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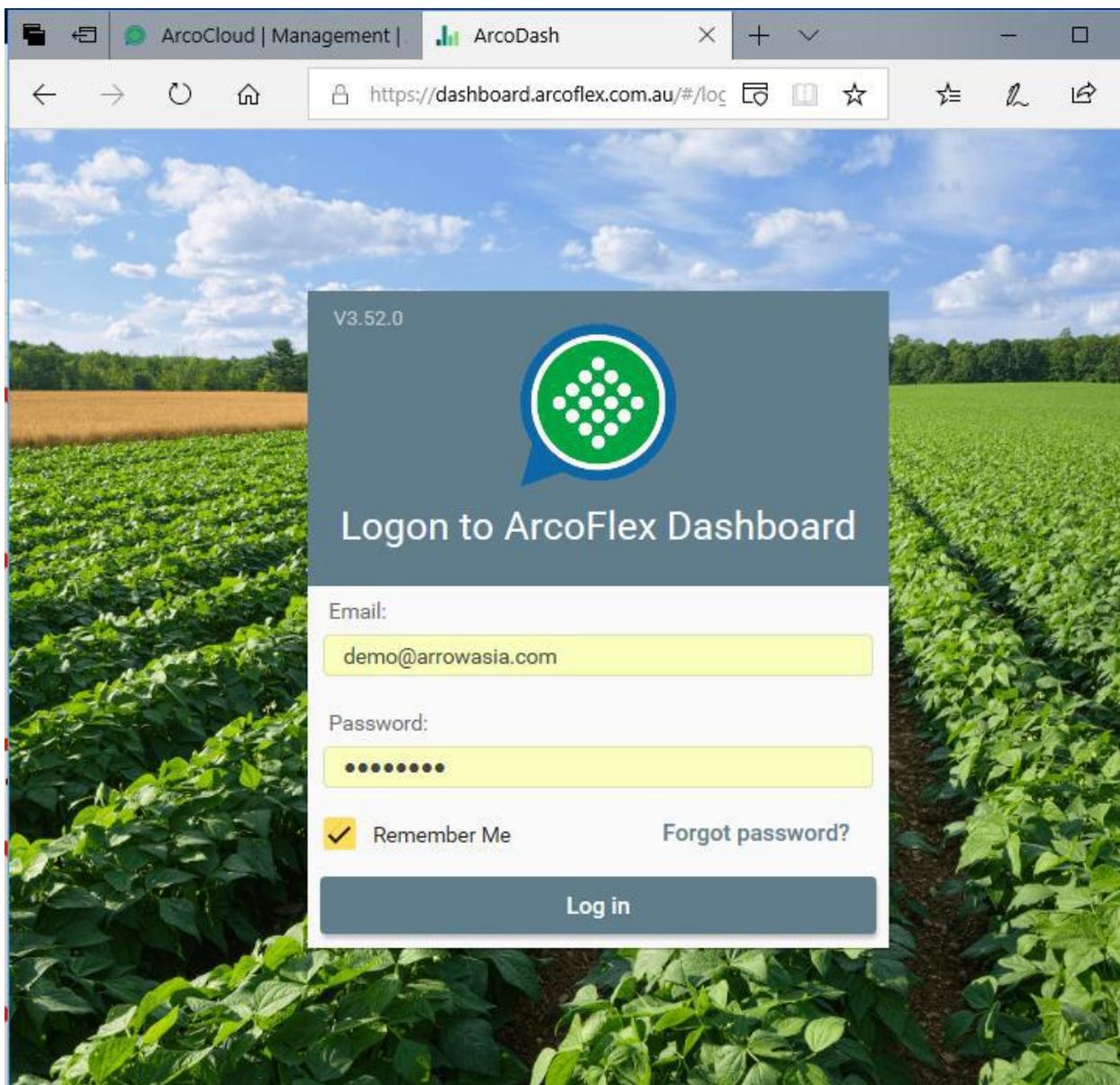
www.arcoflex.com.au



## Arcoflex Dashboard Instructions

### 1. Logging in to the Dashboard

To start the process, you need to log in to the dashboard. We will have created a customer and initial user as shown below. The web address is: <https://dashboard.arcoflex.com.au>. Use Chrome, Firefox or Edge only.



