

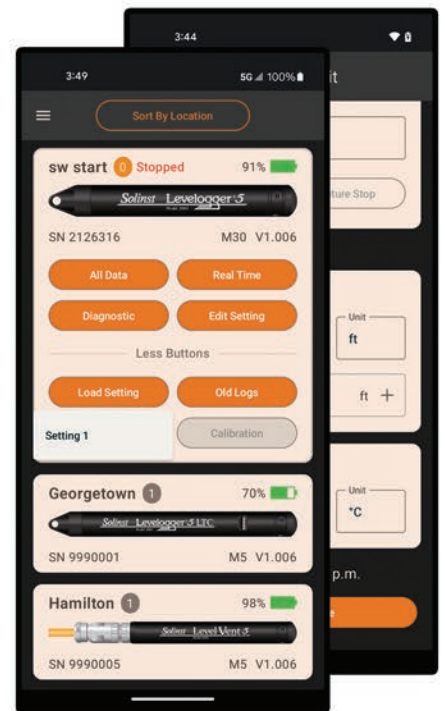
Solinst®



Levelogger 5 App Interface User Guide for Android

October 22, 2024

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High Quality Groundwater and Surface Water Monitoring Instrumentation

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1.0 Introduction

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

The Levellogger 5 App Interface uses *Bluetooth*® wireless technology to connect a Solinst datalogger to your smart device. Once connected, you can use the Solinst Levellogger App on your device to communicate with the datalogger. The Solinst Levellogger 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 Levellogger App also provides the ability to obtain diagnostic information from a connected datalogger, as well as perform a conductivity calibration for a Levellogger LTC.

1.1 Compatibility

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

Datalogger	Firmware Version
Levellogger 5	1.006
Barologger 5	1.006
Levellogger 5 Junior	1.006
Levellogger 5 LTC	1.006
Rainlogger 5	1.006
LevelVent 5	1.006
AquaVent 5	1.006/1.000
Levellogger Edge	3.004
Barologger Edge	3.004
Levellogger Junior Edge	3.004
LTC Levellogger 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 Levellogger that has an older version of firmware to the Solinst Levellogger 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, 1.006/1.000 (or higher) respectively.

1.1.1 Android Devices

The Solinst Levellogger App is available for download on Google Play™. The Solinst Levellogger App and Interface are compatible with tablets and smartphones running Android Version 10.0 or higher.

Tested on the following devices:

- Samsung Galaxy S22
- Google Pixel 4A

2.0 Levellogger 5 App Interface



Figure 2-1 Levellogger 5 App Interface

2.1 Specifications

Levellogger 5 App Interface Specifications	
IP Rating:	IP 64 (dust and splash resistant)
Materials:	Black Delrin®, 316 stainless steel, Viton®
Operating Temperature:	-20°C to +50°C
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 Levellogger 5 App Interface Specifications

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

2.2 Installing Batteries

The Levellogger 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 Levellogger 5 App Interface to access the battery holder.
2. Carefully, remove the battery holder from the Levellogger 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 Levellogger 5 App Interface housing.

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

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



Figure 2-2 Installing/Replacing Levellogger 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 Levellogger 5 App Interface Battery Life Estimates

2.3 Power Button

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

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

2.4 LED Status

The Levellogger 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 Levellogger App is open.

Yellow light: Levellogger 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 Levellogger Deployment

The Levellogger 5 App Interface connects to the top end of an L5 Direct Read Cable, which has a connected Levellogger at the optical end. To connect the Levellogger 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 Levellogger 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 Levellogger User Guide.



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

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

2.5.2 LevelVent Deployment

The Levellogger 5 App Interface connects to the top end of a LevelVent 5 Wellhead. To connect the Levellogger 5 App Interface to the Wellhead, simply hold on to the Wellhead and thread the coupling of the Levellogger 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.

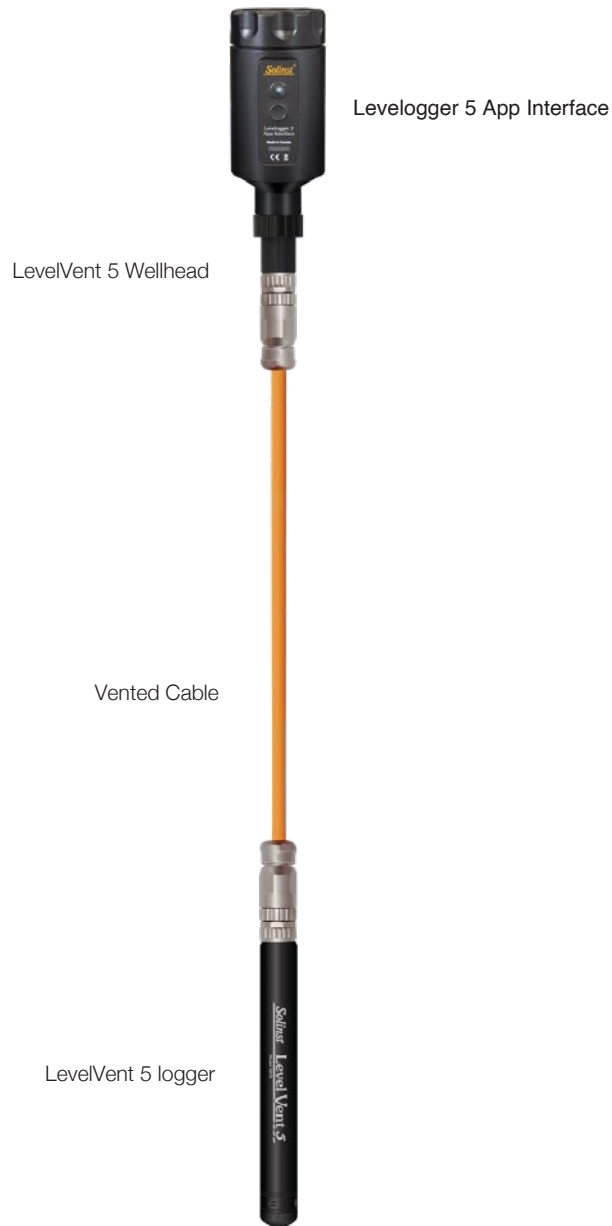


Figure 2-4 Connecting the Levellogger 5 App Interface to the LevelVent 5 Wellhead

2.5.3 AquaVent Deployment

The Levellogger 5 App Interface connects to the App Connector Cable, which is connected to an AquaVent 5 Wellhead. To connect the Levellogger 5 App Interface to the Connector Cable, simply hold on to the top end of the Connector Cable, and thread the coupling of the Levellogger 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 Levellogger 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 Levellogger 5 App Interface to the AquaVent 5 Wellhead

3.0 Activating the System

1. Download the Solinst Levellogger App on your smart device. The Solinst Levellogger App is available on Google Play. See Section 4.1.
2. Connect the Levellogger 5 App Interface to the top end of your Levellogger's L5 Direct Read Cable or Adaptor, LevelVent 5 Wellhead, or the AquaVent 5 Wellhead Connector Cable. Turn the Levellogger 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 Levellogger 5 App Interface to your smart device by selecting it from the list of Bluetooth devices (the Levellogger 5 App Interface will be identified in the list by "Solinst-BT" and its serial number).

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

5. Swipe through your Apps on your Android smart device and tap to launch the Solinst Levellogger App.

4.0 Solinst Levellogger App

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

The Solinst Levellogger App provides information about a connected datalogger, including battery level, serial number, and location. The Solinst Levellogger 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 Levellogger App, or you can connect your smart device to your computer and transfer data logs.

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

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

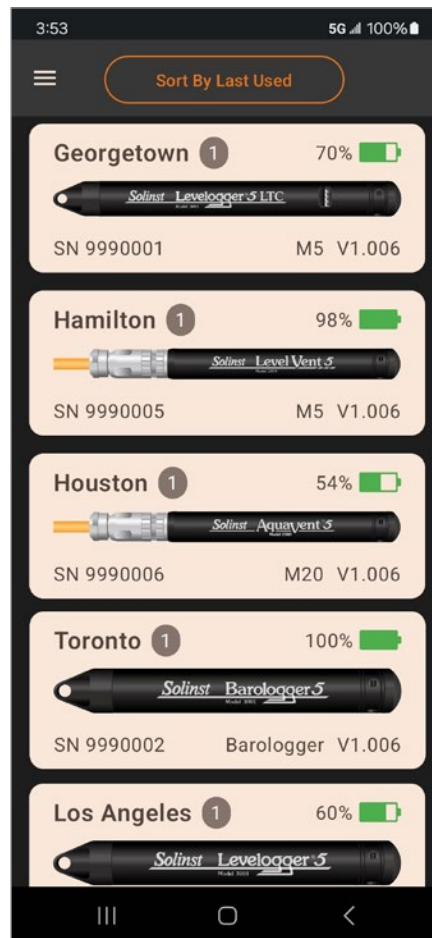


Figure 4-1 Solinst Levellogger App Home Screen
- No Datalogger Connected

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

4.1 Downloading the App

The Solinst Levellogger App can be downloaded on Google Play to your smart device running Android 10.0 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 (4G/5G).
2. Tap “Apps”, then the search icon, and type in “Solinst”. The Solinst Levellogger App should be listed.
3. Tap the Solinst Levellogger App listing, then tap “Install” to download the App.
4. Tap “Accept”, after reviewing the App’s permissions.
5. The Solinst Levellogger 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.

