396-001500

SureBatch Controller Manual
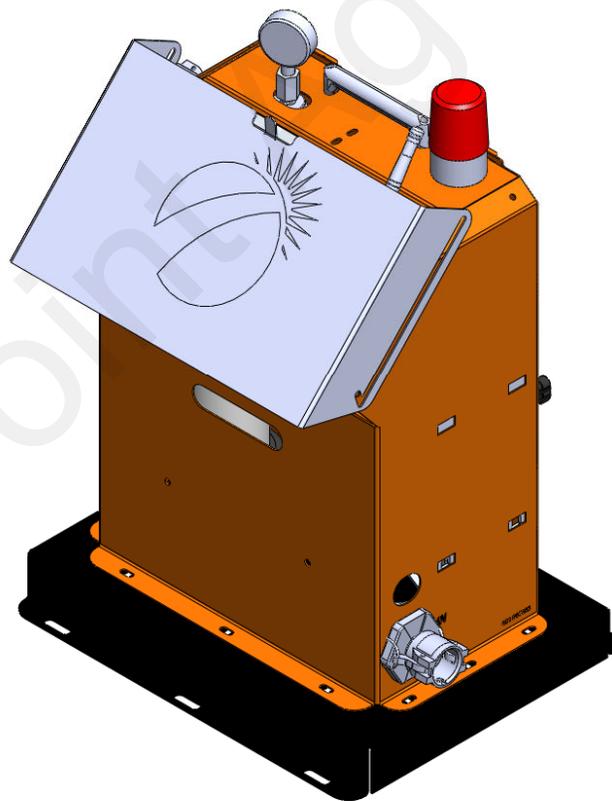
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General Description

The SureBatch system can be used to precisely meter the correct amount of chemical into your system. The batch can be remote initiated via a key fob or it can be initiated using the touch screen interface. All interfacing happens using the touch screen interface. Help information and setting information is available on the touchscreen by pressing the on screen ? symbol.
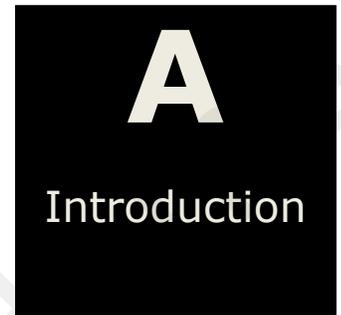
Basic Setup

1. Connect your product to the quick connect port labeled IN.

2. Connect the quick connect port labeled OUT to your injection point.

3. Hook up the battery connection using the supplied fused cable to the battery or plug the 120VAC cord into an outlet. **Take great care not to hook the battery up backwards.**

Pumping Options

The SureBatch unit can be supplied with the following options.
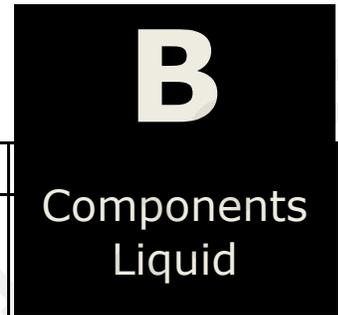
MODEL	Description
545-125250	**2 GPM** pump and .08 to 1.6 GPM flowmeter and **12vDC** Power Cable Minimum output is 10 oz/min. Maximum output is 1.1 GPM @ 10 PSI or 0.9 GPM @ 50 PSI.
545-125500	**5 GPM** pump and 0.3 to 5.0 GPM flowmeter and **12vDC** Power Cable Minimum output is 30 oz/min. Maximum output is 4 GPM @10 psi or 2 gpm @50psi.
545-425250	**2 GPM** pump and .08 to 1.6 flowmeter and **110vAC** Power Cable Minimum output is 10 oz/min. Maximum output is 1.1 GPM @ 10 PSI or 0.9 GPM @ 50 PSI.
545-425500	**5 GPM** pump and 0.3-5.0 GPM flowmeter, **110vAC** Power Minimum output is 30 oz/min. Maximum output is 4 GPM @10 psi or 2 gpm @50psi.
545-125750	**2GPM Procon** Pump with 1950 RPM Motor, .13-2.6 Flow Meter, **12vDC** Power Cable. Minimum output is 15 oz/min. Maximum output is 3.3 GPM at 10 PSI or 2.625 GPM at 70 PSI.
545-425750	**2GPM Procon** Pump with 1950 RPM Motor, .13-2.6 Flow Meter, **110vDC** Power Cable. Minimum output is 15 oz/min. Maximum output is 3.3 GPM at 10 PSI or 2.625 GPM at 70 PSI.

