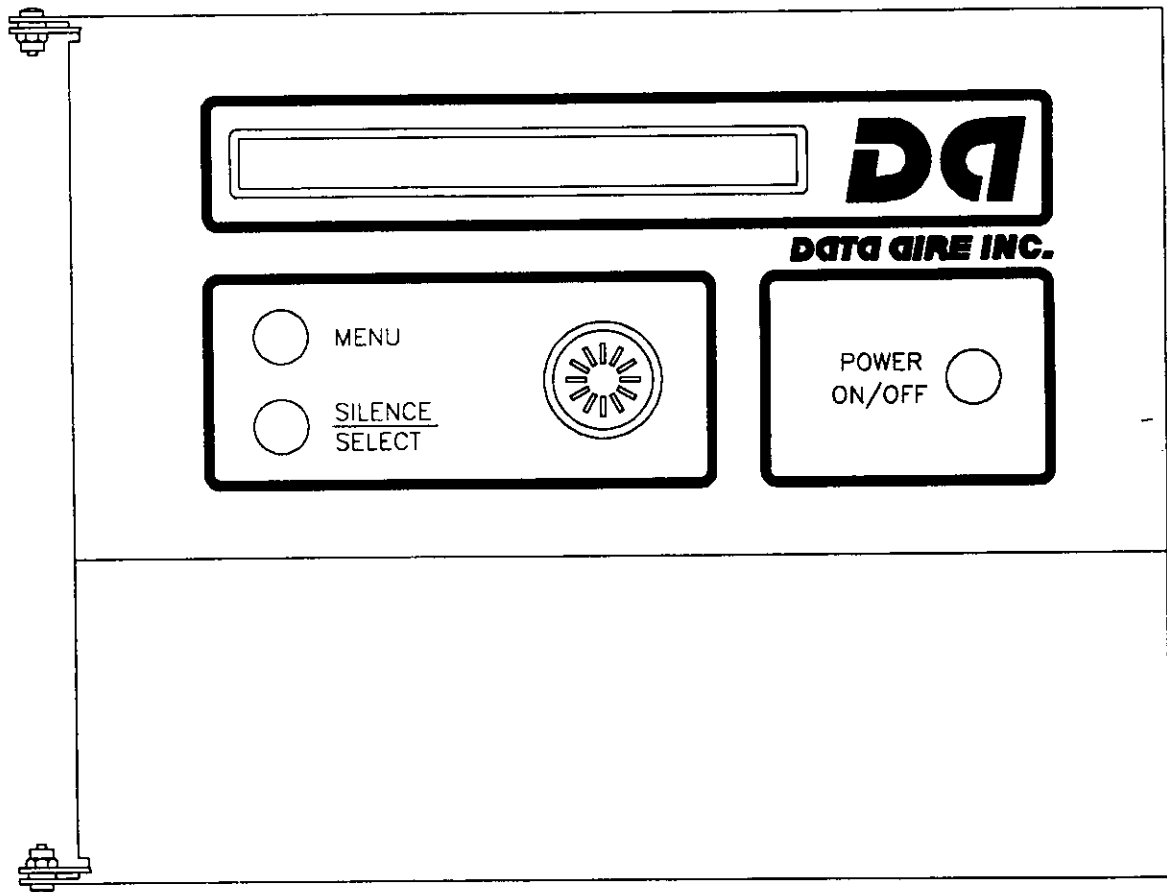


DATA AIRE INC.

DATA ALARM EXPANDED PROCESSOR UNIVERSAL REPLACEMENT PANEL

Installation & Operation Manual



Precision environmental control for computer rooms
WATER/GLYCOL COOLED, AIR COOLED,
ENERGY SAVER AND CHILLED WATER SYSTEMS

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AIR/WATER/GLYCOL COOLED/ENERGY SAVER OR CHILLED WATER SYSTEMS UNIVERSAL REPLACEMENT CONTROL PANEL INSTALLATION AND SERVICE INSTRUCTIONS

GENERAL

THE DATA AIRE UNIVERSAL REPLACEMENT CONTROL PANEL IS SPECIFICALLY DESIGNED TO PROVIDE TEMPERATURE AND HUMIDITY CONTROL FOR COMPUTER ROOMS.

TRANSPORTATION DAMAGE

VISUAL INSPECTION OF THE SHIPPING CARTON PROVIDES A SIMPLE INDICATION OF POSSIBLE INTERNAL DAMAGE TO THE EQUIPMENT. FILE A CLAIM WITH THE SHIPPING COMPANY IF THE SHIPMENT IS DAMAGED OR INCOMPLETE. FREIGHT DAMAGE CLAIMS ARE THE RESPONSIBILITY OF THE PURCHASER.

MECHANICAL INSTALLATION

DUE TO THE NUMBER OF DIFFERENT UNITS THAT MAY BE CONTROLLED BY THIS PANEL, SPECIFIC MOUNTING DETAILS FOR EVERY TYPE OF UNIT ARE NOT POSSIBLE. WITH THIS PANEL CONFIGURATION, MOUNTING ONTO A DOOR IS RECOMMENDED (SEE FIGURE 2). THE BEST METHOD IS TO USE THE SUPPLIED BRACKETS AND BEZEL. THE ORIGINAL UNIT DOOR CUT OUT MAY HAVE TO BE MODIFIED FOR THE SIZE OF THE PANEL FACE BY CUTTING THE OPENING LARGER OR ADDING PAINTED SHEET METAL TO REDUCE THE OPENING SIZE. BE CREATIVE, ANY REASONABLY STRONG VIBRATION FREE MOUNTING IS ACCEPTABLE.

ELECTRICAL INSTALLATION

THE NEW PANEL AS SHIPPED IS COMPLETE WITH ALL INTERNAL RELAYS AND SENSORS REQUIRED FOR MOST INSTALLATIONS. THE ELECTRICAL CONNECTIONS REQUIRED CONSIST OF INPUT POINTS FROM ALARMS, SUCH AS HIGH PRESSURE, LOW PRESSURE, NO AIR FLOW ETC. OUTPUT POINTS ARE FOR COOL, HEAT, HUMIDIFICATION ETC.

THE NEW PANEL HAS A CABLE THAT CONNECTS FROM THE DATA ALARM PROCESSOR PLUGS TO THE EXISTING UNIT 24 VAC TERMINAL BLOCK. NOTE THAT ALL OF THE LISTED TERMINALS ARE NOT REQUIRED, ONLY THOSE TERMINALS REQUIRED TO REPLACE OLD STYLE CONTROL PANELS NEED TO BE CONNECTED.

A DIAGRAM IS INCLUDED SHOWING TYPICAL CONNECTION TERMINAL NUMBERS FROM ONE PANEL TYPE TO THE REPLACEMENT PANEL. THE REPLACEMENT PANEL TERMINAL NUMBERS REFER TO THE **WIRE NUMBERS** AT THE ENDS OF THE SUPPLIED CABLES. FOR CONNECTION CLARIFICATION, COMPARE THE FUNCTIONS LISTED ON THE PIN IDENTIFICATION DRAWING (FIGURE 5) WITH THE WIRE NUMBER IDENTIFICATION DRAWING (FIGURE 6). REPLACEMENT DIAGRAMS WILL NOT WORK IN ALL CASES. YOU MUST VERIFY TERMINAL FUNCTIONS OF OLD PANELS AND CONFIRM THE CORRECT TERMINAL ON THE NEW PANEL PRIOR TO CONNECTION.

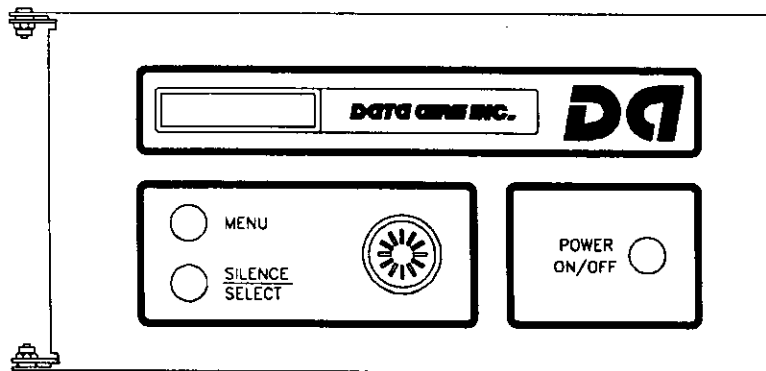


FIGURE 1: DATA ALARM PROCESSOR

MOST ORIGINAL DATA AIRE PANELS HAD THE HUMIDITY AND TEMPERATURE SENSORS MOUNTED ON THE PANEL. THE DAP PANEL REQUIRES THE SENSORS TO BE REMOTE MOUNTED IN THE UNIT RETURN AIR.

WARNING

MANY UNITS BUILT BEFORE 1986 OR 87 HAVE ONE LEG OF THE 24

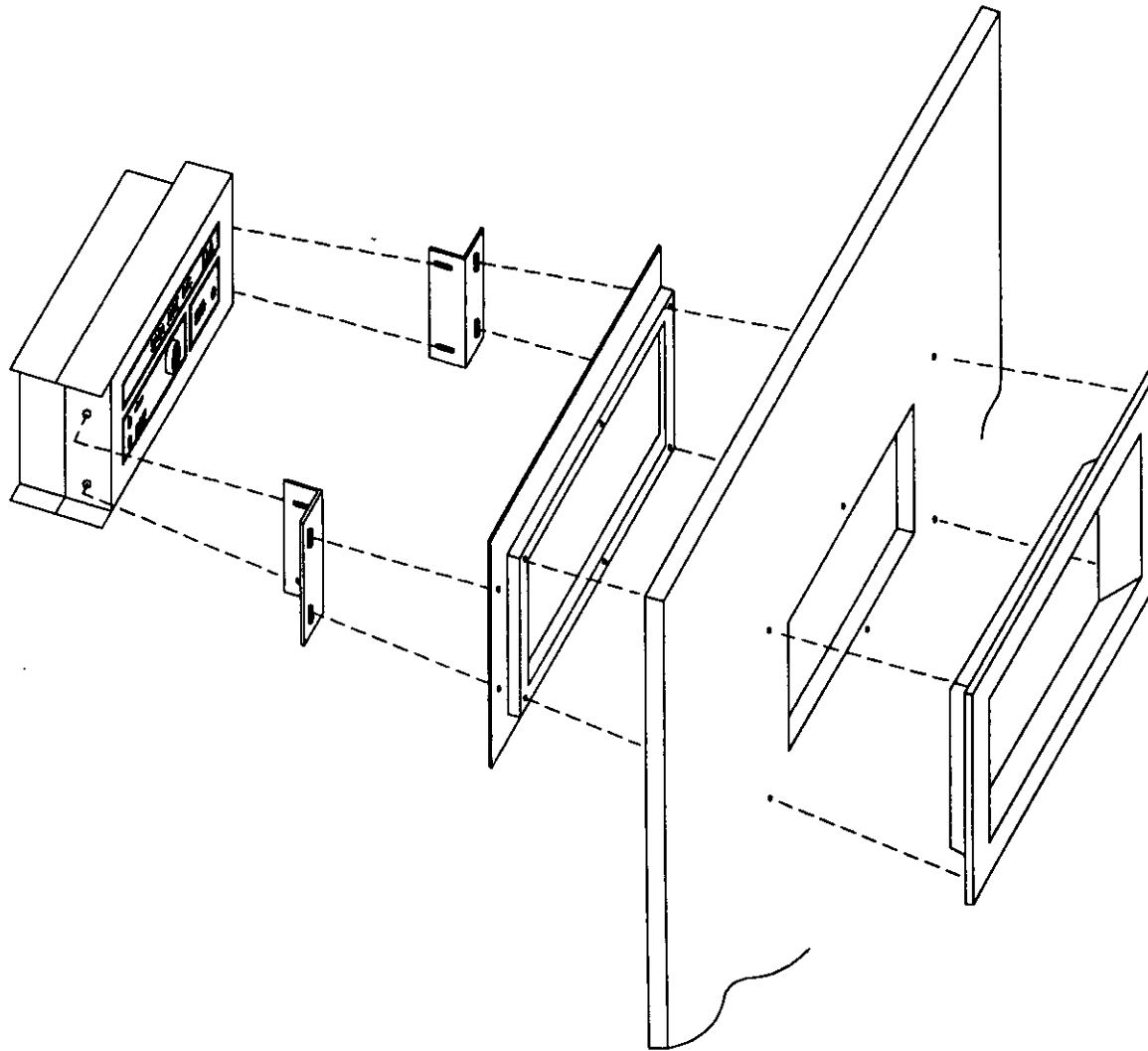


FIGURE 2: MECHANICAL INSTALLATION

VAC CONTROL POWER WIRED TO GROUND. ALL CURRENT PRODUCTION USES AN INTERNAL DC GROUND. YOU MUST REMOVE THE CONTROL POWER GROUND FROM YOUR UNIT, PRIOR TO INSTALLING THE REPLACEMENT PANEL. FAILURE TO REMOVE 24 VAC GROUND WILL USUALLY TRIP THE CONTROL POWER CIRCUIT BREAKER OR BLOW THE DAP INTERNAL FUSE AND MAY DAMAGE THE NEW PANEL.

