HOME-STAT ™

HOME-STAT™ SINGLE STAGE THERMOSTAT

1 Heat/1 Cool

Compatible with heat pump system

Installation and operation instructions

SPECIFICATION:

Power Supply（Transmitter）………….. Dual Power 24VAC or 2AA Battery Powered

Power Supply（Receiver）……………...120VAC±10% 60Hz

Terminal Load……………………………1.0 A per terminal, 3.0A maximum total load

Set point Temperature Range……………45℉ to 90℉ （7℃ to 32℃）

Dimensions（Transmitter）…………… 4.5inch×3.54inch×1.25inch(115mm×90mm ×32mm)

Dimensions（Receiver）……………… 2.6×2.75×4.92inch(W:65mm×D:70mm×H:125mm)

FEATURE:

● Large LCD touch screen display with backlight option

● Menu Driven Programming

● The screen displays the set temperature, the room temperature and current time simultaneously

● Fan switch with on and auto

● Permanent user setting retention during power loss, no batteries are required

● Auto Changeover

● Minimum compressor off-time setting available

● Optional programming Period: 7 individual day or separate 5-day (weekday) and 1-day/1-day (Saturday/Sunday) programming with 4 separate time/temperature periods per day.

● Optional temperature display of Celsius or Fahrenheit scale

● Air filter change indicator

● UV light change indicator

● Display temperature recalibrates

IMPORTANT SAFETY INFORMATION:

● Always turn off power at the main power source by unscrewing fuse or switching circuit breaker to the off position before installing, removing, cleaning, or servicing the thermostat

● Read all of the information in this manual before installing this thermostat.

● Only a professional contractor should install this thermostat.

● All wiring must conform to local and national building and electrical codes and ordinances.

● Use this thermostat only as described in this manual.

Read and Save these Instructions

KEYBOARD, DISPLAY AND SWITCH DESCRIOPTION

SAS1000STK-7-RF Thermostat Button

K1
K2
K3
K4
K5
K6
K8
K7
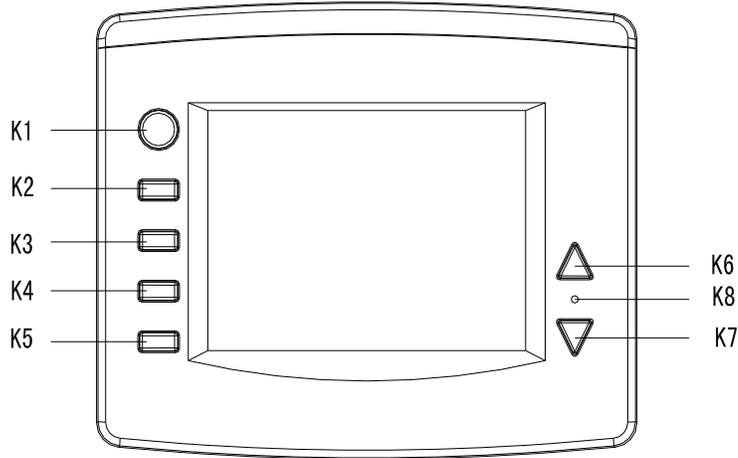
Figure 1

SAS1000 LCD Description

(26) (25)(24)

(9) SYSTEM AUTO COOL OFF EMER HEAT
(10) FAN AUTO ON SET SCHED
(11) SET NEXT SET TIME
(12) RUN SCHED HOLD SET CONFIG
(13) HOT WATER DONE

Mon Tue Wed Thu Fri Sat Sun
Hold
Until
Heat Cool Set
(23)

Permanent Hold
Temporary Hold   Emergency   Using Schedule   (22)

Room
SET DAY
SET CLOCK
SET SCHED
SET CONFIG
°F
% °C
(21)
(20)
Aux +2   +2   (19)
+1   +1
(18)
Low Battery   Alarm
Comp Dly Chg UV Chg Filter Chg Pad   (17)
WAKE   LEAVE   RETURN SLEEP   (16)

(14)(15)

Figure 2

ROMOTE CONTROL
POWER (RED)
LEARN BUTTON
LEARN   ON/OFF
POWER RXD LEARN ON
SIGNAL ON
SIGNAL RECEIVE/LEARN (YELLOW)
ON/OFF BUTTON

Figure 3

(K1)~ (K5) are menu driven buttons, LCD display (9)~(13) shows the function of its left button

(K6) Raise temperature button

(K7) Lower temperature button

(K8) Reset button

(9)~(13) is the menu driven display for its left button

(14) Display hot water status: activated or deactivated

(15) Display current operation mode,

SET DAY shows when thermostat is in setting day mode

SET CLOCK shows when thermostat is in setting time clock mode

SET SCHED shows when thermostat is in setting program mode

SET CONFIG shows when thermostat is in setting configuration mode

(16) Shows current program period

 Time to wake up   Time to leave home   Time to return home   Time to sleep

(17) **Comp Dly** shows when compressor is in lock-out status

Chg UV shows when UV light replacement time has expired

Chg Filter shows when Filter replacement time has expired

Chg Pad shows when humidity pad replacement time has expired

(18) **Low battery** shows when batteries need replacement

Alarm Indicates a malfunction with the system

(19)   Indicates heating is activated.   I Indicates cooling is activated

(20) Indicate current fan status, rotating fan leaf means fan is activated. Stillness fan leaf means fan is deactivated

