Arlyn UpScale

Special Program

Setpoint Flip Flop

Addendum

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1 INTRODUCTION

The “Setpoint Flip Flop” special program allows for the scale to monitor the weight on two platforms and alternatively cycle the setpoint output mapped to those two platforms – in effect “flip flopping” setpoint control between two platforms.

1.1 Prerequisites

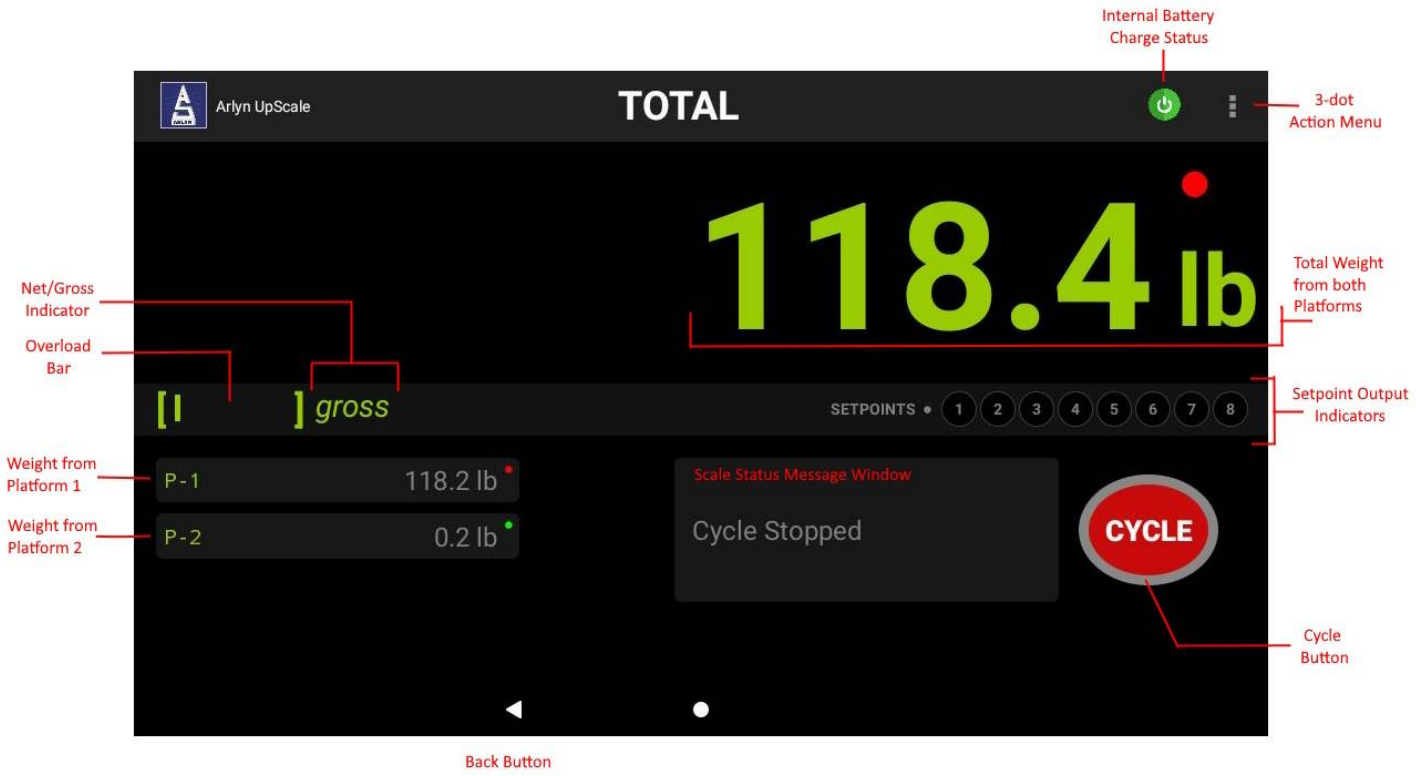
- Any dual platform scale equipped with Arlyn UpScale indicator installed special Flip Flop program.
- Arlyn UpScale User Manual (for general operation) - https://www.arlynscales.com/arlyn-upscale-usermanual/
- Setpoint Controller User Interface (from page 53 of the user manual)

This addendum will assume the above prerequisites have been considered and accomplished and will delve directly into the usage and operation of the “flip flop” feature.