PANEL GENERAL

1. MICROPROCESSOR BASED SINGLE BOARD
2. 64K MEMORY (EPROM AND STATIC RAM)
3. NONVOLATILE PROGRAM STORAGE (EEPROM) FOR ALL MENU-PROGRAMMED

VALUES AND OPTIONS

4. VOLATILE MEMORY (BATTERY BACKED-UP STATIC RAM FOR COMPONENT RUN TIMES, ALARM HISTORY AND OTHER DATA)
5. 12-BIT 1/10° F RESOLUTION ANALOG TO DIGITAL CONVERTER

LIQUID-CRYSTAL DISPLAY MONITOR.

2 LINES WITH 80 CHARACTERS, HIGH INTENSITY BACK LIT DISPLAY. THE MONITOR DISPLAYS TEMPERATURE, HUMIDITY, ALL SET POINTS, COOL 1, COOL 2, COOL 3, COOL 4, HUMIDIFICATION, DEHUMIDIFICATION, HEAT 1, 2, 3,

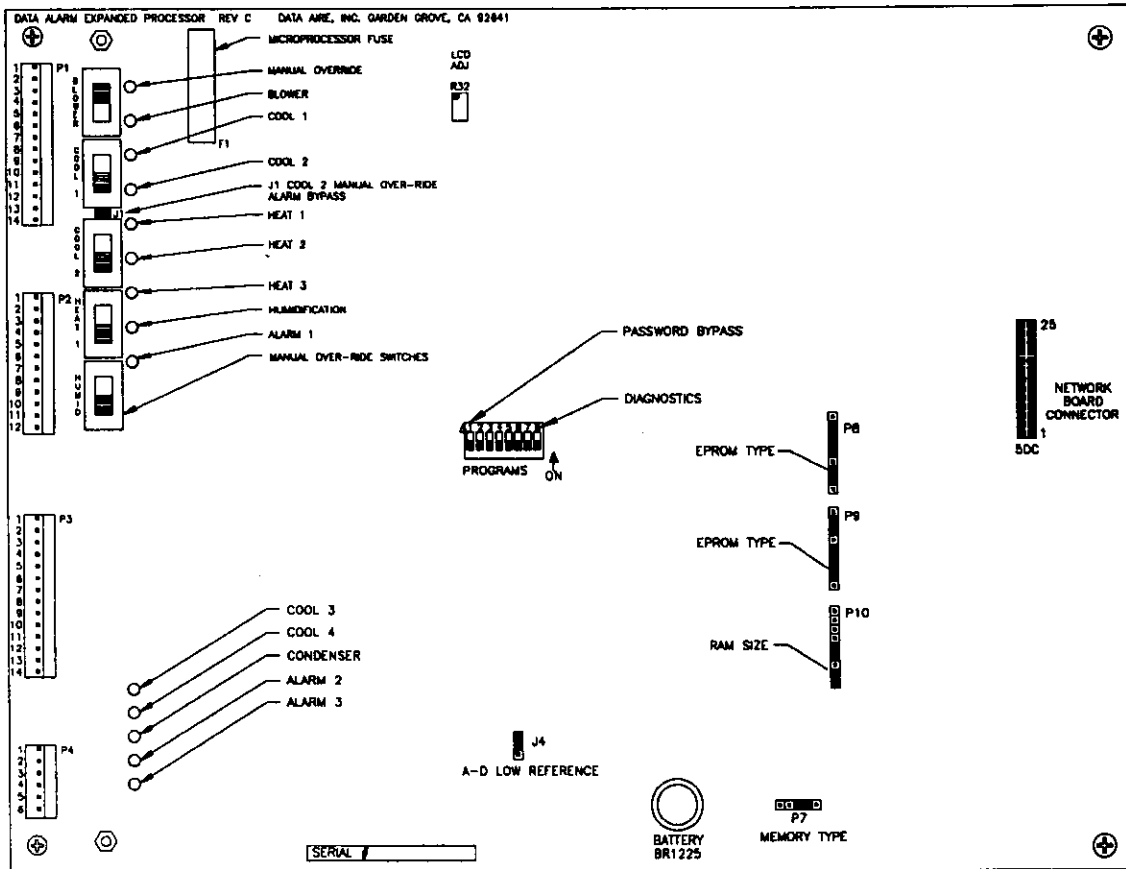


FIGURE 3: DAP SWITCH AND LED LOCATIONS

PERCENTAGE OF CHILLED-WATER CAPACITY (VALVE OPENING), PERCENTAGE OF COOLING CAPACITY (COMPRESSORS AND ENERGY SAVER), PERCENTAGE OF HEATING AND HUMIDIFICATION CAPACITIES, AVERAGE PERCENTAGE OF ALL CAPACITIES FOR LAST HOUR OF OPERATION, COMPONENT RUN TIMES, ALARM HISTORY, DIAGNOSTICS AND ALL ALARMS LISTED IN ALARM SECTION.

LED INDICATORS

BOARD-MOUNTED LED FOR EACH OUTPUT RELAY, ADDITIONAL LED FOR MANUAL OVERRIDE (FIGURE 3)

MANUAL OVERRIDE SWITCHES

LOCATED UNDER THE HINGED COVER FOR THE FOLLOWING:
 BLOWER, COOLING 1, COOLING 2, HEATING

1, HUMIDIFICATION

CONTROL SWITCHES

PUSH-BUTTON ON/OFF, PUSH-BUTTON MENU, PUSH-BUTTON ALARM SILENCE / PROGRAM SET. 8 DIP-SWITCHES.

STANDARD ALARMS

HIGH TEMP, LOW TEMP, HIGH HUMID, LOW HUMID, COMPRESSOR HIGH PRESSURE, COMPRESSOR LOW PRESSURE, NO WATER FLOW (REQUIRES FLOW SWITCH), SMOKE DETECTED (REQUIRES DETECTOR), MANUAL OVERRIDE, UNDER-FLOOR WATER DETECTION, NO AIR FLOW, DIRTY FILTERS, HUMIDIFIER FAILURE, LOW-VOLTAGE WARNING, FIRE STAT, COMPRESSOR SHORT CYCLE, POWER-FAILURE RESTART, HUMIDITY-SENSOR FAILURE, TEMPERATURE-SENSOR FAILURE, MAINTENANCE REQUIRED BASED ON PROGRAMMED RUN TIME, THREE PROGRAMMABLE LOCAL ALARMS AS,

STANDBY GLYCOL PUMP OPERATING, MAIN FAN MOTOR OVERLOAD. (NOTE: ADDITIONAL HARDWARE MAY BE REQUIRED FOR PROGRAMMABLE LOCAL ALARMS.) ON ENERGY-SAVER UNITS, ONE PROGRAMMABLE LOCAL ALARM INPUT (#3) IS TO BE USED TO CHANGE FROM COMPRESSOR OPERATION TO CHILLED-WATER OPERATION. (THIS IS NOT AN ALARM.) DISPLAY WILL SWITCH TO ENERGY SAVER WITH PERCENTAGE OF VALVE-OPENING DISPLAY ON LCD. ON UNITS WITH 3 OR 4 COMPRESSORS, OPTION INPUT (#1) AND (#2) ARE USED FOR A HIGH-PRESSURE ALARMS.

SOFTWARE

SOFTWARE HAS MENU-DRIVEN PROGRAMMING. PASSWORD IS REQUIRED. OPENING OF UNIT DOOR NOT REQUIRED FOR THE FOLLOWING: TEMPERATURE SET POINT, TEMPERATURE DEAD BAND, TEMPERATURE HIGH AND LOW ALARM POINTS, TEMPERATURE SENSOR CALIBRATION, HUMIDITY SET POINT, HUMIDITY DEAD BAND, HUMIDITY HIGH AND LOW ALARM POINTS, HUMIDITY SENSOR CALIBRATION, TIME DELAY BETWEEN STAGES (SEQUENTIAL LOAD ACTIVATION), UNIT-START TIME DELAY, SET TONE OF ALARM BUZZER, SET DC VOLTAGE RANGE FOR CONTROL VALVE, SET HOURS OF OPERATION UNTIL APPEARANCE OF MAINTENANCE-REQUIRED ALARM MESSAGE, SET FUNCTIONS FOR THREE PROGRAMMABLE LOCAL ALARMS INCLUDING TIME DELAYS AND SUMMARY-ALARM OUTPUT, SET POWER-FAILURE RESTART METHOD. FACTORY SETTINGS INCLUDE PERIODIC CHILLED-WATER OR ENERGY-SAVER COIL FLUSH, LOW-VOLTAGE DROPOUT POINT 90%, PREDICTIVE HUMIDITY CONTROL, TEMPERATURE ANTICIPATION, AUTOMATIC LEAD-LAG ROTATION OF COMPRESSORS AND REHEAT.

DATA COLLECTION

THE MICROPROCESSOR WILL LOG DATA FOR THE FOLLOWING ITEMS: RUN TIMES OF FAN MOTOR, COOL 1, COOL 2, COOL 3, COOL 4, HEAT 1, HEAT 2, HEAT 3, HUMIDIFICATION, DEHUMIDIFICATION, CHILLED-WATER OPERATION, ENERGY-SAVER AND CONDENSER OPERATION. TEMPERATURE, HUMIDITY AND CAPACITY READINGS WILL BE TAKEN EVERY THREE MINUTES AND RECORDED ON THE UNIT DATA BASE FOR

THE PAST 24 HOURS. AN ALARM DATA BASE WILL BE MAINTAINED FOR THE LAST 10 ALARMS AND THE TIME SINCE OCCURRENCE. ALL DATA MAY BE DISPLAYED AT THE UNIT WITHOUT ANY ADDITIONAL EQUIPMENT.

COMMUNICATIONS

THE UNIT CAN COMMUNICATE OVER AN RS 485 NETWORK USING A TWISTED PAIR OF WIRES IN A TOKEN RING LOOP. ALL DATA MAY BE TRANSMITTED TO AND DISPLAYED AT AN OPTIONAL REMOTE-MOUNTED DATA-ALARM NETWORK. (OPTIONAL COMMUNICATIONS CARD REQUIRED)

DIAGNOSTICS

ALL ELECTRONIC CIRCUITRY CONTAINS BUILT-IN DIAGNOSTICS. NO ADDITIONAL EXTERNAL DEVICES ARE REQUIRED. AUTOMATIC SELF-DIAGNOSTICS SHALL TAKE PLACE WHEN POWER IS APPLIED TO THE UNIT. MANUAL DIAGNOSTICS WILL BE AVAILABLE WITH SELF-PROMPTING INSTRUCTION DISPLAYS.

CONTROL LOGIC

COMPRESSOR COOLING LOGIC

1. MAXIMUM FREQUENCY OF PRIMARY COMPRESSOR STARTS = 5 MINUTES START TO START OF SAME STAGE
2. PRIMARY COMPRESSOR STAGE MINIMUM TIME OFF = 2 MINUTES STOP TO START OF SAME STAGE
3. SECONDARY UNLOADER STAGE MINIMUM TIME OFF = 1 MINUTE STOP TO START OF SAME STAGE
4. COMPRESSOR STAGING SEQUENCE AT EACH ADJUSTMENT PERIOD:
 - C1 ON AT TEMP SET POINT + TEMP DEAD BAND
 - C2 ON AT TEMP SET POINT + TEMP DEAD BAND + .3° F
 - C3 ON AT TEMP SET POINT + TEMP DEAD BAND + .6° F

C4 ON AT TEMP SET POINT + TEMP DEAD BAND + .9° F

C4 OFF AT TEMP SET POINT + TEMP DEAD BAND + .6° F

C3 OFF AT TEMP SET POINT + TEMP DEAD BAND + .3° F

C2 OFF AT TEMPERATURE SET POINT + TEMPERATURE DEAD BAND

C1 OFF AT TEMPERATURE SET POINT

HEAT STRIP HEATING LOGIC

1. MINIMUM TIME BETWEEN HEAT STAGE TURN ON = 1 MINUTE STOP TO START OF SAME STAGE OR START TO START OF DIFFERENT STAGES

2. HEAT STAGING SEQUENCE:
H1 ON AT TEMPERATURE SET POINT - TEMPERATURE DEAD BAND - .3° F

H2 ON AT TEMPERATURE SET POINT - TEMPERATURE DEAD BAND - .6° F

H3 ON AT TEMPERATURE SET POINT - TEMPERATURE DEAD BAND - .9° F

H3 OFF AT TEMPERATURE SET POINT - TEMPERATURE DEAD BAND - .6° F

H2 OFF AT TEMPERATURE SET POINT - TEMPERATURE DEAD BAND - .3° F

H1 OFF AT TEMPERATURE SET POINT - TEMPERATURE DEAD BAND

HUMIDIFICATION LOGIC

1. ALL HEAT OFF IMMEDIATELY DURING HUMIDIFICATION

2. MINIMUM TIME STOP TO START = 1 MINUTE

3. MINIMUM TIME BETWEEN HUMIDIFICATION/DEHUMIDIFICATION CHANGEOVER = 5 MINUTES

4. HUMIDIFICATION STAGING SEQUENCE:
H1 ON AT HUMIDITY SET POINT - HUMIDITY DEAD BAND

H1 OFF AT HUMIDITY SET POINT - 1%

DEHUMIDIFICATION LOGIC

1. DEHUMIDIFICATION IS NOT GOVERNED BY THE ADJUSTMENT RATE BUT WILL NOT VIOLATE COMPRESSOR SHORT-CYCLE TIMES.

2. HEATING STAGES ARE USED TO REHEAT THE OVER-COOLED BUT DEHUMIDIFIED AIR AND HEATING SHORT-CYCLE TIME WILL NOT BE VIOLATED.

