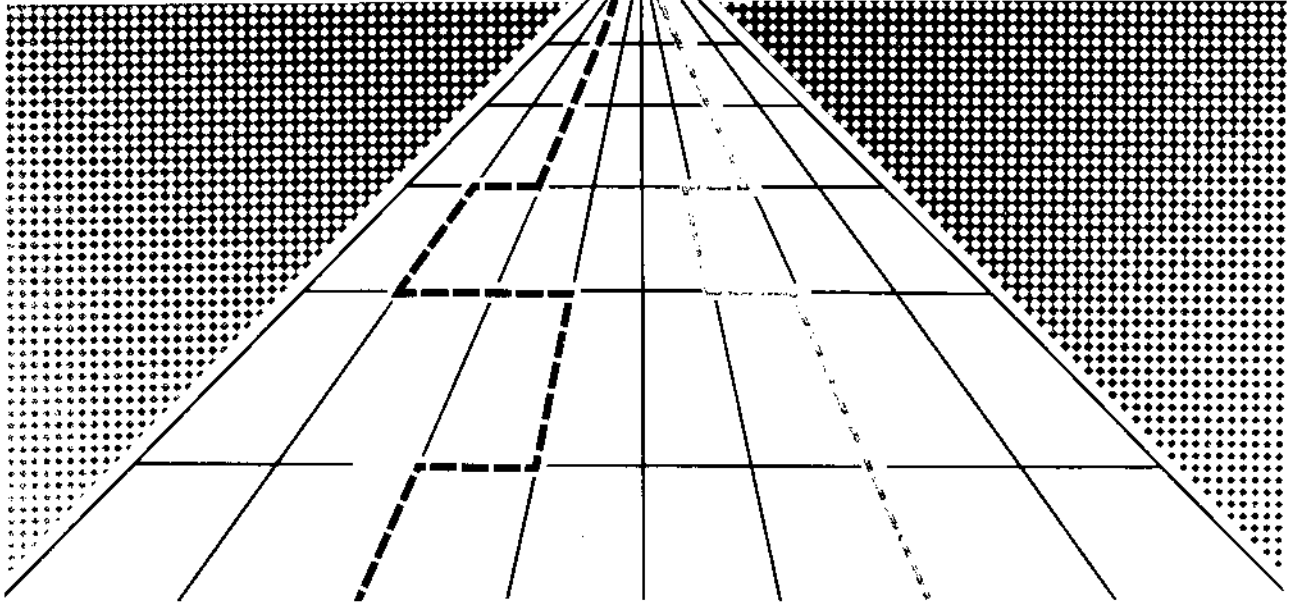


MS-1N



enerstatTM

Functions	Programs
Raise Temp. Adjust Hrs Set Override Hrs	A [] [] [] [] [] [] [] []
Lower Temp. Adjust Mts.	B [] [] [] [] [] [] [] []
Select D Set Override Days	C [] [] [] [] [] [] [] []
Resume Program Display Override	D [] [] [] [] [] [] [] []
Select [] []	[X] on/at [] [] [] [] [] [] [] []

Programmable Multi Stage Thermostat Model MS-1N

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
Program Lock	10
Remote Sensor	10

INSTALLATION INSTRUCTIONS

Thermostat Location	11
Connecting Thermostat	12
Setting Slide Switches	14
Battery Installation and Start Up	15
Checking Installation	15

TROUBLE SHOOTING GUIDE

Trouble Shooting	16
Specifications	(inside back cover)

Warranty	(back cover)
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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.

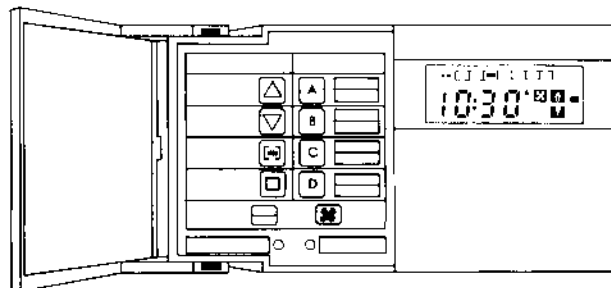
Introduction

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

- 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 from bottom to top: 2nd stage cool, 1st stage cool, 1st stage heat, 2nd stage heat.

