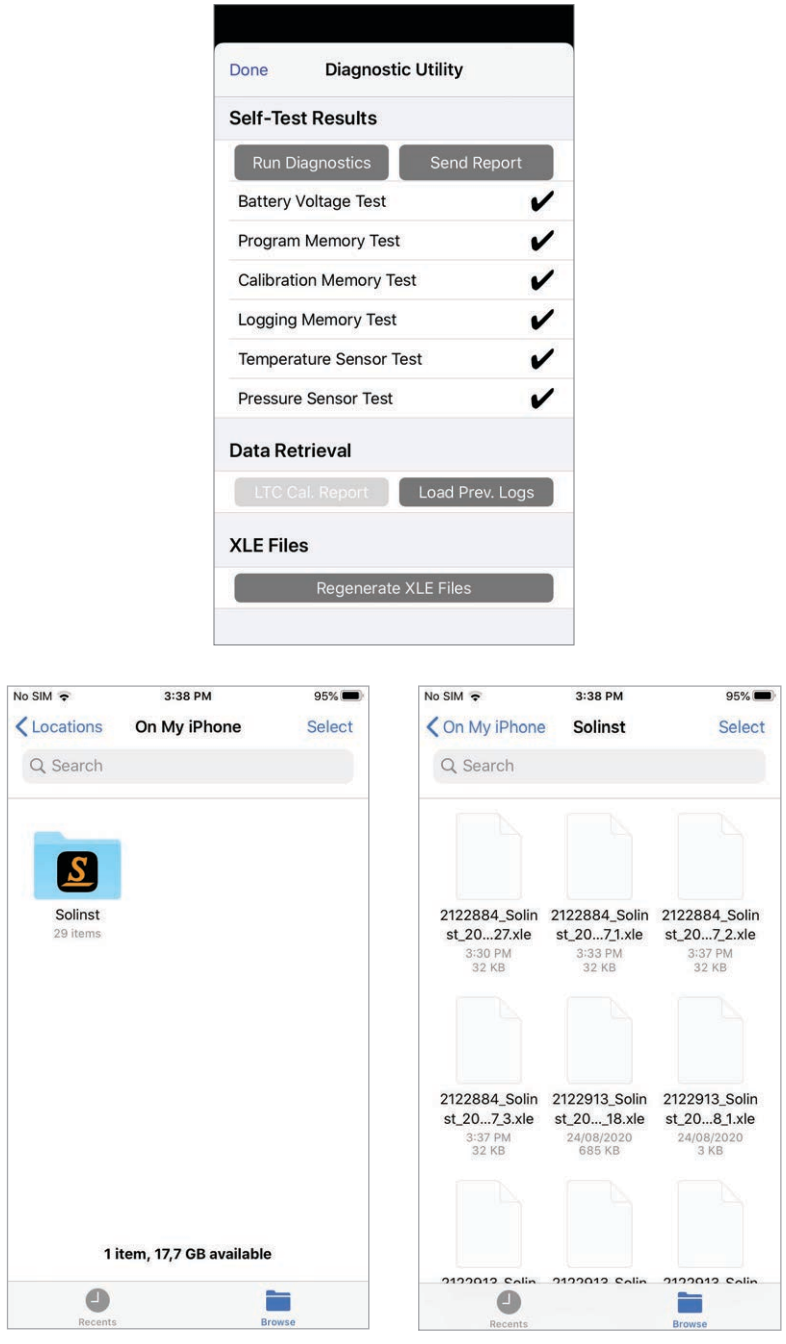


Figure 11-13 Regenerate XLE Files Location – iOS

11.6 Clear Datalogger Zero

To clear a previously performed "Barometric Zero" on a vented datalogger (See Section 6.7), click **Clear Zero Offset**.

