



Wintriss Controls Group

Addendum – SMI 2 – User Guide

ShopFloorConnect Machine Interface

1146200 – Rev. C

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SFC Support Hotline 800-586-8324 (Option 3) 8-5 EST

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ADDENDUM - SMI 2 User Guide

This User Guide is intended to be used – on an interim basis - in conjunction with the SMI 2 user manual while the final manual is completed. Included are explanations of the modified SMI 2 Menus and new settings. This guide applies to HMI code version 3.63. For older version some features may not be available.

NOTE: There is a 30-character limit on all entry fields (with one exception – See below). Allowable characters include numbers, upper and lowercase letters, spaces, and the special characters:

. - _ [] { } \ = * # + ~ % \$

Data can be entered into the fields manually, or by the use of a scanner connected to the SMI 2's USB port.

The one exception to the 30-character limit is the Primary when it is set to 'Tool # (123)'. This particular primary type is intended to match the Wintriss SmartPAC 1 and SmartPAC 2 controls and is limited to 7 numeric characters only.

Note: Not all the available Icon/Buttons and their data fields in the SMI 2 are applicable to all machine types. When a data field does not apply to a specific application, it can be hidden. This guide shows <u>all</u> the data entry fields. If your SMI 2 does not show a particular field, it is likely hidden because it is not needed. To identify which Icon/Buttons and their data entry fields can be hidden from the main menu, refer to the Icon/Buttons table (See page 4).

Specifications

Installation Category	II			
Dimensions	Enclosure: 8.00 x 10.08 x 4.00 in. (101.6 x 203.2 x 256.0 mm) NEMA 12, IP 66 Panel mount: 9.2 x 7.7 x 4.25 in. (234 x 196 x 108 mm)			
Electrical (System Power)	Input: 100-240 Vac, 40 W, 50-60 Hz or 24 Vdc +/- 15%, 30 W When installed, this equipment shall have, in close proximity and easily accessible, a switch or circuit breaker marked as the disconnect switch.			
Operating Environment	Indoor use only Temperature: 32° to 122° F (0° to 50° C) Relative Humidity: Indoor factory conditions Altitude: 6562 ft (2000 m)			
Parts Counter	Total preset for maximum count. Set to 9 digits. Batch Preset for maximum count. Set to 7 digits.			
Inputs	 All SMI 2 inputs (sink or source): 9mA ± 2 mA @ 24 Vdc TB2 Inputs 1-4 (Factory Wired for PNP) Cycle Count Run/Idle Scrap Setup TB4 Automatic Downtime Inputs 1-4 (Factory Wired for PNP) Downtime Reason 32 Downtime Reason 31 Downtime Reason 30 Downtime Reason 29 			
Outputs	1 stop circuit (dry contacts): Contact rating 4 A, max, @240 Vac or 30 Vdc			
Scanner (optional)	USB barcode scanner capable of adding a carriage return as a suffix			
Wireless Connection (optional)	Factory installed IEEE 802.11 b/g/n			

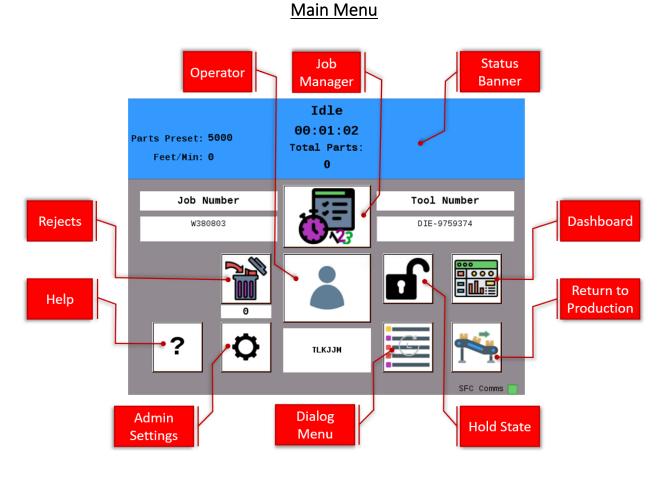


Figure 1 - SMI 2 Main Menu

The Status Banner at the top of the main menu is color-coded for the five different SFC states: Green (Running), Blue (Idle), Red (Unplanned), Yellow (Changeover), Purple (Planned). It also shows the current status and duration as well as the current count info and production rate.

