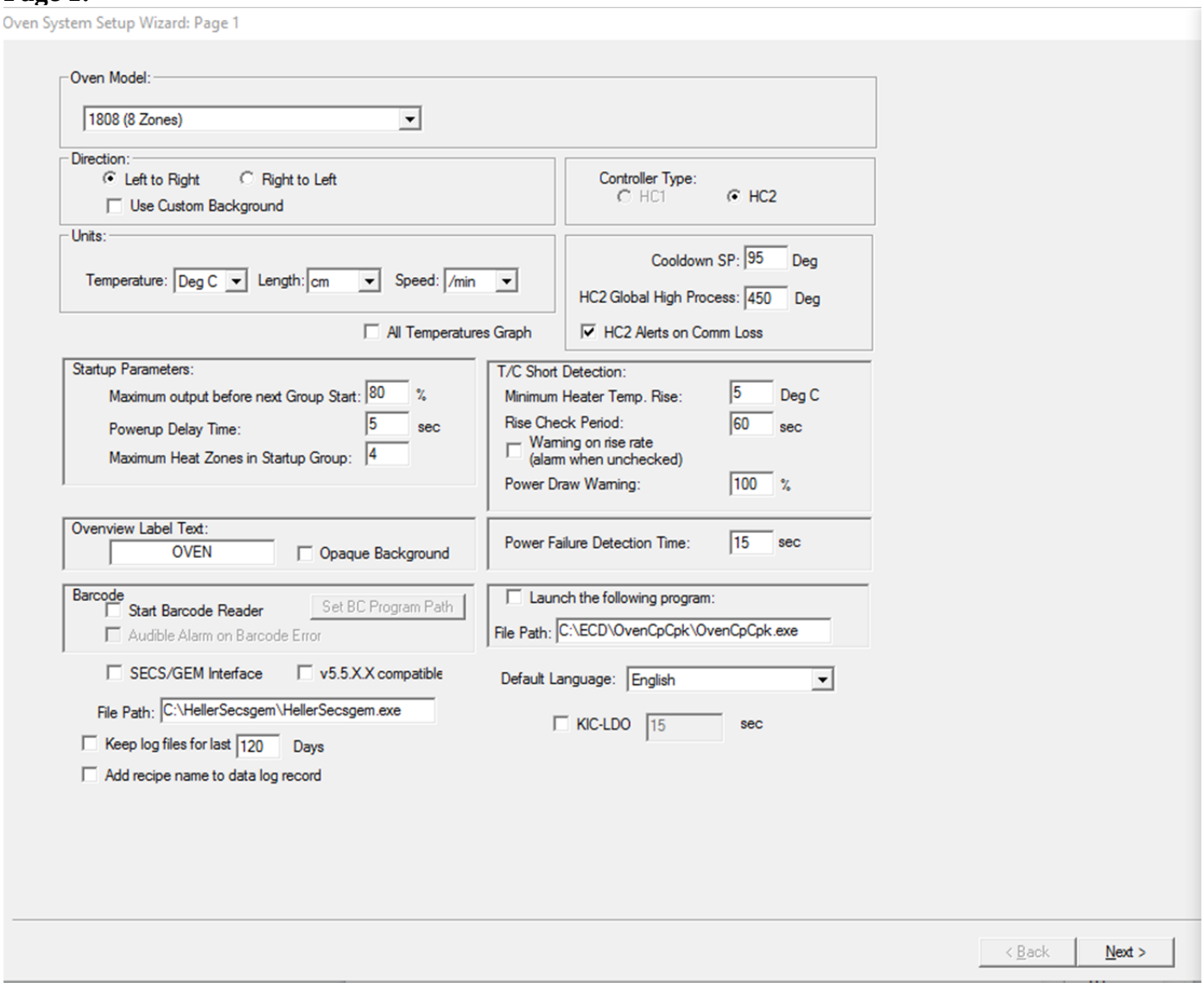
After installing oven workstation software, the first step is to run the Oven Setup Wizard program and configure the oven model and installed options. Various options can be enabled and set in the setup wizard. Many options will need appropriate hardware before they can be enabled.

Windows 7 – Select Run Start > All Programs > Oven Workstation > Oven Setup Wizard to configure the oven.
Windows 8 or 10 – Select > All Apps > Oven Workstation > Oven Setup Wizard to configure the oven.

Page 1:



Oven Model: Select from 1088, 1705, 1706, 1707, 1808, 1809, 1910, 1911, 1912, 1913, 1914, 2017, 2018 2024, 2015, etc.
For an oven model not listed above, select the higher zone model and then turn off unused channels.

Direction: Left to Right or Right to Left. Direction the product travels through the oven.
Use Custom Background: Select this if the default background image on the overview screen needs to be replaced. Only bitmap, (*.BMP), files can be used as a custom background.

Controller Type: HC2 (default).
(The default IP address for the HC2 controller is 192.168.10.250. For a dual HC2 oven model, the IP address for the secondary HC2 controller is 192.168.10.251)

All Temperatures Graph: Select this option to allow a graphical view of all heat zones.

Cooldown SP: 95C (default). This is a global set-point for cooldown mode.

HC2 Global High Process: 450C (default). For HC2 controller this is a global high process alarm in case of temperature runaway and channel high process is turned off.

HC2 Alerts on Comm Loss: With this selection, in case of communication failure between computer and HC2 controller, a non-flashing yellow light on the signal light tower will turn on. The HC2 controller will continue certain control of the oven operation like heater, belt control, safety monitoring etc.

Units: Temperature: Deg C(default) or Deg F
Length: cm(default) or inch
Speed: /min(default) or in

Startup Parameters:
Maximum output before next Group Start: 80% (default).

Power up Delay Time: 5 sec (default)
During startup, the next group of heater channels will turn on after all channels in current startup group drop below “Maximum Output %” and then “Power up Delay Time” starts to countdown.

Maximum Heat Zones in Startup Group: 4 (default), (maximum number of zones can run at 100% power)

T/C Short Detection:
Minimum Heater Rise: 5 Deg C or 9 Deg F (1 Deg C for IR-Panels)
Rise Check: 60sec
During startup sequencing, if heat zone temperature did not rise for minimum heater rise value within rise check period, the oven program will load cooldown with rise rate alarm. Rise rate alarm gets disabled when heat channel changes to green color state.
Warning on rise rate: By selecting this feature, software will only generate a warning for rise rate and keep oven running with warning. By default, this feature is unchecked.
Power Draw Warning: 100%
After startup sequence is completed and oven is in OK condition, if any heater zone reaches “Power Draw Warning %”, a power draw warning for the particular zone will be generated.

Overview Label text: OVEN (default)

Opaque Background: Unchecked (default)

Power Failure Detection Time: 15 sec (Range 1-900sec)

Start Barcode Reader: By selecting this option, the oven program will interact with the Oven Barcode Program. The Oven Barcode Program is a separate program which can read scanned code and compare with the oven recipe.

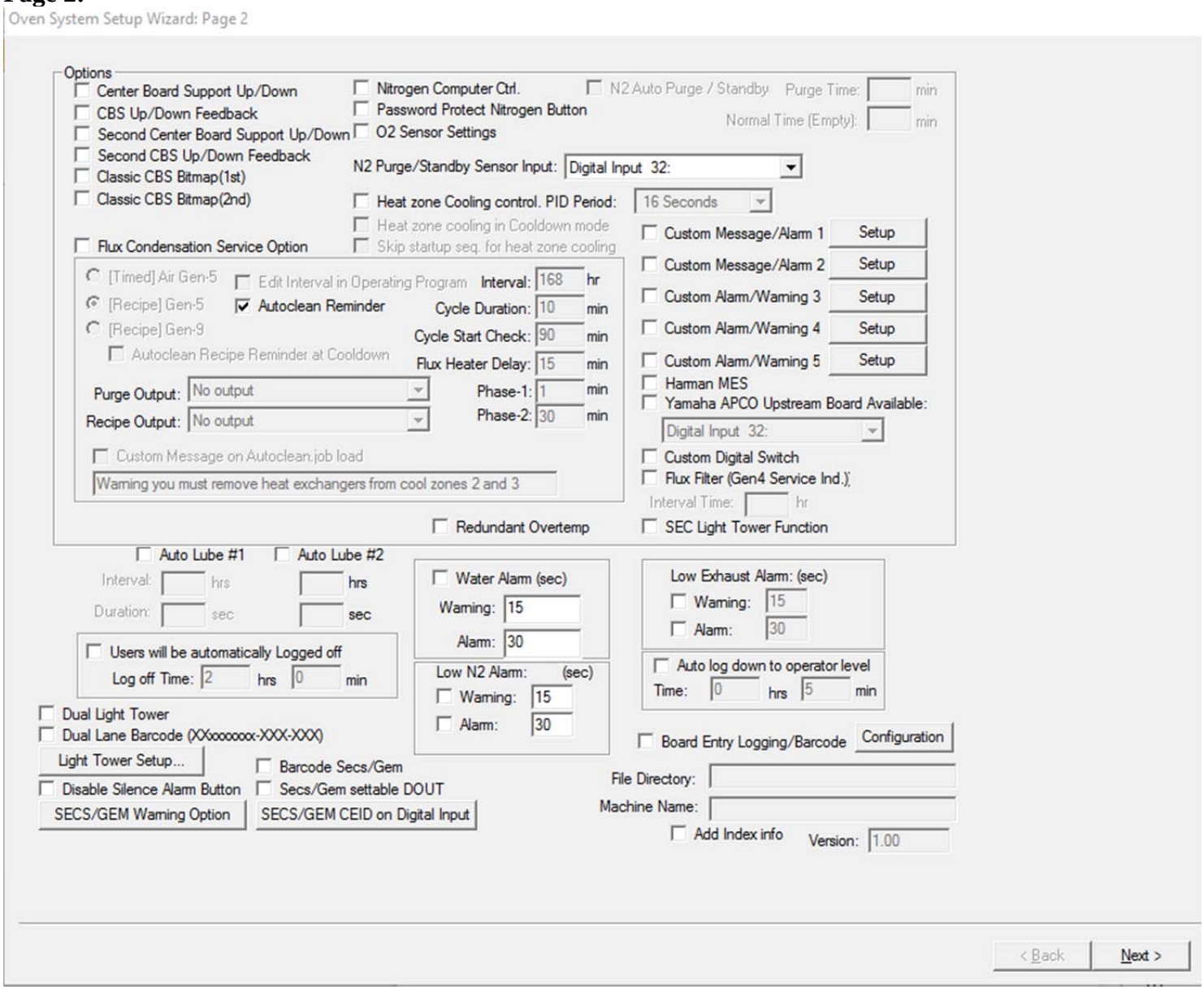
Audible Alarm on Barcode Error: If the oven program should sound an audible alarm on any errors related to barcode program, enable this option.

SECS/GEM Interface: By selecting this option, oven program will link to HellerSECS/GEM program. HellerSEC/SGEM is a separate licensed program.

Launch the following program: By enabling this feature, the oven program will launch an ECD-Cp-Cpk program link.

Add Recipe Name to Data Log Record: Adds the recipe name to each entry in the data log.

Page 2:



Center Board Support Up/Down: This option is used for CBS rail UP or DOWN movement. CBS switch position (Up/Down) can be saved as part of the recipe.

(CBS up and down button images are located in C:\Oven folder; CBSUP.bmp, CBSDOWN.bmp)

CBS Up/Down Feedback: This option is used to display proper CBS rail Up/Down position depending on actual CBS position feedback.

Classic CBS Bitmap: This selection allows using original  CBS rail Up/Down bitmap.

Nitrogen Option: This is used for main N2 solenoid to turn On/Off from overview screen. N2 switch position (On/Off) can be saved as part of recipe.

(N2 on and off button images are located in C:\Oven folder; N2ON.bmp, N2OFF.bmp)

Password Protect Nitrogen Button: Select this option to allow password window pop-up when turning N2 on or off.

Auto Purge / Standby: This option is used for nitrogen purge/standby control, (high, normal and low flow).

Special hardware is required for this option.

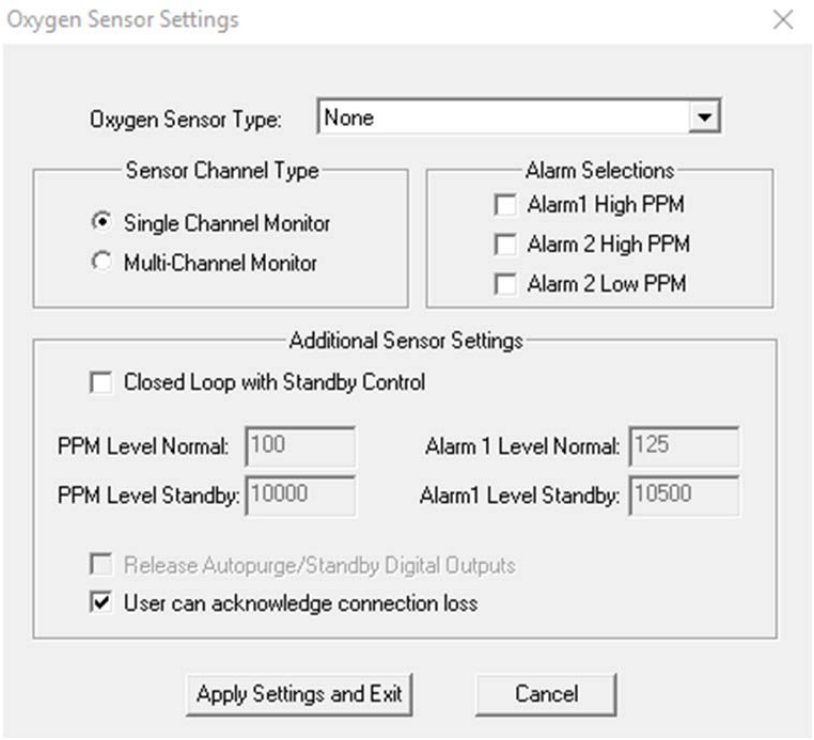
When the N2 switch turns on, High flow output turns on for Purge Time value in minutes, then switches to Normal flow output. If there are no boards in the oven, oven empty, for Normal Time value in minutes, Low flow output turns on. When a board enters the oven, oven not empty, High flow output turns on for half the purge time and switches to normal flow. The Board count option is used by this feature to detect boards in the oven.

O2 Sensor Settings: This option allows setup of a link to the O2 sensor software program.

For Rapidox O2 analyzer, select PBI-Dansensor type.

This link can be used to read PPM_O2, Alarm1, Alarm2 values; write PPM_level in closed loop with standby control.

A Warning message gets displayed when PPM level exceeds alarm level set in O2 sensor software. If closed loop with standby option is selected then N2 Auto Purge/Standby option also needs to be selected.



Alarm2 Low can be used to generate a warning when PPM is below Alarm2 level.
Digital Outputs for High, Normal, Low flow solenoids can be released/freed for other use since with closed loop O2 analyzer, these solenoids are not used.

User can chose to acknowledge or not to acknowledge capability for O2 sensor connection loss display message. Connection loss message will close when the O2 sensor connection is re-established.

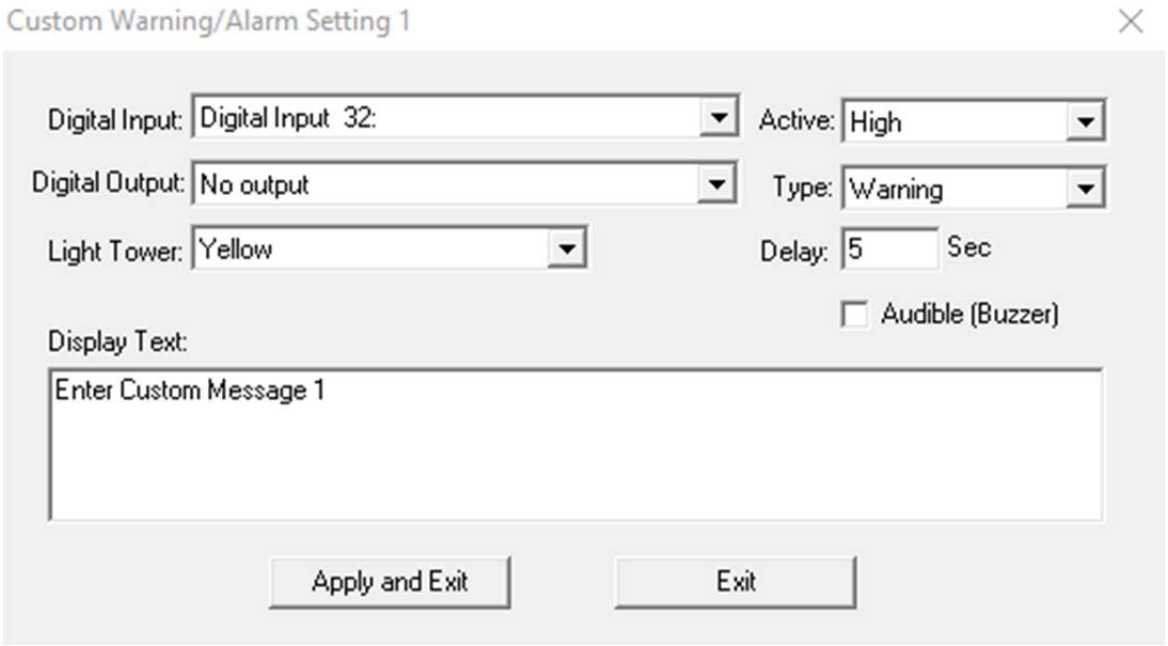
N2 Purge/Standby Sensor Input: This is used, (optional), for closed loop with standby control, to sense incoming board upstream to the oven.