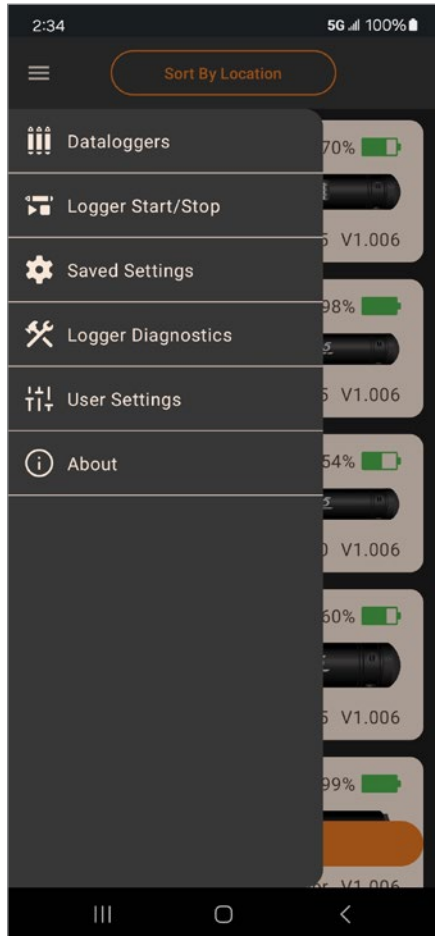


Figure 4-2 Solinst Levellogger App Main Navigation Menu - No Datalogger Connected

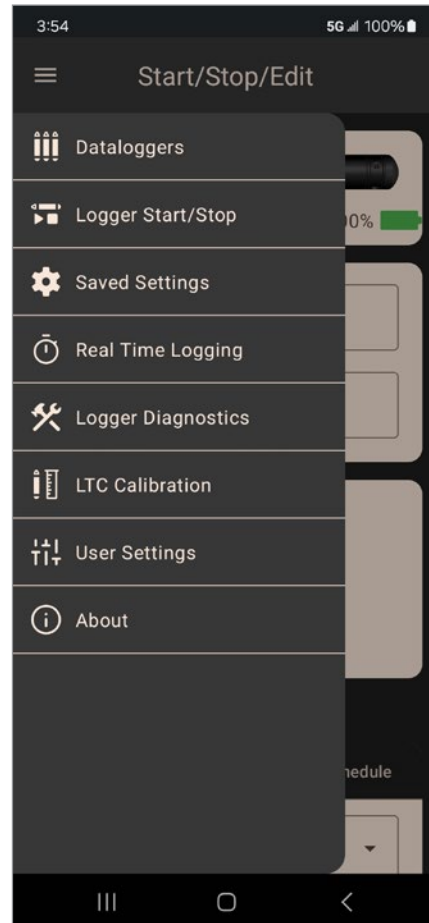


Figure 4-3 Solinst Levellogger App Main Menu - Datalogger Connected

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).

Logger Start/Stop: 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 Logger Start/Stop menu item will allow 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 Logging: See readings from the connected datalogger as they are logged (see Section 8.0). Real Time Logging will only be available when a datalogger is connected.

Logger 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).

LTC Calibration: Perform a conductivity calibration for an attached Levellogger 5 LTC or LTC Levellogger Edge (see Section 12.0). Conductivity Calibration will only be available if an LTC is connected.

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

4.3 User Defaults

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

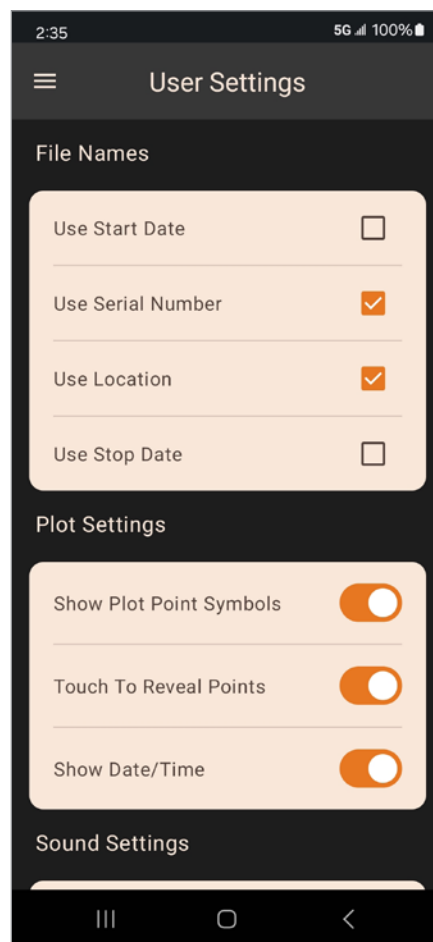


Figure 4-4 Solinst Levellogger App User Defaults

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

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** from the Navigation Menu, displays information about the Solinst Levellogger 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.

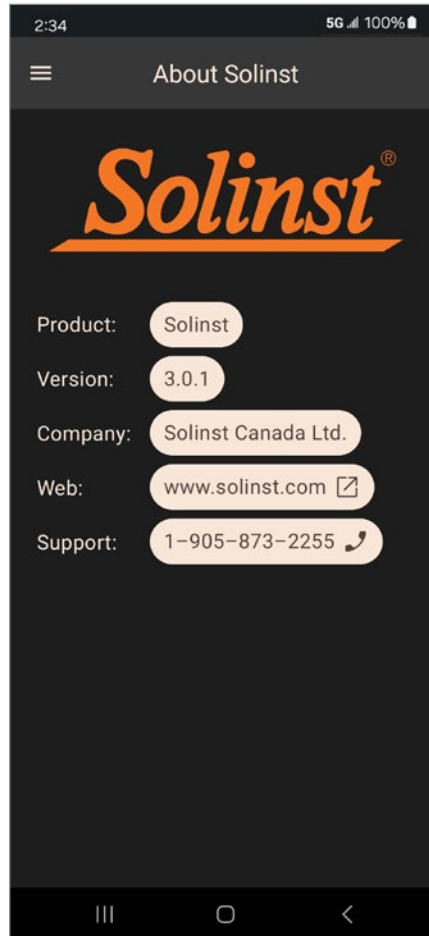


Figure 4-5 Solinst Levellogger App Information

4.5 Connecting Dataloggers

When the Solinst Levellogger App is launched, if a connected datalogger is 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 switching between dataloggers or your datalogger or App Interface becomes disconnected, “Connect” will appear at the bottom of the Dataloggers Screen. Tap the message to connect the datalogger once the App Interface is also connected successfully.

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

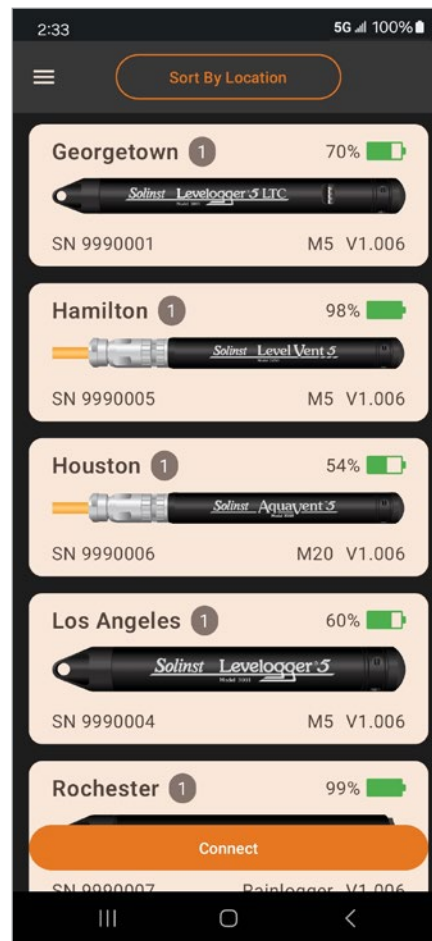


Figure 4-6 Connecting a Datalogger from the Dataloggers Screen

Note: To remove dataloggers from the list, swipe left on the datalogger image and tap the trash can icon.

Note: Swiping right on any datalogger image will allow you to view the previously applied settings for that datalogger.

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

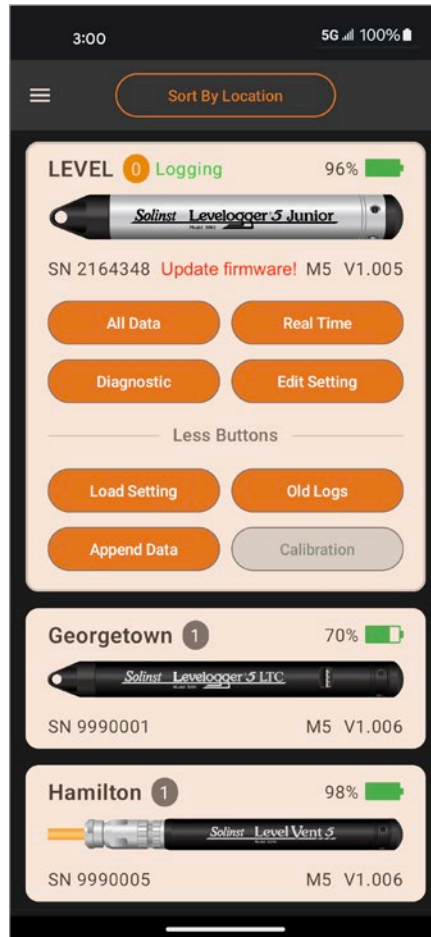


Figure 4-7 Datalogger with Outdated Firmware Message

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

4.6 Dataloggers Home Screen

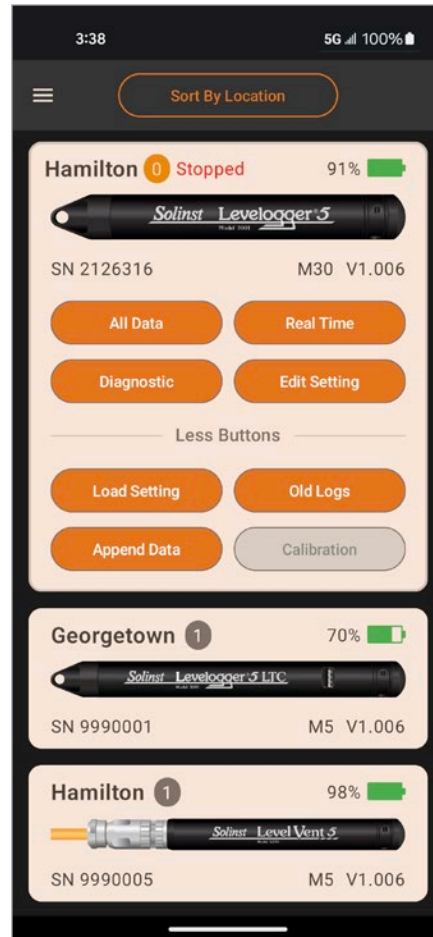


Figure 4-8 Dataloggers Screen with Connected Datalogger

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, model type, firmware version, 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. An orange number above 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.