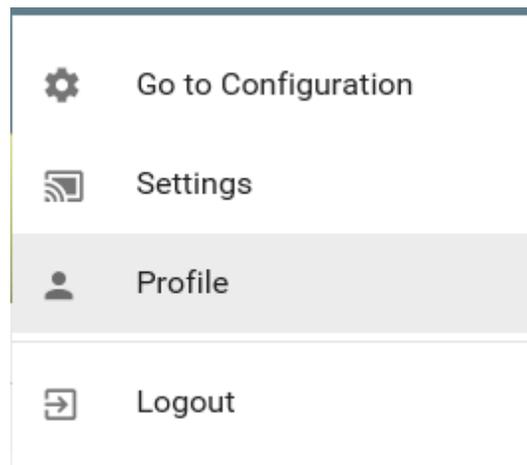
The login to the Configuration Portal is identical to the Dashboard Portal and every user must have a unique email address. This email address is used to send alerts and other notifications. The full dashboard is shown later in this document.

## 2. The Dashboard Menu Bar

The top menu bar has several functions and I encourage you to play around. Right now, there is one yet implemented: Reports. That will turn up in a day or two and will list available reports for that site.

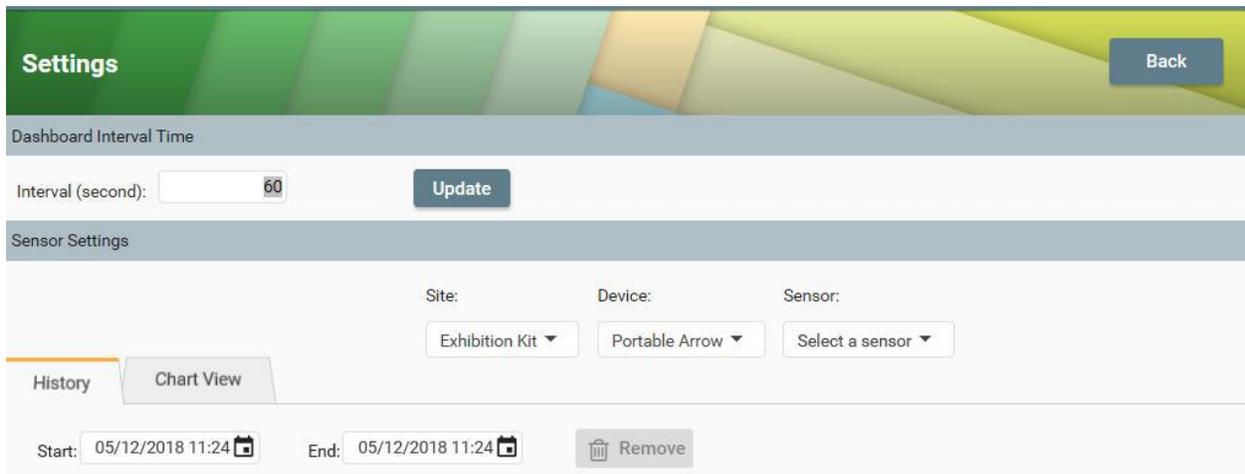


- Active Only – hide any disabled sensors
- Show Hidden – sensors can be temporarily hidden to reduce dashboard clutter
- Show Utilities – these are administrative options hidden from normal users
- Whirly gig – refresh all the cards right now
- Cards Icon – this is the dashboard shown below
- Properties Icon – this shows a list of cards, along with properties
- Trends Icon – see all trends for all sensors
- Adam Icon (your name, of course) – right click this for a sub-menu where you can:
  - Go straight to the configuration portal (advanced)
  - Change auto-refresh settings (I have set it to 2 seconds)
  - Edit your profile
  - Run Reports (not shown below)



### 3. Managing User Preferences

By default, we have set the dashboard refresh to 60 seconds. This means that there is always a minimum latency of 60 seconds for changes to sensors. This is to prevent spamming the server, but the user can reduce this time.



