



DATA AIRE, Inc.

MINI DATA ALARM PROCESSOR II

Operation and Maintenance Manual



Precise Temperature and Humidity Control
Air and Water/Glycol Cooled and Chilled Water

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MINI DATA ALARM PROCESSOR II

The MINI-DAP II control panel is designed for Data Aire Ceiling systems with one or two cooling stages, one heating stage and a humidifier. This microprocessor based control offers innovative features and “state of the art” technology.

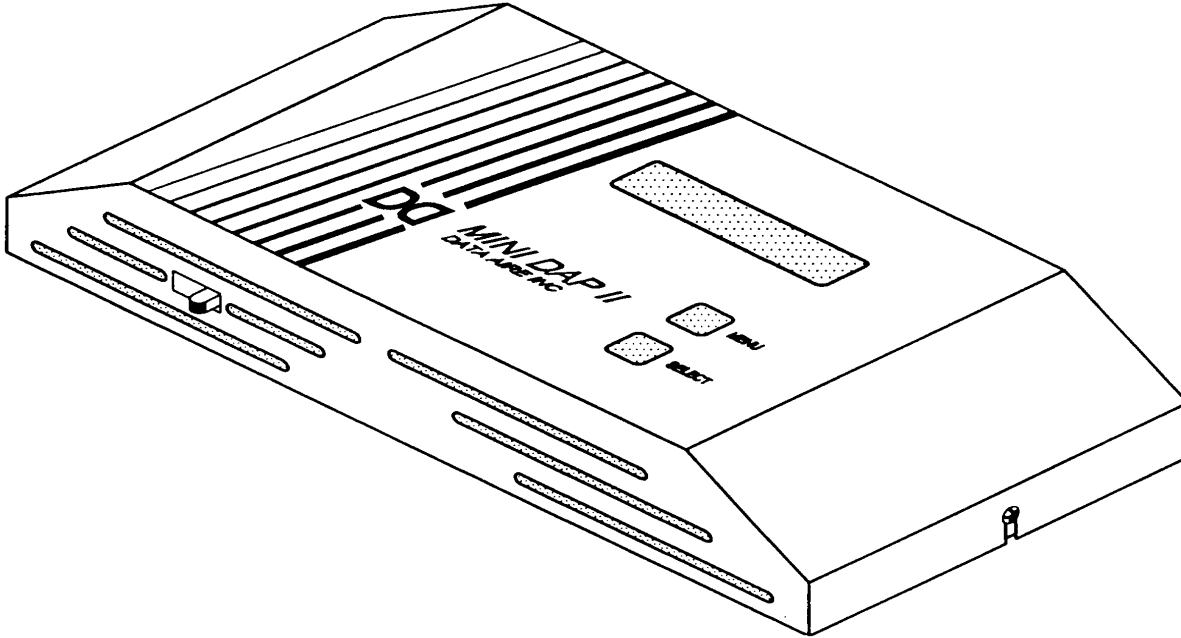


Figure 1: Mini-Dap II Panel

Design Features

- Microprocessor based dual layer board design
- 16 characters liquid crystal display (LCD)
- Panel mounted temperature and humidity sensor are standard
- Nonvolatile memory storage for all programmed settings and alarm history (5 latest alarms)
- Printed circuit board mounted audio alarm
- Five control outputs for fan, cooling stage 1, cooling stage 2, heat, humidifier
- Five alarm inputs with three selectable messages
- Optional plug-in remote alarm contact

Software Features

- Setpoint deviation control logic
- Selectable night setback and on/off functions provide an economical control solution
- Adjustable system reaction time (Adjustment rate)
- All settings are programmed using menu driven soft-touch keys
- Adjustable temperature and humidity deadband
- °C to °F conversion
- Two level passwords for menus access
- Calibration offset for temperature and humidity sensor
- Manual diagnostics for components troubleshooting

Protective & Safety features

- Metal shell enclosure protects panel from electromagnetic interference, environmental contamination and handling damage.
- Protected 24 VAC power input:
 - 1amp fuse for processor portion of the PC board
 - 5 amp fuse for relay outputs
- Metal Oxide Varistor (MOV) snubs the transient voltage and protect the circuit board from an excessive power.
- Opto-isolators for 24 VAC signal inputs protect the processor from electrical noise of contactors, compressors and motors, ect.

Conditions and Functions Displayed

- Current room temperature (°F or °C)
- Current room humidity (% RH)
- Cooling stage (1st stage , 2nd stage)
- Reheat
- Humidification or Dehumidification
- Date and Time
- Occupied or Unoccupied period *

* Only displayed when night setback feature is enabled.

Alarms Displayed

- High Temperature Warning
- Low Temperature Warning
- High Humidity Warning
- Low Humidity Warning
- High Condensate Water
- No Air Flow
- Firestat
- Compressor Short-cycle Warning
- Temperature Sensor Fail
- Humidity Sensor Fail
- Power Failure *
- Change Filter *
- Humidifier Fail *
- No Water Flow *
- Fan Overload *
- Local Alarm 1*
- Local Alarm 2*
- Smoke Alarm *
- High Pressure Compressor 1 **
- High Pressure Compressor 2 **
- Low Pressure 1*
- Low AC Voltage Warning

* Alarm displays require additional components or sensors and programmable selections. Some alarm messages are selected using one of three optional alarm menus.

** These alarms will be set-up at the factory as defaults on single or dual compressor unit.

Historical Data

- Maximum and minimum temperature and humidity since unit has been on.
- Last five alarms to occur.

Location Considerations

Locate the MINI-DAP II panel as follows:

- On a partitioning interior wall, and approximately 5ft (1.5 m) above the floor in a location of the best average room temperature, room humidity and good air movement.
- Away from direct sunlight or radiant heat, outside walls or behind doors, air discharge grilles or outside doors.
- Away from steam or water pipes, warm air stacks, unheated/uncooled areas, monitors or sources of electrical interference.

CAUTION: **Shock Hazard.** Disconnect power before wiring connections are made to prevent electrical shock or possible damage to the equipment.

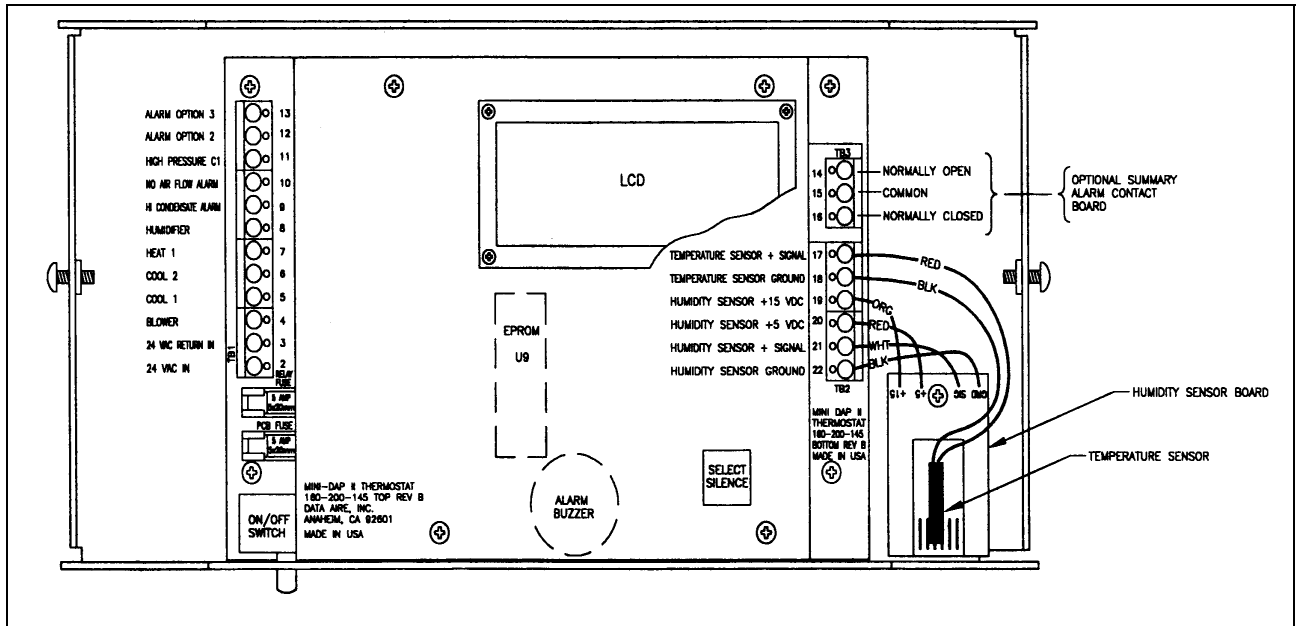


Figure 2: Terminal identification and circuit board details.

Installation and Wiring

To install and wire the MINI-DAP II panel:

1. Use a Phillips screwdriver to loosen the side screws of the panel.
2. Remove the cover of the MINI-DAP II panel. Place the panel against the wall, mark the location of three mounting holes. See figure 3.
3. Use plastic anchors and screws for mounting on drywall or plaster (recommended).
4. Connect one end of the factory provided cable to the unit terminal strip, refer to unit wiring diagram for details. Use the color coded wires to designate the functions and terminal number. See figure 2.
5. Use color code to identify the wire function and connect the other end of the cable to MINI-DAP II panel.