5.0 Downloading Data

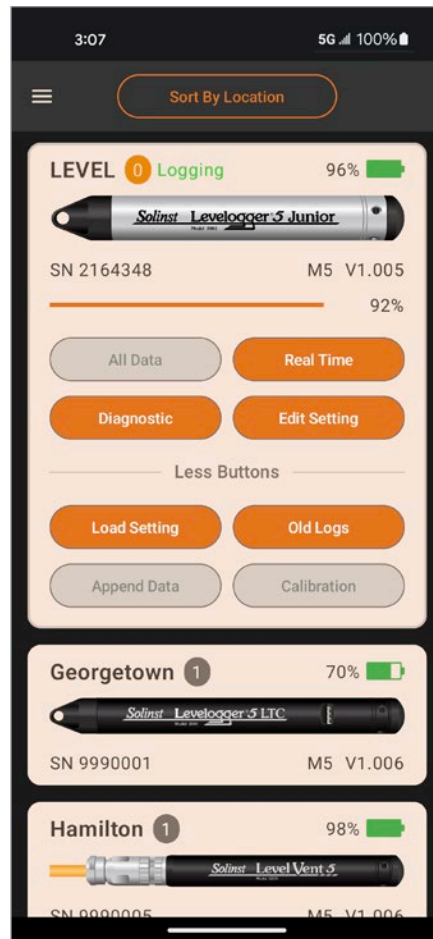


Figure 5-1 Downloading Data - Android

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


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

Note: For Levellogger 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 Levellogger 5 Series dataloggers, selecting **Old Logs** 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 Levellogger 5 Series datalogger (See Section 6.8).

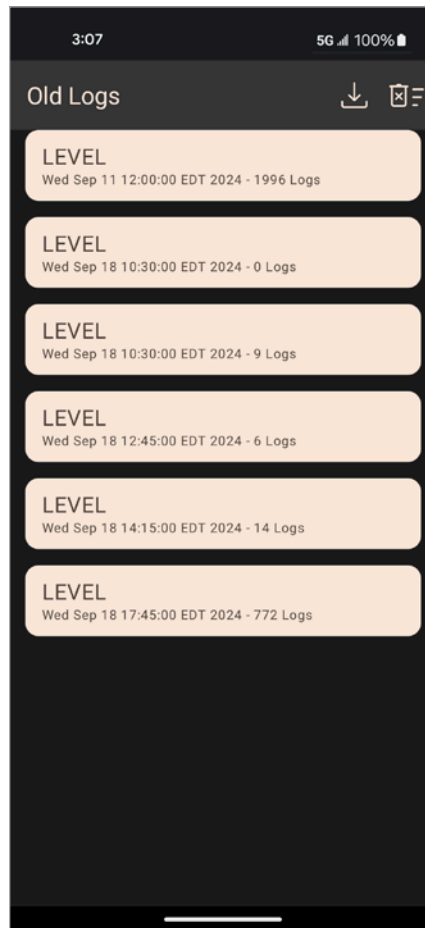


Figure 5-2 Old Logs

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 **Logger Start/Stop** from the Navigation Menu, or select **Edit Settings** from the options on the Dataloggers Screen.

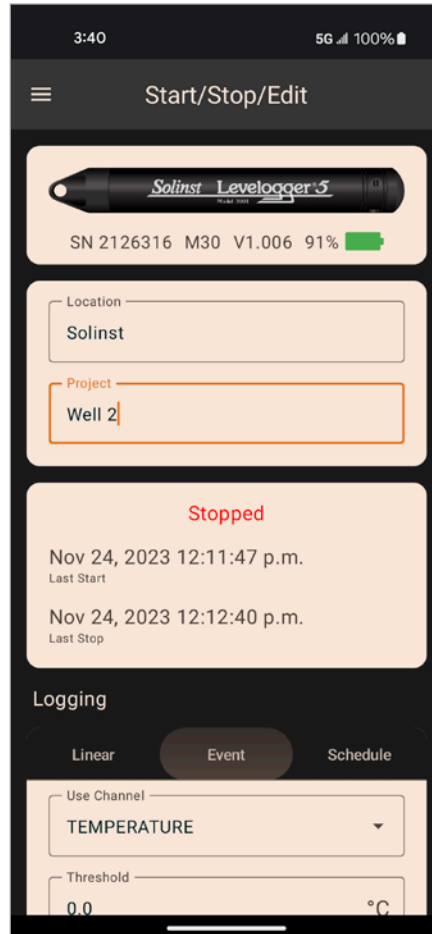


Figure 6-1 Edit Datalogger Settings

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

Once you change a setting, that field will be highlighted in orange. 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

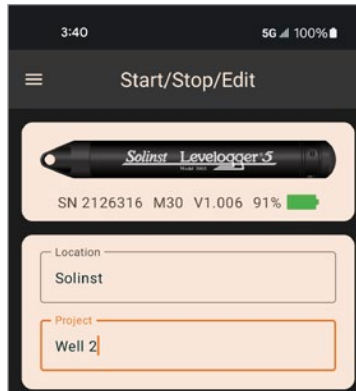


Figure 6-2 Datalogger Identification

The following will be displayed:

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. V1.006).

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.

6.2 Datalogger Status

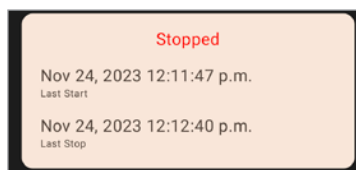


Figure 6-3 Datalogger Status

The following will be displayed:

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

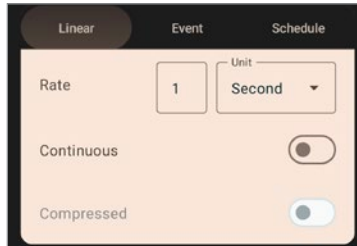


Figure 6-4 Datalogger Sampling Mode

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 programmed for the connected datalogger will 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 (**Rate**) between collections of readings. You can select to record in seconds, minutes, hours, or days.

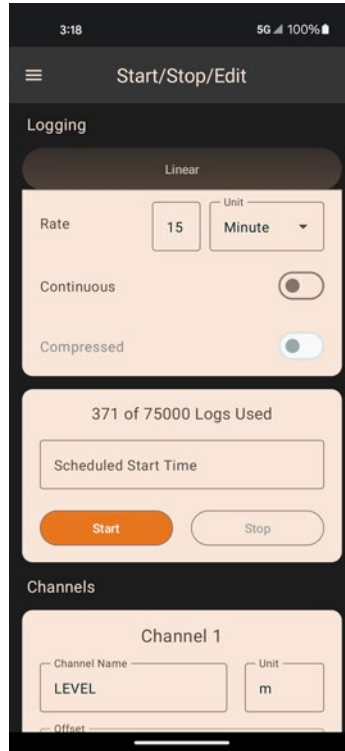


Figure 6-5 Edit Linear

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 the defined **Rate** to see if readings have varied by the entered **Threshold** from the last recorded reading. You can “Level”, “Temperature”, etc., as the monitored parameter.

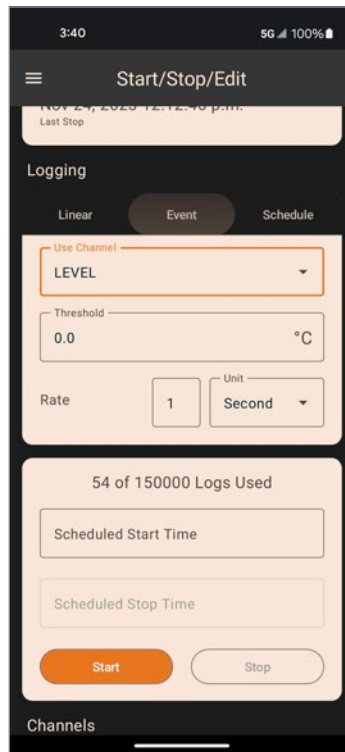


Figure 6-6 Edit Event

The datalogger will record a new reading only if the specified change/threshold 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**, then View Schedule. Schedule sampling allows you to select a logarithmic style sampling schedule adapted to the needs of each application.