3. FIVE MINUTE MINIMUM BETWEEN HUMIDIFICATION AND DEHUMIDIFICATION CYCLES

4. ONE MINUTE MINIMUM BETWEEN STOP TO START OF DEHUMIDIFICATION

5. DEHUMIDIFICATION STAGING SEQUENCE: ENERGY-SAVER OR CHILLED-WATER COOLING PROPORTIONALLY INCREASE OR DECREASE AS REQUIRED, UP TO MAXIMUM VALVE OPENING IF AVAILABLE.

COMPRESSORIZED UNITS

C1 ON AT HUMIDITY SET POINT + HUMIDITY DEAD BAND

C2 ON AT HUMIDITY SET POINT + HUMIDITY DEAD BAND + 1%

C3 ON AT HUMIDITY SET POINT + HUMIDITY DEAD BAND + 2%

C4 ON AT HUMIDITY SET POINT + HUMIDITY DEAD BAND + 3%

C4 OFF AT HUMIDITY SET POINT + HUMIDITY DEAD BAND + 2%

C3 OFF AT HUMIDITY SET POINT + HUMIDITY DEAD BAND + 1%

C2 OFF AT HUMIDITY SET POINT + HUMIDITY DEAD BAND

C1 OFF AT HUMIDITY SET POINT

ENERGY-SAVER COOLING LOGIC

1. ENERGY SAVER FUNCTION IS ALWAYS USED ANY TIME PROGRAMMABLE ALARM POINT #3 HAS BEEN SET FOR ENERGY-SAVER OPERATION AND IS POWERED.

2. COMPRESSORS WILL NOT BE USED WITH ENERGY SAVER TO HOLD SET POINT.

3. ENERGY-SAVER STAGING SEQUENCE:

WATER VALVE IS ON AT TEMPERATURE SET POINT + TEMPERATURE DEAD BAND. WATER VALVE MODULATES EVERY 60 SECONDS TO MAINTAIN SET POINT. WATER VALVE IS OFF AT TEMPERATURE SET POINT.

CHILLED-WATER COOLING LOGIC

CHILLED-WATER STAGING SEQUENCE: WATER VALVE IS ON AT TEMPERATURE SET POINT + TEMPERATURE DEAD BAND. WATER VALVE MODULATES EVERY 60 SECONDS TO MAINTAIN SET POINT. WATER VALVE IS OFF AT TEMPERATURE SET POINT.

AUTOMATIC, PERIODIC COIL-FLUSH LOGIC

CONTROL WILL AUTOMATICALLY FLUSH CHILLED WATER OR ENERGY-SAVER COIL AND REHEAT COILS. CONTROL VALVES OPEN 25% EVERY 100 HOURS OF OPERATION FOR A PERIOD OF 30 SECONDS.

HUMIDITY ANTICIPATION LOGIC

CONTROL WILL AUTOMATICALLY MODIFY HUMIDITY SET POINT TO STOP UNNECESSARY HUMIDIFICATION AND DEHUMIDIFICATION.

HUMIDITY SET POINT IS MODIFIED BASED ON RETURN AIR TEMPERATURE. THIS PREVENTS HUMIDIFICATION AND DEHUMIDIFICATION IF NOT REQUIRED BASED ON CHANGING TEMPERATURE TO 70° F.

MANUAL OVERRIDE LOGIC

ANY MANUAL OVERRIDE FUNCTION WILL CAUSE ALL AUTOMATIC TEMPERATURE AND HUMIDITY CONTROL BY THE PROCESSOR TO BE DISCONTINUED. THIS WILL ALLOW INSTALLERS TO EASILY RUN EACH FUNCTION DURING START-UP.

TEMPERATURE AND HUMIDITY SENSOR FAILURE LOGIC

1. A TEMPERATURE-SENSOR FAILURE WILL CAUSE THE PROCESSOR TO ACTIVATE ALL STAGES OF COOLING IF THE UNIT IS OPERATING AT THE TIME OF FAILURE. IF SELF-TEST FINDS A BAD SENSOR ON START-UP, THE UNIT WILL NOT START.

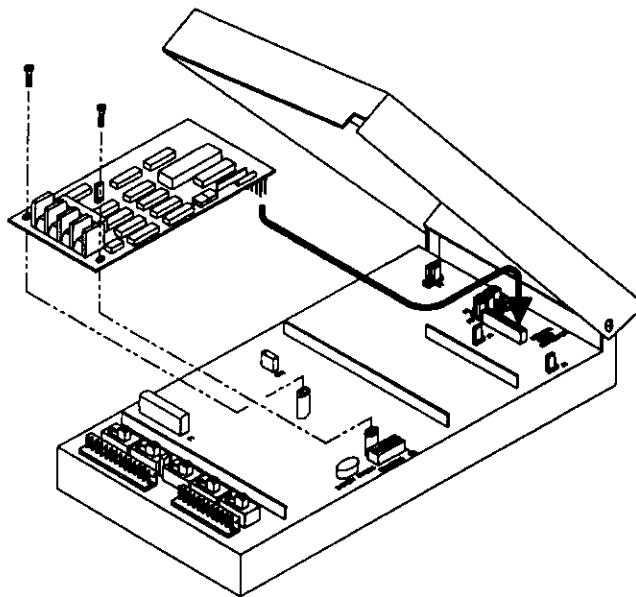


FIGURE 4:
DAP PANEL SHOWING DETAIL FOR NETWORK COMMUNICATIONS CARD INSTALLATION

2. A HUMIDITY-SENSOR FAILURE WILL CAUSE THE PROCESSOR TO DISCONTINUE ALL HUMIDIFICATION AND DEHUMIDIFICATION CONTROL IF THE UNIT IS OPERATING AT THE TIME OF FAILURE. IF SELF-TEST FINDS A BAD SENSOR ON START-UP, THE UNIT WILL NOT BE ALLOWED TO START.

COMPRESSOR SHORT-CYCLE ALARM LOGIC

IF THE COMPRESSOR HAS STARTED 10 TIMES WITHIN THE LAST HOUR, THE ALARM SOUNDS. THE MINIMUM TIME BETWEEN PRIMARY COMPRESSOR STARTS AUTOMATICALLY INCREASES FROM 5 TO 6 MINUTES FOR THE NEXT HOUR OF OPERATION.

POWER-FAILURE RESTART ALARM LOGIC

UNIT RESTARTS BASED ON PROGRAM SELECTION (SEE MENU 31 BELOW).

NO AIR FLOW ALARM LOGIC

A NO AIR FLOW ALARM WILL PREVENT UNIT OPERATION OF COOL, HEAT, HUMIDIFICATION OR DEHUMIDIFICATION. FOR UNIT TO OPERATE, MICROPROCESSOR MUST HAVE PROVEN AIR FLOW.

PROGRAM SELECTIONS

OPERATE FROM FRONT PANEL WITH DOOR CLOSED. AFTER 60 SECONDS WITHOUT AN INPUT, DISPLAY WILL RETURN TO NORMAL.

DATA ALARM PROCESSOR PROGRAMMING

EACH DATA ALARM PROCESSOR PANEL HAS MENU AND SELECT PUSH BUTTONS. THE MENU BUTTON IS USED TO STEP THROUGH THE AVAILABLE MENUS. THE SELECT BUTTON IS USED TO SELECT AN OPTION OR VALUE. EACH PUSH WILL CAUSE THE NEXT MENU OR THE NEXT SELECTION TO APPEAR. HOLDING THE BUTTON DOWN WILL CAUSE THE MENUS OR SELECTIONS TO ADVANCE AT A FASTER RATE. A MENU WITHOUT SELECT BUTTON ACTIVITY FOR ONE MINUTE WILL STORE THE LAST SELECTION OR VALUE APPEARING ON THE DISPLAY, AND THE DATA ALARM PROCESSOR WILL RETURN TO NORMAL OPERATION.

WHEN A MENU FIRST APPEARS, IT WILL HAVE A MENU NUMBER AND TITLE. THE FIRST PRESS OF THE SELECT BUTTON WILL CAUSE THE CURRENT VALUE OR OPTION TO BE DISPLAYED. ADDITIONAL PRESSES OF THE SELECT BUTTON WILL CAUSE ALTERNATE VALUES, DESIRED VALUE OR OPTIONS TO BE DISPLAYED. THE SELECT BUTTON SHOULD BE PRESSED UNTIL THE DESIRED VALUE OR OPTION IS DISPLAYED. AFTER THE SELECT BUTTON HAS BEEN USED TO SELECT THE DESIRED VALUE OR OPTION, THE MENU BUTTON IS PRESSED WHICH CAUSES THE LAST SELECTION TO BE STORED IN MEMORY AND ADVANCES THE DISPLAY TO THE NEXT MENU. TO EXIT THE MENU FUNCTIONS, ANY OF THE "EXIT MENU" MENUS SHOULD BE ACCESSED AND THE SELECT BUTTON PRESSED. TYPICAL DISPLAY SCREENS ARE SHOWN IN **BOLD**.

THE STANDARD PANEL HAS A ONE LINE, 16-CHARACTER DISPLAY. A TWO LINE BACK LIT 80-CHARACTER DISPLAY IS OPTIONAL. SLIGHT VARIATIONS IN THE DISPLAY SCREENS WILL BE PRESENT ON THE 80-CHARACTER PANELS.

THE FOLLOWING EXAMPLES SHOW A TYPICAL DISPLAY IN **BOLD** FOLLOWED ON THE NEXT LINE BY THE IDENTIFICATION OR INSTRUCTIONS ON HOW TO CAUSE OR

CREATE THE DISPLAY. 16-CHARACTER DISPLAYS WILL ALTERNATE FROM MENU IDENTIFICATION SCREENS ON EACH PUSH OF THE MENU BUTTON, TO SELECT INFORMATION SCREENS ON EACH PUSH OF THE SELECT BUTTON.

80-CHARACTER SCREENS WILL DISPLAY THE MENU IDENTIFICATION ON THE TOP LINE AND THE SELECT INFORMATION ON THE BOTTOM LINE.

1-SETPOINTS

PRESS MENU TO GO TO MENU 1.

TEMP SP: 72F

PRESS SELECT FOR TEMPERATURE SETPOINT (NO PASS WORD REQUIRED, SET POINTS MAY BE VIEWED BUT NOT CHANGED).

HUMID SP: 50%

PRESS SELECT FOR HUMIDITY SETPOINT REPORT.

EXIT MENU

PRESS MENU TO ADVANCE TO NEXT MENU.

SELECT TO EXIT

PRESS SELECT TO RETURN TO NORMAL OPERATION. (THIS PROVIDES A PATH BACK TO NORMAL UNIT DISPLAY. THIS OPTION WILL TAKE PLACE AT SEVERAL POINTS ALONG THE PROGRAM SEQUENCE.)

2-PASSWORD A

PRESS MENU TO GO TO MENU 2.

PASSWORD A: 00

PRESS SELECT TO DISPLAY PASSWORD:

PASSWORD A: XX

PRESS SELECT TO CYCLE PASSWORD FROM 00 TO 99. IF THE MENU BUTTON IS PRESSED WITH THE INCORRECT PASSWORD DISPLAYED, NO FURTHER MENU OR SELECT BUTTON ACTIVITY WILL BE ALLOWED FOR 60 SECONDS. IF THE PASSWORD HAS BEEN FORGOTTEN, OPEN REAR HINGED DOOR ON DATA ALARM PROCESSOR PANEL. SET DIP SWITCH NUMBER 1 ON PROGRAM SWITCH S9 TO THE "UP" OR "ON" POSITION. SEE FIGURE 5 FOR LOCATION. THE "UP" OR "ON" POSITION WILL ALLOW TOTAL ACCESS TO ALL SETUP FUNCTIONS WITHOUT A PASSWORD AND MUST NOT BE LEFT ON AFTER START-UP. THOSE INDIVIDUALS WITH THE FIRST-LEVEL PASSWORD WILL BE ALLOWED TO CHANGE SET POINTS, COMPRESSOR LEAD LAG, INTERSTAGE TIME DELAY AND REVIEW UNIT DATA BASE.

3-TEMP SETPOINT

PRESS MENU TO GO TO MENU 3. (IF FORMER PASSWORD WAS CORRECT, THEN MENU 3 WILL APPEAR. IF THE PASSWORD WAS WRONG, THEN A ONE-MINUTE DELAY WILL OCCUR DURING WHICH TIME THE MENU AND SELECT BUTTONS WILL NOT WORK.

TEMP SP TO: 72F

PRESS SELECT TO CYCLE TEMPERATURE SETPOINT FROM 65° F TO 85° F. THE DEFAULT VALUE IS 72° F.

4-HUMID SETPOINT

PRESS MENU TO GO TO MENU 4.

HUMID SP TO: 50%

PRESS SELECT TO CYCLE THE HUMIDITY SETPOINT FROM 40% TO 60%.

5-COMP LEAD/LAG

PRESS MENU TO GO TO MENU 5.

LEAD/LAG: 1 LEAD

PRESS SELECT TO CYCLE THE LEAD/LAG FROM 1 LEAD TO 2 LEAD TO AUTO. THE DEFAULT VALUE IS AUTO.

SELECTION WILL BE LIMITED BY THE TYPES OF COMPRESSORS SELECTED ON MENU #36.

6-ADJUST-RATE

PRESS MENU TO GO TO MENU 6.

