

Arlyn UpScale - Data Logging with Google Spreadsheets

V1.4

By Arlyn Scales

DATA LOGGING WITH GOOGLE SPREADSHEETS

1.1 Introduction

Please note, this feature is only available if the Arlyn UpScale is equipped with **USB Datalogging Option** and any of **the TCP/IP options (Wi-Fi or Ethernet)**. Even though the USB Datalogging Option calls for 'USB', no USB hardware is required for this feature to work.

In addition to logging data locally (i.e. internal database and exported to USB stick), the Arlyn UpScale also features the ability to log data directly online, into a Google Spreadsheet. The logging of data can be observed almost in real time (allowing for a 2 second delay due to the time it takes for the data to be posted to the internet).

Any Google Spreadsheet can be used to implement this feature as long as edit permissions have been set appropriately. Use the steps below to create and configure a Google Spreadsheet to accept data.

1.2 Benefits

Using a live Google Spreadsheet for Data Logging is especially useful for customers who want to view their scale data logging live anywhere at any time. It's a simple replacement of complex and rigid web logging method that is still being used by other scale vendors.

Here are other benefits of live Google Spreadsheet logging.

- 1) View incoming scale data from anywhere in the world.
- 2) Share incoming live data with anyone who has the Google Spreadsheet link
- 3) Perform live analysis of incoming data such as daily weight increase and weight distribution.
- 4) Use full spectrum of Google Spreadsheet capabilities and add-ons on incoming data. No proprietary software needed.
- 5) No need to wait until the end of period before exporting data from scale.

A demonstration of live Google Spreadsheet logging can be seen here: https://youtu.be/xxURKe_TWuo

1.3 Limitations

- 1) Google Spreadsheet logging will only work if the scale is connected to the internet through Wi-Fi or Ethernet.
- 2) If the internet is disconnected, the scale will continue to log into its own internal table. This can be later exported through email or using a USB Flash Drive.
- 3) Google Spreadsheet logging is slower than local Scale logging due to the delay in opening a connection to the internet and posting the data on the spreadsheet.
- 4) Google also has fallback rate limits. If the logging happens too frequently, then the Google Spreadsheet engine throttles incoming data speeds. Experiments show that setting the log period at 10 seconds is appropriate. Any period faster than that will not work.
- 5) Google Spreadsheet must be initiated through an account first. Once the spreadsheet has been initialized, it can then be set to be accessed by anyone with the link to the spreadsheet.

1.4 Setup

Follow the steps below to setup a Google Spreadsheet and the Arlyn UpScale for live Data Logging.

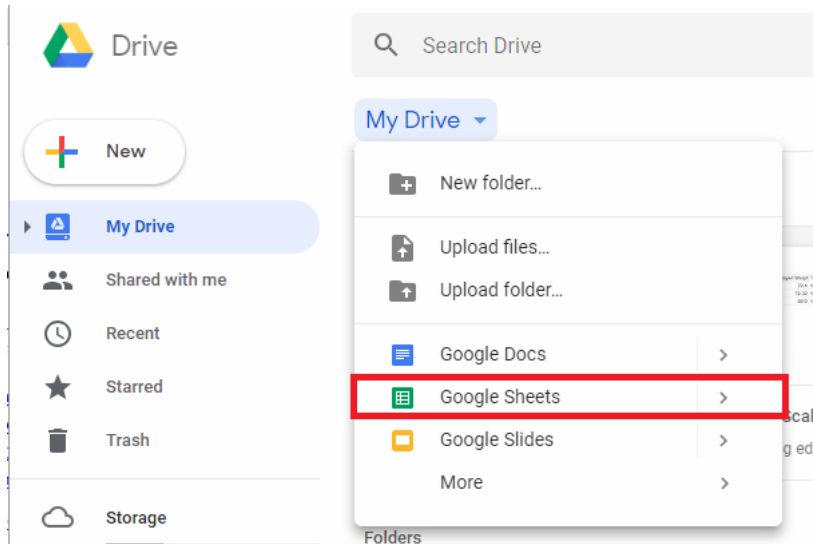
1.4.1 Part I: Create a Google Spreadsheet for UpScale Data Logging

1) **Create a Google account (if you do not have one).**

Google only allows creation of a Spreadsheet through a Google account. Once the account is created and the Spreadsheet is generated, the Spreadsheet can be accessed and used by anyone as long as the privacy settings have been set correctly.