The screenshot shows the 'Settings' page in the Arcoflex dashboard. At the top, there is a green header with the word 'Settings' and a 'Back' button. Below the header, there are two main sections: 'Dashboard Interval Time' and 'Sensor Settings'. The 'Dashboard Interval Time' section has a text input field labeled 'Interval (second):' with the value '60' and an 'Update' button. The 'Sensor Settings' section has three dropdown menus: 'Site:' with 'Exhibition Kit', 'Device:' with 'Portable Arrow', and 'Sensor:' with 'Select a sensor'. Below these, there are two tabs: 'History' and 'Chart View'. At the bottom, there are two date pickers for 'Start:' and 'End:', both set to '05/12/2018 11:24', and a 'Remove' button.

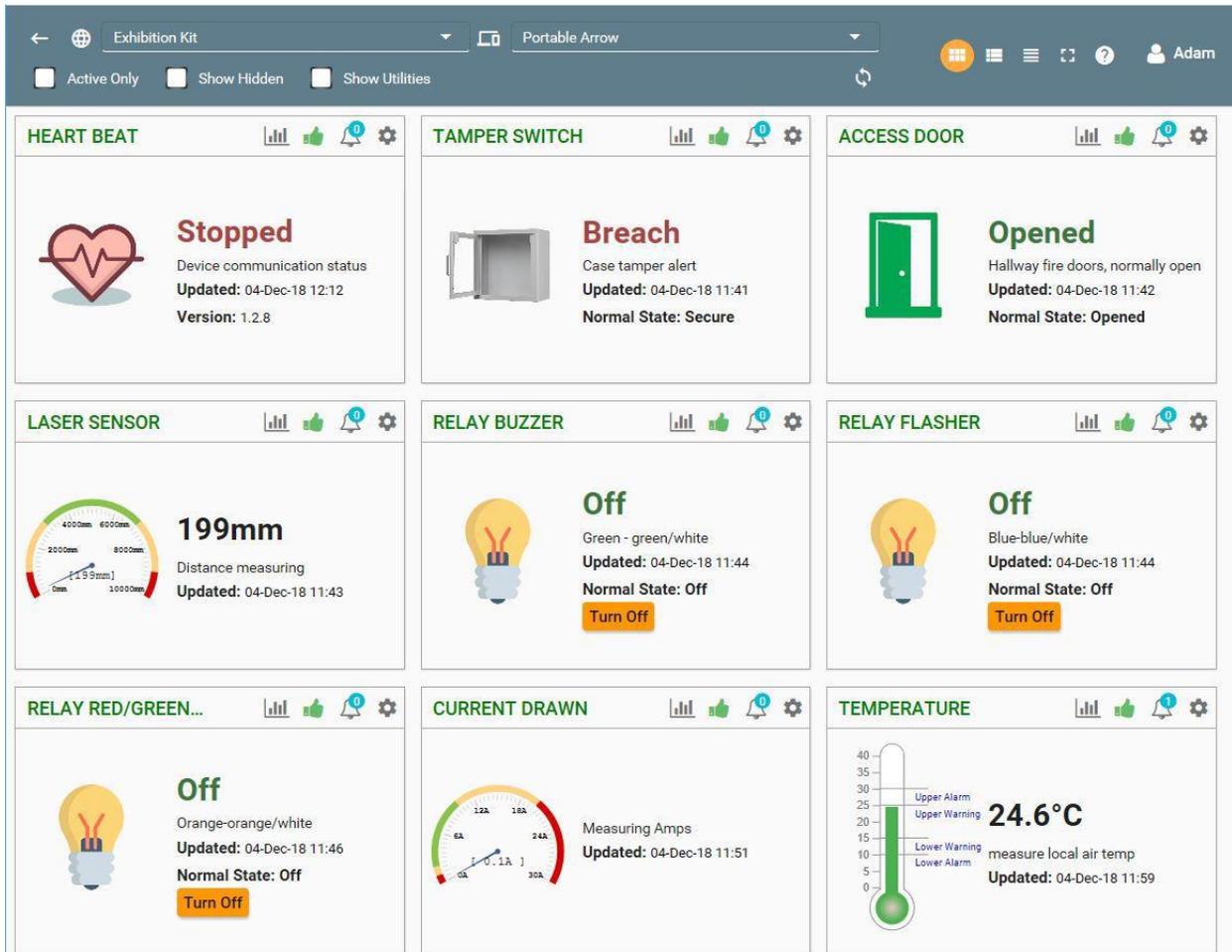
There are two tabs on the user preference page and they have important ramifications. Of the two, Chart view is more useful.

