

81M26 81M27 81M28

DELUXE PROGRAMMABLE THERMOSTATS with Humidity Control



User's Manual

Menu Driven Display

Fully Programmable

24 VAC with Worry-Free Memory Storage

1 Heat / 1 Cool, 2 Heat / 2 Cool and Heat Pump Models

110-1052F 504, 684M



Five Year Warranty

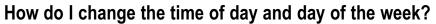
IMPORTANT SAFETY INFORMATION

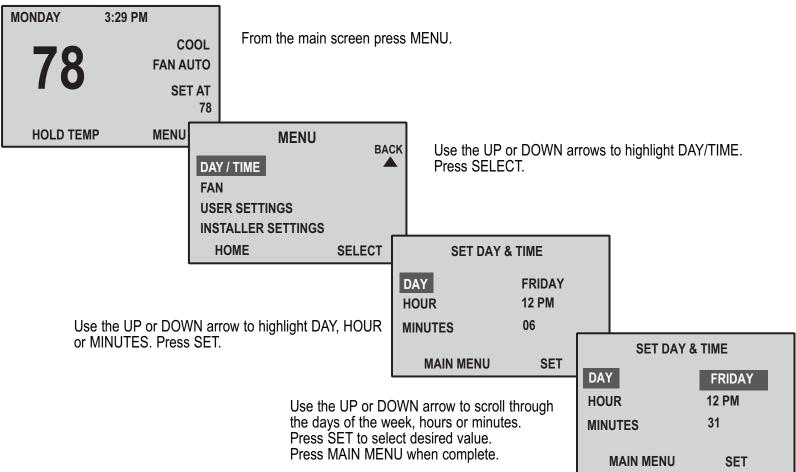
WARNING:

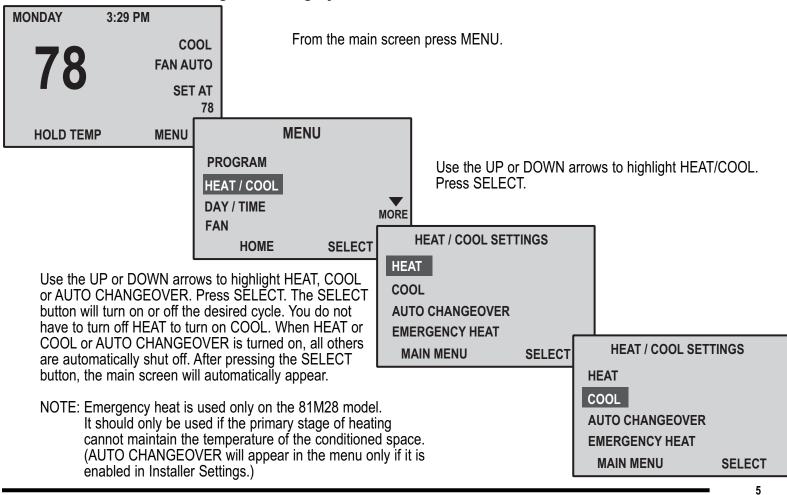
- DO NOT USE WITH COMMERCIAL EQUIPMENT.
- Always turn off power at the main power source by unscrewing fuse or switching circuit breaker to the off position before installing, removing, or cleaning this thermostat.
- Read all of the information in this manual before programming this thermostat.
- This is a 24V AC low-voltage thermostat. Do not install on voltages higher than 30V AC.
- All wiring must conform to local and national building and electrical codes and ordinances.
- Do not short (jumper) across terminals on the gas valve or at the system control to test installation. This will damage the thermostat and void the warranty.
- Do not connect ground to any terminal in this unit.
- This thermostat is equipped with automatic compressor protection to prevent potential damage due to short cycling or extended power outages. The short cycle protection provides a 5-minute delay between heating or cooling cycles to prevent the compressor from being damaged.
- Do not switch system to cool if the temperature is below 45°F (7°C). This can damage the cooling system and may cause personal injury.
- Use this thermostat only as described in this manual.