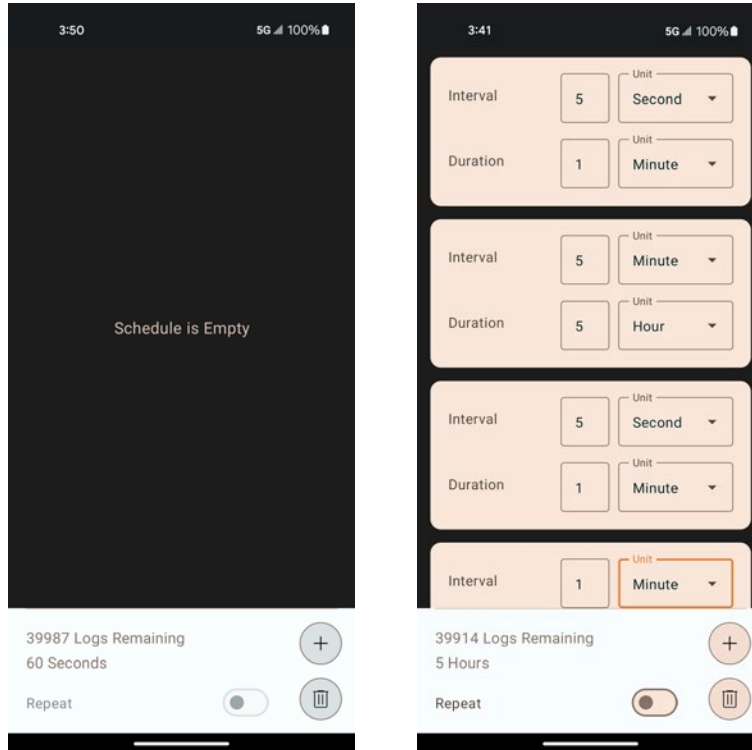


Figure 6-7 Edit Schedule

Schedule sampling is set by using the “plus” [+] symbol at the bottom right 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.

You can change the order of the line items by swiping the item up or down. You can delete a selected line item by tapping the “trash can” icon.

Running totals of the number of readings still available from the total possible, and the run time are shown.

By enabling **Repeat**, the datalogger will continue to run through the schedule until its memory is full, or it is stopped.

6.4 Datalogger Channels

6.4.1 Channel 1: Level



Figure 6-8 Channel 1: Level

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 Levellogger 5, Levellogger 5 Junior, and Levellogger 5 LTC; m (default), cm, ft, kPa, bar, and psi. When using a Barologger 5, the options are kPa (default), mbar, and psi.

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

6.4.2 Channel 2: Temperature



Figure 6-9 Channel 2: Temperature

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 Levellogger 5, Barologger 5, Levellogger 5 Junior and Levellogger 5 LTC the temperature channel can be set to °C (default) or °F.

6.4.3 Channel 3: Conductivity



Figure 6-10 Channel 3: Conductivity

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 μ S/cm.

6.4.4 Rainlogger Channel

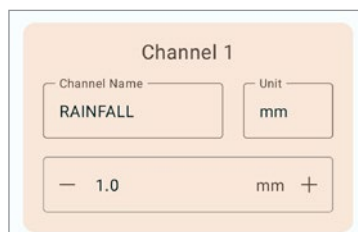


Figure 6-11 Rainfall Channel

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.

The rainfall calibration 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

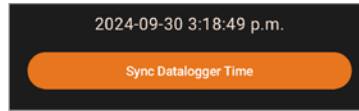


Figure 6-12 Datalogger Time

The datalogger’s internal date and time will be displayed. Select **Sync Datalogger Time** 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.

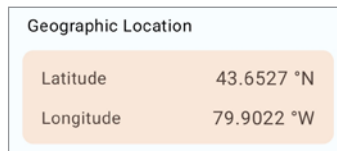


Figure 6-13 Data Set Geographic Location

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

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.

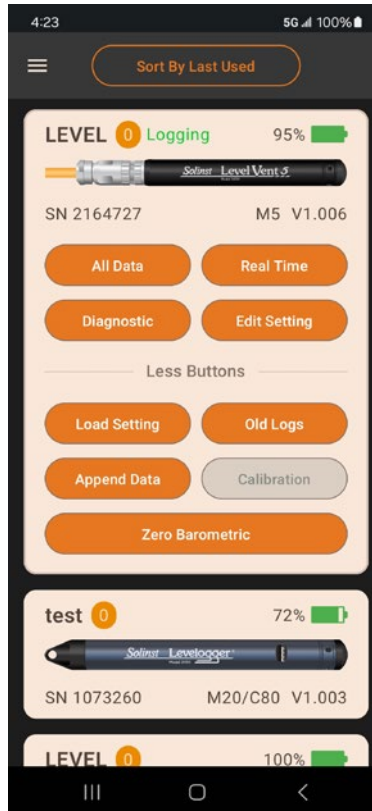


Figure 6-14 Zero Barometric

After selecting **Zero Barometric** a message will appear stating “Zero Offset Calibrated”.

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

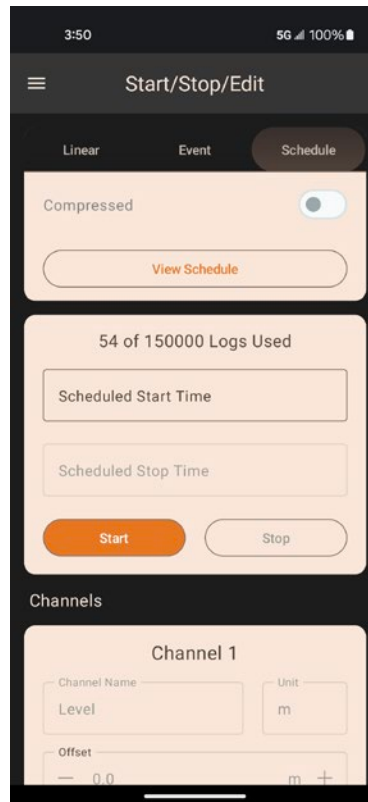


Figure 6-15 Starting and Stopping Dataloggers

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 Levellogger Edge Series datalogger will erase any previous recorded readings from its memory.

The number of used and free logs in the datalogger memory will be displayed. **Before starting a Levellogger 5 Series datalogger**, you have the chance to access **Old Logs** (option on Dataloggers Screen) to download and/or delete data files to free-up more memory (see Section 5).

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

The programmed settings will be applied automatically when the datalogger is started. The 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 to enter the desired Scheduled Future Start 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.

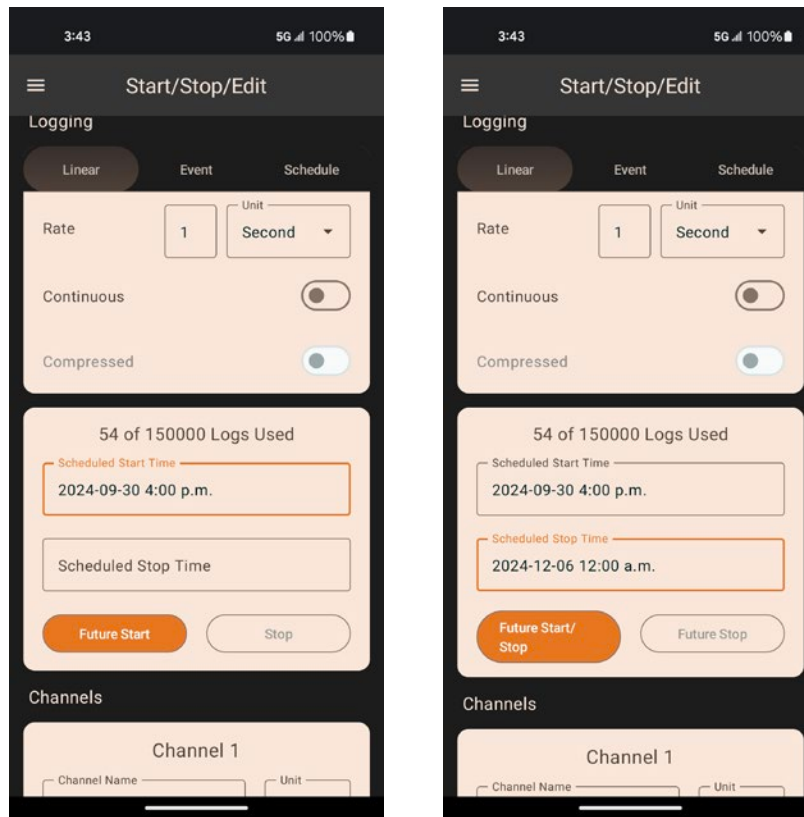


Figure 6-16 Setting a Future Start and Stop Time

6.8.2 Stopping Solinst Dataloggers

To stop a Solinst datalogger from recording immediately, at any time, select **Stop**. 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 Levellogger App screen (from the Identification title bar).

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

To set a **Future Stop** time, tap the date and time field and scroll enter the desired Scheduled Future Stop 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.