Heat zone Cooling control: This option is mainly used for rapid cooling of heat zones in case of recipe to recipe changeover or zone separation where adjacent heat zones have a big delta. This option requires additional hardware.
PID Period: This is a time base setting used for the cooling PID loop.
Additional setup is required to configure heat zone to digital output association on page 7. In the main oven program, a particular heat zone channel needs to set for additional parameters like SP+ offset, On/Off control etc. On/Off control is preferred instead of PID control.

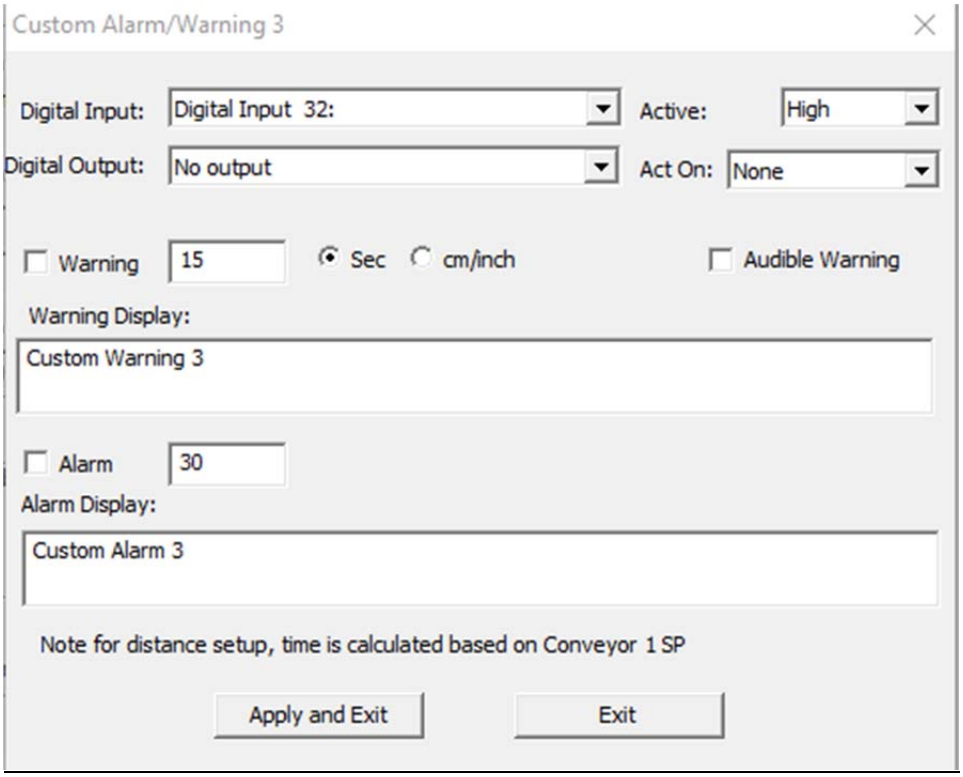
Heat zone cooling in Cooldown mode: This is an additional feature to heat zone cooling. This allows the heat zone cooling option to be active in cooldown mode allowing heat zones cool faster.

Skip startup seq. for heat zone cooling: With this selection, heat zone cooling control is active as soon as the recipe is loaded, even if a particular heat zone is waiting to be activated as part of the startup sequence.

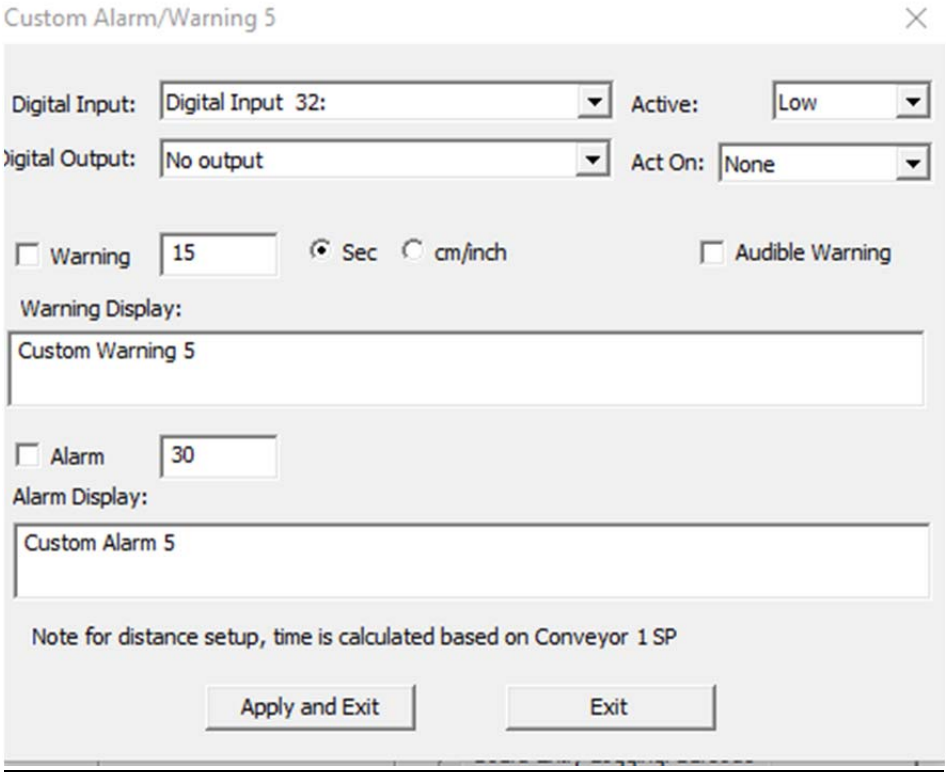
Custom Message/Alarm 1, 2: A custom warning/alarm, which gets activated when digital input signal is active. Two independent custom warning/alarm setup options are available.



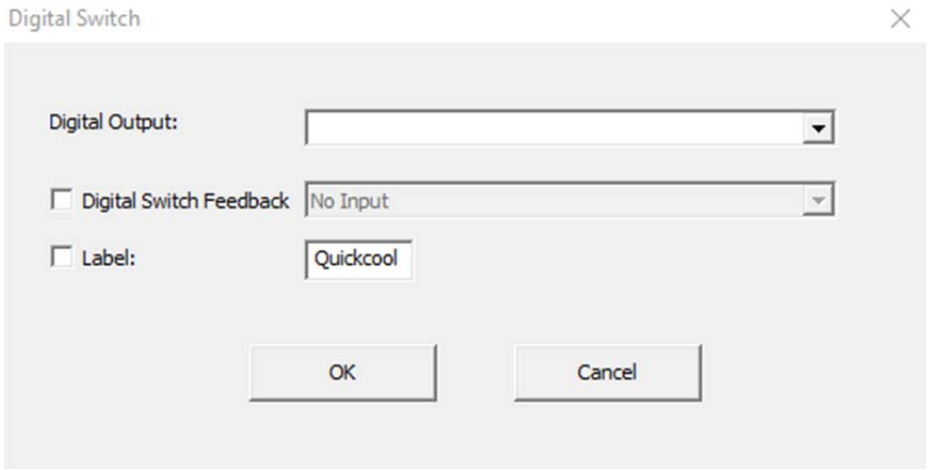
Custom Alarm/Warning 3: Allows a custom warning or alarm or both to be setup.
The timers for warning and/or alarm can be edited from program; Utilities -> Custom Alarm3 submenu.



Custom Alarm/Warning 4, 5: Allows a custom warning or alarm or both to be setup.



Custom Digital Switch: This option allows setting a custom digital switch where an unused Digital Output can be selected to act as a switch output. The switch position, (on or off), can be saved as part of a recipe.

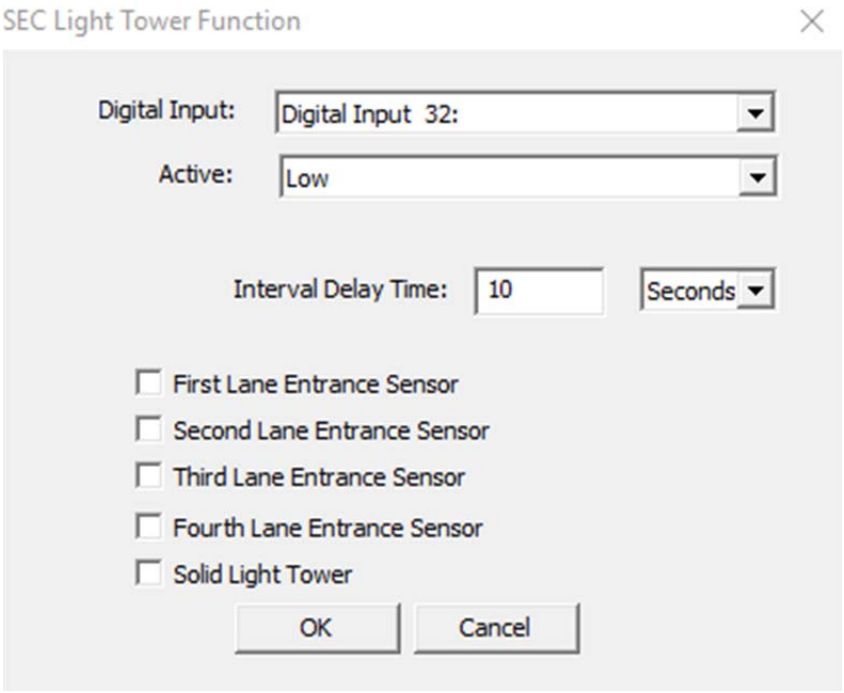


Harman MES: This option is specific to Harman MES system requirement. By checking this option in setup wizard, the option gets enabled in oven operating program under the utilities menu. Harman MES sub-menu can be used to setup the source directory folder and target directory folder. The Oven program monitors the source folder for a file containing recipe name. Oven SMEMA will enable only if the file contains a recipe name matching a running recipe. Once the file is read, it is either deleted or copied to target folder based on not matching or matching recipe. Refer to the separate manual addendum for details.

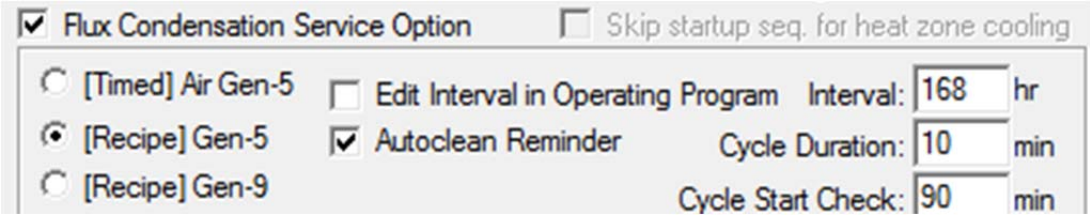
Yamaha APCO Upstream Board Available: This option is specific to Yamaha APCO, (Auto Program Change Over), upstream signal processing. Select the appropriate digital input for upstream Board Available signal based on the electrical schematic of the oven. There are additional settings in the main oven program under Utilities -> Yamaha APCO menu. Refer to the separate manual addendum for details.

Flux Filter: This option is used for Gen-4 flux system with service indicator option.

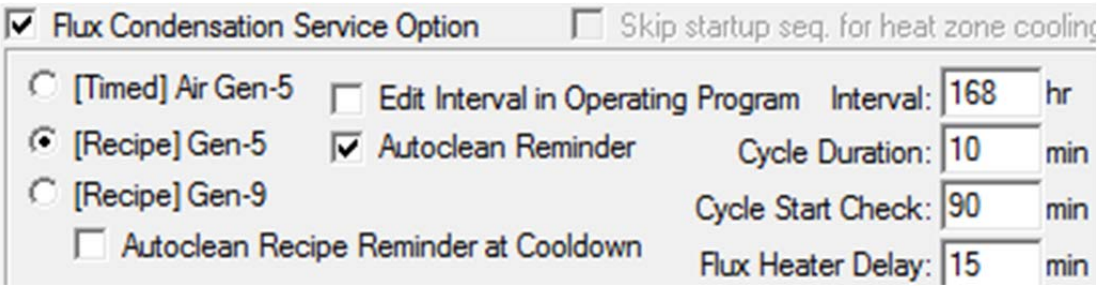
SEC Light Tower Function: This option is specific to customer requirement. When set properly, the light tower can turn off after an input signal is not present for a set period of time. Once the light tower is off, it will turn on again after the input signal is present.



Flux Condensation Service Option: Timed (Air Gen 5) or Recipe mode (N2 Gen5 or Gen9).
[Timed] Air Gen-5 mode: After the set interval time is reached, the flux-box cool blowers will turn off for the set Cycle Duration time. Interval time is counted only when the oven is in OK state.



[Recipe] Gen-5 mode: A recipe named “AUTOCLEAN” needs to be created with proper temperature settings.



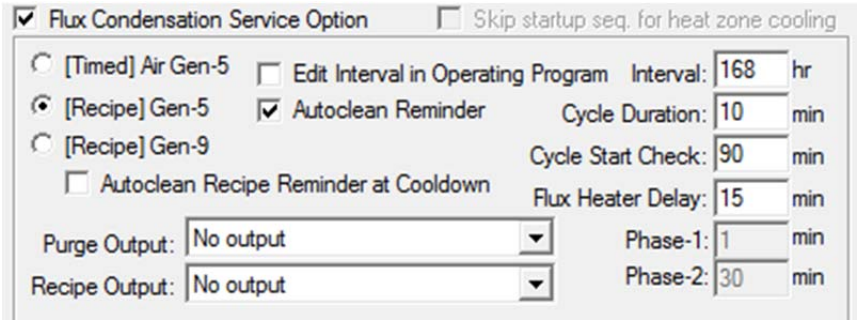
An optional interval timer is used as a reminder to load Autoclean recipe. During oven operate mode, the interval timer counts down and when it reaches 0, a message will pop-up. The Interval can be edited from the main oven program by selecting the option.
During normal recipe run, flux cool-box blowers, (Dout-24) and exhaust blowers, (Dout-25) are on.
When "AUTOCLEAN" recipe starts, the "Cycle Start Check" timer starts countdown and flux-box cool blowers, (Dout-24) turn off. When all heater zones turn green, the Flux Heater Delay timer starts. At the end of delay timer, exhaust blowers, (Dout-25) turns off and flux, (cool zone) heater turns on. After all heater channels goes to OK state, the flux condensation "Cycle Duration" timer starts countdown. At the end of Cycle Duration time, cooldown mode gets loaded. If the cycle duration timer does not start within the Cycle Start Check set time, the oven loads cooldown with alarm message.

At the end of the autoclean recipe one of the following can be selected in operate mode

a. Load Cooldown (default)
b. Load Cooldown w/Nitrogen w/Timer for N2 on time
c. Load selectable existing recipe
d. Reload previous recipe

Note: As an option, recipe with name "AutocleanXXX" where XXX can be any text. This is not for the complete AUTOCLEAN routine. When "AutocleanXXX" recipe is loaded, flux cool-box blowers and exhaust blowers will turn off right away and there is no flux heater delay applied. The rest of the functionality is same as main "AUTOCLEAN" recipe.

[Recipe] Gen-9 mode: A recipe named "AUTOCLEAN" needs to be created with proper temperature settings.



The optional Interval timer is used as a reminder to load Autoclean recipe. During the oven operate mode, the interval timer counts down and when it reaches 0, a message will pop-up. Interval can be edited from main oven program by selecting the option.

During normal recipe run, Dout-24 and Dout-25 are on. When "AUTOCLEAN" recipe is loaded, "Cycle Start Check" timer starts countdown and Dout-24 (water) and Dout-25 turns off. When all heater zones, including cool zone heater, turns in green state, Phase1 timer starts countdown. At the end of Phase-1 timer, Phase-2 timer starts countdown and Dout-25 turns on. At the end of Phase-2 timer, cooldown mode gets loaded. If Phase-2 timer does not start within Cycle Duration, Cycle Start Check timer expires and the oven loads cooldown with alarm message.

At the end of autoclean recipe, one of the following can be selected in operate mode

a. Load Cooldown (default)
b. Load Cooldown w/Nitrogen (Timer for N2 On time in main program)
c. Load selectable existing recipe
d. Reload previous recipe

Note: If recipe name "AutocleanXXX" is used, the oven program will follow the same AUTOCLEAN routine. Recommend to use "AUTOCLEAN" recipe name.

Purge Output: Select proper digital output for cooling purge after autoclean job. (Purge Timer can be set in Heller Operating Program. Default is 15min.)