2) **Create a new Spreadsheet.**

- a. Go to Google Drive.
- b. In the “My Drive” menu, select “Google Sheets” and create a new spreadsheet.



3) **Create an “Apps Script” extension for the Google Spreadsheet**

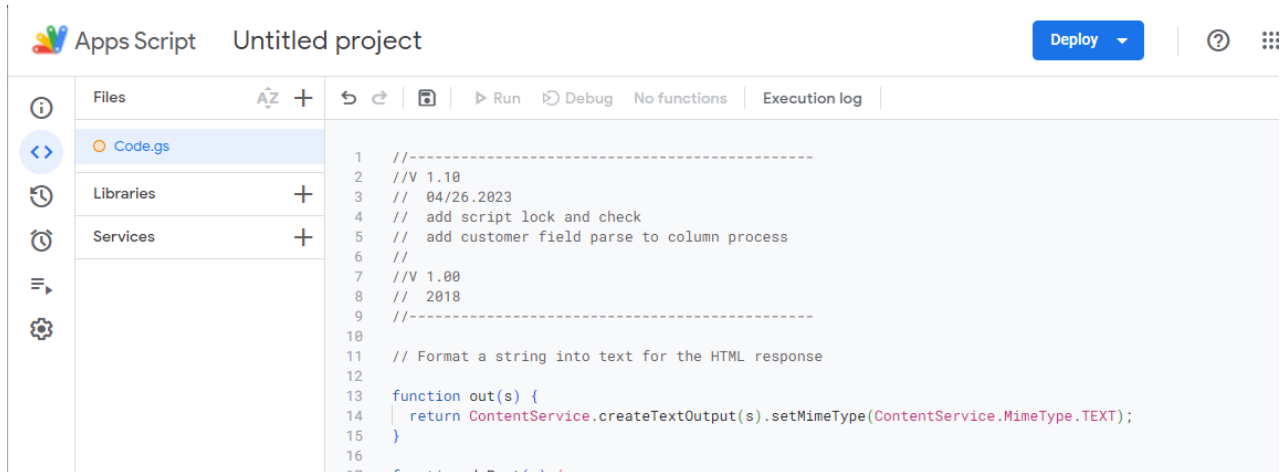
To allow the Google Spreadsheet to capture data through the internet, a script program must be embedded into the sheet. See the code below. The code is available under **Software Downloads** section on the Arlyn Scales website https://www.arlynscales.com/software-downloads/#google_spreadsheets. Look for the “Google Spreadsheet Script for Datalogging” file and download it. To add a script to the Google Spreadsheet, follow the steps below.

- a. In the Spreadsheet menu, click on “Extensions” -> “Apps Script”. This will open a new window/tab with a editable code page.
- b. Select all text in this page and delete it.



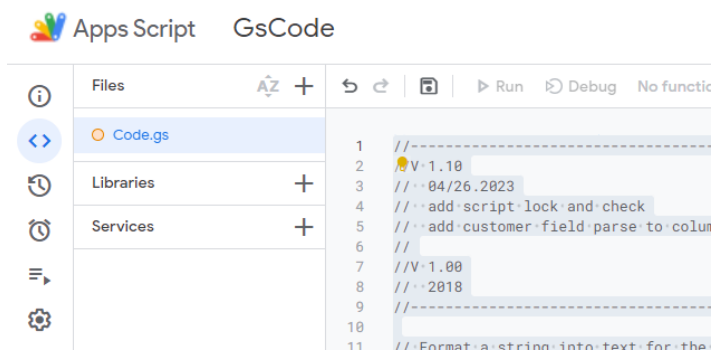
- c. Go to https://www.arlynscales.com/software-downloads/#google_spreadsheets
- d. Look for the “Google Spreadsheet Script for Datalogging” file and download it.
- e. Open the downloaded text file.