- 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.

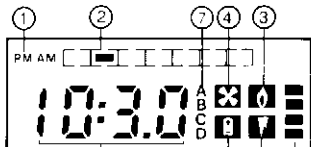


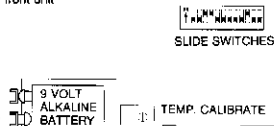
Figure 1.

Slide switches

The slide switches 1 to 10 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 14.

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 -----
- Advances the day indicator to the correct day of week, sets override days when override is displayed
- Pressing once resumes program
Pressing a second time displays timed override
- A** The program buttons A, B, C and D are used to gain access to programs in order to:
 - override to a program
 - change or check the program
- B**
- C**
- D**

Functions	Programs
Raise Temp. Adjust Hrs Set Override Hrs	A [Three horizontal lines]
Lower Temp. Adjust Mts	B [Three horizontal lines]
Select Day Set Override Days	C [Three horizontal lines]
Resume Program Display Override	D [Three horizontal lines]
Select	[Equals sign] [X in circle] on/auto

Front view

Temperature indicator

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

HEAT AUTO OFF COOL

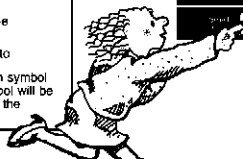
 (no symbols)

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	Programs
Raise Temp. Adjust Hrs Set Override Hrs	A [Three horizontal lines]
Lower Temp. Adjust Mts	B [Three horizontal lines]
Select Day Set Override Days	C [Three horizontal lines]
Resume Program Display Override	D [Three horizontal lines]
Select	[Equals sign] [X in circle] 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.

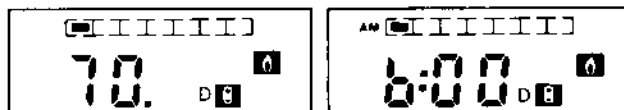
1. Separate the thermostat front unit from the mounting plate (page 12 figure 13).
2. Install the battery (Page 3 figure 2 shows location).
3. Allow a few seconds for the display to start flashing once per second as in figure 5.



Figure 5. Display on start-up

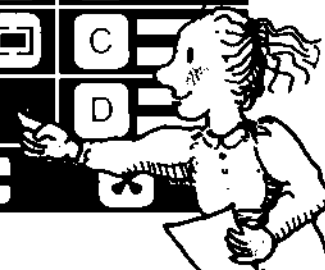
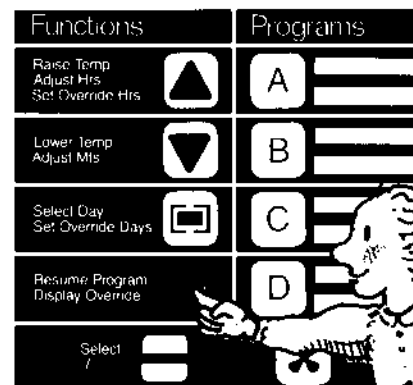
STEP 1.