CAUTION: Equipment Damage Hazard. Before applying power, make all wiring connections and check the connections. Short circuited or improperly connected wires may result in permanent damage to the unit.

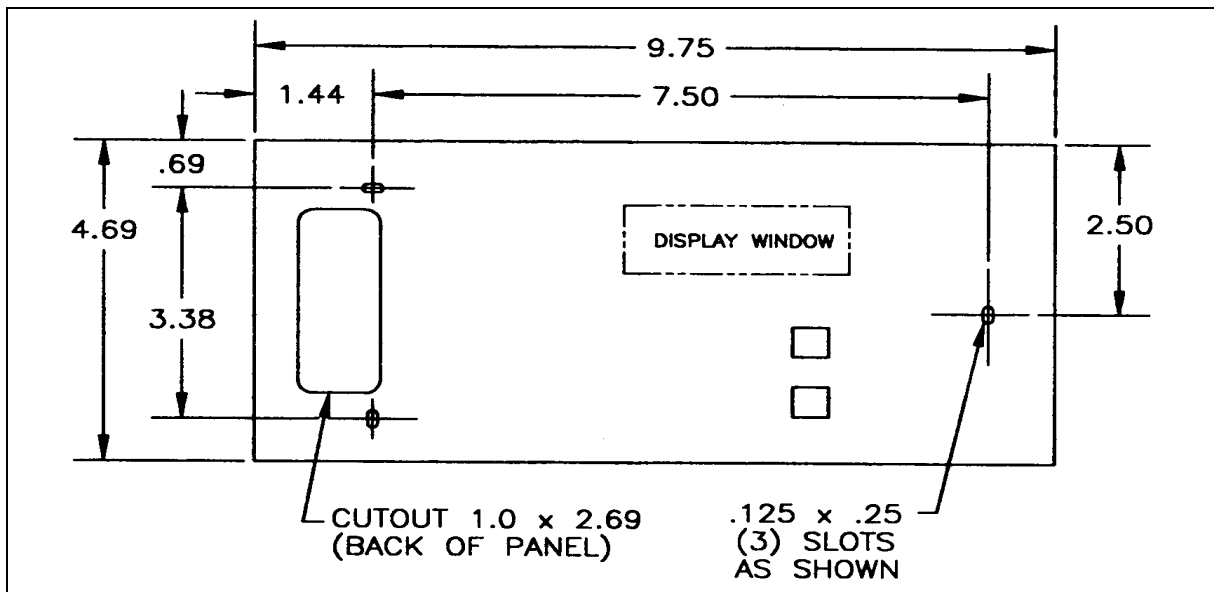


Figure 3: Wall mounting hole location

Installing the Optional Remote Alarm Contact

1. Turn the Mini-Dap II off. Loosen the side screws and remove the panel cover.
2. Remove four screws that secure the 2nd layer board to the base board. See figure 4.
3. Unplug the 2nd layer board.
4. Plug the summary alarm contact board to CON4 plug on the base board. See figure 4.
5. Reinstall the 2nd layer board back to the base board.

Panel Operation

Button Functions

Menu: Press Menu button to go to desired menu.

Select: Press Select button to display current setting, to change setting or to exit menu mode.

Alarm Silence: Press Select button to silence an audio alarm.

Note: The last value to appear is stored for use. Go to Exit menu, press Select button twice to Return to the normal operation.

Menu Designation

* Apply for night setback option only. These menus will only show when menu #13 is set to "Y".

- | | |
|--------------------|-------------------|
| 1. SETPOINTS | 26. SUN SCHEDULE* |
| 2. OVERRIDE RQST* | 27. TEMP SCALE |
| 3. PASSWORD A | 28. TEMP DEADBAND |
| 4. TEMP SETPOINT | 29. HI TEMP LIMIT |
| 5. HUMID SETPOINT | 30. LO TEMP LIMIT |
| 6. COMP LEAD/LAG | 31. CALIB TEMP |
| 7. ADJUST RATE | 32. HUM DEADBAND |
| 8. SET TIME | 33. HI HUM LIMIT |
| 9. CALIB CLOCK | 34. LO HUM LIMIT |
| 10. TEMP/HUM HIST | 35. CALIB HUMID |
| 11. ALARM HISTORY | 36. AUDIO ALARM |
| 12. PASSWORD B | 37. RESTART MODE |
| 13. DAY SCHEDULE | 38. START DELAY |
| 14. OVERRIDE ENBL* | 39. FIRE STAT |
| 15. OVERRIDE TIME* | 40. OPT ALARM 1 |
| 16. SETUP COOL* | 41. OPT ALARM 2 |
| 17. SETBACK HEAT* | 42. OPT ALARM 3 |
| 18. SETUP DEHUM* | 43. FAN MODE |
| 19. SETBACK HUMID* | 44. COOLING EQUIP |
| 20. MON SCHEDULE* | 45. HEATING EQUIP |
| 21. TUE SCHEDULE* | 46. HUMIDIFIER |
| 22. WED SCHEDULE* | 47. DEHUMIDIFIER |
| 23. THU SCHEDULE* | 48. PASSWORD A |
| 24. FRI SCHEDULE* | 49. PASSWORD B |
| 25. SAT SCHEDULE* | |

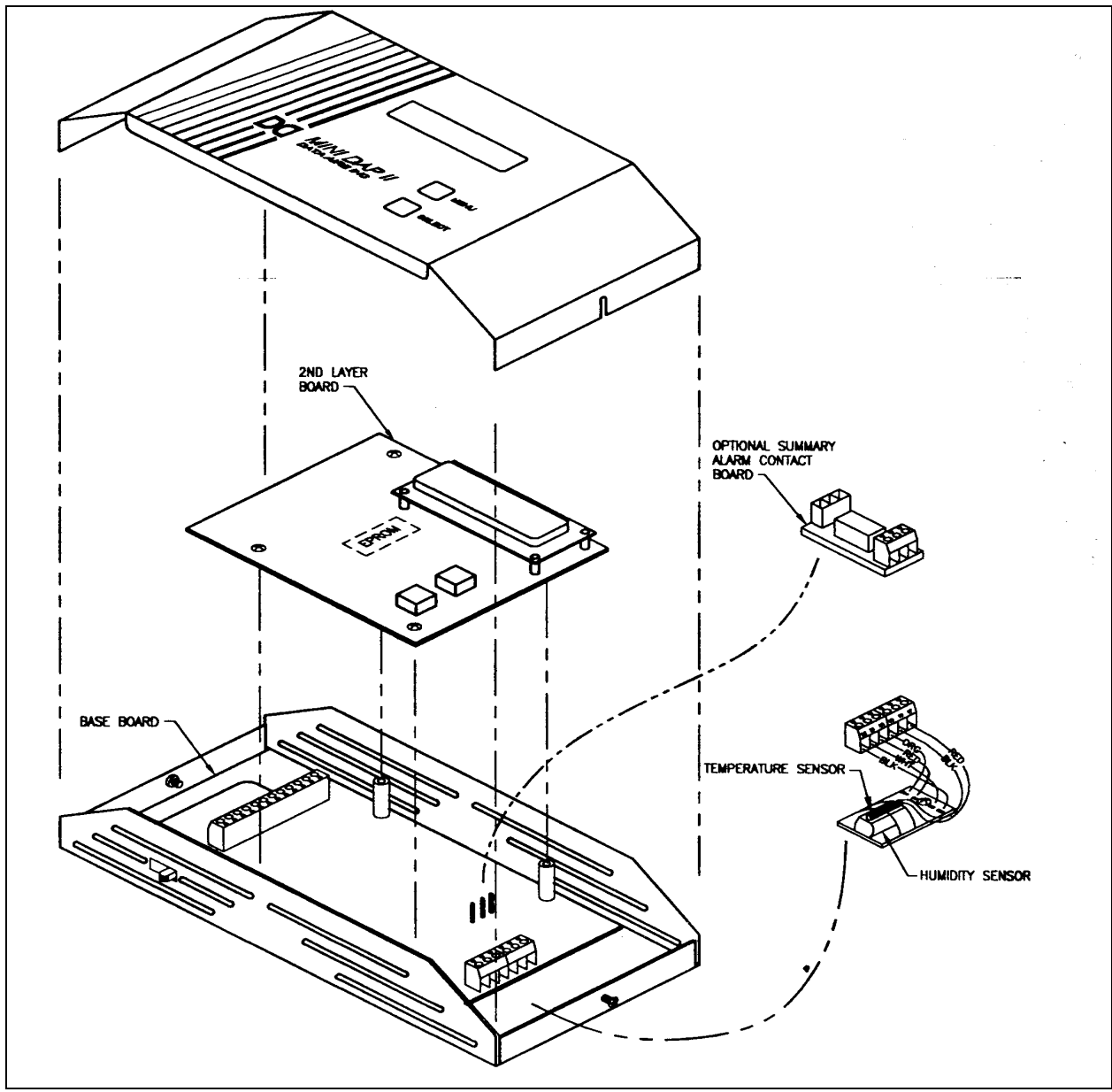


Figure 4: Board assembly with temperature, humidity sensor and optional summary alarm contact

Programming and Selections

Menu Operations and Settings

To access the menus setting of Mini-Dap II,
Press Menu button to go to menu 1

1-SET POINTS

Press Select button to display current
temperature setpoint report

TEMP SP: 72°F

Press Select button again to display current
humidity setpoint report

HUM SP: 50%

Press Menu button

NOTE: Menu #2 -**VERRIDE RQST** will not
show if Menu #13- **DAY SCHEDULE** is set for
"N" or Menu #14-**VERRIDE ENBL** is set for "N"

2-OVERRIDE RQST

Press Select button to display current setting

OVERRIDE RQST: N (No)

Press Select button to change to "Y" (yes)
An override request will temporarily
force the Mini-DAP II to operate in
"occupied" mode for the time period

specified on Menu 15-OVERRIDE TIME and display will show : "OVERRIDE ACTIVE". Remember Menu 14-OVERRIDE ENBL must be set to "Y" to allow override requests, otherwise this menu will never appear.