Recipe Output: Select proper digital output for low N2 flow during autoclean job.
(Note: special plumbing and wiring need to be done for Purge and Recipe output options)

Custom Message on Autoclean: Select this option if a pop-up message should appear before loading autoclean.job, which will allow continuing or canceling the recipe load.

Auto Lube: Used for edge hold and CBS rail lube options.
After interval time countdown, auto lube solenoids will turn on for duration time. Timers are active only during operate mode, (recipe).

Redundant Overtemp: This option is used with temperature sensing devices such as thermostat, Capillary or bi-metallic switch. The Oven loads cooldown on over temperature conditions with an alarm message.

Water Alarm: This option is used for a water cooled system. The Thermostat is used to generate a high water temperature signal. And/or a water flow switch is used to detect water flow.
Warning: 15sec default.
Alarm: 30sec default, loads cooldown.

Low N2 Alarm: This option is used to detect low N2 pressure at N2 inlets of the oven.
Warning: 15sec default, selectable.
Alarm: 30sec default, selectable, loads cooldown.

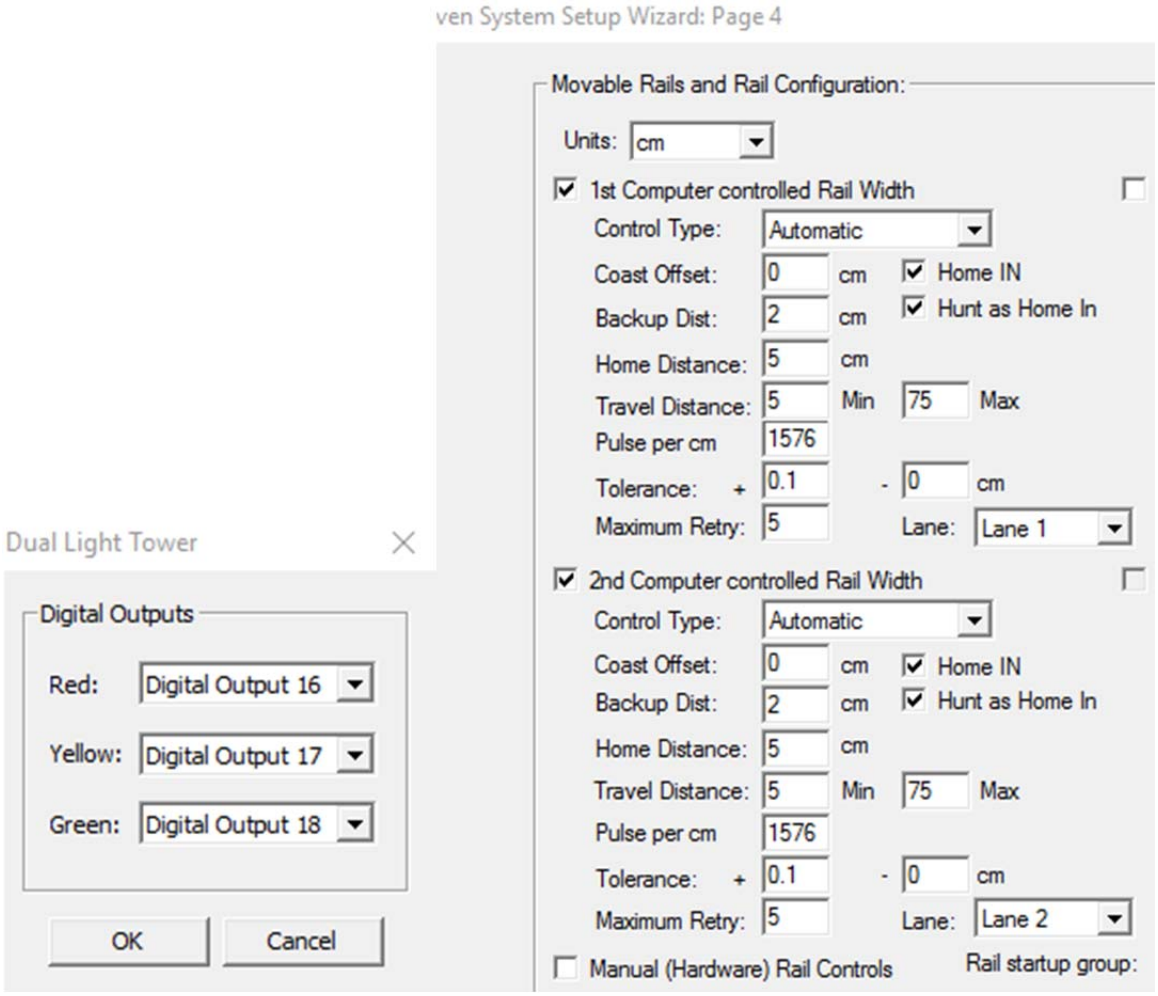
Low Exhaust: This option is used to detect low exhaust pressure at oven exhaust port(s).
Warning: 15sec default, selectable.
Alarm: 30sec default, selectable, loads cooldown.

Users will be automatically logged off: By enabling this option, the user will logged off after set time. This timer starts as soon as the user logs on.

Auto log down to operator level: By enabling this option, the user will log down to operator level once time expires after the last keystroke.

Board Entry Logging/Barcode: This option is developed for a specific customer requirement. This option allows creating a data log file per board entry. Refer to separate manual addendum for details.

Dual Light Tower: This option is developed for a specific customer requirement. Select available digital outputs for second light tower option for independent dual lane status. Warnings that are lane dependent (board drop, board stop, rail width etc.) will be tied to specific light tower. Both lanes need to be assigned for each CC EH on oven setup wizard page-4. This allows dual lane SMEMA to operate independently. Ex. Warning on Lane 2 will not affect Lane 1 SMEMA operation.

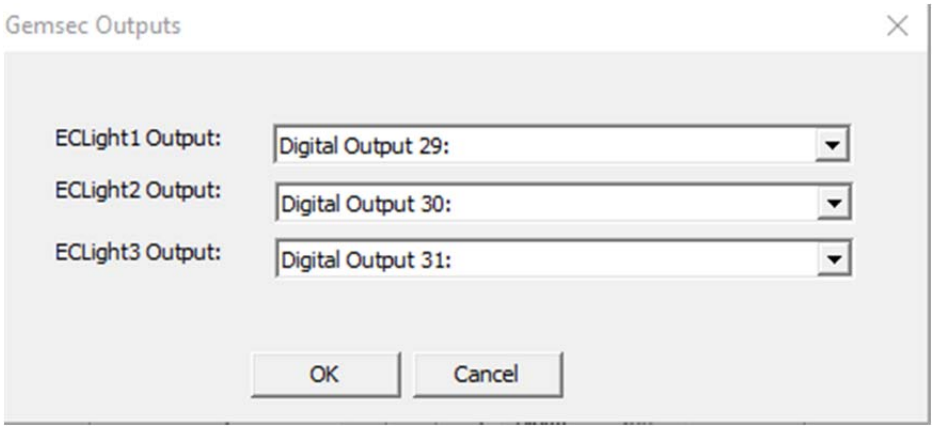


Dual Lane Barcode (XXxxxxxxx-XXX-XXX): This option is developed for a specific customer requirement.

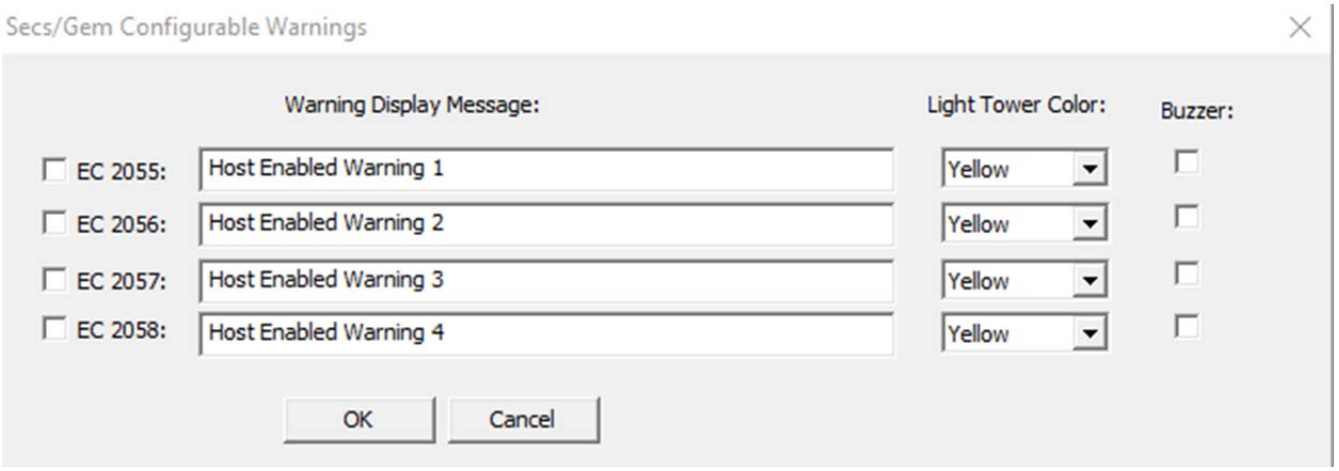
Barcode Secs/Gem: This is for a customer specific option relating to barcode read and event generation

Secs/Gem settable DOUT: This setup allows SECS/GEM host or station controller to set relay output on / off remotely. Additional hardware and SECS/GEM interface option is required.

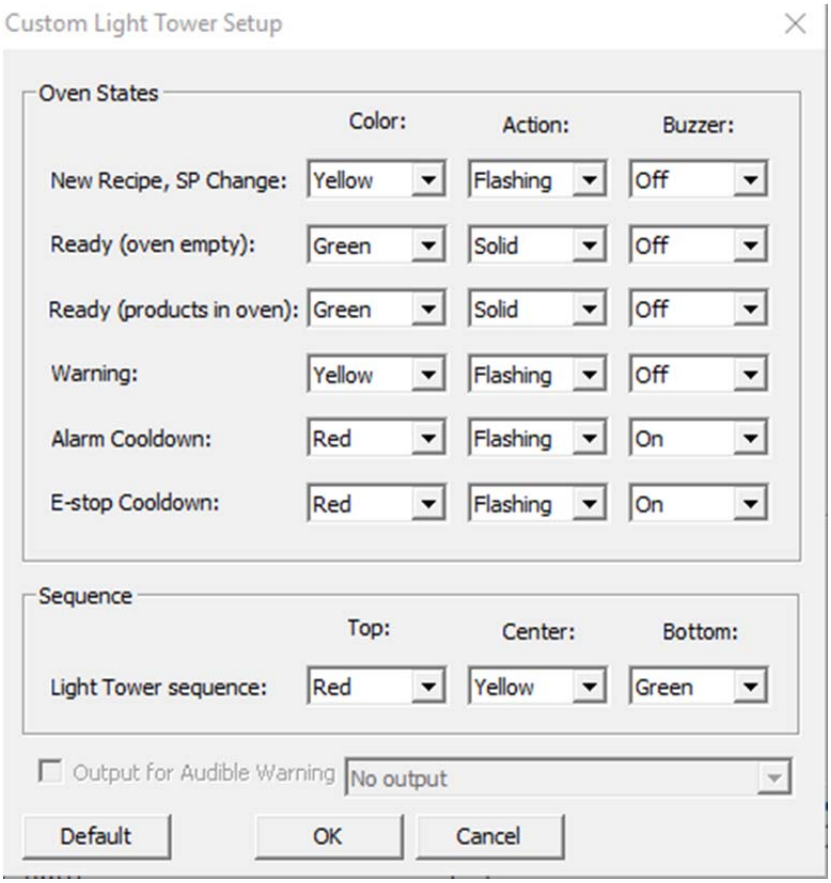
ECLight1 output: EC# 22042, ECLight2 output: EC# 22043, ECLight3 output: EC# 22044



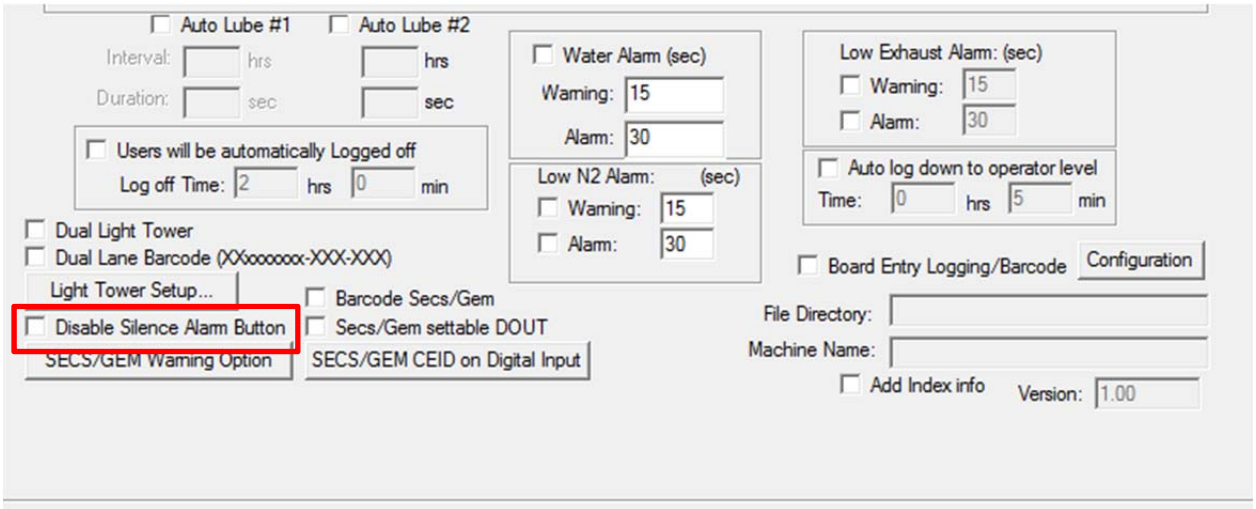
Secs/Gem Warning Option: This setup allows SECS/GEM host or station controller to set a warning remotely in the oven operating program. Additionally, SECS/GEM interface option needs to be enabled on page1.



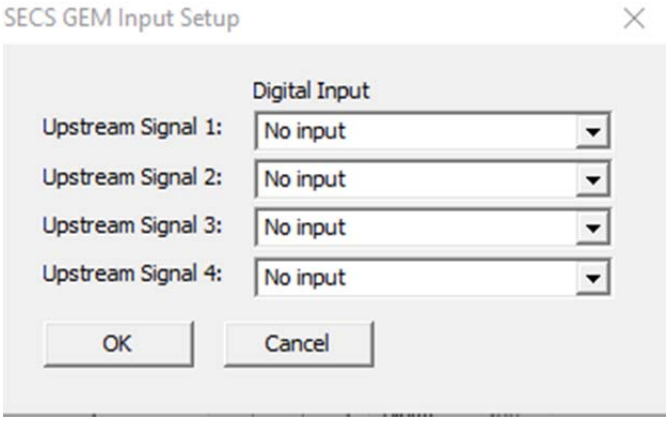
Light Tower Setup: Can be used for custom light tower setup for color selection, flashing or solid, audible alarm operation, etc. Default light tower setup is as below.



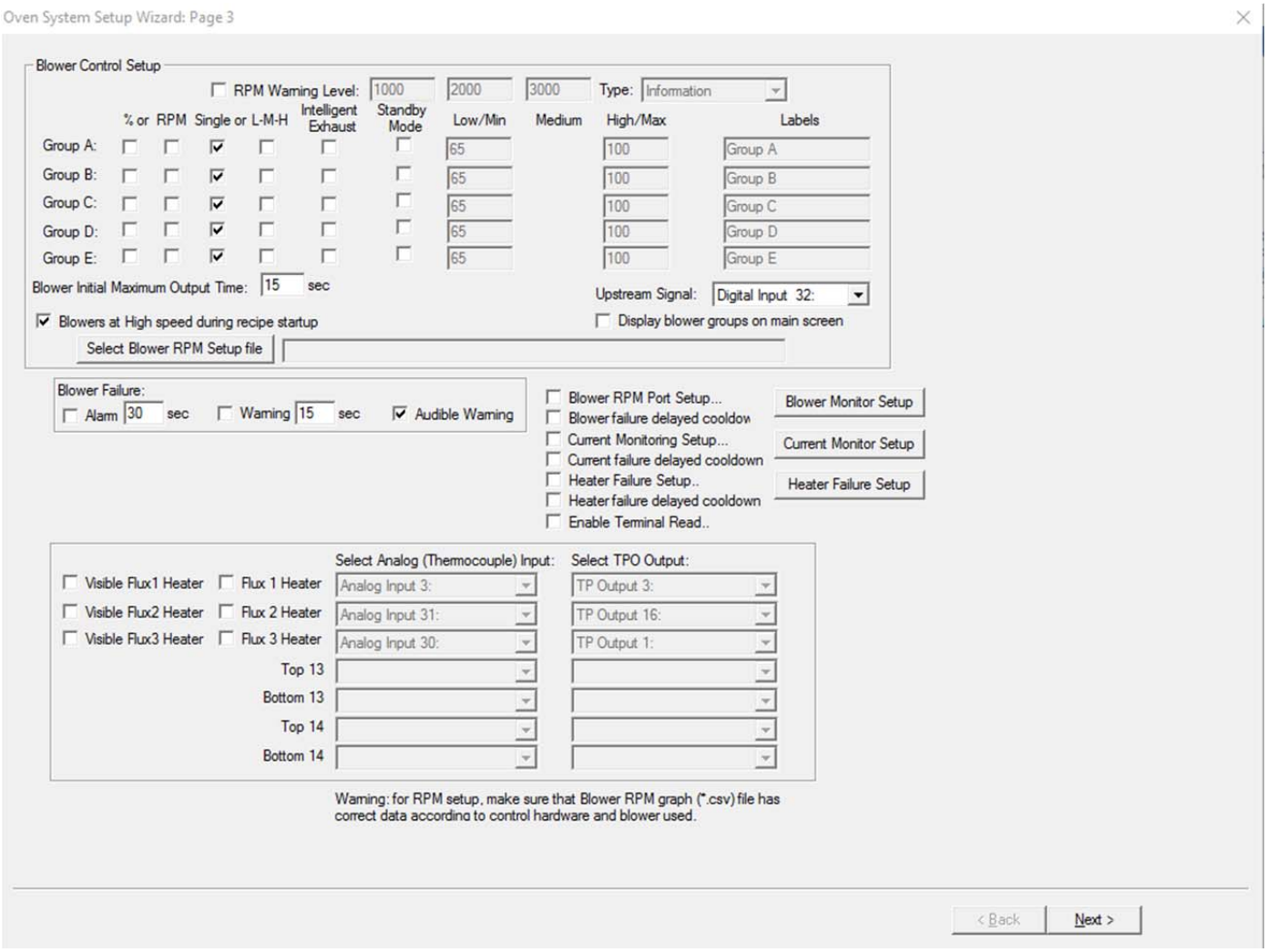
Disable Silence Alarm Button (Page 2): When selected, audible alarm/buzzer silence menu button in the main oven program will not be accessible by the user. The Buzzer can only be silenced by alarm/warning acknowledgement.



