

HEVAC CONTROLS

RTC4 PROGRAMMABLE ROOM THERMOSTAT C/W TIME SWITCH



FEATURE:

- 2 Stage heat / 2 stage cool with 7 day time switch control
- Large LCD display with backlight, continuous backlight option
- **Preset** for quick install/operation as 2 stage heat pump controller Mon-fri 8:00 -17:30
- Simple menu driven programming
- The running screen displays the set Point, Room temperature and current Time
- Auto or Manual heat / cool change over
- Permanent user settings retention during power loss, no batteries are required,
- Run times and temperature set points programmable for each day plus day omit
- 24v and or battery powered
- Permanent ON override, Vacation mode & After hours Run UNTIL timer
- Intelligent optimised morning start option
- Optional Air filter change indicator selectable
- Optional UV light change indicator selectable

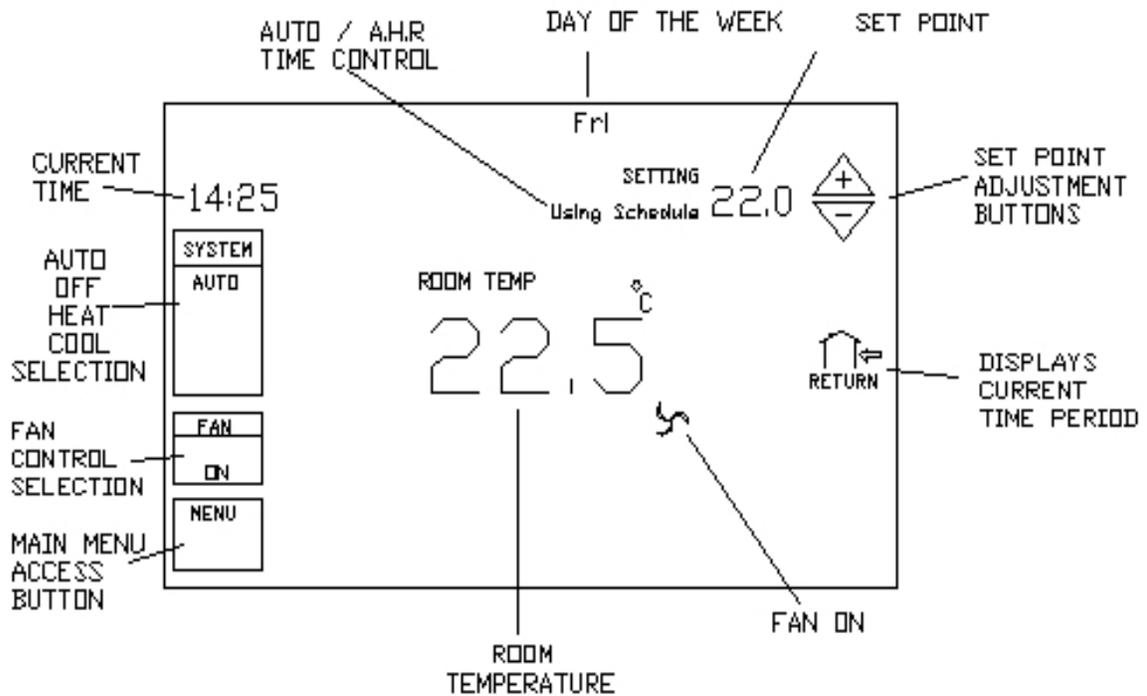
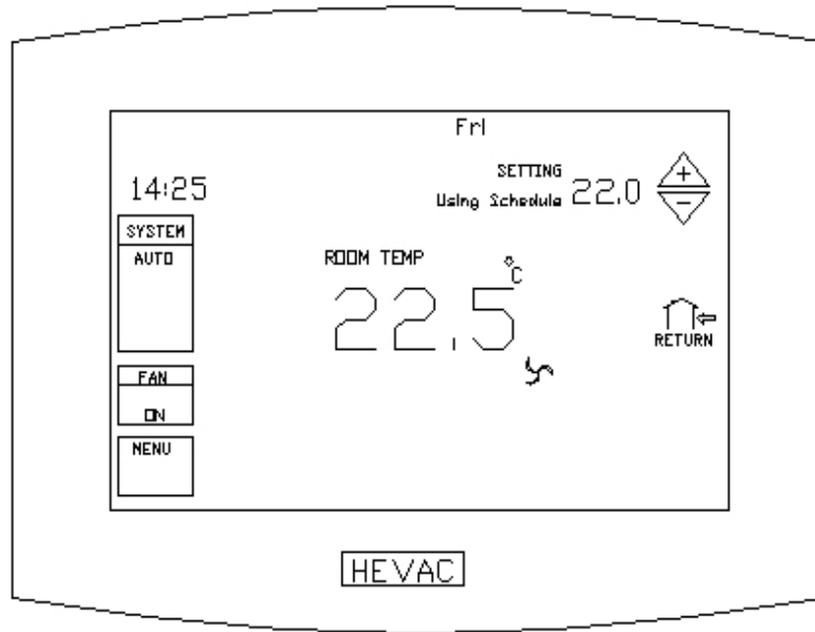
APPLICATION:

The RTC4 room thermostat is ideal for the control of single or twin compressor air conditioning units in commercial air conditioning applications. For easy installation and quick start up the thermostat comes preset to control a typical 2 stage reverse cycle unit with a preset time schedule to operate Monday to Friday from 8:00 to 17:30 with the heating (off) set point set to 21.5 degrees and cooling (off) set point at 22.5. Note: the stage "turn off" temperature is the displayed operating set point. All trigger times and temperatures for each day are easily adjustable via a user friendly menu.

Domestic application model RTC4D is available with typical "Wake, Leave, Return & Sleep type program.

KEYBOARD, DISPLAY AND SWITCH DESCRIPTION

Typical running screen



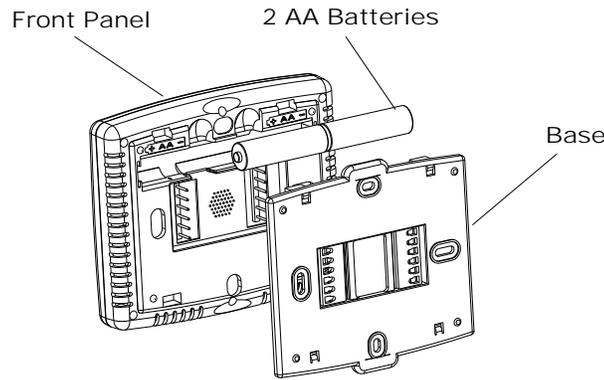


Figure 4

SPECIFICATION:

Power Supply	Dual Power 24VAC (18-30VAC,50/60Hz) or Battery Powered
Terminal Load.....	1.0 A per terminal, 2.0A maximum total load
Set point Temperature Range.....	41°F to 95°F (5°C to 35°C)
Operating Ambient.....	32°F to 122°F (0°C to 50°C)
Operating Humidity.....	90% non-condensing max
Shipping Temperature Range.....	14°F to +140°F (-10°C to 60°C)
Dimensions.....	5.9 inch×4.5 inch×1.2inch(150mm×115mm ×32mm)
Color.....	White

INSTALLATION

1. Pull the thermostat body off the thermostat base. Forcing or prying on the thermostat will cause damage to the unit.
 2. Place base over hole in wall and mark mounting hole locations on wall using base as a template
 3. Move base out of the way. Drill mounting holes. If you are using existing mounting holes and the holes drilled are too large and do not allow you to tighten base snugly, use plastic screw anchors to secure the base.
 4. Fasten base snugly to wall using mounting holes shown in Figure 3 and two mounting screws. Leveling is for appearance only and will not affect thermostat operation.
 5. Connect wires to terminal block on base using appropriate wiring schematic (See Figure 5)
 6. Carefully line the thermostat up with the base and snap into place.
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Batteries are optional (to provide backup power) if your thermostat was wired to run on AC power when installed. 2 “AA” alkaline batteries are included in the thermostat at the factory with a battery tag to prevent power drainage.