Press Menu button

EXIT THE MENU - Press Select button twice to exit to the normal operating

Otherwise press Menu button to advance to the next menu

3-PASSWORD A

Press Select button to enter password.

PASSWORD A: 00

Default password is 00

Press Select button to scroll the password from 00 to 99. After entering the password, press Menu button to advance to menu 4. If an incorrect password is entered, panel will display "**BAD PASSWORD**" for one minute and automatically exit.

PROCEDURE TO RETRIEVE PASSWORDS ON MINI-DAP II PANEL

To retrieve the passwords on Mini-DAP II, turn the panel off. Press and hold the menu and select button down simultaneously while turning the panel back on. Release buttons after panel comes on. The panel will go thru the self-test then display the password A and B. Reset the panel (turn it off then back on) in order to go back to normal running mode. The passwords should be recorded for future reference.

Otherwise panel will advance to menu 4

4- TEMP SETPOINT

Press Select button to change the temperature setpoint. The temperature setpoint will cycle from 65°F to 85°F. Default value is 72°F

Press Menu button to advance to the next menu

5- HUMID SETPOINT

Press Select button to change the humidity setpoint. The humidity setpoint will cycle from 30% to 70%. Default value is 50%

Press Menu button to advance to the next menu

6- COMP LEAD/LAG

Press Select button to change the setting from 1 LEAD to 2 LEAD or to AUTO. Default setting is 1 LEAD.

1 LEAD: Compressor #1 will be the lead compressor.

2 LEAD: Compressor #2 will be the lead compressor (if used)

AUTO: Compressors lead/lag sequence will change every 168 Hrs of operation.

7- ADJUSTMENT RATE

Press Select button to change the setting from 1 to 5 minutes. This is the interstage time delay / system reaction time. Default setting is 1 minute. This can be used to avoid a short cycle in the system.

Press Menu button to advance to the next menu

8- SET TIME

Press Select button to show the Minute

SET MINUTE: 00:00

Press Select button to change minute, press Menu to go to Hour setting

SET HOUR: 00:00

Press Select button to change hour, press Menu to go to Year setting

SET YEAR: 1997

Press Select button to change year, press Menu to go to Month setting

SET MONTH: JAN

Press Select button to change month, press Menu to go to Date setting

SET MONTH: JAN 1

Press Select button to change month then press Menu to go to the next menu

9- CALIB CLOCK

Press Select button for the report of the current setting. Calib clock is designed to compensate for the inherent inaccuracy of the micro-processor crystal used as the time base for the real time clock in the Mini-Dap II. When panel is first powered up the clock error is set equal to 0. In most cases this will result in a real time error of 30 seconds to couple minutes per day. This Calib clock menu allows the user to set the observed error so that this error amount of time is compensated for each 24 hours period.

Press Menu button to advance to the next menu

10- TEMP/ HUM HISTORY

Press Select button for the report of the present, minimum and the maximum temperature since the last power on. Press **Select** button again for the report of the humidity.

Press Menu button to advance to the next menu

11- ALARM HISTORY

Press Select button for the report of the last 5 alarms in order of most recent occurrence. 1 = most recent, 5 = oldest.

Press Select button to cycle through the alarm history list

Press Menu button

EXIT THE MENU - Press **Select** button twice to exit to the normal operation

Otherwise press Menu button to advance to the next menu

12-PASSWORD B

Press Select button to enter password.

PASSWORD B: 00

Default password is 00

Press Select button to cycle the password from 00 to 99. After entering the password, press Menu button to advance to menu 13. If an incorrect password is entered, panel will display "**BAD PASSWORD**" for one minute and automatically exit. See the **Procedure To Retrieve Password On MINI-DAP II** above. Otherwise panel will advance to the next menu

Press Menu button to advance to the next menu

13-DAY SCHEDULE

Press Select button to display the current setting

DAY SCHEDULE: Y

Y (Yes) or N (No)

Press Select button to change the setting to NO
The time-of-day schedule can be turned on and off at this menu. When this menu is set to Y (YES), the Mini-DAP operates according to the time-of-day schedule specified in Menus 20 through 26. If this menu is set to N (NO), the Mini-DAP does not follow a schedule. It operates continuously in the normal mode.

NOTE: All the day schedule menus (14 to 26) below will not show if Menu #13 is set for "N".

Press Menu button to advance to the next menu

14-OVERRIDE ENBL.

Press Select button to display the current setting

OVERRIDE ENBL: Y

Y (Yes) or N (No)

Press Select button to change the setting to NO
This menu enables and disables user requests to override the time-of-day schedule and force the Mini-DAP into "occupied" mode. If this menu is set to Y (YES), the "Menu 2-OVERRIDE RQST" appears to allow override requests. If this menu is set to N (NO), then "Menu 2 OVERRIDE RQST" never appears and override requests are inoperable.

Press Menu button to advance to the next menu

15-OVERRIDE TIME

Press Select button to display the current setting

OVERRIDE HRS: 1

1 to 12 hours

Press Select button to change the Hour
This menu specifies the duration of each override request made using "Menu 2-OVERRIDE RQST".

Press Menu button to advance to the next menu

16-SETUP COOL

Press Select button to display the current setting
SETUP COOL: 5 0 to 30°F

Press Select button to change the temperature range from 1°F to 30°F. Default value is 5°F
When a SETBACK/UP time-of-day schedule is in effect and the Mini-DAP is operating in the "unoccupied" mode, the effective cooling setpoint will be adjusted upward by the amount specified in this menu.

Press Menu button to advance to the next menu

17-SETBACK HEAT

Press Select button to display the current setting
SETBACK HEAT: 5 0 to 30° F

Press Select button to change the temperature range from 1°F to 30°F. Default value is 5°F
When a SETBACK/UP time-of-day schedule is in effect and the Mini-DAP is operating in the "unoccupied" mode, the effective heating setpoint will be adjusted downward by the amount specified in this menu.

Press Menu button to advance to the next menu

18-SETUP DEHUM

Press Select button to display the current setting
SETUP DEHUM: 5 0 to 30% RH

Press Select button to change the humidity range from 1 % to 30 %. Default value is 5 %
When a SETBACK/UP time-of-day schedule is in effect and the Mini-DAP II is operating in the "unoccupied" mode, the effective setpoint for dehumidification will be adjusted upward by the amount specified in the menu.

Press Menu button to advance to the next menu

19-SETBACK HUMID

Press Select button to display the current setting
SETBACK HUMID: 5 0 to 30% RH

Press Select button to change the humidity range from 1 % to 30 %. Default value is 5 %
When a SETBACK/UP time-of-day schedule is in effect and the Mini-DAP is operating in the "unoccupied" mode, the effective setpoint for humidification will be adjusted downward by the amount specified in the menu.

Press Menu button to advance to the next menu

20- MON. SCHEDULE

Press Select button to display the current setting

MON: SETBACK/UP

SETBACK/UP or ON/OFF

Press Select button to change the setting from setback/up to on/off. Default setting is setback/up.

Press Menu button to go to the next setting. Use Select button to set the start time for occupied period. Default value is "N/C" (no change), this means the unit will run in occupied mode all the time. The time is set with 15 minutes increment.

OCCUPIED: XX:XX N/C

(NO CHANGE): 00:00 TO 23:45

Press Menu button to go to the next setting. Use Select button to set the start time for unoccupied period. Default value is "N/C" (no change), this means the unit will run in occupied mode all the time. The time is set with 15 minutes increment

UNOCCUPIED: XX:XX N/C

(NO CHANGE): 00:00 TO 23:45

All the day schedules in menus 20 through 26 are set in the same manner. The Mini-DAP operates normally during all periods designated as occupied. During unoccupied periods, the Mini-DAP operates in one of two ways, depending on which type of schedule is selected:

SETUP/SETBACK OPERATION

During unoccupied periods of a SETBACK-UP schedule, the Mini-DAP II will operate normally, except that it will adjust its temperature and humidity setpoint according to the values set in menus 16 through 19. Operation of the fan is *TO BE SPECIFIED on menu #43*.