History	Chart View
Silo 1	Month ▼
Heart Beat	Day ▼
Silo 2	Week ▼
AC Power OK	Day ▼
Battery Low	Day ▼
Servo Silo 2	Day ▼
Servo Silo 1	Day ▼
Tamper Switch	Day ▼

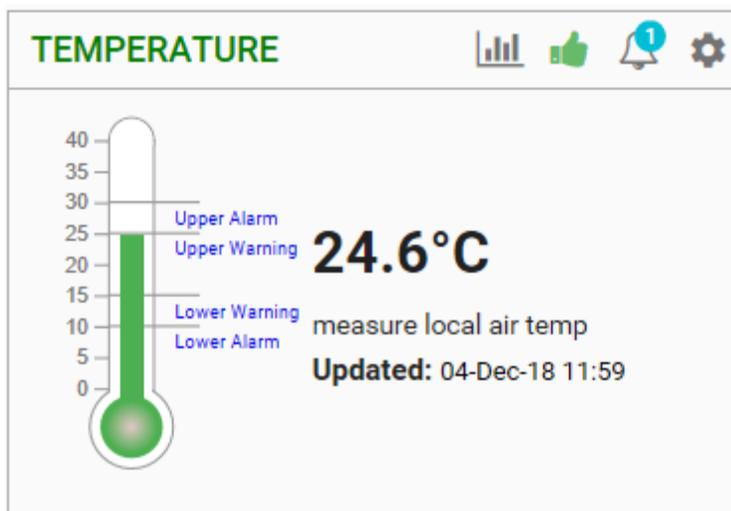
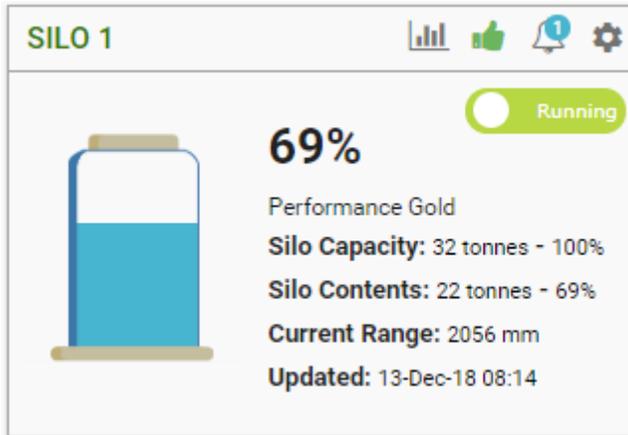
These settings alter the default display range when you open trend charts - hours/days/weeks, etc. Obviously, the user can change this at the chart itself. The second tab is less useful and should not be used for now.

## 4. The Dashboard in Detail

Now we can review the full dashboard:



Each dashboard card has a standard layout, but they can be different, as shown below:



- Double-clicking the card opens the trend chart
- Some cards have buttons (such as Running) that perform an action
- Clicking the little graph icon up the top opens the trend chart
- The green hand says All is Good (there is a thumbs down for alerts)
- The alert icon shows that there is 1 alert defined
- The cog icon opens the Sensor Properties window (See Figure 9)

## 5. Managing Sensor Properties

This form will be different for each sensor type, but it normally allows you to change things such as textual labels, display warning levels, conversion factors. The screen shot below is for a silo but many sensors are far simpler.