- f. Copy the text from the text file in (e) Step 3 above and paste it in the code page in its entirety.



```
1 //-----  
2 //V 1.10  
3 // 04/26.2023  
4 // add script lock and check  
5 // add customer field parse to column process  
6 //  
7 //V 1.00  
8 // 2018  
9 //-----  
10  
11 // Format a string into text for the HTML response  
12  
13 function out(s) {  
14   return ContentService.createTextOutput(s).setMimeType(ContentService.MimeType.TEXT);  
15 }  
16  
17 function doGet(e) {
```

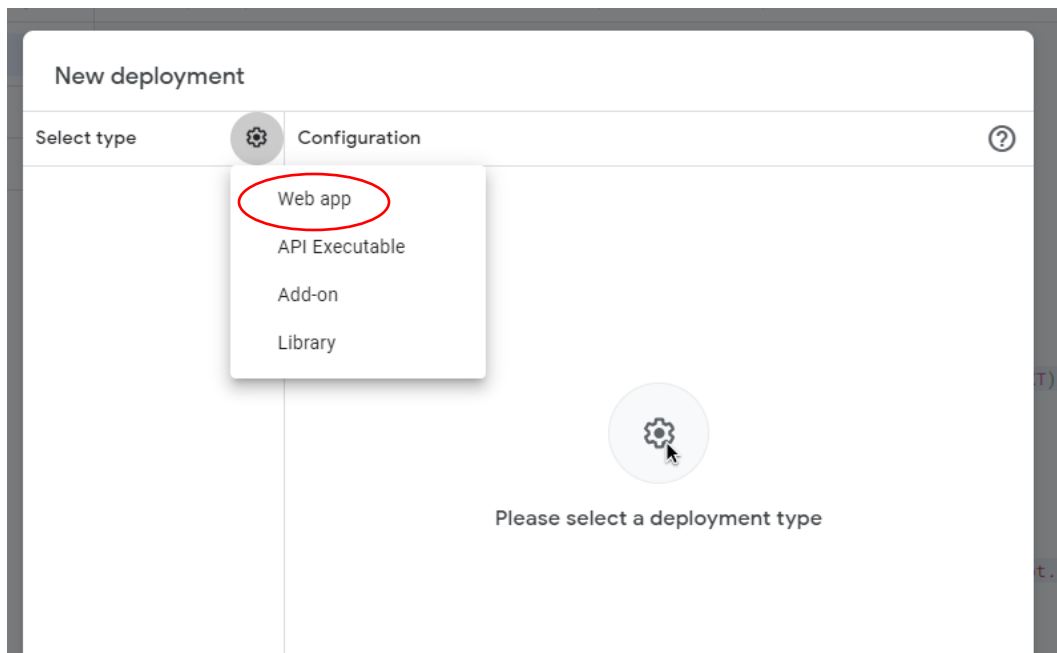
- g. Put a title for the project, such as “GsCode”.



```
1 //-----  
2 //V 1.10  
3 // 04/26.2023  
4 // add script lock and check  
5 // add customer field parse to column process  
6 //  
7 //V 1.00  
8 // 2018  
9 //-----  
10  
11 // Format a string into text for the HTML response
```



4) **Publish the script as a Web App.**

- a. Once the code has been pasted in, go to the “Deploy” button dropdown and select “New Deployment”.
- b. On the left corner of the dialog, press the gear icon to show the deployment type menu. Select the “Web app” option.



- c. Fill out the rest of the options as shown below. You can put the description as anything you want. The “Execute as” field should show your email address.

New deployment

Select type  Configuration 


Web app

Description

New description

Data Logging Script

Web app

Execute as 

The web app will be authorized to run using your account data.

