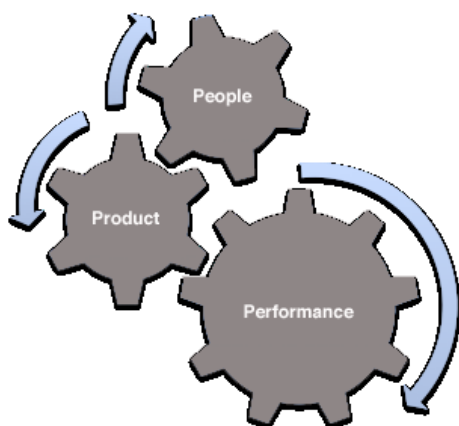




## Flow Assist Service and Operation Guide



SAMUEL JACKSON

# FLOW ASSIST

Flow Assist PLC v01.00 Build 0001

TOUCH SCREEN VERSION: 1.00 Build 0001

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*We appreciate your business and hope you enjoy your  
Samuel Jackson Flow Assist System*

This manual contains information on the installation, startup, and operation of your equipment. Included is information on:

- Electrical installation.
- Installation dimensions.
- Maintenance and troubleshooting.

***IS STARTUP ASSISTANCE PROVIDED?***

Depending upon your location, a startup and inspection service may be provided with your new equipment, free of charge, by Samuel Jackson, Inc. Please contact us to make arrangements or for questions.

In the future when you require service, technical support or parts, contact us by phone, fax or email. Our engineers and service people are available to assist you in obtaining the best performance from your Samuel Jackson, Inc. products.

*Again, thanks for choosing Samuel Jackson.*

**SAMUEL JACKSON, INCORPORATED**  
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Internet: [www.samjackson.com](http://www.samjackson.com)



## **READ THIS CAREFULLY BEFORE OPERATING THIS SAMUEL JACKSON PRODUCT!**

The Samuel Jackson product line consists of sophisticated technology capable of greatly enhancing a gin's productivity and efficiency. Improper use of these products could adversely affect those very same factors and potentially cause injury to gin personnel. For this reason, we include an extensive manual with every product. These manuals outline the proper and safe operating procedure for their respective product. **Do not operate any Samuel Jackson product without first reading the entire manual and all accompanying information.**

Sometimes there are updates added at the customer's discretion to products already in the field. We always refer customers to our website, [www.samjackson.com](http://www.samjackson.com) for the latest product information. The latest manual can be downloaded or printed from the website free of charge. In addition to printed literature, the website includes training videos on several popular products. When available, these videos are highly recommended for viewing before operating a respective product. If you do not have internet access, give us a call and we will gladly send you the latest product information.

***DANGER: Please read and understand all the warnings below before operating or maintaining a Samuel Jackson product. If you do not understand, call Samuel Jackson at 806-795-5218 before proceeding. Failure to do so could result in injury or even death. (Si usted no entiende, llamar a Samuel Jackson en 806-795-5218 antes de proceder. La falta de hacer tan podía dar lugar a lesión o aún a muerte.)***

### **Electrical.**

Most Samuel Jackson products use supply voltage between 110 and 480 volts AC. These levels are considered high voltage and are extremely dangerous. The ignition transformer voltage output is much higher than this.

### **Fire.**

Samuel Jackson Humidair Units and Heaters are combustion-based products. They ignite and burn fuel during operation. These products can reach very high temperatures inside and out. Allow combustion based products 15 minutes to cool before attempting any work.

### **Automatic Flame Ignition.**

Some Samuel Jackson Humidair Units and Heaters use technology to ignite automatically. If you do not see a flame, it does not mean that respective product is not in operation.

### **Access Doors.**

Samuel Jackson products have access doors for added convenience of product maintenance. Access doors must not be opened while the equipment is in operation. Access doors should also remain closed while any connected equipment such as a fan or conveyor is in operation.

**Moving Parts.**

Many Samuel Jackson products have moving or rotating parts. These parts could form pinch points or grab loose clothing or jewelry. Do not reach across or into any product while in operation.

**Replacement Parts.**


When repairing or maintaining this equipment, use only Samuel Jackson approved parts.