**Sensor Properties: #685** ✕

Sensor Card: <span style="border: 1px solid #ccc; padding: 2px;">Analogue Card</span> ▾	Template: <span style="border: 1px solid #ccc; padding: 2px;">Silo Level</span> ▾
Sensor Name: <span style="border: 1px solid #ccc; padding: 2px;">Silo 2</span>	Purpose: <span style="border: 1px solid #ccc; padding: 2px;">Silo Level 2</span>
Measurement: <span style="border: 1px solid #ccc; padding: 2px;">%</span> ▾	Tag: <span style="border: 1px solid #ccc; padding: 2px;">AI01</span>

**Dashboard Warnings**

Lower Alarm: <span style="border: 1px solid #ccc; padding: 2px;">20</span>	Lower Warning: <span style="border: 1px solid #ccc; padding: 2px;">40</span>	Upper Warning: <span style="border: 1px solid #ccc; padding: 2px;">60</span>	Upper Alarm: <span style="border: 1px solid #ccc; padding: 2px;">80</span>
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**Dashboard Display Settings**

Display Min: <span style="border: 1px solid #ccc; padding: 2px;">0</span>	Display Max: <span style="border: 1px solid #ccc; padding: 2px;">100</span>	Display as: <span style="border: 1px solid #ccc; padding: 2px;">Percentage</span> ▾	
Depth (m): <span style="border: 1px solid #ccc; padding: 2px;">3.4</span>	Density (Kg/m <sup>3</sup> ): <span style="border: 1px solid #ccc; padding: 2px;">550</span>	Diameter (m): <span style="border: 1px solid #ccc; padding: 2px;">4.3</span>	Cone Height (m): <span style="border: 1px solid #ccc; padding: 2px;">2</span>
Commodity: <span style="border: 1px solid #ccc; padding: 2px;">Commodity</span> ▾	Usage (kg/day): <span style="border: 1px solid #ccc; padding: 2px;">0</span>		

Hide on Dashboard

Save
Cancel

Here are the three sections in more detail:

### 5.1 Main Sensor Properties

The top section includes some internal information and then labels the user can alter. These show up on the dashboard and on trend charts. They have no direct influence on data. The only exception to this is measurement. Sensors normally record data in only one format but might be able to display it in another. For the silo, we normally report Percent Full, but we can display Tonnes instead. The same happens with temperature. All our sensors record data in Celsius, but we can choose to display in Fahrenheit. The display does the conversion – the underlying data is not affected. All available measurement ranges are present so if you choose a “wrong” one, it will not be prevented.

### 5.2 Dashboard Warnings

This section is only used by form widgets that can displayed colour changes. Mostly it is used for thermometers, amp meters and similar sensors. Where colour cannot be rendered, the values are ignored. Silo level sensors are one example of where these warning levels are completely ignored.

### 5.1 Dashboard Display Settings

This section will change from sensor to sensor. Some sensors only have Display Min and Display Max where others, such as for silos, have far more detail. We will review each item in more detail:

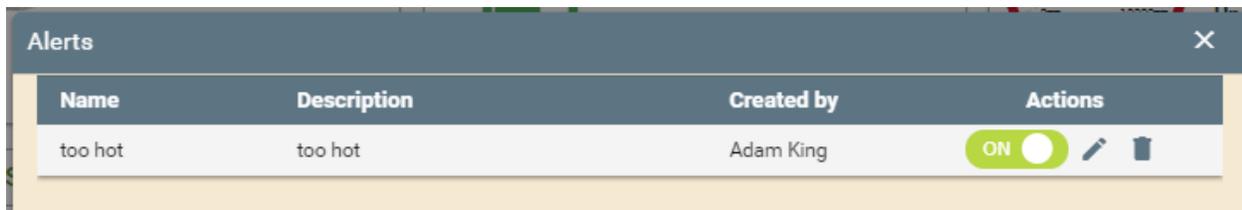
**Display Min and Max:** These are common to most sensors, limits the range that the dashboard card will see. For example, if a cool room only operated between 0C and 10C, that might be an appropriate display range. Any value occurring outside that range would just show as full (or max) or zero. The trend charts respond to this as well. This allows you to set an appropriate display range to review detail.

**Display As:** This is where a change from tonnes to percentage can be made. Again, this does not affect data, just how it is displayed. Temperature has similar choices (C or F) and there are other sensors with other display options. The option of Raw exists to help us fault find sensor issues, if we think the calculation entries are not correct.

- **Sensor-Specific Values:** In the case of silos, we collect silo dimensions to assist with converting a range in millimetres to percent full and tonnes. Other sensors will have other values.
- **Commodity:** Commodities are defined in the configuration portal and they carry a range of metrics, including product density. This value is used to compute tonnage from percent full. The value needs some calibration, but it will be consistent once set.

