

# Index

## **PROGRAMMING INSTRUCTIONS**

Helpful Hints .....	1
Introduction .....	1
Know Your Thermostat .....	2
Display .....	2
Slide Switches .....	3
Control Buttons .....	3
Selecting your heat/cool system .....	3
Set Your Personal Schedule .....	4
Battery Installation and Thermostat Start Up .....	5
Begin Programming Steps 1 to 11 .....	5 to 9
Skipping a Program .....	7
Using some Special Features .....	10
Fan Operation .....	10
Battery Symbol .....	10
Keyboard Disable .....	10
Remote Sensor .....	10

## **INSTALLATION INSTRUCTIONS**

Thermostat Location .....	11
Connecting Thermostat .....	12
Setting Slide Switches .....	13
Battery Installation and Start Up .....	14
Checking Installation .....	14

## **TROUBLE SHOOTING GUIDE**

Trouble Shooting .....	15
Battery removal .....	15
Specifications .....	16

# Programming instructions

## Helpful hints

Please take the few minutes required to read the programming instructions. Experience has shown that users who do read the instructions have no difficulty in programming and using their thermostat. Then find a convenient place for the instruction manual so that you can easily refresh your memory at a later date.

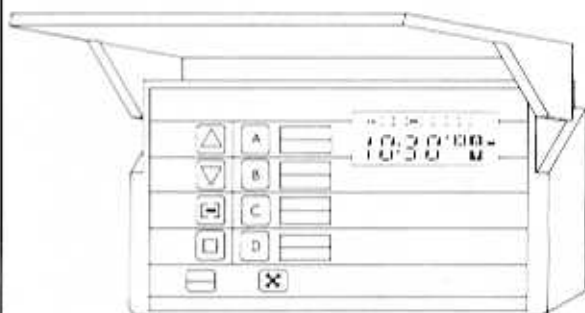
## Introduction

Your new thermostat contains a microcomputer that will automatically adjust the temperature of your store or office, up to four times each day, to save money and energy. It provides comfortable heating or cooling when you need it, and reduces energy expenditure during off-business hours and vacation periods. You can program four temperatures into your thermostat. Each temperature can be selected with a different start time for each day of the week.

You can **OVERRIDE** or **SUPERSEDE** these settings whenever you wish to vary the schedule. For example employees working after hours can override the setback temperature by simply touching a button. In addition, you can keep the temperature at a constant setting for any period from one hour up to 31 days using the **TIMED OVERRIDE** feature, explained on page 9.

We also recommend that key employees read the instructions, and before installation, practice programming the thermostat by inserting the battery and following the programming steps. They will soon know how truly simple it is to operate the thermostat.

The thermostat should then be installed. We recommend that a qualified technician install the thermostat because it is very important that it is properly located and all heating and cooling circuits are wired correctly. For **INSTALLATION INSTRUCTIONS** start on page 11.



# Know your thermostat

## Display

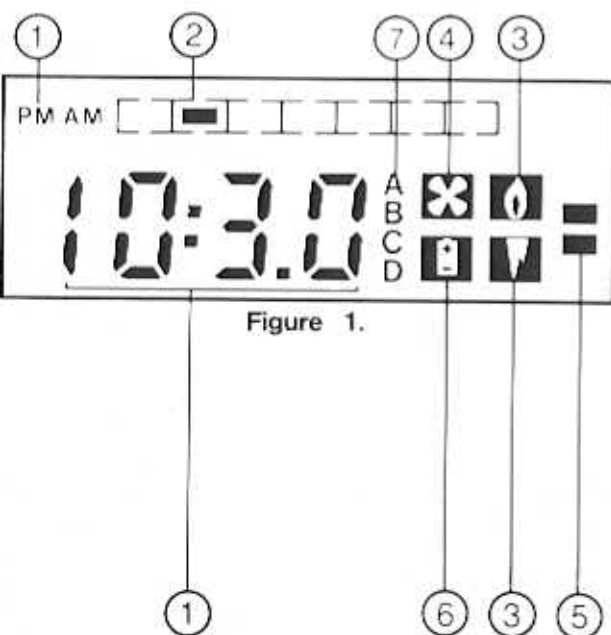


Figure 1.