(21) Indicates current room temperature in ℃ or ℉

(22) **Permanent Hold** shows when thermostat is in permanent hold mode

Temporary Hold shows when thermostat is in temporary hold mode

Using Schedule shows when thermostat operates under pre-programmed schedule

(23) Shows current set temperature

(24) Am indicate current displayed time is in the morning

Pm indicate current displayed time is in the afternoon

(25) Shows current date or date being programmed

(26) Shows current time clock of time being programmed

Wireless signal confirm

1. Plug the power switch with 120VAC power, Then the Power light will be on (Red).

2. Long press the button LEARN, the light RXD/LEARN will on (yellow)

3. Then press the button 5, then icon display. Then the yellow light will flash in several seconds. When it going out. It states the wireless control between thermostat and the power switch established.

ATTACH THERMOSTAT BASE TO WALL

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 4)
6. Carefully line the thermostat up with the base and snap into place.

Battery Location

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)

Front Panel   **2 AA Batteries**

Base
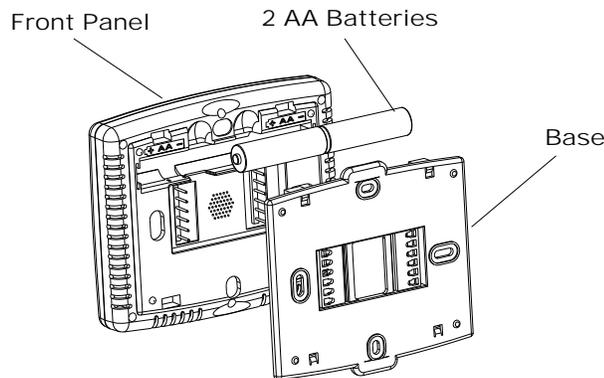
Figure 4

WIRING DIAGRAM

HEAT PUMP

SINGLE STAGE
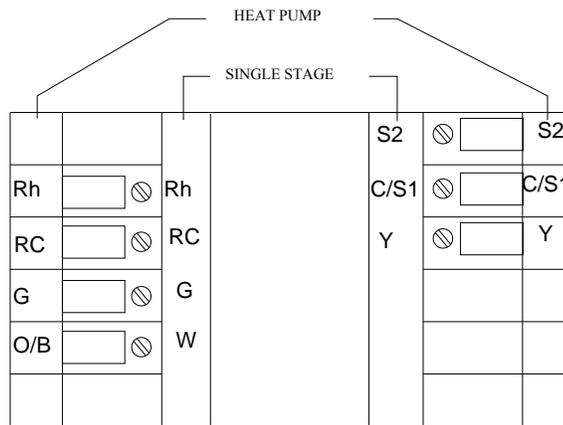
Figure 5

Wiring guide

1H/1C System (1 transformer)

Rc	Power 【1】	
Rh	(Rh+Rc joined by jumper)	
W	Heat Relay	
Y	Compressor contactor	
G	Fan relay	
C/S1	24VAC common/remote sensor 【3,4】	
S2	Remote sensor	

1H/1C System (2 transformer)

Rc	Power (cooling transformer) 【1,2】
Rh	Power (heating transformer) 【1,2】
W	Heat relay
Y	Compressor contactor
G	Fan relay
C/S1	24VAC common/remote sensor 【3,4】
S2	Remote sensor

1H/1C Heat Pump (no auxiliary heat)

Rc	Power 【1】
R	(R+Rc joined by jumper)
Y	Compressor relay
O/B	Changeover valve 【5】
G	Fan relay
C/S1	24VAC common/remote sensor 【3】
S2	Remote sensor

【1】 Power supply

【2】 Remove jumper for 2-transformer system

【3】 Optional 24VAC common connection

【4】 Common connection must come from cooling transformer

【5】 O/B set to control as either O or B in configuration menu item 3

CONFIGURATION MENU

The configuration menu allows you to set certain thermostat operating characteristics to your system or personal requirements.