## 6. Configuring Alerts

Pressing the alert icon on the dashboard card brings up alerts specific to that sensor:



Name	Description	Created by	Actions
too hot	too hot	Adam King	ON <input checked="" type="checkbox"/>  

Clicking on the pen opens the alert edit window as shown in Figure 11. Clicking the Add button (bottom right) achieves the same thing. The little rubbish bin icon is used to delete this alert.

Alerts are created by the user, but you can create alerts that message other or multiple people. There is no limit to the number of alerts possible and they are very powerful but wrongly structured, they can be annoying. You can over-do it. Further, alerts can be created that don't send any emails or SMS – they are just logged. This is very useful where you want to capture something happening but not necessarily needing to be told about it. You will probably be reviewing these occurrences from the log tables later. A good example of this might be to know how often a pump is turned off or yields a pressure below 20 kPa. You don't need to be physically alerted but you might like to see later how often this happens in the average week. Here is the Alert Management form:

Edit Alert: #1660
✕

Device:	<input type="text" value="Portable Arrow"/>		
Name:	<input type="text" value="too hot"/>	Sensor:	<input type="text" value="Temperature"/>
Alert Msg:	<input type="text" value="too hot"/>		
Resolved Msg:	<input type="text" value="cool again"/>		
Status Msg:	<input type="text" value="heating"/>		
Operation:	<input type="text" value="Greater Than"/>	Alert Value:	<input type="text" value="50"/>
Repetition:	<input type="text" value="10"/> (mins)	Alert Color:	<input type="text" value="Serious"/>
Last Sent:	<input type="text" value="04/12/18 11:52"/>	Last Detected:	<input type="text" value="N/A"/>
Start Time:	<input type="text"/>		
End Time:	<input type="text"/>		
Process:	<input type="text"/>		
<input checked="" type="checkbox"/> Email	<input type="text" value="reshmi.selvarajhan@arrowasia.com"/>		
<input checked="" type="checkbox"/> SMS	<input type="text" value="0479146755"/>		
<input checked="" type="checkbox"/> Active	<input checked="" type="checkbox"/> Send Alert on Resolved		