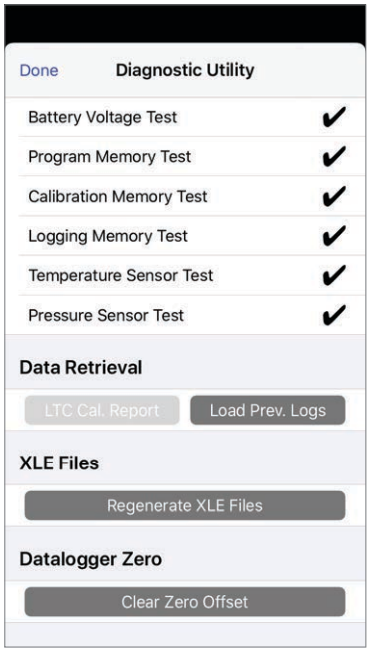


Figure 11-14 Clear Zero Offset – iOS

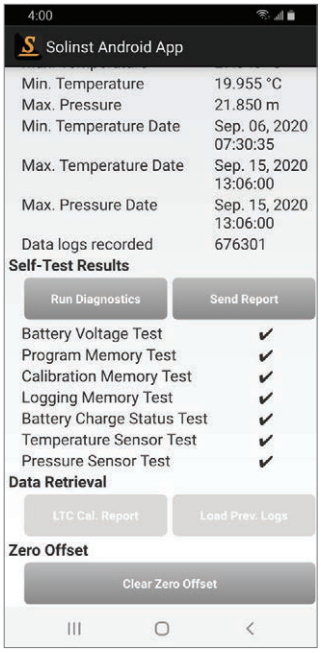


Figure 11-15 Clear Zero Offset – Android

12.0 Conductivity Calibration

To calibrate a connected Levelogger 5 LTC or LTC Levelogger Edge conductivity sensor, select **Conductivity Calibration** from the Navigation Menu or **Conductivity Cal.** from the options on the Dataloggers Screen.

The Levelogger LTC must not be running while the calibration is being performed. See Section 6.8 for information on stopping dataloggers.

Note: See the Levelogger User Guide for more information on conductivity calibration requirements and guidance.

Figure 12-1 Conductivity Calibration Introduction - iOS

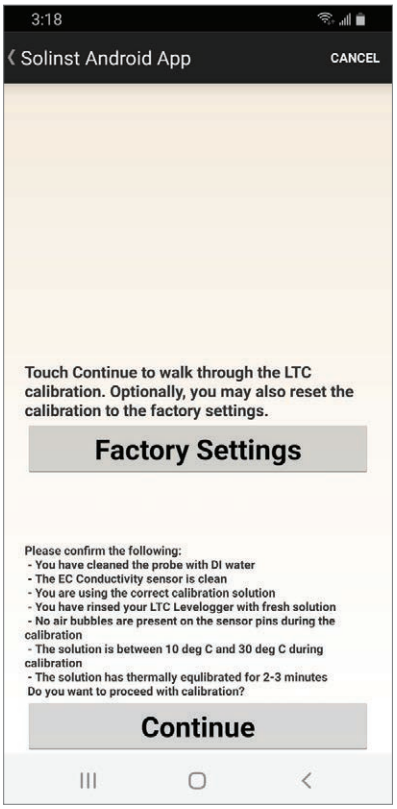


Figure 12-2 Conductivity Calibration Introduction - Android

A Levelogger LTC can be set back to original factory calibration settings for conductivity at any time, by selecting **Factory Settings** in the first Calibration screen. If you suspect that user calibrations are not working properly, you can restore the Levelogger LTC to its original factory settings and then perform a "first-time" conductivity user calibration to maximize accuracy.

To initiate a calibration, select "Continue" after you have read through the requirements on the screen.