Battery replacement

Install fresh batteries immediately when the **Low Batt** warning begins flashing. The warning flashes about 60 days before batteries are depleted. Even if the warning does not appear, you should replace batteries once a year, or before leaving home for more than 1 month

To replace batteries, set system to OFF, remove thermostat from wall and install the batteries in the rear along the top of the thermostat. (See figure 4)

WIRING DIAGRAM

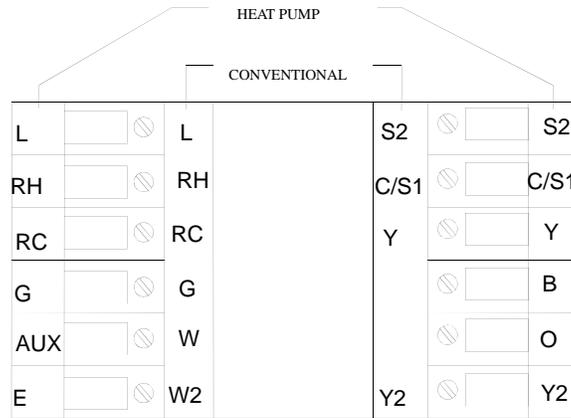


FIGURE 5

WIRING GUIDE

HEAT PUMP UNITS (HP2 PROGRAM)

HEAT/COOL APPLICATIONS (2H PROGRAM)

1 STAGE

RC	24v Active (for cool)	
RH	24v Active (for heat)	
C/S1	Neutral	
G	Fan O/P	
B	Rev. Valve (for Heat mode)	
Y	Compressor	

RC	24v Active (for cool)	
RH	24v Active (for heat)	
C/S1	Neutral	
G	Fan O/P	
W	Heat O/P	
Y	Cool O/P	

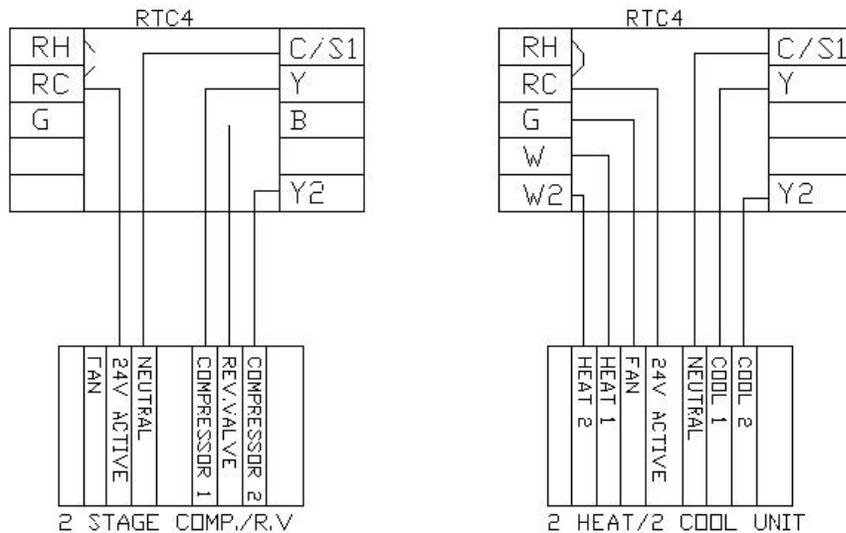
FACTORY DEFAULT

2 STAGE

RC	24v Active (for cool)	
RH	24v Active (for heat)	
C/S1	Neutral	
G	Fan O/P	
B	Rev. Valve (for Heat mode)	
Y	Compressor 1	
Y2	Compressor 2	

RC	24v Active (for cool)	
RH	24v Active (for heat)	
C/S1	Neutral	
G	Fan O/P	
W	Heat 1 O/P	
W2	Heat 2 O/P	
Y	Cool 1 O/P	
Y2	Cool 2 O/P	

AS PER DEFAULT "HP2" PROGRAM



WIRE PER THIS
 TO MATCH DEFAULT
 HP2 PROGRAM

Screen lock

To prevent tampering, the screen can be partially or fully locked. Configuration menu item 24 explain the way to partially or fully locked the screen

Special feature

Intelligent Recovery: See configuration menu item 6- Intelligent Recovery operation.