Who has access

Anyone

This can also be used as a library. [Learn more](#)

Cancel Deploy

- d. Press the “Deploy” button.
- e. You may get a dialog asking you for “Authorize Access”. Press this button and follow onscreen instructions to complete this process.
- f. Depending on the security settings of your browser, you might get certain warnings. You will get a warning that the app is not verified.



This app isn't verified

This app hasn't been verified by Google yet. Only proceed if you know and trust the developer.

If you're the developer, submit a verification request to remove this screen. [Learn more](#)

[Advanced](#)

[BACK TO SAFETY](#)

- g. Click on the “Advanced” link and then click on the name of the script link. In our case, its “GsScript (unsafe)”.

This app isn't verified

This app hasn't been verified by Google yet. Only proceed if you know and trust the developer.

If you're the developer, submit a verification request to remove this screen. [Learn more](#)

[Hide Advanced](#)


BACK TO SAFETY

Google hasn't reviewed this app yet and can't confirm it's authentic. Unverified apps may pose a threat to your personal data. [Learn more](#)

[Go to GsScript \(unsafe\)](#)

- h. The next screen will prompt you to sign in once again into your Google Account. Once done, a permissions prompt will show asking you to allow and trust the script you just wrote.

GsScript wants to access your Google Account

 arlyn.v9@gmail.com

This will allow **GsScript** to:

- View and manage your spreadsheets in Google Drive



Make sure you trust GsScript

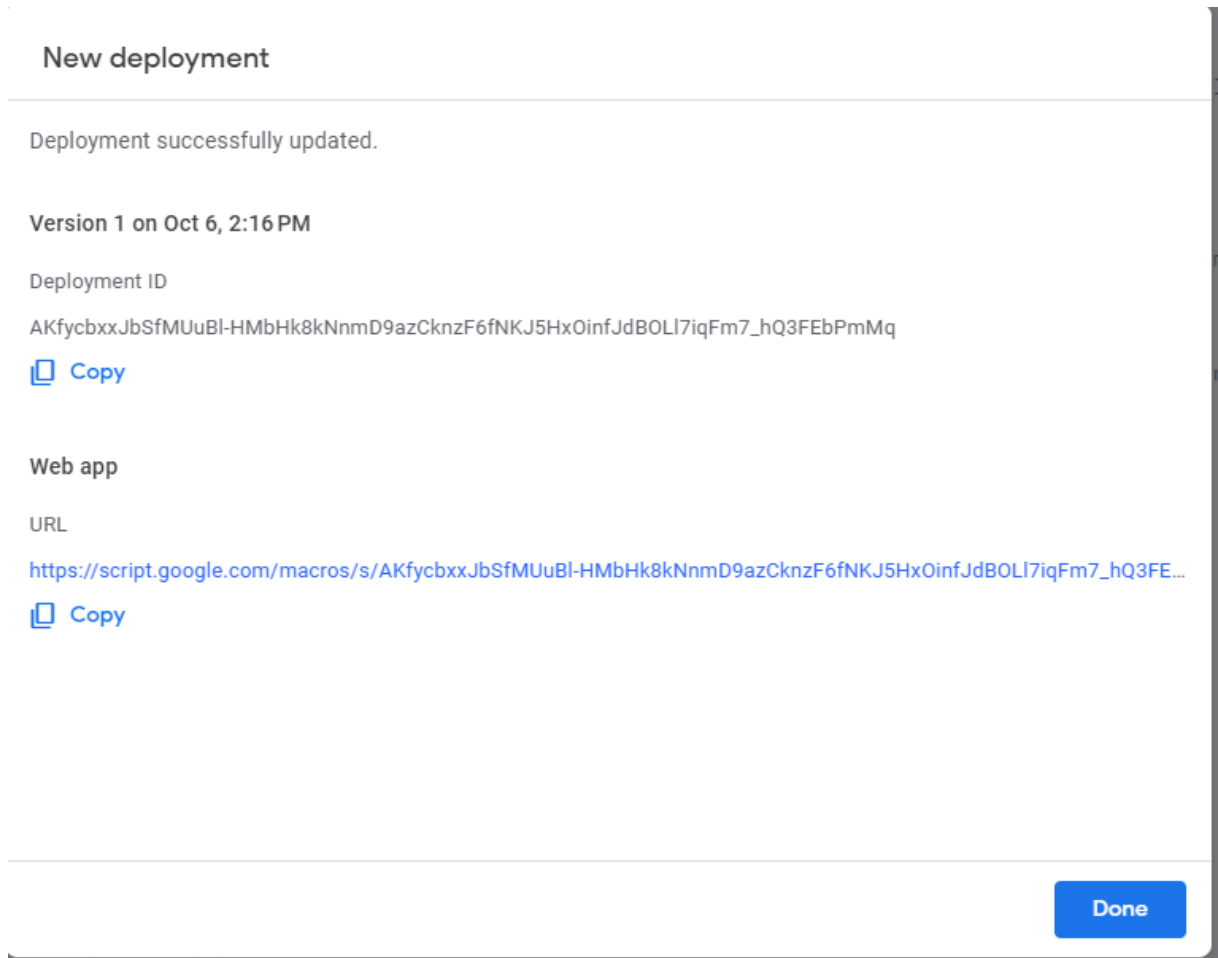
You may be sharing sensitive info with this site or app. Learn about how GsScript will handle your data by reviewing its terms of service and privacy policies. You can always see or remove access in your [Google Account](#).