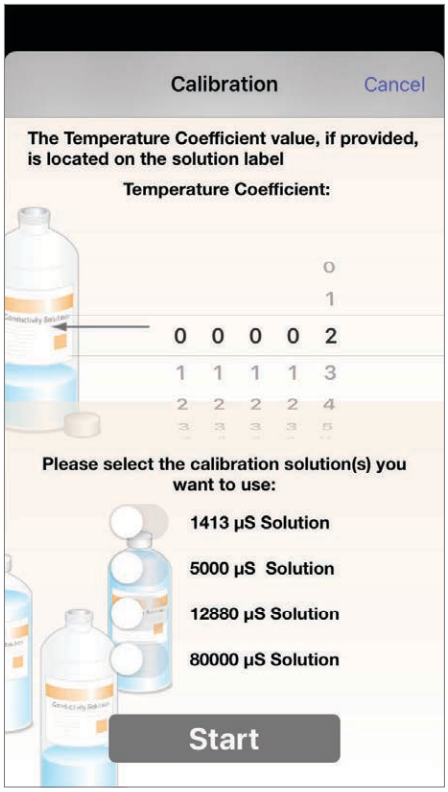


Figure 12-3 Temperature Coefficient and Calibration Solutions - iOS

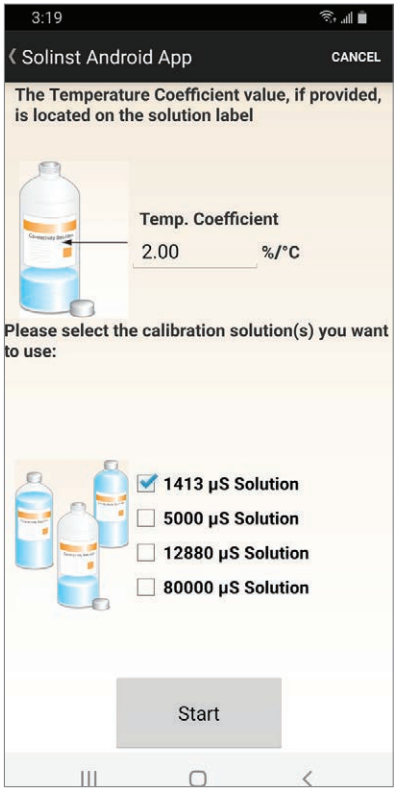


Figure 12-4 Temperature Coefficient and Calibration Solutions - Android

Select the **Temperature Coefficient** for the conductivity solution(s) you will be using. The default setting is 2.000. If the conductivity solution you are using to calibrate the Levelogger LTC states a different temperature coefficient on the label, please input that number.

Select the **calibration solutions** you will use for the calibration. Choose up to four solutions for a multipoint calibration of the Levelogger LTC. Ensure the solutions are ready in the calibration beaker or container. Select "Start" to begin the calibration.

Note: If you know the approximate conductivity range of the water that you will be measuring, best accuracy when calibrating your unit is to select two calibration points – one above, and one below that range. If you are measuring in water less than 1,413 µS/cm or above 12,880 µS/cm or 80,000 µS/cm, use just one calibration solution.