Main Menu Icon/Button Selections

	Select the 'Operator' icon to enter the operator number or name (Optional Scan Field).
ľ	Select the 'Rejects' (scrap) icon to manually enter the desired quantity of defective parts.
	Select the 'Job Manager' icon to enter job related information, start a new job or to end the current job.
	Select the 'Dashboard***' icon to show MTBF (Mean Time Between Failures) and Analog Channel values.
	Select the 'Hold State***' to hold the current Planned/Unplanned downtime or Changeover state and prevent the SMI from counting until it is selected again and disabled. Hold State is often used when setting up the machine.
†	Select the 'Return to Production' icon when first powering up, to end a downtime event or if a count preset is reached. By selecting 'Return to Production' icon it will change the state to an idle state.
C	Select the 'Dialog Menu' icon to select an applicable Downtime Reason code as to why the machine is down (Used when machine is not running and before or after a forced dialog reason is entered).
¢	Select the gear icon to access the 'Admin Menu'.
?	Select the question mark icon (bottom left) for a series of help topics related to the menu or menu item that is in view.

These are the main menu Icon/Buttons and their functions (an *** indicates that the button may be hidden via a selection in the 'Admin Settings' menu):

Dashl	board		
Total Parts: 76	Changeover 01:28:43		
MTBF per Shift Current 480 min Previous 0 min	Analog Channels Temperature(F) 0.0		

Figure 2 - Dashboard Menu

The DASHBOARD menu shows MTBF (Mean Time Between Failures) and the Analog values from any connected analog sensor (e.g. Temperature, Current, Pressure, etc.).

Mean time between failures (MTBF) refers to the average amount time between Unplanned Downtime occurrences.

Note: The Dashboard menu is disabled by default. The current functionality can be used for displaying analog channels however, enhanced features will be available soon in a future release. For more information on this feature and availability, please contact SFC Technical Support 800-586-8324 (Option 3).

Downtime			
	Downtime		
Page 1	Changeover		
	Lunch		
Next	Cleanup		
Cancel	Blade Change		
	Waiting for Crane		
?	Quality Control		

Figure 3- The Downtime Menu

Use this menu to choose the appropriate downtime reason. Use the 'Previous' or 'Next' buttons to display the previous or next set of reasons. Press the 'Cancel' button to skip setting the downtime reason and return to the Main Menu. Press the reason to select it as the current downtime reason.

Note: Downtime reasons can be 30 characters or less.

Job Manager



Figure 4 - The Job Manager Menu

Use this menu to Scan/Enter Job information - Primary (e.g. Tool, Part, Mold, Fixture, SKU, Material, Item, etc.) is required.

Optionally Scan/Enter Job Number, Preset (qty. parts to be produced), and Batch.

The BATCH allows the operator to set the quantity of parts to make for this batch. When the quantity is reached, the inhibit relay is opened. Setting a preset to zero disables the preset. If 'Stop On Preset' is enabled, the inhibit relay will be opened when the preset is reached.

Select 'End Job' to terminate the current Job. Select 'Next Job' to consume the next job on the schedule. The 'Next Job' is enabled/disabled using the 'Scheduler' on the Production Setting menu. Select 'Load Job' to start a new job using the primary and secondary items displayed.

Select '#' to modify the count multiplier values. Select 'Update' to save the Preset and Batch values you entered for the currently loaded job.

Select the 'Chain' icon to link the primary/job #, so when the operator enters or scans a primary it will automatically bring them to the Job Number field. Select both 'Chain' icons to link all 3 fields' primary, Job #, and Preset.

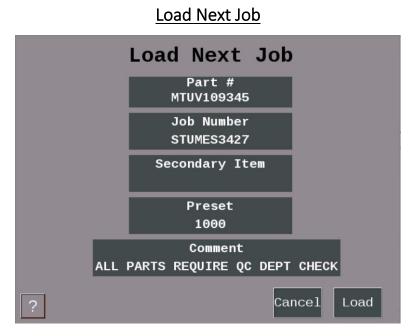


Figure 5 - Load Next Job

The 'Load Next Job' menu launches when the Next button on the Job manager is selected, and Scheduler is enabled. Job information from the ShopFloorConnect Scheduler is displayed and gets consumed by selecting 'Load'.