[Learn about the risks](#)

Cancel

Allow

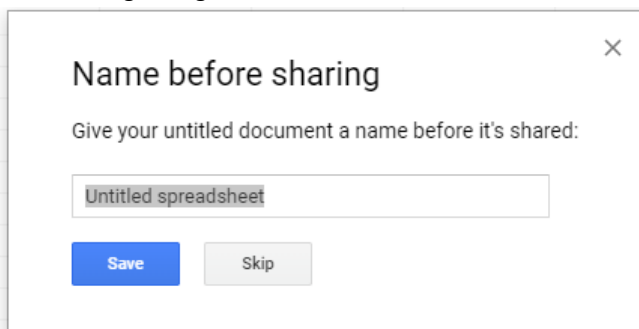
- i. Click on the “Allow” button to proceed.
j. Finally, the Deployment is complete. The confirmation screen will appear.



- k. The "Deployment ID" letters is your **Google Spreadsheets Web App ID**. To make things easier in the next steps, create a file on your PC called "link.txt" and save this Web ID. Put the file in a USB stick (recommended to use the one that came with your scale), to later import it in the scale.
- l. You can find this Deployment ID anytime by going to the Deploy -> Manage Deployments option.
- m. Close the script page and go back to the Google Spreadsheet.

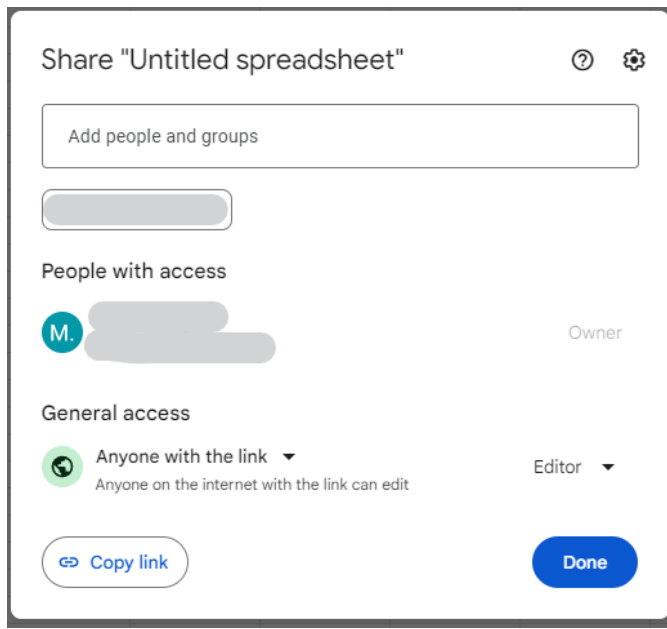
5) **Name and share the Google Spreadsheet**