Compressor protection: See configuration menu item 10- Select compressor lockout delay

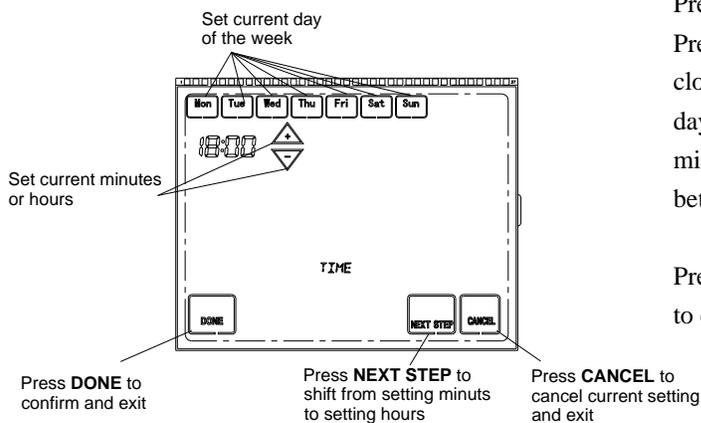
Heat Pump Temperature Lockout: See configuration menu item 21-Heat pump compressor lockout temperature

PROGRAMMING

This thermostat comes factory set with a typical commercial default operating monday to friday program and with time and date set. (see page 10.)

To adjust these default settings if necessary follow the procedure below.

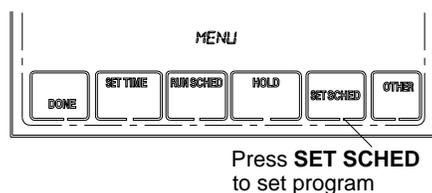
To Set Current Time clock and Day of the week



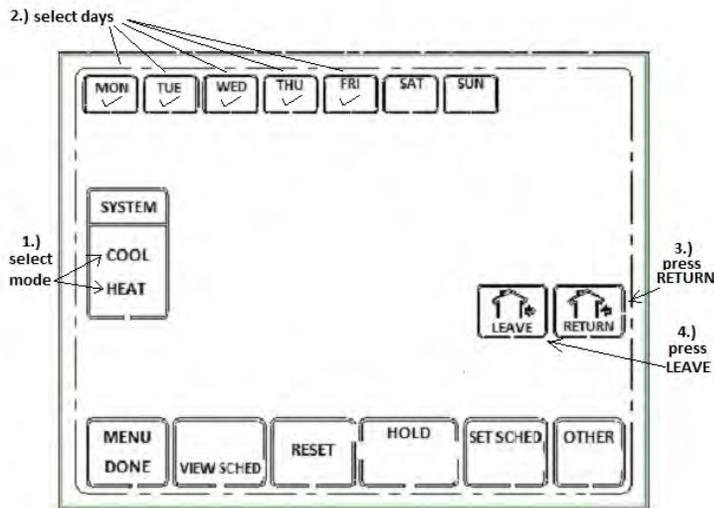
Press **MENU** for displaying main menu button. Press **SET TIME** button to enter to the clock-setting mode. Press the day to set current day of the week. Press Δ or ∇ to adjust the minutes or hours. Press **NEXT STEP** to shift between setting minutes and setting hours.

Press **DONE** to save & exit (or press **CANCEL** to exit without changing the time).

Adjust program schedules



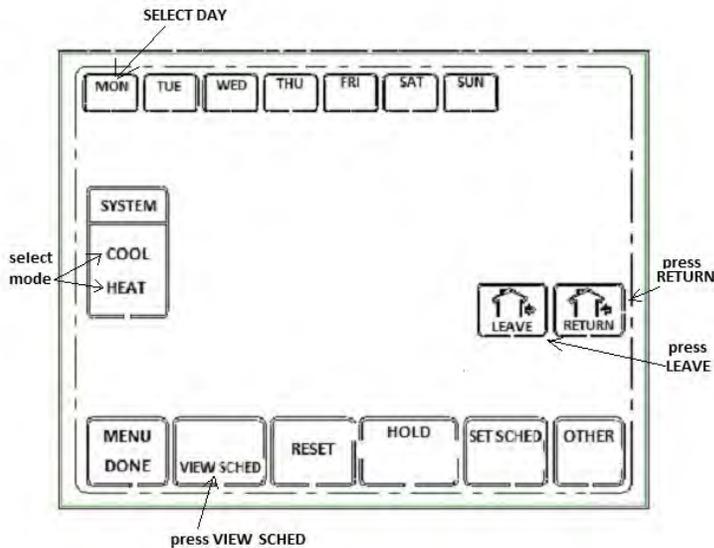
Press menu button to display main menu buttons. Press **SET SCHED** to enter Programming schedule mod