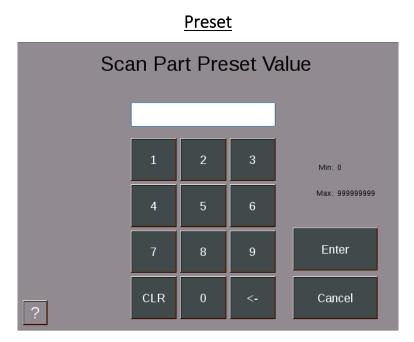


Figure 6 - Setting the Preset (set up for a scanner)

Selecting the scan/edit to the right of 'Preset' allows the operator to enter the total quantity of parts to be made. Figure 6 above shows the field set up for scanning.

When the quantity is reached, the SMI's inhibit relay will open and stop the machine if 'Stop on Preset' is enabled and the machine's stop circuit is wired in series with the inhibit relay.

When 'Stop on Preset' is disabled the SMI's inhibit relay will not open and the operator can continue running and the message 'Preset Reached Continuing Operation' will appear.

Setting a preset to zero disables the preset.

Note: To disable and/or enable your Preset (See Admin – Multipliers -Figure 12)

When 'Stop on Batch' is disabled, the SMI's inhibit relay will not open, the operator can continue running, and the message 'Preset Reached Continuing Operation' will appear.

Note: To disable and/or enable your preset please go to Admin > Multipliers - Figure 12.

Batch Segment Preset



Figure 7 - Batch Segment Preset Value

The 'Batch Segment' menu allows the operator to enter a batch quantity. Often, it's programmed to stop the machine when a certain quantity of parts is reached so a basket can be switched out or to QC a part after X number of cycles.

When 'Stop on Batch' is disabled, the SMI's inhibit relay will not open, the operator can continue running, and the message 'Preset Reached Continuing Operation' will appear.

Note: To disable and/or enable your presets please go to 'Admin' > Counts & Presets

Admin Menu

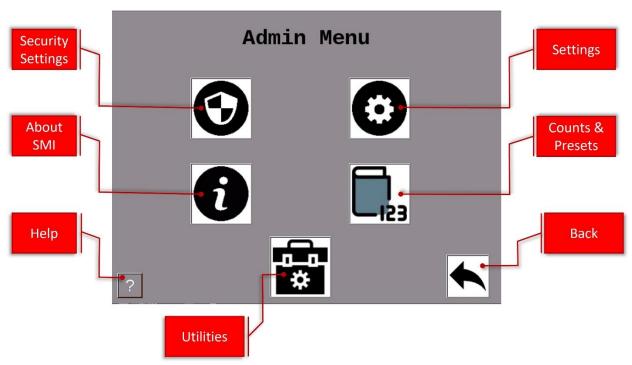


Figure 8- Admin Menu

Icon/Button Selections

\bigcirc	Select 'Security Settings' to set or change Admin and Adjust Scrap passwords. Also, to reset all settings to their Factory Defaults.
$\overline{\mathbf{O}}$	Select 'Settings' to set various systems parameters like Screen and Scanner defaults, Network settings, State Hold and SFC Parameter Downloads.
6	Select 'About SMI' for SMI Firmware Versions, password 5-digit code and Support contact info.
	Select 'Counts & Preset' to change the counter preset settings & modify counting parameters.
	Select 'Utilities' to perform miscellaneous tasks like Copying Log files, System Reboot and Start Remote Access

Security Settings

Security	Settings
Password Required Access Setup Disabled Adjust Rejects Disabled	Change Password Factory Defaults
?	

Figure 9 - Security Settings

When the 'Password Required to Access Admin' is set to 'Enabled', the user will be required to enter a password to access the admin Menus.

When the 'Password Required to Adjust Rejects' is set to 'Enabled', the user will need a password to change the reject count.

The 'Change Password' allows you to reset the system password (Note: default password is 0).



Figure 10 – Confirm Reset to Factory Defaults

Warning: Pressing the Confirm button will erase all settings you have made and return the SMI 2 to its original factory settings.

Note: This includes all Downtime Reasons saved to the SMI 2. These will need to be resent from ShopFloorConnect.

Press the 'Cancel' button to keep your settings and return to the previous menu.





Figure 11 - About SMI

Lists code versions, password code and SFC Support contact information.