1) Press **SYSTEM** button till **OFF** icon blink
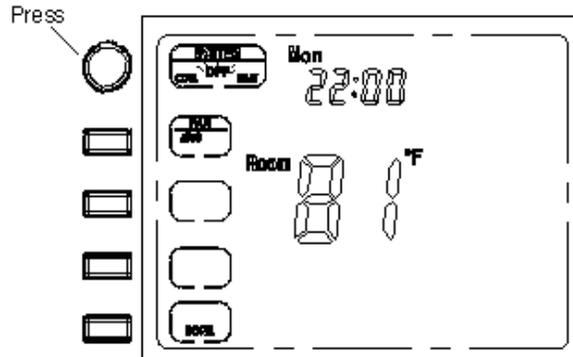
2) Press **DONE** button to switch off the thermostat
3) Press **SET** button and then press **SET CONFIG** button to enter configuration mode
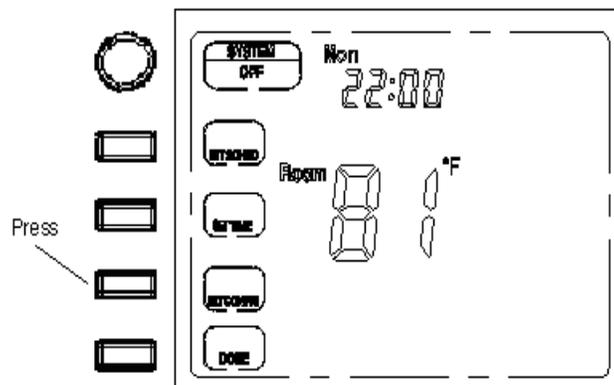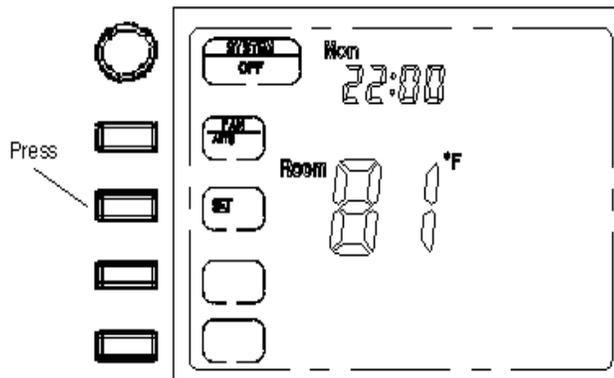
4) Press **NEXT** button to shift to next menu item (USE ▲ **or** ▼ TO CHOOSE THE DATE YOU WANT TO ADJUST)
5) Press ▲▼ to select options
6) Hold button (4) for 3 seconds to revert to factory default setting. Display will show dEF 3 times and display menu item 1.
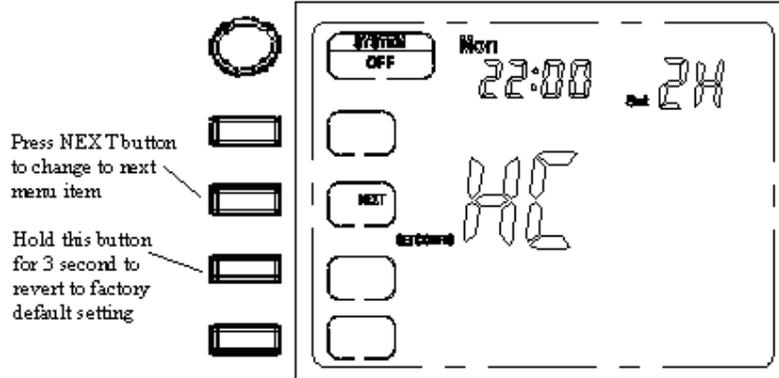
The configuration menu chart summarizes the configuration options. An explanation of each option as follows:

1H	P1	Item	Press	Display （factory default）	Press Up and DOWN To select	Comments
		1	NEXT STEP	HC (1H)	1H,P1	Select control system
	NA	2	NEXT STEP	FS (HA)	HA,HE	HA: Gas heating, Furnace controls blower HE: Electric heating. Thermostat controls blower
NA		3	NEXT STEP	Ob (b)	O,b	O: O/B terminal controls in cooling 'b: O/B terminal controls in heating
		4	NEXT STEP	CO (0)	0,1	0: Manual changeover 1: Auto changeover
		5	NEXT STEP	db (3)	2,3,4,5,6,7,8,9	Auto changeover dead band
		6	NEXT STEP	ES (OF)	OF/ON	Intelligent Recovery operation
		7	NEXT STEP	CH (SL)	FA, SL	Heating cycle rate
		8	NEXT STEP	CC (SL)	FA, SL	Cooling cycle rate
		9	NEXT STEP	CP (5)	0,5	Select compressor lockout delay
		10	NEXT STEP	bL (5)	0,5,15	Select time backlight display
		11	NEXT STEP	CL (0)	+4 TO -4	Select Temperature Calibration
		12	NEXT STEP	FC (F)	F or C	Select ºF or ºC Readout
		13	NEXT STEP	PS (7)	0,3,7	7: 7-day program 0: non-program 3: 5-day (weekday) and 1-day/1-day program

		14	NEXT STEP	FL (00)	00 – 12	Select filter replacement run time
		15	NEXT STEP	UU (UF)	UO or UF	Select UV lamp replacement run time
		16	NEXT STEP	SO (YES)	YES, No	Select audible beeper On/off
		17	NEXT STEP	OC (12)	24,12	Selection of time scale
		18	NEXT STEP	SE (0)	0,1,3	Remote sensor option
		19	NEXT STEP	Pd (0)	0,1,2,3	Select humidity pad replacement time