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





Actual temperature

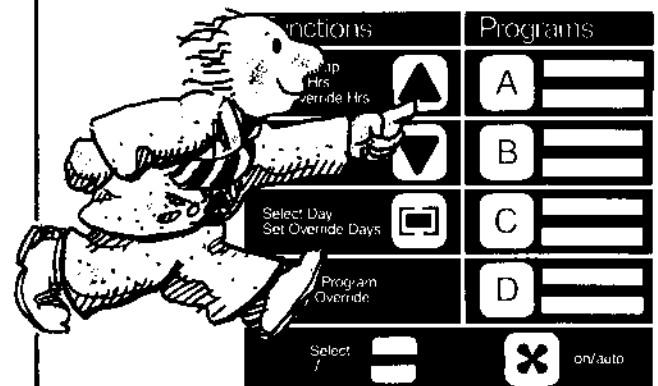
Time



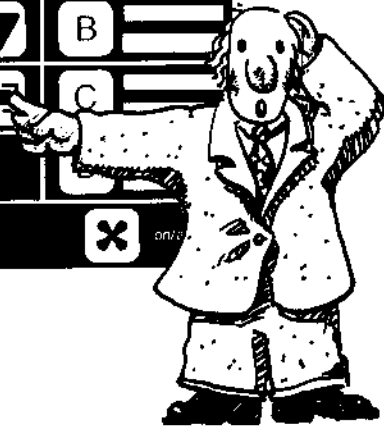
STEP 2. Set correct time of day

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 Mts	B
Select Day Set Override Days	C
Resume Program Display Override	D
Select	X 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.

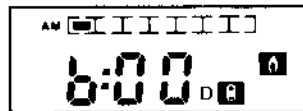







Figure 6.

Functions	Programs
Raise Temp Adjust Hrs Set Override Hrs	A
Lower Temp Adjust Mts	B
Select Day Set Override Days	C
Resume Program Display Override	D
Select	X on/off







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 ie, 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.

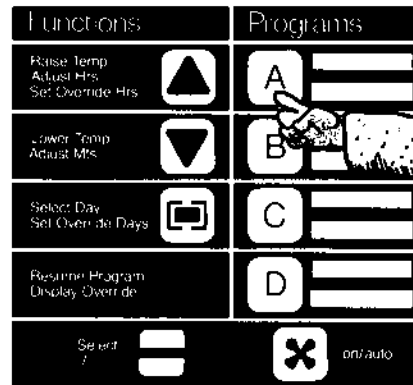


Figure 7. Heat set point



Figure 8. Cool set point



Figure 9. Time

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

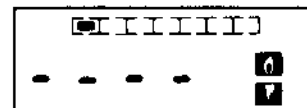
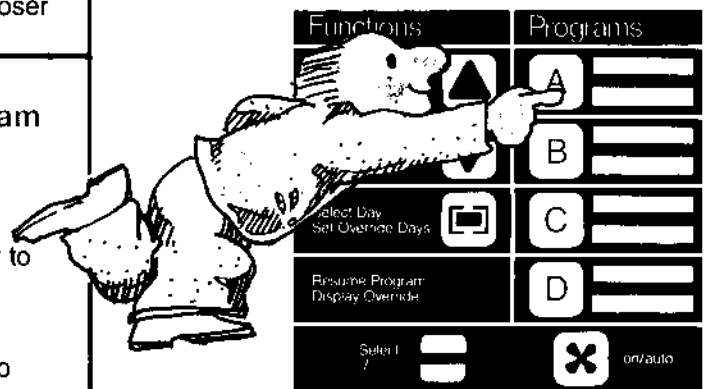
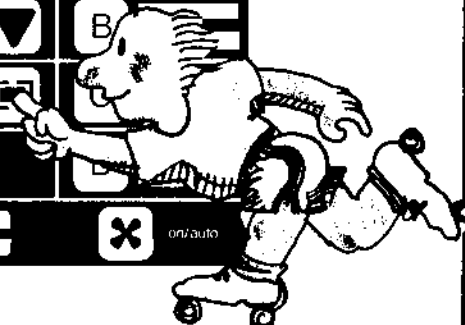






Figure 10. Program skipped

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	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	on/auto

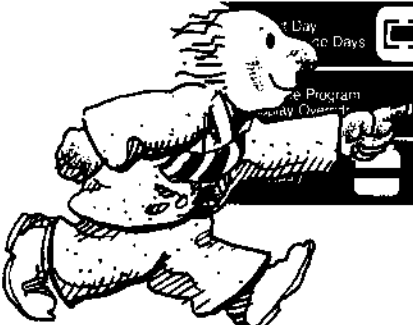


STEP 8. Enter B, C, and D temperatures and times


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	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.

