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DIGITAL MODEL 48 OPERATING INSTRUCTIONS

PSB Part Number – 70305-470

The digital Model 48 is connected identically to the standard Model 48. All Required inputs and outputs are the same and connect to the same terminals.

The digital Model 48 now has a 16-character LCD display and an enhanced front panel led display. Additional LED's are now included to indicate Cool Cycle and Re-pressurization.

The LCD display can be used in two distinct modes. The normal use of the LCD display is to show cycle information, which includes normal runtime data and alarm conditions. Normal runtime data includes:

1. The portion of the cycle the controller is in and the amount of time remaining in that part of the cycle, i.e. "HEAT 01:21:30".
2. Any of the six thermocouple input temperatures, i.e. "TWR1 BED 120°F"

The Mode Key is used to step through the normal runtime data. Alarm conditions will be displayed if they occur, and the Alarm LED will flash at the same constant rate no matter what the alarm is.

Alarm messages are:

- | | |
|-----------------------|-----------------------|
| 1. "SYSTEM FAILURE" | 8. "TWR2 CNTRL T/C" |
| 2. "SET UP FAILURE" | 9. "TWR1 BED T/C" |
| 3. "TWR1 LIMIT ALARM" | 10. "TWR2 BED T/C" |
| 4. "TWR2 LIMIT ALARM" | 11. "TWR1 HIGH PRESS" |
| 5. "TWR1 LIMIT T/C" | 12. "TWR2 HIGH PRESS" |
| 6. "TWR2 LIMIT T/C" | 13. "TWR1 LOW PRESS" |
| 7. "TWR1 CNTRL T/C" | 14. "TWR2 LOW PRESS" |

The reset key must be pressed to reset an alarm condition.

The controller can be advanced using the combination of the Step Advance switch and the Enter switch. To step advance the unit the STEP ADV. switch is pressed. The Display will then show the message "CAUTION STEP ADV". The user then must press the ENTER key within 15 seconds to step advance the unit one step at a time, or the unit will exit the step advance mode. The user can exit the step advance mode immediately by pressing reset.

The digital Model 48 also has a Set Up Mode to allow changes to the controller's cycle time and temperature settings. These settings should only be adjusted by someone very familiar with the dryer's operation. Please contact PSB's Service Department at (800) 829-1119 for details on this feature or any other questions on the digital Model 48.



Digital Model 48 Programming Instructions

The purpose of these instructions are to describe the methods used to program or reprogram the Digital Model 48 Solid State Control Board.

Making the changes described below will change the operation of the dryer! They should only be performed by qualified personnel. If you have any questions, please contact PSB's Service Department by phone at (800) 829-1119 or (814) 453-3651 or by fax at (814) 459-0521.

Enabling / Disabling The Cycle Failure Option

The Cycle Failure Option of the Digital Model 48 is enabled by the setting of dip switch #1, which is located on the main circuit board behind the smaller display board. (Refer to Figures 1 and 2 on Page 2.) With dip switch #1 in the OFF (right) position, the Cycle Failure option is enabled. With the switch in the ON (left) position, the option is disabled.

Fahrenheit / Centigrade Temperature Display

The Digital Model 48 displays all temperatures in degrees Fahrenheit as supplied from the manufacture. The display can be converted to read degrees Centigrade by mounting a jumper, PSB part number 70400-288, on the 2 pins located on the main circuit board behind the smaller display board. (Refer to Figures 1 and 3 on Page 2.) Removal of the jumper will switch the display back to degrees Fahrenheit.

Using the Set Up Mode to Adjust the Cycle Times and Temperature Setpoints

The cycle times and temperature settings of the Digital Model 48 can be displayed and adjusted by placing the controller into the Set Up Mode. To enter the Set Up Mode, place dip switch #2 in the ON (left) position. (Refer to Figures 1 and 2 on Page 2.) When in the Set Up Mode, the Set Up LED will flash at a constant rate.