2 FRONT PANEL VIEW

2.1 Cycle Control Display

When starting the scale, the screen shown below appears.



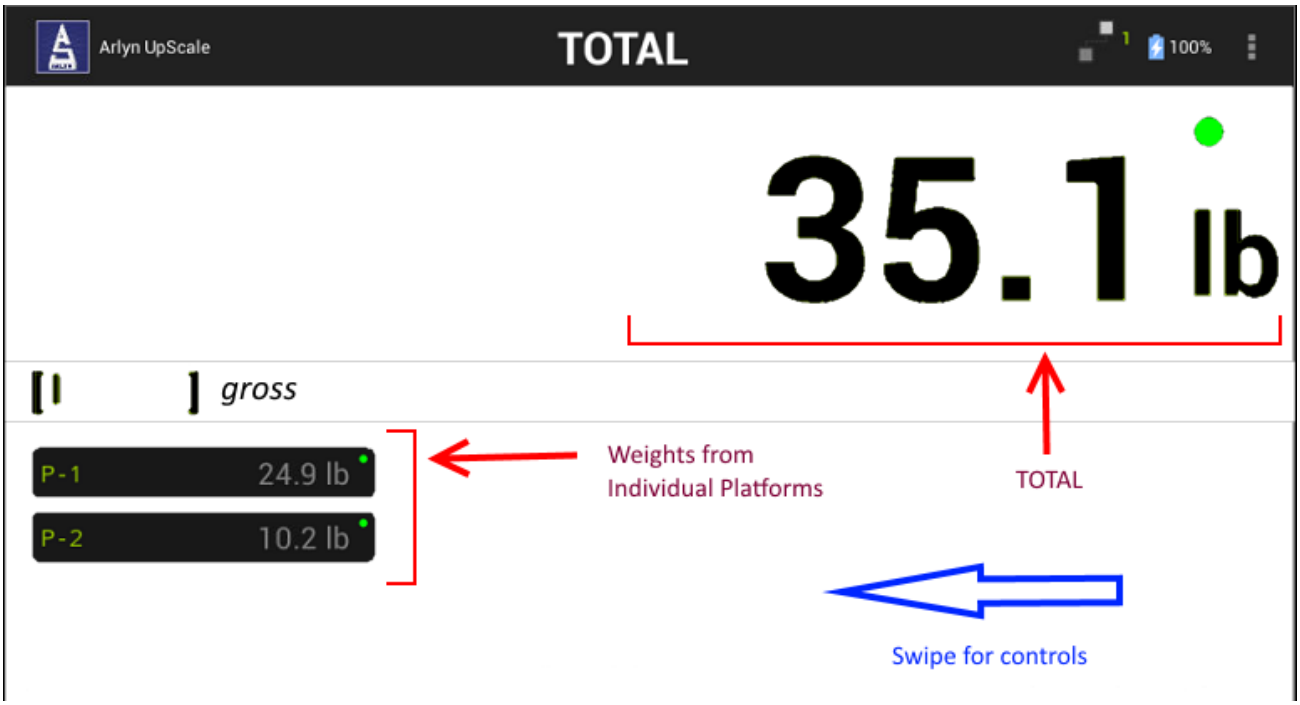
TOTAL WEIGHT W/UNIT	Total weight from both platforms in the current unit setting
WEIGHT – PLATFORM 1	Weight reading from Platform 1
WEIGHT – PLATFORM 2	Weight reading from platform 2
NET/GROSS INDICATOR	Shows the “net” indicator if in the scale is in net weighing mode
OVERLOAD INDICATOR	Shows how much load is on the platform relative to its maximum capacity
CYCLE BUTTON	Press this button to begin or abort a cycle.
SETPOINT OUTPUT LEDS	Shows which output is currently active. Correlate this with the Setpoint Output Pin Diagram
3-DOT ACTION MENU	Gateway to additional settings of the scale.