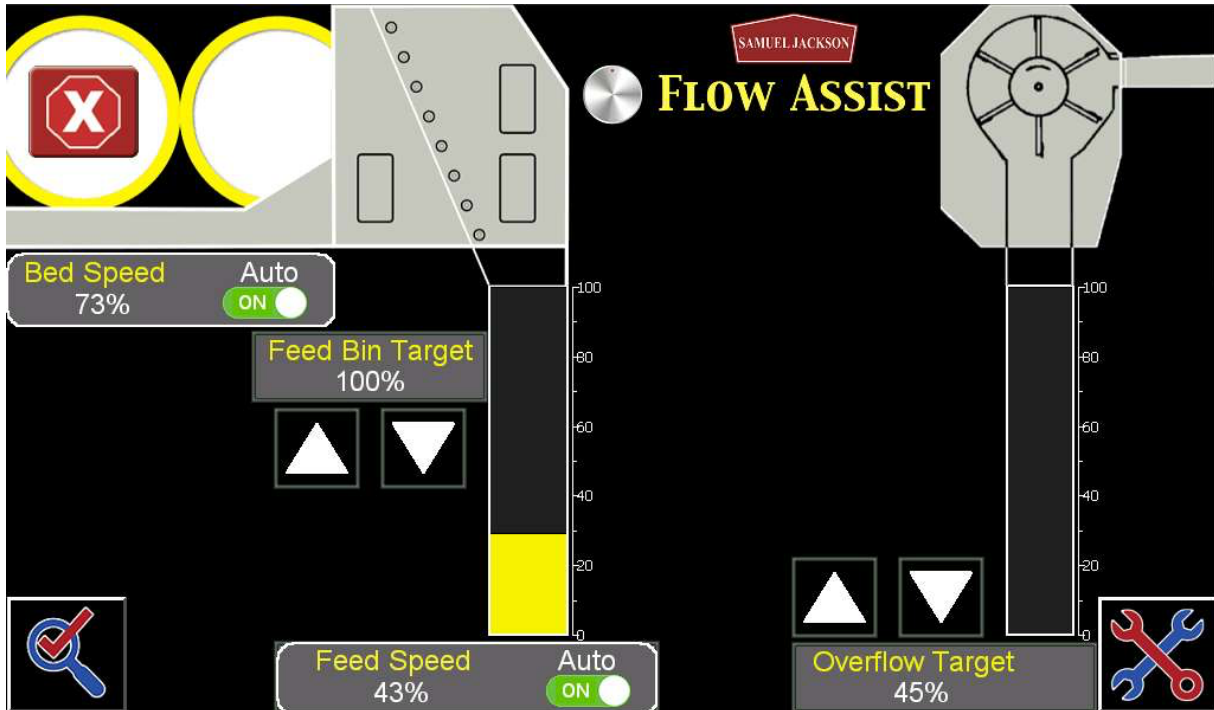
*Do not work on any Samuel Jackson product without first following OSHA Lockout/Tagout procedures. Confirmation by a licensed electrician that there is no electricity present is highly recommended. We recommend using a Samuel Jackson Authorized Technician for all work Samuel Jackson products. Additional safety information is located throughout this manual and should be read carefully before operating this Samuel Jackson product. If you have any questions about how to properly operate a Samuel Jackson product, please call +1-806-795-5218 before proceeding.*

# INTRODUCTION

Flow Assist is intended to aid the ginner when ginning module of variable density without constant adjustments on the feed control or module feeder speeds.

It is as simple as pressing the Green Go  button to start feeding cotton into the gin.

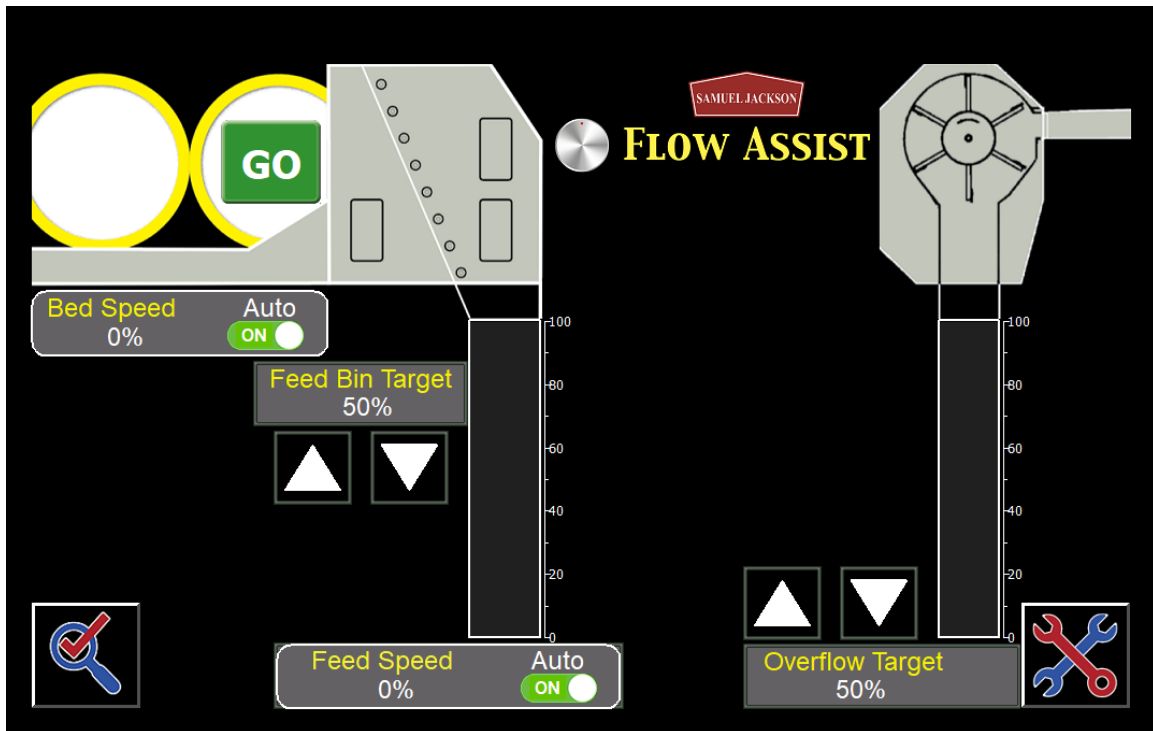
To stop feed just press the Red X  button and the feed will stop.