Parts

Ion Flowmeter:

Model	SurePoint Part#
0.08 to 1.6 GPM	204-01-4621CUF05
0.13 to 2.6 GPM	204-01-46211CUF00
0.3 to 5.0 GPM	204-01-46211CUF01

Pump:

Model	SurePoint Part#
2 GPM	290-01-2963Y1
3 GPM	290-01-08-5514-2F1-63A
5.3 GPM	290-01-5503-5.3-BPSS
2GPM Procon	290-12-103A125R31RA-250

Parts

PWM EPD	205-18385
Flowmeter Adapter	201-17842
12VDC Fused Power Cable	208-02-2190Y1
120VAC Fused Power Cable	208-02-2191Y1
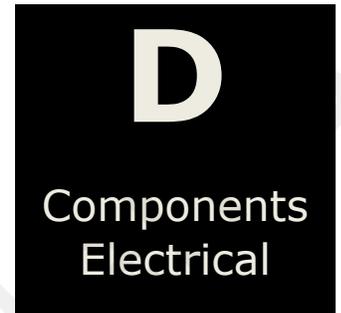
Wiring Block Diagram
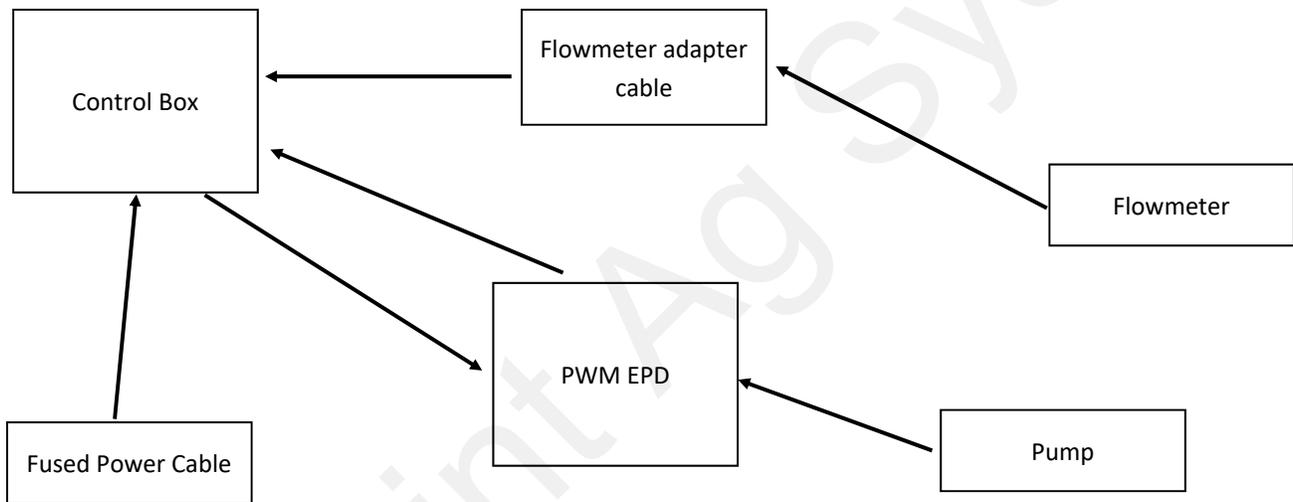
Operation and Setup

All settings and operation are accessed using the built in touch screen interface. The following explains the different options and how to navigate the screens

RUN Screen

This screen displays the operational information for the controller. If this screen is not shown, it can be accessed at anytime by pressing the RUN button in the lower right corner.

The FLOW RATE and BATCH TOTAL settings are split into two columns. The first column shows the CURRENT values. The second column shows the SETPOINT values that are entered on the op settings screen.

Under the CURRENT column, the FLOW RATE displays the real time flow rate flowing through the controller. And the BATCH TOTAL displays how much product has been pumped so far. This will match your batch setpoint when the system finishes.

Under the SETPOINT column, the FLOW RATE shows the target flow rate as entered or as calculated on the op settings screen. The BATCH TOTAL is the stop setting for the current batch setup on op settings screen.

The SPEED location shows the current speed of the pump. When the Manual/Auto switch is in auto, this value will automatically adjust to hit the desired flow rate setup on the next screen. When the MANUAL/AUTO switch is in the Manual position, the speed value is adjustable by pressing the "+" or the "-" keys or by pressing the number. When you press the speed setting box, you can then enter the desired speed using the on screen keypad that pops up.

RUN Screen (continued)

The START/STOP button initiates a batch and turns the system on.

The PUMP OFF lamp will change depending on the status of your system. When the unit is batching, the status lamp will read IN PROGRESS on top and RUNNING on the bottom. When the batch has completed the status lamp will be off with a label that reads BATCH COMPLETED. Then if the system has the BATCH RESUME option enabled and the system is stopped in the middle of a batch, the lamp will be off and say PUMP OFF, but the top label will still say IN PROGRESS.

When BATCH RESUME mode is enabled, a new button will show up on this screen that says RESET BATCH. Pushing this button when the status lamp says IN PROGRESS and PUMP OFF will reset the current batch and the next batch, when initiated, will be a new batch. This also turns off the external flashing lamp which flashes long on short off to indicate batch is paused but still in progress.