1. **System type option**
   1H: 1 heat /1 cool conventional
   P1: 1 compressor heat pump

2. **Fan control option**
   HA: Gas heating. Furnace controls blower
   HE: Electric heating. Thermostat controls blower

3. **Changeover valve option**
   This option apply only to HP1 setting in system type option
   O: O/B terminal controls in cooling
   'b: O/B terminal controls in heating

4. **Manual/Auto changeover option**
   0: Manual changeover
   1: Auto changeover

5. **Auto changeover dead ban option**
   Option: 2~9℉, factory default setting is 3℉, which means cooling set temperature must be 3℉ higher above heating set temperature if Manual/Auto changeover option is selected at **1** and **SYSTEM** button is set at **AUTO**.

6. **Intelligent Recovery operation**
   The thermostat has an intelligent recovery function that brings your room temperature to the set temperature at exactly the pre-set time by turning on the heating earlier. Select ON to activate the intelligent recovery function, Select OFF to deactivate the intelligent recovery function. Intelligent recovery function doesn't activate when program setting to non-programmable.

7. **Heating cycle rate**
   FA: Fast rate, heating will activate 0.6℉ below set point
   SL: Slow rate, heating will activate 1.2℉ below set point

8. Cooling cycle rate

FA: Fast rate, cooling will activate 1.2℉ above set point

SL: Slow rate, cooling will activate 1.7℉ above set point

9．Select compressor lockout delay

To protect the compressor from short cycling, you can select compressor off-time cycle between 0 or 5 minutes. When the thermostat compressor time delay occurs, "**Comp Dly**" display during compressor lockout.

10．Select display backlight

The display backlight improves display contrast in low lighting conditions. Select 0 for NO backlight display. Select 5 for the backlight display 5 seconds .Select 15 for the backlight to remain on 15 seconds.

NOTE: When operated from batteries (No "C" terminal connection, or if AC power goes off), the LCD continuously display of backlight will be disabled.

11. Select temperature recalibration

This feature allows you to adjust the displayed room temperature up to 4º higher or lower. Your thermostat can be accurately calibrated to match your previous thermostat. The current or adjusted room temperature will be displayed on the display.

12. Select ºF or ºC readout

Changes the display readout to Centigrade or Fahrenheit as required.

13. Program options

7: Select 7-day program function for the thermostat

0: Select non-program function for the thermostat

3: Select 5-day (weekday) and 1-day/1-day program function for the thermostat

14. Select filter replacement run time

The thermostat will display **chg filter** after a set time of operation. This is a reminder to change or clean your air filter. This time can be set from 0 to 12 months in 1 month increments. Selection of 00 will cancel this feature. You can check the count back time by following step

1. Press SET button
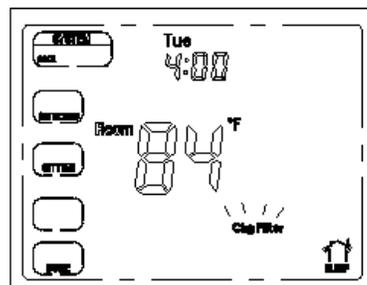
2. Press Up and Down button simultaneously for 3 seconds

3. If **chg filter** time is expires when inquiry about filter count back time, hold the (4) button for 3 seconds will reset the Timer
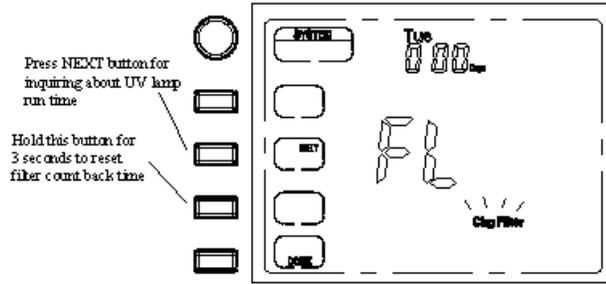
15. Select UV lamp replacement run time

This is the reminder to change UV lamp. Select UF means you have canceled the feature. Select UO starts to count for 0 day to 400 day. The thermostat will display **chg UV** when UV time (400 days) has expired. When **Chg UV** time expires, press set button then Hold the (4) button for 3 second will reset the Timer. If both **chg filter Chg UV** time expire, the first time Hold (4) button for 3 second will reset the filter replacement time. Hold (4) button for another 3 second will reset the UV lamp replacement time.