When used in collaboration with a Mirror X or Spectrum using Flow Analyzers, Flow Assist can automatically pause the Module Feeder or Feed Control when there is a Flow Analyzer alarm condition. It will also automatically begin feeding cotton again once the Alarm condition has cleared.

This system is designed to work on top of your previous system, so that if for any reason you want to return to the traditional controls you can. To do this just disable the Module Feeder and Feed Control from the touchscreen, or power off the Flow Assist Panel.

# HOME SCREEN



The Bed Speed can be operated in Auto or Manual.

The Feed Speed can also be operated in Auto or Manual independent of the Bed Speed.

## Auto Bed Speed

The Bed Speed will change to maintain the Feed Bin Target. The Feed Bin Target can be adjusted by tapping on the number and entering a new value or by pressing the up/down arrows to make small adjustments.

## Manual Bed Speed

The user sets a Bed Speed and controls this speed directly.

## Auto Feed Speed

The Feed Speed will change to maintain the Overflow Target. The Overflow Target can be adjusted by tapping on the number and entering a new value or by pressing the up/down arrows to make small adjustments. The Feed Speed will never exceed Overflow Target.

## Manual Feed Speed

The user sets a Feed Speed and controls this speed directly.



## SETUP SCREEN

Pressing the wrench button in the bottom right corner of the Home Screen (see above) will access the Setup Menu. That screen is shown below.

**FLOW ASSIST SETUP** Single Blowbox

**Module Feeder**  
MF Control Enabled  
Startup Max Speed: 60%  
Output Compression Factor: 50%  
Output Control Filter: 1 s

**Feed Control**  
Feed Control Enabled  
Limited Range: No  
Output Compression Factor: 0%  
Output Control Filter: 60 s

**Feed Control Sensor Settings**  
Value: 10.7 mA  
Valley Hold: 10.0s  
Rise Rate: 5  
Current Reading: 42%

**Overflow Sensor Settings**  
Value: 14.4 mA  
Valley Hold: 5.0s  
Rise Rate: 10  
Current Reading: 65%

**Flow Analyzer Alarms From:** Spectrum  
FA 1: Module Feeder (On)  
FA 2: Pre-Cleaning (On)  
FA 3: Pre-Cleaning (On)  
FA 4: Pre-Cleaning (Off)  
FA 5: Pre-Cleaning (Off)  
FA 6: Pre-Cleaning (Off)

The setup screen is broken into sections, Module Feeder, Feed Control, Feed Control Sensor, Overflow Sensor, Flow Analyzers.

### Single or Double Blowbox

This can be accommodated by pressing the button in the upper right so that it displays according to your setup.

## Module Feed & Feed Control Settings

Both the Module Feeder and Feed Control can be disabled if desired by pressing the green button at the top of the respective section. Press again to re-enable.

### Startup Max Speed

The maximum for the Bed Speed in Auto when the Feed Bin is empty.

### Output Compression Factor

This accounts for situations where the usable 4-20mA range of control is narrower than the full range. The smaller the usable range the greater the compression required.

### Output Control Filter

This is the filter time on the output signal for smoothing.

### Limited Range (No)

This means the Feed Control Speed can vary from Overflow Target all the way down to fully stopped.

### Limited Range (Yes)

This adds Feed Speed Range. This value is how much the Feed Control can slow down from your maximum (Overflow Target). So with an Overflow Target of 56% and Feed Speed Range of 20% would mean to achieve your Overflow Target the Feed Control can operate between 56-36%.

The screenshot shows two side-by-side control panels. The left panel, titled 'MF Control Enabled', has a green status bar and three settings: 'Startup Max Speed' at 60%, 'Output Compression Factor' at 50%, and 'Output Control Filter' at 1 s. The right panel, titled 'Feed Control Enabled', has a green status bar and three settings: 'Limited Range' set to 'No' (highlighted in green), 'Output Compression Factor' at 0%, and 'Output Control Filter' at 60 s.

The screenshot shows the same two control panels. The left panel is identical to the previous one. The right panel, titled 'Feed Control Enabled', has a green status bar and four settings: 'Limited Range' set to 'Yes' (highlighted in green), 'Feed Speed Range' at 20%, 'Output Compression Factor' at 0%, and 'Output Control Filter' at 60 s.

## Feed Control and Overflow Sensors

This shows the current scaled sensor value and analog value for the Feed Control and Overflow.