The remote key fob is pictured to the left. This remote can be used to start and stop the SureBatch wirelessly. The function keys that are used are as follows.
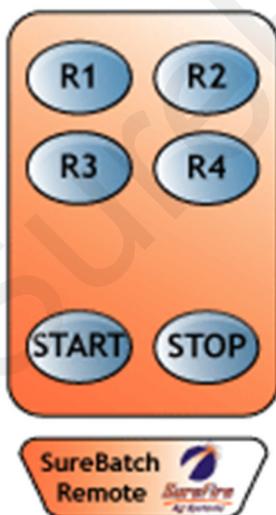
Button #	Function
7	Recipe #1 load and start
8	Recipe #2 load and start
5	Recipe #3 load and start
6	Recipe #4 load and start
3	Not Used
4	Not Used
1	START
2	STOP

Operational Settings Screen

To navigate to the operational settings screen, press the SETUP button on the RUN screen.

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Setup & Operation
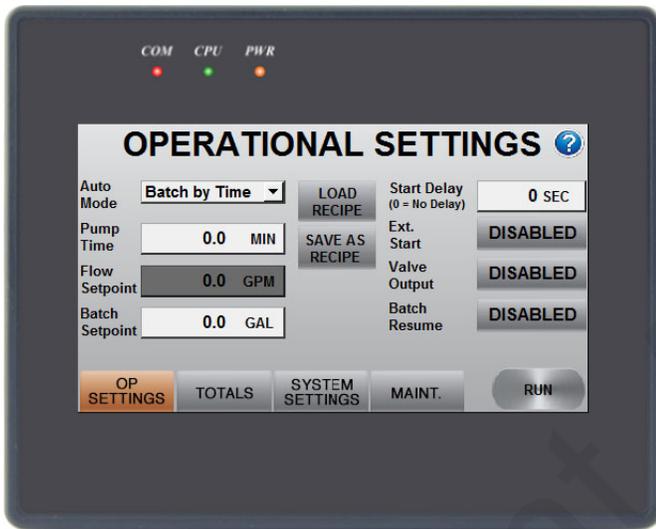
The SureBatch has three main modes of operation, and these are selected using the AUTO MODE drop down menu. The following table describes the operation of the three modes.

Mode	Description	Calculated Values
Batch by TIME	Uses Pump Time and Batch Setpoint to calculate Flow Setpoint.	Flow Setpoint=Batch Setpoint/Pump Time
Batch by RATE (Flow Rate)	Uses Flow Setpoint and Batch Setpoint to calculate Pump Time.	Pump Time=Batch Setpoint/Flow Setpoint
Flow Rate	This setting allows the system to run continuously. The SureBatch no longer tries to pump a set batch, it just runs at the FLOW RATE setpoint indefinitely.	None

The BATCH SETPOINT sets the amount of product that needs to be pumped. When the system pumps this amount of product, the system will shut the pump off and stop pumping.

The FLOW SETPOINT is the flow rate that the system tries to maintain when the Auto/Manual switch on the main screen is set to Auto.

The PUMP TIME setting sets the length of time that the batch will take to finish.

Operational Settings Screen (continued)
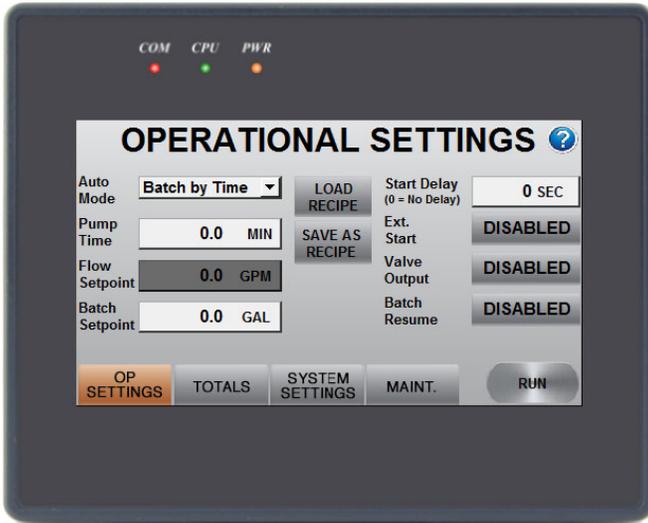
The START DELAY is used to delay the start of a batch by the number of seconds you enter. If this is set greater than 0, the system will wait for that amount of time after the batch is requested before the batch actually starts. During this time, the RUN screen shows a start delay active with a countdown, and the external green light will flash indicating that a start delay is active.