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	

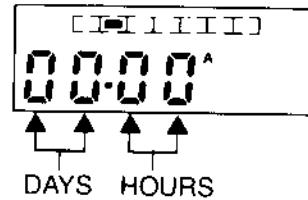


Figure 11.
Continuous override

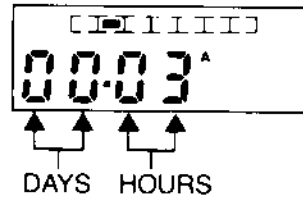


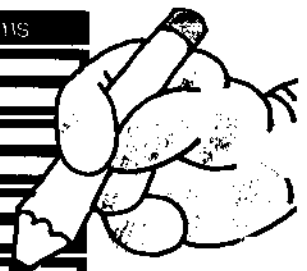
Figure 12.
Timed override



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 day and time.
- (4) Press **☐** **Note:** Ensure AM/PM is correct. and check your time for the following day.
- (5) Repeat (4) for each day 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	
	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	on/auto



BATTERY INSTALLATION

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

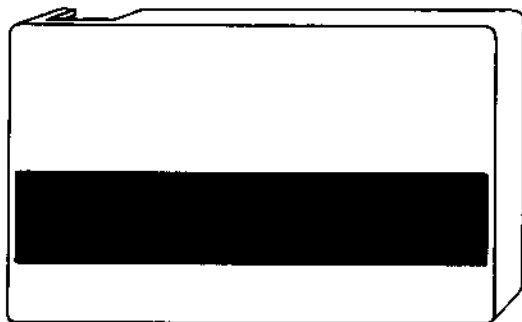
The battery symbol indicates two conditions. If it is flashing, it indicates a missing or low battery condition. When this condition occurs, go to BATTERY INSTALLATION AND START-UP for instructions on how to replace the battery. If the battery symbol is displayed continuously, it indicates that the power 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.

Program Lock

Keyboard buttons

can be disabled by setting slide switch #8 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 and insulated cable with shield wire. Thermostat wire is not suitable for the remote sensor. Follow instructions that come with the sensor.
Suggest Belden 8760 or 8761 cable or equivalent.

Installation instructions

- We recommend installer be a trained, experienced service technician.
- Disconnect power supply to systems before beginning installation to prevent personal injury or death from electrical shock or entanglement in moving parts and to prevent equipment damage.
- Ensure control voltage is 20-30 Vac.

Thermostat location

To ensure proper operation, the thermostat should be mounted on an inside wall in a frequently occupied area of the building. In addition, its position must be at least 18 inches from any outside wall, and approximately five feet above the floor in a location with freely circulating air of an average temperature. Be sure to avoid the locations described below when determining a site for the thermostat.

CAUTION: ZONE INTEGRITY MUST BE MAINTAINED TO EFFICIENTLY CONTROL UNITS OR GROUPS OF UNITS. UNLESS ZONES OF CONTROL ARE CONSIDERED AND ACCOUNTED FOR, ADJACENT UNITS MAY OPERATE IN HEATING AND COOLING MODES SIMULTANEOUSLY.

Locations to avoid the thermostat

- behind doors or in corners where freely circulating air is unavailable.
- where direct sunlight or radiant heat from appliances might affect control operation.
- on an outside wall.
- adjacent to, or in line with, conditioned air discharge grilles, stairwells, or outside doors.
- where its operation may be affected by steam or water pipes or warm air stacks in an adjacent partition space, or by an unheated/uncooled area behind the thermostat.
- where its operation will be affected by the supply air of an adjacent unit.
- near sources of electrical interference such as arcing relay contacts.



Connecting thermostat

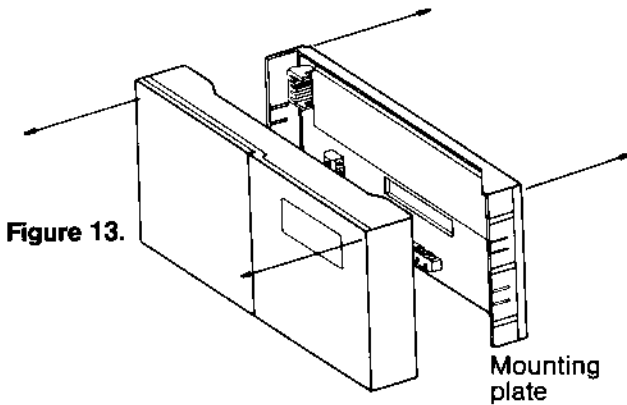


Figure 13.