Secs/Gem CEID on Digital Input: This option allows SECS/GEM collection event (CEID) to be generated depending on set digital input transitions from ON-to-OFF or OFF-to-ON.



Page 3:



Blower Control Setup: There are a total of five control channels, (groups), available for blower control. Each group can be set as (% or RPM) and (Low-Medium-High or Single control).

%: the blower speed control values are in the form of controller output percentage.
RPM: the blower speed control values are in the form of blower rpm. Software uses a look up file to set appropriate control output %.
(Warning: for RPM setup, the look-up file called BlowerRPMgraph.csv located in c:\oven folder should be updated as per blower and control hardware used.)

Single: blower speed control values can be changed during program run between minimum and maximum allowed limit, in % or rpm.
L-M-H: low-medium-high % values are set in setup wizard and cannot be changed while the oven program running. Only low, medium or high control level can be selected during program run.

Standby Mode: this mode is mainly selected for heat or cool zones blower group for energy saving. When blower control group is set as standby mode, it can be used as part of Energy Saving setup in main oven program; under Utilities / Energy Saving Setup submenu.

Intelligent Exhaust: this setting can be used for exhaust blower control group. When the blower control group is set as Intelligent Exhaust, it can be used as part of Energy Saving setup in the main oven program; under Utilities / Energy Saving Setup submenu. Blower speed can be controlled for low production board count from main program energy saving setup.

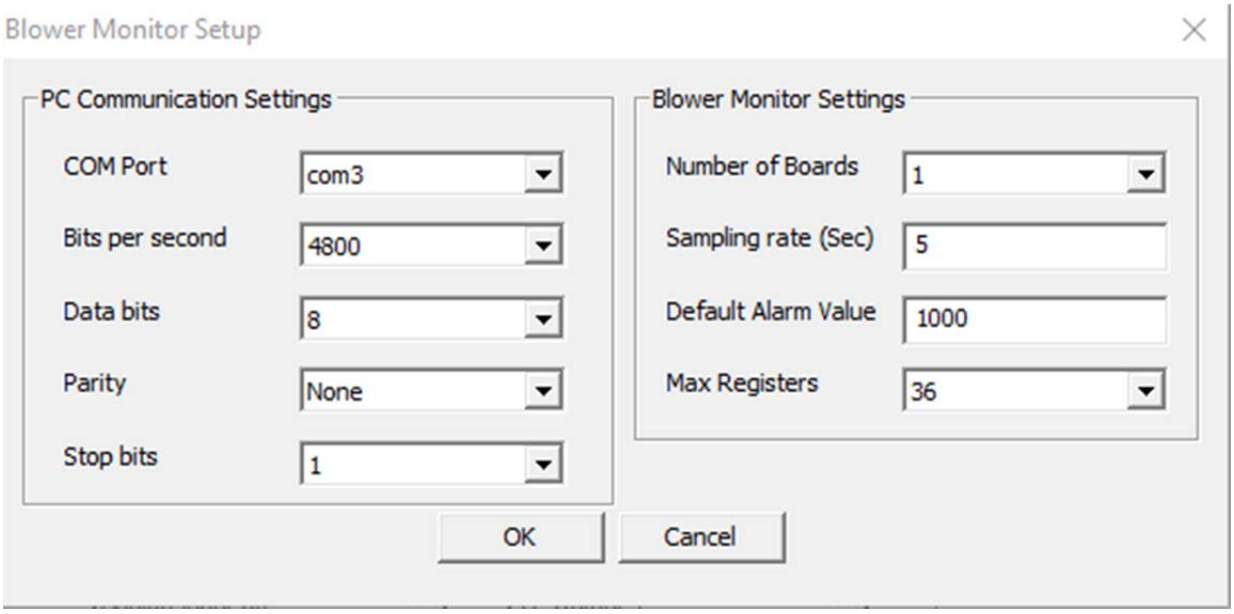
The labels window can be used for labeling the control group.

Upstream Signal: an additional board sensor can be used at upstream to trigger normal oven operation mode from energy saving standby modes.

Blower Initial Maximum Output Time: 15sec, at new recipe load
Blowers at High speed during recipe startup: This option allows blowers to run at 100% speed during recipe startup. Light tower will stay yellow during this period, blower speed will set to recipe setting after all heat zones output power is less than 80% (page1 parameter for Maximum output before next Group Start).

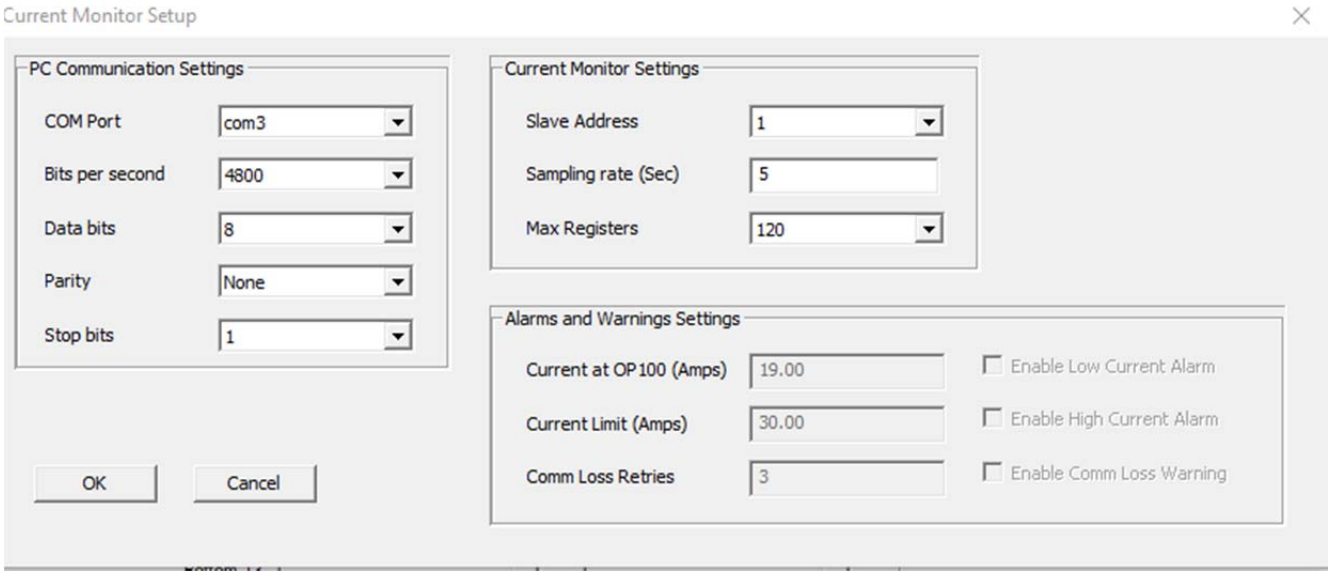
Blower Failure: Warning and/or Alarm selectable option with time delay; optional audible alarm on warning.
Warning: 15sec default, selectable.
Alarm: 30sec default, selectable, loads cooldown.

Blower RPM Port Setup: is used to set an RS232 com port to read blower RPM data from a Tachscan36 board. This data can be read from SECS/GEM host only.

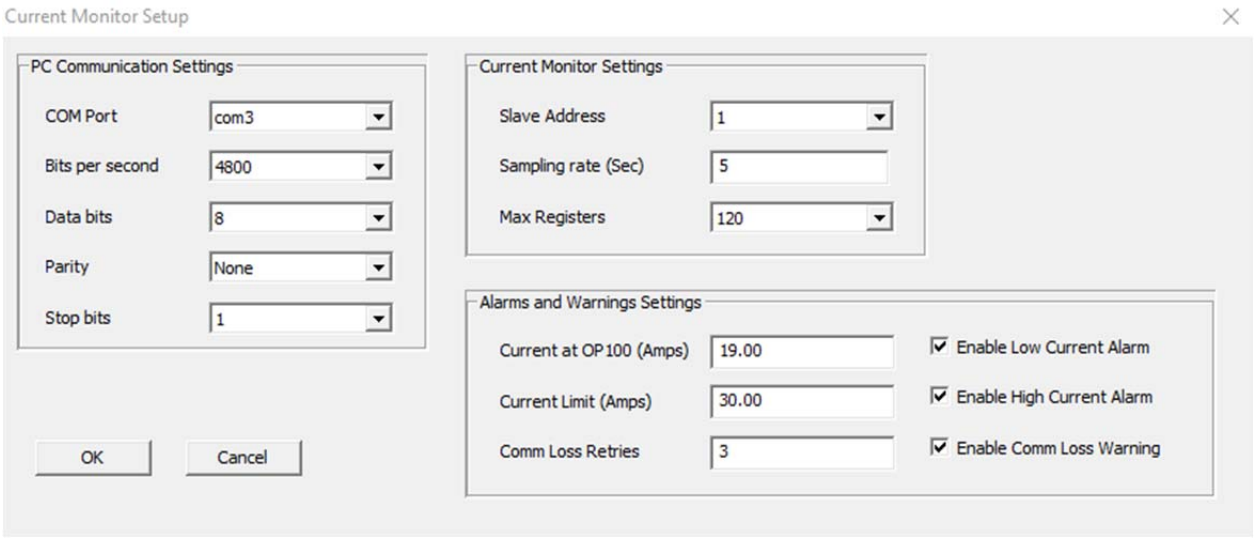


Blower failure delayed cooldown: This feature requires blower RPM input read, “Blower RPM Port setup”, option to be selected. Additionally on setup wizard page 7, the blower RPM channel# needs to get assigned to an appropriate heat channel. With this option, when the blower for particular zone fails, (RPM drops below alarm level), zone output % is set to zero. And if there are no boards in oven, (board count is zero), the oven goes in cooldown mode. If there are boards in oven then, the light tower turns yellow and waits for all boards to exit. As soon as the oven is empty, cooldown is loaded.

Current Monitoring setup: is used to set an Rs232 com port to read blower current monitoring data from a current sense board. Current monitoring data can be for heaters or blowers. This data is reported to SECS/GEM host.

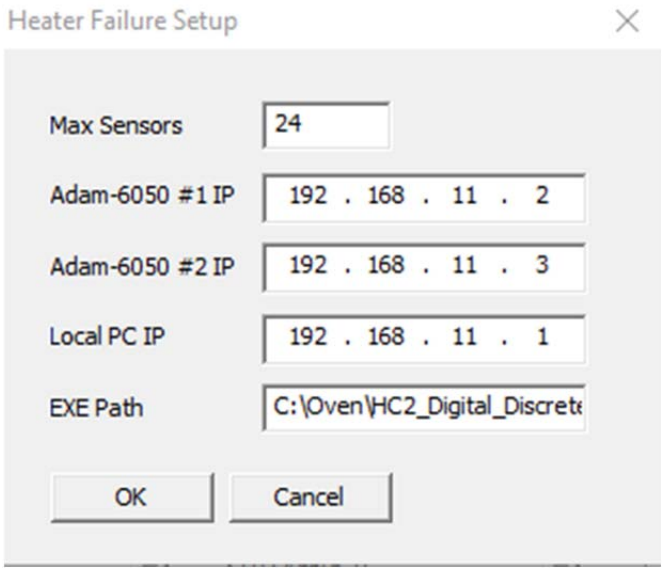


Current failure delayed cooldown: when this option enabled along with Current Monitoring, additional setup is required on setup wizard page 7 for assigning current data register to particular heater channel. See specific addendum for additional setup information.



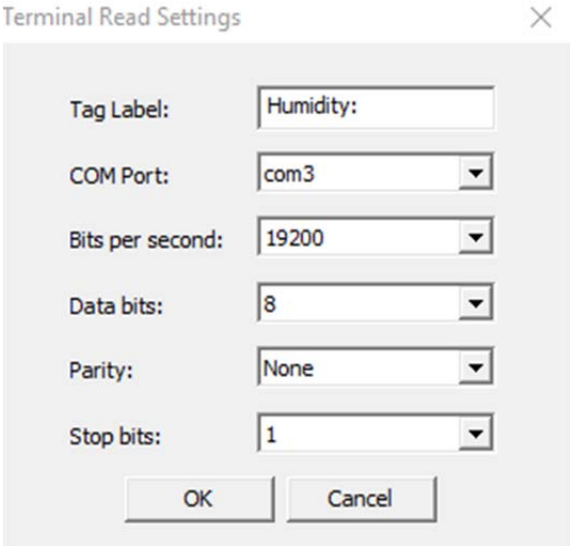
With this option, the oven program monitors heater current value for particular zones. If heater current is less than expected value or greater than max limit, then a warning is generated. Particular zone OP% will be set to 0. The Oven will load cooldown once it's empty.

Heater Failure Setup: this is a setup for communicating to an external digital I/O device, (ADAM-6050). This external device is used to read heater breaker or GFI trip status.



Heater failure delayed cooldown: When this option is enabled along with Heater Failure Setup, additional setup on setup wizard page 7 is required for assigning digital input to a particular heater channel. With this option, the oven program will monitor heater breaker or GFI failure status and put the oven in cooldown if oven is empty. If there are boards in oven, the particular heater OP% will be set to 0 till oven becomes empty. See specific addendum for additional setup information.

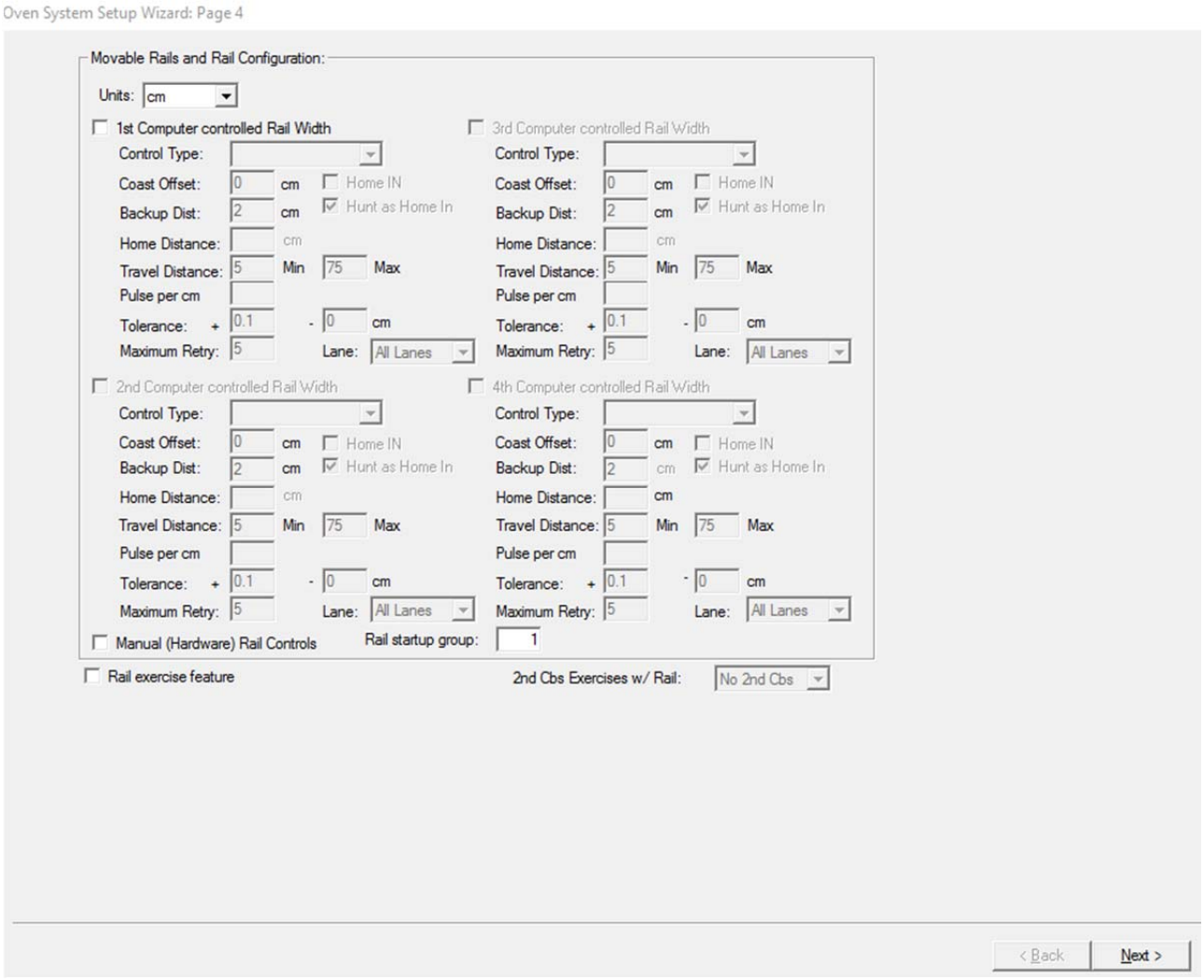
Enable Terminal Read: This option allows reading and displaying data from an RS232 hyper-terminal port from devices like Hygrometer.