You can check the UV lamp run time by following step

1. Press **SET** button
2. Press **Up** and **Down** button simultaneously for 3 seconds. If filter replacement time has been set before, display will show filter replacement time first. Press **NEXT** button, it will display UV lamp run time. If filter replacement time has not been set before, display will show UV lamp rum time.
3. If **chg filter** time is expires when inquiry about UV lamp run time, hold the (4) button for 3 seconds will reset the Timer
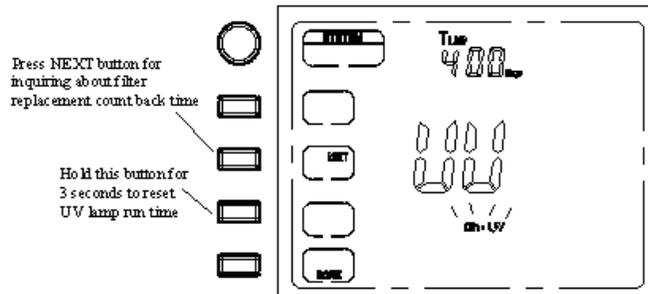
16. Selection of time scale

Select 12 for 12 hours display for time clock and select 24 for 24 hours display for time clock

17. Remote sensor option

0: No remote sensor

1: Outdoors sensor (display only).

3: Indoor sensor. If 3 is selected and the thermostat is installed with an indoor remote sensor, display will show the read temperature from the indoor sensor.

18. Select audible beeper On/off

Select yE, thermostat will beep when any button touched

Select nO, thermostat will turn off the voice

19. Select humidity pad replacement time

The thermostat will display **chg Pad** after a set time of operation. This is a reminder to change or clean your humidity pad. This time can be set from 0 to .3 years options. Selection of 00 will cancel this feature. You can check the humidity pad run time by following step

1. Press **SET** button
2. Press **Up** and **Down** button simultaneously for 3 seconds. If filter replacement time has been set before, display will show filter replacement time first. Press **NEXT** button, it will display UV lamp run time. If filter replacement time has not been set before, display will show UV lamp rum time. Press **NEXT** it will display humidity pad run time.

To inquiry the current humidity Pad count back time , Press Up and Down Button simultaneously for 3 seconds
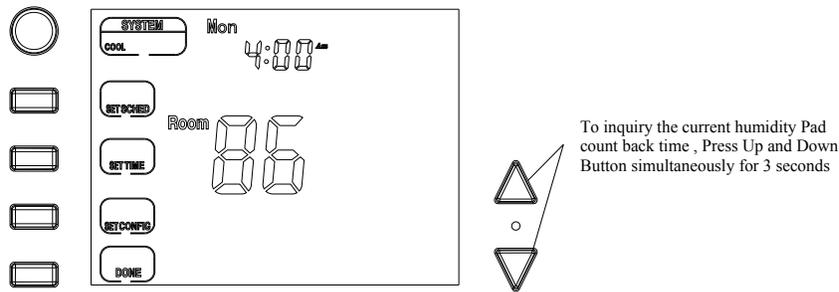
3. If **Chg Pad** icon flashing, it means the humidity pad change time is expires when inquiry about humidity pad run time, hold the (4) button for 3 seconds will reset the Timer

Press NEXT button for inquiring about humidity pad run time

Hold this button for 3 seconds to reset filter count back time
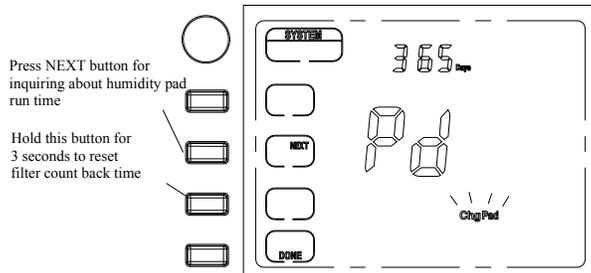
OPERATING YOUR THERMOSTAT

Press SYSTEM options to your requirement

Press FAN options to your requirement
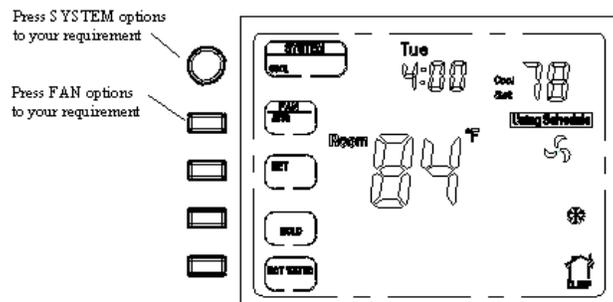
Setting system key

Heat-thermostat controls your heating system.

Off-Heating or Cooling system is off

Cool-thermostat controls your cooling system

Setting the fan key

On-fan runs continuously. Use this setting for improved air circulation or for more efficient central air cleaning.

Auto-fan follows whether there is a call for heating or cooling

Setting temperature override

Your thermostat has three temperatures override options: Temporary Hold, Permanent Hold and vacation Hold.

● **Temporary Hold**

Hold temperature temporarily until next scheduled period time.