Note: This thermostat requires a connection to the transformer common. Make sure that there are enough conductors in the thermostat cable to include it. A cable of up to 10 conductors may be required.

1. Make sure the power to the systems is off.
2. Pull front unit off of mounting plate.
3. Determine which of the systems described in table 1 applies to your installation. See table 2 for functional descriptions of the terminals. It may be necessary to obtain schematic diagrams and other information from the equipment manufacturer to determine installation requirements. The thermostat manufacturer may also from time to time publish wiring information.
4. Determine if and how you want to use the two general purpose indicator lights. See page 13.
5. If there are any special wiring requirements, go to the equipment and perform the wiring.
6. Set slide switches 2, 3, and 4 to select one of the four systems. This step is very important. These slide switches must correspond to the output wiring.

Table 1

SYSTEM	OUTPUT TERMINALS									SLIDE SWITCHES		
	1	2	3	4	5	6	7	8	9	2	3	4
1 heat/1 cool	X	Y	W	G	—	—	—	OCC	R	OFF	OFF	ON
1 heat/2 cool	X	Y1	W	G	Y2	—	—	OCC	R	OFF	ON	OFF
2 heat/1 cool	X	W1	W2	G	Y1	—	—	OCC	R	ON	OFF	ON
2 heat/2 cool	X	W1	W2	G	Y1	—	Y2	OCC	R	ON	ON	OFF

7. Identify the wires as per your system in table 1.
8. Position the mounting plate so that all the control and indicator light wires protrude through the centrally located slot (figure 14). Level for appearance and mark the three mounting holes. Drill holes using a 3/16" (5mm) drill bit. Install supplied anchors, reposition the mounting plate and secure it to the wall. Do not overtighten screws.
9. Affix the appropriate output terminal label to your mounting plate. Connect the control wires to the proper output terminals. Connect the indicator light wires if the lights are being used.

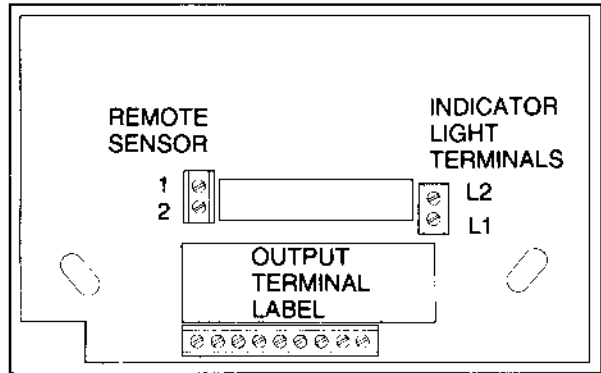
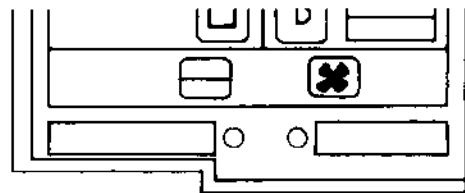


Figure 14. Mounting plate

Table 2.

OUTPUT TERMINALS	FUNCTIONAL DESCRIPTION
OCC	In cooling OCC will de-energize when the setpoint is the highest of the four setpoints, in heating OCC will de-energize when the setpoint is the lowest of the four setpoints, it will energize when the temperature rises to within 2 degrees F of whichever one of the three higher temperatures next become active (warm up).
R	24 Vac connection for all stages.
G	Energizes on any demand for heating or cooling or when manually activated by the fan button. (Subject to the plenum fan and smart fan options, see figure 15 on page 14.
X	24 Vac common connection.
W,W1	Energizes on a demand for 1st stage heat.
W2	Energizes on a demand for 2nd stage heat.
Y,Y1	Energizes on a demand for 1st stage cool.
Y2	Energizes on a demand for 2nd stage cool when temperatures rise 2°F above setpoint.