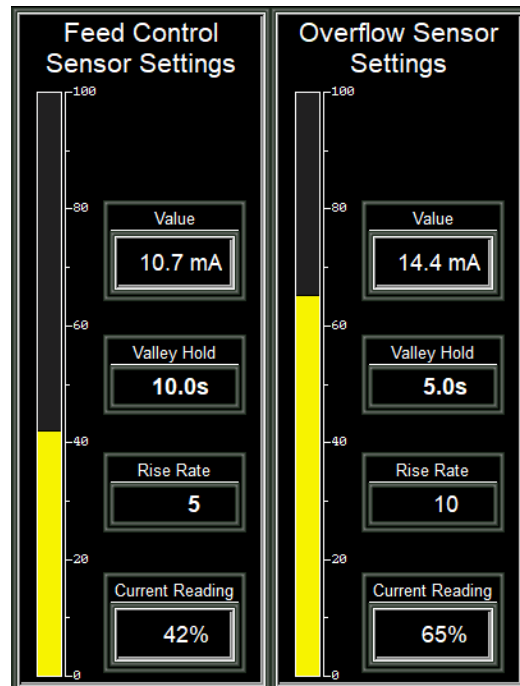
The following two values are used to smooth out the bin height readings.

### Valley Hold

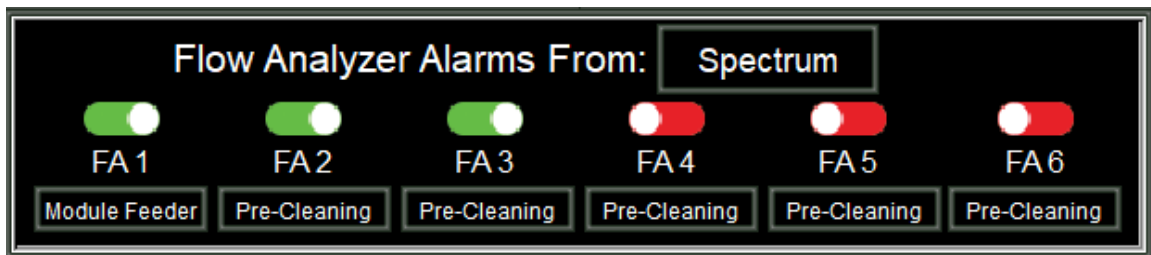
This is the time to hold onto the lowest reading.

### Rise Rate

This is the time it takes to rise from the previous Valley Hold value to the current sensor reading.



## Flow Analyzer Alarms



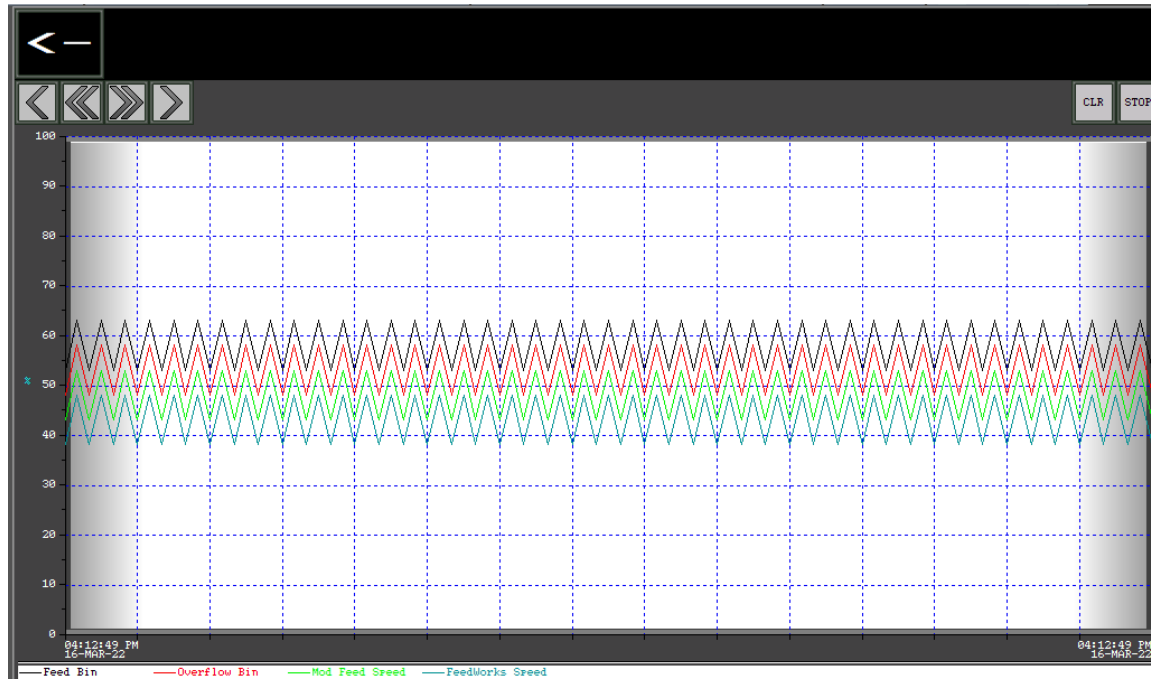
Flow Assist can pull Flow Analyzer alarms from a Mirror X or Spectrum on the network.

Pressing the box at the right side of “Flow Analyzer Alarms From:” will toggle between 3 options: None, Mirror X, Spectrum.