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Setup & Operation

The EXTERNAL START Enable/Disable allows the user to use the provided external start feature. The wiring harness included has a connector labeled external start. If this feature is enabled on this screen and pins A and C on the connector get shorted, a start batch command will be accepted and the system will start.

The VALVE OUTPUT Enable/Disable allows the user to externally hook up an electric valve or relay to drive another device that needs to turn on at the same time the batch is initiated. Again, the supplied harness has a connector labeled VALVE OUTPUT. Pin C is the signal, Pin A is +12VDC, and Pin B is ground. Pin C will go to 12VDC when a batch is active.

The BATCH RESUME Enable/Disable allows for the ability to stop a batch in the middle of pumping and then resume it at a later time. For example, if this option is enabled, and a batch is started, and then you run out of product, the system will stop on a low flow alarm. Then the product can be refilled, and then the batch restarted. The batch will then finish from where it left off. If the batch resume is disabled, then any time the unit stops, a new batch will be pumped when the system is started again. When this is enabled, a new button appears on the RUN screen that allows you to reset the batch and start a new one if the last one was not completed but a new batch is desired anyway.

Totals Screen
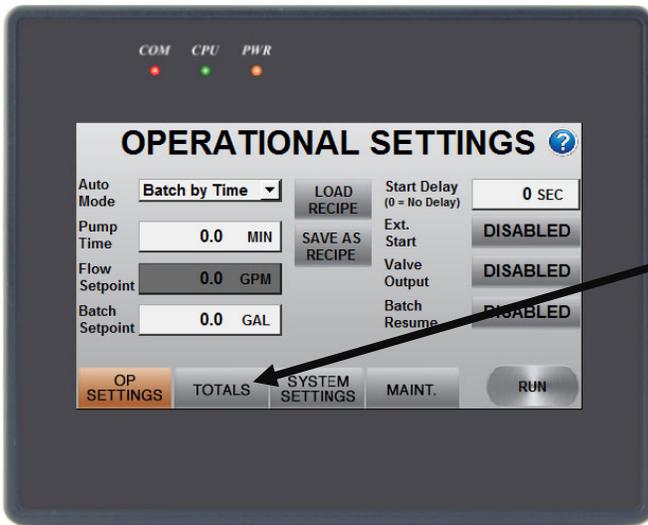
To navigate to the Totals screen, press the TOTALS button on any of the internal screens that have this menu shown.

This screen keeps track of several useful totalizers. TOTAL PRODUCT PUMPED is an end customer resettable totalizer that can be used to get a combined total of several batches.

TOTAL HOURS is also an end customer resettable total. This allows for keeping track of the number of hours the SureBatch has been run.

NUMBER OF BATCHES is a resettable count of the number of batches that have been successfully completed.

LIFETIME PRODUCT PUMPED is a non resettable totalizer that counts the amount of product pumped over the life of the SureBatch.

The RETAIL PASSWORD ENTRY gives access to a password protected screen that has another set of totalizers that can be used by to keep track of product used that is not accessible by the end user. Contact SurePoint to get the password for this screen if it is a desired feature.

System Settings Screen
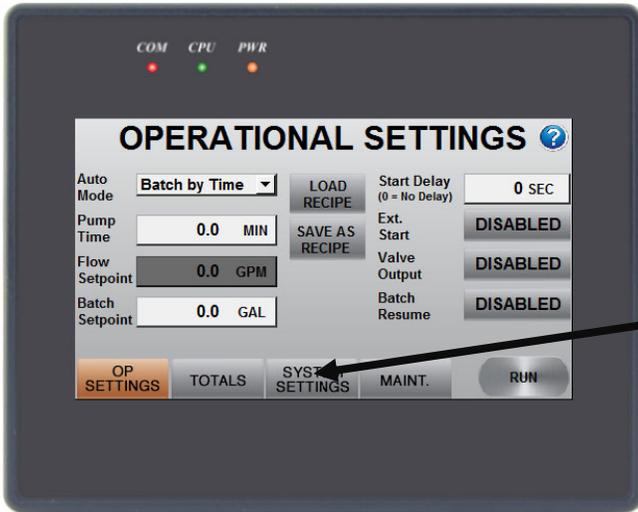
To navigate to the system settings screen, press the SYSTEM SETTINGS button on any of the internal screens that have this menu shown.
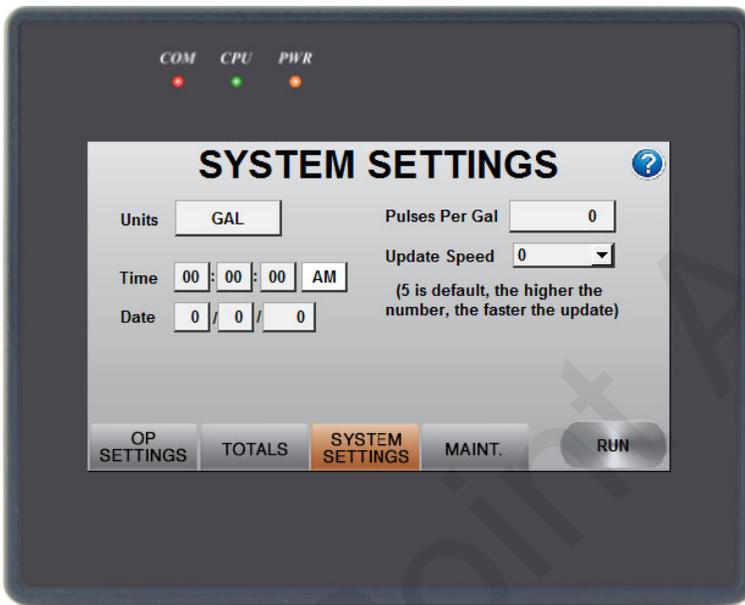
The settings on this screen handle some of the options that are available on the SureBatch unit.