Both HEAT & COOL temperature set points & RETURN & LEAVE times have to be set for each day.

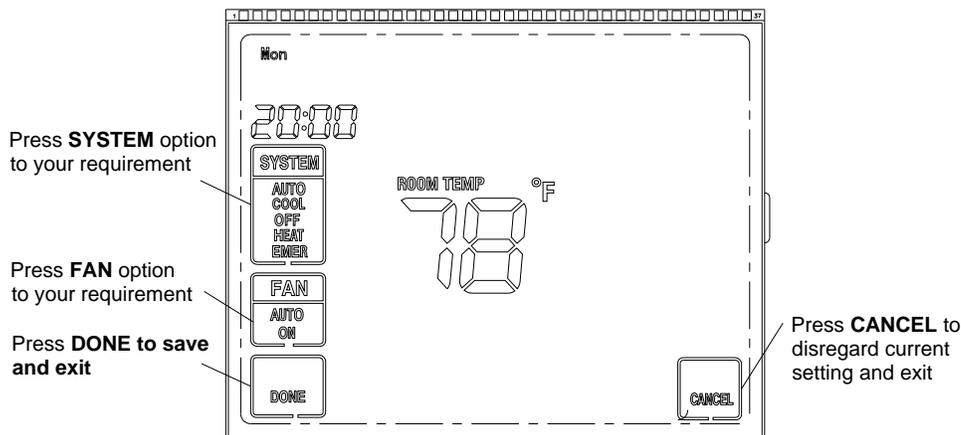
This can be done for each day individually or in a block of days by selecting more than one day for programming.

- 1.) Select HEAT in the SYSTEM button window,
- 2.) Select the group of days that require the same RETURN time & HEAT set point.
- 3.) Press the RETURN button and the existing start time and set point will appear, alter temp & time as required.
- 4.) Press the LEAVE button and adjust finish time as required.
- 5.) In the SYSTEM selection window select COOL then repeat steps 2-4.
- 6.) Press the DONE button to exit programming.



To view the schedule press the VIEW SCHED button
 And then select the day to be viewed. Press the RETURN or LEAVE buttons in either HEAT or COOL mode to see the program schedule for that day.

OPERATING YOUR THERMOSTAT



Choose the Fan Setting (Auto or On)

Fan set to “**Auto**” causes the fan to turn on only when heating or cooling is on (and the thermostat is running in the “RETURN” time period). The fan, heating & cooling remain off during the “LEAVE” time period. This is the typical selection for domestic applications.

Fan set to “**On**” causes the fan to run continuously during the “RETURN” time period as required to meet ventilation standards in commercial applications. The fan, heating & cooling remain off during the “LEAVE” period.

To choose the System mode Setting (Auto, Cool, Off, Heat, Emer)

Press the **SYSTEM** button to select:

Auto: Auto Changeover is used in areas where both heating and cooling may be required on the same day

Cool: Thermostat controls only the cooling system

Off: thermostat outputs are held permanently off

Heat: Thermostat controls only the heating system

Emer: Emergency heat is available only when the thermostat is configured in HP1 or HP2 mode.

When **SYSTEM** button set to **AUTO**, the thermostat automatically selects heating or cooling depending on the indoor temperature. Heat and cool turn on points operate with a factory set minimum gap of 2 degrees (configuration menu item 5) to stop the system jumping from one mode to the other. The auto change over in operation requires the measured temperature to be at least 2 degrees closer to the other mode turn on point for at least 5 minutes before mode change over can occur. .