INTERNAL BATT. CHARGE This indicator is for troubleshooting purposes only and not for the end user to utilize.
SCALE STATUS WINDOW This window shows the current status of the flip flop operation.

2.2 Additional Controls

The Cycle Control Display shows the Total sum of all the weights from all connected platforms. The display also shows the weights on the individual connected platforms in summary format below the Total weight.

A limited number of operations can be done on this screen. To bring up the control buttons, swipe to the left of the screen as shown in the figure below.



Swiping to the left of the screen brings out additional controls.

TARE — This button is disabled as this is a platform specific operation.

NET/GROSS — Will toggle the indicator between the net and gross mode. The Net mode will show the net total weight on the platform minus any tared weight from any individual platforms.

UNIT — Pressing this key will show total weight in various units without affecting the display units of individual platforms.

ZERO — The ZERO button on the screen is a special operation that needs to be used carefully. Pressing this button *will zero out all the connected platforms.* This button should be normally pressed if all the platforms are empty and need to be zero out to adjust any drifts over time.

3 FLIP FLOP SYSTEM

The setpoint controller on the scale has been setup so that the cycle begins from a starting "high" weight until it stops at a target "low" weight. The following initial settings apply.

- Platform 1:
  - Initial High Weight: 117 lbs
  - Target Low Weight: 115 lbs
  - Setpoint Control set to turn on/off Output 1
- Platform 2:
  - Initial High Weight: 116.8 lbs
  - Target Low Weight: 114.8 lbs
  - Setpoint Control Set to turn on/off Output 2

These values can be obviously changed in the Setpoint Controller screen that will be illustrated later, but for the purpose of explaining the Flip Flop operation in this section, we will use these values.

The Setpoint Outputs specified can be used to control valves mapped to your tanks. As an example, if the cycle is operating for Platform 1, Output 1 is turned ON which in turn has the valve for tank 1 open. Once the weight for Platform 1 reaches target weight, Output 1 turns OFF

3.1 Overview

Once the CYCLE button is pressed, the Flip Flop Cycle always begins evaluating weight from Platform 1. There is no way to start the operation from Platform 2.

IMPORTANT NOTE: The weight of Platform 1 must be greater than the initial "High" weight for the cycle to start. If the weight measured is lower than the starting high weight, then the scale will just wait for the weight to reach this value. You can always change the "high" value in the Setpoint Controller screen.

In the same vein, once the cycle is transferred to Platform 2, the weight on Platform 2 also must be greater than the initial "High" weight set for Platform 2.

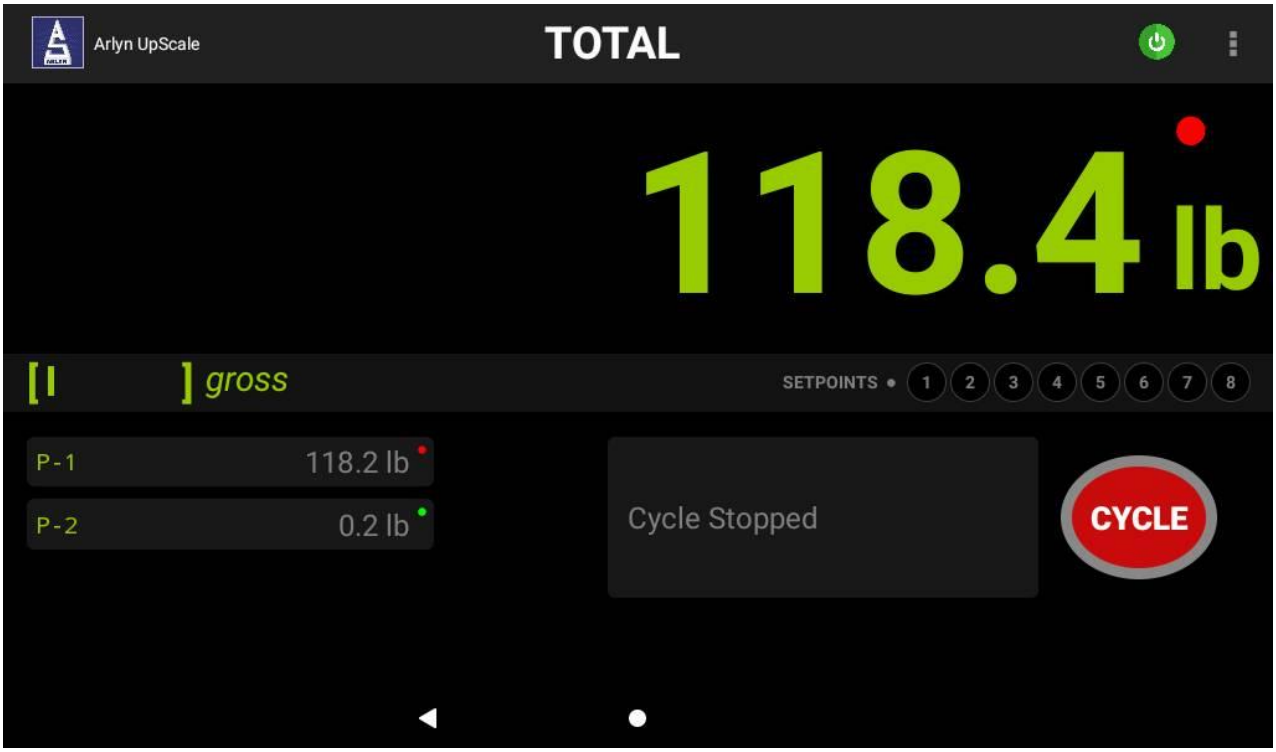
Once the cycle starts:

a) The scale will begin evaluating weight Platform 1 and turn ON Output 1 as long as the weight is:
    a. Below the initial "high" weight, and
    b. Above the target "low" weight.
b) Once the target "Low" weight from Platform 1 is reached (i.e., the "empty" condition), Output 1 is turned OFF and the scale will automatically transfer the setpoint cycle to Platform 2.
c) While evaluating weight on Platform 2, the Setpoint Controller will turn ON Output 2. Output 2 will remain ON as long as the conditions associated with this platform is true.
d) Once the target "Low" weight from Platform 2 is reached, the Setpoint Controller will turn OFF Output 2 and the scale will again transfer the setpoint cycle to Platform 1.
e) These cycles will automatically switch between Platform 1 and Platform 2 without user intervention.
f) The cycle can be aborted at any time. After the cycle is stopped, the only to begin the cycle again is to make sure that Platform 1 is reading greater than the starting "high" weight (see note above).

3.2 Operation

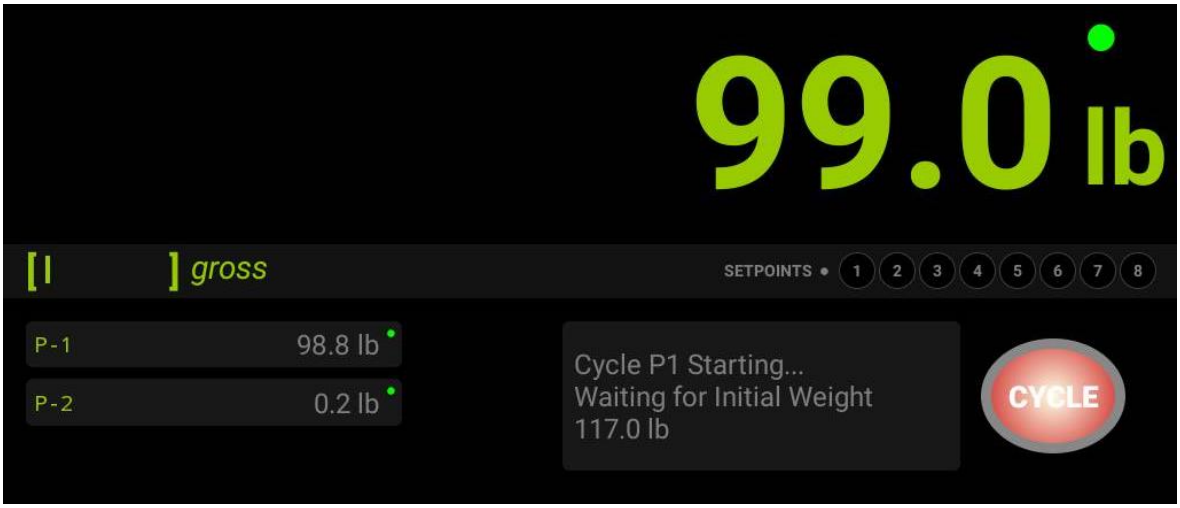
The following steps describe the flip flop operation from the initialization point.