ON/OFF OPERATION

During unoccupied periods of an ON/OFF schedule, the Mini-DAP will deactivate all heating, cooling, humidification and dehumidification, and the fan will remain off.

Press Menu button to advance to the next menu

21-TUE SCHEDULE

Similar in all respects to MON SCHEDULE.

Press Menu button to advance to the next menu

22-WED SCHEDULE

Similar in all respects to MON SCHEDULE.

Press Menu button to advance to the next menu

23-THU SCHEDULE

Similar in all respects to MON SCHEDULE.

Press Menu button to advance to the next menu

24-FRI SCHEDULE

Similar in all respects to MON SCHEDULE.

Press Menu button to advance to the next menu

25-SAT SCHEDULE

Similar in all respects to MON SCHEDULE.

Press Menu button to advance to the next menu

26-SUN SCHEDULE

Similar in all respects to MON SCHEDULE.

Press Menu button to advance to the next menu

EXIT THE MENU

Press Select button twice to exit to normal operation. Otherwise press Menu button to go to the next menu

27- TEMP SCALE

Press Select button to choose either F or C temperature scale. Default setting is F scale

Press Menu button to advance to the next menu

28- TEMP DEADBAND

Press Select button to change the setting from 1°F to 5°F. default setting is 2°F.

Press Menu button to advance to the next menu

29- HI TEMP LIMIT

Press Select button to cycle the setting of the high temperature alarm limit from 50°F to 90°F in 1°F increments or Hi Temp Lim Disab.

Default setting is 80°F.

Press Menu button to advance to the next menu

30- LO TEMP LIMIT

Press Select button to cycle the setting of the low temperature alarm limit from 50°F to 90°F in 1°F increments or Lo Temp Lim Disab.

Default setting is 60°F.

Press Menu button to advance to the next menu

31- CALIB TEMP

Press Select button to display the current temperature with default 0 calibration offset.

TEMP+ 0.0 = xx

Press Select button to change the temperature offset to make temperature reading matches a reference temperature reading. The offset value cycles from -20 to +20, default value is 0.0

Press Menu button to advance to the next menu

32- HUM DEADBAND

Press Select button to change the setting from 1% to 10%. Default setting is 3%

Press Menu button to advance to the next menu

33- HI HUM LIM

Press Select button to cycle the setting of the high humidity alarm limit from 10% to 90% in 1% increments or Hi Hum Lim Disab. Default setting is 60%

Press Menu button to advance to the next menu

34- LO HUM LIM

Press Select button to cycle the setting of the low humidity alarm limit from 10% to 90% in 1% increments or Lo Hum lim Disab. Default setting is 40%

Press Menu button to advance to the next menu

35- CALIB HUMID

Press Select button to display the current humidity with default 0 calibration offset.

HUM + 0.0 = xx

Press Select button to change the humidity offset until the humidity reading matches a reference humidity reading.

Press Menu button to advance to the next menu

36- AUDIO ALARM

Press Select button to display the current audio alarm mode and for a sample of the sound level. Default value is long beep

TONE: LONG BEEP

Press Select button to cycle the audio alarm to the desired mode of silent, full on, short beep, double or long beep

Press Menu button to advance to the next menu

37- RESTART MODE

Press Select button to display the current power failure restart mode. Default setting is auto

RESTART: AUTO

Press Select button to cycle to the desired restart mode:

- Auto: unit will automatically restart after a power failure with no message or audio alarm
- Auto M: unit will restart with alarm message only. Press **Select** button to acknowledge the message
- Auto A : unit will restart with alarm message and audio alarm. Press **Select** button to acknowledge the alarm
- Manual: unit will not restart until the power failure alarm is acknowledged. Press **Select** button to acknowledge the alarm and restart unit

Press Menu button to advance to the next menu

38 – START DELAY

Press Select button to view the current setting

DELAY: 00:05

Press Select button to cycle to the desired start time delay. Minimum value is 5 seconds, maximum value is 5 minutes. Default value is 5 seconds

Press Menu button to advance to the next menu

39 – FIRE STAT

Press Select button to view the current setting

FIRE STAT: 100 F

Press Select button to cycle to the desired firestat trip point based on the return air temperature sensor. Minimum value is 100°F, maximum value is 200°F. Default value is 100°F

Press Menu button to advance to the next menu

40 – OPT ALARM 1

Press Select button to view the current setting alarm message for alarm input , press Select button to cycle to the desired alarm message for this alarm input. The default setting for a DX unit is **Hi Press C1** (high-pressure compressor #1), otherwise it is **Local Alarm 1** or one listed below:

- **Smoke Alarm** – this will shutdown unit when it is detected.
- **No Water Flow**

Press Menu button to advance to the next menu

41 – OPT ALARM 2

Press Select button to view the current setting alarm message for alarm input , press Select button to cycle to the desired alarm message for this alarm input. The default setting **Local Alarm 2**. Other alarm selections are:

- **Smoke Alarm** – this will shutdown unit when it is detected.
- **Change Filter**
- **Hi Press C2** (for 2 compressors unit only)
- **Lo Press C1**

Press Menu button to advance to the next menu

42 – OPT ALARM 3

Press **Select** button to view the current setting alarm message for alarm input , press Select button to cycle to the desired alarm message for this alarm input. The default setting is **Humid Fail**. This alarm will shut down the humidifier. Other selections are:

- **Smoke Alarm** – this will shutdown unit when it is detected.
- **No Water Flow**
- **Change Filter**
- **Fan Overload**

Press Menu button to advance to the next menu

43- FAN MODE

Press Select button to view the current setting

FAN MODE: AUTO

Press Select button to change to cont. Default setting is Auto.

- **AUTO**: fan comes on when unit calls for cooling, heating, dehumidification and

humidification. It goes off in one minute when no functions are required.

- **CONT:** fan runs continuously during the occupied mode or normal mode even when no functions are needed.

Press Menu button

EXIT THE MENU

Press Select button twice to exit to normal operation. Otherwise press **Menu** button to advance to the next menu

44- COOLING EQUIP

Press Select button to view the current setting

COOL: PRI

This is the default setting, press select button to change to:

PRI/PRI (For 2 compressors system)

VALVE (For chilled water unit).

PRI/SEC (For 1 compressor w/ unloader)

Press Menu button to advance to the next menu

45 – HEATING EQUIP

Press Select button to view the current setting

HEAT STAGE: YES

Press Select button to cycle from Yes to No

Press Menu button to advance to the next menu

46 – HUMIDIFIER

Press Select button to view the current setting

HUMID: COMPUTER

Press Select button to cycle from Computer to Comfort or to None.

- **Computer** : reheat will be locked out when humidifier is called for.
- **Comfort** : this will allow reheat and humidifier to work simultaneously.
- **None** : this will disable the humidifier

Press Menu button to advance to the next menu

47 – DEHUMIDIFIER

Press Select button to view the current setting

DEHUMID: YES W/ INH (Yes with inhibit)

Or YES WO/INH (Yes without inhibit).

See Occupied Dehumidification Logic on page 15 for detail logic.

Press Select button to cycle from Yes to No

Press Menu button

EXIT THE MENU

Press Select button twice to exit to normal operation

Press Menu button to advance to the next menu

48-PASSWORD A

Press Select button to display the current password.

PASSWORD A: 00

Default password is 00

Press Select button to change the password from 00 to 99.

Press Menu button to advance to the next menu

49-PASSWORD B

Press Select button to display the current password.

PASSWORD B: 00

Default password is 00

Press Select button to change the password from 00 to 99.

Press Menu button

EXIT THE MENU

Press Select button twice to exit to normal operation or press Menu button to cycle back to menu 1.

Manual Diagnostic Program

To enter Manual diagnostic program, simply turn the control panel off. Press and hold the menu and select button down simultaneously while turning the panel back on. Release buttons after the panel comes on. The panel will go thru the self-test then enter to the first diagnostic test:

1- MENU & SELECT

MENU: - SELECT: -

Test #1 is the button test, this test will automatically start after the above title is shown. Each time either the menu or the select button is pressed the dash (-) will change to asterisk (*) for as long as the button is held down.

Press both Menu and **Select** button at the same time, the display will switch to test #2.

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2- TEST RELAYS

Press **Select** button to manually cycle on one relay at a time with the function name, PCB relay location and the pin connector number. For example: BLOWER K1 P1-4. This indicates blower relay is K1 on the PC board and the 24vac output for blower is on pin #4 of the panel. Press the menu button to go to the next test.

3- AUDIO ALARM

Press Select button to manually turn on the audio alarm. The display will show AUDIO ALARM: ON and the audio alarm will sound. Press Select button to cycle the audio alarm from on to off.

Press the menu button to go to the next test.