TEMPORARY SETPOINT CHANGE OR & "RUN UNTIL" AFTER HOURS MODE

During operation if the set point is changed this automatically puts the thermostat into a temporary "RUN UNTIL" mode. The thermostat is locked into the heating or cooling mode it was in when the set point was altered and will operate in only this mode (heat or cool) and cycle the output per the temperature demand with this temporary set point until the "RUN UNTIL" time expires (which is easily altered with the time adjust buttons. The screen will display the system is operating in this temporary mode. To return to the program schedule, press the "RUN SCHED" button.

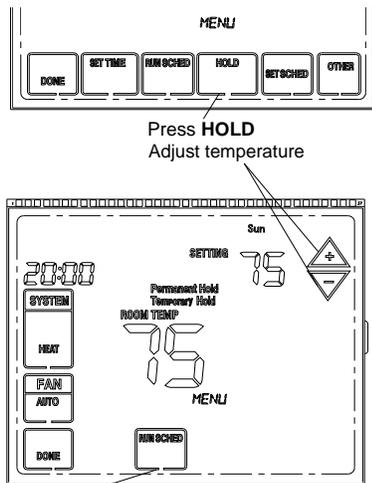
Manual Operation for Non-programmable Thermostats

Press the SYSTEM button to select Heat or Cool and Use the Δ or ∇ buttons to adjust the temperature to your desired setting. After selecting your desired settings you can also press the SYSTEM button to select AUTO to allow the thermostat to automatically change between Heat and Cool if AUTO changeover option is set to 1. (See configuration menu item 5)

Manual Operation for programmable thermostats

This operation applies only when Program option (See configuration menu item 14) is set to programmable.

Permanent Hold Override



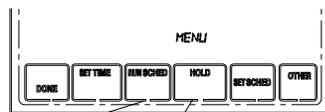
Press **HOLD**
Adjust temperature

Press **RUN SCHED**
to resume program
schedule

Press **HOLD** to permanently adjust the temperature. This will turn off the program schedule.

Whatever temperature you set will be maintained 24 hours a day, until you manually change it, or press RUN SCHED to cancel “Hold’ and resume the program schedule.

Vacation Hold Override

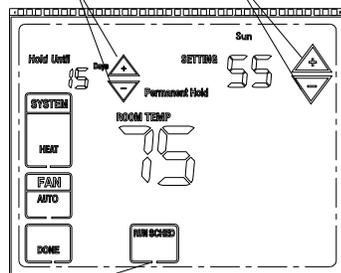


Press **RUN SCHED**
to resume program
schedule

Press **HOLD**
for 5 seconds

Press to select number
of days

Adjust temperature



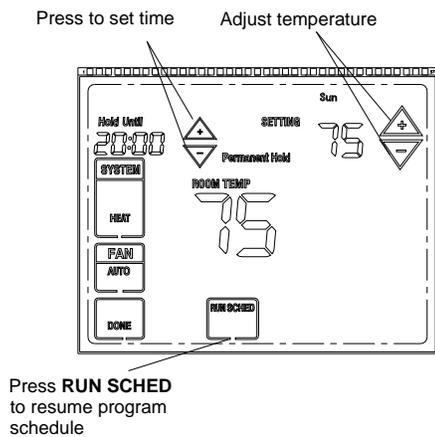
Press **RUN SCHED**
to resume program
schedule

This feature can suspend the program schedule for extended period of days.

Press **HOLD** for 5 seconds.

Press Δ or ∇ to set the temperature you want, then press Δ or ∇ to set time of day you want to schedule to resume when you return.

Whatever temperature you set will be maintained 24 hours a day for the number of days you select. After these numbers of days have elapsed, the previously programmed schedule will resume at the time you set.



If you return earlier than expected, press **RUN SCHED** button to resume program.

Press Δ or ∇ to immediately adjust the temperature. This will temporarily override the temperature setting for the current time period.

The new temperature will be maintained until the time you set. When the timer expires, the program schedule will resume and set the temperature to the level you've programmed for the current time period.

