

# **APPENDIX K**

## **TEMPERATURE AND HUMIDITY CONTROL PANEL MODIFICATIONS**

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Contractor:

**EWMP, PAT ROAD  
BOOSTER STATION  
CONTROL PANEL**

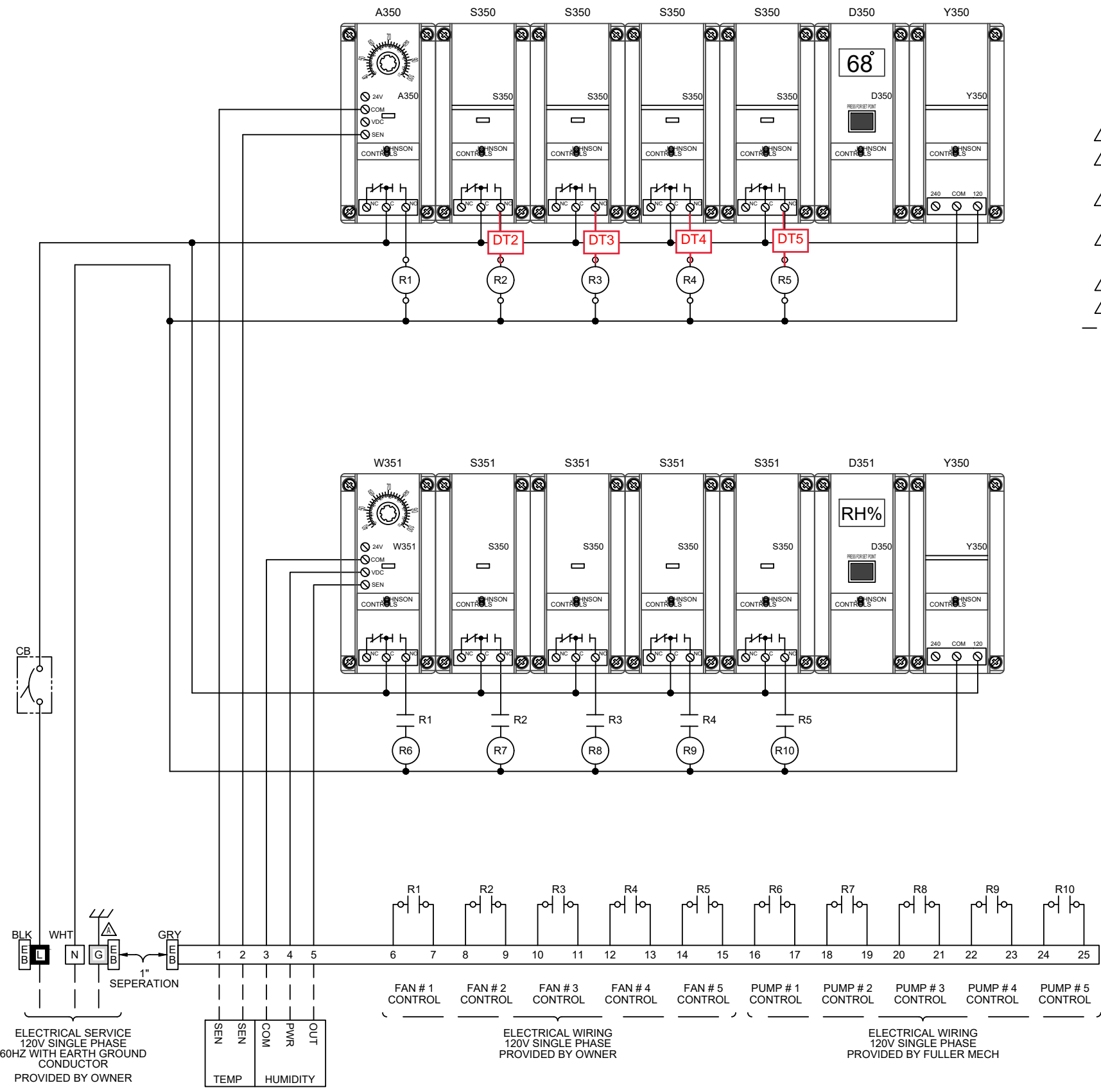
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Sheet Title:

Revisions	Change	
Rev	Date	
Job #:	9605	
Designed By:	DS	
Drawing By:	DS	
Approved By:		
Date:	04-24-08	
Sheet:	1 OF 1	



- ⚠ TORQUE TO 35 LBS-IN. (GND LUG)
  - ⚠ TORQUE 50-55 LBS-IN. (DISC)  
USE COPPER CONDUCTORS  
ONLY RATED @ 60°C MIN
  - ⚠ TORQUE 12.0-13.5 IN LBS (T-BLKS)  
USE COPPER CONDUCTORS  
ONLY RATED @ 60°C MIN
  - ⚠ TORQUE 16 LBS-IN.  
USE COPPER CONDUCTORS  
ONLY RATED @ 60°C MIN
  - ⚠ PROVIDED WITH PANEL
  - ⚠ PROVIDED BY OTHERS
  - FIELD WIRE BY OTHERS
- THIS PANEL ENCLOSURE IS RATED NEMA 1.  
TO PRESERVE RATING USE NEMA 1  
CONDUIT ENTRY HUBS