Lights



The thermostat has two status indicator lights that can be used to indicate user defined conditions such as equipment failure, dirty filter or an output such as W2 being energized. They are activated by connecting the respective terminal (L1 for the left light and L2 for the right light) to R via an output terminal or an appropriate relay contact. For example, if W2 (terminal 3) is connected to L1, the left light will come on whenever W2 is energized. Label the lights in the area provided on the keypad using a pencil.

Setting slide switches

10. There are a number of options that you can select with the slide switches. They slide up and down very easily using a pen. The ON position is marked on the block that encloses the switches (figure 15). Set the slide switches using the information in figure 15 as your guide. Note: Only turn switch 8 on after the thermostat is programmed.

Switch 7 — Smart fan option

OFF—Fan operates normally.
ON—Fan goes from ON to AUTO during a setback or setup program. A setback program is one containing the lowest setpoint temperature in heating. A setup program is one containing the highest setpoint temperature in cooling.

Switch 8

OFF—Keyboard operates normally.
ON—These buttons are disabled to prevent program tampering:



Switch 1

OFF—1st stage cool cycle rate is 3 cycles per hour.
ON—1st stage cool cycle rate is 1.5 CPH.

Switch 5

OFF—Temperature displayed in °F.
ON—Temperature displayed in °C.

Switches 2, 3 and 4 see Table 1 on page 12.

Switch 6

OFF—Cycle rate of 6 cycles per hour (CPH) on highest heat stage.
ON—Cycle rate of 3 CPH on highest heat stage.

Switch 9

OFF—Fan operates with any call for heating or cooling
ON—Fan does not operate with a call for heat. The furnace plenum switch controls the fan.

Switch 10

OFF—For use with remote sensor.
ON—Normal operation with internal sensor.

Figure 15. Slide switch settings

Battery installation & start-up

Figure 16. Start-up display

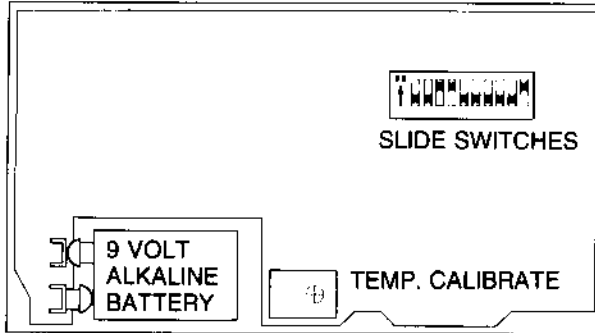


Figure 17. Rear view of front unit

Checking installation

CAUTION: UNIT HAS BUILT-IN TIME DELAYS FOR HEAT AND COOL. THEY MAY VARY DEPENDING ON ROOMTEMP RISE OR FALL. DELAYS CAN BE FROM 3 TO 15 MIN. PER STAGE.

Follow the checkout procedure outlined in Table 3. When the system power is turned on the battery symbol should disappear or flash if the battery is weak or missing. Minimum on and off times have been built into the thermostat to prevent HVAC equipment damage due to short cycling. These delays may be longer than specified if the HVAC equipment has built in delays.

Temperature Calibration

The temperature calibration control shown in figure 17 may be used for minor adjustments. Clockwise rotation will lower the displayed temperature.

11. Install the battery.
12. Allow a few seconds for the display to start flashing once per second (figure 16).
13. Push The display will alternate every four seconds between room temperature and time.
14. Replace the thermostat front unit on mounting plate.

Table 3

STEP	PUSH BUTTON	DISPLAY SHOWS	RESPONSE
1			Heat mode
2			Auto heat/cool mode
3		(no symbol)	All systems go off after 7 seconds.
4			Cool mode
5		select required mode (step 1, 2 or 4) for further testing	
6		Stationary 68 or 73 (20 or 22.5)	Heating and cooling set-points. Room temperature will be maintained at these set-points
7	 	Increase or decrease of set point temperature	Equipment will respond subject to time delays
8	 hold	Quick Check Start-up Time delays can be reduced to a few seconds by pressing and holding any one of the program buttons A, B, C, or D. Release when the stage indicator is displayed. Care must be taken not to short cycle the compressor. Set-point should be 10° higher than ambient in heating or 10° cooler than ambient in cooling. Note: return temperature to the original setting.	
9			Fan runs continuously
10		(no FAN symbol)	Fan operates automatically