To cancel the temporary setting at any time, press **RUN SCHED**. The program schedule will resume.

Inquiry for filter count back time

This operation is only available when filter replacement time is set. Configuration menu item 17 explains the way for inquiry for the count back time.

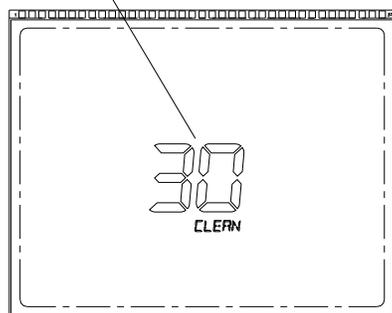
Inquiry for UV lamp duration time

This operation is only available when UV lamp duration time is set. Configuration menu item 18 explains the way for inquiry for the UV lamp duration time.

Screen cleaning



Screen lock timer
(count back 30 seconds)



Press **CLEAN DISPLAY** to lock the screen for cleaning. The screen will remain locked for 30 seconds so you can clean the screen without changing any setting.

After 30 seconds, press **DONE** to resume normal operation, or press **CLEAN DISPLAY** again if you require more time for cleaning.

Note: Do not spray any liquid directly on the thermostat. Spray liquids onto a cloth, then use the damp cloth to clean the screen. Use water or household glass cleaner. Avoid abrasive cleansers

Factory Default Pre-program

The thermostat is pre-programmed with the energy saving settings shown in the table below for all days of the week. If this program suits your needs and the thermostat clock is correct for your region button, then the thermostat is ready for operation. The table below shows the factory set heating and cooling schedule for all days of the week

Program	<i>HEAT RETURN</i>		<i>HEAT LEAVE</i>		<i>COOL RETURN</i>		<i>COOL LEAVE</i>	
	Time	Temp	Time		Time	Temp	Time	
Mon	08:00	21.5 C	17:30	--- (OFF)	08:00	22.5 C	17:30	---
Tue	“	“	“	“	“	“	“	“
Wed	“	“	“	“	“	“	“	“
Thu	“	“	“	“	“	“	“	“
Fri	“	“	“	“	“	“	“	“
Sat	---	---	---	---	---	---	---	---
Sun	---	---	---	---	---	---	---	---

Planning Your Program

The Heating and Cooling Program schedules below allow you to pencil in your own program times and temperatures.

Keep the following guidelines in mind when planning your program

- In Heating, lower temperatures will save energy
- In Cooling, higher temperatures will save energy
- If you plan on using Auto Changeover, set the heating temperature below the cooling set temperature for more than the value of pre-set dead ban (See configuration menu item 5.

Worksheet for Re-programming 7 day program

Program	<i>HEAT RETURN</i>		<i>HEAT LEAVE</i>		<i>COOL RETURN</i>		<i>COOL LEAVE</i>	
	Time	Temp	Time		Time	Temp	Time	
Mon								
Tue								
Wed								
Thu								
Fri								
Sat								
Sun								