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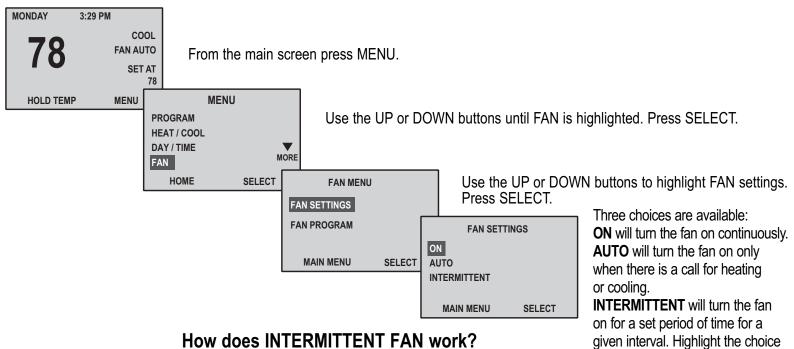






How do I turn on the heating or cooling cycles?

How do I cycle the fan?



INTERMITTENT FAN					
ON	TIME	5 MIN			
OFF	TIME	20 MIN			
FAI	N MENU	SELECT			

INTERMITTENT will turn the fan on for a set period of time for a given interval when the heating or cooling equipment is idle.

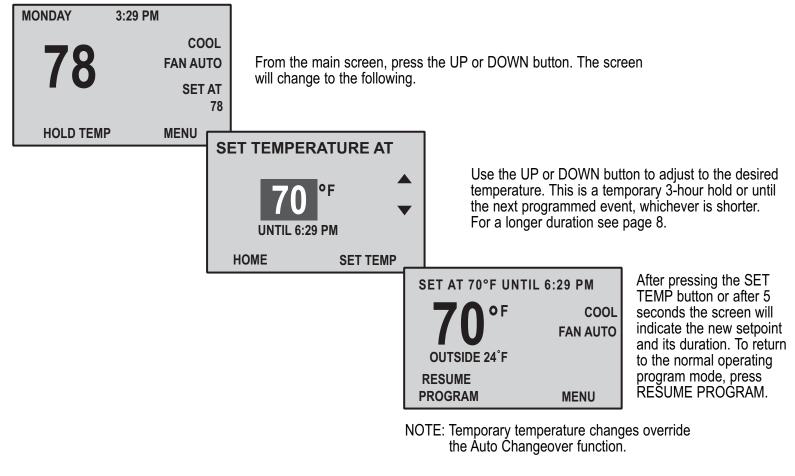
The thermostat will cycle the fan on for the set ON cycle. The fan will remain off for the set OFF cycle.

If the HVAC system runs for a longer period than the ON cycle, the OFF cycle will start counting over again when the system shuts off.

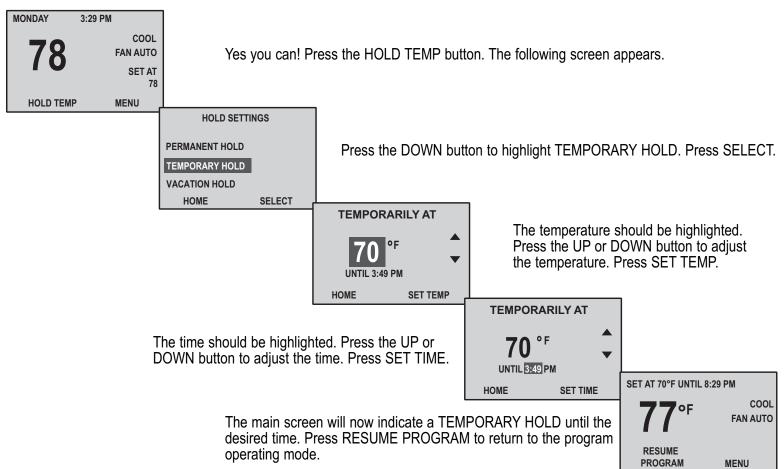
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you desire and press SELECT.