1) After the scale has booted up, the first screen will appear as below:



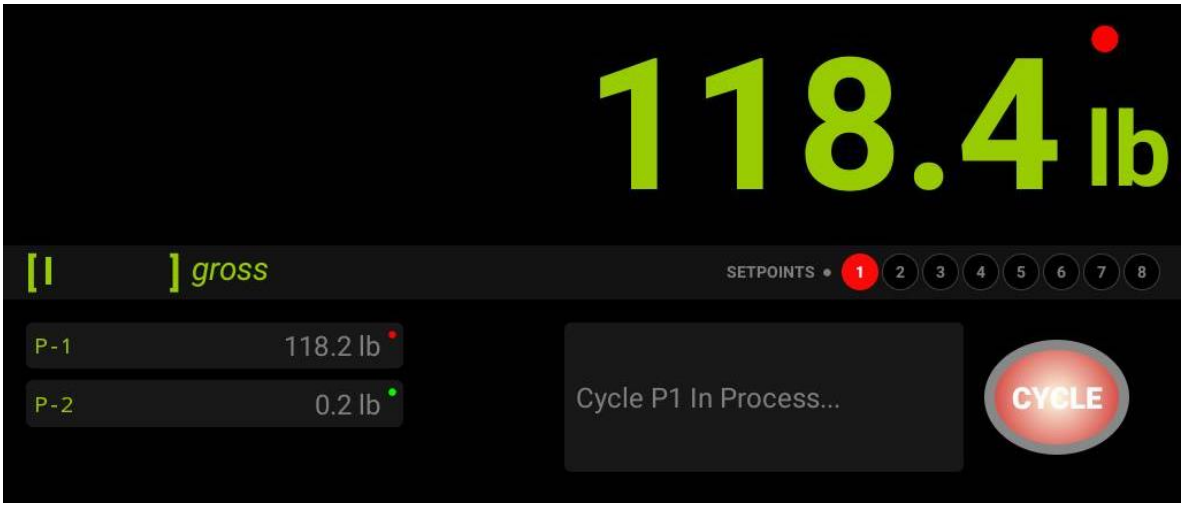
The P1 weight will reflect the weight as shown on Platform 1 while P2 will show the weight on Platform 2. The large text weight shown is the total weight summing P1 and P2.

2) Press the CYCLE button to begin Setpoint Cycle process. The scale will begin evaluating weight from P1.
   a. If the weight on P1 is <u>less than</u> the initial "high" weight, then you will see the following message appear on the status message window: (note the reading on P1 is below 117 lbs)



The "117.0 lb" weight value shown in the status window is the initial "high" weight set in the Setpoint Controller screen.

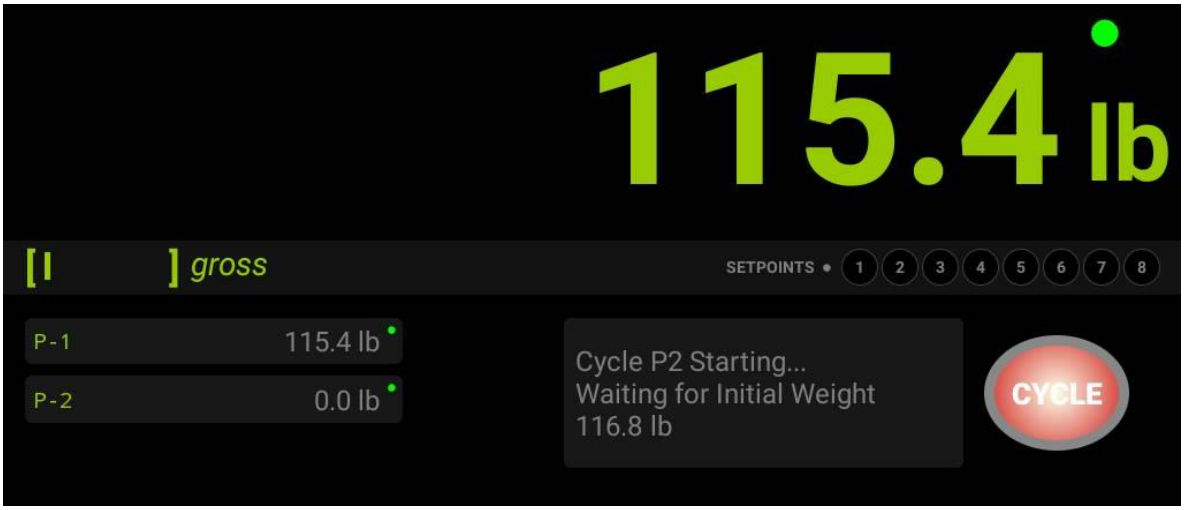
   b. If the weight on P1 is greater or equal to the initial "high" weight set for P1, then you will see the following screen:



This means the weight on Platform 1 has satisfied the condition for the initial "high" weight and the scale has started the cycle by turning ON Output 1.

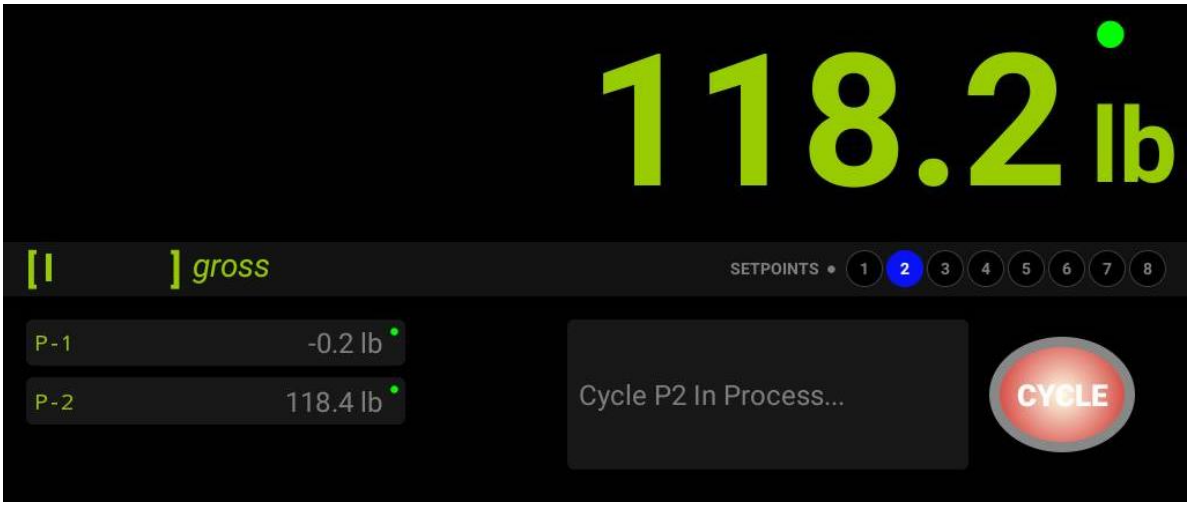
3) Now that the cycle has started, the scale will take over and continuously analyze weight from Platform 1. At some point, weight from Platform 1 will reach the target "low" weight of 115 lbs (or below). When this happens, the Setpoint Controller will turn OFF Output 2 and the scale will automatically switch the cycle to Platform 2.

4) While evaluating Platform 2, the Setpoint Control takes the same evaluation principles as it did for Platform 1.
   a. If the weight on P2 is less than the initial "high" weight, then you will see the following message appear on the status message window: (note the reading on P1 is below 116.8 lbs)



The "116.8 lb" weight value shown in the status window is the initial "high" weight set in the Setpoint Controller screen.

   b. If the weight on P2 is greater or equal to the initial "high" weight set for P2, then you will see the following screen:



This means the weight on Platform 2 has satisfied the condition for the initial “high” weight and the scale has started the cycle by turning ON Output 2.

