

Temperature Controller Replacement

Replacement of Fenwal Temperature Controller with United Electric Controls Unit (P/N 7486) in a Model 7053 450-psig Air Dehydrator

Lockout-Tagout.

- a. Slowly close the air outlet valve.
- b. Turn the power-on switch off.

NOTE

Waiting for the heater to cool will prolong the life of the heater.

- c. Let the unit run until the heater temperature has dropped below 120° F.
- d. Slowly close the air inlet valve.

WARNING

The dehydrator operates on 115 VAC. This voltage can kill or injure. When performing repairs, lock and tag out the unit. Only qualified, authorized personnel should attempt electrical maintenance on energized equipment.

- e. Open the external electrical disconnect to remove power from the unit.
- f. Lock out and tag out the electrical disconnect.

Temperature Controller Replacement.

NOTE

The sensing bulb is located in a well, isolated from the 450 psig in the air system.

- a. Remove the packing gland and the packing to release the sensing bulb from the thermal well at the bottom of the heater. Remove tie-wraps as necessary to release the capillary tube.
- b. Remove the access plate at the top of the controller.
- c. Disconnect the electrical leads from the terminal board under the access plate.
- d. Disconnect the conduit fitting from the controller housing. Withdraw the conduit with the electrical leads.
- f. Remove the three mounting screws securing the controller to the panel and remove the controller.
- g. Secure the new controller's mounting bracket to the panel.
- h. Remove the four screws securing the faceplate of the new controller. Remove the set screw (5/64" Allen) securing the adjusting knob. Remove the knob and the faceplate.
- h. Install the conduit fitting in the top left side of the new controller.

NOTE

The terminals inside the controller are marked, from left to right: switch 1 NO, NC, common, switch 2 NO, NC, common. The incoming electrical leads are marked 22, 23, and 24.

- i. Connect the electrical leads as follows: #22 to switch 1 common, with a jumper to switch 2 common; #23 to switch 2 NC; #24 to switch 1 NC.
- j. Reinstall the faceplate and the adjusting knob.



UEC Controller Terminals

CAUTION

Avoid bending or coiling the capillary tube tighter than 1/2" radius. Exercise caution when making bends near the capillary ends.

- k. Insert the temperature sensing bulb in the thermal well and secure it using the packing and the packing gland.

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Restart the Unit.

- l. Ensure that the low and high settings of the temperature controller are at 120° F and 135° F (49° and 57° C), respectively.
- m. Turn the power-on switch on.
- n. Ensure that the air supply pressure is 440 - 450 psig (3030 - 3100 kPa).
- o. Open the isolation valve in the air inlet line, external to the dehydrator.
- p. Slowly open the air inlet valve. The temperature indicator on the temperature controller should start to rise, and the sound of purge air escaping at the purge port should begin. When the heater reaches 120° F, the heater-not-up-to temperature lamp should go off. When the heater reaches 135° F, the heater-on lamp should go off.
- q. Let the unit run for 15 minutes. This gives the air lines and the membrane a chance to dry out thoroughly, to ensure that outlet air will be dry.
- r. Open the outlet valve, external to the unit.
- s. Slowly open the air outlet valve.

CAUTION

Exceeding 10 scfm (0.28 m³/min) air flow rate will cause the unit to deliver wet air.

- t. Check the outlet air flow rate, using a flowmeter external to the unit, and adjust as necessary, using a metering valve upstream of the unit.
- u. Check the two filter pressure drop gauges. Filter pressure drop should not exceed 5 psi (34.5 kPa). If the reading on either gauge exceeds 5 psi, replace the element in the associated filter per Paragraph 4.4 of the technical manual.

(Optional) You may check the calibration of the temperature controller as follows:

- a. Remove the temperature bulb from its well at the bottom of the heater.
- b. Place the temperature bulb and the bulb of a calibrated temperature gauge or thermometer into a bath of cold water at the same time. Compare the readings. If they do not agree within 2° F, send the temperature controller to an approved facility for calibration at the earliest opportunity.
- c. Repeat step b with a hot water bath.
- d. Reinstall the unit temperature bulb
- e. Restart the unit per steps l through u above.