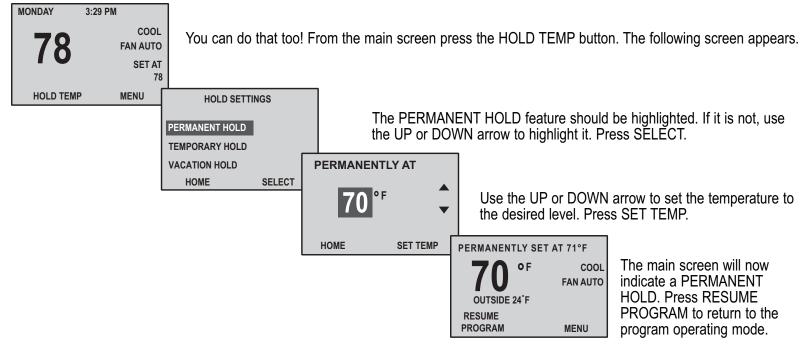
How do I temporarily change the temperature?



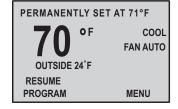
Can I set a temporary adjustment for longer than 3 hours?



Can I set the thermostat to hold one temperature indefinitely?

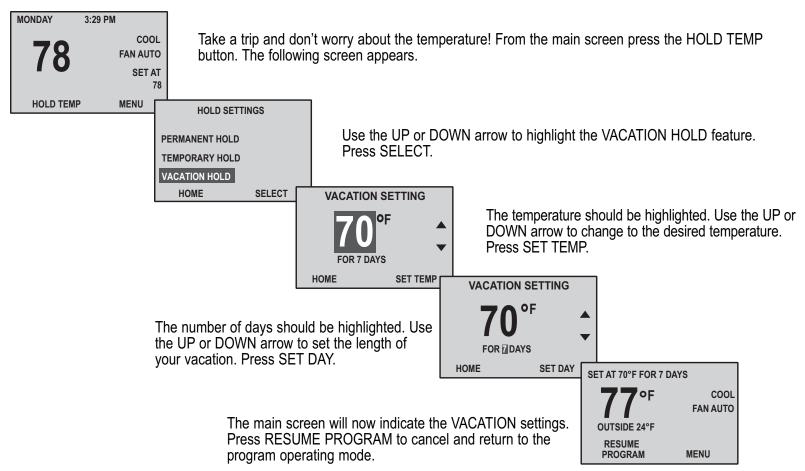


How do I return to the Program Mode after being in HOLD?

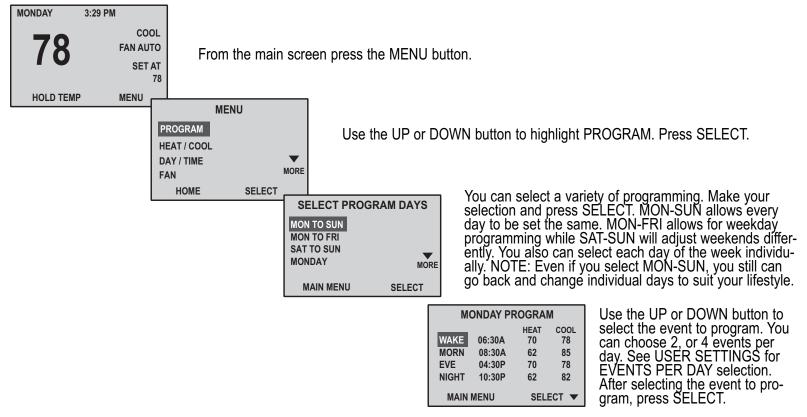


Simply press the RESUME PROGRAM button. This works from all HOLD screens.

How do I set the Vacation Mode?



How do I program my thermostat?



Please go to the next page for a continued discussion on "How to program your thermostat."

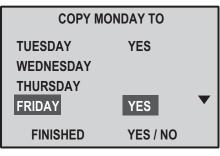
WAKE 06:00A MORN 08:30A EVE 04:30P NIGHT 10:30P	GRAM IEAT COOL 70 78 62 85 70 78 62 82 SET TIME		ime for tl s SET TII		event shou	d be higł	nlighted.	Use the UP or DOWN key to change the time.
		MONDAY	PROGRAM	N	1			
		WAKE 06:30A MORN 08:30A EVE 04:30F NIGHT 10:30F MAIN MENU	62 70 62	COOL 78 85 78 82 EAT ▼				he first event will be highlighted. Use the UP or e desired temperature. Press SET HEAT.
					MONDA	PROGRA	M	
					WAKE 06:30 MORN 08:3 EVE 04:3 NIGHT 10:3	0A 62 0P 70 0P 62	COOL 78 85 78 82	The cooling setpoint for the first event will be highlighted. Use the UP or DOWN key to change the desired temperature. Press SET COOL.
				l	MAIN MEN	U SET	COOL 🔻	
		Use t desir press	he UP oi ed. Wher	r DOW n the de T. Cont	II now be hi N key to ch esired even inue progra ned.	ange eve is highlig	nts if ghted,	MONDAY PROGRAM HEAT COOL WAKE 06:30A 70 78 MORN 08:30A 62 85 EVE 04:30P 70 78 NIGHT 10:30P 62 82 MAIN MENU SELECT ▼