4- TMP,HUM,AD CAL

Press select button to display the temperature sensor raw value and its calibration offset, which is programmed on menu #31. Press select button to display the humidity sensor raw value and its calibration offset, which is programmed on menu #35. Press select button again, panel will display the reference voltage of the sensors (temperature and humidity): REF: 5.000 (VDC). Press select button to display the voltage reading (raw value) across sensors.

Note: the offset is the amount of calibration required for a true reading of room condition. Press the menu button to go to the next test.

5- ALARM INPUT

Press select button to display the 24 VAC alarm inputs on the terminal strip of the panel: P 09,

10, 11,12,13. The connector terminal number indicates the alarm input is on, a dash mark (--) means the alarm input is off. The alarm inputs (terminal numbers) are as follows:

9. High condensate alarm
10. No air flow alarm
11. Optional input #1 (may be set for Hi press C1 for single compressor)
12. Optional input #2 (may be set for Hi press C2 for dual compressor)
13. Optional input #3

Press menu button to go back to test 1.

To go back to the normal operation, Turn panel off, wait 5 seconds then turn the panel back on. Panel will go thru the self-test then unit will come back on.

Control Logic

This control panel can be programmed in two different types of operation:

1. Continuous operation, no setback or schedule. This operation is normally applied to a computer room or equipment room. This requires the menu #13 on the MINI-DAP II panel set to "N". the operational logic of this mode is the same as the logic of the OCCUPIED mode. See below logic for details.
2. Setback/up or On/Off operation. This requires that menu #13 is set to "Y" and the seven days schedules are set on menu #20 thru #26. See Menus setting for details. This operation has two periods: OCCUPIED period and UNOCCUPIED period. See below logic for details.

Important note:

1. If menu #13- DAY SCHEDULE is set for "Y", the time-of-day schedule setting for occupied and unoccupied period must be set on menu #20 to #26. If they are left at "N/C", the control panel will operate as it is in the occupied period at all time.
2. Mini-DAP II panel does not have a real time clock with backup battery therefore the date and time must be reset every time the panel loses power, otherwise the panel will stay in the same mode as last time it is turned off and "TIME NOT SET" message will appear.

Occupied or Normal mode

When unit is in the "OCCUPIED" mode or normal operation, the MINI-DAP II will operate in the following control logic:

EVAPORATOR FAN

The blower will operate based on the setting of menu #43-FAN MODE: AUTO OR CONT

AUTO: fan comes on when unit calls for cooling, heating, dehumidification and humidification. It goes off in one minute when no functions are called for.

CONT: fan runs continuously during the occupied mode even when no functions are needed.

OCCUPIED COOLING LOGIC

1. 5 minutes delay between start to start of the compressor (anti short cycle delay).
2. 2 minutes delay between stop to start of the same compressor.
3. Compressor sequences as follows:

COOL 1 ON AT TEMPERATURE SETPOINT + TEMPERATURE DEADBAND

COOL 2 ON AT TEMPERATURE SETPOINT + TEMPERATURE DEADBAND + .3°F (IF EXISTS)

COOL 2 OFF AT TEMPERATURE SETPOINT + TEMPERATURE DEADBAND
COOL 1 OFF AT TEMPERATURE SETPOINT

OCCUPIED HEATING LOGIC

1. 1 minute delay between stop to start of the reheat. Reheat will be overridden by humidification in the computer room.
2. Heating sequences as follows:

HEAT ON AT TEMPERATURE SETPOINT – TEMPERATURE DEADBAND - .3 °F
HEAT OFF AT TEMPERATURE SETPOINT - TEMPERATURE DEADBAND

OCCUPIED HUMIDIFICATION LOGIC

1. Heat will be overridden by humidification unless menu #46 is set for “COMFORT”.
2. 1 minute delay between stop to start of humidification.
3. 5 minutes delay between humidification and dehumidification.
4. Humidification sequences as follows:

HUMIDIFICATION ON AT HUMIDITY SETPOINT + HUMIDITY DEADBAND

HUMIDIFICATION OFF AT HUMIDITY SETPOINT –1%

OCCUPIED DEHUMIDIFICATION LOGIC

1. Dehumidification is not governed by the adjustment rate but the operation will not violate compressor short cycle times
2. Heating is used to reheat the overcooled and dehumidified air but heating short cycle times will not be violated. Also, if heating comes on and return air temperature is still below temperature setpoint minus temperature deadband minus 2°F, with (Menu 47) the Dehumidifier set to “Yes W/INH” the dehumidification cooling will be inhibited until the temperature goes back to the temperature setpoint. If Menu 47 is set to “Yes WO/INH”, the dehumidification cooling will allow to stay on until Humidity setpoint is satisfied regardless the Temperature setpoint.
3. When reheat comes on, the second stage of cooling will go off if it exists.
4. 1 minute delay between stop to start of the dehumidification.
5. Dehumidification compressor staging sequence:

COOL 1 ON AT HUMIDITY SETPOINT + HUMIDITY DEADBAND
COOL 2 ON AT HUMIDITY SETPOINT + HUMIDITY DEADBAND + 1% (IF EXISTS)
COOL 2 OFF AT HUMIDITY SETPOINT + HUMIDITY DEADBAND (IF EXISTS)
COOL 1 OFF AT HUMIDITY SETPOINT

Setback/up mode

When control panel in the unoccupied schedule, unit will operate as following:

EVAPORATOR FAN

The blower will operate based on the setting of menu #43-FAN MODE: AUTO OR CONT

AUTO: fan comes on when unit calls for cooling, heating, dehumidification and humidification. It goes off in one minute when no functions are called for.

CONT: fan runs continuously during the occupied mode even when no functions are needed

SETUP COOLING LOGIC

When a SETBACK/UP time-of-day schedule is in effect and the Mini-Dap II is operating in the “Unoccupied” mode, the effective heating setpoint will be adjusted upward by the amount specified in menu #16.

1. 5 minutes delay between start to start of the compressor (anti short cycle delay).
2. 2 minutes delay between stop to start of the same compressor.
3. Compressor sequences as follows:

COOL1 ON AT TEMP SETPOINT + COOL SETBACK TEMP + TEMP DEADBANB
 COOL2 ON AT TEMP SETPOINT + COOL SETBACK TEMP + TEMP DEADBANB + .3°F (IF EXISTS)

COOL2 OFF AT TEMP SETPOINT + COOL SETBACK TEMP + TEMP DEADBAND (IF EXISTS)
 COOL1 OFF AT TEMP SETPOINT + COOL SETBACK TEMP

SETBACK HEATING LOGIC

When a SETBACK/UP time-of-day schedule is in effect and the Mini-DAP is operating in the “unoccupied” mode, the effective heating setpoint will be adjusted downward by the amount specified in menu #17.

1. 1 minute delay between stop to start of the reheat. Reheat will be overridden by humidification.
2. Heating sequences as follows:

HEAT ON AT TEMP SETPOINT - HEAT SETBACK TEMP – TEMP DEADBAND - .3°F

HEAT OFF AT TEMP SETPOINT – HEAT SETBACK TEMP

SETBACK HUMIDIFICATION LOGIC

When a SETBACK/UP time-of-day schedule is in effect and the Mini-DAP is operating in the “unoccupied” mode, the effective setpoint for humidification will be adjusted downward by the amount specified in menu #19.

1. Heat will be overridden by humidification unless menu #46 is set for “COMFORT”.
2. 1 minute delay between stop to start of humidification.
3. 5 minutes delay between humidification and dehumidification.
4. Humidification sequences as follows:

HUMIDIFIER ON AT HUMIDITY SETPOINT – HUMIDITY SETBACK – HUMIDITY DEADBAND

HUMIDIFIER OFF AT HUMIDITY SETPOINT – HUMIDITY SETBACK – 1%

SETUP DEHUMIDIFICATION LOGIC

When a SETBACK/UP time-of-day schedule is in effect and the Mini-DAP is operating in the “unoccupied” mode, the effective setpoint for dehumidification will be adjusted upward by the amount specified in menu #18.

1. Dehumidification is not governed by the adjustment rate but the operation will not violate compressor short cycle times
2. Heating is used to reheat the overcooled and dehumidified air but heating short cycle times will not be violated. Also if heating comes on and return air temperature is still below temperature setpoint minus temperature deadband minus 2°F, the dehumidification cooling will be inhibited until the temperature goes back to the temperature setpoint.
3. When reheat comes on, the second stage of cooling will go off if it exists.
4. 1 minute delay between stop to start of the dehumidification.
5. Dehumidification compressor staging sequence:

COOL1 ON AT HUMIDITY SETPOINT + HUMIDITY SETBACK + HUMIDITY DEADBAND
 COOL2 ON AT HUMIDITY SETPOINT + HUMIDITY SETBACK + HUMIDITY DEADBAND + 1%
 COOL2 OFF AT HUMIDITY SETPOINT + HUMIDITY SETBACK + 1%
 COOL1 OFF AT HUMIDITY SETPOINT + HUMIDITY SETBACK

On/Off mode

If the time-of-day schedule setting for occupied and unoccupied period on menu #20 to #26 are set for “N/C” or when menu #13- DAY SCHEDULE is set for “N”, the control panel will operate in the “occupied “ mode all the time otherwise it will only operate in the “Occupied “ mode when time-of-day occupied schedule is in effect.