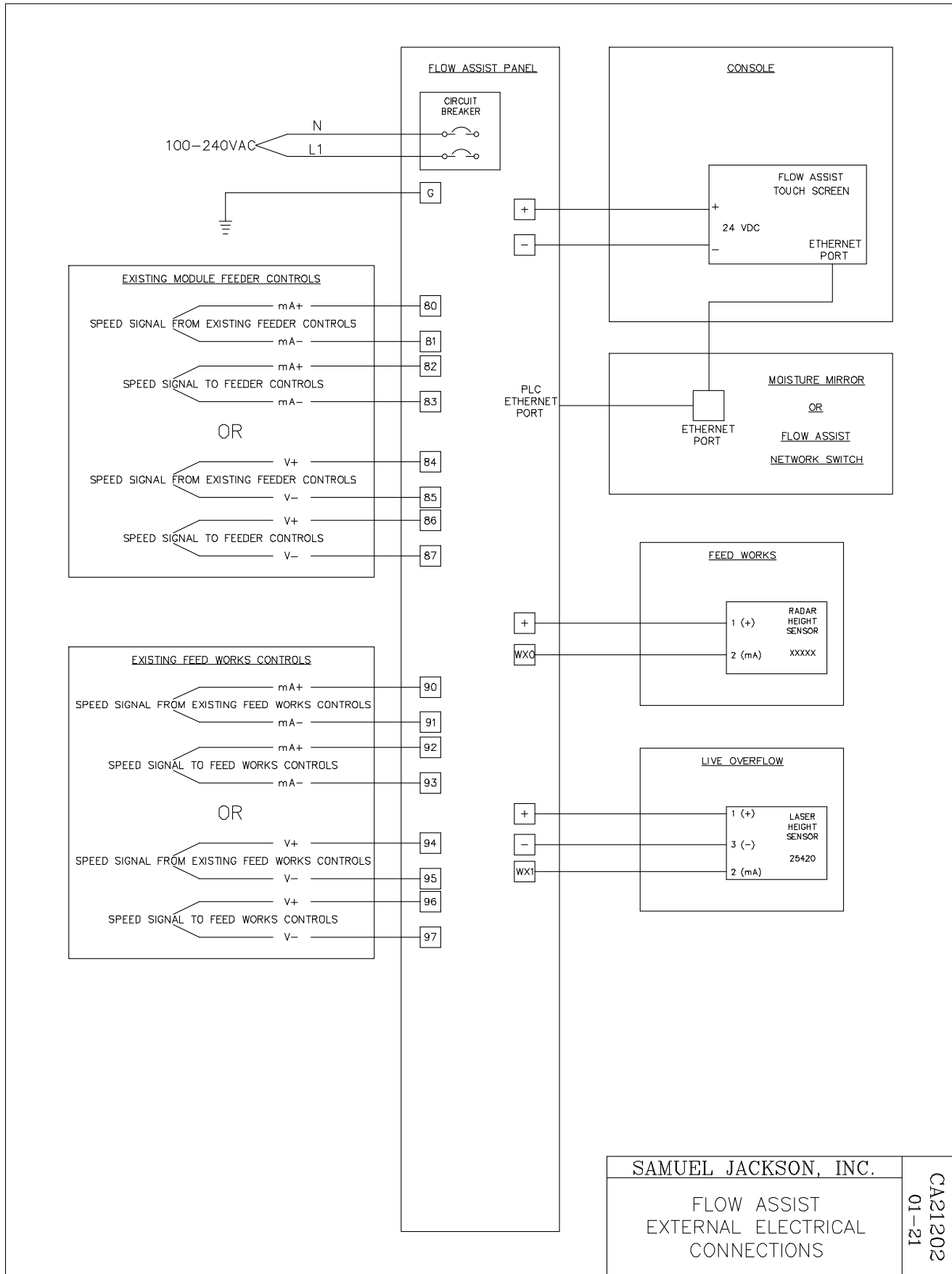
Pressing the toggle button above each Flow Analyzer will allow alarms from that FA to pause the loop it is associated with.

The button below each FA sets which control it associated with (Module Feeder or Pre-Cleaning).