Created by: Adam King

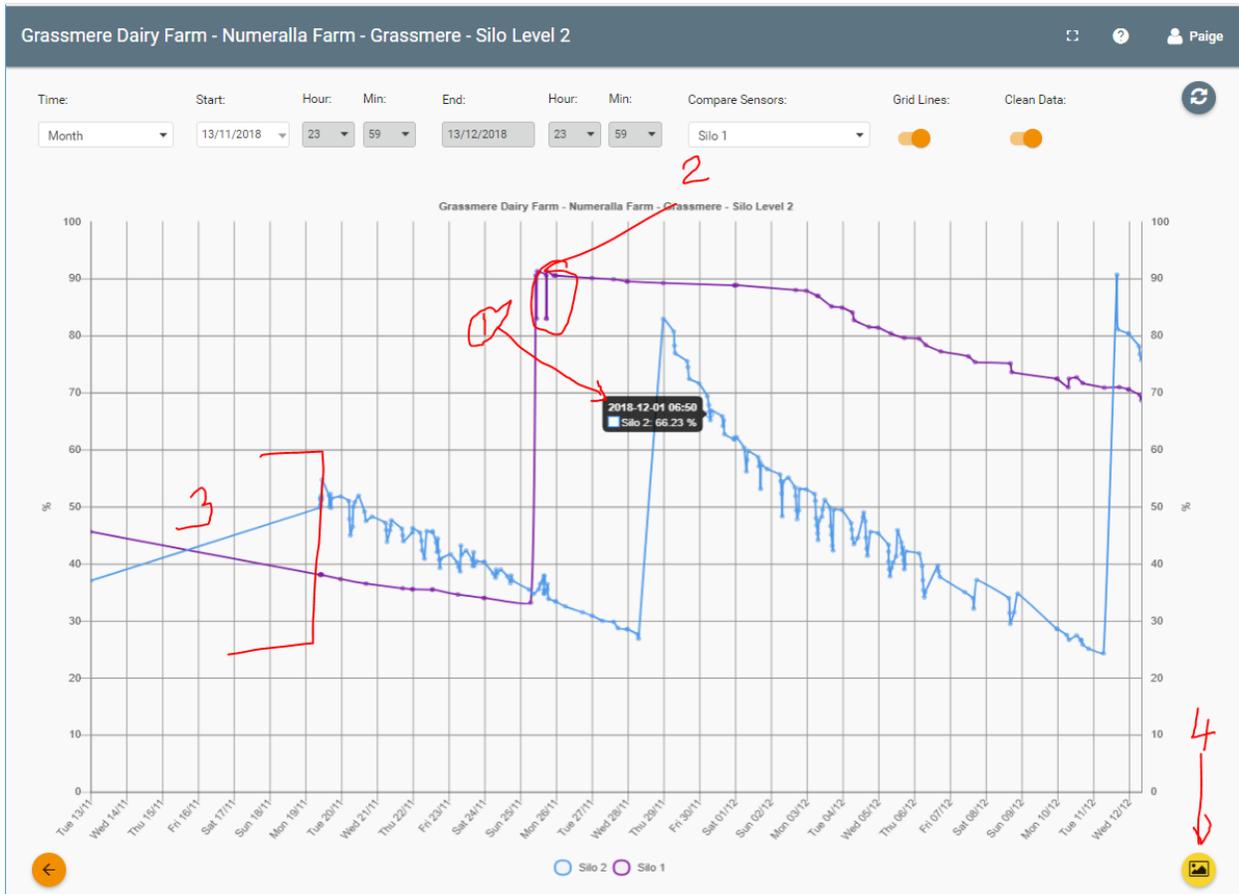
Delete
Undo
Save
Cancel

There is a lot in here. There are simple alerts (based on a condition) and complex alerts that include time frames or are conditional on another sensor. Whilst much of it is self-explanatory, here are the key operations:

- There can be an unlimited number of alerts on each sensor, each customised
- This form specifies the alert messages to appear in emails, SMS and dashboard cards
- All alerts are logged for historical and trending purposes
- The operations offered are in context with the type of sensor. For example, Boolean operations only apply to digital sensors and comparative operations apply to analogue values (percent, tonnes, amps, metres...)
- Multiple email and SMS address can be supplied for each alert
- SMS must be Australian numbers for now
- The alert colour simply colours the dashboard but if two or more alerts are set up for one sensor with different colours, only one will win and that is indeterminant
- Repetition is the rate at which you will get reminders if the condition stays active
- A start and finish time can be specified, outside of which the alert will not be sent or recorded. However, an alert initiated inside this allowed zone will still be reset if conditions so specified occur after this time zone.
- Alerts can be conditional upon a process running or the digital state of another sensor

## 7. Working with Trend Charts

The fun part is charts. Not all sensors have charts that are meaningful and some charts need an appropriate default time period set in the user profile. Here is one chart I have prepared that was opened over Silo 2 and had Silo 1 overlaid for the same time period:



At the top of the chart there are time-period selections and a display of the time zone included. There are several interesting features looking at these two specific silos.

1. Hovering the mouse over any charted point gives you more information
2. You can see data bounces when the silo is over filled
3. This period shown is when the device was not recording data
4. This icon lets you save the report as an image file.

One final example is a chart that includes two primary sensors and one that is the difference of the other two. In other words, a difference analysis.



## 8. Working with Trend Charts – Cleaning Data

An important ‘feature’ of data collection is that sensors may misreport or go faulty at times. Currently, we let such data go through to the history tables and charts will attempt to draw it. We need to know when sensors go faulty so that they can be investigated however, they have the potential to mess up calculations and charts. We do two things:

- For the charts, such as above, we provide a small slider that will remove known erroneous values. The slider is up to the top next to the Grid Lines slider. Click it to clear bad data from the chart – note... this does not remove the data from the history tables.
- For calculations, all such known bad data elements are automatically excluded.

## 9. Summary

That was a quick overview of the Dashboard. You should now read the instructions for Configuration Portal.