Notice that the P1 is reading 0 on this screen. This means that the platform is empty. While P2 is under cycle, you can take the time to setup a new cylinder on Platform 2.

5) After the Platform 2 has reached its target weight, the cycle will repeat again to Step 1 above.

This completes the illustration of the Flip Flop operation.

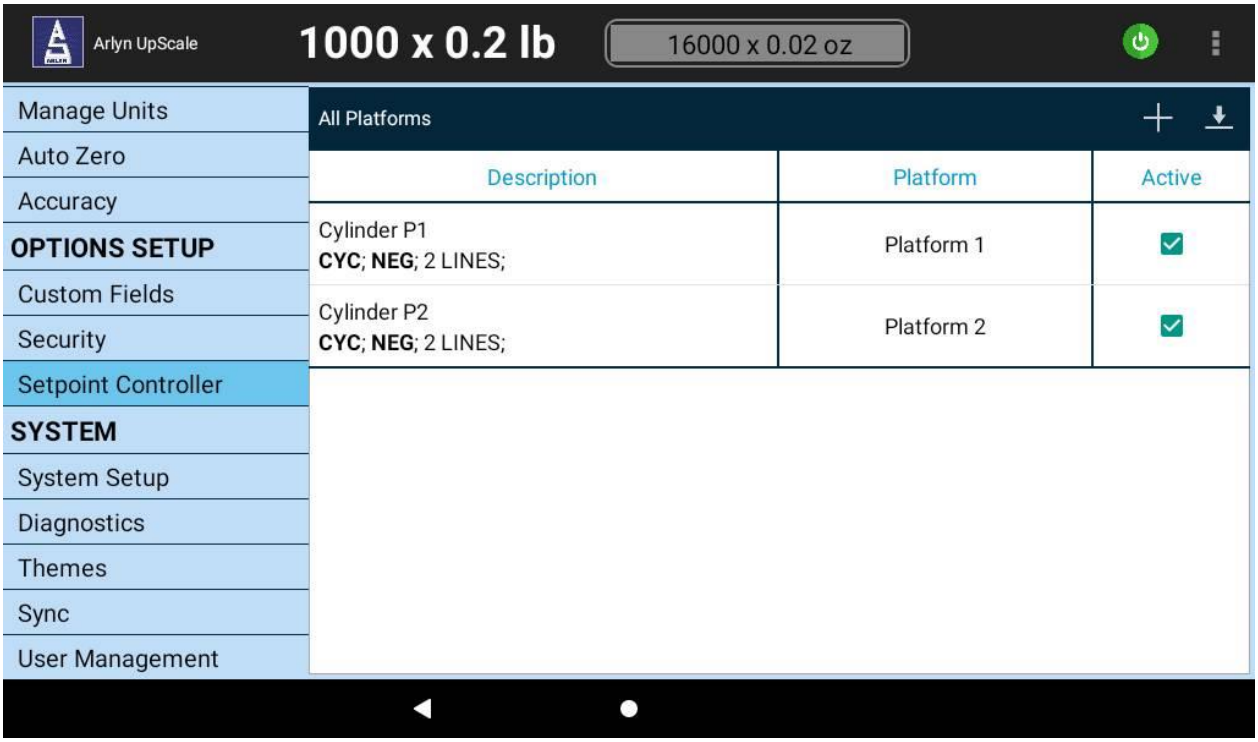
4 SETPOINT CONTROLLER SETUP

The scale offers multiple levels of customization for the Flip Flop operation. To setup the parameters of this operation, you need to utilize the Setpoint Controller screen provided by the scale.