# Graph



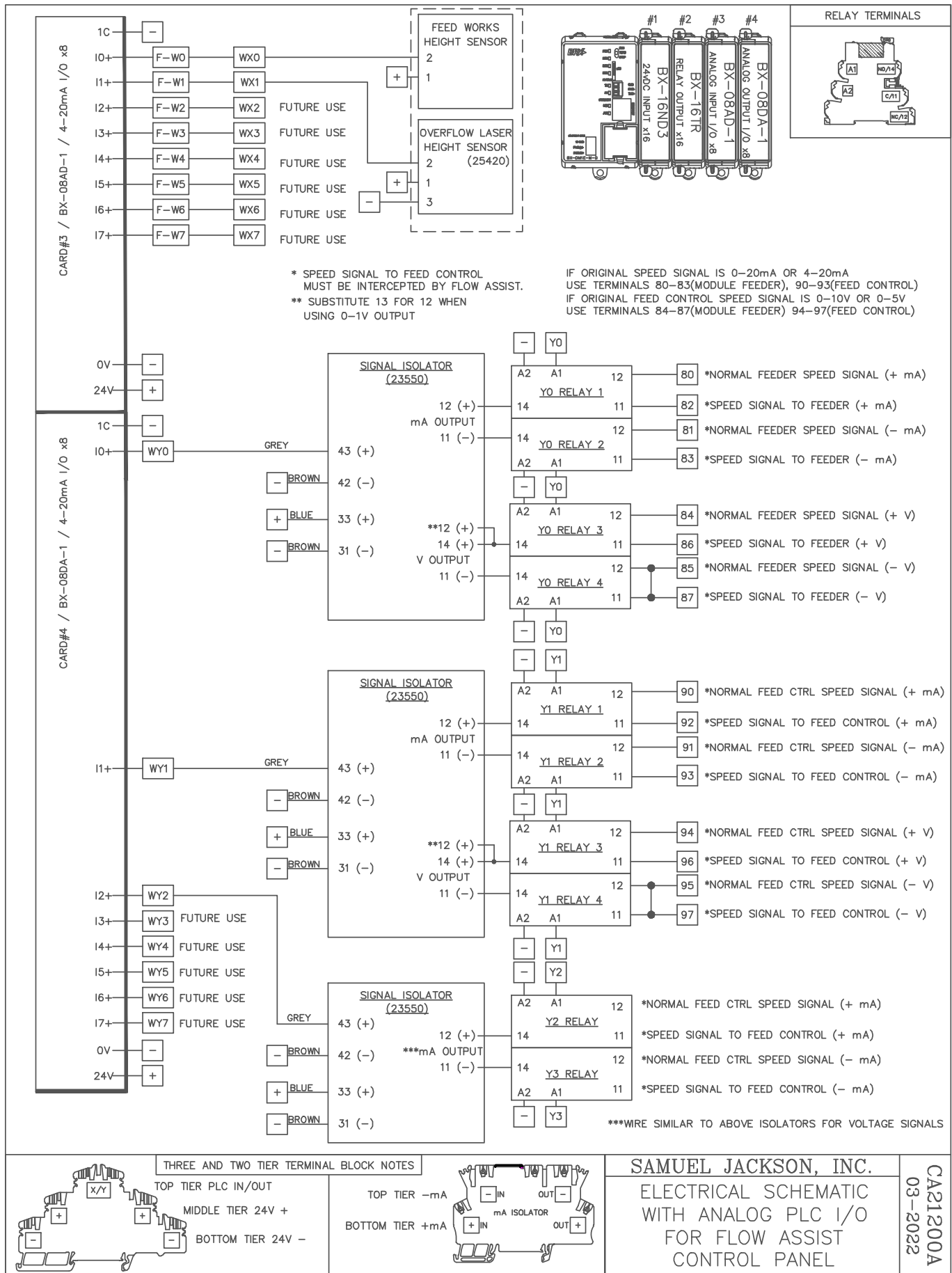
# WIRING DIAGRAMS

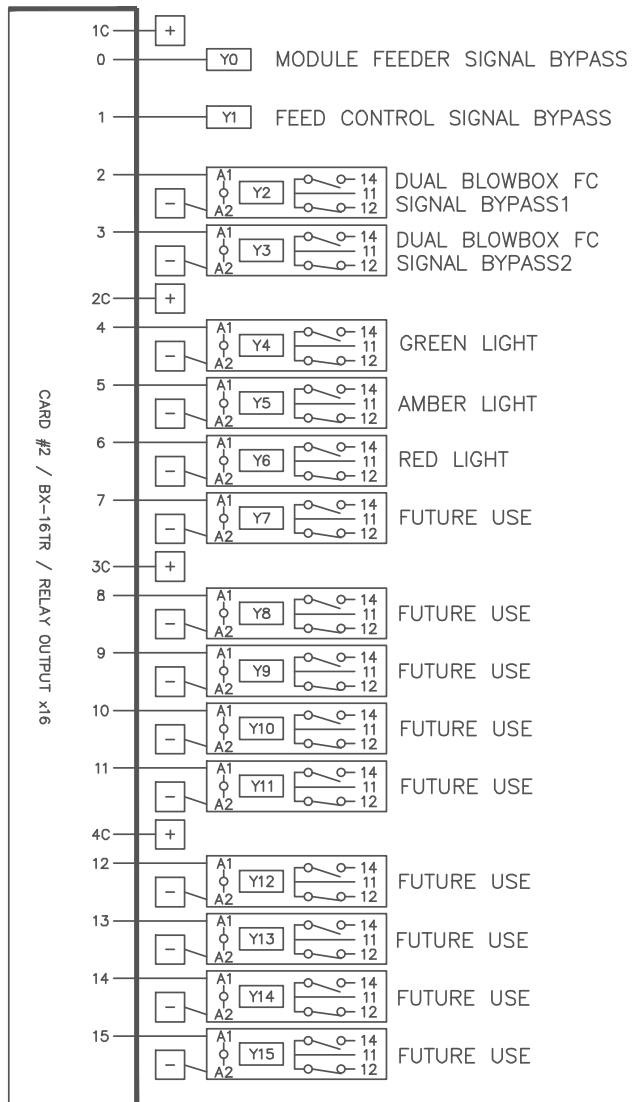
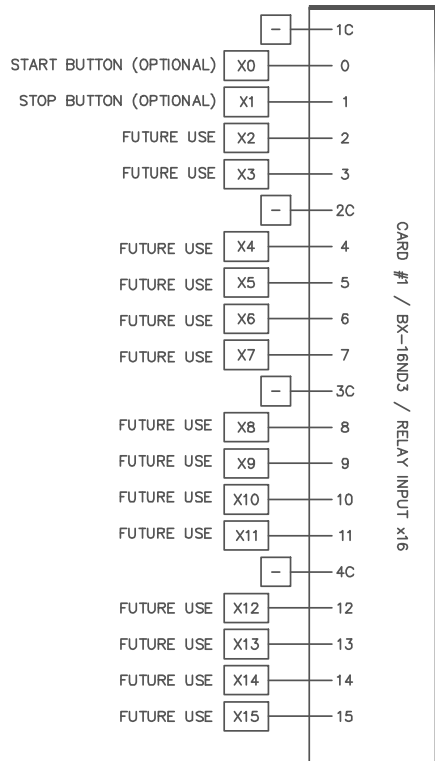
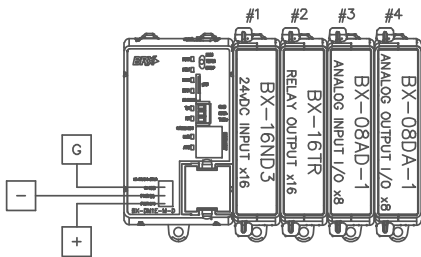
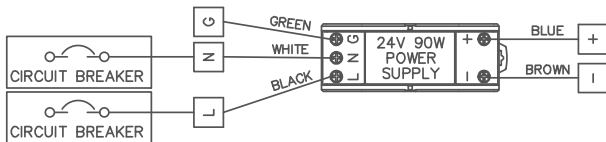