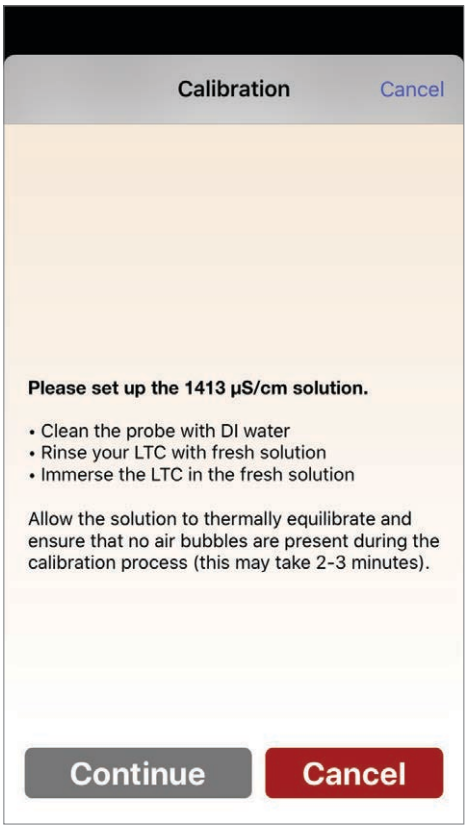


Figure 12-5 Calibration Setup - iOS

Figure 12-6 Calibration Setup - Android

Use DI water to rinse the Levelogger LTC first and then rinse the Levelogger LTC with the displayed calibration solution. Use fresh solution for calibration, and immerse the Levelogger LTC. Lightly tap the Levelogger to remove any bubbles from the sensor. Allow 2-3 minutes to stabilize, then select "Continue" to calibrate.

Since most standard calibration solutions state conductivity at a standard temperature of 25°C, the Levelogger LTC an account for temperature differences between 10 to 30°C when you calibrate the unit. The Levelogger LTC will compare the current temperature and conductivity readings against the temperature corrected standard solution.

When a single-point calibration is successful, the process is complete. Once the calibration is complete for the first solution of a multipoint calibration, a message will appear stating that the calibration was successful. When you select 'Ok', you will be prompted to start the rinsing process for the next solution selected. The calibration process will proceed automatically until completed for all solutions.

If a failure occurs at any point during calibration, a message will appear asking you to clean and check your probe, check your solutions, then start the calibration process over for that current solution by selecting 'Ok'. If performing a multipoint calibration, any previous successful calibration points will remain.