OCCUPIED SCHEDULE OF ON/OFF MODE

When unit is in the “OCCUPIED” period, the MINI-DAP II will operate in the same control logic as the “OCCUPIED” period of the **SETBACK/UP** mode indicated above.

UNOCCUPIED SCHEDULE OF ON/OFF MODE

During the “UNOCCUPIED” period of an **ON/OFF** schedule, the Mini-Dap II will deactivate all heating, cooling, humidification and dehumidification, and the fan will remain off.

Alarms Logic

1. HIGH TEMPERATURE ALARM

This indicates that the return air temperature is warmer than the high temperature limit setting. High temperature reports on the LCD screen and audio alarm sounds. High temperature alarm limit is set on menu #29.

2. LOW TEMPERATURE ALARM

This indicates that the return air temperature is colder than the low temperature limit. Low temperature reports on the LCD screen and audio alarm sounds. Low temperature alarm limit is set on menu #30.

3. HIGH HUMIDITY ALARM

This indicates that the return air humidity is higher than the high humidity limit. High humidity level reports on the LCD screen and audio alarm sounds. High humidity alarm limit is set on menu #33.

4. LOW HUMIDITY ALARM

This indicates that the return air humidity is lower than the low humidity limit. Low humidity level reports on the LCD screen and audio alarm sounds. Low humidity alarm limit is set on menu #34.

5. NO AIR FLOW ALARM

This requires an airflow sensor. When no airflow is detected, the cooling, heating, humidification and dehumidification functions are locked out until the alarm condition is corrected. The audio alarm is activated and “NO AIRFLOW” message is displayed on the LCD.

6. CHANGE FILTER ALARM (optional)

This requires a differential pressure sensor. When dirty filter is detected, the audio alarm is activated and “CHANGE FILTER” message is displayed on the LCD until the alarm condition is corrected.

7. HUMID FAILURE (optional)

This requires a supply water pressure switch. When water pressure is not detected, the humidifier is held off, the audio alarm is activated and “HUMID FAILURE” message is displayed on the LCD until the alarm condition is corrected.

8. HIGH CONDENSATE (WATER LEVEL)

A float switch is installed in the condensate pan to detect a high condensate water level. When high water level is detected, the cooling, heating, humidification and dehumidification are locked out until the alarm condition is corrected, the audio alarm is activated and “HIGH CONDENSATE” message is displayed on the LCD.

9. FIRESTAT ALARM

When return air temperature exceeds firestat temperature limit setting (menu #39). All blower, cooling, heating, humidification, and dehumidification functions will be immediately terminated. The audio alarm is activated and "FIRESTAT ALARM" message is displayed. The alarm will disappear when return air temperature drops below the firestat limit setting and all functions will resume.

WARNING: firestat alarm can be caused by the temperature sensor failure or incorrect calibration.

10. COMPRESSOR SHORT CYCLE

When the compressor has started 5 times within the past 30 minutes for any reasons (cooling or dehumidification). A "COMP SHORT CYCLE" message is displayed and the audio alarm is activated. The short cycle time delay between start to start of the same compressor is automatically increased from 5 minutes to 6 minutes for one hour. The alarm message will remain until one hour has elapsed without 10 compressor starts.

REMEMBER this alarm is only a warning, it will not prevent the compressor from coming on.

11. POWER FAILURE

The power restart mode is selected in menu # 37 "RESTART MODE". The following is the sequence of each mode:

AUTO: the unit will start automatically after a power failure or a reset. No audio or message.

AUTO M: the unit will start automatically after a power failure or a reset with alarm message only.

AUTO M: the unit will start automatically after a power failure or a reset with message and audio.

MANUAL: the unit will not start automatically after a power failure or a reset. An alarm message is displayed and audio alarm is activated. Press the alarm silence button to manually restart unit.

12. TEMP SENSOR FAIL

Temperature sensor values are out of reasonable range. This may be caused by a bad sensor (see sensor troubleshooting) or incorrect wiring. When temp sensor fail alarm goes off, cooling will come on and stay on until the alarm condition is corrected.

WARNING:A temperature sensor failure will cause the firestat alarm to be inoperative.

13. HUM SENSOR FAIL

Humidity sensor values are out of reasonable range. This may be caused by a bad sensor (See sensor troubleshooting) or incorrect wiring. When the humidity sensor fail alarm goes off, humidification and dehumidification will be locked out until the alarm condition is corrected.

14. HIGH PRESSURE 1 ALARM (HI PRES C1)

High-pressure alarm for compressor is set on menu #40, "OPT ALARM 1". This is default setting on this menu for a DX unit. This alarm goes off when the high-pressure switch opens. "HIGH PRES C1" message is displayed and audio alarm is activated. Compressor is off and alarm stays on until the high-pressure switch is manually reset.

15. HIGH PRESSURE 2 ALARM (HI PRES C2)

Apply for dual compressor systems only. The high pressure 2 alarm is set on menu #41, "OPT ALARM 2". This is default setting on this menu for 2 compressors unit. This alarm goes off when the high-pressure switch opens. "HIGH PRES C2" message is displayed and audio alarm is activated. Compressor is off and alarm stays on until the high-pressure switch is manually reset.

CAUTION: The unit needs to be checked-out by a qualified technician if it goes off on high pressure frequently.

16. NO WATER FLOW (optional)

This alarm requires a flow switch that is wired to the alarm optional input and menu #42,"OPT ALARM 3", is set for "NO WATER FLOW". When flow switch is opened, alarm will go off until the alarm condition is corrected.

17. SMOKE ALARM (optional)

This alarm requires a smoke detector that is wired to the alarm optional input and menu #41 or #42, "OPT ALARM 2" or "OPT ALARM 3", are set for "SMOKE ALARM". When the smoke detector energizes, a "SMOKE ALARM" message will display and audio alarm will activate. All the blower, cooling, heating and humidifier will be locked out until the alarm condition is corrected.

18. FAN OVERLOAD ALARM (optional)

This alarm requires a motor overload relay that is wired to the alarm optional input and menu #42, "OPT ALARM 3", is set for "FAN OVERLD". When overload relay is energized, alarm will go off until the alarm condition is corrected.

19. LOCAL ALARM (optional)

This alarm requires a 24 VAC signal applying to the alarm optional input and menu #41 or #42 are set for "LOCL ALARM". This alarm can be used as a custom alarm. When 24 VAC signal is not present, alarm will go off until 24 VAC signal resumes.

20. LOW PRESSURE 1 ALARM (optional)

Apply for single compressors system only. The low pressure 1 alarm is set on menu #41, "OPT ALARM 2". This alarm goes off when the low pressure switch opens. "LOW PRES C1" message is displayed and audio alarm is activated. Compressor is off and alarm stays on until the low pressure is corrected.

21. LOW AC VOLTAGE WARNING

When 24 VAC power supply that feeds the MINI-DAP II drops below 18 VAC, this alarm will go off until 24 VAC power is back to normal.

Troubleshooting

1. The power must be turned off before servicing or replacing the panel.
2. Factory notification is required before any parts are replaced in the panel.

PROBLEM	POSSIBLE CAUSE	CHECK OR REMEDY
No power or panel does not come on.	Main disconnect switch is off.	Turn main disconnect switch on.
	Optional remote shutdown contact is opened.	Check remote shutdown contact.
	Loose connections on pin #2 and #3 of TB1 (24vac input) on Mini-DAP II board.	Check the connections on pin #2 and pin #3 of TB1. Also check 24 VAC between pin #2 and #3.
	PCB fuse of Mini-DAP II is blown.	Check PCB fuse and replace with 1 amp fuse if necessary.
	Transformer circuit breaker is tripped.	Reset the circuit breaker on the control transformer inside unit electrical box.
Operates but no display.	Loose connections on IC chips of PC board.	Turn panel off. Firmly press on all IC chips that plug into sockets on the board.
	Improper LCD adjustment.	Adjust the LCD adjust pot on the top left hand corner the PC board
Display is too dim or too bright.	Improper LCD adjustment.	Adjust the LCD adjust pot on the top left hand corner the PC board
Self-Test Failures: EPROM: FAIL EEPROM: FAIL	Loose connection or contaminated EPROM.	Insure EPROM chip is secured in U9 socket on PC board. Replace EPROM.
	Loose connection or contaminated.	Insure EEPROM chip is secured in U20 socket on board.
VAC A TO D: FAIL	Bad 24 VAC power supply or sensors wiring are incorrect	Check 24 VAC across pin #2 and #3 of TB1, make sure it is 24VAC± 10%. Refer to unit wiring diagram to check sensor wiring
RTN SENSOR: FAIL (return air temp sensor)	Loose connections or sensor is wired incorrectly.	Check connections and wiring. See temperature sensor problem.
HUM SENSOR: FAIL (relative humidity sensor)	Loose connections or sensor is wired incorrectly.	Check connections and wiring. See humidity sensor problem.