- a. Once the Google Spreadsheet has been configured with script code, we need to name it and share it so that the scale can find it and upload data to it.
- b. Click the blue "SHARE" Button on the top right corner of the Spreadsheet.
- c. The resulting dialog will ask for Sheet name. Just name it anything you want and press OK.



- d. The next dialog pop-up shows the "Share with others" parameters. Click on "Get Shareable link" button at the top right of the corner and make sure it turns green. A link appears on dialog. Set the link with "Anyone with the link

can edit". You can also leave it as "...can view". However, no one will be able to edit the Spreadsheet except you, the owner.



e. Press "Done" to close the dialog.

- 6) Refresh the Spreadsheet and give it about 5 to 10 seconds until a new menu item appears call "V9 Script".
- 7) Click on "V9 Script" -> "Active Log" to activate the data logging script for this sheet.
- 8) You can add more sheets to the workbook. The scale will only log data on the sheet on which the V9 Script logging has been activated.

1.4.2 Part II: Setup the Arlyn UpScale indicator for Google Spreadsheet Data Logging

Now that you have a Google Spreadsheet loaded with a data logging script, it's time to setup the Arlyn UpScale indicator to log data onto the spreadsheet.

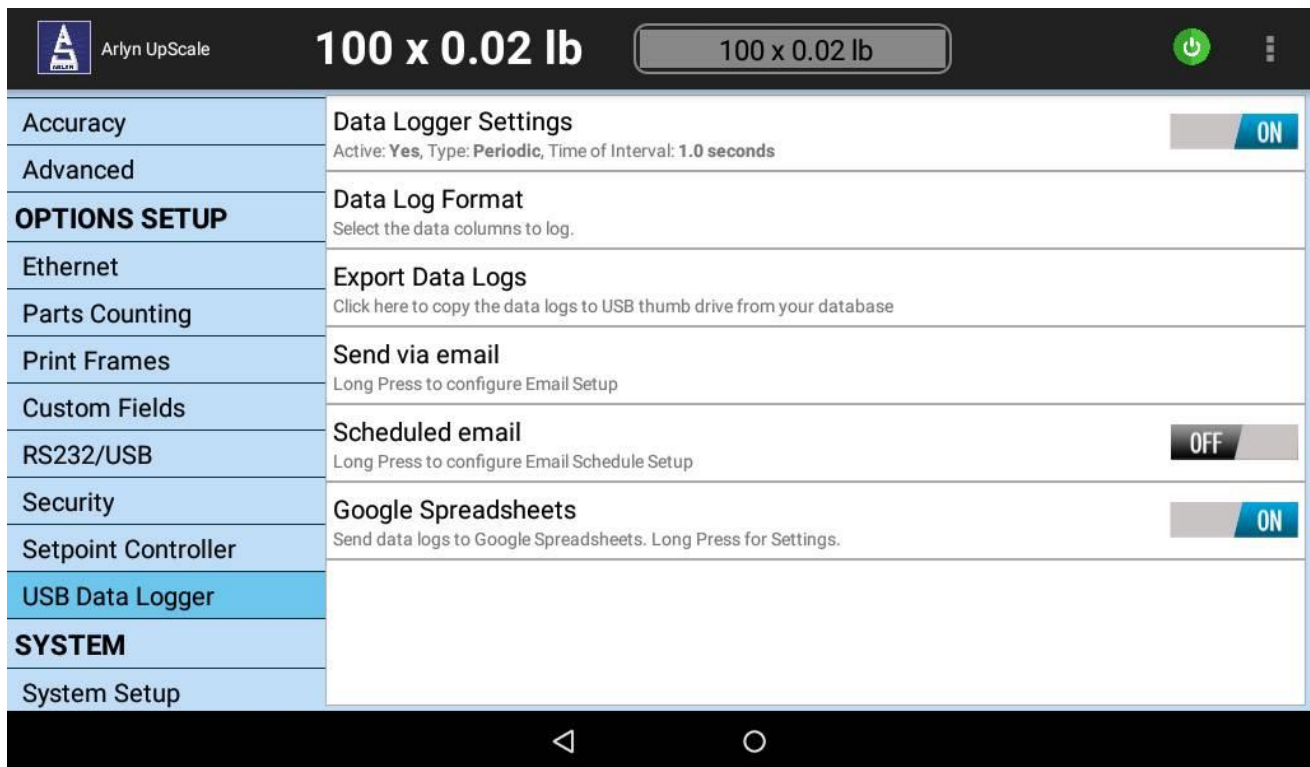
The scale must be equipped with **USB Datalogging Option** and either of the **TCP/IP options** (Ethernet or Wi-Fi). The Google Spreadsheet feature is a subset feature of the USB Data Logging features. The Data logger feature must be set correctly for the Google Spreadsheet feature to work. For further information on setting up USB Data Logging, refer to the [USB Data Logging Section](#).