ADJ RATE: 1 MIN

PRESS SELECT TO DISPLAY CURRENT ADJUSTMENT RATE (INTERSTAGE TIME DELAY). THE DEFAULT VALUE IS ONE MINUTE. PRESS SELECT TO CYCLE THE ADJUSTMENT RATE TO THE DESIRED VALUE FROM ONE MINUTE TO FIVE MINUTES. A "0" SETTING IS ALSO AVAILABLE FOR DIAGNOSTIC AID AND PROVIDES NO TIME BETWEEN STAGES. IF THE ADJUSTMENT RATE IS SET TO 0, THE DISPLAY SCREEN WILL SCROLL ONCE PER SECOND AS A WARNING. DO NOT LEAVE UNIT IN SERVICE WITH ADJUSTMENT RATE SET AT 0.

EXIT MENU

PRESS MENU TO ADVANCE TO NEXT MENU.

SELECT TO EXIT

PRESS SELECT TO RETURN TO NORMAL OPERATION.

7-24HR HISTORY

PRESS MENU TO GO TO MENU 7.

TEMP: 72F 69-73F

PRESS SELECT FOR REPORT OF THE

PRESENT, MINIMUM, AND MAXIMUM TEMPERATURE OVER THE LAST 24 HOURS. THE FIRST SET OF NUMBERS IS THE CURRENT INFORMATION, THE SECOND SET IS THE LOW FOR THE LAST 24 HOURS AND THE THIRD IS THE HIGH FOR THE LAST 24 HOURS.

HUMID: 50% 48-52%

PRESS SELECT FOR REPORT OF THE PRESENT, MINIMUM, AND MAXIMUM HUMIDITY OVER THE LAST 24 HOURS.

8-% OF CAPACITY

PRESS MENU TO GO TO MENU 8.

COMPS: 100%: 100%

PRESS SELECT FOR REPORT OF CURRENT % OF COMPRESSOR STAGES ONLINE AND AVERAGE % OF COMPRESSOR STAGES ONLINE OVER THE LAST HOUR.

CHILL:100% :100%

PRESS SELECT FOR REPORT OF CURRENT % OF CHILLED-WATER CAPACITY ONLINE AND AVERAGE % OF CHILLED-WATER CAPACITY ONLINE OVER THE LAST HOUR.

HEAT:100% :100%

PRESS SELECT FOR REPORT OF THE CURRENT % OF HEAT STAGES ONLINE AND THE AVERAGE % OF HEAT STAGES ONLINE OVER THE LAST HOUR.

HUMID:100% :100%

PRESS SELECT FOR REPORT OF THE CURRENT % OF HUMIDIFICATION ONLINE AND THE AVERAGE % OF HUMIDIFICATION STAGES ONLINE OVER THE LAST HOUR.

9-RUNTIMES

PRESS MENU TO GO TO MENU 9.

BLOWER: XXXX HRS PRESS SELECT

COOL 1: XXXX HRS PRESS SELECT

COOL 2: XXXX HRS PRESS SELECT

COOL 3: XXXX HRS PRESS SELECT

COOL 4: XXXX HRS PRESS SELECT

HEAT 1: XXXX HRS PRESS SELECT

HEAT 2: XXXX HRS PRESS SELECT

HEAT 3: XXXX HRS PRESS SELECT

HUMID: XXXX HRS PRESS SELECT

DEHUMID: XXXX HR PRESS SELECT

E-SAVER: XXXX HR PRESS SELECT

CHILLED: XXXX HR PRESS SELECT

CONDENSER: XXXX HR PRESS SELECT

10-RESET RUNTIMES

PRESS MENU TO GO TO MENU 10.

RESET TIMES: NO

PRESS SELECT TO RESET RUNTIMES FROM NO TO YES. THE DEFAULT OPTION IS NO. SELECTING YES RESETS ALL RUNTIME COUNTERS TO 0.

11-ALARM HISTORY

PRESS MENU TO GO TO MENU 11.

#1: 0001 HRS AGO

PRESS SELECT TO DISPLAY THE TEN MOST RECENT ALARMS.

MANUAL OVERRIDE

EACH IS PRECEDED BY THE NUMBER OF HOURS AGO THAT THE ALARM WAS DETECTED. THE ALARMS ARE LISTED IN ORDER OF RECENCY.

EXIT MENU

PRESS MENU TO ADVANCE TO NEXT MENU.

SELECT TO EXIT

PRESS SELECT TO RETURN TO NORMAL OPERATION.

12-PASSWORD B

PRESS MENU TO GO TO MENU 12.

PASSWORD B: 00

PRESS SELECT TO DISPLAY PASSWORD.

PASSWORD B: 00

PRESS SELECT TO CYCLE PASSWORD FROM 00 TO 99. THE SECOND PASSWORD PROVIDES ACCESS TO ALL SETUP FUNCTIONS. THESE FUNCTIONS SHOULD BE CHANGED BY QUALIFIED SERVICE PERSONNEL ONLY AND ARE NORMALLY NOT CHANGED AFTER UNIT INSTALLATION.

13-TEMP SCALE

PRESS MENU TO GO TO MENU 13. (IF FORMER PASSWORD WAS CORRECT THEN MENU 14 WILL APPEAR. IF THE PASSWORD WAS INCORRECT, THEN A ONE MINUTE DELAY WILL OCCUR DURING WHICH TIME THE MENU AND SELECT BUTTONS WILL NOT RESPOND.)

TEMP SCALE: F

PRESS SELECT TO DISPLAY THE CURRENT TEMPERATURE SCALE. THE DEFAULT VALUE IS (F) FAHRENHEIT.

TEMP SCALE: C

PRESS SELECT TO CHOOSE EITHER F OR C TEMPERATURE SCALE.

14-TEMP DEADBAND

PRESS MENU TO GO TO MENU 14.

TEMP DB: 1.0F

PRESS SELECT TO DISPLAY CURRENT TEMPERATURE DEADBAND. THE DEFAULT VALUE IS 2.0°F. PRESS SELECT TO CYCLE THE TEMPERATURE DEADBAND TO THE DESIRED VALUE IN .1F INCREMENTS FROM 1.0°F TO 5.0°F.

15-HI TEMP LIMIT

PRESS MENU TO GO TO MENU 15.

HI TEMP LIM: 80F

PRESS SELECT TO DISPLAY CURRENT HIGH-TEMPERATURE ALARM LIMIT. THE DEFAULT VALUE IS 80°F.

HI TEMP LIM: 80F

PRESS SELECT TO CYCLE THE HIGH-TEMPERATURE ALARM LIMIT TO THE DESIRED VALUE IN 1.0-DEGREE INCREMENTS FROM 50°F TO 90°F.

16-LO TEMP LIMIT

PRESS MENU TO GO TO MENU 16.

LO TEMP LIM: 60F

PRESS SELECT TO DISPLAY CURRENT LOW-TEMPERATURE ALARM LIMIT. THE DEFAULT VALUE IS 60°F.

LO TEMP LIM: 60F

PRESS SELECT TO CYCLE THE LOW TEMPERATURE ALARM LIMIT TO THE DESIRED VALUE IN 1.0-DEGREE INCREMENTS FROM 50°F TO 90°F.

17-CALIB TEMP

PRESS MENU TO GO TO MENU 17.

CAL TEMP: 72.0F

PRESS SELECT TO DISPLAY CURRENT TEMPERATURE. PRESS SELECT TO CYCLE THE TEMPERATURE READING TO THE CURRENT CORRECT MEASURED VALUE IN .1°F INCREMENTS, FROM 60°F TO 85.0°F. (ROOM MUST BE WITHIN SETTABLE RANGE.)

18-HUM DEADBAND

PRESS MENU TO GO TO MENU 18.

HUMID DB: 3.0%

PRESS SELECT TO DISPLAY CURRENT HUMIDIFICATION DEADBAND. THE DEFAULT VALUE IS 3.0%.

HUMID DB: 1.0%

PRESS SELECT TO CYCLE THE HUMIDIFICATION DEADBAND TO THE DESIRED VALUE IN .1%, INCREMENTS FROM 1.0% TO 15.0%.

19-HI HUM LIMIT

PRESS MENU TO GO TO MENU 19.

HI HUM LIM: 60%

PRESS SELECT TO DISPLAY CURRENT HIGH-HUMIDITY ALARM LIMIT. THE DEFAULT VALUE IS 60%. PRESS SELECT TO CYCLE THE HIGH-HUMIDITY ALARM LIMIT TO THE DESIRED VALUE IN 1% INCREMENTS, FROM 10% TO 90%.

20-LO HUM LIMIT

PRESS MENU TO GO TO MENU 20.

LO HUM LIM: 40%

PRESS SELECT TO DISPLAY CURRENT LOW-HUMIDITY ALARM LIMIT. THE DEFAULT VALUE IS 40%. PRESS SELECT TO CYCLE THE LOW-HUMIDITY ALARM LIMIT TO THE DESIRED VALUE IN 1% INCREMENTS, FROM 10% TO 90%.

21-CALIB HUMID

PRESS MENU TO GO TO MENU 21.

CAL HUMID: 50.0%

PRESS SELECT TO DISPLAY CURRENT HUMIDITY.

CAL HUMID: 50.1%

PRESS SELECT TO CYCLE THE HUMIDITY READING TO THE CURRENT CORRECT MEASURED VALUE IN .1% INCREMENTS, FROM 20% TO 80%. HUMIDITY SENSORS HAVE A NARROW RANGE OF ACCURACY. FINAL CALIBRATION SHOULD BE DONE WITH THE ROOM AS CLOSE TO 50% RH AS POSSIBLE.

EXIT MENU

PRESS MENU TO ADVANCE TO NEXT MENU.

SELECT TO EXIT

PRESS SELECT TO RETURN TO NORMAL OPERATION.

22-AUDIO ALARM

PRESS MENU TO GO TO MENU 22.

AUDIO ALARM: BEEP

PRESS SELECT TO DISPLAY THE CURRENT AUDIO-ALARM MODE AND A SAMPLE OF THE SOUND LEVEL. PRESS SELECT TO CYCLE THE AUDIO ALARM TO THE DESIRED MODE OF SHORT BEEP, LONG BEEP, FULL ON OR OFF AND FOR A SAMPLE OF THE SELECTION WITH EACH CHANGE.

23-RESTART MODE

PRESS MENU TO GO TO MENU 23.

RESTART: AUTO

PRESS SELECT TO DISPLAY CURRENT POWER-FAILURE RESTART MODE. THE DEFAULT VALUE IS AUTO. PRESS SELECT TO CYCLE THE DESIRED RESTART MODE. ALL AUTOMATIC RESTART ALARMS AUTOMATICALLY CANCEL AFTER FIFTEEN MINUTES. THE POWER-FAILURE RESTART MODE OPTIONS ARE:

RESTART: AUTO

FOR AUTOMATIC RESTART WITH NO MESSAGE OR AUDIO ALARMS

RESTART: AUTO M

FOR AUTOMATIC RESTART WITH ALARM MESSAGE ONLY

RESTART: AUTO A

FOR AUTOMATIC RESTART WITH ALARM MESSAGE AND AUDIO ALARM

RESTART: AUTO R

FOR AUTOMATIC RESTART WITH ALARM MESSAGE, AUDIO ALARM, AND ALARM RELAY

RESTART: MANUAL

FOR MANUAL RESTART WITH ALARM MESSAGE AND AUDIO ALARM

(PRESS ALARM SILENCE TO MANUALLY RESTART UNIT.)

24-START DELAY

PRESS MENU TO GO TO MENU 24.

DELAY: 00:05

PRESS SELECT TO DISPLAY CURRENT START DELAY TIMES. THE DEFAULT VALUE IS FIVE SECONDS. PRESS SELECT TO CYCLE THE START-DELAY TIME TO THE DESIRED VALUE IN FIVE SECOND INCREMENTS FROM FIVE SECONDS TO TEN MINUTES. THE DEFAULT VALUE IS FIVE SECONDS.

25-FIRE STAT

PRESS MENU TO GO TO MENU 25.

FIRE STAT: 100F

PRESS SELECT TO DISPLAY CURRENT FIRE-STAT TRIP POINT BASED ON RETURN AIR SENSOR TEMPERATURE. THE DEFAULT VALUE IS 100°F. PRESS SELECT TO CYCLE TO THE DESIRED FIRE-STAT TRIP POINT IN 1°F INCREMENTS FROM 100°F TO 150°F. THIS ALARM REQUIRES A HIGH TEMPERATURE AND A TEMPERATURE CHANGE OVER A SHORT PERIOD OF TIME. THIS MEANS THAT IF THE COMPUTER ROOM IS OVER THE ALARM TRIP POINT ON START-UP, NO ALARM WILL TAKE PLACE.

26-MAINTENANCE

PRESS MENU TO GO TO MENU 26.

MAINTENANCE: OFF

PRESS SELECT TO DISPLAY THE SCHEDULED TIME BETWEEN MAINTENANCE-DUE ALARMS. THE DEFAULT VALUE IS OFF. PRESS SELECT TO CYCLE TO THE DESIRED TIME BETWEEN MAINTENANCE DUE ALARM MESSAGES FROM OFF OR ONE HOUR TO 1000 HOURS OF BLOWER RUNTIME.

EXIT MENU
PRESS MENU TO ADVANCE TO NEXT MENU.
SELECT TO EXIT
PRESS SELECT TO RETURN TO NORMAL
OPERATION.