Trouble shooting guide

SYMPTOM	CAUSE	ACTION
UNIT APPEARS OK BUT WILL NOT ACTIVATE RELAYS OR RELAYS CHATTER	1) SOLID STATE SWITCH FAILURE 2) HIGH RESISTANCE AT EQUIPMENT	— REPLACE UNIT — LOAD DOWN RELAY COIL WITH 4700 ohm 1 WATT RESISTOR OR INSTALL ISOLATION RELAY
HEAT OR COOL STATUS INDICATORS WILL NOT APPEAR	1) BUILT IN TIME DELAYS 2) NO 24 VAC	— OVERRIDE USING QUICK CHECK START-UP — TURN ON 24 VAC
SYSTEM CYCLES BEFORE REACHING SETPOINT	BUILT IN COMPUTER RECOVERY	UNIT OPERATING NORMALLY
DISPLAY FLASHING-PROGRAM LOST	1) STATIC ELECTRICITY 2) RADIO FREQUENCY INTERFERENCE	— DISCHARGE BEFORE TOUCHING STAT! — USE SHIELDED CABLE WITH REMOTE SENSOR
TEMPERATURE READING INCORRECT	1) OUT OF CALIBRATION 2) EXTERNAL HEAT SOURCE 3) DOWN DRAFT AT THERMOSTAT	— RECALIBRATE WITH ACCURATE THERMOMETER — ISOLATE STAT FROM HEAT SOURCE OR OVERHEAD DIFFUSERS
ERRATIC TEMPERATURE READING	1) WHEN REMOTE SENSOR IS INSTALLED SWITCH #10 MUST BE OFF 2) FAULTY THERMISTOR 3) INCORRECT SHIELDING CONNECTIONS OR SHIELD GOES TO MECHANICAL GROUND	— DISCONNECT REMOTE SENSOR LEADS IF INTERNAL THERMISTOR IS TO BE USED TEMPORARILY — REPLACE OR CHECK WITH OHMMETER (10,000 ohms APPROXIMATE AT 77° F) — CHECK REMOTE SENSOR WIRING
STAT WILL NOT RETURN FROM SETBACK	1) OVERRIDE SET FOR DAYS 2) WRONG DAY OF WEEK	— PRESS RESUME, REMOVE DAYS FROM MEMORY — PRESS DAY KEY AND ADVANCE TO CORRECT DAY
UNIT WILL NOT ENERGIZE 2ND STAGE — GOES ON THEN OFF IMMEDIATELY	NO COMMON WIRE ON #1 TERMINAL	— INSTALL WIRE TO #1 TERMINAL FROM COMMON OF TRANSFORMER

Specifications

Rated voltage	18-30 Vac
Rated current	0.050 — 1.5 Amp continuous for each output with surges to 4 Amps. Maximum 3 Amps continuous total of all outputs.
Cycle rate optional optional	3 Cycles per hour 6 CPH on highest stage heat 1.5 CPH on 1st stage cool
Minimum on/off times to prevent short cycling	1.5 CPH — 12 minutes 3 CPH — 6 minutes 6 CPH — 3 minutes
Control range Heating	42 to 114° F in 1° steps or 7 to 43° C in 0.5° steps
Cooling	44 to 116° F in 1° steps or 8 to 44° C in 0.5° steps
Temperature measurement range	38 to 119° F or 5 to 45.5° C
Accuracy	± 1° F at 68° F or ± 0.5° C at 20° C
Battery	9 volt ALKALINE (Eveready #522 or equivalent) for memory retention during power outage
Quartz clock accuracy	± 80 seconds/month
Range of ambient operation	32 to 131° F (0 to 55° C)
Storage temperature	-30 to 131° F (-34 to 55° C)
Operating humidity range	5 to 90% RH non condensing

Specifications subject to change without notice.

enerstat™

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