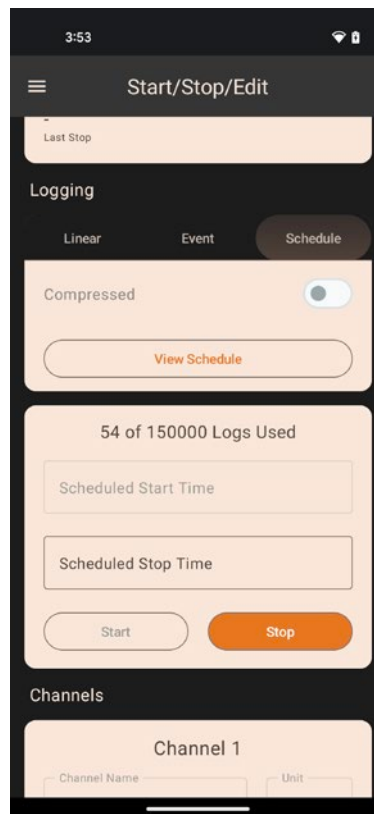


Figure 6-17 Stop a Logging Datalogger

7.0 Saved Settings

Up to 10 Settings can be customized and saved in the Solinst Levellogger 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.

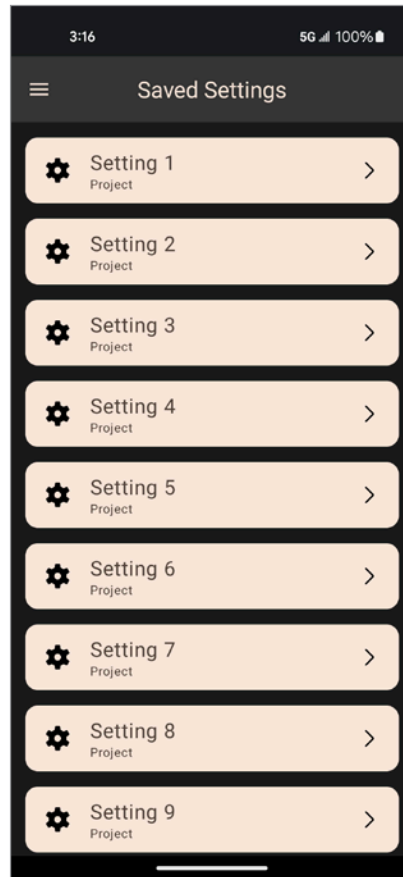


Figure 7-1 Saved Settings Screen

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

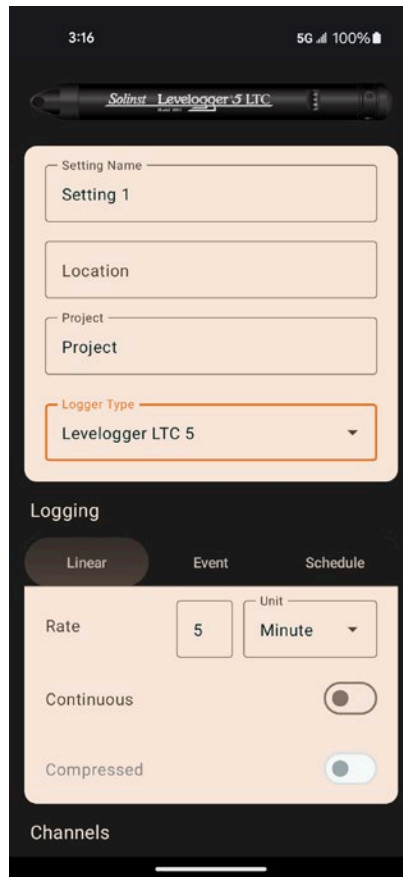


Figure 7-2 Customizing a Setting

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 e.g. Levellogger 5, Barologger 5, Levellogger 5 LTC.

Logging: choose between Linear, Event, or Schedule sampling mode (see Section 6.3).

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

Set a Future Start and Future Stop time, if desired.

7.2 Apply Settings

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

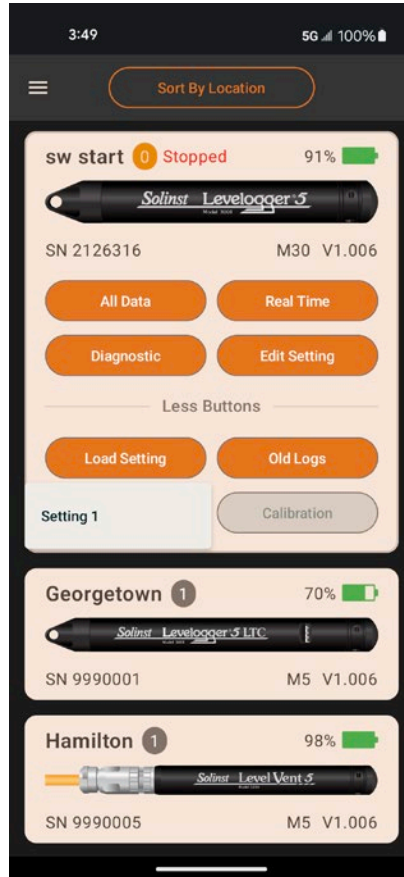


Figure 7-3 Apply a Saved Setting

In the Dataloggers Screen, tap **Load Setting** to select and 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 Logging** from the Navigation Menu, or **Real Time** from the options on the Dataloggers Screen.



Figure 8-1 Real-Time View Screen

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.

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.

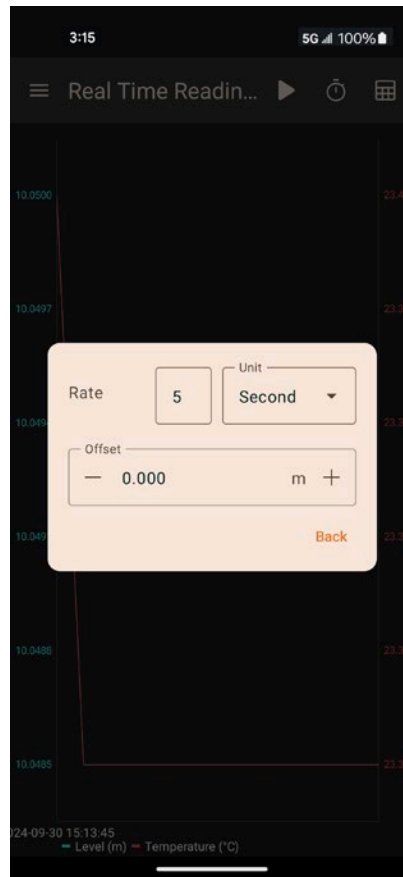


Figure 8-2 Edit Real-Time Parameters

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

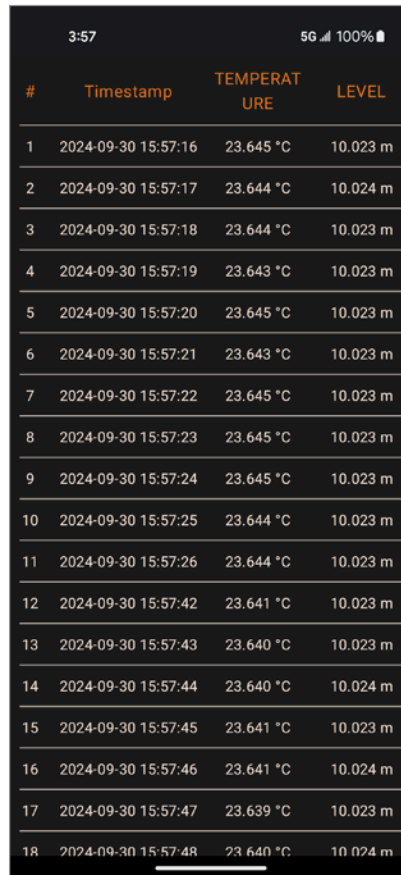
Select the start symbol  at the top left of the Solinst Levellogger App to start recording real-time readings. Select the stop symbol  to stop recording real-time readings.

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.



#	Timestamp	TEMPERATURE	LEVEL
1	2024-09-30 15:57:16	23.645 °C	10.023 m
2	2024-09-30 15:57:17	23.644 °C	10.024 m
3	2024-09-30 15:57:18	23.644 °C	10.023 m
4	2024-09-30 15:57:19	23.643 °C	10.023 m
5	2024-09-30 15:57:20	23.645 °C	10.023 m
6	2024-09-30 15:57:21	23.643 °C	10.023 m
7	2024-09-30 15:57:22	23.645 °C	10.023 m
8	2024-09-30 15:57:23	23.645 °C	10.023 m
9	2024-09-30 15:57:24	23.645 °C	10.023 m
10	2024-09-30 15:57:25	23.644 °C	10.023 m
11	2024-09-30 15:57:26	23.644 °C	10.023 m
12	2024-09-30 15:57:42	23.641 °C	10.023 m
13	2024-09-30 15:57:43	23.640 °C	10.023 m
14	2024-09-30 15:57:44	23.640 °C	10.024 m
15	2024-09-30 15:57:45	23.641 °C	10.023 m
16	2024-09-30 15:57:46	23.641 °C	10.024 m
17	2024-09-30 15:57:47	23.639 °C	10.023 m
18	2024-09-30 15:57:48	23.640 °C	10.024 m

Figure 8-3 Real-Time Data List

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 data log that you want to view.

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

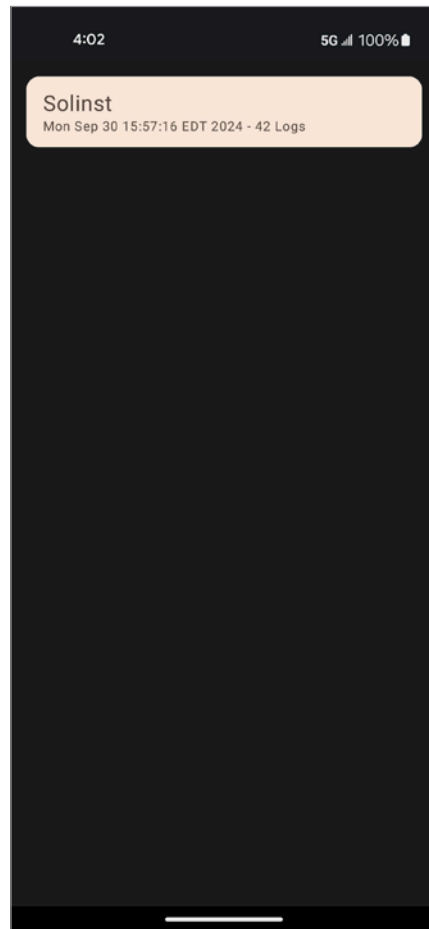


Figure 9-1 Viewing Saved Logs

You can delete Saved Logs from the list by swiping left on the log.