27-SET ALARM #1
PRESS MENU TO GO TO MENU 27.
#1: LOCAL ALARM
PRESS SELECT TO DISPLAY CURRENT
MESSAGE FOR ALARM INPUT #1. THE
DEFAULT VALUE IS LOCAL ALARM. PRESS
SELECT TO CYCLE TO THE DESIRED
MESSAGE FOR ALARM #1. IF UNIT HAS 3 OR
4 COMPRESSORS, THIS OPTION MUST BE SET
FOR HIGH PRESSURE C3. IF ANOTHER
SELECTION IS MADE, ALL COMPRESSOR
SAFETIES WILL OPERATE NORMALLY, BUT
NO HIGH PRESSURE ALARM CAN OCCUR.

THE ALARM MESSAGES AVAILABLE ARE:
#1: HIGH PRES C3
#1: STANDBY PUMP
#1: LOCAL ALARM
#1: LOCKOUT REHEAT
#1: LOCKOUT HUMIDIFICATION
#1: LOCKOUT HEAT AND HUMIDIFICATION
#1: CUSTOM MESSAGE
NOTE OPTIONAL INPUT FOR HIGH PRESSURE
COMPRESSOR 3 IS THE ONLY INPUT
NORMALLY NOT USED ON RETROFIT
APPLICATIONS.

28-ALARM 1 DELAY
PRESS MENU TO GO TO MENU 28.
ALARM 1 DLY: 005
PRESS SELECT TO DISPLAY CURRENT
ALARM #1 DELAY TIME. PRESS SELECT TO
CYCLE THE ALARM #1 DELAY TIME TO THE
DESIRED VALUE IN ONE SECOND
INCREMENTS FROM ONE SECOND TO 900
SECONDS.

29-ALARM 1 RELAY
PRESS MENU TO GO TO MENU 29.
ALARM 1 RELAY: Y
PRESS SELECT TO DISPLAY THE CURRENT
ALARM RELAY USAGE WITH ALARM #1.
THE DEFAULT STATUS IS YES. PRESS SELECT
TO CYCLE THE USE OF THE ALARM RELAY
WITH ALARM #1 FROM YES (Y) TO NO (N).

30-SET ALARM #2
PRESS MENU TO GO TO MENU 30.
#2: LOCAL ALARM

PRESS SELECT TO DISPLAY CURRENT
MESSAGE FOR ALARM INPUT #2. THE
DEFAULT VALUE IS LOCAL ALARM. PRESS
SELECT TO CYCLE THE DESIRED MESSAGE
FOR ALARM #2.

THE ALARM MESSAGES AVAILABLE ARE:

#2: HIGH PRES C4
#2: STANDBY PUMP
#2: LOCAL ALARM
NOTE OPTIONAL INPUT FOR HIGH PRESSURE
COMPRESSOR 4 IS THE ONLY INPUT
NORMALLY NOT USED ON RETROFIT
APPLICATIONS. IF YOUR UNIT DOES NOT
HAVE 4 COMPRESSORS, SET THIS OPTION
FOR LOCAL ALARM.

31-ALARM 2 DELAY
PRESS MENU TO GO TO MENU 31.
ALARM 2 DLY: 005
PRESS SELECT TO DISPLAY CURRENT
ALARM #2 DELAY TIME. THE DEFAULT
VALUE IS FIVE SECONDS. PRESS SELECT TO
CYCLE THE ALARM #2 DELAY TIME TO THE
DESIRED VALUE IN ONE SECOND
INCREMENTS FROM ONE SECOND TO 900
SECONDS.

32-ALARM 2 RELAY
PRESS MENU TO GO TO MENU 32.
ALARM 2 RELAY: Y
PRESS SELECT TO DISPLAY THE CURRENT
RELAY USAGE WITH ALARM #2. THE
DEFAULT STATUS IS YES. PRESS SELECT TO
CYCLE THE USE OF THE ALARM_RELAY
WITH ALARM #2 FROM YES (Y) TO NO (NO).

33-SET ALARM #3
PRESS MENU TO GO TO MENU 33.
#3: LOCAL ALARM
PRESS SELECT TO DISPLAY CURRENT
MESSAGE FOR ALARM INPUT #3. THE
DEFAULT VALUE IS LOCAL ALARM. PRESS
SELECT TO CYCLE TO THE DESIRED
MESSAGE FOR ALARM #3.

THE ALARM MESSAGES AVAILABLE ARE:
#3: LOCAL ALARM
#3: ENERGY SAVER
#3: CUSTOM MESSAGE
INPUT #3 IS REQUIRED FOR ENERGY-SAVER
OPERATION, AND IS NOT AVAILABLE FOR
OTHER ALARMS ON ENERGY-SAVER UNITS.

34-ALARM 3 DELAY
PRESS MENU TO GO TO MENU 34.

ALARM 3 DLY: 005

PRESS SELECT TO DISPLAY CURRENT ALARM #3 DELAY TIME, THE DEFAULT VALUE IS FIVE SECONDS. PRESS SELECT TO CYCLE THE ALARM #3 DELAY TIME TO THE DESIRED VALUE IN ONE SECOND INCREMENTS FROM ONE SECOND TO 900 SECONDS.

35-ALARM 3 RELAY

PRESS MENU TO GO TO MENU 35.

ALARM 3 RELAY: Y

PRESS SELECT TO DISPLAY THE CURRENT ALARM RELAY USAGE WITH ALARM #3. THE DEFAULT STATUS IS YES. PRESS SELECT TO CYCLE THE USE OF THE ALARM RELAY WITH ALARM #3 FROM YES (Y) TO NO (N).

EXIT MENU

PRESS MENU TO GO TO NEXT MENU.

SELECT TO EXIT

PRESS SELECT TO RETURN TO NORMAL OPERATION.

36-COMPRESSORS

PRESS MENU TO GO TO MENU 36.

COMP: PRI

PRESS SELECT TO CHOOSE FROM THE FOLLOWING:

COMP: PRI

COMP: PRI/PRI

COMP: PRI/PRI/PRI/PRI

COMP: PRI/SEC

COMP: PRI/SEC PRI/SEC

PRI INDICATES A SINGLE COMPRESSOR.

PRI/PRI INDICATES TWO COMPRESSORS.

PRI/PRI/PRI/PRI INDICATES 3 OR 4 COMP

PRI/SEC INDICATES ONE COMPRESSOR WITH UNLOADING.

PRI/SEC PRI/SEC INDICATES 2 COMPRESSORS WITH UNLOADING

NOTE IF YOUR UNIT HAS 3 COMPRESSORS, THE PANEL WILL DISPLAY 4TH STAGE COOLING.

37-HEAT STAGES

PRESS MENU TO GO TO MENU 37.

HEAT STAGES: 3

PRESS SELECT TO CHOOSE FROM THE FOLLOWING:

HEAT STAGES: 0

HEAT STAGES: 1

HEAT STAGES: 3

38-HUMIDIFIER

PRESS MENU TO GO TO MENU 38.

HUMIDIFIER: YES

PRESS SELECT TO CHOOSE FROM THE FOLLOWING:

HUMIDIFIER: YES

HUMIDIFIER: NO

39-WATER VALVE

PRESS MENU TO GO TO MENU 39.

VALVE: NONE

PRESS SELECT TO CHOOSE FROM THE FOLLOWING:

VALVE: NONE

VALVE: CHILLED

40-H2O VDC

PRESS MENU TO GO TO MENU 40.

H2O VDC: 0-10 DC

PRESS SELECT TO CHOOSE FROM THE FOLLOWING:

H2O VDC: 0-10 DC

H2O VDC: 4-7 DC

H2O VDC: 6-9 DC

H2O VDC: 7-10 DC

THIS WILL BE SET AT THE FACTORY BASED ON THE TYPE OF VALVE MOTOR INSTALLED. IF THE MOTOR IS REPLACED AND THE CONTROL VOLTAGE IS NOT DETERMINED FOR THE VALVE MOTOR, RUN THE MANUAL DIAGNOSTICS (TEST 7) TO DETERMINE CLOSED AND OPEN VOLTAGE. THE OPERATING DISPLAY SHOWS A PERCENTAGE OF VALVE OPENING BASED ON APPLIED CONTROL VOLTAGE. MOST VALVES WILL WORK SET AT 1-10 VOLTS, BUT THE PERCENT OF CAPACITY DISPLAY WILL BE INCORRECT.

41-PASSWORD A

PRESS MENU TO ADVANCE TO MENU 41.

PASSWORD A: 00

PRESS SELECT TO CYCLE PASSWORD FROM 00-99.

42-PASSWORD B

PRESS MENU TO ADVANCE TO MENU 42.

PASSWORD B: 00

PRESS SELECT TO CYCLE PASSWORD FROM 00-99.

EXIT MENU

PRESS MENU TO ADVANCE TO NEXT MENU.

SELECT TO EXIT

PRESS SELECT TO RETURN TO NORMAL OPERATION.

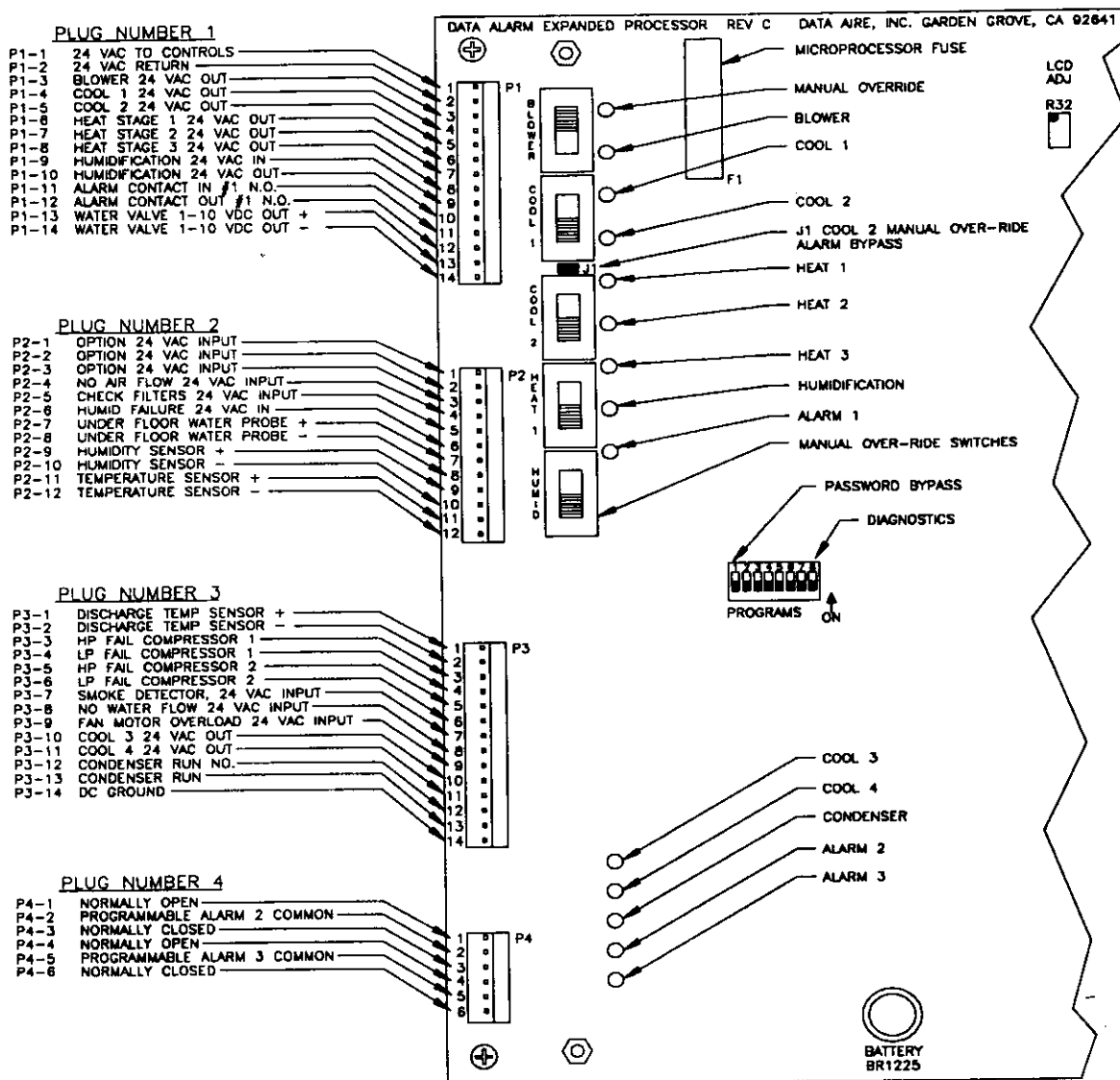


FIGURE 5: DAP PLUG PIN IDENTIFICATION

43-DISCHARGE AIR TEMP LIMIT
 PRESS MENU TO ADVANCE TO MENU 43.
SENSOR NOT INSTALLED
 PRESS SELECT TO CYCLE TEMP FROM
 SENSOR NOT INSTALLED TO 45 TO 60
 DEGREES.
NOTE, A DISCHARGE AIR SENSOR FAILURE
WILL OCCUR AT START UP IF NO SENSOR
IS USED AND THE PANEL IS NOT SET TO
NO SENSOR INSTALLED. DISCHARGE AIR
SENSORS ARE NORMALLY NOT USED ON
RETROFIT APPLICATIONS.

44-CALIBRATE DISCHARGE AIR TEMP SENS
 PRESS MENU TO ADVANCE TO MENU 44.
SENSOR NOT INSTALLED

PRESS SELECT TO CALIBRATE DISCHARGE
SENSOR.