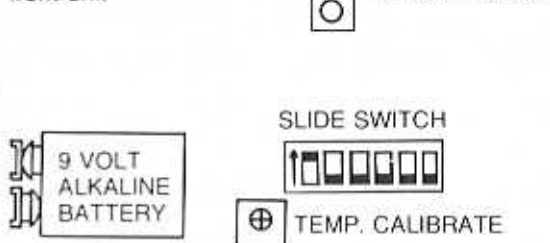
- ① The time of day AM or PM and the actual room temperature are displayed alternating at 4 second intervals in normal operation, and the decimal or colon are constantly blinking when temperature and time respectively are shown.
- ① A set temperature and time are displayed when programming. Nothing is blinking. The factory setting for all programs is shown in figure 3b on page 4.
- ① The duration of timed override is displayed. Nothing blinks. (see timed override page 9).  
Note: decimal point is displayed and not a colon as in a time display.
- ② Day of week, shows the day indicator at Monday.
- ③ Mode symbols, indicating system in heating (flame) heating and cooling (flame and icicle) cooling (icicle) or off mode (no symbols).
- ④ Fan symbol shows when the fan is in the 'on' continuous mode.
- ⑤ Indicators showing when heating (top bar) or cooling (bottom bar) is operating.
- ⑥ Indicates when unit is operating on the battery (thermostat is not installed or the power is off). When battery needs to be replaced, the symbol is flashing.
- ⑦ Indicates the program A,B,C, or D in which the thermostat is operating.

## Slide switches

The slide switches 1 to 6 are accessed from the rear of the front unit of the thermostat. They have been preset at the factory for the most frequently used settings and should only be changed by the installer.

However, if you wish to review the options, see page 13.

Figure 2. Rear view of front unit



## Control buttons

There are Function buttons on the left and Program buttons on the right. Each button has multiple uses.

- Raises temperature, adjusts hours, sets override hours
- Lowers temperature, adjusts minutes, skips program -----
- Push to advance the day indicator to the correct day of week, sets override days when override is displayed
- Pressing once will resume program  
Pressing a second time will display timed override
- A** The program buttons A, B, C and D are used to gain access to programs in order to;
  - enter a program
  - override a program
  - change or check a program
- B**
- C**
- D**

### Functions

Raise Temp.  
Adjust Hrs.  
Set Override Hrs.



### Programs

A

Lower Temp.  
Adjust Mts.



B

Select Day  
Set Override Days



C

Resume Program  
Display Override



D

Select  
Heat/Cool



on/auto

Front view

## Selecting your heat/cool system

By consecutively pressing and releasing the button the following symbols will appear:

HEAT      AUTO      OFF      COOL

          (no symbols)     

With no heat or cool symbols displayed, the system is off.

With the fan button , you set the fan to continuous operation (ON mode) and the fan symbol is displayed. In the 'auto' mode, no fan symbol will be displayed and the fan operates or cycles as the system demands.

### Functions

Raise Temp.  
Adjust Hrs.  
Set Override Hrs.



A

Lower Temp.  
Adjust Mts.



B

Select Day  
Set Override Days



C

Resume Program  
Display Override

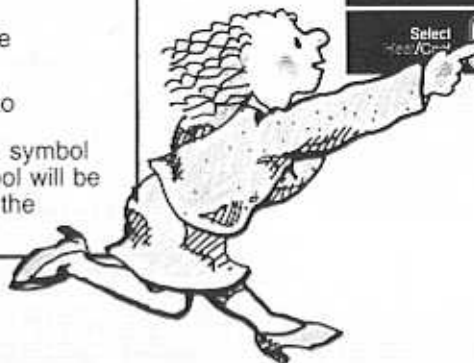


D

Select  
Heat/Cool



on/auto



# Set your personal schedule

## Typical Retail Schedule

Figure 3a.

