

Installation and Operating Instructions

T DAP24-AH22-CB



(Please refer to owner's manual for programming instructions)

APPLICATION:

This thermostat is a programmable 24 volt Heating and Cooling Digital Temperature Control with automatic changeover from heating to cooling and back again. It can be used for residential and light commercial systems. They are ideal for use with most heating and cooling systems with multi-stages. The large, easy to read display makes the thermostat easy to operate and simple to program. Backlighting makes it easy to read the display in the dark.

SPECIFICATIONS:

- Setpoint Temperature Range:** 40.0°F to 95.0°F (5.0°C to 35.0°C)
- Display Format:** Liquid Crystal Display (LCD)
- Sampling Rate:** Every 30 seconds
- Accuracy:** ± 1°F
- Power Source:** 24V, 30V maximum, Class II Supply and Wiring
- Load Rating:** 1.5 Amps maximum total load
- Fan Control:** selectable - auto cycle or continuous
- Heat/Cool Control:** 2 heat and 2 cool circuits
- LCD Backlighting:** auto or continuous

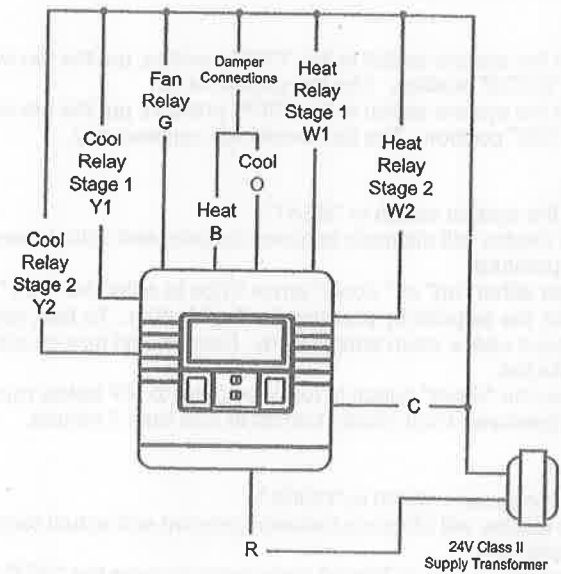
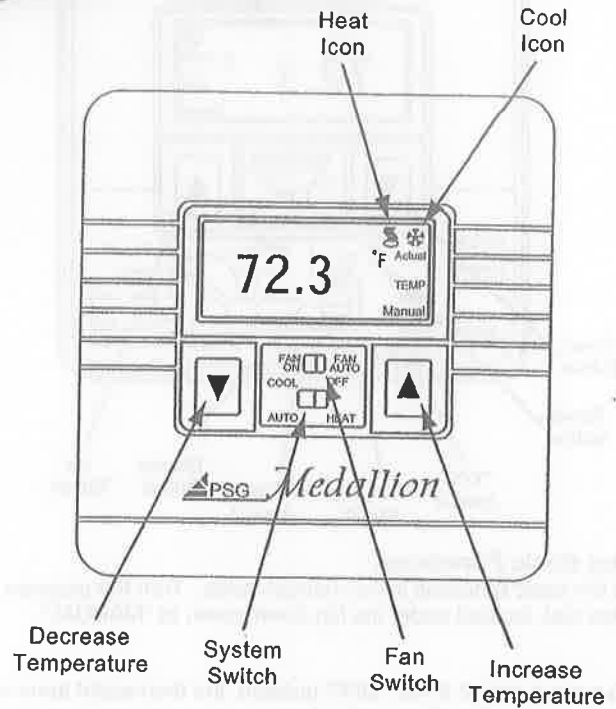
General Installations:

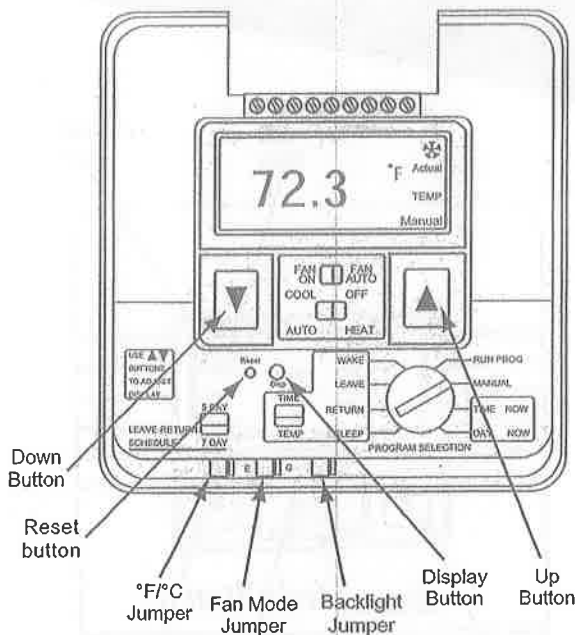
This device should be installed and serviced by a qualified technician. Junction box mounting is highly recommended.