PROBLEM	POSSIBLE CAUSE	CHECK OR REMEDY
MENU: FAIL	Bad menu button (close) or button is pressed when self-test is proceeding	Turn panel off, clean and press on the button couple times, make sure the button works freely
SELECT: FAIL	Bad menu button (close) or button is pressed when self-test is proceeding	Turn panel off, clean and press on the button couple times, make sure the button works freely
Blower does not come on.	Bad connections on the plugs or cable	Check connection from pin #4 of TB1 of Mini-DAP II to pin #4 of unit.
	Relay fuse of Mini-DAP II is blown.	Check relay fuse on Mini-DAP. Replace with 5 amp fuse if necessary.
	Smoke detector alarm activated (if used).	Reset the smoke detector.
	Fire stat alarm activated.	System is inhibited until return air temperature is below the firestat limit temperature, which is set on Menu #39.
	Faulty blower relay K1.	Use Manual diagnostic relay test #2 to check. See above for Manual diagnostic. Use AC voltmeter to check for 24 VAC between pin #3 and #4 when blower relay is called for.
Blower comes on then goes off.	Fan mode is set for auto, not continuous	See fan mode logic above then set a desired fan mode on menu #43.
Temperature sensor fail.	Loose connections	Check connections on pin #17 and #18 of TB2 on board.
	Faulty sensor	Refer to sensor chart to check VDC across the temp sensor by applying DC voltmeter across pin 17(+) and pin 18(-).
	Incorrect calibration	See Programming and selections, menu #31 above for temp sensor calibration.
Humidity sensor fail	Loose connections	Check connections on pin #19,20,21 and 22 for loose connection or incorrect wiring.
	Faulty sensor.	Check for 15 VDC between pin #19 and #22 of TB2 on Mini-DAP II. Check for 5 VDC between pin #20 and #22 of TB2. Refer to the sensor chart to verify VDC between pin #21 and #22 of TB2.
	Incorrect calibration	See Programming and selections, menu #35 above for hum sensor calibration.
Compressors do not come on.	No call for cooling.	Check temperature setpoint and deadband (menu #4 and menu #28).
	Cooling stages are in short-cycle time delay period.	Wait 5 to 10 minutes or reset the panel. See the cooling logic above.
	Inhibited by high condensate water or no airflow alarm.	Correct the alarms.
	Incorrect configuration on compressor menu.	Check setting on Menu #44. It should be set at "PRI" for single compressor or "PRI/PRI" for dual compressor unit and "VALVE" for chilled water unit.
	Loose connection on connector or incorrect wiring.	Check connections between pin #5 of Mini-DAP II to pin 5 of unit for cool 1 and pin #6 of Mini-DAP II to pin 6 of unit for cool 2
	Relay fuse of panel is blown.	Check Relay fuse on Mini-DAP II and replace it with 5 amp fuse if necessary.
	High pressure alarm goes off	Reset the high-pressure switch. If it happens again, contact a technician.

PROBLEM	POSSIBLE CAUSE	CHECK OR REMEDY
Compressor comes on then goes off then shows "short cycle alarm".	Smoke alarm goes off.	Check and Reset the smoke detector.
	Fire stat alarm activated.	System is inhibited until return air temp is below the fire stat limit on Menu #39.
	Faulty cool 1 st stage K2 relay.	Use manual diagnostic relay test #2 to test this relay. Check 24VAC between pin #3 and pin #5 of TB1.
	Faulty cool 2 nd stage K3 relay.	Use manual diagnostic relay test #2 to test this relay. Check 24VAC between pin #3 and pin #6 of TB1.
	Incorrect setting on the alarm input	Check optional alarm 1 setting (menu #40). It must be set at "HI PRESS C1" for single compressor unit. Optional alarm 2 (menu #41) should be set at "HI PRESS C2" if unit has two compressors. These optional alarm inputs should not be set for "smoke alarm" as standard.
Chilled water valve does not open.	Compressor may experience a low pressure.	Contact a service technician
	Compressor overload trips	Check compressor overload. Contact a service technician.
	No call for cooling.	Check temperature setpoint and deadband (menu #4 and menu #28).
	Inhibited by high condensate water or no airflow alarm.	Correct the alarms.
	Incorrect configuration on compressor menu.	Check setting on Menu #44. It should be set for "VALVE" for chilled water unit.
	Loose connection on connector or incorrect wiring.	Check connections between pin #5 of Mini-DAP II to pin 5 of unit for cool.
	relay fuse of panel is blown.	Check Relay fuse on Mini-DAP II and replace it with 5 amp fuse if necessary.
	Smoke alarm goes off.	Check and Reset the smoke detector.
	Fire stat alarm activated.	System is inhibited until return air temp is below the fire stat limit on Menu #39.
Reheat does not come on.	Faulty cool 1 st stage K2 relay.	Use manual diagnostic relay test #2 to test this relay. Check 24VAC between pin #3 and pin #5 of TB1.
	No call for reheat.	Check temperature setpoint and deadband.
	Inhibited by high condensate or no air flow alarm.	Correct the alarms.
	Incorrect configuration.	Check settings in Menu #45. It must be set for "yes" if reheat is used.
	Inhibited by humidification.	Normal control logic for computer room application. Refer to reheat control logic.
	Loose connection.	Refer to wiring diagram to check connection.
	relay fuse of panel is blown.	Check relay fuse (5 amp fuse).
	Faulty 1 st stage reheat K4 relay.	Use manual diagnostic relay test #2 to check the relay. Also check 24 VAC across pin #3 and pin #7 on TB1 of Mini-DAP II.
	Reheat thermal cutout switch open.	Check thermal cutout switch located in the reheat box assembly.
Humidification does not come on.	No call for humidification.	Check humidity setpoint and deadband.
	Inhibited by high condensate or no air flow alarm.	Correct the alarms.

PROBLEM	POSSIBLE CAUSE	CHECK OR REMEDY
	Incorrect configuration.	Check setting in Menu #46.it should be set "Computer" for computer room or "Comfort" for office. Refer to humidification logic above.
	Loose connection.	Check connection on pin #8 of TB1. Refer to wiring diagram to check connection between unit and panel.
	relay fuse of panel is blown.	Check relay fuse and Replace it if necessary (5amp fuse).
	Faulty humidifier K5 relay.	Use manual diagnostic relay test #2 to check relay. Also check 24 VAC between pin #3 and pin #8 when hum relay is called for.
	Bad humidifier controller (applied for steam generator humidifier only) or drain switch on the controller is turn off	Check the manual drain switch on the humidifier control board, make sure it is on auto position. Check 24VAC input to the board and 24VAC output from the controller to the humidifier contactor.
	Humidifier fail alarm on.	Correct the alarm (if optional supply water pressure switch is installed). Otherwise Check alarm optional setting #3 on menu #42, it should not be set for "Humid fail" if optional water pressure switch is not installed. In this case, this should be set for "Chng filter".
	Restricted by interstage time delay .	Wait 1 to 5 minutes or reset. Refer to humidification logic.
Dehumidification does come on.	No call for Dehumidification.	Check humidity setpoint and deadband.
	Inhibited by high condensate or no air flow alarm.	Correct the alarms.
	Incorrect configuration.	Check settings in Menu #47.
	Inhibited by humidity anticipation.	Refer to humidity logic. Check Menu #21.
	Inhibited by reheat.	Refer to dehumidification logic.
	Dehumidification is off.	Check Menu #47.
	Unit does not have reheat.	On units without reheat the dehumidification mode is not operable. See dehumidification logic.
	Compressor does not come on	See the compressor troubleshooting above.
	Restricted by interstage time delay.	Wait 1 to 5 minutes or reset panel. Refer to dehumidification logic.
Panel locks up or displays a scramble readout	Power supply is too high or too low.	Check 24 vac power that supplied to panel between pin #2 and #3 of TB1. It must be 24VAC±10%. Reset panel.
	Loose ground connections	Tighten mounting screws of PC board to aluminum enclosure. Reset panel.
	Dirty power or power surges.	Check power supply. A power conditioner or UPS power source is recommended.
Audio alarm does not sound.	Audio alarm has been turned off.	Check setting on Menu #36.
	Faulty alarm buzzer.	Use manual diagnostic relay test #3 to check audio alarm buzzer.
Optional alarm contact does not close on alarm.	Alarm contacts are disabled or not programmed correctly.	Check settings on audio alarm menu #36. Make sure it is not set for "silent".

PROBLEM	POSSIBLE CAUSE	CHECK OR REMEDY
High condensate (water) alarm, all functions shutdown	Faulty alarm relays K6.	Use manual diagnostic relay test #2 to test.
	Condensate water builds up in the condensate pan.	Check the condensate pan and the condensate float switch. Make sure the switch is open.
	High pressure alarm	Check and reset the high-pressure switch. This switch is normally close, open on failure.
No air flow alarm, all functions shutdown.	High-pressure switch trips	Check compressor overload.
	Compressor overload trips (if existed)	Check compressor overload.
	Bad compressor K2 or K3 relays on Mini-DAP II.	See "Compressor does not come on" troubleshooting above for details.
No air flow alarm but blower continues to run	Fan motor is damaged, blower belt breaks , motor overload trips or blower fuses are blown	Check motor, fan belt, blower fuses or motor overload.
No air flow alarm but blower continues to run	Bad air flow switch or bad panel input	Check air flow switch, this switch is normally open, close on lose of airflow.
Faulty standard alarm conditions.	Bad connections or incorrect wiring.	Refer to wiring diagram to check connections. See alarm logic above for alarm details.
	Bad or contaminated sensor	Check sensors.
	Incorrect settings on alarm options	Check optional alarm input setting on menu #40, 41 and 42. See programming and selections above for details.
High or Low temperature or humidity warning.	Return air temperature or humidity is above or below the alarm limits.	Silence the audio alarm. The alarm deactivates automatically when the temperature or humidity returns to within the alarm limits. Check the setting limit on menu #29, 30,33 and 34.