**MODIFICATION INSTRUCTIONS:**

Furnish and install four (4) delay timers in the existing Temperature and Humidity Control Panel, as shown schematically in RED hereon. Existing components are shown in BLACK. Delay timers shall be installed as follows;

1. Remove the existing conductors from S350 Module NC terminals to the fan relay coil terminals.
2. Furnish and install new 120VAC, SPST delay timers. Delay timers shall be Model 700-FEA3TU23 (On-Delay), as manufactured by Allen Bradley (Rockwell), or equal. Mount delay timer on existing DIN Rail in location shown on Figure K2.
3. Provide new #14 conductors and terminate conductors as shown on Figure K3. New conductors shall be routed in existing open-slot wire duct (panduit).
4. Delay timers shall initially set as follows: DT2-10sec, DT3-20sec, DT4-30sec, and DT5-40sec.

**Control Panel Sequence of Operation**

Total Control Drawing # Q3740 (attached)

Note: All temperatures and ranges are being submitted for owner review and approval.  
Owner may request other temperatures and set points than those submitted.  
EMCOR shall use the temperatures and set points approved or as revised by the owner.

**A350 Temperature Control - Fans shall have the following Set Points**

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Degree F/ Fan On	76	78	80	81	82
Degree F/ Fan Off	70	73	75	76	77

**W351 Humidistat shall control Pumps for Cooling - Pump shall be locked out if Fan interlock Relay is open.**

% Relative RH/ Pump On	45	47	49	52	55
% Relative RH/ Pump Off	55	55	56	56	57

- Sequence: Unit 1, A350 closes R1 contact @ 76 degrees F and will continue to run until A350 senses area temperature of 70 degrees F  
W351 Humidistat becomes operational when Fan is running  
Pump will run, by closing R6 Contact, if humidity in area is 45 % or below and stop went area humidity is 55%
- Unit 2, A350 closes R2 contact @ 78 degrees F and will continue to run until A350 senses area temperature of 73 degrees F  
W351 Humidistat becomes operational when Fan is running  
Pump will run, by closing R7 Contact, if humidity in area is 47 % or below and stop went area humidity is 55%
- Unit 3, A350 closes R3 contact @ 80 degrees F and will continue to run until A350 senses area temperature of 75 degrees F  
W351 Humidistat becomes operational when Fan is running  
Pump will run, by closing R8 Contact, if humidity in area is 49 % or below and stop went area humidity is 56%
- Unit 4, A350 closes R4 contact @ 81 degrees F and will continue to run until A350 senses area temperature of 76 degrees F  
W351 Humidistat becomes operational when Fan is running  
Pump will run, by closing R9 Contact, if humidity in area is 52 % or below and stop went area humidity is 56%
- Unit 5, A350 closes R5 contact @ 82 degrees F and will continue to run until A350 senses area temperature of 77 degrees F  
W351 Humidistat becomes operational when Fan is running  
Pump will run, by closing R10 Contact, if humidity in area is 55 % or below and stop went area humidity is 57%

Both the A350 temperture sensor and W351 Humidistat (with remote bulb) shall be located in the facility and the controls do not allow for outdoor temperatures or humidity.

**TEMPERATURE & HUMIDITY CONTROL PANEL MODIFICATION  
FIGURE K1**

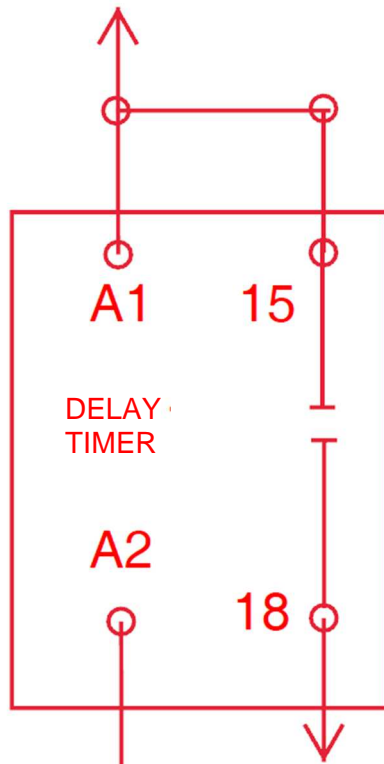
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MOUNT TIMERS ON EXISTING DIN RAIL

**TEMPERATURE & HUMIDITY CONTROL PANEL MODIFICATION  
FIGURE K2**

TO EXISTING 5350 MODULE  
NC TERMINAL



TO EXISTING FAN RELAY  
TERMINAL COIL

TO COMMON  
NEUTRAL

### DELAY TIMER SCHEMATIC

TYPICAL OF DT2, DT3, DT4, AND DT5