In the Set Up Mode, the user has access to HEAT time, COOL time, REPRESS time, DELAY time, LIMIT temp, CONTROL temp, HEAT TERMINation, and COOL TERMINation temperature settings. Use the MODE key to display the setting of interest to the user. If the setting is to be changed, use the UP and DOWN keys to adjust the setting and then press the ENTER key to input the value. If the ENTER key is not pressed, the new value will not be entered. Return dip switch #2 to the OFF (right) position to exit the Set Up Mode.

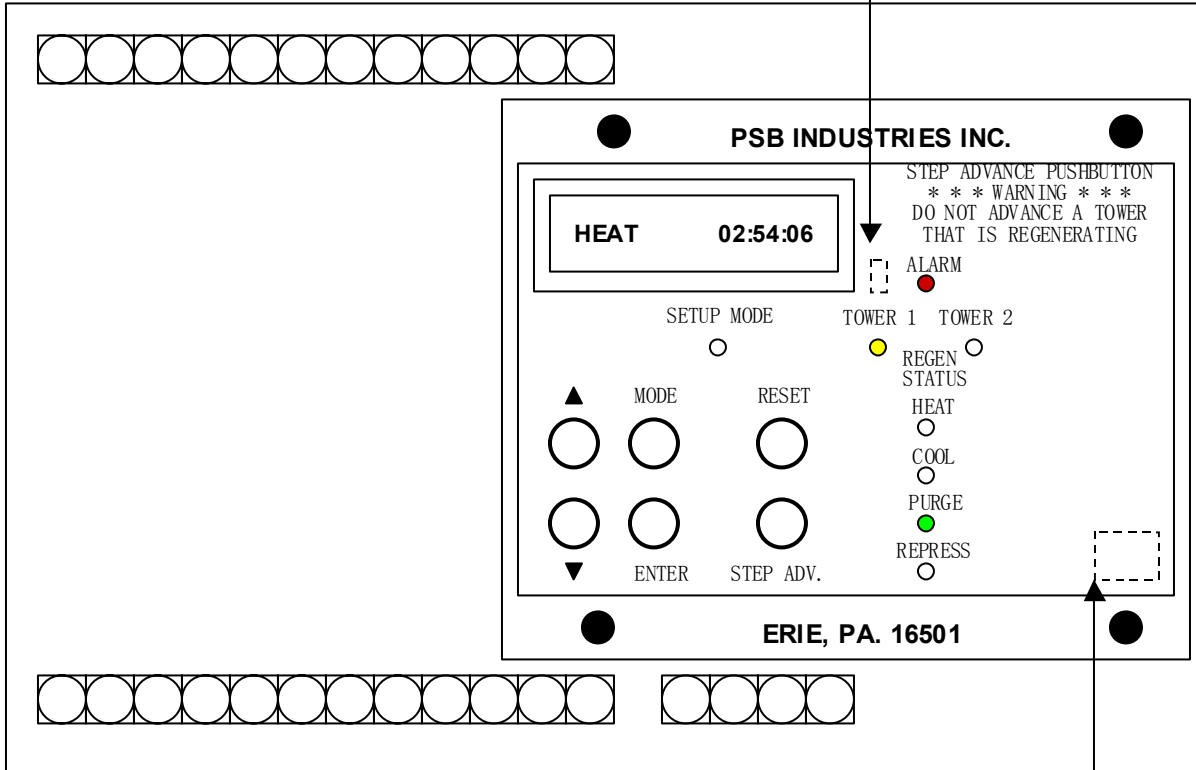
If a time setting was changed, the controller should be stepped to the next part of the cycle using the STEP ADV. key to initialize the new time setting. The controller can be advanced using the combination of the STEP ADV. key and the ENTER key. To step advance the unit, the STEP ADV. key is pressed. The display will then show the message "CAUTION STEP ADV". The user then must press the ENTER key within 15 seconds to step advance the unit one step at a time, or the unit will exit the Step Advance mode. The user can exit the Step Advance mode immediately by pressing the RESET key.

