EMCS Portable Batch Only Revisions

VERSION 2.14 RELEASE NOTES   Steve Logue   Release Date: March 30, 1998
- Put in software for watchdog.

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VERSION 2.13 RELEASE NOTES   Release Date: July 5, 1996
- Remove j5-01 from the wiring of the moisture controller.

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VERSION 2.12 RELEASE NOTES   Release Date: July 5, 1996
- Made the rear discharge give the correct error.
- Made left and right messages for grain temp sensors.

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VERSION 2.11 RELEASE NOTES   Release Date: July 5, 1996

Tim McDonough/Steve Logue @ Illini Technology, Inc.
- Corrected the out of grain timer so it runs in the low heat load cycle.
- Added software so the air switch would be automatically reset to the testing state after power was turned off.

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VERSION 2.10 RELEASE NOTES   Release Date: October 24, 1995
- Corrected the problem of the low heat load selection not working properly.
- Altered program so it no longer loads timer values from tic to fix the problem of the wrong value being admitted into the timers.
- Added mercoid safeties for Canadian batch dryers to sense hi gas pressure. J4-20 and j4-18 must be jumpered out on normal batch dryers.

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VERSION 2.05 RELEASE NOTES   Release Date: October 25, 1994

Tim McDonough @ Illini Technology, Inc.
- When the setup mode is entered, one of the items the user can configure is called LOW HEAT LOAD. This defaults to NO. If it is changed to YES then the dryer will load grain during the low heat cycle or the high heat cycle when the grain level switch calls for it and the load control switch is in automatic mode. The dryer is normally prevented from adding wet grain once the high heat cycle is complete.

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VERSION 2.04 RELEASE NOTES   Release Date: October 21, 1994
- Added updated emergency cooling software to match that used in the combination dryers, eliminating the need for the two emergency cooling diodes.
- Revised the high heat controls for burner operation during temperature hold. The burner should cycle properly between high and low heat based on the state of the low heat thermostat.

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VERSION 2.03 RELEASE NOTES   Release Date: September, 1994
- In two fan dryers both fans are now controlled by the "Fan 1" switch. The jumpers to the "Fan 2" control switch inputs are no longer needed.
- The default message in the "user message editor" is now the serial number for the dryer.
- The error message associated with the second, non-existent plenum has been removed from the software.
- A Burner 2 shutdown should now produce a burner 2 shutdown message as expected.
- The low thermostat is now tested during the temperature hold phase of operation. The dryer should not cycle between the
  two thermostats during temperature hold because the low heat cycle is being extended and low heat uses the low heat thermostat to control the burner solenoids.

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VERSION 2.02 RELEASE NOTES   Release Date: August 18, 1994
- The display alignment procedure now resets the run time meter to zero hours. This change was required due to changes in Illini's factory testing and burn in procedures.

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VERSION 2.01 RELEASE NOTES   Release Date: May 26, 1994
- The "FAN MOTOR OVERLOAD" warning message has been changed to "MOTOR OVERLOAD".
- When presetting the NOVRAM, the run-time meter is no longer reset to zero.
- The default fan delay time has been changed to 1 second.
- Air Switch testing is now enabled when the NOVRAM is preset.
- The Emergency Cooling Time has been changed from 1 minute to 5 minutes.
- The High Heat and Cool timer windows are blanked during Emergency Cooling Mode operation.
- During Emergency Cooling, the most likely cause of the over temperature shutdown is displayed on the LCD.

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- Version 2.00E of the Batch Dryer software was sent to GSI customers in Pennsylvania. It's considered the first official release of 2.00

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| With this software release, the version number has been bumped to 2.00 to reflect major software changes required to implement new features for 1994 |
| and later dryers. Versions with numbers such as 2.00A, 2.00B, etc. are for GSI use only.  The first "official" version for customer use will be 2.00         |
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Pre-Release "E": (April 14, 1994)
- Changed control wiring and software so that the dryer uses hi-heat and lo-heat thermostats to control the gas solenoids. Hi is used during the hi heat portion of the dry cycle and Lo is used during the low heat portion of the cycle.

Pre-Release "D": (Lost)

Pre-Release "C":
- Modified the code that changes the unload delay value so that it displays the programmed value first and asks the user to press MODIFY before going to the editing screen.

Pre-Release "B":
- Updated the emergency cooling mode software to work like that in the combination dryers.

Pre-Release "A":
- Reconfigured the actions of the front panel switches to be the same as the Combination Dryer operation.
- Added Emergency Cooling Mode software to allow users to run the fans to cool rain after a temperature related shutdown.
- Added the message editor software to allow a user message to be programmed and displayed when the dryer computer restarts.
- Added the capability to view the error history anytime the dryer is running.
- Added additional tests and error logging to shutdown on a loss of airflow when the fans are running.