1) Press ▲or▼ button until the set temperature meets your demands. **Temporary Hold** appears on the screen. The thermostat will hold the set temperature temporarily until next scheduled period time.
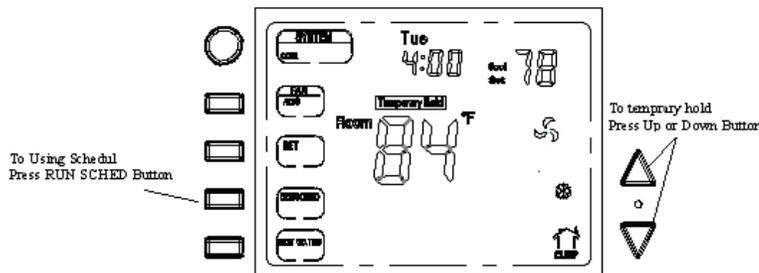
2) Press the **RUN SCHED** to resume the schedule

● **Permanent Hold**

Permanent Hold changes the temperature setting until permanent Hold is cancelled

1) In Using Schedule mode,
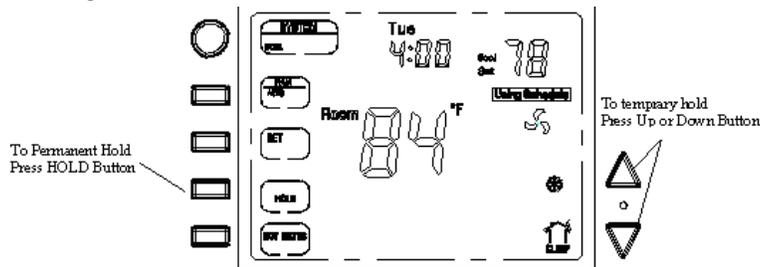
1) Press **HOLD** button. "**Permanent Hold**" appears on the screen.
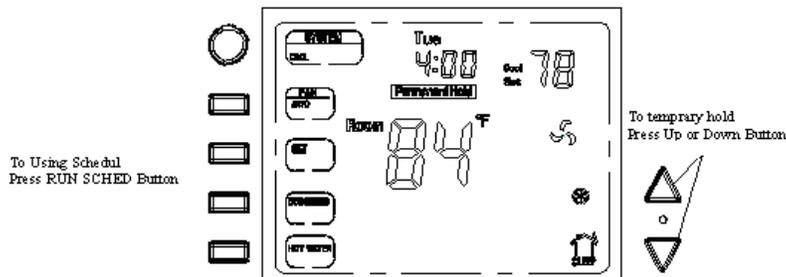
NOTE: SHORT PRESS HOLD IS PERMANENT HOLD, IF YOU LONG PRESS HOLD FOR 3 SECONDS WILL ENTER TO THE DATE HOLD MODE. USE ▲▼ TO CHOOSE HOW MANY DAYS YOU WANT TO HOLD THE TEMPERATURE UNTIL. AND PRESS DONE THAN THE THERMOSTAT RUN THE SETTING OF DATE HOLD. YOU CAN USE ▲▼ TO CHANGE THE TEMPERATURE OF HOLD MODEL. PRESS RUN SCHEDULE, EXIST THE HOLD MODE

● **Vacation Temperature hold**

1) pressing **HOLD** button over 3 seconds until display will show Vacation indicates you have now entered into vacation hold, press ▲or▼ button to select the number of the days (from 1 to 99 days) during your vacation.，then Push **DONG** button to run into temperature setting, you can use ▲or▼ button to adjust the temperature during your holiday. Push button **RUN SCHED** to revert to program operation.。

Inquiry for outside temperature

When remote sensor option is set to **1** or **2, p**ress **Up and Down** button in a same time for 3 second in normal operation. Thermostat will display outside temperature.

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

Note: Inquiry for filter count back time and UV lamp duration time, you must first press SET button to enter into set mode, and then press Up and Down button. To inquiry for out side temperature, you should press Up and Down button in normal operation mode.

Replacing your batteries

Low Battery warning flashes on the screen for approximately 30 days when your thermostat runs out of batteries. Replace the batteries when **Low battery** warning flashes
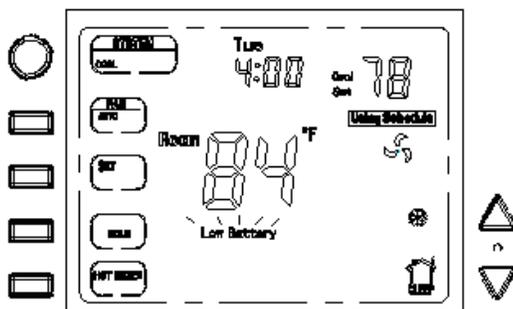
To replace batteries, set system to OFF, remove thermostat from wall and install the batteries in the rear along the top of the thermostat. (See figure 3)

Special feature

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

SELF CHECK FUNCTION: IF THE RECEIVER DID NOT RECEIVE THE SIGNAL FROM THE TRANSMITTER FOR ONE HOUR, THE RECEIVER WILL POWER ON THE WATER HEATER. FOLLOWING 24 HOURS IF THE RECEIVER STILL DOES NOT RECEIVING A SIGNAL THE YELLOW LIGHT WILL FLASH INDICATING THERE MAYBE SOMETHING WRONG WITH THE THERMOSTAT. IF A SIGNAL IS RECEIVED THE YELLOW LIGHT WILL STOP FLASHING. AND THE THERMOSTAT WILL RUN AS PER THE SCHEDULED SETTINGS.