Multipliers

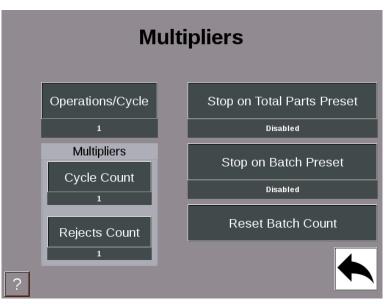


Figure 12 - Multipliers Menu

The Operations/Cycle should be used when one or more cycles of the machine are required to produce a completed part.

The Cycle Count Multiplier value is the number of parts created after a single cycle.

The Rejects Count Multiplier value is the number of Scrap/Rejects that will be tallied and deducted from the Good Parts Count when the Scrap/Rejects input is actuated.

Note: The Scrap input must be enabled to use this input. Often it is connected to an automated scrap handling system or a simple N/C momentary switch for manual entry.

Enable 'Stop on Total Parts Preset' to open the SMI 2 Inhibit Relay and stop the machine when the total quantity of items/parts have been reached.

Enable 'Stop on Batch Preset' to open the SMI 2 Inhibit Relay and stop the machine when a batch quantity of items/parts have been reached.

Note: Provided the machine's stop circuit is wired in series the inhibit relay. The 'Reset Batch Count' sets the Batch Segment Count to zero, not the Batch Segment Preset.

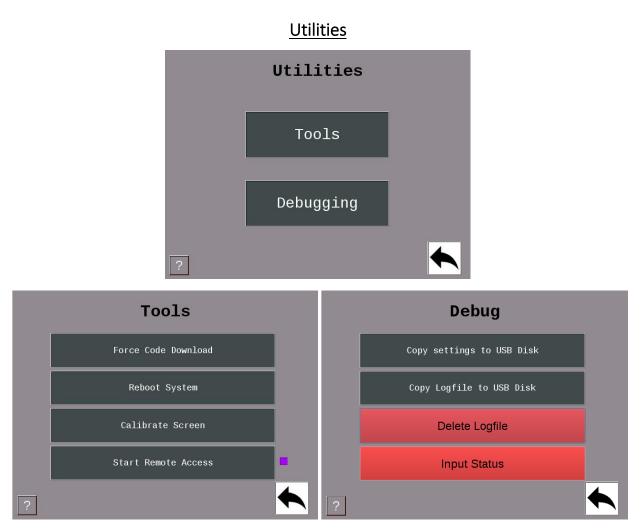


Figure 13 - Utilities with Tools and Debug Sub-menus

The 'Force Code Download' button forces the SMI to reboot and prompt the user to perform a Code Download.

The 'Reboot System' button restarts the SMI 2.

The 'Calibrate Screen' button is for calibrating the touch screen.

The 'Start Remote Access' button starts an application which gives the user the ability to control the SMI from their computer (this is a support function and should be used with care).

Note: A purple square next to the Utilities>Start Remote Access button and in the lower left corner of the Main Menu indicates that Remote Access is started.

Additional Settings - Icon/Button Selections

***	Select 'Screen Defaults' to change the language of the SMI, hide the changeover and/or Dashboard button.
	Select 'Forced Dialog Settings' to Enabled/Disable when the operator is forced to select a downtime reason before restarting the machine.
[!!!!!!]	Select 'Scanner defaults' to select the production fields you would like to scan into a field.
	Select 'Production Settings' to set the frequency the SMI calculates the speed of the machine and sets a production Idle Timer.
	Select 'Input Settings' to program input off delay timers, to enable Run/Idle, Scrap Sense and Analog Inputs. Also, to enable Decrement on Scrap setting.
ß	Select 'Hold State Settings' to set and/or change your hold state settings.
SFC	Select 'SFC Settings' - to enable SFC to download the production parameters to the SMI when a new production segment is started (loading a new job).
00	Select 'Job Manger Settings' to set the primary, job aliases, and to hide various parameters.
	Select 'Forced Operator Login' to Enable/Disable the Forced Operator Login function. Can also setup expiration time for operator logins.
	Select 'Network Settings' to setup to Network related parameters.

Screen Defaults

Screen Defaults			rts Preset: 5000 Cycles/Min: 0	Idle 162:44:02 Total Parts: 0	
Langua	age	Г			
▼Hide Changeover Button	• Standard		STOP		START
▼Hide Dashboard Button	• Parent				
■ Hide Scrap Button	○ Child			? 🗘	
Enable Simple View			.\$		B SFC Comms

Figure 14 - Screen Default Settings and Simple View When Enabled

Languages that SFC currently supports are English, Spanish, Italian, and German.