Follow the steps below to setup Google Spreadsheet datalogging.

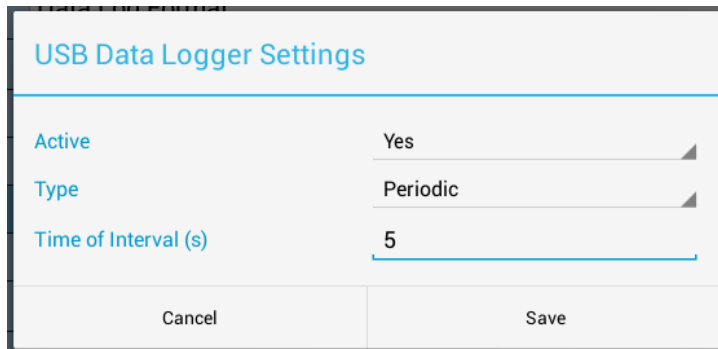
Prerequisite: You must have Google Spreadsheets Web App ID as extracted from 6(k) in Section 27.1 1 either saved in a USB stick "link.txt" file or written out.

1.4.2.1 Confirm Data Logger Settings

- 1) In the Arlyn UpScale indicator look for the 3-dot Quick Action menu on the top right corner of the screen and press it. Press the "Settings" option.
- 2) On the resulting Settings Screen, press the "USB Datalogger" option on the left panel to reveal the Datalogging setup screen.



- 3) Press on “Data Logger Settings” to open the Data Logger Settings dialog.



- 4) Confirm or set the following selections in their respective fields.

Active – Yes

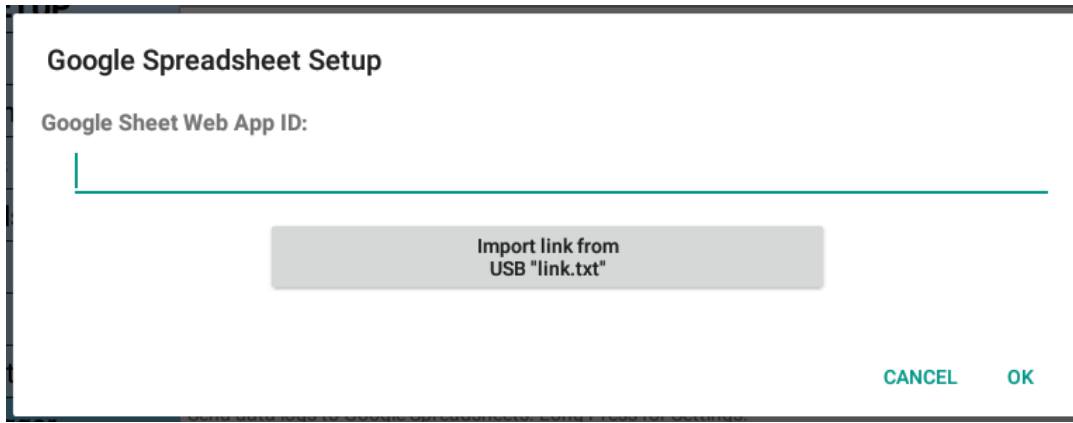
Type – Set the Data Logger mode type to be either Triggered or Periodic. If you set it to Periodic, then the Time Interval field is enabled. You can enter the interval in seconds to set the frequency of logging weights to the internal table.