Visible Flux Heater 1,2,3: Select only if cool zone flux heater channel needs to be displayed on the main overview screen. If this option is not selected then channel can be accessed via channel setup screen. It will not display on the main overview screen.

Flux Heater 1, 2, 3: select these as required and set proper Analog input and TPO output. Select correct analog input and TPO outputs especially for 1913 and 1914 models.

Page 4:



Movable Rails and Rail Configuration:

Units: cm or mm. CM is the default setting. When length unit "cm" is selected on page 1, the Units dropdown selection is enabled for rails. Based on cm/mm selection in setup wizard, the main oven program will show SP and PV for rails accordingly.

Control Type:
Automatic: enter set point
Jog: left or right arrow buttons to move the rail.

Home IN: select if home switch is towards fixed rail.
If home switch is away from fixed rail then uncheck Home IN. This will make the rail as Home Out.

Rail final position direction: "Hunt as Home In" or "Hunt as Home Out".
Keep the default setting which is hunt from the home direction for standard ovens.

Coast Offset: use this distance to stop the rail enable signal before the final position. (Range 0-10cm)

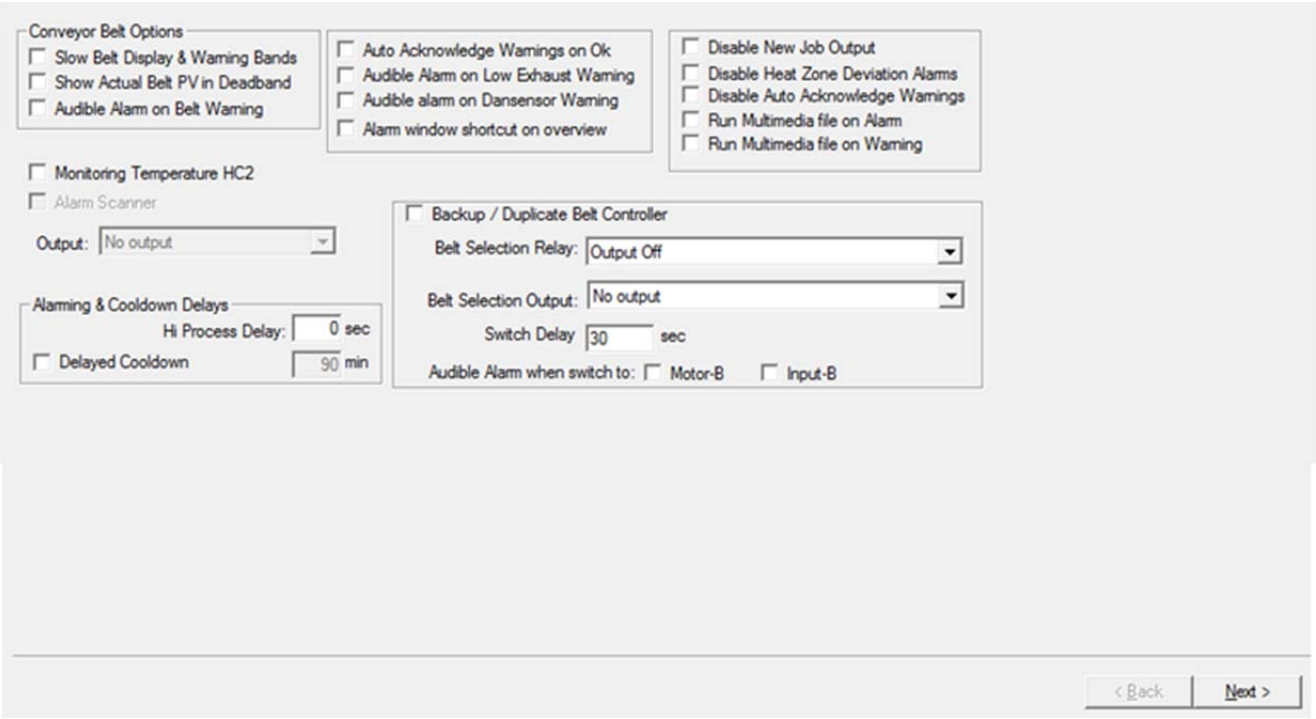
Backup Dist: rail always moves for "Backup" distance in home direction when new set point is entered or if it is out of the tolerance band and retrying (hunt) for final position. (range 0.5-3cm)

Home Distance: Board width distance when rail is on home switch. (range 0-100cm).

Travel Distance: is a minimum and maximum distance that a user can enter for the rail position.
Pulse per cm: 1576 (for 200 pulse encoder); (range 0-9999)
Tolerance: allowed + and – distance from the set point; (default +0.1, -0; range 0-0.2cm).
Maximum Hunt Tries: 5 (default). If a rail falls out of the tolerance band while trying to go to its final position, it retries to achieve the final position; (range 0-5)
Lane: by default all lanes are assigned to rails. Select proper lane# for the rail. This helps software to decide if the rail should not move in case of non-zero board count for particular lane.

Manual (Hardware) Rail Controls: enable this option if the hardware key switch is installed for manual rail movement. Default manual/computer rail selection input signal is DIN-15.
Rail startup group: 1(default). This is to enable rail movement along with heat zone startup group.
Rail exercise feature: This feature will allow the rail exercise while loading cooldown or new recipe where rail moves to home then to set-point and then back to home. This feature is applicable for certain rail configurations only.

Page 5:



Conveyor Belt Options:

Slow Belt Display & Warning Bands: select for low belt speed and 0.1" minimum warning band. Need 1000 pulse encoder for better resolution.

Show Actual Belt PV in Deadband: to display the actual process value for the belt when it is within the dead band.

Audible Alarm on Belt Warning: audible alarm output is activated for belt warning.

Auto Acknowledge Warnings on Ok: warning gets acknowledged when clicked OK on warning message.
Audible Alarm on Low exhaust Warning: audible alarm output is activated for exhaust warning.
Audible alarm on Dansensor Warning: audible alarm output is activated for Dansensor warning.
Alarm window shortcut on overview: when selected, a shortcut icon to access Alarm window is displayed on main overview screen.

Disable New Job Output: Digital Output25 is shared between three options- Flux exhaust blower, secondary audible alarm and new job 5sec output. Only one option can be used at a time. Flux exhaust blower has the priority. The Secondary alarm output will move to main audible alarm if DOUT25 is used for other option.

Disable Heat Zone Deviation Alarms: with this option selected, the oven does not load cooldown for heat zone alarm deviation. Usually select this option with redundant secondary control board.

Disable Auto Acknowledge Warnings: select this option if auto acknowledge on heat and belt channel warnings are not needed.

Run Multimedia file on Alarm or Warning: A multimedia file can be played in case of alarm or warning. Computer speaker output should use to hear alarm or warning sound.

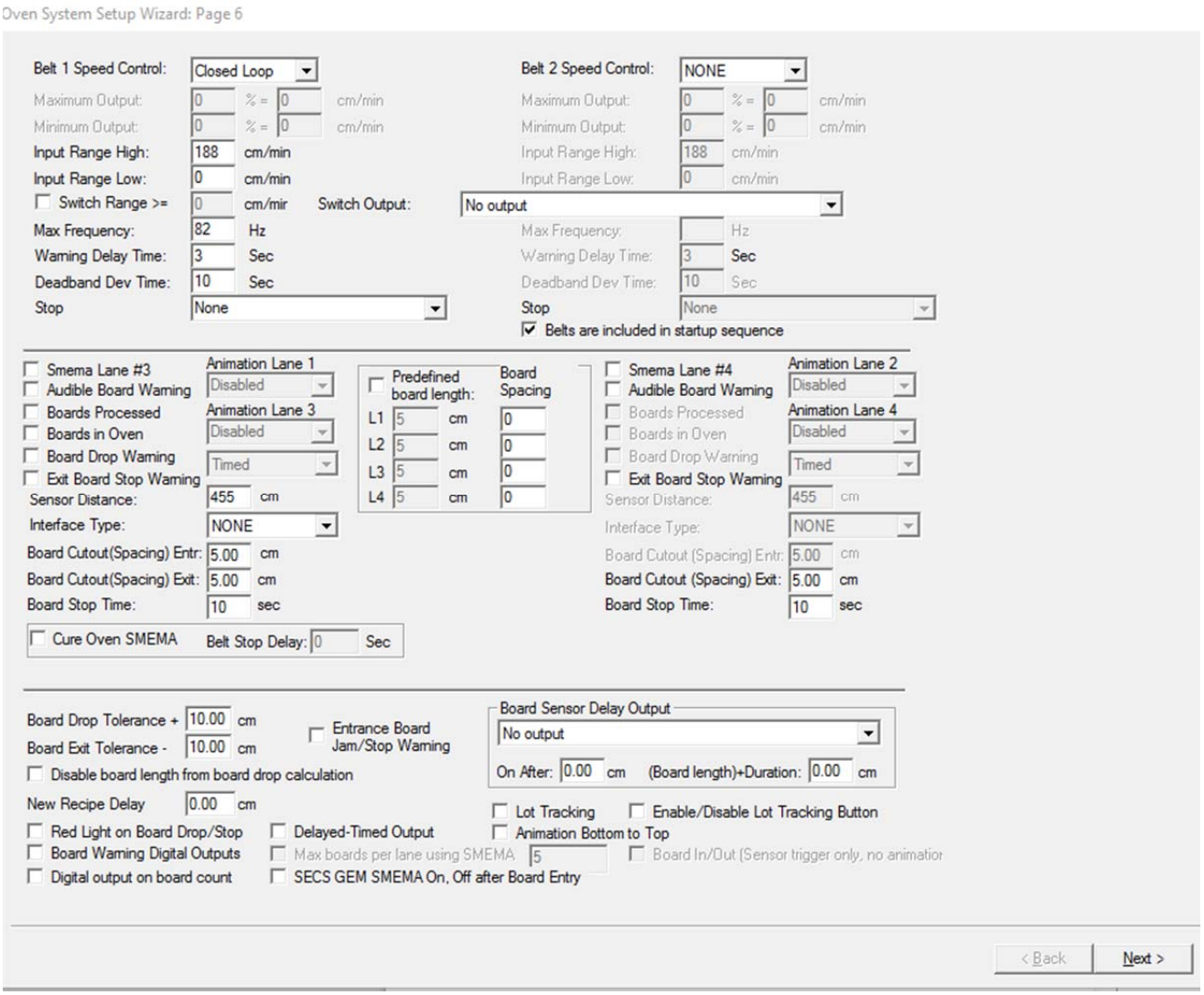
Monitoring Temperature HC2: Select this option for monitoring temperature data from serial HC2 connection. This data is available for SECS/GEM host.

Alarm Scanner: Select this option for redundant alarm scanner option using Monitoring HC2. Select particular digital output to turn on for individual redundant alarm scanner option. Proper scanner input channel has to be assigned in setup wizard page-7 and oven operating program menu Windows/Secondary Monitoring screen, a global high process has to be set for correct high process value.

Alarming and Cooldown Delays: High process alarm and cooldown can be delayed, usually use this option with secondary control board option.

Backup / Duplicate Belt Controller option is used as backup belt system. If equipped, belt system can be switched between System-A (Motor-A, encoder Input-A) and System-B (Motor-B, encoder Input-B).

Page 6:



Belt Speed control:

Closed Loop:

Input Range High: 188 cm/min (range 0-635cm/min)

Input Range Low: 0 cm/min

Max Frequency: (range 0-9999Hz)

200Pulse encoder: 82 Hz (encoder mounted on Square Drive shaft)

89 Hz for oven w/o edge hold (encoder mounted on Belt Drive shaft)

78 Hz for SX model oven (w/edge hold)

For 1000Pulse encoder: x5 Hz, (freq. for 200Pulse multiply by 5)

Warning Delay Time: default is 3sec, range 1-9999sec

Deadband Dev Time: default is 10sec, range 0-9999sec, (during this, actual speed is not reported for display on main overview screen)

Open Loop (1088):

Maximum Output: 100% = 100 cm/min

Minimum Output: 0% = 0 cm/min

Switch Range: this option is used when two motors are used to achieve two separate belt speed ranges. The selected digital output can be used as a switch between the motors depending on the belt speed SP.

Stop: This option allows stopping of belt on external signal. Select a digital input as external signal. During oven program run, when digital input turns ON, belt will stop.

Boards Processed and Board in Oven: both options should be selected together.

Animation: by default board Animation is disabled. To display animation on main overview screen, select "Left to right" or "Right to left" based on belt direction.

Board Drop Warning: to detect a board drop condition (a board which does not reach exit sensor on time). Select Timed; make sure to enter proper sensor distance.

Exit Board Stop Warning: to detect board stop at exit side. When board is removed from exit sensor the board stop warning will auto-acknowledge.

Sensor Distance: Entrance and Exit end sensor distance used for board drop option animation.

Interface Type: select proper interface type from the drop down box; for ex. SMEMA II as standard interface option.

Board Cutout (Spacing) Entr: 5cm default (range 0-9999cm); used by SMEMA interface to delay oven ready signal to upstream after board passes entrance sensor. This allows board spacing when entering oven and also helps to ignore cutouts on board.

Board Cutout (Spacing) Exit: 5cm default (range 0-9999cm); used by SMEMA interface to extend board available signal to downstream after the board passes exit sensor.

Board Stop Time: is used to allow more time for the board to stay under exit sensor before board stop warning. (Default= 10sec, range 0-9999sec)

For 3rd and 4th lane SMEMA, lane 1 settings are applied for lane 3 and lane 2 settings for lane 4 after SMEMA Lane #3 and 4 and Animation Lane#3 and 4 selection.

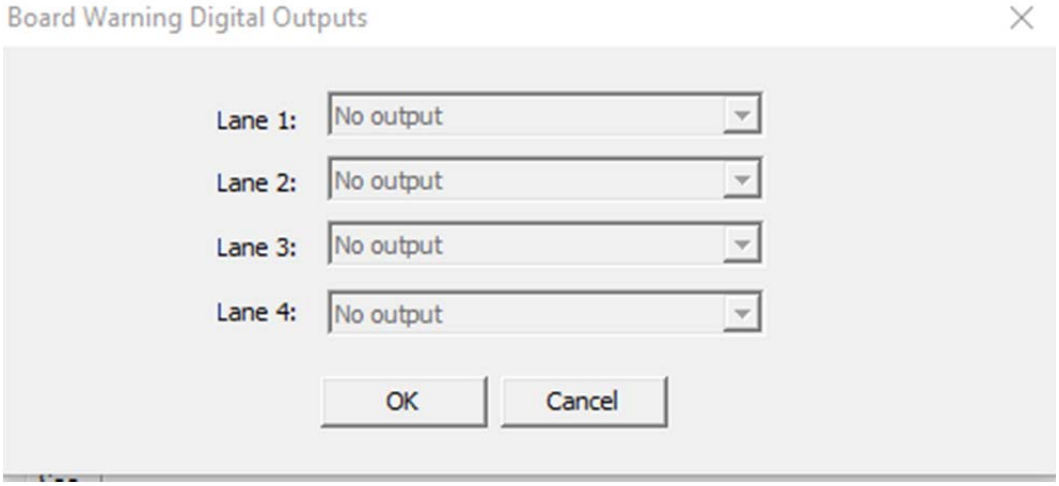
Board Drop Tolerance + : This is used to allow more time to detect board at exit before board drop warning. (Default= 10cm, range 0-9999cm)

Board Exit Tolerance - : This is used for early board detection at exit end sensor. (Default= 10cm, range 0-9999cm)

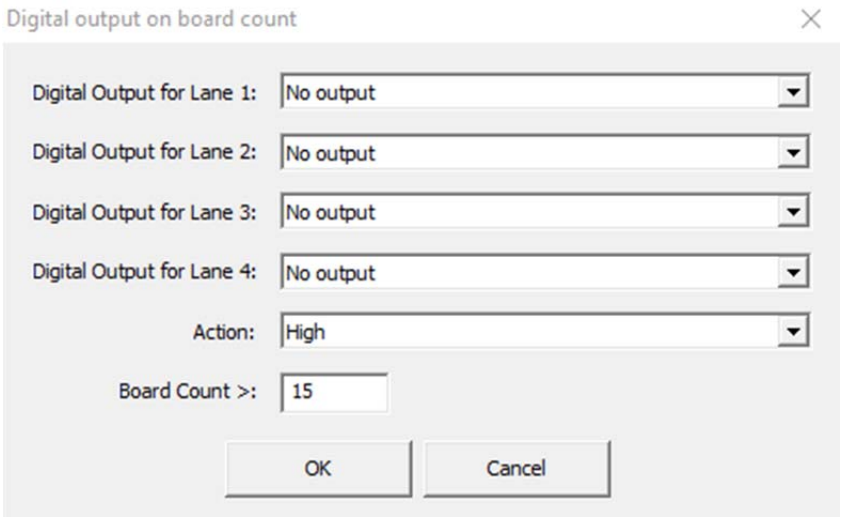
Disable board length from board drop calculation: by default board length is included as part of the window to look for board available at exit end. By selecting this option, board length is not considered, only the + and – tolerance is part of the window to look for board at exit end.