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VERSION 1.06 RELEASE NOTES   Release Date: November 23, 1993
   The items listed on GSI's fax of 11-18-1993 have been addressed.
- The dryer now restarts properly if it is stopped or a shutdown occurs while unloading grain.
- If the dryer stops while holding for temperature or in the "cool" cycle, it will resume the cool cycle when restarted.
- While in the "modify" mode, the software now continues to process any running timers and will check for warnings and switch changes.
- The dryer no longer resets timers or reverts to the previous operating cycle if the "start" switch is pressed while the dryer is already processing grain.
- If air switch testing is enabled and a fan cannot start because its air switch is still closed, a message is displayed on lines 2 and 3 of the LCD display.
- With the load switch in "manual" and the fans and burners shut off, the load auger will now run when "start" is pressed to allow manual filling of the dryer.
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VERSION 1.05 RELEASE NOTES   Release Date: November 19, 1993
- The total hours display is now properly erased to prevent the total batches value from being improperly displayed.
- Pressing the timer switches to check the programmed values no longer resets the time unless the value is actually modified.
- The software has been changed to allow values up to 199.9 minutes to be programmed into the timers and delays.
- The fan air switches are now filtered so they must be open for approximately two seconds before the computer considers it a true loss of airflow.
- The date and time for the system clock can now be set from within the diagnostics mode rather than having to preset the entire dryer to factory defaults.
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VERSION 1.04 RELEASE NOTES   Release Date: November 10, 1993
- The hour meter now displays total run time in hours and minutes. Pressing the INCREASE switch while the dryer is running will briefly display the hours.
- Switch transitions are now cleared in when the stop switch is pressed to prevent false dryer starts if the start switch is pressed before stop when a safety occurs.
- Fan Air Switch testing may now be disabled through a setup screen in the diagnostics mode.
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VERSION 1.03 RELEASE NOTES   Release Date: October 19, 1993
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*               NOTE!!!                  *
*  WHEN YOU FIRST UPGRADE A DRYER TO VERSION 1.03 OR  LATER SOFTWARE FROM A VERSION NUMBER LESS THAN 1.03   *
*  YOU SHOULD TURN POWER ON, PRESS THE RESET SWITCH ONCE  THE TIME AND DATE ARE DISPLAYED, AND THEN PRESS THE    *
*  STOP SWITCH BEFORE RUNNING THE DRYER. THIS PROCEDURE  MUST BE DONE ONLY ONCE SO THAT INFORMATION ABOUT THE  *
*  STATE OF THE TIMERS CAN BE STORED THE FIRST TIME.        *
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- Modified the system to save the state (running/expired) of the main timer functions whenever the system shuts down due to a safety or the stop switch being pressed. These flags are restored when the start switch is pressed to improve the dryers ability to continue what it was doing at the time it was stopped.
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VERSION 1.02 RELEASE NOTES   Release Date: October 15, 1993
- Revised the software that runs when the start switch is pressed so that the dryer starts properly when it is full of grain and the start switch is pressed.
- Added Combination Dryer software that allows the 20 second burner "grace period" to function during the entire heat cycle not just when the burner is first lit.
- Revised moisture control software so that the dryer will still unload if the grain temperature drops during the cool cycle.
- Changed Out of Grain Timer operation so that it does not run during the low heat or cool cycles.
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VERSION 1.01 RELEASE NOTES   Release Date: October 13, 1993
- Changed the main batch processing software so that a "dryer empty" condition must exist for a certain amount of time before grain unloading will stop. This time is user selectable via the UNLOAD DELAY switch on the front panel. When the system is reset by holding the AUX 1 switch when power is applied this value is preset to 5 seconds.
- Revised the fan and burner control software so the fans can no longer start until after the load cycle is completed when the fan control switches are in the "auto" position.
- Revised the timer and delay programming software so that changing a value only resets that particular timer and does not reload all of the system timers.
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VERSION 1.00 RELEASE NOTES   Release Date: October 11, 1993
- First release of software for shipment to end users.
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VERSION 0.03 RELEASE NOTES   Release Date: October 11, 1993
- Changed the run-time meter processing so the meter only increments when a batch cycle is in progress. Previously the meter incremented any time the dryer was turned on.
- Added software to "de-bounce" the dryer empty switch. This is to prevent erroneous empty indications that can cause the unload process to stop prematurely.
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VERSION 0.02 RELEASE NOTES   Release Date: September 30, 1993
- Modified timer processing software to allow for any timer to be set to "0.0". This causes that cycle of the grain processing (dry, cool, unload) to be bypassed.
- Changed run-time meter code so that the meter increments any time the computer is powered up. Previously the meter did not start incrementing until after the user had pressed the reset switch and the main screen was displayed.
- Changed the LCD "TOTAL CYCLES:" message to read "TOTAL BATCHES:"
- The batch cycle counter can now be reset to zero from the diagnostics mode. Hold the reset switch down, after the safety tests you are given an option to reset both the run-time meter and the total batches count.
- The user is now prompted before clearing the historical failure records.
- The currently programmed dryer model number is now displayed as the computer is powered up.
- The "AUX 2" triac output (J7-02) is now energized any time a batch cycle is in progress. This can be used to control an auxiliary operation that should occur only when the dryer is running.
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VERSION 0.01 RELEASE NOTES   Release Date: 09/17/93 12:47 pm
- Changed fan starting procedures so that fans do not start until grain loading is complete.
- Corrected Out Of Grain timer problem.
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VERSION 0.00 RELEASE NOTES   Release Date: 09/01/93
- V0.00 is the test/development version of the Batch Only Dryer software.