How do I program my thermostat? (continued)

MO			
MORN EVE NIGHT COPY	08:30A 04:30P 10:30P	HEAT 62 70 62	COOL 85 78 82
MAIN	MENU	SELE	СТ

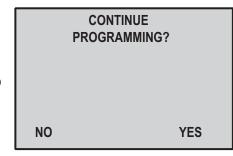
How do I copy one day's program to another day?

In the program screen, press the DOWN button until COPY is highlighted.



Use the UP or DOWN button to highlight the day to copy to. Press YES / NO. A YES will appear next to the day. Do this for each day to which that program is to be copied. Press FINISHED when complete.

After pressing FINISHED, you can choose to program other days or exit. YES will take you back to the Select Program Days screen. NO will exit you to the main screen.



What is an event?

An event is a programming period. This could be the period in the morning when you are preparing for work or school. It could be the period when no one is at home. It could be the period when the household is asleep at night.

The time for an event is selected based on when you want the event to occur. For example, if you wake up at 6:30 AM, set the first event for 6:30 AM. The thermostat will automatically make sure that your home is at the desired temperature selected for that event by the time you wake.

This thermostat can be set for 2 or 4 events.

Two events should be selected if someone is home all day thereby requiring a constant temperature during the day and a different temperature at night.

Four events are the most common for working households. Event 1 (WAKE) is the morning period. Event 2 (DAY) is when everybody has left for school or work. Event 3 (EVE) is the return period, coming home from school or work. Event 4 (NIGHT) is the night period when everybody is asleep.

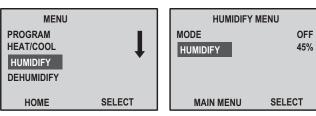
How do I know what program is right for me?

The thermostat is factory set with the US EPA ENERGYSTAR[®] recommended times and temperatures for optimal energy savings. You can change these to suit your lifestyle.

The best rule is to examine your schedule and set the times and temperatures that best fit. This thermostat is so versatile, you can easily change temperatures or programs at a whim.

How do I set the Humidify Levels?

Humidification can occur only when the thermostat is in the HEAT mode. The humidify level is adjustable from 15% to 45% RH. From the Main Screen press MENU.



Use the UP or DOWN arrow to highlight

HUMIDIFY. Use the UP or DOWN arrow to again highlight HUMIDIFY. Use the UP and DOWN arrow to adjust the Humidify level.

How do I set the Dehumidify Levels?

Dehumidification can occur only when the thermostat is in the COOL mode. The dehumidify level is adjustable from 45% to 60% RH. From the Main Screen press MENU. Use the UP or DOWN arrow to highlight DEHUMIDIFY. Use the UP or DOWN arrow to again highlight DEHUMIDIFY. Use the UP and DOWN arrow to adjust the Dehumidify level.

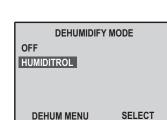
What is the difference between Basic and Precision modes?

In the Basic mode, the humidifier will turn on only with a call for heat. If there is a need for dehumidification, this will occur only with a call for cooling.

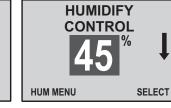
In the Precision mode, if the conditioned space requires humidification, the system will circulate air and turn on the humidifier to add moisture to the air regardless of whether there is a call for heat. If the conditioned space requires dehumidification, the air conditioner will turn on to reduce the humidity level to the desired setpoint regardless of whether there is a call for cooling.

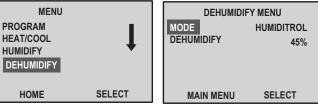
During dehumidification, it is possible to over-cool the conditioned space by up to 2°F to achieve desired humidity levels.