1. **⚠ Caution:** Make sure that power has been disconnected.
2. All wiring must comply with applicable codes and ordinances.
3. A thorough check-out of the system should be made after installation is complete.
4. If retrofitting old thermostat, remove old thermostat from wall, carefully noting the wire connections on the old unit. Record wire color and terminal legends in spaces provided.

Terminal function	Thermostat terminals	Cable wire color
Single 24V Feed	R	_____
Single 24V Common	C	_____
Cooling Aux/Damper	O	_____
Heating Aux/Damper	B	_____
Fan	G	_____
Cool Stage 1	Y1	_____
Heat Stage 1	W1	_____
Cool Stage 2	Y2	_____
Heat Stage 2	W2	_____

- i. Using the mounting screws provided, mount the thermostat to the wall or junction box.
- i. Connect wire cables according to your wire color chart.
- . Push excess cable wires back into the wall while positioning thermostat. If there is a draft, pack the opening with non-combustible material.





Setting Parameters:

There are six parameters to set depending on the model. °F/°C selection, fan mode selection, backlight mode selection, display selection, system time delay selection and cycle rate selection.

°F/°C Selection:

All units are shipped in °F display mode. °C can be selected by moving the jumper to the °C position. Press reset after changing jumper position. **Warning:** Resetting F/C will erase any user program schedule and replace it with the factory default schedule.

Fan Mode Selection:

All units are shipped with the jumper in the right position. The fan then cycles only with cooling calls normal for gas or oil heat. The fan mode jumper in the left position selects the fan to cycle with both heating and cooling calls necessary for some electric heat systems.

Backlight Mode Selection:

All units are shipped with the backlight jumper in the left position, auto mode. The backlight comes on whenever the up or down button is pressed. The backlight jumper in the right position keeps the backlighting on continuously. Backlighting is not available on battery powered models.

Display Button Selection:

All units are shipped with the display alternating between room temperature, current setpoint and time-of-day. Pressing the display button selects the display to show only room temperature or alternate between actual room temperature, current setpoint and time-of-day.

System Time Delay Selection:

This selection is for water source heat pumps. If you do not have a water source heat pump you may skip this step. If you have a water source heat pump follow these steps. Hold the "display" button down and then press the "up" button. SHC will appear on the display. Release both buttons. Change SHC to HP by pressing the "down" button. After approximately 20 seconds the display will return to normal. Also set the fan mode jumper to the right hand position (electric heat).

Cycle Rate Selection:

The cycle rate selection determines the cycle rate for both heating and cooling. All units are shipped with a cycle rate of 1.0, the medium rate. To change the cycle rate press the "up" and "down" buttons together for approximately 10 seconds. The display will change to diff and 1.0. Use the "up" or "down" button to select a new cycle rate. After approximately 15 seconds the display will return to normal. Selection Criteria: 0.5 is the fastest cycle rate, 2.0 is the slowest.

Trouble Shooting Tests:

Using a voltmeter, confirm the supply voltage. With the system switch in the off position and the fan switch in the auto position the voltage should measure between 18VAC and 30VAC from R and the other terminals. Confirm supply voltage between R and C. Briefly press the reset button to initialize the processor. The LCD should power up.

To Check Continuity: (Using a Voltmeter with all loads connected)

A) When thermostat is calling for Cool, meter should read 0VAC from "R" to "Y1". When Cooling is deactivated, meter should read 24VAC from "R" to "Y1" ("Y2" is offset 2°F above "Y1").

B) When thermostat is calling for Heat, meter should read 0VAC from "R" to "W1". When Heat is deactivated, meter should read 24VAC from "R" to "W1" ("W2" is offset 2°F below "W1").

C) When the fan switch is in the AUTO position and the system switch is in the OFF position, meter should read 24VAC between "R" and "G". When the fan switch is in the ON position and the system switch is in the OFF position, the meter should read 0VAC between "R" and "G".

Testing Basic Functions:

Check the basic functions in the manual mode. Turn the program selection dial, located under the flip down cover, to "MANUAL".

Off:

1. With system switch in the "OFF" position, the thermostat turns off both heating and cooling systems.
2. Setpoints cannot be changed in the "OFF" position.
3. Actual room temperature will continue to be displayed.

Fan:

1. With the system switch in the "OFF" position, put the fan switch to the "AUTO" position. The fan should be off.
2. With the system switch in the "OFF" position, put the fan switch to the "ON" position. The fan should run continuously.