Use the UNITS selection to display the units in OZ or GAL. This button toggles between OZ and GAL.

PULSES PER GAL is set based upon the flowmeter in your SureBatch unit. There are three options for flowmeters. Refer to the table below to select the correct pulses per gal. This number can be calibrated to produce more accurate output if catch tests are off more than what is acceptable.

The **UPDATE SPEED** gives the user the ability to fine tune the speed at which the automatic control updates. The larger the number the faster the system updates. If the pump seems to be responding too slowly, then increasing this number will help it respond more quickly. If the pump goes above and below the rate and won't lock on, use a smaller number. **Start at 5** and go up or down 1 at a time to adjust.

Flowmeter	Pulses per GAL
0.3 to 5 GPM	3000
0.13 to 2.6 GPM	3000
0.08 to 1.6 GPM	22710

Maintenance Screen
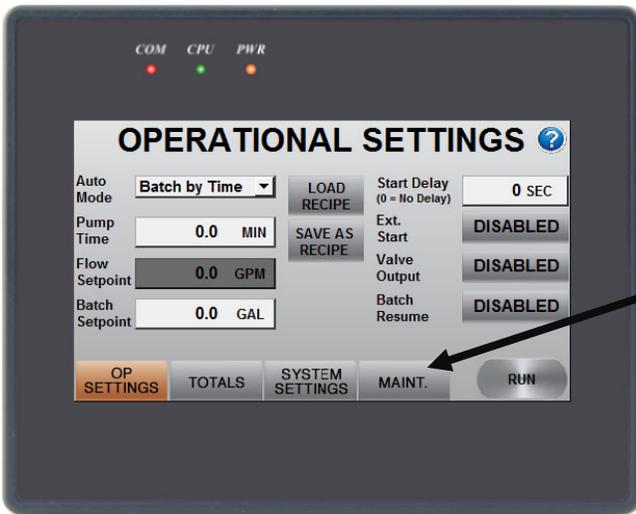
To navigate to the Maintenance screen, press the MAINT. button on any of the internal screens that have this menu shown.
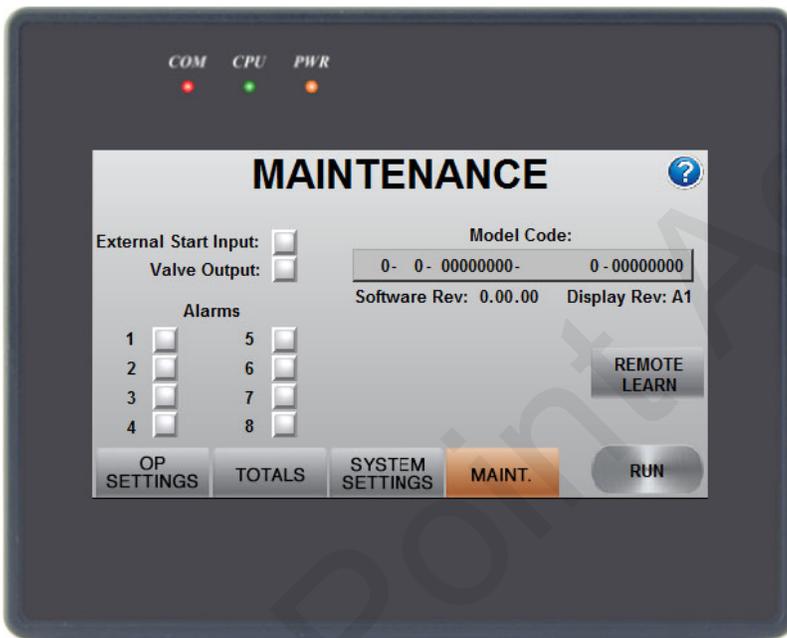
The model code is a number that can be used by SurePoint service people to quickly gather the pertinent information about the unit.

Your SurePoint service technician may ask you for some of the information on this screen if you are having problems.