Red Light on Board Drop/Stop: select if flashing red light is required instead of flashing yellow light for board warnings.

Board Warning Digital Outputs: This option is developed for a specific customer requirement. This feature can be used to activate independent buzzer or indicator on board drop/stop warnings for each lane and up to 4 lanes.



Digital output on board count: This option is developed for a specific customer requirement. This feature allows turning a digital output ON when lane board count is reached as per setting.



Predefined board length: When enabled, the board animation will reflect consistent board length irrespective of entrance sensor block time. All four lanes can be set independently. Board length can be set in the oven operating program as well. A fixed length animation will be displayed on screen after trailing edge of the board.

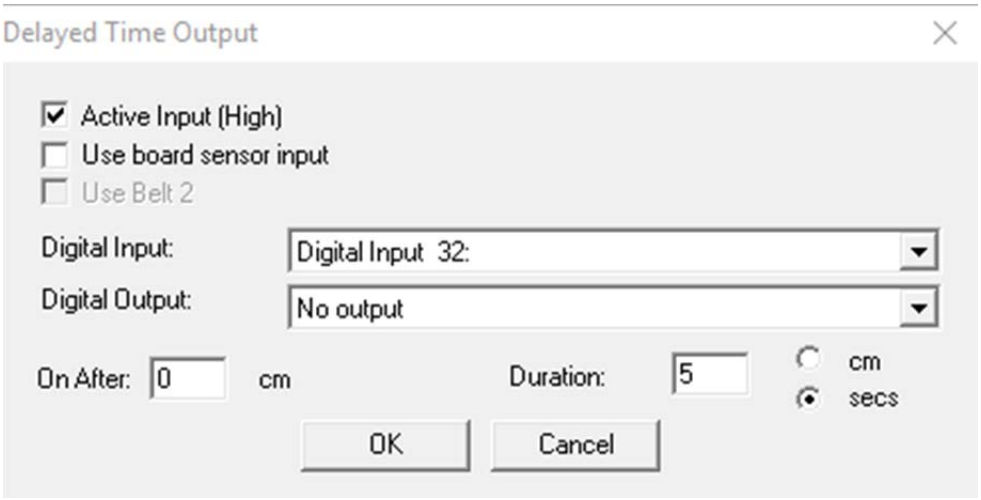
SMEMA 9851 new board delay: is used for SMEMA 9851 interface. Once the Smema entrance signal goes low after board entry, the Smema signal will go high after delay time calculated based distance entered and belt speed to allow new board. If delay is set to 0 then SMEMA entrance signal will go low or not ready for 200 milliseconds before next board is allowed. This SMEMA signal delay is between board to board.

Cure Oven SMEMA: This selection will allow the conveyor belt to stop when the downstream is not ready and board is at exit sensor. This option is not used for Reflow application and used only for cure application.

Entrance Board Jam/Stop Warning: If selected, a warning will be generated if entrance sensor is blocked more than predefined board length + board stop time. Predefined board length must be set for this option.

New Recipe Delay: enter a distance to allow for the board to completely exit the oven after "boards in" oven count becomes zero, before new recipe can be loaded.

Delayed-Timed Output:



Optional digital output that can turn on after a delay for a specified time when selected digital input is active. This output can be used for various options like special flagged CBS.

Max boards per lane using SMEMA: This option allows setting max boards inside oven per lane. A new board will be allowed once the board count is less than this "max boards" set in the setup wizard.

Board In/Out (Sensor trigger only. No animation): When selected, board count will increment or decrement by just triggering entrance and exit sensor input. Board animation, board drop or stop alarm cannot be used with this option.

SECS/GEM SMEMA On, Off after Board Entry: This option allows SECS/GEM host or station controller to turn entrance SMEMA On or Off remotely.

Lane1 SMEMA on/off EC# 22051, Lane2 SMEMA on/off EC# 22052,
Lane3 SMEMA on/off EC# 22053, Lane4 SMEMA on/off EC# 22054,

This allows host to control board entry remotely. After a board is entered for a lane, particular EC# will be set to off (0).

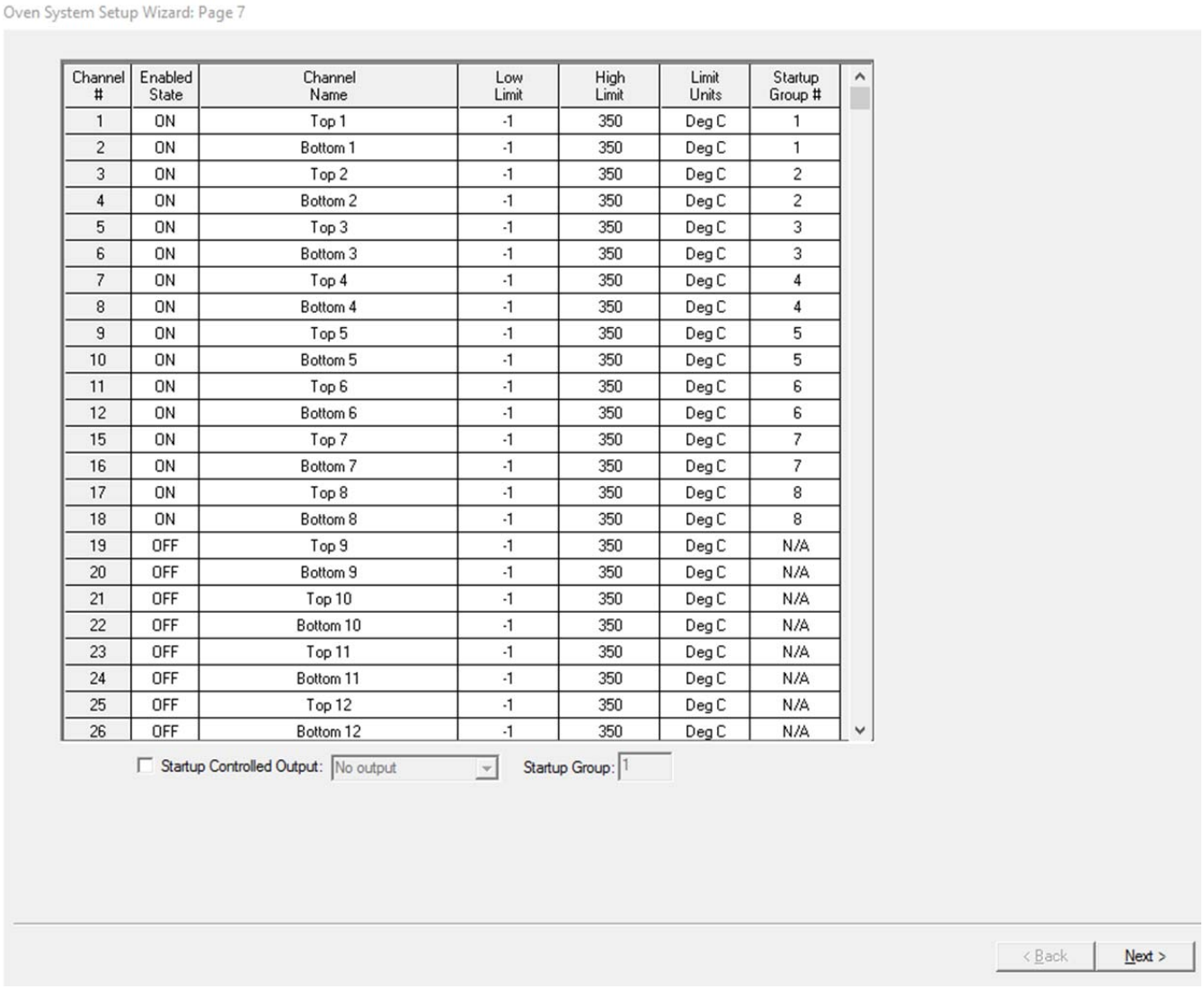
Board Sensor Delay Output: optional digital output that can turn on for a specified time after a delay when a board enters the oven. This output can be used for options like water spray cooling or internal vacuum system.

Lot Tracking: Is used for lot tracking feature. This feature works with SECS/GEM interface option. When lot tracking is enabled, SMEMA will allow board entry only if the lot is defined by SECS/GEM host.

Enable/Disable Lot Tracking Button: Is used to allow user to enable or disable the lot tracking feature from the main overview screen. When lot tracking is disabled, SMEMA can accept a board without a lot defined.

Animation Bottom to Top: By default, board animation is displayed from top to bottom starting with lane1 on the overview screen. This option selection will reverse the display from bottom to top, starting with lane1 on bottom.

Page 7:



Channel #	Enabled State	Channel Name	Low Limit	High Limit	Limit Units	Startup Group #
1	ON	Top 1	-1	350	Deg C	1
2	ON	Bottom 1	-1	350	Deg C	1
3	ON	Top 2	-1	350	Deg C	2
4	ON	Bottom 2	-1	350	Deg C	2
5	ON	Top 3	-1	350	Deg C	3
6	ON	Bottom 3	-1	350	Deg C	3
7	ON	Top 4	-1	350	Deg C	4
8	ON	Bottom 4	-1	350	Deg C	4
9	ON	Top 5	-1	350	Deg C	5
10	ON	Bottom 5	-1	350	Deg C	5
11	ON	Top 6	-1	350	Deg C	6
12	ON	Bottom 6	-1	350	Deg C	6
15	ON	Top 7	-1	350	Deg C	7
16	ON	Bottom 7	-1	350	Deg C	7
17	ON	Top 8	-1	350	Deg C	8
18	ON	Bottom 8	-1	350	Deg C	8
19	OFF	Top 9	-1	350	Deg C	N/A
20	OFF	Bottom 9	-1	350	Deg C	N/A
21	OFF	Top 10	-1	350	Deg C	N/A
22	OFF	Bottom 10	-1	350	Deg C	N/A
23	OFF	Top 11	-1	350	Deg C	N/A
24	OFF	Bottom 11	-1	350	Deg C	N/A
25	OFF	Top 12	-1	350	Deg C	N/A
26	OFF	Bottom 12	-1	350	Deg C	N/A

On this page, Heat channels will be enabled as per Oven Model selected on Page1.

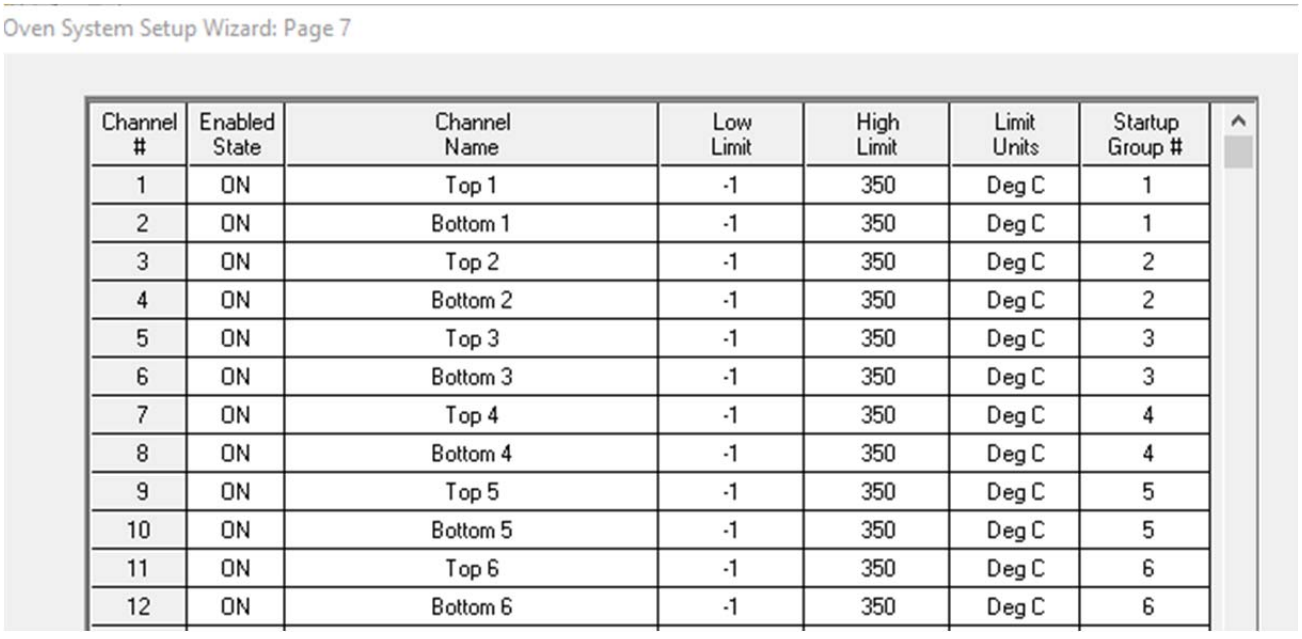
High Limit: 350 Deg C for standard oven heat channel
(In Heat channel setup Hi Process: 400 Deg C, (50 + High Limit))
Cool1 Flux Heater – OFF state (ON for heated cool zone1)
Belt 1 Speed (channel # 14) – ON state, default as startup group1
Profile Ports (channel # 27,28,29,30,31) – OFF state
Belt 2 Speed (channel # 32) – OFF state (- ON only for Dual Belt Speed)
Cool2 Flux Heater – OFF state (ON for heated cool zone2)
Cool3 Flux Heater – OFF state (ON for heated cool zone3)
Start Group # - enter Heat Zone Startup sequence according to oven model and oven operating voltage (Low Voltage: 208-240V, High Voltage: 380-480V). Put flux heater channels in a separate last startup group.
* If “TH” is set as startup group#, channel will not be part of startup sequence.