Check 'Hide Changeover Button' to hide the canned changeover dialog reason in the dialog menu.

Check 'Hide Dashboard Button' to hide the dashboard button on the Main menu.

Check 'Hide Scrap Button' to hide the Scrap button on the Main menu.

Check the 'Enable Simple View' to enable the simple view on the run screen (shown above).

Check standard if you are not using the parent/child function. If the SMI is parent, select the Parent radio button. If the SMI is Child to a Parent SMI select the Child radio button.

	Forced Dialog Settings	
	Forced Dialog Settings	
	Forced Dialog Mode Enabled w/Auto	
	Forced Dialog Timer 180 seconds	
?		

Figure 15 - Forced Dialog Settings

When enabled, the 'Forced Dialog' mode forces the operator to select a downtime reason before restarting the machine.

The 'Auto Back Fill' mode automatically replaces the idle time with any selected downtime event.

The 'Manual Backfill' mode requires the user to specify whether to Keep or Change the previous reason.

The 'Forced Dialog Timer' sets a grace period, after which the operator will be forced to enter a downtime code in order to restart the machine.

Scanner Defaults			
Scann	er Defaults		
Scan	Operator		
Scan	Primary		
Scan	Job		
□ Scan	Preset		
?			

Figure 16 - Scanner Default Settings

Check any of the boxes for items you want the operator to be able to scan data into a field.

Production Settings

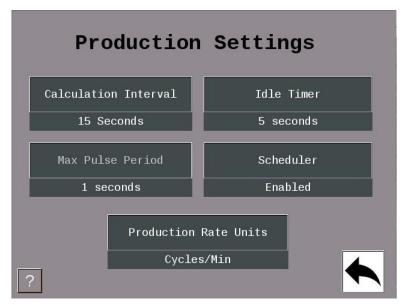


Figure 17 - Production Settings

The 'Calculation Interval' sets the frequency at which the SMI calculates the speed (Production Rate) of the machine. Set this to the time it takes to make 10 cycles, or 15 seconds, whichever is greater.

The 'Idle Timer' sets the time the SMI will wait between machine cycles before it switches the state from Running to Idle. As a starting point, set this value to 1.5 times the expected normal time between cycles.

The 'Max Pulse Period' sets an interval of time in which the SMI calculates the speed of the machine when the 'Calculation Interval' is set to Instantaneous. Set this slightly longer than it takes to complete a machine cycle.

The 'Production Rate Units' specifies the speed units that the SMI will display (Cycles/Minute, Parts/Hour, etc.). Select 'Production Rate Units' to cycle through the available selections.

Input Settings

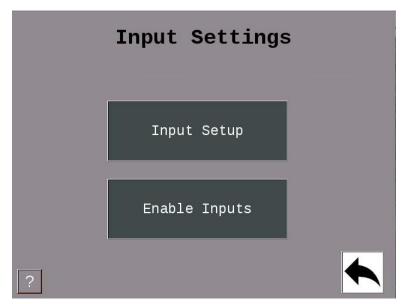


Figure 18 - Input Settings

The 'Input Setup' provides access to settings associated with the Cycle Input, Run/Idle inputs, Rate Calculation, and Analog Inputs.

The 'Enable Inputs' shows the current on/off state of the SMI's inputs. The 'Enable Inputs' gives access to the setting the way the SMI interprets state changes using the Cycle and Run/Idle inputs. Also, the 'Enable Inputs' is used to set the Scrap Sense Input, Decrement on Scrap, and the Analog Channels.

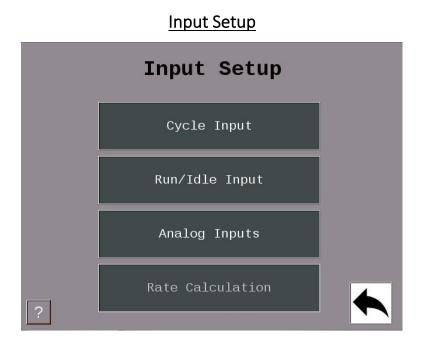


Figure 19 - Input Setup

The 'Cycle Input', 'Run/Idle Input', and 'Analog Inputs' allows access to the settings associated with those inputs.

The 'Rate Calculation' provides access to the 'Pulses Per Units' setting which specifies the number of actuations of the cycle input that represents one increment of the speed units.