If the HUMIDITROL accessory is enabled in the Installer Settings, the Precision mode selection will appear as HUMIDITROL. This selection allows for the most effective use of the HUMIDITROL equipment.











What happens if the mode is set to OFF?

The humidification and dehumidification are turned off. The thermostat will simply control to the temperature setpoint.

What is the difference between Basic and Basic/DP (same as Precision and Precision/DP)?

The DP stands for Dew Point. If the remote outdoor sensor (Part #46M98) is connected and Basic/DP or Precision/DP is selected, the thermostat will automatically optimize the indoor humidity level based on the desired indoor temperature and outdoor temperature. In Dew Point mode, the humidify control level (described on the previous page) is ignored.

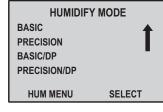
If Basic/DP or Precision/DP is chosen, a new menu DEW POINT ADJUSTMENT will be displayed.

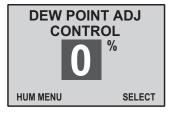
What is the Dew Point Adjustment Function?

The Dew Point Adjustment can be set from -15% to +15%. These settings allow you to customize the Dew Point setting for your home. Some homes may require an adjustment to help maintain comfort. If you notice condensation on your windows, set the adjustment lower, between -15% to -5%. If your home feels dry, set the adjustment upwards, between +5 to +15%.

Can I change the Humidifier Maintenance Service Intervals?

No. This interval is fixed based on the run time of your system and if the humidifier has been turned on. When the recommended service interval has expired, the screen to the right will appear. Simply press DELAY to be reminded later or RESET to reset the interval.





HUMIDIFIER MA	INTENANCE
LENNOX	, INC.
1-800-9LE	INNOX
DELAY	RESET

What are the USER settings?

NONDAY	3:29 PM	
78	COOL FAN AUTO SET AT 78	T to
HOLD TEN	IP MENU	
	MENU	
	DEHUMIDIFY	BAC
	DAY / TIME FAN	_
	USER SETTINGS	MOR
	HOME	SELECT

The USER SETTINGS can change the way information is displayed on the thermostat and help to optimize comfort. It's one way to truly personalize your new thermostat.

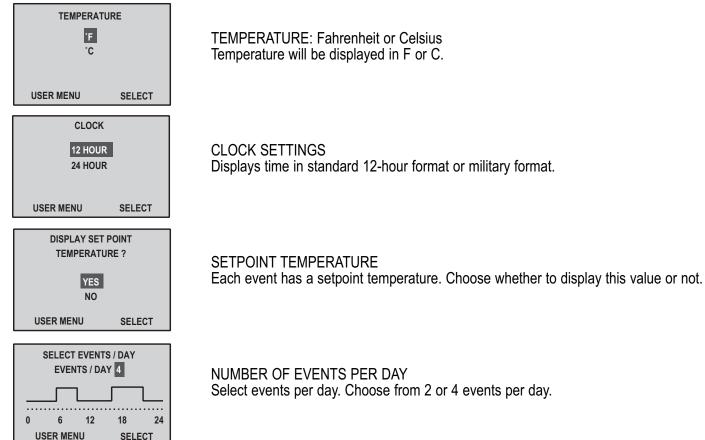
To get to the USER SETTINGS, press the MENU button from the main screen.

USER SETTINGS are below the FAN settings. Use the DOWN button to scroll below the screen. Press SELECT.

Choose the setting you would like to change. When the SETTING is highlighted, press SELECT. There are 10 USER SETTINGS in all as listed below. For detailed information on each user setting, please go to the next page.

USER SETTIN	GS MENU	USER SETTIN	IGS MENU 🔺	USER SETTIN	IGS MENU 🔺
F OR C	۴F	1ST STAGE DIFF	1°F	COOLING LIMIT	68°F
12 OR 24hr	12	2ND STAGE DIFF	2°F	HEATING LIMIT	78°F
SHOW SET TEMP	YES	2ND DELAY	20	SECURITY	OFF
EVENTS / DAY	4	COOLING LIMIT	45°F		
MAIN MENU	SELECT 🔻	MAIN MENU	SELECT 🔻	MAIN MENU	SELECT 🔻

Detailed Information on the USER SETTINGS (Or what do these USER SETTINGS do?) To select a USER SETTING, use the UP or DOWN button to highlight the desired value. Press SELECT to select desired value.