Heat:

1. Set the system switch to "HEAT".
2. The display will alternate between setpoint and actual room temperature.
3. Press either "up" or "down" arrow twice to enter the "SET" mode. Raise the setpoint by pressing the "up" button. To test, raise the setpoint above room temperature. Heat should turn on within 3 minutes.
4. Press the "down" button to lower setpoint to 5°F below room temperature. Heat should turn off in less than 1 minute.

Cool:

1. Set the system switch to "COOL".
2. The display will alternate between setpoint and actual room temperature.
3. Press either "up" or "down" arrow twice to enter the "SET" mode. Lower the setpoint by pressing the "down" button. To test, lower the setpoint below room temperature. Compressor should turn on within 3 minutes.
4. Press the "up" button to raise setpoint to 5°F above room temperature. Compressor should turn off in less than 1 minute.

Auto:

1. Set the system switch to "AUTO".
2. The automatic changeover function is now engaged. The change over band (deadband) is automatically adjusted so that heating and cooling setpoints are never closer than 4°F.

Programming Instructions For *Medallion*



PSG Controls, Inc.

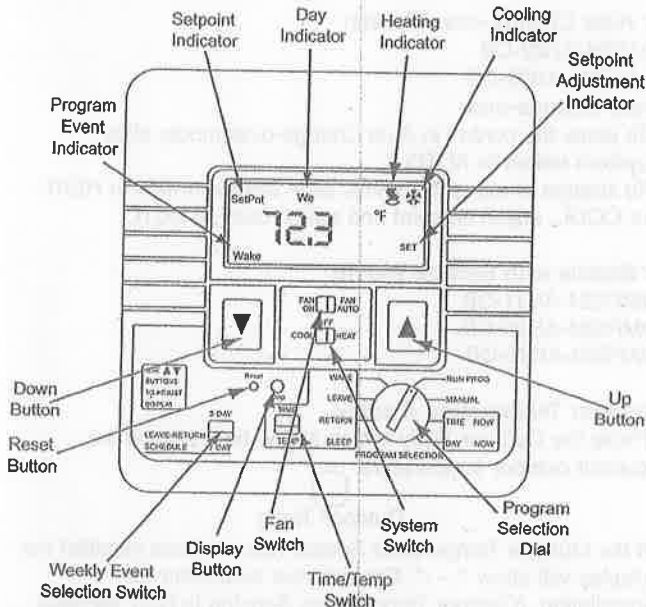
Models

TDMP24-H1	TDMP24-A1-CB	TDMP24-AH11-CB
TDMP24-A1	TDMP24-AH11-CB	TDMP24-AH22-CB
TDMP24-AH11	TDMP24-AH22-CB	TDAPS24-AH22-CB
TDMP24-H1-CB	TDAP24-AH22-CB	

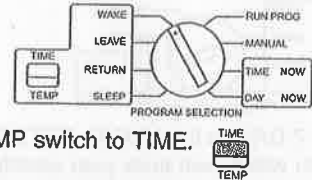
NOTE: To maximize Energy Savings, please take into consideration the amount of time it takes for the house to warm up or cool down for comfort levels. Example: Set ARRIVE time for 15 or 30 minutes before you normally arrive so the house is at your comfort level when you get home.

Write your schedule here:

WAKE at ____ AM HEAT at ____° and COOL at ____°
 LEAVE at ____ AM HEAT at ____° and COOL at ____°
 RETURN at ____ PM HEAT at ____° and COOL at ____°
 SLEEP at ____ PM HEAT at ____° and COOL at ____°



To Program the four (4) program events:
 1. **Set Dial to WAKE.**



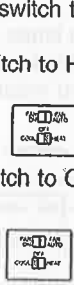
Slide TIME-TEMP switch to TIME.

Using the ▼ and ▲ buttons, set your wake time. Clock advances in 15 minute intervals, by holding down ▼ or ▲ button time will advance rapidly.



Now set the WAKE Heat & Cool Temperatures.

- Set TIME-TEMP switch to TEMP.
- Slide System Switch to HEAT, press ▼ or ▲ button to set temperature.
- Slide System Switch to COOL, press ▼ or ▲ button to set temperature.



Selecting Method of Operation:

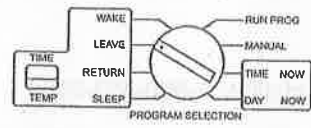
- Open the hinged cover. Notches directly left or right of ▼ and ▲ buttons on edge of control.
- Rotate the PROGRAM SELECTION dial to RUN PROG to run the energy saving program or to MANUAL for single setpoint operation.