To activate the 'Rate Calculation', the Calculation Interval on the Production Settings menu must be set to Instantaneous.

Cycle Input Setup

(Cycle Input Setu	р
	Cycle Input	
	Delay Timer	
?	5 seconds	

Figure 20 - Cycle Input Setup

The 'Cycle Input' allows the operator to modify the cycle input signal to match the requirements of the SMI.

The choices are 'No additional Timing' and 'Off Delay'.

The 'No additional Timing' selection makes no modifications to the input signal.

The 'Off Delay' selection delays the change to off.

This has the ability to count all the pulses that occur within the time window as one.

Run/Idle Input Setup

Run	/Idle Input Se	tup
	Run/Idle Input	
	No Additional Timing	
	Delay Timer	
	5 seconds	
?		

Figure 21 - Run/Idle Input Setup Menu

The 'Run/Idle Input' allows the operator to modify the run/idle input signal to match the requirements of the SMI. The choices are 'No additional Timing' and 'Off Delay'.

The 'No Additional timing' selection makes no modifications to the input signal.

The 'Off delay' selection, delays the change from Running to the Idle state until the delay timer has expired.

 Rate Calculation

 Pulses per Unit

 1

Figure 22 - Rate Calculation Setting

The 'Pulses per Unit' specifies the number of actuations of the cycle input that represents one increment of the speed units. This is typically set to 1.

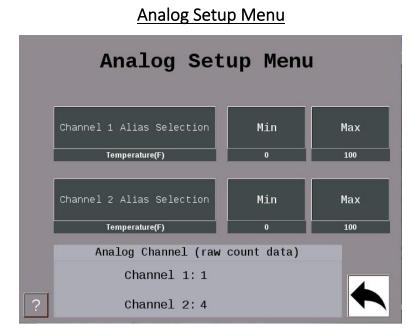


Figure 23- Analog Input Setup Menu

Select the 'Channel 1 Alias Selection' to change to the right metric (Temperature (F), Temperature (C), Pressure, or Volts). Do the same for 'Channel 1 Alias Selection'.

Select the Max to set your channel max to (Range is 10-4095).

The max number is mapped to a percentage (0-100%) based on the 10-volt input the analog will receive.

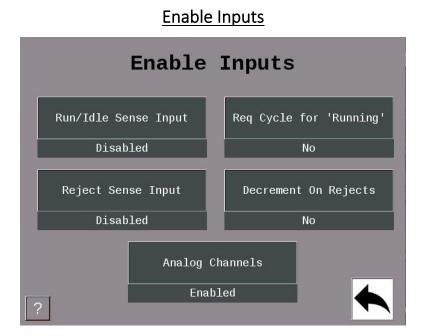


Figure 24- The Enable Inputs

The 'Run/Idle Sense Input' is an optional signal the SMI can use to determine if the machine is running.

If this signal is not supplied, the SMI uses the Cycle Input and Production Idle Timer to determine the Run/Idle state.

If the 'Req Cycle for Running' is set to 'No', the SMI2 is able to operate with only the Run/Idle sense input.

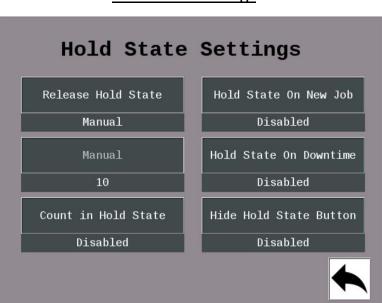
This function is not active when the Run/Idle Sense input is disabled.

The 'Scrap Sense Input' is an optional signal that is activated when a bad part has been detected.

'Decrement on Scrap' is an optional setting that can be set to 'Yes' or 'No' and actuated when the scrap input is pulsed.

Select 'Analog Channels' to enable 1 or both channels.

Your choices are Disabled, Chan 1 Enabled, or Chan 1 and 2 Enabled. Analog Channels can track Temperature F/C, volts, or Pressure.



Hold State Settings

Figure 25 - Hold State Settings

Release Hold State – There are 3 options. One, release hold state manually by selecting the hold state button. Two, release hold state when X number of cycles are produced. Three, release hold state after X number of seconds. Note: the operator can un-hold the state at any time by selecting the hold state button.

'Manual' – if 'Release Hold State' is set to 'Seconds' or 'Cycles', then you can enter in the number of cycles or seconds by selecting this button.