This Heat channel will start as soon as a recipe is loaded. Following are properties for this channel

- No heat rise rate alarm
- This channel is not considered for features like “more than 5 zones running at 100% output power” and “heat#: is drawing output power beyond threshold”.
- Flux heater channels, cool1 & cool2, cannot set as “TH”
- Can be used for closed loop tunnel heater

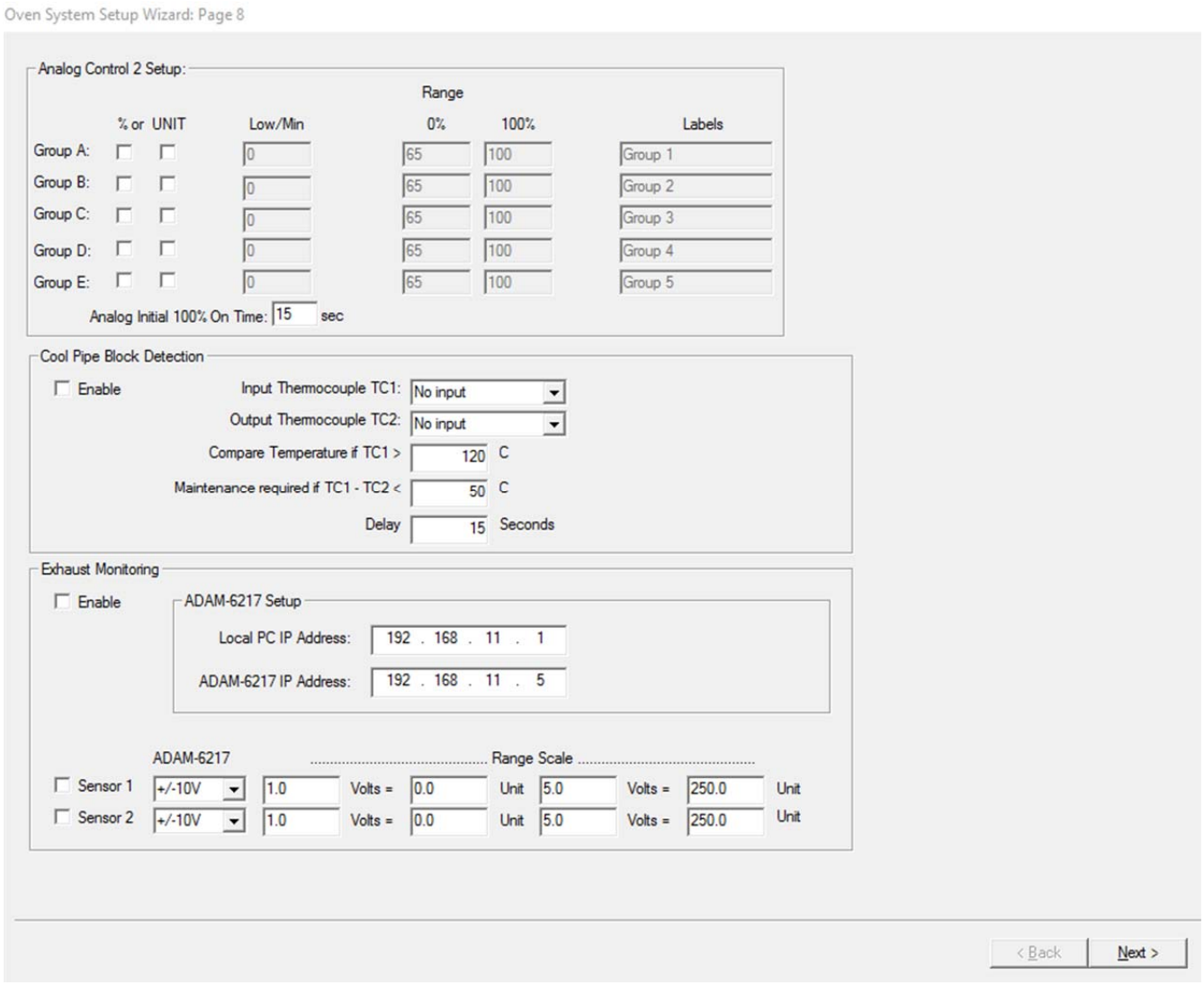
Startup Controlled Output: This option allows a digital output, (relay), to be activated by the startup sequence. Set available digital output and startup group#. During main program operation, the digital output will turn on as part of the startup group either after a recipe load or if startup is re-initiated. If digital output is on during cooldown load, it will stay on until blowers turn off.

Additional columns on page7 are displayed when “Blower failure delayed cooldown”, “Current failure delayed cooldown”, “Heater failure delayed cooldown”, “Heat zone cooling control” or “Alarm Scanner” options are selected. This is to assign proper I/O channel# to heat zone channel.
For “Blower failure delayed cooldown” option, blower RPM input channel# needs to associate with heat zone.
For “Current failure delayed cooldown” option, current data input channel# needs to associate with heat zone.
For “Heater failure delayed cooldown” option, external digital input channel# needs to associate with heat zone.
For “Heat zone cooling control” option, proper digital output needs to associate with heat zone.
For “Alarm Scanner” option, monitoring thermocouple input channels needs to associate with heat zone.



Channel #	Enabled State	Channel Name	Low Limit	High Limit	Limit Units	Startup Group #
1	ON	Top 1	-1	350	Deg C	1
2	ON	Bottom 1	-1	350	Deg C	1
3	ON	Top 2	-1	350	Deg C	2
4	ON	Bottom 2	-1	350	Deg C	2
5	ON	Top 3	-1	350	Deg C	3
6	ON	Bottom 3	-1	350	Deg C	3
7	ON	Top 4	-1	350	Deg C	4
8	ON	Bottom 4	-1	350	Deg C	4
9	ON	Top 5	-1	350	Deg C	5
10	ON	Bottom 5	-1	350	Deg C	5
11	ON	Top 6	-1	350	Deg C	6
12	ON	Bottom 6	-1	350	Deg C	6

Page 8:



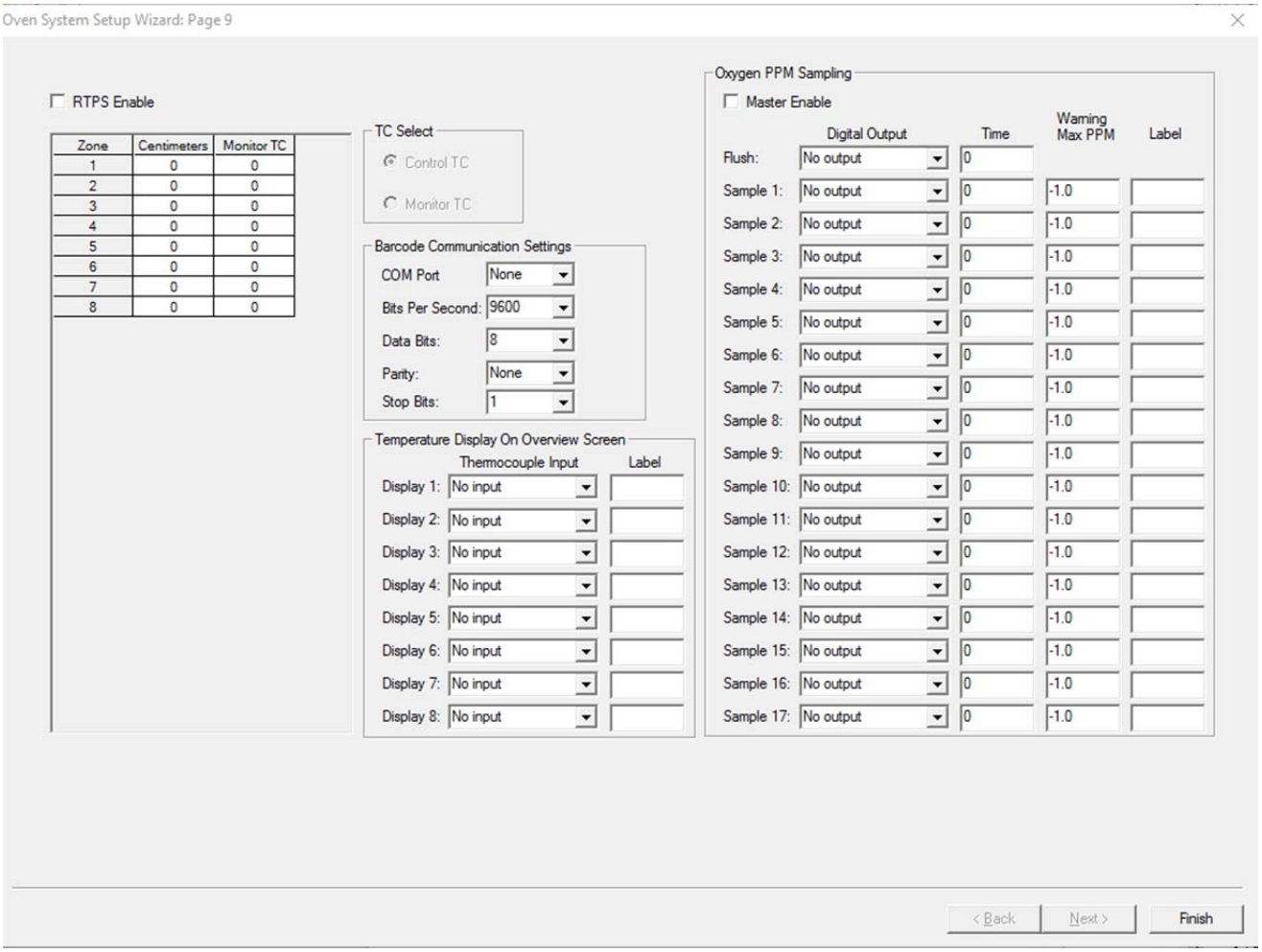
Analog Control 2 Setup: Additional five analog 0-5Vdc outputs are available from the 2nd HC2 controller. These can be programmed to use as % set value, (0-100,) or any unit, (ex. SCFH N2 flow).
For this option, dual HC2 oven controllers, (Primary-Secondary), must be used.

Cool Pipe Block Detection: This option is used to detect cool pipe blockage based on temperature difference at entrance and exit of cool pipe. If temperature drop is less than the set value, the oven will generate a warning message.

Exhaust Monitoring: This option is used to read exhaust pressure from 1 or 2 sensors and report to SECS/GEM.

ADAM-6217**, (**8-Channel Isolated Analog Input Modbus® TCP Module), remote IO module is used to convert pressure sensor analog signal to data reading.

Page 9:

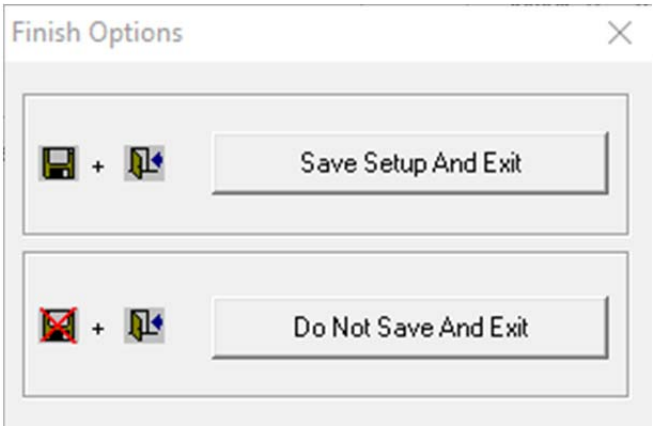


RTPS Enable:
Refer to the separate manual addendum for details.

Temperature Display On Overview Screen: This option allows additional thermocouples to be installed and monitored. Refer to the separate manual addendum for details.

Oxygen PPM Sampling: This option allows custom O2 PPM sampling using single channel O2 analyzer. Refer to the separate manual addendum for details.

Click on Finish to exit with or without saving.

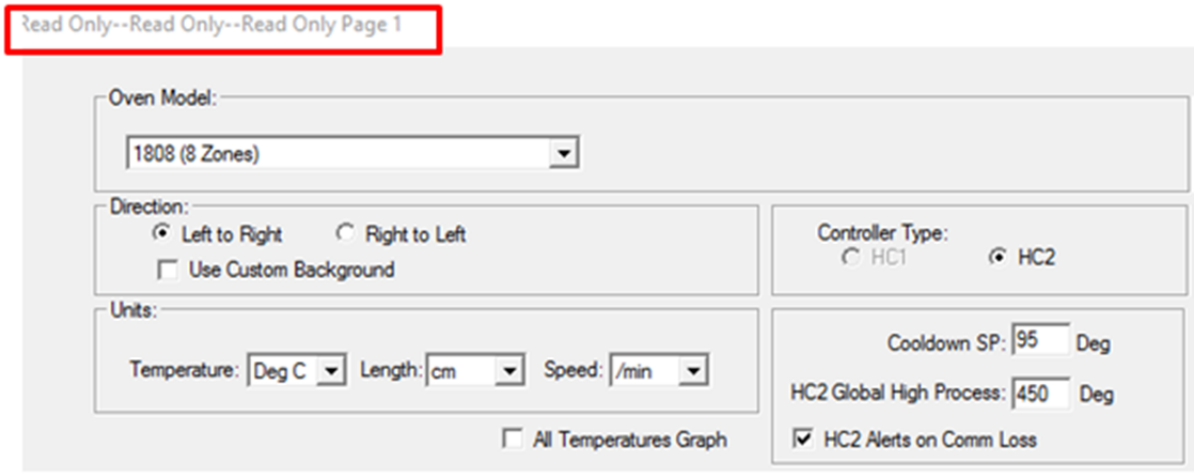


NOTES:

1. When selecting options, make sure the oven is equipped with the proper hardware.

2. Use the RJ45 port for communication from computer to HC2 controller. (Set computer IP address as 192.168.10.1)

3. If the Oven Setup Wizard is accessed while the oven program is running, it will open in read only mode and any **changes will not be saved**.



4. To Run the Oven Operating Program in DEMO mode –
   Change the Target in “Oven Operating Program” desktop shortcut properties and add DEMO as "C:\oven\Oven Operating Program.exe" DEMO

Oven Setup Wizard checklist for HC2 Controller:

MODEL:	CUSTOMER NAME:		
CO#	S/N:	SOFTWARE VER:	DATE:

Page 1

Oven Model: _____ (select from 4 to 24 zone model)

Oven Direction: ☐ Left to Right ☐ Right to Left ☐ Use Custom Background	Controller Type ☐ HC2 HC2 IP Address: 192 . 168 . 10 . 250

Temperature:	☐ Deg C	or	☐ Deg F	Speed: /min	Cooldown SP: _95_Deg
Length:	☐ Cm	or	☐ inch		HC2 Global High Process: _450_Deg
			☐ All Temperatures Graph		☐ HC2 Alerts on Comm. Loss

Startup Parameters: Maximum Output before next Group Start: **80** % Power up Delay Time : 5 sec. Maximum Heat Zones in Startup Group : 4	T/C Short Detection: Minimum Heater Temp Rise : 5 ^{O}C or 9 ^{O}F (1 ^{O}C for IR-panels) Rise Check Period : 60 sec ☐ Warning on rise rate (alarm when unchecked) Power Draw Warning : 100 %
Oven Label Text:	
OVEN ☐ Opaque Background	Power Failure Detection Time: **15** sec
Barcode:	☐ Launch the following program:
☐ Start Barcode Reader Set BC Program Path	
☐ Audible Alarm on Barcode Error	File Path: C:\ECD\OvenCpCpk\OvenCpCpk.exe
☐ SECS/GEM Interface ☐ V5.5.X.X compatible	Default Language: English
File Path: C:\HellerSecsgem\HellerSecsgem.exe	☐ KIC-LDO _____ Sec
☐ Keep log files for last : _____ Days	
☐ Add recipe name to data log	

Page 2

☐ Center Board Support Up/Down
☐ CBS Up/Down Feedback
☐ Second Center Board Support Up/Down
☐ Second CBS Up/Down Feedback
☐ Classic CBS Bitmap[1st]
☐ Classic CBS Bitmap[2nd]

☐ Flux Condensation Service Option

☐ Nitrogen Computer Ctrl.
☐ Password Protect Nitrogen Button
☐ O2 Sensor Settings
N2 Purge/Standby Sensor Input:_____
☐ Heat zone Cooling control. PID Period: _____ Seconds
☐ Heat zone cooling in Cooldown mode
☐ Skip startup seq. for heat zone cooling

☐ N2 Auto Purge/Standby
Purge Time: _____ min.
Normal Time: _____ min.