45-ALARM RELAY #1 CATEGORY
 PRESS SELECT TO ADVANCE TO MENU 45
ANY ALARM CONDITION
 PRESS SELECT TO CHOSE THE ALARM
 GROUP THAT WILL CAUSE ALARM RELAY #1
 TO CLOSE ON AN ALARM. SELECT FROM
 THE FOLLOWING:
ANY ALARM CONDITION
ANY UNIT MECHANICAL ALARM
ANY TEMPERATURE OR HUMIDITY ALARM
ANY SMOKE OR FIRE ALARM
UNDERFLOOR WATER DETECTION
NOTE THAT ALL EXISTING PANELS ONLY

HAVE 1 ALARM RELAY THAT CLOSES ON ANY ALARM CONDITION.

46-ALARM RELAY #2 CATEGORY

PRESS SELECT TO ADVANCE TO MENU 46
ANY ALARM CONDITION
PRESS SELECT TO CHOSE THE ALARM
GROUP THAT WILL CAUSE ALARM RELAY #2
TO CLOSE ON AN ALARM. SELECT FROM
THE FOLLOWING:

NOT USED

ANY ALARM CONDITION

ANY UNIT MECHANICAL ALARM

ANY TEMPERATURE OR HUMIDITY ALARM

ANY SMOKE OR FIRE ALARM

UNDERFLOOR WATER DETECTION

NOTE THAT ALL EXISTING PANELS ONLY
HAVE 1 ALARM RELAY THAT CLOSES ON
ANY ALARM CONDITION.

47-ALARM RELAY #3 CATEGORY

PRESS SELECT TO ADVANCE TO MENU 47
ANY ALARM CONDITION
PRESS SELECT TO CHOSE THE ALARM
GROUP THAT WILL CAUSE ALARM RELAY #3
TO CLOSE ON AN ALARM. SELECT FROM
THE FOLLOWING:

NOT USED

ANY ALARM CONDITION

ANY UNIT MECHANICAL ALARM

ANY TEMPERATURE OR HUMIDITY ALARM

ANY SMOKE OR FIRE ALARM

UNDERFLOOR WATER DETECTION

NOTE THAT ALL EXISTING PANELS ONLY
HAVE 1 ALARM RELAY THAT CLOSES ON
ANY ALARM CONDITION.

48-PERSON TO CONTACT ON ALARM

PRESS SELECT TO ADVANCE TO MENU 48
SERVICE COMPANY
SELECT FROM THE FOLLOWING MESSAGES
ADDED TO THE BASIC ALARM
INFORMATION:

CONTACT MESSAGE NOT USED

ALARM: CONTACT D.P. MANAGER

ALARM: CONTACT BUILDING MANAGER

ALARM: CONTACT SUPERVISOR

ALARM: CONTACT SERVICE COMPANY

ALARM: CUSTOM MESSAGE

CUSTOM MESSAGE NOT AVAILABLE FOR
RETROFIT APPLICATIONS.

DIAGNOSTIC PROGRAM

AUTOMATIC DIAGNOSTIC TESTS

WHENEVER THE POWER IS FIRST TURNED
ON, AND PERIODICALLY WHILE OPERATING,
THE DATA ALARM PROCESSOR WILL
ROUTINELY INITIATE A SELF-TEST
SEQUENCE. THE FOLLOWING FUNCTIONS
WILL BE CHECKED AND THEIR STATUS WILL
BE REPORTED:

SOFTWARE REV X.X

EPROM: PASS/FAIL

BATTERY: PASS/FAIL

EEPROM: PASS/FAIL

MENU: PASS/FAIL

SILENCE: PASS/FAIL

SWITCH: PASS/FAIL

VOLTAGE: PASS/FAIL

STATIC RAM: PASS/FAIL

A TO D: PASS/FAIL

TEMP SENSOR: PASS/FAIL

HUMID SENSOR: PASS/FAIL

NETWORK: YES/NO

START-UP COMPLETE

START DELAY XX COUNTDOWN

MANUAL DIAGNOSTIC TESTS

TO ENTER THE MANUAL DIAGNOSTIC
PROGRAM, SET PROGRAM SWITCH 8 TO THE
"UP" OR ON POSITION. THE SELF-TEST
SEQUENCE DESCRIBED ABOVE WILL
ALWAYS PRECEDE THE MANUAL
DIAGNOSTIC PROGRAM, FOLLOWED BY THE
FIRST DIAGNOSTIC MENU. TO EXIT THE
DIAGNOSTIC TEST, SET SWITCH 8 TO THE
NORMAL "DOWN" OR OFF POSITION THEN
TURN THE UNIT OFF AND BACK ON.

1-MENU & SELECT

DIAGNOSTIC TEST 1 TITLE WILL
AUTOMATICALLY APPEAR AFTER THE SELF-
TEST HAS BEEN COMPLETED.

MENU:- SELECT:-

TEST 1 WILL AUTOMATICALLY START
AFTER THE ABOVE TITLE IS SHOWN FOR
TWO SECONDS. EACH TIME EITHER THE
MENU OR THE SELECT SWITCH IS PRESSED
THE :- WILL CHANGE TO :* FOR AS LONG AS
THE SWITCH IS HELD DOWN. PRESS MENU
AND SELECT AT THE SAME TIME AND
RELEASE TO ADVANCE TO NEXT PROGRAM.
THEN PRESS MENU AS REQUIRED TO
ADVANCE TO DESIRED TEST.

1	24 VAC Trans	Humidifier Fail	21
2	24 VAC to Cont	Floor Water Detector	22
3	24 VAC Return	Floor Water Detector	23
4	Blower	Humid Sensor +	24
5	Cool 1	Humid Sensor -	25
6	Cool 2	Temp Sensor +	26
7	Heat 1	Temp Sensor -	27
8	Heat 2	Discharge Air Sensor +	28
9	Heat 3	Discharge Air Sensor -	29
10	Humid In	HP Fail Compressor 1	30
11	Humid Out	LP Fail Compressor 1	31
12	Alarm N.O.	HP Fail Compressor 2	32
13	Alarm N.O.	LP Fail Compressor 2	33
14	Water Valve +	Smoke Detector	34
15	Water Valve -	No Water Flow	35
16	Option 1	Fan Motor Overload	36
17	Option 2	Cool 3	37
18	Option 3	Cool 4	38
19	No Air Flow	Condenser Run	39

FIGURE 6:
TERMINAL CONNECTION BOARD LABEL. ALL TERMINALS WILL NOT BE USED. SEE WIRING DIAGRAM FOR YOUR UNIT. CUT LABEL TO IDENTIFY UNIT CONNECTION POINTS

2-PROGRAM SWITCH

PRESS MENU TO GO TO DIAGNOSIS. MENU 2
 1 8

PRESS SELECT TO START PROGRAM SWITCH TEST. YOU ARE IN THE DIAGNOSTIC MODE, SO SWITCH NUMBER 8 SHOULD BE DISPLAYED. SWITCH NUMBER 1 WILL BE DISPLAYED IF THE PASSWORD BYPASS FEATURE IS ON. SWITCH NUMBER 2 PROVIDES AN OVERRIDE OF THE HUMIDITY ANTICIPATION FEATURE. THE REMAINING SWITCHES ARE NOT USED BUT COULD BE CHECKED BY TURNING ON ONE AT A TIME, THEN ALL OFF ONE AT A TIME. WATCH FOR FAILURE TO TURN ON, OR OFF, OR TO OPERATE INDEPENDENTLY. A DASH MARK (-) INDICATES THAT THE SWITCH IS OFF. THE NUMBER OF THE SWITCH INDICATES THE SWITCH IS ON. SWITCHES NUMBER 1, 2 AND 8 ARE CURRENTLY USED.

3-TEST RELAYS

PRESS MENU TO GO TO DIAGNOSIS MENU 3.

BLOWER K7 P1-3

PRESS SELECT TO MANUALLY TURN ON ONE RELAY AT A TIME WITH THE FUNCTION NAME, PCB RELAY LOCATION, AND CONNECTOR PIN DISPLAYED ON THE LCD.

THIS DIAGNOSTIC FUNCTION PROVIDES AN EASY WAY TO CHECK THE UNIT AT START-UP. FIRST, PRESS SELECT TO DISPLAY BLOWER K7 P1-3. "BLOWER" INDICATES THE CONTROLLED ITEM. "K3" INDICATES THE OUTPUT RELAY ON THE DAP PANEL AND "P1-3" INDICATES THE PLUG AND PIN NUMBER FOR CONTROL VOLTAGE OUTPUT FROM DAP PANEL.

PRESS THE SELECT BUTTON A SECOND TIME. THE BLOWER WILL CONTINUE TO OPERATE AND THE DISPLAY WILL SHOW COMP #1 K6 P1-4. COMPRESSOR NUMBER 1 WILL NOW OPERATE WITH THE DISPLAY SHOWING RELAY AND PIN IDENTIFICATION DATA FOR THE COMPRESSOR.

PRESS THE SELECT BUTTON A THIRD TIME. THE BLOWER WILL CONTINUE TO OPERATE, AND THE FIRST COMPRESSOR WILL BE TURNED OFF. THE DISPLAY WILL SHOW COMP #2 K5 P1-5. COMPRESSOR NUMBER 2 WILL NOW OPERATE WITH THE DISPLAY SHOWING RELAY AND PIN IDENTIFICATION DATA FOR THE COMPRESSOR. DATA AIRE SYSTEMS UNITS DO NOT HAVE A SECOND COMPRESSOR. HOWEVER, UNLOADING OF THE COMPRESSOR IS ACCOMPLISHED WITH

A SOLENOID VALVE THAT TURNS ON HOT-GAS BYPASS ON SOME UNITS.

PRESS THE SELECT BUTTON A FOURTH TIME. THE BLOWER WILL CONTINUE TO OPERATE AND THE SECOND COMPRESSOR WILL BE TURNED OFF. THE DISPLAY WILL SHOW HEAT #1 K4 P1-6. HEAT NUMBER 1 WILL NOW OPERATE WITH THE DISPLAY SHOWING RELAY AND PIN IDENTIFICATION DATA FOR FIRST STAGE HEAT.

ADDITIONAL PUSHES OF THE SELECT BUTTON WILL CONTINUE TO STEP THROUGH THE REMAINING ITEMS BELOW:

HEAT #2 K3 P1-7
HEAT #3 K2 P1-8
HUMID K1 P1-10
ALARM K8 P1-12

4-AUDIO ALARM

PRESS MENU TO GO TO DIAGNOSIS MENU 4.
AUDIO ALARM: ON
PRESS SELECT TO CYCLE AUDIO ALARM FROM ON TO OFF TO ON.

5-TEMP & HUMID

PRESS MENU TO GO TO DIAGNOSIS MENU 5.
TEMP XXF + 01.9F
PRESS SELECT TO DISPLAY RAW TEMPERATURE AND + OR - CALIBRATION OFFSET.
HUM: XX% - 23.5%
PRESS SELECT TO DISPLAY RAW HUMIDITY AND + OR - CALIBRATION OFFSET.

6-ALARM INPUTS

PRESS MENU TO GO TO DIAGNOSIS MENU 6.
P2: 1 2 3 4 5 6
PRESS SELECT TO READ 24VAC ALARM INPUTS. THE CONNECTOR NUMBER INDICATES THE ALARM INPUT IS ON, A DASH MARK (-) MEANS THE ALARM INPUT IS OFF. ALL EXTERNAL ALARM INPUTS ARE LISTED BELOW:
1= OPTION 1
2= OPTION 2
3= OPTION 3
4= NO AIR FLOW
5= CHANGE FILTERS
6= HUMIDIFIER FAILURE

7-WATER VALVE

PRESS MENU TO GO TO DIAGNOSIS MENU 7.
H2O VALVE: 10 DC

PRESS SELECT TO INCREMENT CHILLED-WATER VALVE VOLTAGE FROM 0 TO 10 VOLTS IN ONE-VOLT INCREMENTS.

8-FLOOR WATER

PRESS MENU TO GO TO DIAGNOSIS MENU 8.
FLOOR: DRY
PRESS SELECT TO REPORT THE STATUS OF THE UNDER-FLOOR WATER-DETECTION PROBE AS EITHER WET OR DRY.

9-NETWORK TEST

PRESS MENU TO GO TO DIAGNOSIS MENU 9.
NETWORK: PASS
PRESS SELECT TO START A NETWORK TRANSMIT AND RECEIVE TEST. IF THE UNIT IS NOT ON AN ACTIVE NETWORK, THEN TWO WIRE JUMPERS FROM + TO + AND - TO - AT TB1 ARE REQUIRED.
NOTE PANELS DO NOT HAVE NETWORK COMMUNICATIONS CARD AS STANDARD EQUIPMENT.