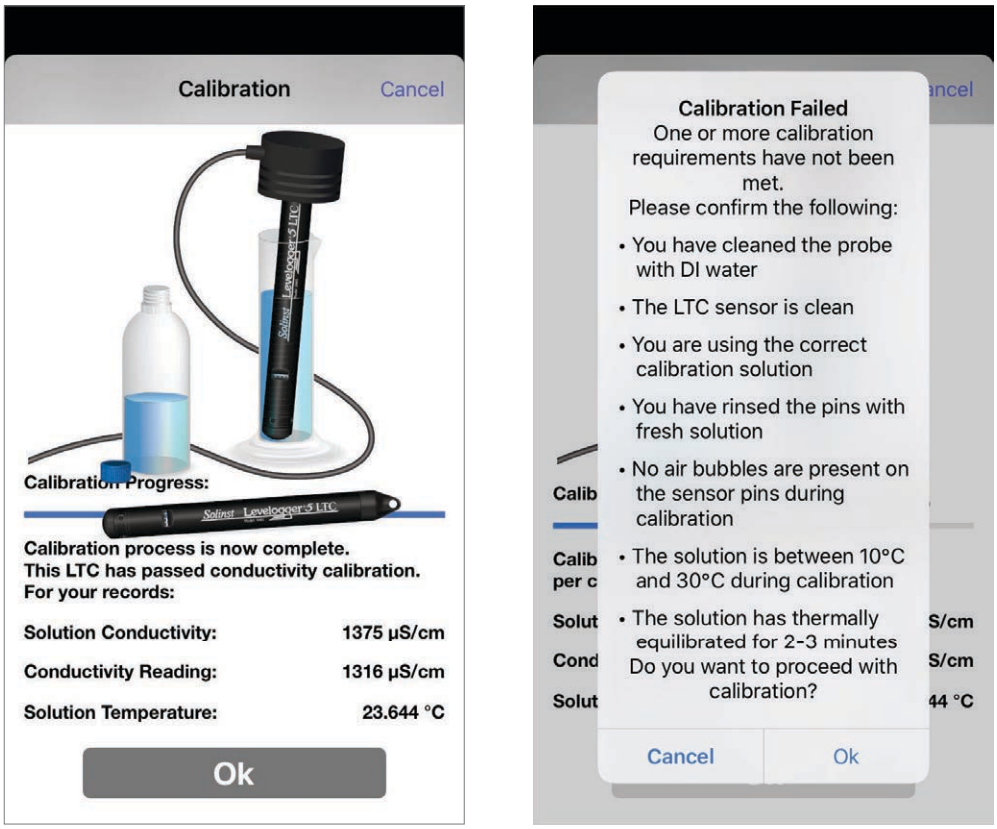


Figure 12-7 Conductivity Calibration Results - iOS

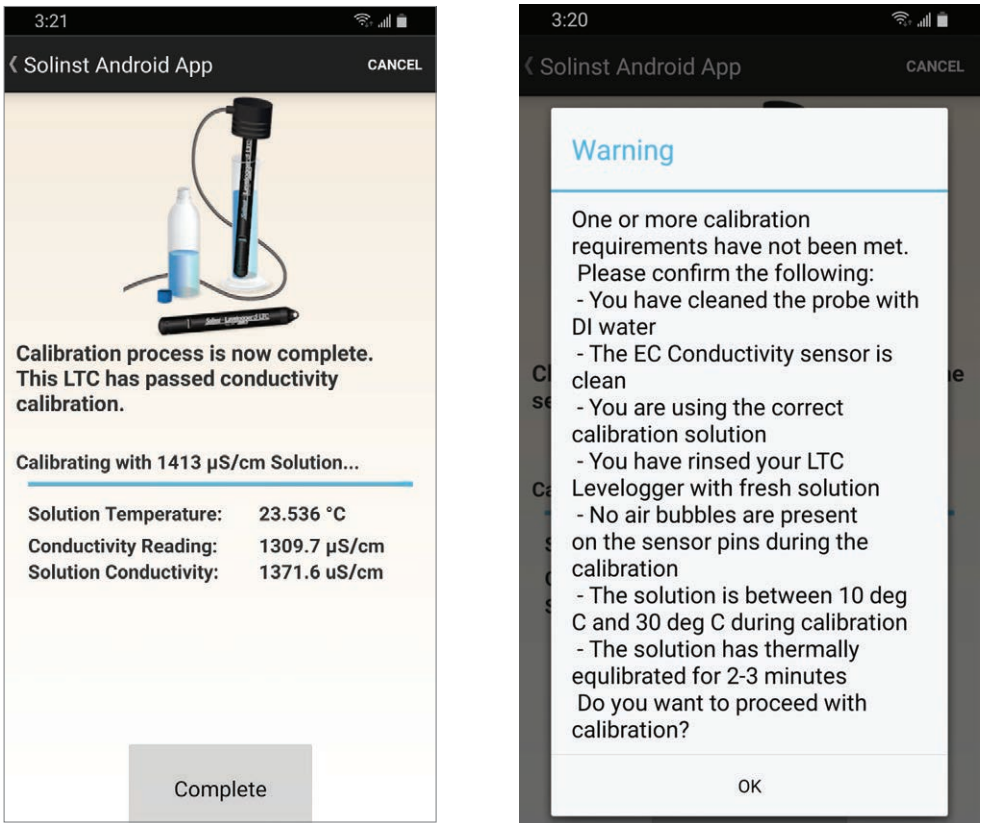


Figure 12-8 Conductivity Calibration Results - Android

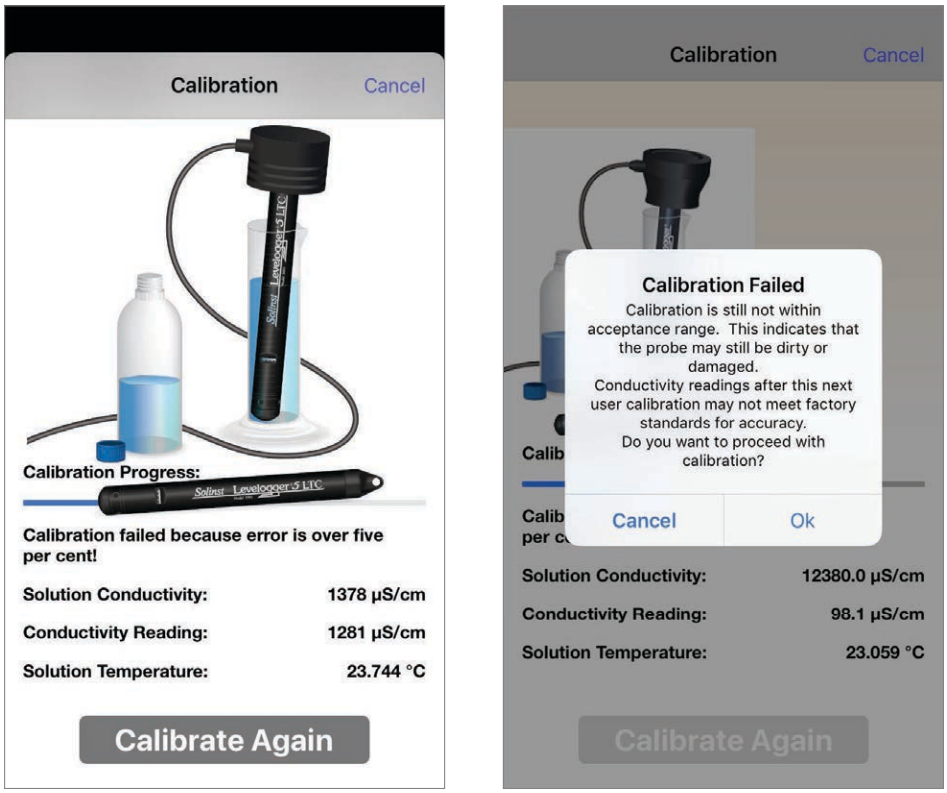


Figure 12-9 Conductivity Calibration Retry - iOS

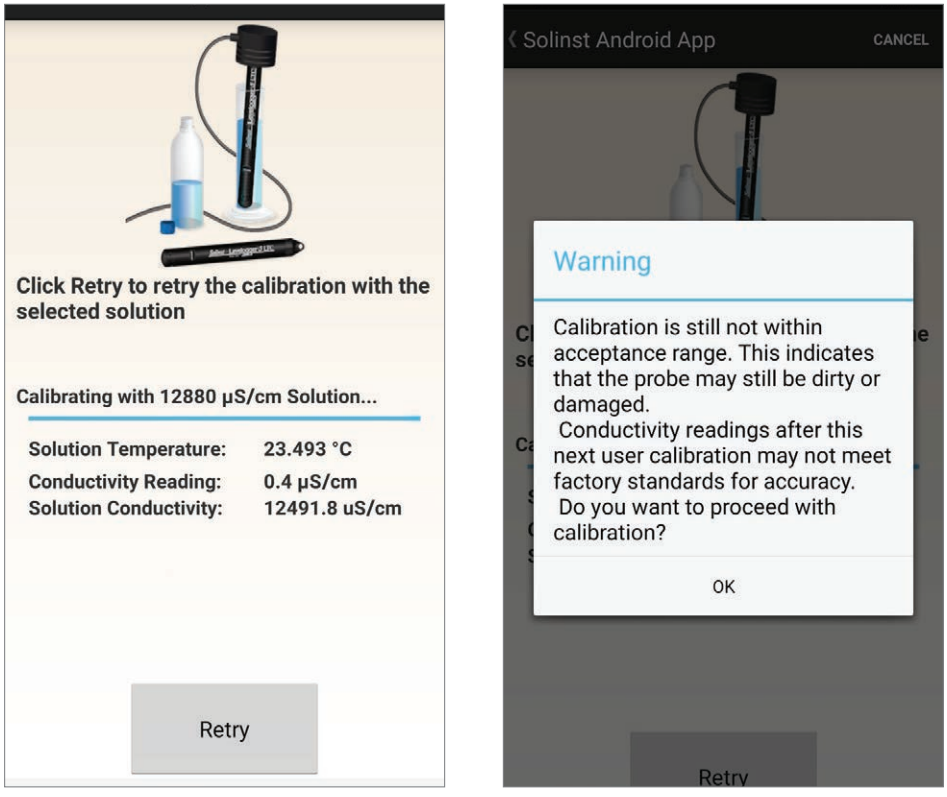


Figure 12-10 Conductivity Calibration Retry - Android

Select "Calibrate Again" or "Retry" to retry the calibration a second time. If a second failure occurs during calibration, a warning message will appear indicating that your probe may still be dirty, or damaged. This may occur if your Levelogger LTC conductivity sensor