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FAHRENHEIT VS CENTIGRADE
 PINS SEE FIGURE 3 BELOW

FIGURE 1



DIP SWITCHES NUMBERS 1 & 2
 SEE FIGURE 2 BELOW

DIP SWITCHES #1 & 2

NOTE: THE SWITCHES ARE SHOWN IN THEIR "STANDARD" CONFIGURATION. DIP SWITCH #1 IN THE "ON" POSITION (CYCLE FAILURE DISABLED). DIP SWITCH #2 IN THE "OFF" POSITION (THE BOARD IN NORMAL RUN MODE).

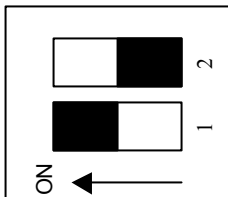


FIGURE 2

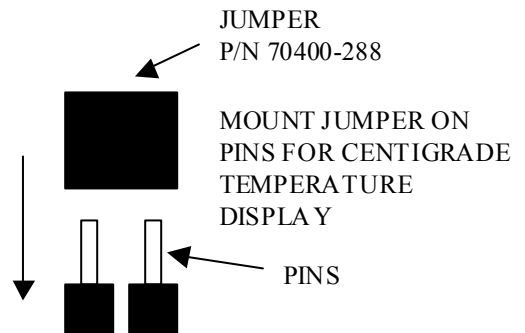


FIGURE 3



**STANDARD TYPE “P” HYDRYER
CAPACITY DATA CHART**

| Model No. | Max Flow (SCFM @ 100 psig | Purge Flow (SCFM) | Aux. Cooldown Flow (SCFM) | Auto Heat Setpoint (°F) | Auto Cool Setpoint (°F) | Activated Alumina Desiccant Charge (lbs) |
|------------------|--|----------------------------------|--|------------------------------------|------------------------------------|---|
| 83P | 100 | 5 | 5 | 170 | 125 | 118 |
| 103P | 200 | 10 | 10 | 165 | 125 | 234 |
| 123P | 300 | 15 | 15 | 165 | 125 | 350 |
| 143P | 425 | 21 | 21 | 165 | 125 | 510 |
| 163P | 600 | 30 | 30 | 160 | 115 | 700 |
| 183P | 800 | 40 | 40 | 160 | 115 | 940 |
| 203P | 1000 | 50 | 50 | 150 | 110 | 1170 |
| 243P | 1200 | 60 | 60 | 150 | 110 | 1400 |
| 253P | 1550 | 78 | 78 | 150 | 110 | 1880 |
| 303P | 2200 | 110 | 110 | 140 | 110 | 2800 |
| 363P | 3200 | 160 | 160 | 140 | 110 | 4200 |

**STANDARD TYPE “P” HYDRYER
ELECTRICAL DATA CHART**

NOTE: ALL REFERENCED FLA’s ARE FOR 460V/3/60 UNITS ONLY

| Model No. | Heater | | Transformer | | Dryer |
|----------------------|---------------|------------|--------------------|------------|--------------|
| | KW | FLA | KW | FLA | FLA |
| 83P | 1.2 | 1.5 | 0.5 | 1.1 | 2.6 |
| 103P | 2.3 | 2.9 | 0.5 | 1.1 | 4.0 |
| 123P | 3.5 | 4.4 | 0.5 | 1.1 | 5.5 |
| 143P | 5.2 | 6.5 | 0.5 | 1.1 | 7.6 |
| 163P | 7.1 | 8.9 | 0.5 | 1.1 | 10.0 |
| 183P | 10.3 | 12.9 | 0.5 | 1.1 | 14.0 |
| 03P | 12.0 | 15.1 | 0.5 | 1.1 | 16.2 |
| 243P | 13.3 | 16.7 | 0.5 | 1.1 | 17.8 |
| 253P | 17.6 | 22.1 | 0.5 | 1.1 | 23.2 |
| 303P | 26.5 | 33.3 | 0.5 | 1.1 | 34.4 |
| 363P | 36.1 | 45.3 | 0.5 | 1.1 | 46.4 |

* All FLA’s are based on 460V/3/60HZ operation. Heater KW/FLA ratings have been revised from their 480V/3/60HZ rating. Consult engineering if specified dryer voltage is other than 460V.