Temperature		Time AM/PM						
		Sun	Mon	Tues	Wed	Thur	Fri	Sat
A	Heat 68	-----	9:00 AM	9:00 AM	9:00 AM	9:00 AM	9:00 AM	10:00 AM
	Cool 72	-----						
B	Heat 70	-----						
	Cool 74	-----						
C	Heat 70	-----						
	Cool 74	-----						
D	Heat 62	10:30 PM	5:00 PM	5:00 PM	5:00 PM	9:00 PM	9:00 PM	6:00 PM
	Cool 78							

## Factory Set Schedule

Figure 3b.

Temperature		Time AM/PM						
		Sun	Mon	Tues	Wed	Thur	Fri	Sat
A	Heat 68	8:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM	8:00 AM
	Cool 73							
B	Heat 64	-----	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM	-----
	Cool 85	-----						
C	Heat 68	-----	3:30 PM	3:30 PM	3:30 PM	3:30 PM	3:30 PM	-----
	Cool 73	-----						
D	Heat 62	10:30 PM	10:30 PM	10:30 PM	10:30 PM	10:30 PM	10:30 PM	10:30 PM
	Cool 78							

NOTE:  
If the thermostat has more than one setting with the same start time, it chooses the first one in alphabetical order.

The first thing to do before programming the thermostat is to determine the requirements for each day as to temperature and time. Figure 3b is the factory set schedule. Until a program is entered by the user, the factory set program controls the temperature.

Figure 4 is a blank form for your use. Start by selecting your heat/cool temperatures. Now determine the times that you want the temperatures to be active on Sunday. Write in the desired times in the appropriate place. If you want to skip a temperature, write in four dashes as is done in the typical schedules. Now do the same for the remaining days of the week.

**Note:** Unlike conventional clock thermostats, this thermostat will bring the building to the required temperature at the programmed time on recovery from unoccupied periods.

*Fill in this chart to help program your schedule*

Temperature		Time AM/PM						
		Sun	Mon	Tues	Wed	Thur	Fri	Sat
A	Heat							
	Cool							
B	Heat							
	Cool							
C	Heat							
	Cool							
D	Heat							
	Cool							

Figure 4.

# Begin programming

## Battery installation and startup


**CAUTION:** Your microcomputer thermostat, like many modern electronic devices such as office computers, can be disrupted or damaged by static electricity. Although we have taken steps to lessen the thermostat's susceptibility to static electricity, we advise that you discharge any static build-up on your body by touching a metal object before touching your thermostat.

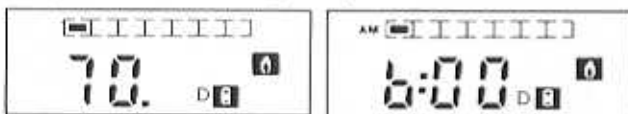
1. Separate the thermostat front unit from the mounting plate (page 12 figure 13).
2. Install the battery (Page 13 shows location).
3. Allow a few seconds for the display to start flashing once per second as in figure 5.



Figure 5. Display on start-up

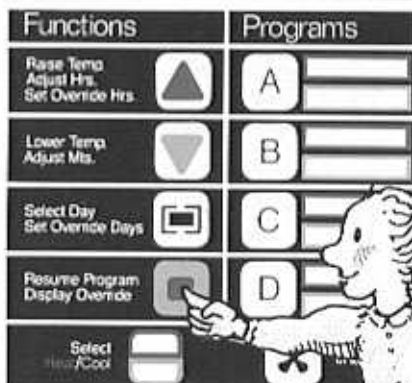
## STEP 1.

Press the  button and observe the time and temperature alternating every 4 seconds.