The data log will be shown in a graphical format. Tap and hold to show the value. You can use gestures to scroll through the data, and zoom in and out.

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



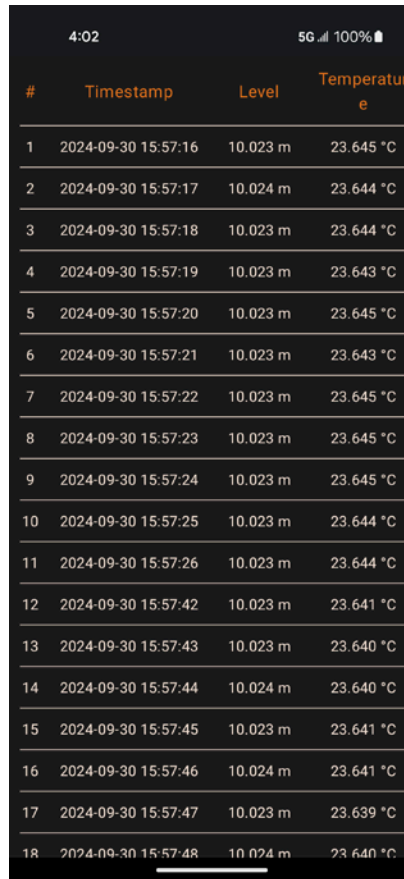
Figure 9-2 Viewing Saved Data Log Plot

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 Settings (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.



#	Timestamp	Level	Temperature
1	2024-09-30 15:57:16	10.023 m	23.645 °C
2	2024-09-30 15:57:17	10.024 m	23.644 °C
3	2024-09-30 15:57:18	10.023 m	23.644 °C
4	2024-09-30 15:57:19	10.023 m	23.643 °C
5	2024-09-30 15:57:20	10.023 m	23.645 °C
6	2024-09-30 15:57:21	10.023 m	23.643 °C
7	2024-09-30 15:57:22	10.023 m	23.645 °C
8	2024-09-30 15:57:23	10.023 m	23.645 °C
9	2024-09-30 15:57:24	10.023 m	23.645 °C
10	2024-09-30 15:57:25	10.023 m	23.644 °C
11	2024-09-30 15:57:26	10.023 m	23.644 °C
12	2024-09-30 15:57:42	10.023 m	23.641 °C
13	2024-09-30 15:57:43	10.023 m	23.640 °C
14	2024-09-30 15:57:44	10.024 m	23.640 °C
15	2024-09-30 15:57:45	10.023 m	23.641 °C
16	2024-09-30 15:57:46	10.024 m	23.641 °C
17	2024-09-30 15:57:47	10.023 m	23.639 °C
18	2024-09-30 15:57:48	10.024 m	23.640 °C

Figure 9-3 Viewing Saved Data Log List

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. Tap the e-mail icon .

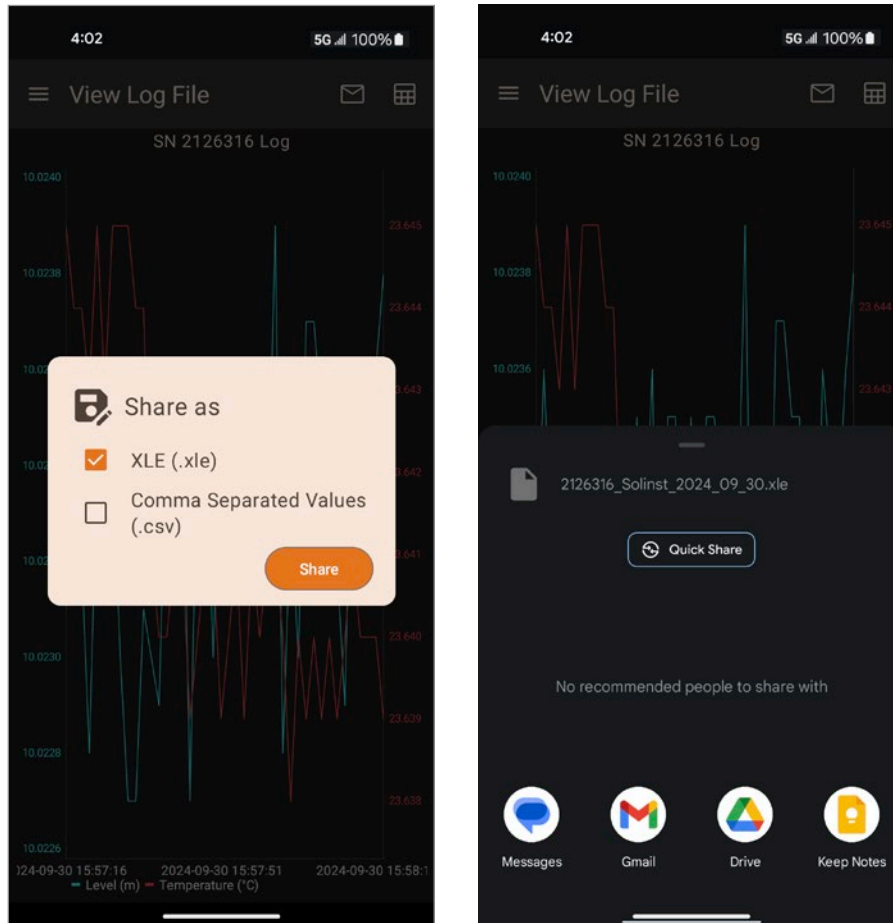


Figure 10-1 Data Log Sharing

You will have the option to share an *.xle file or a *.csv file. Select your desired format and click “Share”.

You will be provided with multiple options for sharing the file, including e-mail.

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

10.2 Transferring Data Logs

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

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 Levellogger 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) Levellogger 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 (Levellogger LTCs only)
- 10) Max/Min Temperature Reading
- 11) Max Pressure Reading
- 12) Max Conductivity Reading (Levelloggers LTCs only)
- 13) Total Number of Logs

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

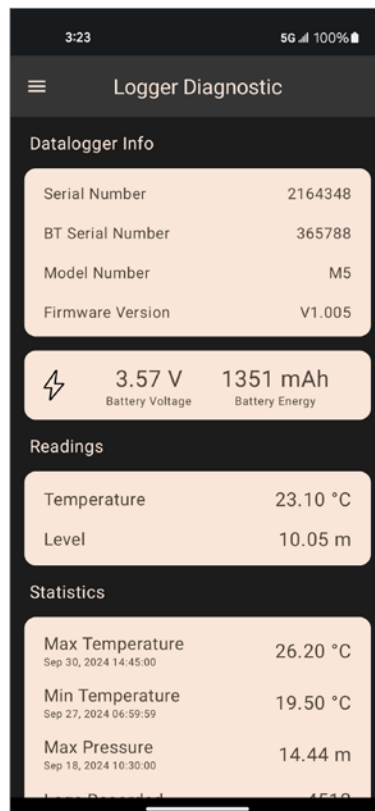


Figure 11-1 Diagnostics Utility

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 Levellogger 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.

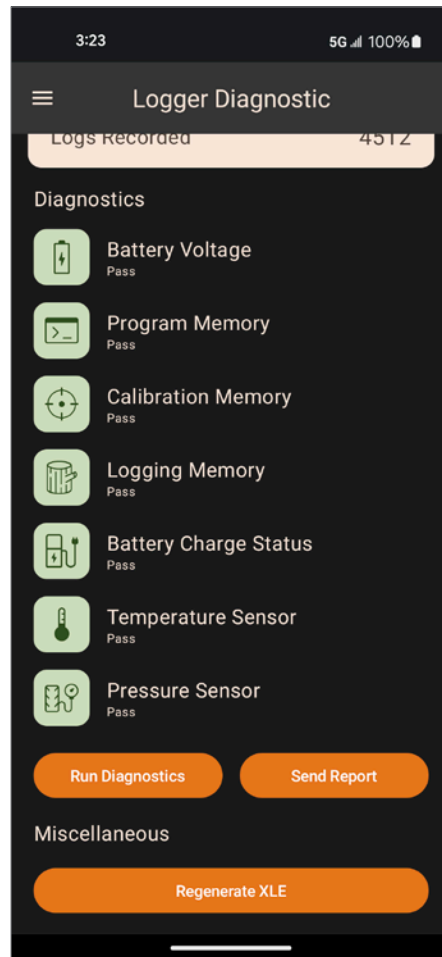
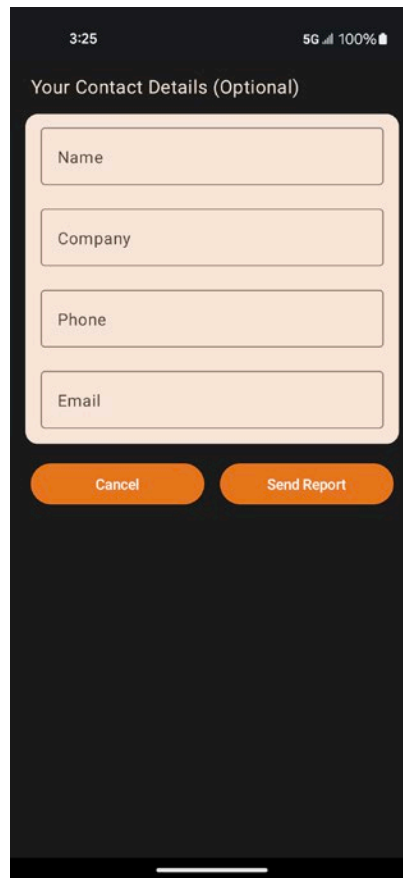


Figure 11-2 Run Diagnostics

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 contact information. Fill this out, select “Send Report” and the resulting report can be saved or sent to Solinst Technical Support for troubleshooting. If creating a report for an Levellogger LTC, the LTC Calibration History Report will be included.