○ [Timed] Air Gen-5
○ [Recipe] Gen-5
○ [Recipe] Gen-9

☐ Edit Interval in Operating Program
☐ Autoclean Reminder

Purge Output: _____
Recipe Output: _____

Interval: _____ Hr.
Cycle Duration: _____ Min
Cycle Start Check: _____ Min
Flux Heater Delay: _____ Min
Phase-1: _____Min
Phase-2: _____Min

☐ Custom Message/Alarm1
☐ Custom Message/Alarm2
☐ Custom Alarm/Warning 3
☐ Custom Alarm/Warning 4
☐ Custom Alarm/Warning 5
☐ Harman MES
☐ Yamaha APCO Upstream Board
Available: Digital Input _____
☐ Custom Digital Switch
☐ Flux Filter (Gen4, service ind)
Interval Time:_____Hr
☐ SEC Light Tower Function

☐ Custom Message on Autoclean.job load: _____

☐ Redundant Overtemp

☐ Auto Lube # 1
Interval: _____Hrs.
Duration:_____ sec

☐ Auto Lube # 2
Interval: _____Hrs.
Duration:_____ sec

☐ Water Alarm (sec)
☐ Warning: 15
☐ Alarm: 30

Low Exhaust Alarm: (sec)
☐ Warning: 15
☐ Alarm: 30

☐ Users will be automatically Logged off
Log off Time: _____hrs _____min

Low N2 Alarm: (sec)
☐ Warning: 15
☐ Alarm: 30

☐ Auto log down to operator level
Time: _____ hrs _____min

☐ Dual Light Tower
☐ Dual Lane Barcode (XXxxxxxxx-XXX-XXX)

☐ Board Entry Logging/Barcode Configuration
File Directory: _____
Machine Name: _____
☐ Add Index info Version: _____

Light Tower Setup
☐ Disable Silence Alarm Button

☐ Barcode Secs/Gem
☐ Secs/Gem settable DOUT
Secs/Gem Warning Option
Secs/Gem CEID on Digital Input

☐ Custom Message/Alarm Setting1:
Digital Input: _____
Digital Output: _____
Light Tower: _____
Display Text: _____
(Note: Make sure proper hardware is installed)

Active: _____
Type: _____
Delay: ___ sec
☐ Audible (Buzzer)

☐ Custom Message/Alarm Setting2:
Digital Input: _____
Digital Output: _____
Light Tower: _____
Display Text: _____
(Note: Make sure proper hardware is installed)

Active: _____
Type: _____
Delay: ____ sec
☐ Audible (Buzzer)

☐ Custom Alarm/Warning 3
Digital Input: _____
Digital Output: _____
☐ Warning: _____ Sec or cm/inch
Warning Display: _____
☐ Alarm: _____
Alarm Display: _____
(Note: for distance setup, time is calculated based on conveyor 1 SP)

Active: _____
Act On: _____
☐ Audible Warning (Buzzer)

☐ Custom Alarm/Warning 4
Digital Input: _____
Digital Output: _____
☐ Warning: _____ Sec or cm/inch
Warning Display: _____
☐ Alarm: _____
Alarm Display: _____
(Note: for distance setup, time is calculated based on conveyor 1 SP)

Active: _____
Act On: _____
☐ Audible Warning (Buzzer)

☐ Custom Alarm/Warning 5
Digital Input: _____
Digital Output: _____
☐ Warning: _____ Sec or cm/inch
Warning Display: _____
☐ Alarm: _____
Alarm Display: _____
(Note: for distance setup, time is calculated based on conveyor 1 SP)

Active: _____
Act On: _____
☐ Audible Warning (Buzzer)

☐ Custom Digital Switch
Digital Output:_____
☐ Digital Switch Feedback:_____
☐ Label:_____

☐ O2 Sensor Settings: Oxygen Sensor
Type:_____
O2 Sensor type
☐ Single Channel Monitor
☐ Multi-Channel Monitor
Additional O2 Sensor Settings
☐ Closed Loop with Standby control
PPM Level Normal: _____
PPM Level Standby: _____
☐ Release Autopurge/Standby Digital Outputs
☐ User can acknowledge connection loss

Alarm2 Selection:
☐ Alarm1 High PPM
☐ Alarm2 High PPM
☐ Alarm2 Low PPM

Alarm1 Level Normal: _____
Alarm1 Level Standby: _____

(Note: for Closed loop with Standby control option select “Auto Purge / Standby” option also)

☐ SEC Light Tower Function:
Digital Input: _____
Active: _____
Interval Delay Time: _____ Seconds or Minutes or hours

☐ First Lane Entrance Sensor
☐ Second Lane Entrance Sensor
☐ Third Lane Entrance Sensor
☐ Fourth Lane Entrance Sensor
☐ Solid Light Tower

Board Entry Logging/Barcode, configuration
☐ Panel ID Barcode Setting
COM Port: _____
Bits per second: _____
Data bits: _____
Parity: _____
Stop bits: _____

Light Tower Setup:

	Color:	Action:	Buzzer:
New Recipe, SP Change:	_____	_____	_____
Ready (oven empty):	_____	_____	_____
Ready (products in oven):	_____	_____	_____
Warning:	_____	_____	_____
Alarm Cooldown:	_____	_____	_____
E-stop Cooldown:	_____	_____	_____

Sequence:

	Top:	Center:	Bottom:
Light Tower sequence:	_____	_____	_____

☐ Output for Audible Warning : _____

Secs/Gem settable DOUT

ECLight1 Output:_____
ECLight2 Output:_____
ECLight3 Output:_____

Secs/Gem Warning Option configuration:

	Warning Display Message	Light Tower Color	Buzzer
☐ EC 2055		☐ Yellow / Red	☐
☐ EC 2056		☐ Yellow / Red	☐
☐ EC 2057		☐ Yellow / Red	☐
☐ EC 2058		☐ Yellow / Red	☐

Secs/Gem CEID on Digital Input:

	Digital Input
Upstream Signal 1:	
Upstream Signal 2:	
Upstream Signal 3:	
Upstream Signal 4:	

Barcode Secs/Gem settings:

COM Port: _____
Bits per second: _____
Data bits: _____
Parity: _____
Stop bits: _____

Digital Input: _____
Digital Output: _____
Scan Allow Time (sec): _____

Note: for SECS/GEM related options, select SECS/GEM interface option on page1

Page 3

Blower Control Setup:

☐ RPM Warning Level: _____, _____, _____ Type: _____

	% or RPM		Single or L-M-H		Intelligent Exhaust	Standby Mode	Low/Min	Medium	High/Max	Labels
Group A:	☐	☐	☐	☐	☐	☐	____	_____	_____	_____
Group B:	☐	☐	☐	☐	☐	☐	____	_____	_____	_____
Group C:	☐	☐	☐	☐	☐	☐	____	_____	_____	_____
Group D:	☐	☐	☐	☐	☐	☐	____	_____	_____	_____
Group E:	☐	☐	☐	☐	☐	☐	____	_____	_____	_____

Blower Initial Maximum Output Time: 15_____ Sec.

☐ Blowers at High Speed during recipe startup

Upstream Signal : _____

☐Display blower groups on main screen

Select Blower RPM Setup file: _____

Blower Failure:

☐ Alarm 30 Sec. ☐ Warning 15 Sec. ☐ Audible Warning

		Select Analog (Thermocouple) Input:	Select TPO Output:
☐ Visible Flux 1 heater	☐ Flux 1 heater	_____	_____
☐ Visible Flux 2 heater	☐ Flux 2 heater	_____	_____
☐ Visible Flux 3 heater	☐ Flux 3 heater	_____	_____
	Top 13:	_____	_____
	Bottom 13:	_____	_____
	Top 14:	_____	_____
	Bottom 14:	_____	_____

(Warning for RPM setup, make sure that blower RPM graph(*.csv) file has correct data according to control hardware and blower used.)

☐ Blower RPM Port Setting

PC Communication Settings		Blower RPM Port Settings	
COM Port:	_____	Number of Boards:	_____
Bits per second:	4800	Sampling rate (Sec):	5
Data bits:	8	Alarm Relay RPM Value:	1000
Parity:	None	Max Blowers:	_____
Stop bits:	1		

☐ Blower failure delayed cooldown

☐ Current Monitoring Port Setting

PC Communication Setting		Current Monitoring Settings	
COM Port:	_____	Slave Address:	_____
Bits per second:	4800	Sampling rate (Sec):	5
Data bits:	8	Max Registers:	_____
Parity:	None		
Stop bits:	1		

☐ Current failure delayed cooldown

Alarms and Warnings Settings

Current at OP100 (Amps): _____	☐ Enable Low Current Alarm
Current Limit (Amps): _____	☐ Enable High Current Alarm
Comm Loss Retries: 3__	☐ Enable Comm Loss Warning

☐ Heater Failure Setup
Max Sensors: 24
Adam-6050 #1 IP: 192.168.11.2
Adam-6050 #2 IP: 192.168.11.3
Local PC IP: 192.168.11.1
EXE Path: C:\Oven\HC2_Digital_Discretes\HC2_Digital_Discretes.exe

☐ Heater failure delayed cooldown

☐ Enable Terminal Read Settings

Tag Label: _____
COM Port: _____
Bits per second: _____
Data bits: _____
Parity: _____
Stop bits: _____

Page 4

Movable Rails and Rail Configuration: (Computer controlled rails)

Units: cm / mm

☐ 1st Computer controlled Rail Width
Control Type: Automatic/Manual
Coast Offset:____ ❑ Home IN
Backup Dist:____ ❑ Hunt as Home IN
Home Dist:_____
Travel Dist:_____Min _____Max
Pulse per cm: 1576
Tolerance +_____ - _____
Maximum Retry: _____ Lane: _____

☐ 3rd Computer controlled Rail Width
Control Type: Automatic/Manual
Coast Offset:____ ❑ Home IN
Backup Dist:____ ❑ Hunt as Home IN
Home Dist:_____
Travel Dist:_____Min _____Max
Pulse per cm: 1576
Tolerance +_____ - _____
Maximum Retry: _____ Lane: _____

☐ 2nd Computer controlled Rail Width
Control Type: Automatic
Coast Offset:____ ❑ Home IN
Backup Dist:____ ❑ Hunt as Home IN
Home Dist:_____
Travel Dist:_____Min _____Max
Pulse per cm: 1576
Tolerance +_____ - _____
Maximum Retry: _____ Lane: _____

☐ 4th Computer controlled Rail Width
Control Type: Automatic
Coast Offset:____ ❑ Home IN
Backup Dist:____ ❑ Hunt as Home IN
Home Dist:_____
Travel Dist:_____Min _____Max
Pulse per cm: 1576
Tolerance +_____ - _____
Maximum Retry: _____ Lane: _____

☐ Manual (Hardware) Rail Controls Rail startup group: _____

☐ Rail exercise feature 2nd Cbs Exercises w/Rail: _____

(Set rail drive motor voltage for EXL/MK3.5 Model between 48V to 53V, for SX Model set between 28V to 33V)
(For single edge hold select, 1st Computer Controlled Rail Width,
For dual edge hold select, 1st and 2nd Computer Controlled Rail Width,
For single edge hold w/ CBS select, 1st Rail Width for CBS and 2nd Rail Width for Edge Hold)

Page 5

Conveyor Belt Options

☐Slow Belt Display & Warning Bands ☐Show actual Belt PV in Dead band ☐Audible Alarm on Belt Warning	☐Auto Acknowledge Warning on Ok ☐Audible Alarm on Low Exhaust Warning ☐Audible alarm on Dansensor Warning ☐Alarm window shortcut on overview	☐Disable New Job Output ☐Disable Heat Zone Deviation Alarms ☐Disable Auto Acknowledge Warnings ☐Run Multimedia file on Alarm ☐Run Multimedia file on Warning

☐ Monitoring Temperature HC2 ☐ Alarm Scanner Output: _____	☐ Backup / Duplicate Belt Controller Belt Selection Relay: _____ Belt Selection Output: _____
Alarming & Cooldown Delays Hi Process Delay: _____ sec ☐ Delayed Cooldown, Delay Time: _____ min	Switch Delay: _____ Sec. Audible Alarm when switch to: ☐ Motor-B ☐ Input-B

Page 6

Belt Speed Control

BELT ONE	BELT TWO
☐ Closed Loop Input range high : _____ /min Input range low : **0** cm/min or in/min Max Frequency : _____ Hz Warning Delay Time: _____ sec Dead band Dev Time: _____ sec Stop - Digital Input _____	☐ Closed Loop Input range high : _____ /min Input range low : **0** cm/min or in/min Max Frequency : _____ Hz Warning Delay Time: _____ sec Dead band Dev Time: _____ sec Stop - Digital Input _____ ☐ Belts are included in startup sequence

☐ Open Loop (for 1088)
Maximum output : 100% = **100** cm/min
Minimum output : 0% = **0** cm/min

☐ Switch Range >= _____cm/min or in/min Switch Output: _____

Board Tracking option:

☐ Smema Lane#3
☐ Audible Board Warning
☐ Board processed
☐ Board in Oven
☐ Board Drop Warning – **Timed**
☐ Exit Board Stop Warning
Sensor distance : _____cm

Animation Lane1: Disable / L-R / R-L
Animation Lane3: Disable / L-R / R-L

☐ Predefined board length:
L1 _____cm
L2 _____cm
L3 _____cm
L4 _____cm
Board Spacing
L1 _____cm
L2 _____cm
L3 _____cm
L4 _____cm

☐ Smema Lane#4
☐ Audible Board Warning
☐ Board processed
☐ Board in Oven
☐ Board drop Warning – **Timed**
☐ Exit Board Stop Warning
Sensor distance : _____ cm

Animation Lane2: Disable / L-R / R-L
Animation Lane4: Disable / L-R / R-L

Interface type : _____
Board Cutout(Spacing) Entrance : _____ cm
Board Cutout(Spacing) Exit : _____ cm
Board Stop Time : _____ sec

Interface type : _____
Board Cutout(Spacing) Entrance : _____ cm
Board Cutout(Spacing) Exit : _____ cm
Board Stop Time : _____ sec

☐ Cure Oven SMEMA Belt Stop Delay : _____ Sec

Board Drop Tolerance + : _____ cm
Board Exit Tolerance - : _____ cm
☐ Entrance Board Jam/Stop Warning
☐ Disable board length from board drop calculation

Board Sensor Delay Output _____
On After :____in (Board length) + Duration :____in

New Recipe Delay : _____ cm
☐ Red Light on board drop/stop ☐ Delayed-Timed Output
☐ Lot tracking ☐ Enable/Disable lot tracking button
☐ Animation Bottom to Top

☐ Board Warning Digital Outputs ☐ Max boards per lane using SMEMA _____ ☐ Board In/Out (sensor trigger only, no animation)
☐ Digital output on board count ☐ SECS/GEM SMEMA On, Off after Board Entry

(Must enter a sensor distance value for all ovens with board count or board drop option)

☐ Board Warning Digital Outputs
Lane 1: _____
Lane 2: _____
Lane 3: _____
Lane 4: _____

☐ Delayed Time Output
☐ Active Input (High)
☐ Use board sensor input
☐ Use Belt 2
Digital Input: _____
Digital Output: _____
On After: _____ cm Duration: _____ cm / sec

☐ Digital output on board count
Digital Output for Lane 1: _____
Digital Output for Lane 2: _____
Digital Output for Lane 3: _____
Digital Output for Lane 4: _____
Action: _____
Board Count >: _____

On this page heat channel will be enabled as per oven model selected on page 1. (In heat channel setup Hi process: 50 + High Limit)

Channel #	Enabled State	Channel Name	Blower RPM	Cool D-Out		Scanner-Inp	Low Limit	High Limit	Limit Units	Startup Group #
1	ON / OFF	Top 1								
2	ON / OFF	Bottom 1								
3	ON / OFF	Top 2								
4	ON / OFF	Bottom 2								
5	ON / OFF	Top 3								
6	ON / OFF	Bottom 3								
7	ON / OFF	Top 4								
8	ON / OFF	Bottom 4								
9	ON / OFF	Top 5								
10	ON / OFF	Bottom 5								
11	ON / OFF	Top 6								
12	ON / OFF	Bottom 6								
15	ON / OFF	Top 7								
16	ON / OFF	Bottom 7								
17	ON / OFF	Top 8								
18	ON / OFF	Bottom 8								
19	ON / OFF	Top 9								
20	ON / OFF	Bottom 9								
21	ON / OFF	Top 10								
22	ON / OFF	Bottom 10								
23	ON / OFF	Top 11								
24	ON / OFF	Bottom 11								
25	ON / OFF	Top 12								
26	ON / OFF	Bottom 12								
	ON / OFF	Top 13								
	ON / OFF	Bottom 13								
	ON / OFF	Top 14								
	ON / OFF	Bottom 14								
	ON / OFF	Top 15								
	ON / OFF	Bottom 15								
	ON / OFF	Top 16								
	ON / OFF	Bottom 16								
	ON / OFF	Top 17								
	ON / OFF	Bottom 17								
	ON / OFF	Top 18								
	ON / OFF	Bottom 18								
	ON / OFF	Cool 1 Flux Heater								
	ON / OFF	Cool 2 Flux Heater								
	ON / OFF	Cool 3 Flux Heater								

14	ON / OFF	Belt 1 Speed								
32	ON / OFF	Belt 2 speed								
27	ON / OFF	Profile 1								
28	ON / OFF	Profile 2								
29	ON / OFF	Profile 3								
30	ON / OFF	Profile 4								
31	ON / OFF	Profile 5								

☐ Startup Controlled Output: _____ Startup Group: _____

Page 8

Analog Control 2 Setup:

			Range			
	% or UNIT		Low/Min	0%	100%	Labels
Group A:	☐	☐	____	_____	_____	_____
Group B:	☐	☐	____	_____	_____	_____
Group C:	☐	☐	____	_____	_____	_____
Group D:	☐	☐	____	_____	_____	_____
Group E:	☐	☐	____	_____	_____	_____

Analog Initial 100% On time: _____ sec

Cool Pipe Block Detection
☐ Enable
Input Thermocouple TC1: _____
Output Thermocouple TC2:_____
Compare Temperature if TC1 > _____C
Maintenance required if TC1-TC2 < _____C
Delay: _____Sec

Exhaust Monitoring
☐ Enable
ADAM-6217 Setup
Local PC IP Address 192. 168. 11 .1
ADAM-6217 IP Address 192. 168. 11 .5

	ADAM-6217 ……..Range Scale…….					
☐ Sensor 1	_____	_____	Volts = _____	Unit _____	Volts = _____	Unit
☐ Sensor 2	_____	_____	Volts = _____	Unit _____	Volts = _____	Unit

Page 9

☐ RTPS Enable

Zone	Centimeters	Monitor TC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

TC Select

○ Control TC
○ Monitor TC

Barcode Communication Settings

COM Port	
Bits Per Second	
Data Bits	
Parity	
Stop Bits	

Temperature Display On Overview Screen		
	Thermocouple Input	Label
Display 1		
Display 2		
Display 3		
Display 4		
Display 5		
Display 6		
Display 7		
Display 8		

Page 9 Continued

Oxygen PPM Sampling ☐ Master Enable				
	Digital Output	Time	Warning Max PPM	Label
Flush:				
Sample 1:				
Sample 2:				
Sample 3:				
Sample 4:				
Sample 5:				
Sample 6:				
Sample 7:				
Sample 8:				
Sample 9:				
Sample 10:				
Sample 11:				
Sample 12:				
Sample 13:				
Sample 14:				
Sample 15:				
Sample 16:				
Sample 17:				