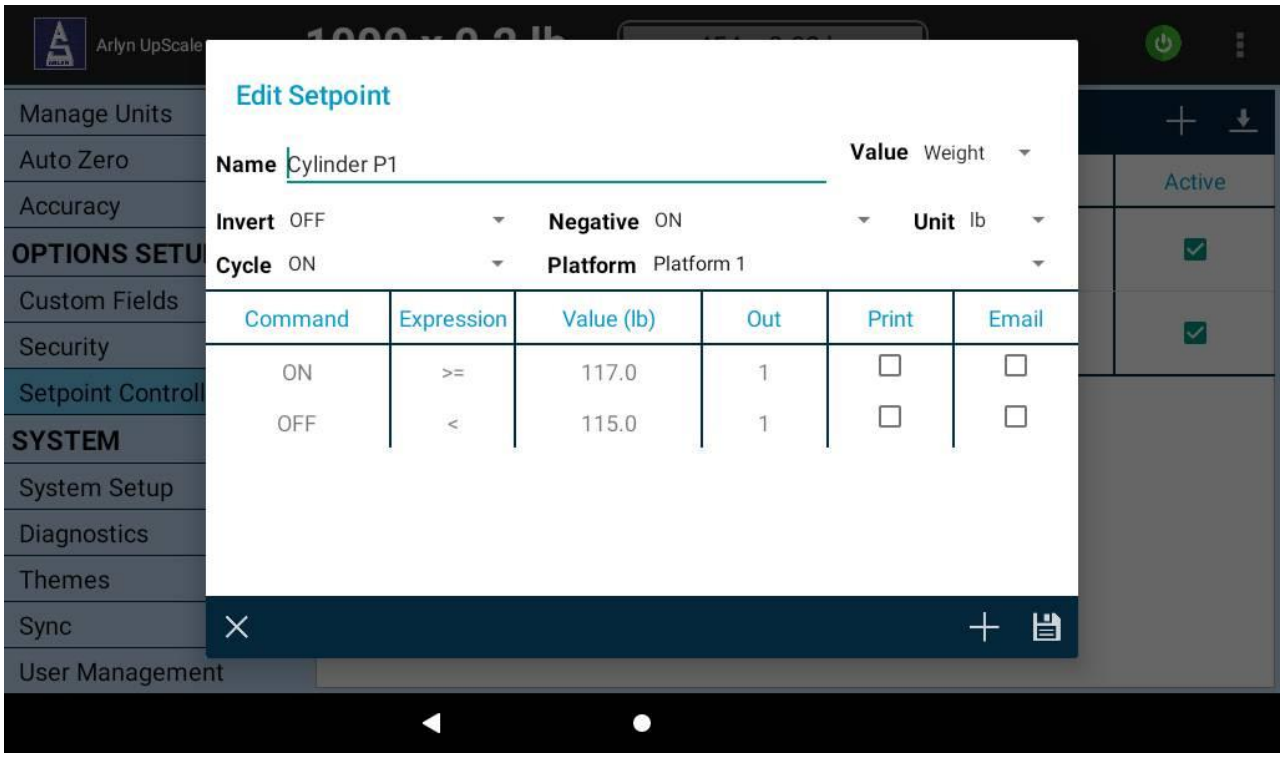
NOTE: A detailed set of instructions is given in the main Arlyn UpScale user manual on Page 53 on how to operate the Setpoint Controller screen. This section will assume the user is familiar with the screen’s operation and proceed with the parts relevant to the Flip Flop operation.

To reach the Setpoint Controller screen, go to the 3-DOT MENU->SETTINGS->SETPOINT CONTROLLER. (NOTE: The Settings screen cannot be accessed while a Cycle is in operation).

The Setpoint Controller screen will already be setup for you at the time of shipment. It will have two definitions, each dedicated to its own Platform.



Clicking on the first row, Platform 1 Definition will yield the screen below.



The **Edit Setpoint** Dialog allows you to change the initial "high" weight and the target "low" weight as mentioned multiple times in this addendum. In this case, the dialog shown has two command lines set for Platform 1, summarized below:

Command	***Expression***	***Value (lb)***	***Out***	***Comment***
ON	>=	117.0	1	Turn ON output 1 if value is equal to or exceeds the initial "high" weight of 117 lbs

OFF	<	115.0	1	Turn OFF output 1 once the value falls below the target “low” weight of 115 lbs

Change the weight values accordingly to match your requirements for Platform 1.

You can also do the same for Setpoint Definition for Platform 2 (not shown).

Once you complete the change, you may have to reboot the scale for the values to take effect. In most cases, this is not necessary.

5 SUPPORT

For any questions relating to the Flip Flop operation or general questions about the scale, please reach us at:

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