Actual temperature

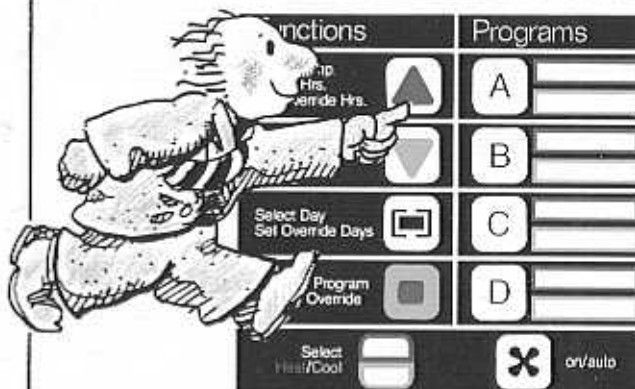
Time



## STEP 2. Set correct time of day

When the display is showing time, press and hold the  button, until the hour digits advance to the correct hour, ensuring that AM/PM indicator is correct. (This button will not affect minutes).


Again when the time is displayed, press and hold  button until the minute digits advance to the correct minute. (This button will not affect the hours).



Functions	Programs
Raise Temp. Adjust Hrs. Set Override Hrs.	A
Lower Temp. Adjust Mins.	B
Select Day Set Override Days	C
Resume Program Display Override	
Select Heat/Cool	on/off



### STEP 3. Set correct day of week

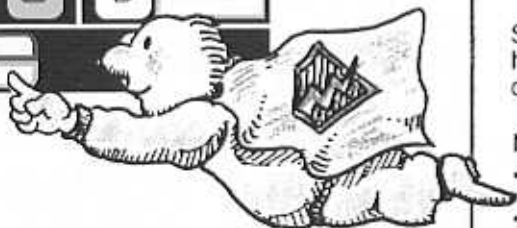
Press the  button, and advance the day

indicator to the correct day of the week. Figure 6 shows the indicator at Sunday.








Figure 6.

Functions	Programs
Raise Temp. Adjust Hrs. Set Override Hrs.	A
Lower Temp. Adjust Mins.	B
Select Day Set Override Days	C
Resume Program Display Override	D
Select Heat/Cool	







### STEP 4. Select heat/ cool system

By consecutively pressing and releasing the  button the following symbols will appear in this order on your display.

HEAT	AUTO	OFF	COOL
		(no symbols)	
			



Select and display your system requirements i.e. heat only, cool only, or heating and cooling (auto change over).


#### NOTE

- The battery symbol will show when power is off.
- Battery symbol will flash to indicate weak battery.
- When no heat or cool symbol is displayed, the system is off.
- If you have  only or  only displayed, you will program one temperature and the time. If you have both  and  (auto change over) you will first program heat, then cool, and then the times.

For the following steps, refer to your personal schedule on page 4.

## STEP 5. Enter your A program temperatures

This sequence assumes that you selected the auto  



mode in step 4. If you have heat only 

selected you will program just the heat temperature by skipping substeps (3) and (4). If



you have cool only  selected

you will program just the cool temperature by skipping substeps (1) and (2).

(1) Press and release . You will observe a display as in figure 7. This is the heat temperature.

(2) Press  to raise or  to lower to the desired temperature.


(3) Press and release . You will observe a display as in figure 8. This is the cool temperature.


(4) Press  to raise or  to lower to the desired temperature.



**Note:** the thermostat's design will not allow the heat and cool setpoints to be set closer than 2°F or 1°C.

**Caution:** We recommend that in residential use you do not have the heat and cool setpoints closer than 4°F or 2°C.

## STEP 6. Enter Sunday A program time

(1) Press and release 

(2) Press  and advance the day indicator to the left hand position (Sunday). You will see a display as in figure 9.

(3) Press  to advance hours and  to advance minutes (10 minute increments) to the desired start time. You have now entered the Sunday A time.

### Skipping a program

When advancing the minutes between 50 and 00, you will see a display as in figure 10. This means that the program will be skipped. However, the temperatures will still be available for OVERRIDE.