PLANNING YOUR PROGRAM

● **Set Current Time and Day**

1) Press SET button once. Then Press SET TIME button, **SET CLOCK** and minutes flashing shows in the display.
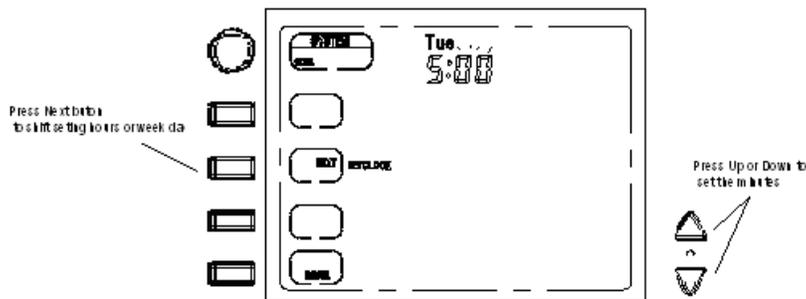
2) Press and hold either Up and Down key until you reach the correct minutes
3) Press **NEXT**. The display will show hours flashing
4) Press and hold either Up and Down key until you reach the correct hours
5) Press **NEXT** once again. The display will show **SET DAY** and day of the week flashing
6) Press and hold either Up and Down key until you reach the correct day of the week
7) Press **DONE** to confirm setting and return to schedule running.

Factory Pre-Program

Look at the factory preprogrammed times and temperatures shown in the sample schedule. If this program will suit your needs, simply keep the thermostat in Run Schedule mode.

	Wake Up (Morning)		**Leave For Work (Day)**		**Return Home (Evening)**		**Go To Bed (Night)**	
Heating Program	6:00	70℉	8:00	62℉	17:00	70℉	22:00	62℉
Cooling Program	6:00	78℉	8:00	85℉	17:00	78℉	22:00	85℉

● **Planning Your Program**

The Heating and cooling schedule below allow you to pencil in your own program times and temperatures. The thermostat comes configured for 7 day programming and can also be configured for 5+1+1 programming.

Factory setting are listed on Monday, Saturday and Sunday. If you are re-programming a 5+1+1 day schedule, pencil in your own times and temperatures directly below the factory times and temperatures.

If you are re-programming a 7 day fill in all lines with the times and temperature you want.

Worksheet for Re-Programming 5+1+1 and 7 Day program

Heating Program	Wake Up (Morning)		Leave For Work (Day)		Return Home (Evening)		Go To Bed (Night)	
Mon	6:00AM	70℉	8:00AM	62℉	6:00PM	70℉	10:00PM	62℉
Tue								
Wed								
Thu								
Fri								
Sat	6:00AM	70℉	8:00AM	62℉	6:00PM	70℉	10:00PM	62℉
Sun	6:00 AM	70℉	8:00 AM	62℉	6:00PM	70℉	10:00PM	62℉

● **Enter the Heating Program**

Your thermostat can control up to four different schedule periods per day

Wake-Period when you awaken and want your home at a comfortable temperature

Leave-Period when you are away from home and want an energy-saving temperature

Return-Period when you return home and want your home back to a comfortable temperature

Sleep-Period when you are asleep and want an energy-saving temperature

1) Press **SYSTEM** key to select HEAT setting (flashing). Press **DONG** to enter main menu.