10-RS-232 TEST

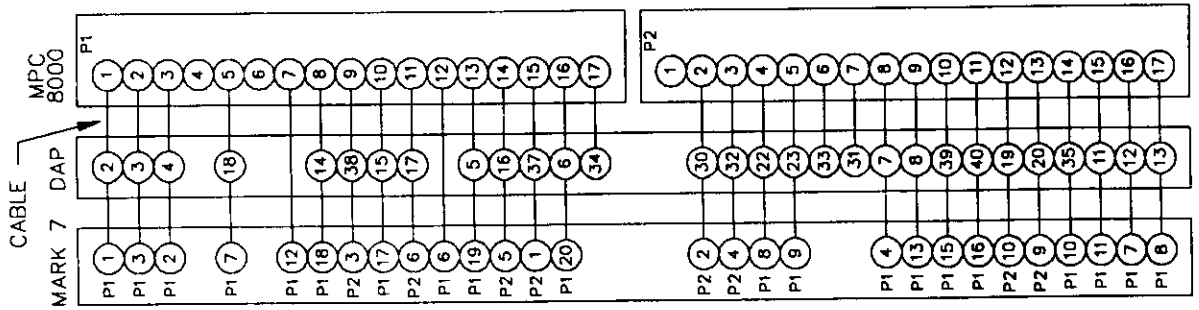
PRESS MENU TO GO TO DIAGNOSIS MENU 10.
NOTE RS232 TEST REQUIRES A SPECIAL BOARD AND IS A FACTORY ONLY TEST FUNCTION.

NOTES:
CHANGING MARK 7 OR MPC 8000
TO DAP PANEL

1. MARK 7 HAS NO HP OR LP FAIL, DISPLAYS COOL FAIL ONLY. DAP WILL DISPLAY HP FAIL.
2. USE DIAGRAMS AT LEFT TO IDENTIFY TERMINALS ON CABLE PLUGS FOR MARK 7 AND MPC 8000. WIRE TO TERMINAL ON DAP PANEL AS INDICATED.
3. MOD MTR R IS NOT USED ON DAP REPLACEMENT PANEL.
4. THE INPUT OPTION #1, PIN #16 IS ASSIGNED FOR HIGH PRESSURE #3.
5. THE INPUT OPTION #2, PIN #17 IS ASSIGNED FOR HIGH PRESSURE #4.
6. THE INPUT OPTION #3, PIN #18 IS ASSIGNED FOR FREE COOLING.
7. DAP TERMINAL 11 IS OUTPUT FOR HUMIDIFICATION, TERMINAL 10 IS INPUT AND MUST BE POWERED.
8. DAP TERMINAL 24 & 25 ARE FOR HUMIDITY SENSOR, TERMINALS 26 & 27 FOR TEMPERATURE SENSOR.
9. SEE WIRING SECTION OF MANUAL FOR ADDITIONAL INFORMATION.

WARNING: THIS DIAGRAM REPRESENTS THE BEST EFFORT TO IDENTIFY WIRING REQUIREMENTS FOR REPLACING OLD STYLE CONTROL PANELS WITH THE CURRENT DAP. MINOR CHANGES MAY BE REQUIRED ON SOME UNITS.

REPLACEMENT DAP CONTROL PANEL FOR MARK 7/MPC 8000 UNITS	
DATA AIRE INC. A CONSTRUCTION SPECIALTIES, INC. Company	
DRAWN BY: ACROSS	SCALE
CHECKED BY:	TFC REPL/PNL
DATE: 9-29-89	SHT. OFF
REPL PANEL DRAWING NO.	



MPC 8000		P1
1	24 VAC	
2	24 VAC RET	
3	BLOWER	
4	COOL FAIL 4 LP	
5	FREE COOLING	
6	NOT USED	
7	HUM FAIL	
8	MOD. MTR W	
9	COOLING 4TH STAGE	
10	MOD. MTR B	
11	COOL FAIL 4 HP	
12	MOD. MTR R	
13	COOLING 1ST STAGE	
14	COOL FAIL 3 HP	
15	COOLING 3RD STAGE	
16	COOLING 2ND STAGE	
17	SMOKE DETECTOR	

1	COOL FAIL 3 LP	
2	COOL FAIL 1 HP	
3	COOL FAIL 2 HP	
4	WATER PROBE	
5	WATER PROBE	
6	COOL FAIL 2 LP	
7	COOL FAIL 1 LP	
8	HEATING 1ST STAGE	
9	HEATING 2ND STAGE	
10	REMOTE CONDENSOR	
11	REMOTE CONDENSOR	
12	NO AIR FLOW	
13	CLOGGED FILTER	
14	NO WATER FLOW	
15	HUMIDIFICATION	
16	REMOTE ALARM	
17	REMOTE ALARM	

DAP		P2
2	24 VAC	
3	24 VAC RET	
4	BLOWER	
5	COOL 1	
6	COOL 2	
7	HEAT 1	
8	HEAT 2	
9	HEAT 3	
10	HUMID IN	
11	HUMID OUT	
12	ALARM N.O.	
13	ALARM N.O.	
14	WATER VALVE +	
15	WATER VALVE -	
16	OPT 24 VAC INPUT	
17	OPT 24 VAC INPUT	
18	OPT 24 VAC INPUT	
19	NO AIR FLOW	
20	CHANGE FILTER	
21	HUM FAIL	
22	FLOOD WATER	
23	FLOOD WATER	
24	HUMIDITY SENSOR	
25	HUMIDITY SENSOR	
26	TEMPERATURE SENSOR	
27	TEMPERATURE SENSOR	
30	HP FAIL COMP 1	
31	LP FAIL COMP 1	
32	HP FAIL COMP 2	
33	LP FAIL COMP 2	
34	SMOKE DETECTOR	
35	NO WATER FLOW	
37	COOLING 3RD STAGE	
38	COOLING 4TH STAGE	
39	CONDENSER RUN	
40	CONDENSER RUN	

DX MARK 7		P1
1	24 VAC	
2	BLOWER	
3	VAC RET	
4	HEATING 1ST STAGE	
5	NOT USED	
6	MOD MTR R	
7	FREE COOLING	
8	WATER PROBE	
9	WATER PROBE	
10	NO WATER FLOW	
11	HUMIDIFICATION	
12	HUM FAIL	
13	HEATING 2ND STAGE	
14	NOT USED	
15	REMOTE CONDENSER	
16	REMOTE CONDENSER	
17	MOD MTR B	
18	MOD MTR W	
19	COOLING 1ST STAGE	
20	COOLING 2ND STAGE	

1	COOLING 3RD STAGE	
2	COOL 1 FAIL	
3	COOLING 4TH STAGE	
4	COOL 2 FAIL	
5	COOL 3 FAIL	
6	COOL 4 FAIL	
7	REMOTE ALARM	
8	REMOTE ALARM	
9	CLOGGED FILTER	
10	NO AIR FLOW	

RECOMMENDED PROGRAM SETTINGS

MENU #	FUNCTION	DAA 06-30	ENERGY SAVER	DAW/G 06-30	YOUR SETTINGS
1	DISPLAY SETPOINTS	INFORMATION ONLY PROGRAM SETTING NOT REQUIRED			
2	PASSWORD A	SET AS REQUIRED TO GAIN ACCESS TO HIGHER LEVEL MENUS			
3	TEMP SETPOINT	70-72	70-72	70-72	_____
4	HUMIDITY SETPOINT	50%	50%	50%	_____
5	COMP LEAD LAG	1	1	1	_____
6	ADJUSTMENT RATE	1	1	1	_____
7	24-HOUR HISTORY	INFORMATION ONLY PROGRAM SETTING NOT REQUIRED			
8	% OF CAPACITY	INFORMATION ONLY PROGRAM SETTING NOT REQUIRED			
9	RUN TIMES	INFORMATION ONLY PROGRAM SETTING NOT REQUIRED			
10	RESET RUN TIMES	USED TO RESET RUN TIMES AS DESIRED			
11	ALARM HISTORY	INFORMATION ONLY PROGRAM SETTING NOT REQUIRED			
12	PASSWORD B	SET AS REQUIRED TO GAIN ACCESS TO HIGHER-LEVEL MENUS			
13	TEMP SCALE	SET FOR DESIRED UNITS, FAHRENHEIT OR CENTIGRADE			
14	TEMP DEAD BAND	1-2	1-2	1-2	_____
15	TEMP HIGH LIMIT	80	80	80	_____
16	TEMP LOW LIMIT	60	60	60	_____
17	CALIBRATE TEMP	SET TO MATCH ROOM RETURN AIR TEMPERATURE AT UNIT			
18	HUMID DEAD BAND	3-5	3-5	3-5	_____
19	HI HUMIDITY LIMIT	60%	60%	60%	_____
20	LO HUMIDITY LIMIT	40%	40%	40%	_____
21	CALIBRATE HUMIDITY	SET TO MATCH ROOM RETURN AIR HUMIDITY AT UNIT			
22	AUDIO ALARM	SET FOR DESIRED ALARM NOISE LEVEL			_____
23	RESTART MODE	AUTO	AUTO	AUTO	_____
24	START DELAY	5-30	5-30	5-30	_____
25	FIRE STAT	100-120	100-120	100-120	_____
26	MAINTENANCE	OFF, UNLESS PERIODIC MAINTENANCE SCHEDULE USED			_____
27	SET ALARM #1	LOCAL **	LOCAL **	LOCAL **	_____
28	ALARM 1 DELAY	5	5	5	_____
29	ALARM 1 RELAY	Y	Y	Y	_____
30	SET ALARM #2	LOCAL **	LOCAL **	LOCAL **	_____
31	ALARM 2 DELAY	5	5	5	_____
32	ALARM 2 RELAY	Y	Y	Y	_____
33	SET ALARM #3	LOCAL	ENERGY SAVER	LOCAL	_____
34	ALARM 3 DELAY	5	5	5	_____
35	ALARM 3 RELAY	Y	Y	Y	_____
36	COMPRESSORS	PRI/PRI	PRI/PRI	PRI/PRI	_____
37	HEAT STAGES	3	3	3	_____
38	HUMIDIFIER	YES	YES	YES	_____
39	WATER VALVE	NO	YES	YES	_____
40	H2O VDC	SET TO MATCH VALVE MOTOR ON UNITS			_____
41	PASSWORD A	SET AS DESIRED NOT 00			_____
42	PASSWORD B	SET AS DESIRED			_____

CONTROL TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	CHECK OR REMEDY
CONTROL WON'T PASS SELF TEST	LOW-VOLTAGE WARNING	TEST WILL CONTINUE IF ACKNOWLEDGED WITH SILENCE SWITCH, CORRECT LOW-VOLTAGE CONDITION TO AVOID EQUIPMENT DAMAGE.
	BATTERY FAILURE	TEST WILL CONTINUE IF ACKNOWLEDGED WITH SILENCE SWITCH, TWIST BATTERY IN BACK OF PANEL TO CLEAN CONTACTS, RESTART UNIT TO CONTINUE TEST. IF BATTERY STILL FAILS, REPLACE BATTERY. UNIT WILL OPERATE NORMALLY WITH BATTERY FAILURE, BUT HISTORICAL DATA WILL BE LOST IN CASE OF POWER FAILURE.
	TEMPERATURE OR HUMIDITY SENSOR FAILURE	UNIT WILL NOT BE ALLOWED TO OPERATE WITH AUTOMATIC CONTROL. UNIT MAY BE OPERATED USING MANUAL OVERRIDE SWITCHES. CALL DATA AIRE ENGINEERING FOR ASSISTANCE.
BLOWER WON'T START	NO MAIN POWER	CHECK L1,L2,L3 FOR RATED VOLTAGE.
	BLOWN FUSE	CHECK OUTPUT SIDE OF FUSE BLOCK FEEDING BLOWER CONTACTOR.
	TRANSFORMER OVERLOAD TRIPPED	PRESS RESET BUTTON ON EACH CONTROL TRANSFORMER.
	MOTOR OVERLOAD TRIPPED	WILL START AUTOMATICALLY AFTER COOL DOWN, CHECK MOTOR AMPERAGE.
	RELAY K7 OPEN,	CHECK PANEL LCD DISPLAY FOR START DELAY COUNT- DOWN, MAY BE SET UP TO 10 MINUTES. OPEN COVER OF DAP, AND CHECK BLOWER LED. IF LIT RELAY IS POWERED 24 VAC OUTPUT AT PLUG P1-3. TURN ON MANUAL OVERRIDE SWITCH. IF BLOWER DOES NOT RUN, PROBLEM IS EXTERNAL TO PANEL. CHECK PLUGS, CABLE, WIRING AND RELAY AS LISTED BELOW.
	CABLE FROM DAP TO TERMINAL STRIP OPEN	CHECK CONTINUITY FROM PLUG P1-3 TO TERMINAL #4.
	WIRE FROM TERM. STRIP TO CONTACTOR	CHECK CONTINUITY FROM TERMINAL 4 TO BLOWER RELAY COIL.
	BLOWER CONTACTOR COIL OPEN	CHECK FOR 24 VAC AT BLOWER RELAY COIL.
BLOWER RUNS BUT CONTROLS WILL NOT OPERATE	AIR-FLOW FAILURE	ANY AIR-FLOW ALARM WILL STOP ALL AUTOMATIC CONTROL OPERATION. CHECK FOR 24 VAC AT TERMINAL 19. IF POWER PRESENT, UNIT SHOULD HAVE AIR FLOW ALARM. CORRECT PROBLEM WITH AIR FLOW SWITCH. VERIFY BY REMOVING WIRE FROM TERMINAL 19. UNIT SHOULD RUN BUT WILL NOT HAVE AIR-FLOW ALARM.
	MANUAL OVERRIDE SWITCH ON	OPERATION OF ANY MANUAL OVERRIDE SWITCH WILL STOP ALL AUTOMATIC CONTROL FUNCTIONS.
COMPRESSOR #1 WILL NOT OPERATE	NO CALL FOR COOLING	CHECK TEMPERATURE CONTROL SET POINT.
	PANEL TIME DELAYS	A VARIETY OF COMPRESSOR PROTECTION TIME DELAYS ARE LOCATED IN THE CONTROL PANEL AND MAY HOLD OFF A COMPRESSOR FOR UP TO SEVERAL MIN. READ CONTROL LOGIC SECTION FOR DETAILS.
	COMPRESSOR OFF ON HIGH PRESSURE ALARM	HIGH PRESSURE SAFETY SWITCH OPEN. PRESS RED BUTTON ON TOP OF HIGH PRESSURE SAFETY SWITCH.
	COMPRESSOR HAS HIGH PRESSURE FAILURE AFTER STARTING	CHECK CONDENSER OR FLUID COOLER OPERATION. SHOULD START ON CLOSURE OF AUXILIARY CONTACTS ON SIDE OF COMPRESSOR CONTACTOR.
	COMPRESSOR RUNS FOR 3 MIN.	AIR COOLED UNITS ONLY. COMPRESSOR IS RUNNING ON WINTER POSITIVE START LOW PRESSURE BYPASS TIMER. SHUTDOWN DUE TO LOW PRESSURE AFTER TIME OUT.