If any of the ALARMS lamps are red, call your SurePoint representative for help.

REMOTE LEARN is used to program new remotes to the system. Your SureBatch will come with one remote programmed into the controller, but if you lose your remote or would like a second one, then follow the procedure below.

1. Press the REMOTE LEARN button, and the blue Mode light will start flashing.

2. Hold down the START button on the remote until the blue mode light goes solid. This will take about 30 seconds.

3. Release the button on the remote, and now your new remote is paired to the controller.

Recipe Management

Recipes are a convenient way to store several settings at once. Each recipe contains the AUTO MODE, PUMP TIME, FLOW SET-POINT, BATCH SETPOINT, and UNITS settings. Up to 4 sets or 4 recipes of these settings can be stored in the unit.
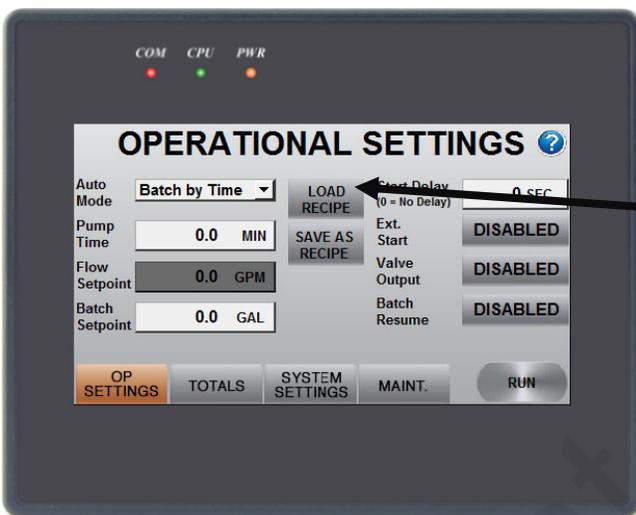
To navigate to the Load Recipe screen, press the LOAD RECIPE button on the Operational Settings screen.
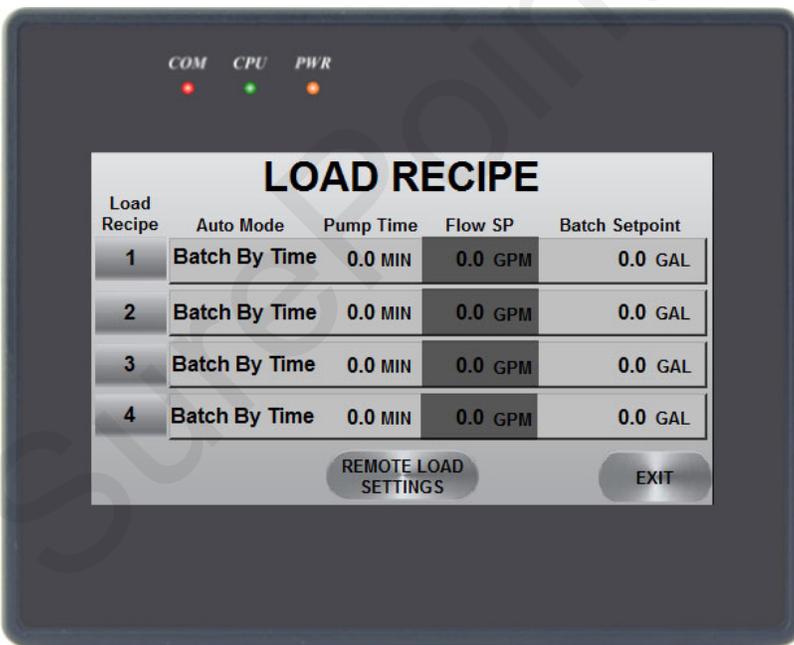
To LOAD RECIPE select the number button on the left hand side of the screen corresponding to the recipe that is desired to be loaded. Then a confirmation screen will be provided to verify the recipe to load. Loading a recipe will overwrite the existing AUTO MODE, PUMP TIME, FLOW SETPOINT, BATCH SETPOINT, and UNITS settings. Then you can use the START/STOP or remote key fob to control the batch.