Time Interval – 10 seconds or more to bypass Google Spreadsheet’s rate limits.

- 5) Press the SAVE button to save your settings.

1.4.2.2 Enable Google Spreadsheets

- 6) On the same Data Logger Setup Screen, enable Google Spreadsheets by toggling the switch on the option to “ON”.
- 7) Long Press the Google Spreadsheets option to open up the Google Spreadsheets Web App ID dialog



- 8) There are two ways to assign the Google Spreadsheet Web App ID into the scale.
 - a. Type in the Web App ID obtained from item (6) (k) in section 28.3.1 into this dialog. This will be hard to do and prone to errors so we do not recommend this method.
 - b. Or, plug in the USB stick where you saved the “link.txt” file with the Google Spreadsheet Web App ID.
 - i. Once plugged in, wait for few seconds for the Arlyn UpScale indicator to recognize the USB stick. Then press the “Import link from USB ‘link.txt’” button to import the link.
 - ii. The new link will appear on the field of the dialog.
- 9) Press OK to save the Web App ID.

1.4.3 Part III: Start Logging

Once both the computer and Google Spreadsheets have been setup, we can start the logging process. Make sure the that you have enabled “Active Log” on the Google Spreadsheet (see item (7) in Section 27.1).

On the scale on the main weight screen, look for the LOG WEIGHT button (for Triggered setting) or the START LOGGING button (for Periodic setting). Press on it. You will see the data coming into the Spreadsheet live.

	A	B	C	D	E
1	Displayed Weight	Time Stamp	Custom Fields	Unit	
2	63.3	10/08/18 12:04:2		lb	
3	63.3	10/08/18 12:04:2		lb	
4	63.5	10/08/18 12:04:2		lb	
5	63.28	10/08/18 12:04:2		lb	
6	62.86	10/08/18 12:04:2		lb	
7	63.34	10/08/18 12:04:2		lb	
8	63.48	10/08/18 12:04:2		lb	
9	63.3	10/08/18 12:04:2		lb	
10	63.3	10/08/18 12:04:2		lb	
11	63.18	10/08/18 12:04:3		lb	
12	63.24	10/08/18 12:04:3		lb	
13					
14					

If the order of the columns is not suitable to you, you can easily move the columns around to match your desired order. The Spreadsheet will internally redirect the data to the right column.

	A	B	C	D
1	Time Stamp	Displayed Weigh	Unit	Custom Fields
2	10/08/18 12:04:21	63.3	lb	
3	10/08/18 12:04:22	63.3	lb	
4	10/08/18 12:04:23	63.5	lb	
5	10/08/18 12:04:24	63.28	lb	
6	10/08/18 12:44:11	62.8	lb	
7	10/08/18 12:44:12	62.6	lb	
8	10/08/18 12:44:13	62.62	lb	

You do not have to have the Spreadsheet open for this feature to work. As long as the scale is connected to the internet, it will log data to the referenced Spreadsheet. You can log in anywhere at anytime to view the Spreadsheet.

1.5 Technical Support and Disclaimers

The “Data Logging with Google Spreadsheets” feature is available “as is”. We make no warranties as to how it is used and the effects of using this feature.

The feature is available as part of the Data Logging function in the Arlyn UpScale at no additional charge.

Technical support for this and other “Extra Features” will be provided at a nominal charge of \$200 an hour.