SAMUEL JACKSON, INC.

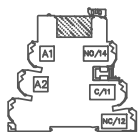
FLOW ASSIST  
EXTERNAL ELECTRICAL  
CONNECTIONS

CA21202  
01-21

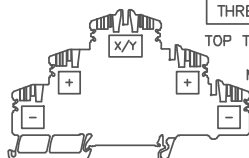




#### RELAY TERMINALS



#### THREE AND TWO TIER TERMINAL BLOCK NOTES

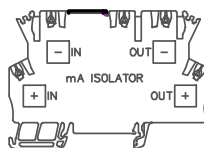


TOP TIER PLC IN/OUT

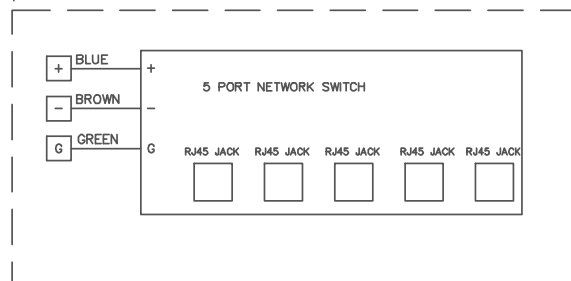
MIDDLE TIER 24V +

BOTTOM TIER 24V -

TOP TIER -mA  
BOTTOM TIER +mA



#### \*Optional Network Switch\*

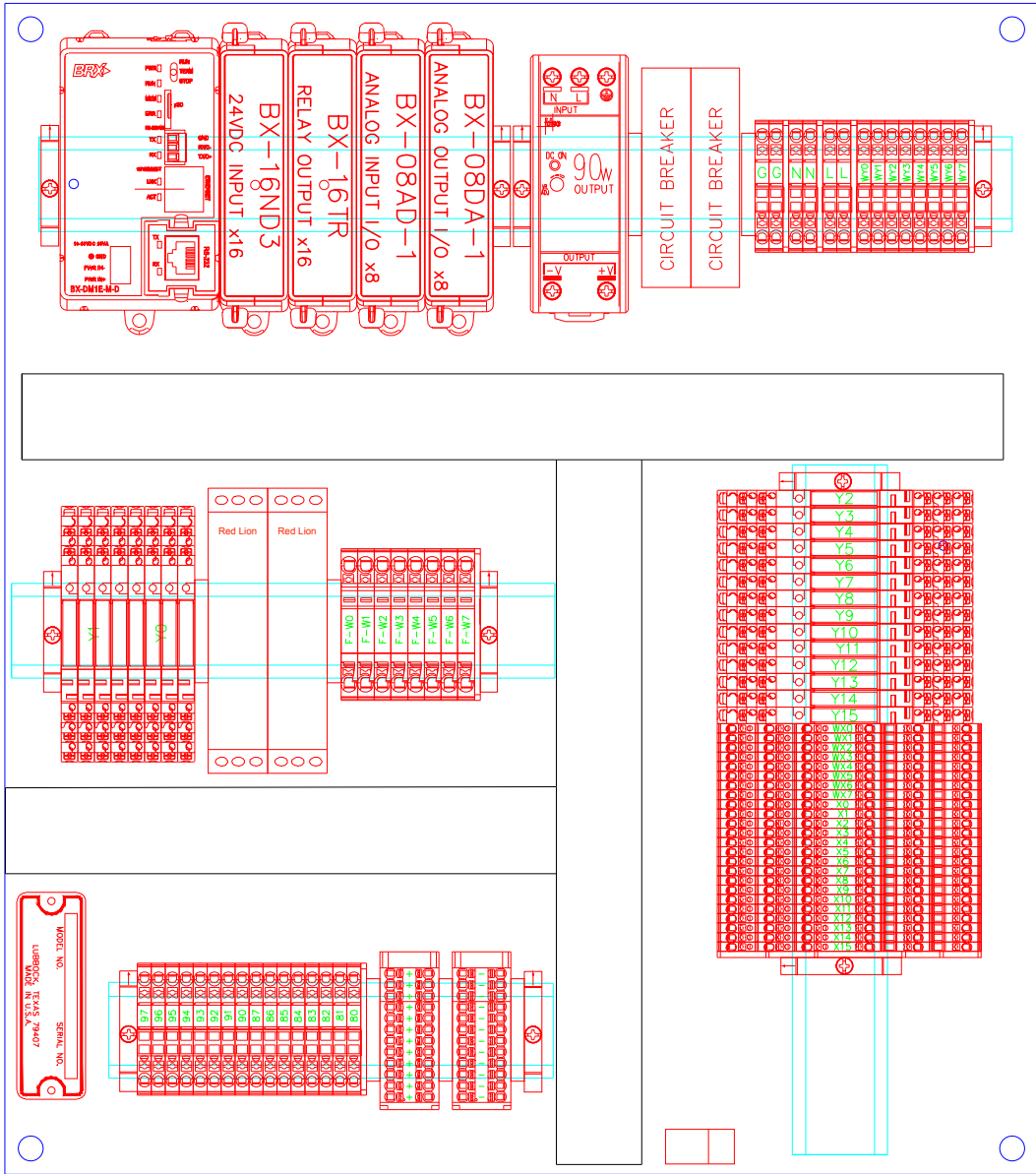


SAMUEL JACKSON, INC.

ELECTRICAL SCHEMATIC  
WITH DISCRETE PLC I/O  
FOR FLOW ASSIST  
CONTROL PANEL

CA21201  
01-2021

# CONTROL PANEL



SAMUEL JACKSON, INC.  
FLOW ASSIST  
PANEL LAYOUT

28776A  
04-81



# **DIMENSIONS SHEET**

# WARRANTY

## LIMITED WARRANTY

### SAMUEL JACKSON, INCORPORATED

For Commercial and Industrial Customers of Samuel Jackson Moisture Control Products

SAMUEL JACKSON, INCORPORATED ("Sam Jackson") warrants to its customers who purchase Sam Jackson products that its equipment is free from defects in material and workmanship under normal use and service for 12 months from the date of shipment from its Lubbock, Texas factory.

THIS WARRANTY DOES NOT EXTEND TO EQUIPMENT SUBJECTED TO MISUSE, NEGLIGENCE, OR ACCIDENT: NOR DOES THIS WARRANTY APPLY UNLESS THE PRODUCT COVERED BY IT IS PROPERLY INSTALLED BY A QUALIFIED, COMPETENT TECHNICIAN, WHO IS LICENSED WHERE STATE AND LOCAL CODES REQUIRE, AND WHO IS EXPERIENCED IN MAKING SUCH INSTALLATIONS.

Equipment, which is defective in material or workmanship and within the warranty period, will be repaired or replaced, at Sam Jackson's option, in order to facilitate proper operation.