'Count in Hold State' – when enabled the SMI 2 will increment its good parts count when the cycle input is actuated regardless of whether the state is being held or not.

'Hold state On New Job' – when enabled the state will be held when loading a new job.

'Hold State ON Downtime' – when enabled the state will be held when any downtime reason is selected.

'Hide Hold State Button' – when enabled the hold state button is hidden from view.

Figure 26- Production Parameter Download Menu

Check 'Get Count Factors' to download the Operations Per Cycle and Parts Per Cycle count modifier settings at the start of a new job.

Check 'Get Production Idle timer' to download the Production Idle timer setting at the start of a new job.

Check 'Get Forced Dialog Timer' to download the Forced Dialog Timer setting at the start of a new job.

SMI 2 Job Manager Settings

Job Manager	Settings
Primary Name Selection	Job Alias Selection
Tool Number	Job Number
Hide Adjust Multipliers Buttor Hide OP/Cycle Multiplier Butto Hide Cycle Multiplier Button Hide Rejects Multiplier Buttor	'n
Hide Preset Button	
Hide Batch Button	
? ✔ Hide End Job Button	

Figure 27 - Job Manager Settings

This Menu allows you to select names (aliases) for your Primary Item and Job Number. Select 'Primary Name Selection' to scroll through the selections.

Choices for 'Primary Name Selection' are Tool # (123), Tool # (abc123), Part #, Mold #, Fixture #, SKU #, Material #, and Item Number.

Choices for 'Job Alias Selection' are Job Number, Work Order, MO, and Production Order.

Uncheck Hide 'Adjust Multiplier' to give the operator the ability to modify the counting parameters in the job manager Menu (or check which buttons to be grayed out).

Uncheck 'Hide Preset' to give the operator the ability to enter a preset in the job manager Menu. Uncheck the 'Hide Batch Button' to give the operator the ability to enter a batch # in the job manager.

Uncheck the 'Hide End-Job' to give the user the ability to terminate the current Job and put the SMI into planned downtime.

Forced Operator Login

Forced Operator Login
Enable Forced Operator Login
Login Expiration Time
480 minutes
Stop on Expired Operator Login
Disabled
?

Figure 28 – Forced Operator Login Settings

When Forced Operator Login is enabled a full screen message is displayed indicating that the operator must login and the operator fields are erased from the SMI2. In addition, the SMI2 inhibit circuit will be opened until an operator is logged in.

The Forced Operator Login feature can be enabled/disabled on the SMI2 additional settings screen. The default state is disabled. This setting will be saved through power cycles.

Pressing the Operator "Login Expiration Time" button opens a keypad for numerical entry in minutes. The default expiration time is 480 minutes (8 hours). This setting will be saved through power cycles.

If the login timer expires the "Stop on Expired Operator Login" option, if enabled, will open the inhibit circuit and display the operator login message for any state including Running.

Power cycles require the operator to login again and therefore reset the expiration timer.

Forced Operator Login will supersede the Forced Dialog Timer.

Network Settings

	Network Settings	
	• Wired	
	• Wireless	
	Network IP Settings	
	Wireless Settings	
?		

Figure 29- Network Settings

Select the Network IP Settings button to input Static IP address settings.

Select the Wireless Settings button to configure wireless settings, SSID, Passcode etc.

Note: For your SMI 2 to connect to your network wirelessly, the Optional Wireless Kit (802.11 B/N/B) must be Factory installed at time of initial order. The kit includes an adapter board and antenna. Compatible with AC and 24 VDC models with enclosure.

(For more information on wireless specifications, setup and retrofit options, please consult the full manual, or contact SFC Technical Support 800-586-8324 Option 3).

Network IP Settings					
Network IP Settings					
	 Static IP 				
• DHCP					
IP Address:	192.168.50.61	Edit			
Subnet Mask:	255.255.255.0	Edit			
Default Gateway:		Edit			
?	Cancel	Save Changes			

Figure 30 – Network IP Settings

This menu enables the user to set the network parameters for a static IP address or allow the DHCP server to provide the address.

Wireless Settings				
Wireless Settings				
SSID:		Edit		
Pass Key:		Edit		
?		Save	Cancel	

Figure 31 – Wireless Settings

To set the SMI-2 up to use a wireless access point, you must provide the following information: SSID, and Pass Key (Password Key).