Programming Instructions

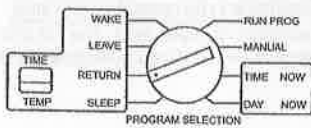
Programming your Energy Saving Thermostat:

- Open the hinged cover.
- Select a Heating or Cooling schedule. You should write down your desired WAKE-LEAVE-RETURN-SLEEP times and HEAT/COOL temperatures for each event. Times and temperatures for heating and cooling are independent and may be programmed and reprogrammed at any time. Factory default heating and cooling programs are already stored in the thermostat —right out of the box. If you do not reprogram it yourself, the unit will run these default program(s) – refer to the default schedules shown here.
 WAKE at 6:00AM HEAT at 70°F and COOL at 78°F
 LEAVE at 8:00AM HEAT at 62°F and COOL at 85°F
 RETURN at 6:00PM HEAT at 70°F and COOL at 78°F
 SLEEP at 10:00PM HEAT at 62°F and COOL at 82°F

2. **Turn Dial to LEAVE**
 Follow Step 1 above.

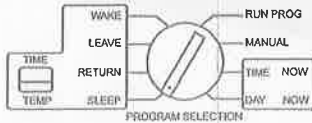


3. **Turn Dial to RETURN.**
 Follow Step 1 above.



4. Turn Dial to SLEEP.

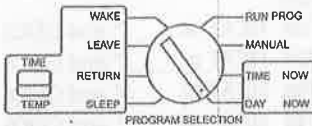
Follow Step 1 above.



Daily event programs are now set. The program will remain permanently in its memory until you change it. Power failure WILL NOT erase the program.

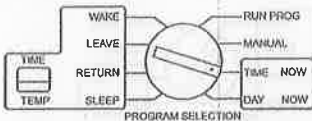
5. Set the Current Day

Turn Dial to DAY NOW press ▼ or ▲ button



6. Set Time of day.

Turn Dial to TIME NOW press ▼ or ▲ button. By holding down button time will advance rapidly.



7. Choose 5 DAY or 7 DAY on the LEAVE- RETURN

SCHEDULE switch which best suits your weekly lifestyle. The 5 DAY Schedule recognizes 4 distinct times for each day, Monday thru Friday. They are WAKE, LEAVE, RETURN and SLEEP. The distinct times for the weekend are only WAKE and SLEEP.

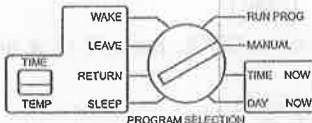
The 7 DAY schedule recognizes the same 4 schedule times each day of the week – Mon thru Sun. Use the 5 DAY- 7 DAY switch to select your schedule preference.



Programming & Operation Tips

Holiday, Vacation Settings

For a period that goes beyond event times. Turn the Dial to MANUAL and set the temperature to your desired setting by pressing ▼ or ▲ buttons. When you return turn, the Dial to RUN PROG.



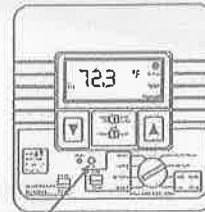
Overriding the Current Program Setting

Just press ▼ or ▲ button to change the setting. When the next event occurs the setting will return to the program set points.

Display Button

There are two (2) display options.

- Actual Room Temperature, set point and time of day will alternately display.
 - Actual room temperature is only displayed.
- To change the display press DISP button.



Disp Button

Special Model Notes

• For Auto Change-over Models:

TDAP24-AH22-CB
TDAPS24-AH22-CB

Auto Change-over

To place the control in Auto Change-over mode, slide system switch to AUTO.

To change or adjust setpoints, slide system switch to HEAT or COOL, adjust setpoint and switch back to AUTO.

• For Models with Service Watch:

TDMPS24-AH11-CB
TDMPS24-AH22-CB
TDAPS24-AH22-CB

Outdoor Temperature Display

Press the Outdoor Temp button at any time to read the current outdoor temperature.



Outdoor Temp

If the Outdoor Temperature Sensor has not been installed the display will show "- -". Contact your contractor for installation. (Outdoor Temperature Sensing is NOT required for your system to operate properly.)

Service Watch Alert

If a phone number appears in the display it means that it is time to call your maintenance contractor for routine system tune up or filter change. Simply dial the number shown on the display. The display will also indicate ✖ if cooling system or ☀ if heating system checkout is suggested. The word "FILTER" will appear to indicate that a filter cleaning or replacement is suggested. When the checkup or maintenance is completed the contractor will reset the Service Watch function. The Service Watch Alert display may be overridden temporarily by simply pressing either ▼ or ▲ button. The alert will reappear for 1 minute, 4 times EVERY hour until it is reset.

• For Models with Batteries:

TDMP24-H1
TDMP24-A1
TDMP24-AH11

Battery Replacement Indicator

If "Lo Batt" appears in the display it means that the batteries require replacement. Two fresh "AA" alkaline cells are needed. Press down on the top center of the cover and hinge forward. Remove old batteries and replace immediately with new ones. Time of day may need to be corrected but all other programming will remain in place.

Technical Hotline: 1-800-523-2558



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