2) Press **SET** key to enter into set menu.
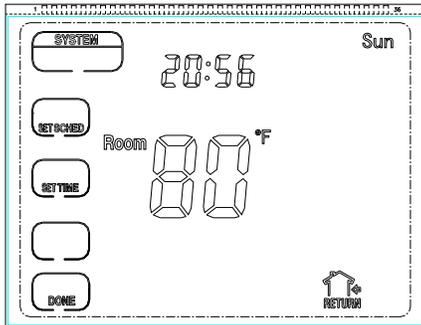
3) Press **SET SCHED** button, SET SCHED and MON (In 7 day programming mode) or Weekday (Mon-Fri in 5+1+1 programming mode) will appear in the display. Also displayed is the current programmed start time (flashing) for the Wake period and the currently programmed temperature.
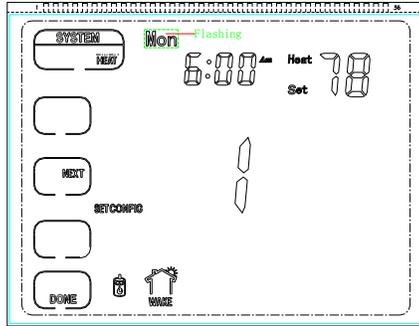
4) Press **NEXT** to select the day you want to program.
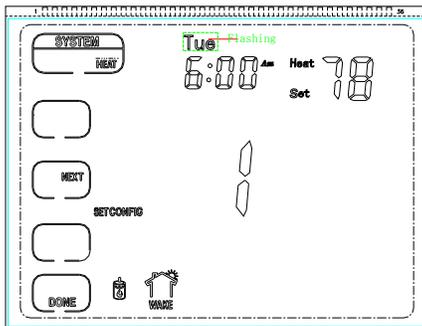
5) Press **NEXT** to enter into the 1st heating period start time setting (flashing).
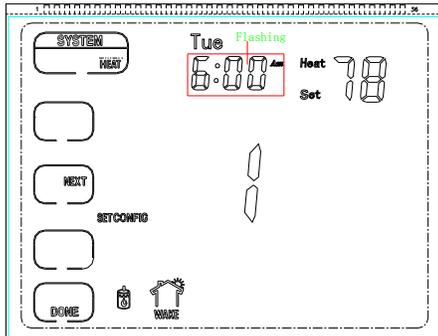
6）Press the ▲ or ▼ buttons to change the time. The time will change in 15 minute increments. When your selected time is displayed, press **DONE** key to return to run schedule. Then press the **NEXT** button to enter temperature setting. (flashing)
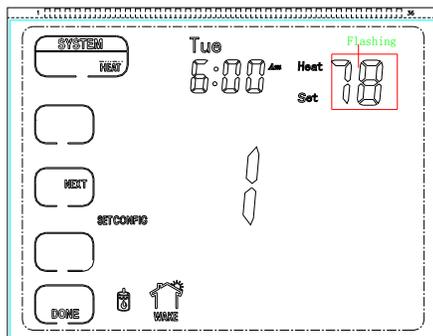
7) Press the ▲ or ▼ to change the set temperature. Press **NEXT** button run into 1st heating period water heater state setting (flashing)
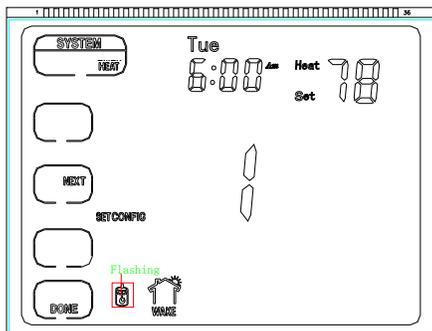
8) Press the ▲ or ▼ to change the set ON or OFF (or)

9) Press **NEXT** to enter into the 2nd heating period start time setting (flashing),and repeat step 5 to 8 set the 2nd (LEAVING) period schedule..

10) Press **NEXT** button, repeat step 5 to 8 to set 3rd (RETURN and 4th (SLEEP) period schedule

11）Press **NEXT** button, repeat step 4 to 10 to set Tue, Wed, Thu, Fri, Sat Sun schedule (in 7 day programming mode) or Sat, Sun schedule (in 5+1+1 day programming mode)

12) When complete, press **DONE** key to return to run schedule.

Enter the Cooling Program

Press SYSTEM key to select Cool operation

Follow "Enter the Heating Program" for entering your cooling program, using your selected cooling times and temperatures.

Revert to factory default pre-programmed schedule

In SET SCHED mode, hold (4) button for 3 seconds, display will show dEF 3 times and revert to pre-programmed schedule.

TROUBLE SHOOTING

We provided several FAQs. Please follow the guide and make reference to the manual.

1. **Thermostat is calling for heating or cooling, however there is no output:**
   Please check the connection of jump wire on the back part of thermostat.

2. **The wireless switch plug for water heater does not receive signal for long time:**
   a . Remove the wireless switch plug and wait for five minutes, then plug again.
   b. Check the thermostat and plug, if they have established the wireless communication. Please refer to page 3 in manual wireless signal confirm and follow the guide and operate again.

3. **The backlight time is too short:**
   Take reference to configuration Item 10. Option to change backlight to 15 sec.

4.   **Thermostat displays wrong no. or the out of functions:**
       Check if the wiring diagram is correct. If so, use small sticker/pin and press K8 button to reset the software.

5.   **Thermostat displays Comp Dly flashing:**
       The thermostat is doing Compressor/Damper time delay protection

6.   **Low battery flashing:**
       Battery is low and needs to be replaced.

7.   **Thermostat display has Chg UV / Chg Filter / Chg Pad icon flashing:**
       Reminder that the UV light / Filter / Humidity pad needs to be cleaned or replaced.

8.   **Thermostat is not following the RUN schedule:**
       a. check the setting of the program, refer to the manual **planning your program,** Page 14**.**
       b. check if thermostat is in **Permanent Hold** function, Page 12. If so, press Run, and the thermostat will follow the presetting program.
       c. check the configuration table and confirm the value of the Item 13 (PS) to be 0.

CUSTOMER ASSISTANCE

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