Recipe Management (Continued)
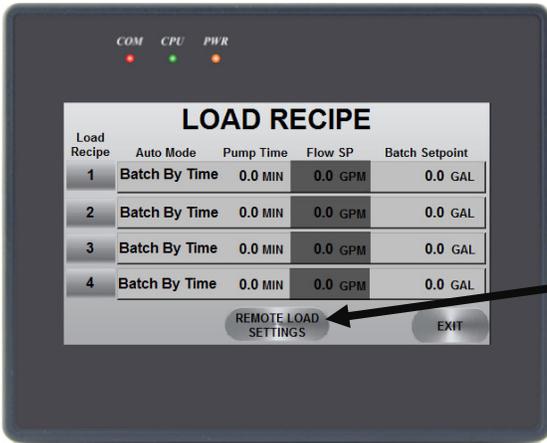
To navigate to the Remote Load Settings screen, press the REMOTE LOAD SETTINGS button on the Load Recipe screen.
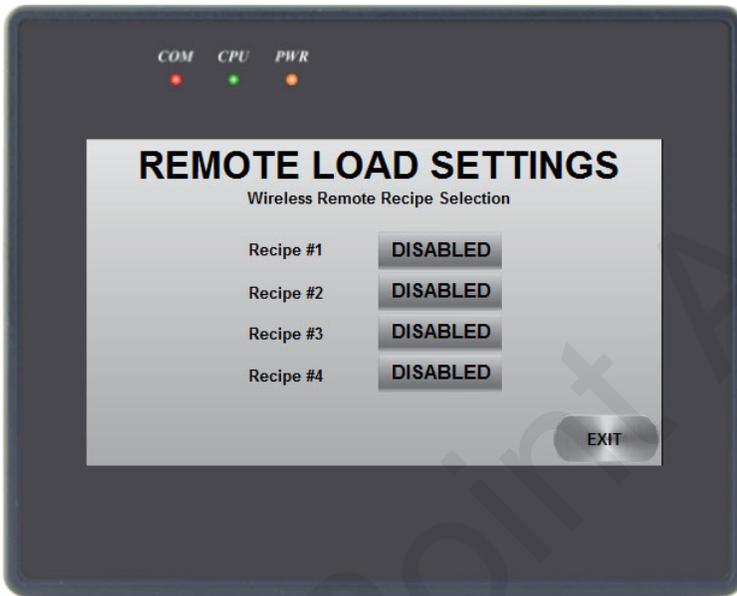
The REMOTE LOAD SETTINGS screen controls which recipes can be loaded using the key fob remote. These settings effectively enable or disable the R1-R4 buttons on the remote control. For example, if Recipe #1 is enabled, then when the R1 button is pressed on the remote, the recipe settings for recipe 1 will be loaded and the batch will start. Also, if Recipe #2 is disabled on this screen, then pressing the R2 button will do nothing.
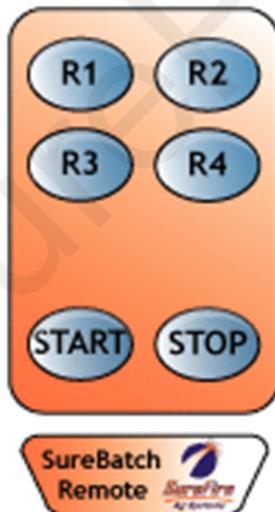
Recipe Management (Continued)
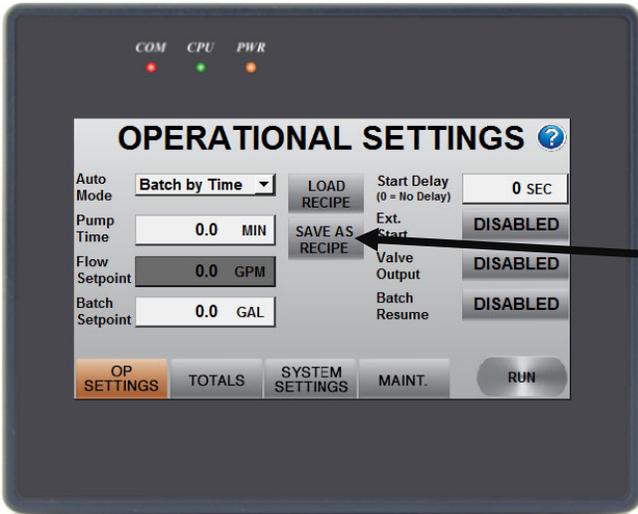
To navigate to the Save Recipe screen, press the SAVE AS RECIPE button on the Operational Settings screen.

To SAVE RECIPE select the number button on the left hand side of the screen corresponding to the recipe that is desired to be saved. Then a confirmation screen will be provided to verify the recipe to save. Saving a recipe will overwrite the existing AUTO MODE, PUMP TIME, FLOW SETPOINT, BATCH SETPOINT, and UNITS settings for the recipe number you select. Going to the LOAD RECIPE screen is a good way to verify that the recipe has been saved correctly.

Troubleshooting

Touch screen not on:
- Check wiring, and check the inline fuse in the supplied power cable. Do not use a fuse larger than 25 Amps.
- Make sure the power switch is on.

No Flow Rate:
- The pump will self prime, but sometimes it takes a little time for the system to get primed. Until product is flowing through the flowmeter, it will read no flow. To help with priming do the following
    a. Set the MANUAL/AUTO switch to MANUAL
    b. Press the SPEED value and type 100 into the keypad and press enter.
    c. Press the START/STOP to turn on the pump. Now the pump will run continuously and at full speed.
    d. Once you know product is moving through the system press the START/STOP button to shut the system off, and press the MANUAL/AUTO switch to switch back to AUTO.