The screenshot shows a mobile application interface for sending a report. At the top, the status bar displays the time 3:25, 5G signal strength, and 100% battery. Below the status bar, the title "Your Contact Details (Optional)" is centered. The main content area contains four vertically stacked text input fields with light beige backgrounds and thin black borders. The fields are labeled "Name", "Company", "Phone", and "Email" from top to bottom. At the bottom of the dialog, there are two orange buttons with white text: "Cancel" on the left and "Send Report" on the right. The entire dialog is set against a dark background.

Figure 11-3 Send Report

11.3 Load Previous Logs

For Levelogger Edge Series dataloggers, selecting **Load Previous 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.

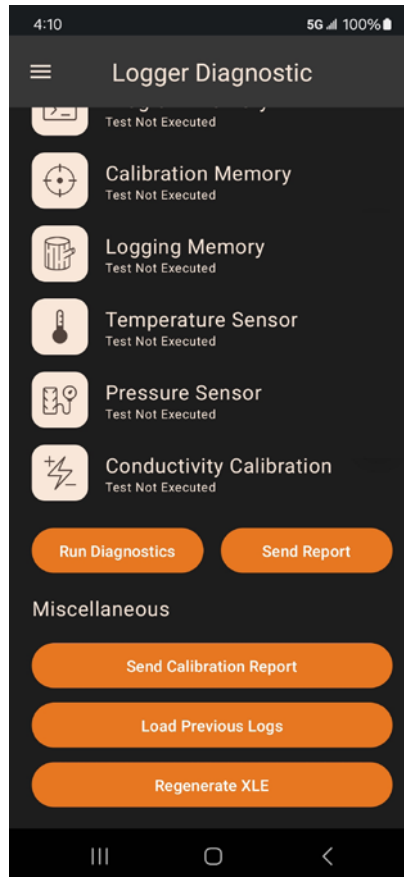


Figure 11-4 Load Previous Log

11.4 LTC Calibration History Report

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

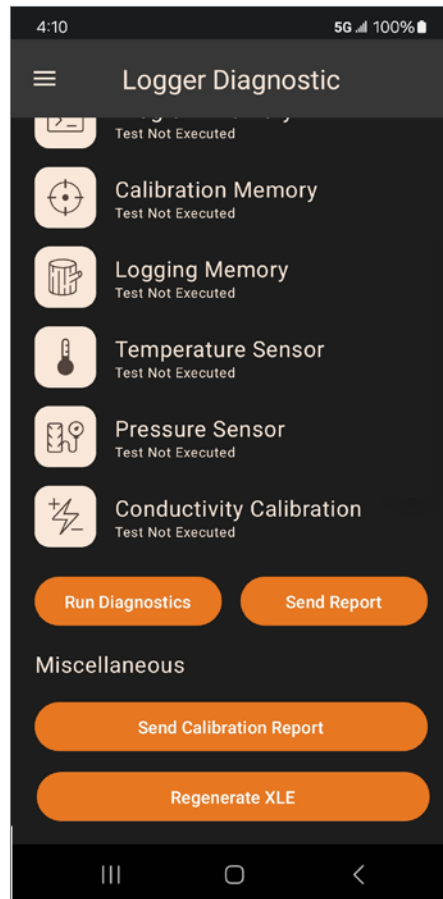


Figure 11-5 LTC Calibration Report

11.5 Regenerate Data Files

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

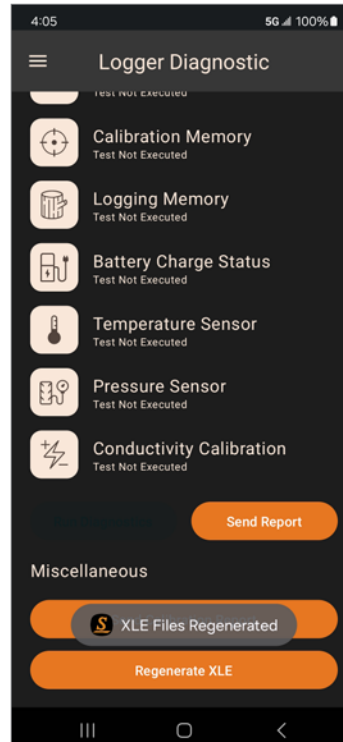


Figure 11-6 Regenerate XLE Files

11.6 Clear Datalogger Zero

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

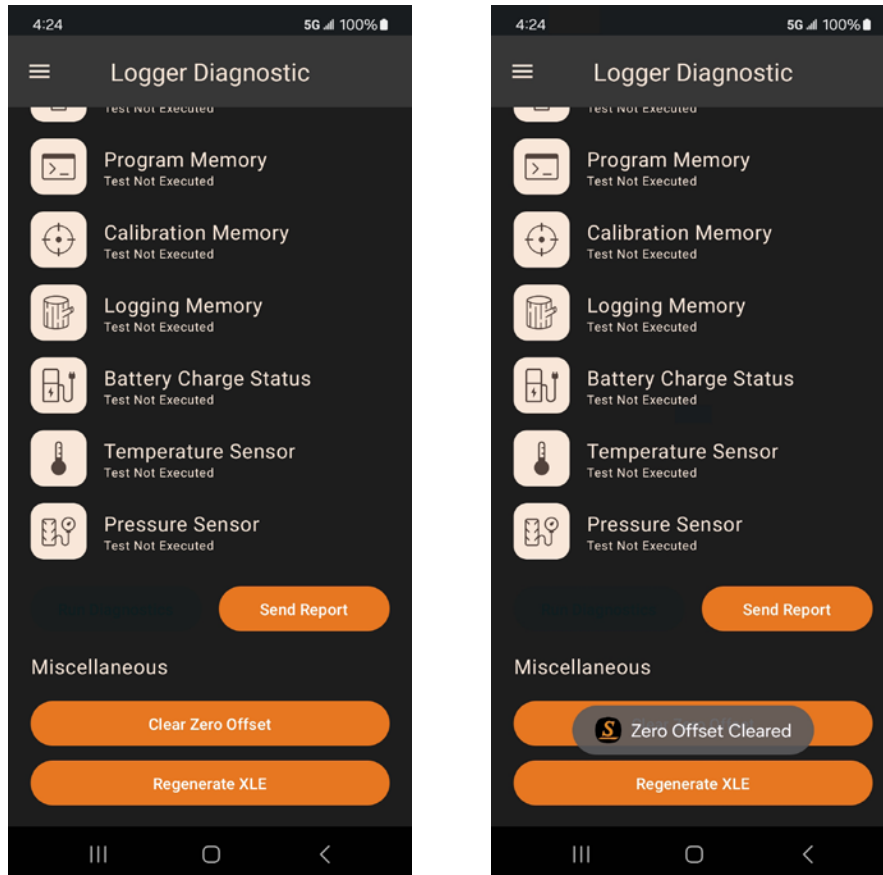


Figure 11-7 Clear Zero Offset

12.0 Conductivity Calibration

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

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

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

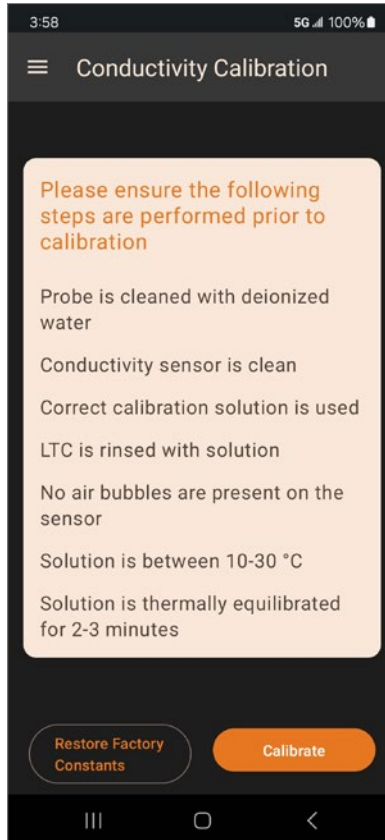


Figure 12-1 Conductivity Calibration Introduction

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

To initiate a calibration, select “Calibrate” after you have read through the requirements on the screen.