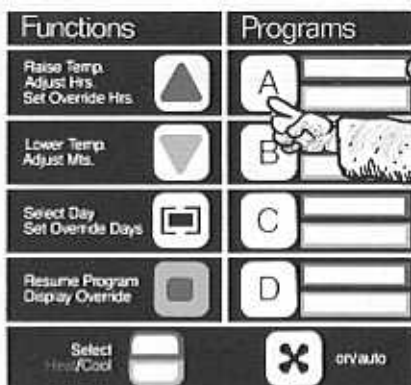


Figure 7. Heat set point

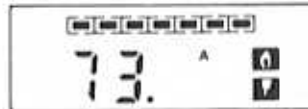


Figure 8. Cool set point

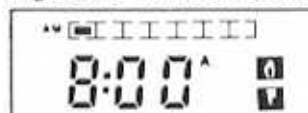


Figure 9. Time

**Note:** These displays are typical for heat only. What you observe will differ if someone already programmed the thermostat or if your system selection is not heat/cool (see step 4).

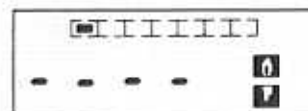
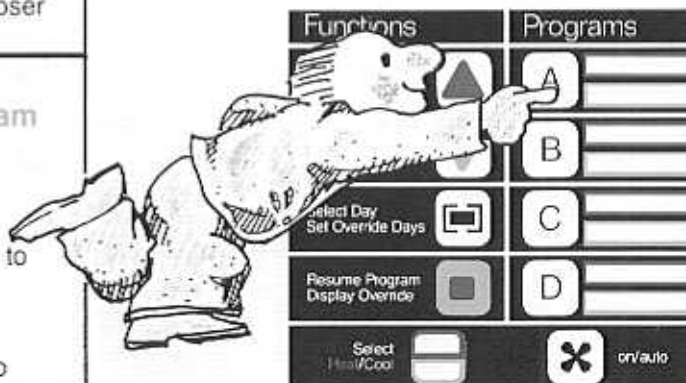
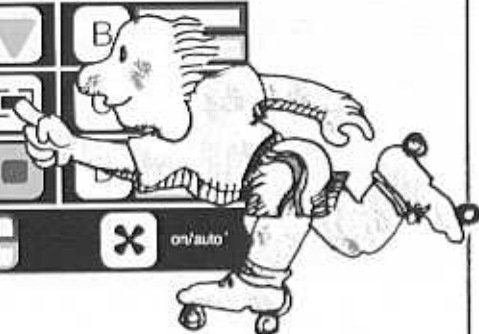


Figure 10. Program skipped

Push  to exit skip mode.

Functions	Programs
Raise Temp. Adjust Hrs. Set Override Hrs.	A
Lower Temp. Adjust Mts.	B
Select Day Set Override Days	
Resume Program Display Override	
Select Heat/Cool	on/auto



## STEP 7. Enter the A times for the balance of the week

- (1) Press to advance the day indicator to Monday.
- (2) Press to advance hours and to advance minutes (10 minute increments) to the desired start time.
- (3) In a similar fashion program the times for the rest of the week.  
by advancing the day indicator with and repeating substep (2).

Functions	Programs
Raise Temp. Adjust Hrs. Set Override Hrs.	A
Lower Temp. Adjust Mts.	B
Select Day Set Override Days	C
Resume Program Display Override	D
Select Heat/Cool	on/auto



## STEP 8. Enter B, C, and D temperatures and times

Repeat steps 5 to 7 substituting , , or for .

**Note:** and times for Saturday and Sunday are in the factory set skip mode -----  
To get out of skip mode, press when -----  
is displayed. Now set the desired time.


Functions	Programs
Raise Temp. Adjust Hrs. Set Override Hrs.	A
Lower Temp. Adjust Mts.	B
Select Day Set Override Days	C
Resume Program Display Override	D
Select Heat/Cool	on/auto



## STEP 9. Return to normal operation

Press and the display will alternate between temperature and time and control of your environment will be automatic as programmed.

## STEP 10. Continuous override

At any time you may override the scheduled program by merely pressing the program button **A**, **B**, **C** or **D** with the temperature you wish to hold. The display will then only show that temperature. The temperature will now control at the selected program temperature until you press  or the override time elapses.

### Enter timed override

Note: An override time of 00.00 as in figure 11 will give a continuous override.
















- (1) Press  until you observe your display as in figure 12.
- (2) Press and hold  until the desired hours of override are shown in two right digits.
- (3) Press  until the desired days of override are shown.