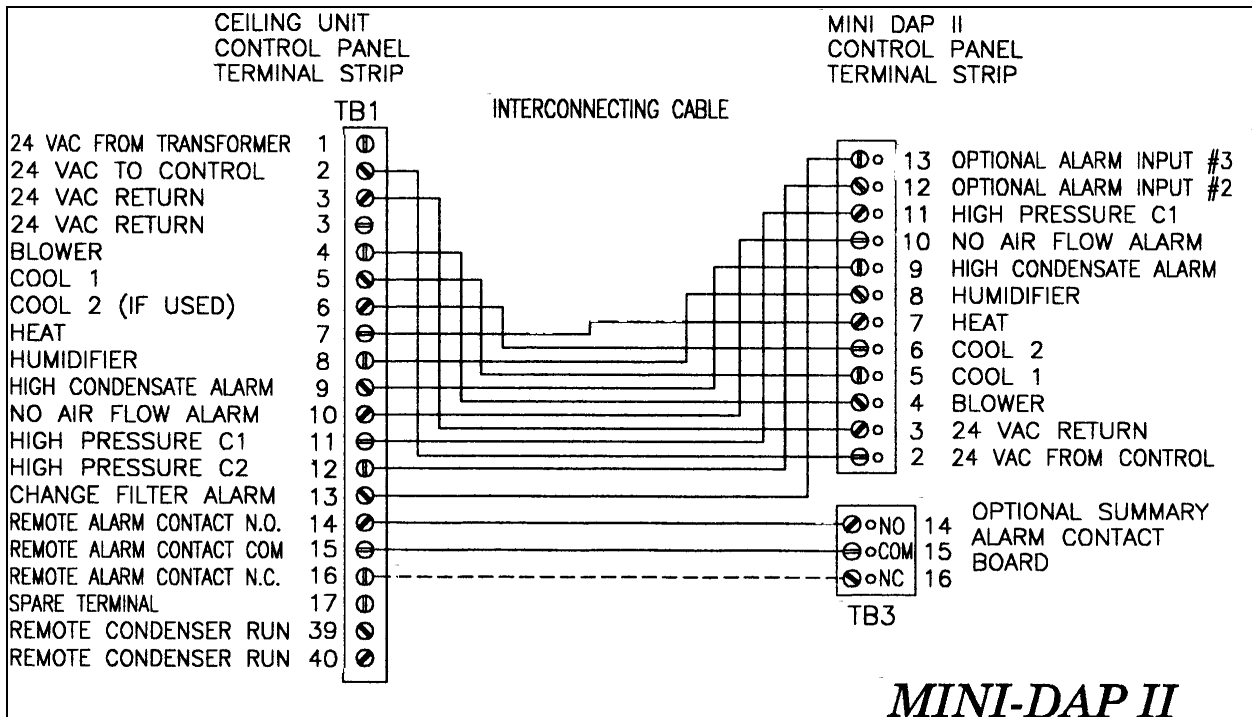


Figure 5: Typical interconnecting wiring between Mini-DAP II and ceiling unit

Specifications

Power Requirements	24 VAC \pm 10% @ 50/60 Hz
Current Draw	600 mA with no load
Control Output signal	24 VAC \pm 10%
Alarm Input signal	24 VAC \pm 10%
Fuse for Power supply F1	1 Amps, 5X20 mm fast- acting miniature fuse
Fuse for relay output F2	5 Amps, 5X20 mm fast- acting miniature fuse
Optional Remote Contact rating	2A @ 30 VDC, .6 A @ 125 VAC (resistive)
Measuring Temperature range	0°- 192 °F \pm 1°F accuracy (89°C \pm 1°C accuracy)
Measuring Relative Humidity range	1% to 90% RH (\pm 3%) non-condensing
Temperature setpoint	60°F to 80°F, \pm 1°F to \pm 5°F deadband
Humidity setpoint	30% to 70%, \pm 1% to \pm 15% deadband
Connections	Miniature screw-type terminals
Wiring	22-18 AWG wires
Dimensions (H x W x D)	4 $\frac{3}{4}$ in. x 9 $\frac{3}{4}$ in. x 1 $\frac{3}{4}$ in. (120 x 248 x 44 mm)
Shipping Weight	1.75 lbs (800g)

PARTS LIST

	PART NUMBER
MINI-DAP II PANEL	160-200-145
OPTIONAL REMOTE ALARM CONTACT	160-200-140
TEMPERATURE SENSOR	160-200-060
HUMIDITY SENSOR	160-200-202

HUMIDITY & TEMPERATURE SENSOR CHART FOR MINI-DAP-II

DC VOLTAGE vs RELATIVE HUMIDITY					
1.11	10.0%	1.95	37.1%	2.78	63.9%
1.14	11.0%	1.98	38.1%	2.82	65.2%
1.17	11.9%	2.01	39.0%	2.85	66.1%
1.20	12.9%	2.04	40.0%	2.88	67.1%
1.23	13.9%	2.07	41.0%	2.91	68.1%
1.27	15.2%	2.10	41.9%	2.94	69.0%
1.30	16.1%	2.13	42.9%	2.97	70.0%
1.33	17.1%	2.16	43.9%	3.00	71.0%
1.36	18.1%	2.20	45.2%	3.03	71.9%
1.39	19.0%	2.23	46.1%	3.06	72.9%
1.42	20.0%	2.26	47.1%	3.09	73.9%
1.45	21.0%	2.29	48.1%	3.13	75.2%
1.48	21.9%	2.32	49.0%	3.16	76.1%
1.51	22.9%	2.35	50.0%	3.19	77.1%
1.54	23.9%	2.38	51.0%	3.22	78.1%
1.58	25.2%	2.41	51.9%	3.25	79.0%
1.61	26.1%	2.44	52.9%	3.28	80.0%
1.64	27.1%	2.47	53.9%	3.31	81.0%
1.67	28.1%	2.51	55.2%	3.34	81.9%
1.70	29.0%	2.54	56.1%	3.37	82.9%
1.73	30.0%	2.57	57.1%	3.40	83.9%
1.76	31.0%	2.60	58.1%	3.44	85.2%
1.79	31.9%	2.63	59.0%	3.47	86.1%
1.82	32.9%	2.66	60.0%	3.50	87.1%
1.85	33.9%	2.69	61.0%	3.53	88.1%
1.89	35.2%	2.72	61.9%	3.56	89.0%
1.92	36.1%	2.75	62.9%	3.59	90.0%

DC VOLTAGE vs TEMPERATURE					
2.800	44.3°F	2.873	57.5°F	2.948	71.0°F
2.801	44.5°F	2.876	58.0°F	2.951	71.5°
2.804	45.0°F	2.879	58.5°F	2.954	72.0°F
2.807	45.5°F	2.882	59.0°F	2.957	72.5°F
2.809	46.0°F	2.884	59.5°F	2.959	73.0°F
2.812	46.5°F	2.887	60.0°F	2.962	73.5°F
2.815	47.0°F	2.890	60.5°F	2.965	74.0°F
2.818	47.5°F	2.893	61.0°F	2.968	74.5°F
2.820	48.0°F	2.895	61.5°F	2.970	75.0°F
2.823	48.5°F	2.898	62.0°F	2.973	75.5°F
2.826	49.0°F	2.901	62.5°F	2.976	76.0°F
2.829	49.5°F	2.904	63.0°F	2.979	76.5°F
2.831	50.0°F	2.907	63.5°F	2.982	77.0°F
2.835	50.5°F	2.909	64.0°F	2.984	77.5°F
2.837	51.0°F	2.912	64.5°F	2.987	78.0°F
2.840	51.5°F	2.915	65.0°F	2.990	78.5°F
2.843	52.0°F	2.918	65.5°F	2.993	79.0°F
2.845	52.5°F	2.920	66.0°F	2.995	79.5°F
2.848	53.0°F	2.923	66.5°F	2.998	80.0°F
2.852	53.5°F	2.926	67.0°F		
2.854	54.0°F	2.929	67.5°F		
2.857	54.5°F	2.932	68.0°F		
2.859	55.0°F	2.934	68.5°F		
2.862	55.5°F	2.937	69.0°F		
2.865	56.0°F	2.940	69.5°F		
2.868	56.5°F	2.943	70.0°F		
2.870	57.0°F	2.945	70.5°F		



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