CONTROL TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	CHECK OR REMEDY
COMPRESSOR #1 WILL NOT OPERATE	BLOWN FUSE	CHECK OUTPUT SIDE OF FUSE BLOCK FEEDING COMPRESSOR CONTACTOR.
	COMP 1 RELAY K6 OPEN	CHECK COMPRESSOR LED. IF LIT, RELAY IS POWERED 24 VAC OUTPUT AT PLUG P1-4. TURN ON MANUAL OVERRIDE SWITCH, IF COMPRESSOR DOES NOT RUN, PROBLEM IS EXTERNAL TO PANEL. CHECK SAFETY SWITCHES, PLUGS, CABLE WIRING AND CONTACTS AS LISTED BELOW.
	CABLE FROM DAP TO TERMINAL STRIP OPEN	CHECK CONTINUITY FROM PLUG P1-3 TO TERMINAL #4.
	WIRE FROM TERM. STRIP TO CONTACTOR	CHECK CONTINUITY FROM TERMINAL 4 TO COMP. CONTACTOR COIL.
	COMPRESSOR CONTACTOR COIL OPEN	CHECK FOR 24 VAC AT COMPRESSOR CONTACTOR COIL.
	COMP 1 RELAY K6 OPEN	CHECK COMPRESSOR LED. IF LIT, RELAY IS POWERED 24 VAC OUTPUT AT PLUG P1-4. TURN ON MANUAL OVERRIDE SWITCH, IF COMPRESSOR DOES NOT RUN, PROBLEM IS EXTERNAL TO PANEL. CHECK SAFETY SWITCHES, PLUGS, CABLE WIRING AND CONTACTS AS LISTED BELOW.
	CABLE FROM DAP TO TERMINAL STRIP OPEN	CHECK CONTINUITY FROM PLUG P1-3 TO TERMINAL #4.
	WIRE FROM TERM. STRIP TO CONTACTOR	CHECK CONTINUITY FROM TERMINAL 4 TO COMP. CONTACTOR COIL.
	COMPRESSOR CONTACTOR COIL OPEN	CHECK FOR 24 VAC AT COMPRESSOR CONTACTOR COIL.
	COMPRESSOR #2 WILL NOT OPERATE	NO CALL FOR COOLING
PANEL TIME DELAYS		A VARIETY OF COMPRESSOR PROTECTION TIME DELAYS ARE LOCATED IN THE CONTROL PANEL AND MAY HOLD OFF A COMPRESSOR FOR UP TO SEVERAL MIN. READ CONTROL LOGIC SECTION FOR DETAILS.
COMPRESSOR OFF ON HIGH PRESSURE ALARM		HIGH PRESSURE SAFETY SWITCH OPEN. PRESS RED BUTTON ON TOP OF HIGH PRESSURE SAFETY SWITCH.
COMPRESSOR HAS HIGH PRESSURE FAILURE AFTER STARTING		CHECK CONDENSER OR FLUID COOLER OPERATION. SHOULD START ON CLOSURE OF AUXILIARY CONTACTS ON SIDE OF COMPRESSOR CONTACTOR.
COMPRESSOR RUNS FOR 3 MIN.		AIR COOLED UNITS ONLY. COMPRESSOR IS RUNNING ON WINTER POSITIVE START LOW PRESSURE BYPASS TIMER. SHUTDOWN DUE TO LOW PRESSURE AFTER TIME OUT.
BLOWN FUSE		CHECK OUTPUT SIDE OF FUSE BLOCK FEEDING COMPRESSOR CONTACTOR.
COMP 2 RELAY K5 OPEN		CHECK COMPRESSOR LED. IF LIT, RELAY IS POWERED 24 VAC OUTPUT AT PLUG P1-5. TURN ON MANUAL OVERRIDE SWITCH, IF COMPRESSOR DOES NOT RUN, PROBLEM IS EXTERNAL TO PANEL. CHECK SAFETY SWITCHES, PLUGS, CABLE WIRING AND CONTACTS AS LISTED BELOW.
CABLE FROM DAP TO TERMINAL STRIP OPEN		CHECK CONTINUITY FROM PLUG P1-3 TO TERMINAL #4.
WIRE FROM TERM. STRIP TO CONTACTOR	CHECK CONTINUITY FROM TERMINAL 4 TO COMP. CONTACTOR COIL.	
COMPRESSOR CONTACTOR COIL OPEN	CHECK FOR 24 VAC AT COMPRESSOR CONTACTOR COIL.	

CONTROL TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	CHECK OR REMEDY
COMPRESSOR 2 WILL NOT OPERATE CONT.	COMP 1 RELAY K6 OPEN	CHECK COMPRESSOR LED. IF LIT, RELAY IS POWERED 24 VAC OUTPUT AT PLUG P1-4. TURN ON MANUAL OVERRIDE SWITCH. IF COMPRESSOR DOES NOT RUN, PROBLEM IS EXTERNAL TO PANEL. CHECK SAFETY SWITCHES, PLUGS, CABLE WIRING AND CONTACTS AS LISTED BELOW.
	PLUG P1-3 TO TERMINAL #4.	CABLE FROM DAP TO TERMINAL STRIP OPEN/CHECK CONTINUITY FROM
	WIRE FROM TERM. STRIP TO CONTACTOR	CHECK CONTINUITY FROM TERMINAL 4 TO COMP. CONTACTOR COIL.
	COMPRESSOR CONTACTOR COIL OPEN	CHECK FOR 24 VAC AT COMPRESSOR CONTACTOR COIL.
HUMIDIFIER WILL NOT OPERATE	NO CALL FOR HUMIDIFICATION	CHECK HUMIDITY CONTROL SET POINT.
	PANEL TIME DELAYS	A VARIETY OF HUMIDIFICATION TIME DELAYS ARE LOCATED IN THE CONTROL PANEL AND MAY HOLD OFF A HUMIDIFIER FOR UP TO SEVERAL MIN. READ CONTROL LOGIC SECTION FOR DETAILS.
	HUMIDIFIER OFF ON LOW WATER PRESSURE	DISPLAY SHOULD SHOW HUMIDIFIER FAILURE. JUMPER LOW PRESSURE SAFETY SWITCH TO CHECK. CORRECT WATER PRESSURE PROBLEM OR REPLACE SWITCH.
	CONTACTOR PULLED IN BUT WATER DOES NOT BOIL (STEAM GENERATOR)	LOW WATER CONDUCTIVITY AT START-UP OR INSTALLATION OF A NEW CYLINDER. REMOVE STEAM DISTRIBUTION TUBE FROM TOP OF CYLINDER AN ADD APPROXIMATELY 1 TABLESPOON OF SALT. WATER CONDUCTIVITY WILL AUTOMATICALLY STABILIZE AFTER A FEW HOURS OF OPERATION.
	RELAY K1 IS OPEN	CHECK HUMIDIFIER LED. IF LIT, RELAY IS POWERED 24 VAC OUTPUT AT PLUG P1-9. TURN ON MANUAL OVERRIDE SWITCH. IF HUMIDIFIER DOES NOT RUN, PROBLEM IS EXTERNAL TO PANEL. CHECK SAFETY SWITCHES, PLUGS, CABLE WIRING AND CONTACTS AS LISTED BELOW.
	COMMON SIDE OF RELAY NOT POWERED	COMMON SIDE OF NORMALLY OPEN CONTACT IN CONTROL PANEL NOT POWERED WITH 24 VAC. TERMINAL 10 PIN P1-9 IS THE INPUT AND PIN P1-10 TERMINAL 11 IS THE OUTPUT. SEE ELECTRICAL DIAGRAM FOR DETAILS OF DIFFERENT HUMIDIFIERS.
	CABLE FROM DAP TO TERMINAL STRIP OPEN	CHECK CONTINUITY FROM PLUG P1-9 TO TERMINAL #10 AND FROM P1-10 TO TERMINAL 11.
	WIRE FROM TERM. STRIP TO CONTACTOR	CHECK CONTINUITY FROM TERMINAL 11 TO HUMIDIFIER COIL (SEE ELECTRICAL DIAGRAM)
	COMPRESSOR CONTACTOR COIL OPEN	CHECK FOR 24 VAC AT HUMIDIFIER CONTACTOR COIL.
REHEAT WILL NOT OPERATE	NO CALL FOR REHEAT	CHECK TEMPERATURE CONTROL SET POINT.
	PANEL TIME DELAYS	A VARIETY OF REHEAT TIME DELAYS ARE LOCATED IN THE CONTROL PANEL AND MAY HOLD OFF REHEAT FOR SEVERAL MIN. READ CONTROL LOGIC SECTION FOR DETAILS.
	REHEAT OFF ON HIGH TEMPERATURE	HIGH TEMPERATURE SAFETY SWITCH OR FUSIBLE LINK OPEN.
	BLOWN FUSE	CHECK OUTPUT SIDE OF FUSE BLOCK FEEDING COMPRESSOR CONTACTOR
	RELAY K2 OPEN	CHECK REHEAT LED. IF LIT, RELAY IS POWERED 24 VAC OUTPUT AT PLUG

CONTROL TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	CHECK OR REMEDY
REHEAT WILL NOT OPERATE CONT.	RELAY K3 OPEN RELAY K4 OPEN	P1-6 FOR HEAT 1, P1-7 FOR HEAT 2 AND P1-8 FOR HEAT 3. TURN ON MANUAL OVERRIDE SWITCH, TO TEST HEAT 1. RUN MANUAL DIAGNOSIS. PROBLEM IS EXTERNAL TO PANEL IF IT CAN NOT BE OPERATED IN DIAGNOSTIC MODE. CHECK SAFETY SWITCHES, PLUGS, CABLE WIRING AND CONTACTS AS LISTED BELOW.
	CABLE FROM DAP TO TERMINAL STRIP OPEN	CHECK CONTINUITY FROM PLUG P1-6 TO TERMINAL #7 FOR HEAT 1. CHECK CONTINUITY FROM PLUG P1-7 TO TERMINAL #8 FOR HEAT 2. CHECK CONTINUITY FROM PLUG P1-6 TO TERMINAL #9 FOR HEAT 3.
	WIRE FROM TERM. STRIP TO CONTACTOR	CHECK CONTINUITY FROM TERMINAL 7 TO HEAT 1 CONTACTOR COIL. CHECK CONTINUITY FROM TERMINAL 8 TO HEAT 2 CONTACTOR COIL. CHECK CONTINUITY FROM TERMINAL 9 TO HEAT 3 CONTACTOR COIL.
	REHEAT CONTACTOR COIL OPEN	CHECK FOR 24 VAC AT COMPRESSOR CONTACTOR COIL.
DISPLAY IS SQUARES, DIM	LCD DRIVER VOLTAGE HIGH	ADJUST VOLTAGE WITH GREEN POT LABELED LCD ADJUST R32. LOCATED ON BACK OF PANEL (SEE FIGURE 6).
	LCD DRIVER VOLTAGE LOW	ADJUST VOLTAGE WITH GREEN POT LABELED LCD ADJUST R32. LOCATED ON BACK OF PANEL SEE FIGURE 6. NOTE: 16 CHARACTER STANDARD PANEL IS NOT BACK LIT AND REQUIRES REFLECTED LIGHT FOR DISPLAY. THE DISPLAY LEVEL CANNOT BE INCREASED WITHOUT ADDITIONAL LIGHT.
DISPLAY WILL NOT OPERATE OR CONTROL. MANUAL OVERRIDE SWITCHES OPERATE UNIT.	BLOWN FUSE F1	MICROPROCESSOR CONTROL POWER FUSE BLOWN. REPLACE WITH BUSS AGC 3. CONTROL VOLTAGE IS 24 VAC.

PARTS LIST

DAP-REP-KIT

COMPONENT DESCRIPTION	DATA AIRE PART #
PANEL	160-200-046
BEZEL	160-500-002
TERMINAL LABEL	196-900-002
CABLE P1, P2	160-000-005
CABLE P3, P4	160-000-006
MOUNTING FRAME	550-099-101
MOUNTING BRACKETS (2)	523-021-400
TEMP. SENSOR	160-200-060
HUMID. SENSOR	160-011-102
SCREWS (4) DAP-BRACKET	201-006-110
SCREWS (6) BEZEL	201-012-061
SCREWS (4) BRACKET	201-057-082
INSTRUCTION MANUAL	DAPREP-989