Figure 12 shows the factory setting of 3 hours of timed override and no days. Any time the override is used, (by simply pressing

button **A**, **B**, **C** or **D** which has the desired temperature) the temperature called for will control for 3 hours and then the normal program will resume again.

## STEP 11. Verify Your Programs

- (1) Press **A** and check that it shows your desired heat temperature.
- (2) Press **A** again and check your cool setpoint.
- (3) Press **A** again and check your Saturday time.
- (4) Press  **Note:** Ensure AM/PM is correct, and check your Sunday time.
- (5) Press  again five more times and check the times for the rest of the week.
- (6) In a similar manner, check your times and temperatures for B, C, and D.

Functions	Programs
Raise Temp. Adjust Hrs. Set Override Hrs. 	A 
Lower Temp. Adjust Mts. 	B 
Select Day Set Override Days 	C 
Resume Program Display Override 	D 
Select Heat/Cool 	 on/auto

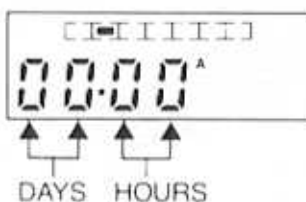


Figure 11.  
Continuous override

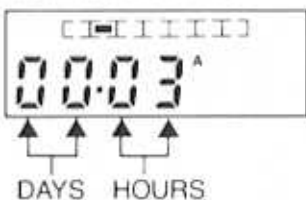










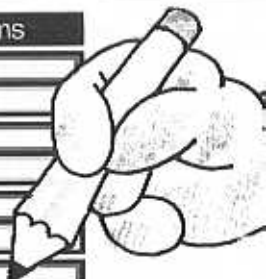


Figure 12.  
Timed override

Functions	Programs
Raise Temp. Adjust Hrs. Set Override Hrs. 	A 
Lower Temp. Adjust Mts. 	B 
Select Day Set Override Days 	C 
Resume Program Display Override 	D 
Select Heat/Cool 	 on/auto

Write in your heat/cool temperatures in pencil.



# Using some special features

Functions	Programs
Raise Temp Adjust Hrs Set Override Hrs	A
Lower Temp Adjust Hrs	B
Select Day Set Override Days	C
Resume Program Display Override	D
Select Heat/Cool	on/auto



## Fan operation

To select FAN ON press . The fan will operate continuously and the fan symbol will be displayed. To select FAN AUTO, which operates the fan only when the system is running, press a second time and the fan symbol will disappear.

## Battery symbol

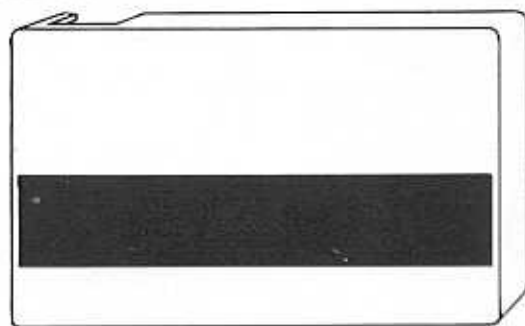
The battery symbol indicates two conditions. If it is flashing, it indicates a missing or low battery condition. When this condition occurs, go to BATTERY INSTALLATION AND START-UP for instructions on how to replace the battery. If the battery symbol is displayed continuously, it indicates that the power is off and that the thermostat is maintaining its memory using the battery. A fresh battery will last 5 to 10 days without power to the thermostat. With continuous power the battery should last two to three years.

Caution: use alkaline battery only.

## Keyboard disable

Keyboard buttons

can be disabled by setting slide switch # 3 ON. This prevents the program from being altered by unauthorized people.



REMOTE SENSOR  
ACTUAL SIZE SHOWN

## Remote sensor Model RSK4

If you are planning on installing a remote sensor you must use a two conductor shielded cable with bare ground. Thermostat wire is not suitable for the remote sensor. Follow instructions that come with the sensor.

Suggest Belden 8760 or 8761 cable or equivalent.