has been affected by dirt, mineral build-up, etc., so it no longer responds like it did when it was first factory calibrated. This step allows your sensor to be calibrated within a wider range of the standard solution value.

If you select 'Ok' to accept the larger tolerance, the calibration process will start over for that current solution. If performing a multipoint calibration, any previous successful calibration points will still remain. If you select 'Cancel', the Levelogger LTC will default back to the last pre-calibrated state. You can retry the calibration using the normal tolerance range. Select "Calibrate Again" or "Retry" to retry the calibration a third time.

Figure 12-11 Conductivity Calibration Third Try - iOS

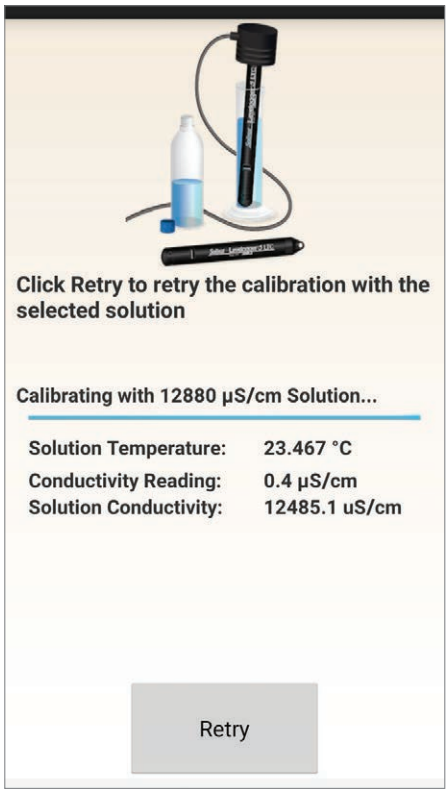


Figure 12-12 Conductivity Calibration Third Try - Android

Figure 12-13 Calibration Failure - iOS

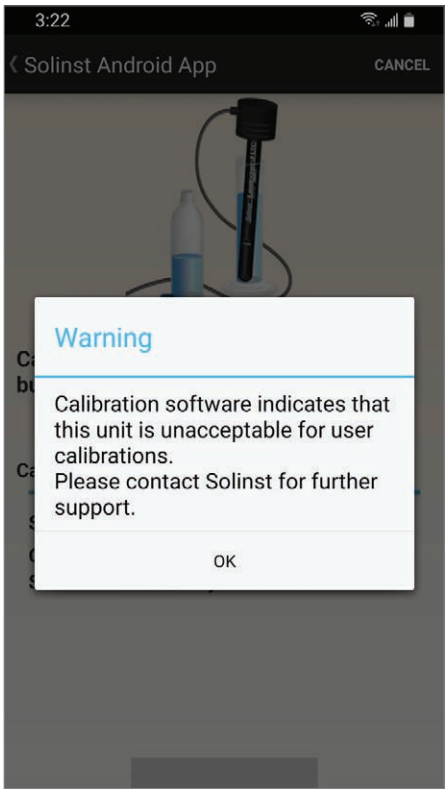


Figure 12-14 Calibration Failure - Android

If a third calibration error occurs, or the results of the calibration are outside the error tolerance range, a warning message will appear stating the calibration failed. It is recommended to contact Solinst for further options. Click "Ok" or "Complete" to exit the Calibration screen.

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