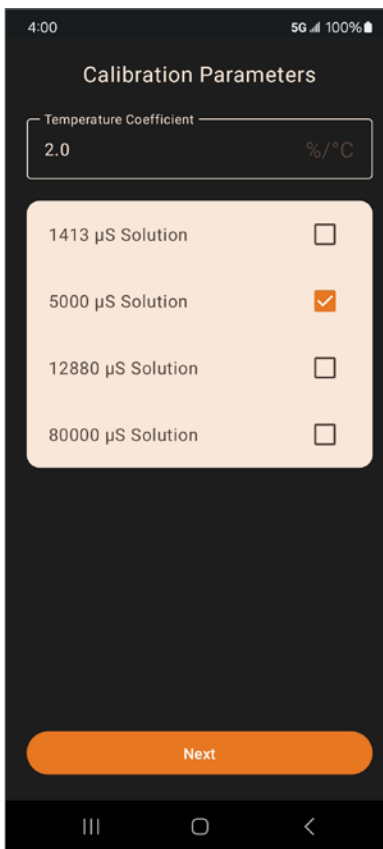


Figure 12-2 Temperature Coefficient and Calibration Solutions

Enter the **Temperature Coefficient** for the conductivity solution(s) you will be using. The default setting is 2.0. If the conductivity solution you are using to calibrate the Levellogger 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 Levellogger LTC. Ensure the solutions are ready in the calibration beaker or container. Select “Next” 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.

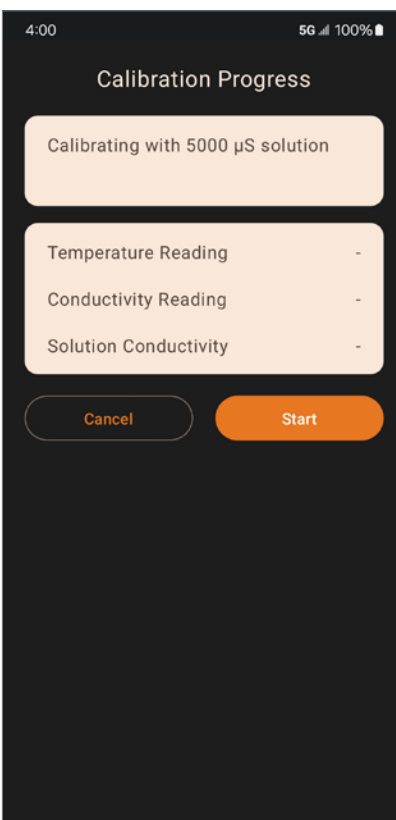


Figure 12-3 Calibration Setup

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 “Start” to calibrate.

Since most standard calibration solutions state conductivity at a standard temperature of 25°C, the Levelogger LTC 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 ‘Calibration Complete’, 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 ‘Continue’. If performing a multipoint calibration, any previous successful calibration points will remain.

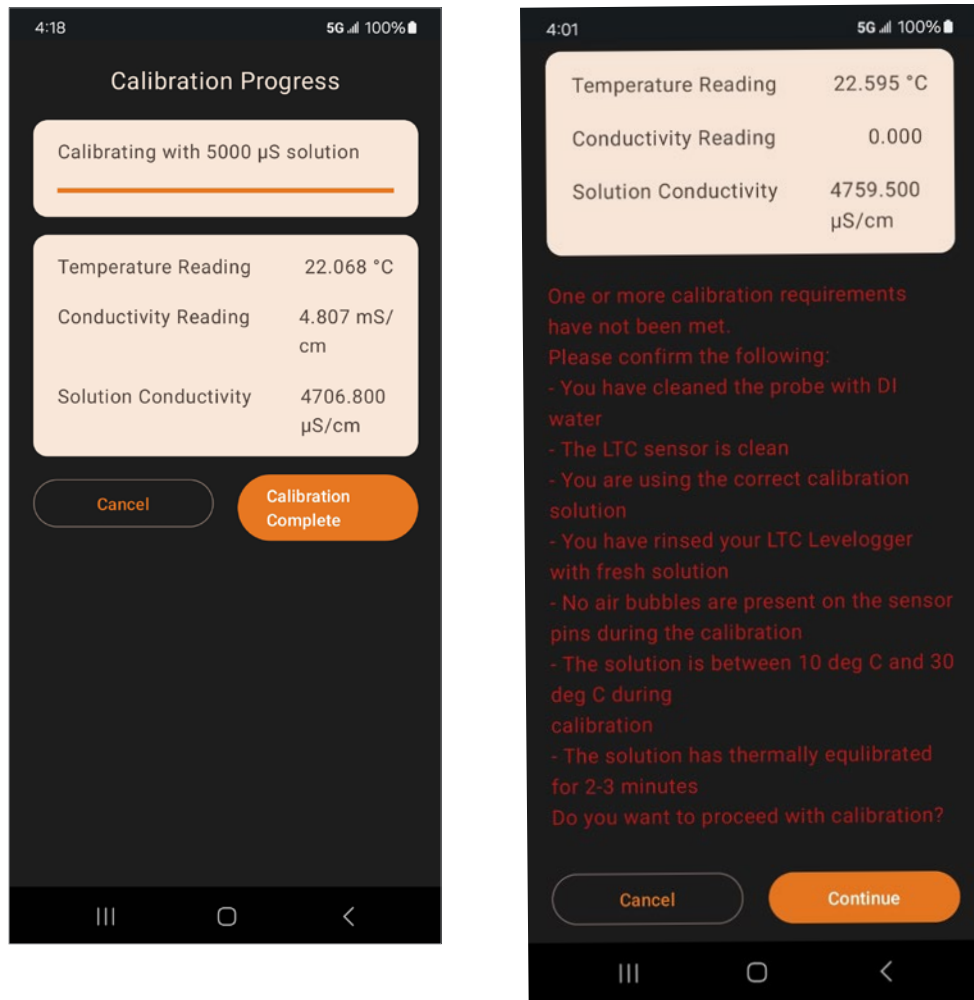


Figure 12-4 Conductivity Calibration Results

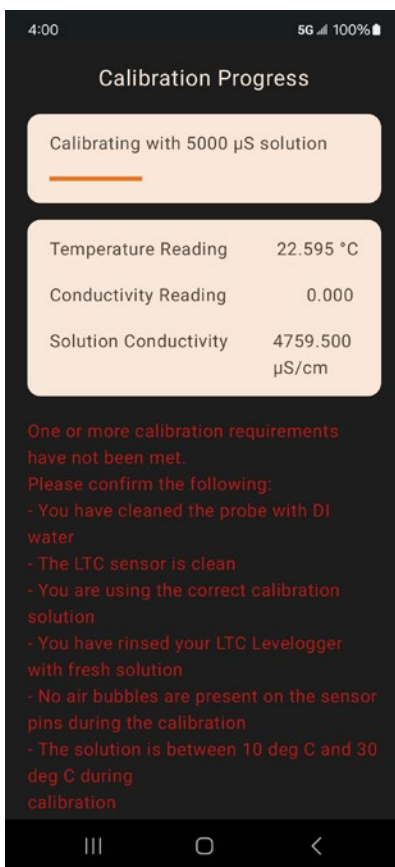


Figure 12-5 Conductivity Calibration Retry

Select “Continue” 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 Levellogger 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 ‘Continue’ 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 Levellogger LTC will default back to the last pre-calibrated state. You can retry the calibration using the normal tolerance range. Select “Continue” to retry the calibration a third time.

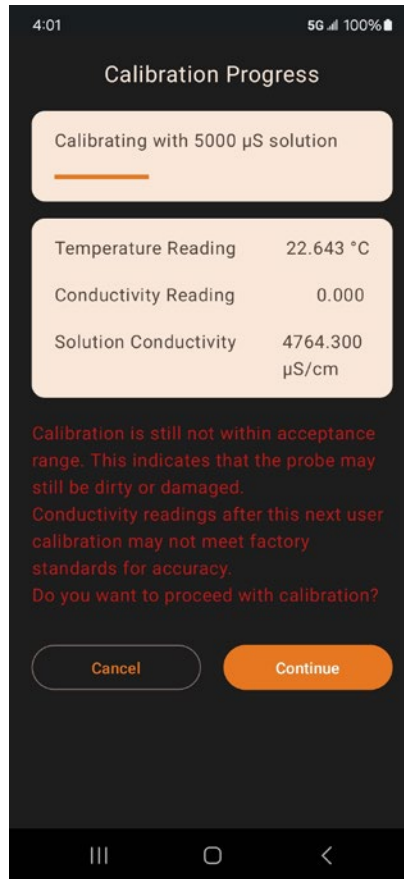


Figure 12-6 Conductivity Calibration Third Try

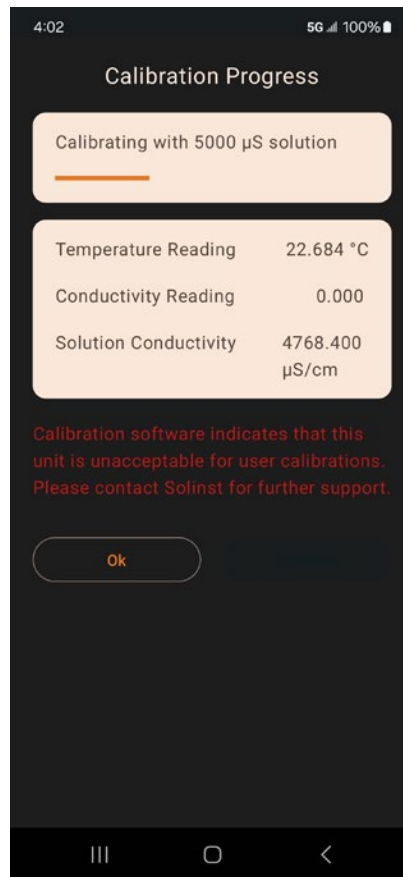


Figure 12-7 Calibration Failure

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” to exit the Calibration screen.



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