THIS WARRANTY IS LIMITED TO THE PRECISE TERMS SET FORTH ABOVE, AND PROVIDES EXCLUSIVE REMEDIES EXPRESSLY IN LIEU OF ALL OTHER REMEDIES. AND IN PARTICULAR THERE SHALL BE EXCLUDED THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL SAM JACKSON BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGE OF ANY NATURE.

Sam Jackson neither assumes nor authorizes any person to assume for Sam Jackson any other liability or obligation in connection with the sale of this equipment. Sam Jackson's liability and Customer's exclusive remedy being limited to repair or replacement as set forth above.

**SAMUEL JACKSON, INCORPORATED**  
3900 Upland Avenue Lubbock, Texas 79407

## **IMPORTANT!**

**The following notice affects your warranty.**

### **Electrical Controls and Your Safety**

Your new Sam Jackson product may be equipped with electrical controls or designed to interact with controls on a related Sam Jackson product.

In the event that local, state, federal or other specified safety compliance is required, we will consider modifications to meet the particular requirements. Implementation of alternative safety devices may incur additional charges. No warranty of compliance with a particular standard is made in the absence of specific reference to it in our quotation.

If you modify, or permit others to modify, these controls without specific written permission from Sam Jackson, Inc. the warranty on your product will be void and there is a possibility of serious damage to machinery, damage to product, serious injury to personnel, or death. The modifier of the controls assumes all liability for these consequences.

Samuel Jackson, Incorporated  
3900 Upland Avenue  
Lubbock, Texas 79407  
806-795-5218