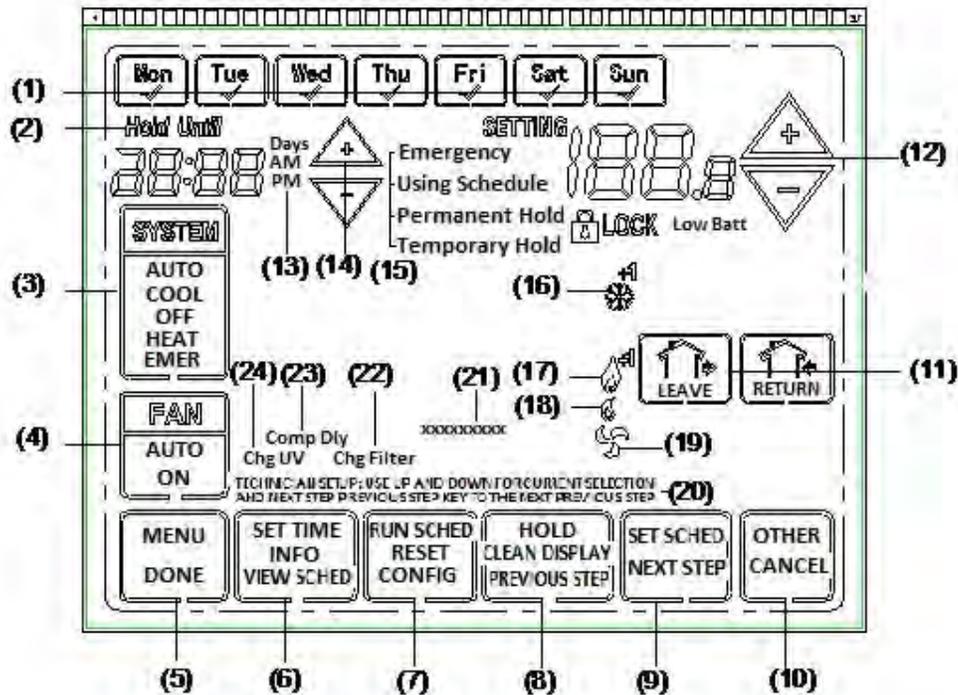
CUSTOMER ASSISTANCE

After reading this guide, if you have any question about the operation of your thermostat, please contact your installer, service provider or contact HEVAC CONTROLS.

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22/02/16



- (1) Press day(s) to set program schedule
- (2) “**Hold Until**” indicates the time when a temporary hold period will end
- (3) Press to select **Auto** (C/O), **Cool** (only), **Off**, or **Heat** (only) mode
- (4) Press to select fan operation : cycles with compressor or ON during occupancy time.
- (5) Press “**MENU**” to display first function menu of button (6) (7) (8) (9) (10)
- (6) Press “**SET TIME**” to set current time and day
Press “**INFO**” to check outside temperature or inquiry for count back time for changing filter or inquiry for UV light duration hours.
- (7) Press “**RUN SCHED**” to resume program operation
Press “**RESET**” to current program setting or current configuration setting to factory default value
Press “**CONFIG**” to set configuration menu item
- (8) Press “**HOLD**” to permanent hold current set point
Press “**CLEAN DISPLAY**” for entering 30 second count back time for cleaning the display
Press “**PREVIOUS STEP**” for going back to last configuration menu item
- (9) Press “**SET SCHED**” for setting schedule for each days of the week
Press “**NEXT STEP**” for going forward to next configuration menu item or next day of week when setting schedule.
- (10) Press “**OTHER**” for entering the second function menu of (5) (7) (8) (10)
Press “**CANCEL**” to disregard current setting and go back to last operation
- (11) Press “**LEAVE**” or “**RETURN**” to choose setting period of each day when setting program schedule
- (12) Press UP and DOWN for modifying set point
- (13) “**Days**” displays during steps in setting vacation duration days or count back days of vacation duration days
“**Am**” indicate current time clock is in the morning. “**Pm**” indicates current time clock is in the afternoon

- (14) Press **UP** and **DOWN** for setting current time clock or setting time in programming or changing Selections in configuration menu or setting the time when a temporary hold period will end
- (15) “**Emergency**” flashes when system mode is set “**EMER**”
- “**Using Schedule**” displays when thermostat is operating under presetting schedule
 - “**Permanent Hold**” displays when thermostat is in permanent hold setting temperature period
 - “**Temporary Hold**” displays when thermostat is in temporary hold setting temperature period
- (16)  displays when first stage cooling activate
-  displays when both first stage cooling and second stage cooling activate
- (17)  displays when first stage heating activate
-  displays when both first stage heating and second heating activate
- (18)  displays when Auxiliary heating or Emergency heating activate
- (19)  displays when circulating fan activate
- (20) “TECHNICIAN SET UP: USE UP AND DOWN FOR CURRENT SELECTION AND NEXT STEP PREVIOUS STEP KEY TO THE NEXT PREVIOUS STEP” displays to help technician how to operate in configuration mode
- (21) Indicate current status of the thermostat
- (22) “**Chg Filter**” displays indicate changing filter count back has expired
- (23) “**Comp Dly**” displays when compressor delay lock out activate
- (24) “**Chg UV**” displays when changing UV duration days has expired
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