Pump will not Run:
- Check the fuse.
- Open the back cover and check the connections to the EPD and from the EPD to the pump.

System never stops:
- Make sure that the AUTO MODE is not set to FLOW RATE.
- Make sure that the Flow Rate is displaying a flow. If it is not, then the Current BATCH TOTAL will not increment and reach the BATCH SETPOINT.

Troubleshooting

How to Program the SureBatch Remote

This Remote is programed from SurePoint Ag Systems to work with this specific controller. In the event that the remote fails to operate follow these instructions...

Step 1: Locate the create button on the back of remote.
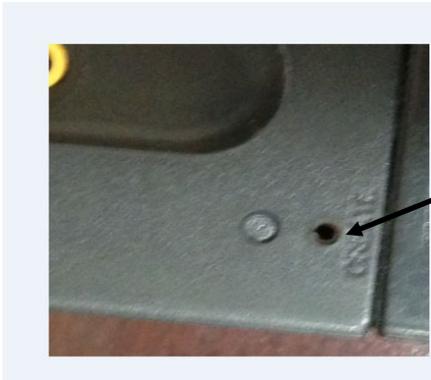
Step 2: Insert paper clip into hole and push button until blue light flashes

Step 3: While blue light is flashing turn remote over then starting from bottom left push the numbers in numerical order 1 through 8.   Number 1 on this remote is the start, button 2 is stop, 3 is above the start button, 4 is above stop, 5 is R3, 6 is R4, 7 is R1 and 8 is R2. Buttons 1-8 must be pushed in numerical order while the blue light flashes. This will create a code for the remote.

(Note buttons 1 & 3 are hidden by sticker see picture below)

Programming Remote Cont'd...

Step 4: Learning the remote. Power up the SureBatch Controller. Select the run tab.
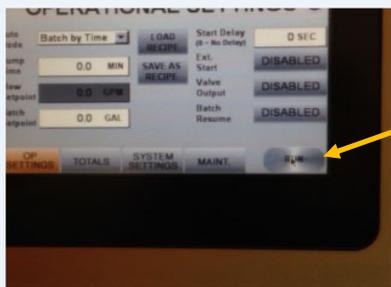
Step 5: Select the setup tab.
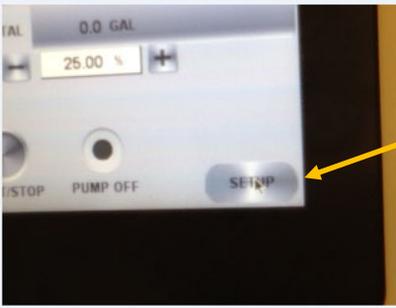
Step 6: Select the Maintenance Tab
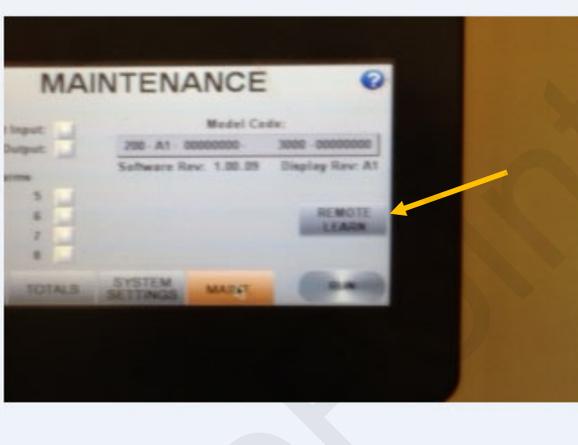
Step 7: Select the learn remote tab and a blue light under the power button will flash, while flashing hold down the start button until the green light turns on.

Your remote should now be synced with the controller.

Declaration of Conformity

TRADE NAME:	SureBatch Controller
MODEL NUMBER:	SB200
COMPLIANCE TEST REPORT NUMBER:	B20906A1
COMPLIANCE TEST REPORT DATE:	9/12/2012
RESPONSIBLE PARTY(IN USA):	SurePoint Ag Systems
ADDRESS:	9904 Hwy 25
TELEPHONE:	785.626.3670

This equipment has been tested and found to comply with the Class B limits of CFR Title 47, Part 15, Subpart B for the Receiver portion and complies with the Class A limits of CFR Title 47, Part 15, Subpart B for the digital portion.. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If the unit does cause harmful interference to radio or television reception, please refer to your user's manual for instructions on correcting the problem.

I the undersigned, hereby declare that the equipment specified above conforms to the above requirements.

Place: Atwood, Kansas   Signature:

Date: 9/28/2012   Full Name: Albert Popp

Position: Engineer

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* Reorient or relocate the receiving antenna.
* Increase the separation between the equipment and receiver.
* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
* Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.