More Detailed Information on the USER SETTINGS

DIFFERENTIAL SETTING				
1ST DIFF 1°F				
2ND DIFF 2°F				
2ND DELAY 20 MIN				
USER MENU SELECT				

DIFFERENTIAL SETTINGS

The temperature differential is your comfort level. The differential is the difference from setpoint before your heating or cooling system will turn on. The 81M27 and 81M28 models also have 2nd stage differential. In the Heat mode, if the temperature falls below (or above for cooling) the setpoint by the 1st stage differential plus the 2nd stage differential, the second stage of heating (or cooling) will turn on.

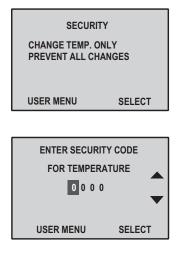
The 2nd stage delay is a timed delay before the second stage will turn on if the setpoint has not been achieved within that time frame, and if the difference between the setpoint and the actual temperature is bigger than the first stage differential but smaller than the first stage differential plus the second stage differential.

SET COOLING LIMIT	SET HEATING LIMIT
LOWEST COOLING 45 °F SETTING ALLOWED	HIGHEST HEATING 90 °F SETTING ALLOWED
USER MENU SELECT	USER MENU SELECT

HEATING and COOLING LIMITS

To prevent individuals (probably your kids) from adjusting the thermostat too hot or too cold, you can limit the maximum setting for the heating and cooling modes. This will help you save on energy costs.

More Detailed Information on the USER SETTINGS



SECURITY SETTINGS

In order to prevent tampering with the program and your desired settings, two levels of security are available. The first will allow only temporary changes to the temperature. It protects all other programmed setpoints. The second will restrict changes to EVERYTHING, including temporary changes to the temperature.

SECURITY CODE

In this screen you enter a four-digit code. Use the UP or DOWN button to change the first value, press SELECT. The second digit will be highlighted. Repeat for all four values. And don't forget your code. If you do, you will have to reset the entire thermostat and that will erase all the schedules you've programmed into the unit.

NOTE: After entering the security code to unlock the thermostat, the code will need to be re-entered to secure the thermostat after changes are made.

When would I need to change the USER settings?

About the only features you may need to change are the temperature differentials (if you desire additional comfort) and the security settings. All the other settings probably will not need to be changed.

What are the INSTALLER settings?

The INSTALLER SETTINGS are setup during the initial installation. They tell the thermostat how to function with your heating or cooling equipment. The following is a brief overview and discussion of these settings.

INSTALLER SETTINGS				
SYSTEM SETUP	GAS			
RESIDUAL COOL	60			
LOW BALANCE	45°F			
HIGH BALANCE	95°F			
HOME	SELECT 🔻			

	INSTALLER SET	TINGS	
	AUTOCHANGEOVER	ON	
	EER	ON	
*	DEADBAND	3°F	
	HUMIDITROL	OFF	
	HOME	SELECT	▼

* DEADBAND is displayed only when AUTOCHANGEOVER is ON.

INSTALLER SETTINGS			
SECURITY	OFF		
CONTACT INFO			
SERVICE INT			
REMINDER	RUN		
MAIN MENU	SELECT		

INSTALLER SET	TINGS
CONTACT INFO	
SERVICE INT	
REMINDER	RUN
TEMP OFFSET	0.0°F
MAIN MENU	SELECT

SYSTEM SETUP	
FURNACE	
HEAT PUMP	
INSTALL MENU	SELECT
1ST STAGE HEA	ATING
1ST STAGE HE/ GAS / OIL	
	1
GAS / OIL	1

SYSTEM SETUP

Choose the system component that the thermostat will control. With the 81M26, either a furnace or a single-stage heat pump (with no auxiliary heat) can be used. If FURNACE is selected, then either a GAS/OIL or ELECTRIC furnace can be used.

1st STAGE HEATING With the 81M27, either a GAS/OIL or ELECTRIC furnace can be used.

INSTALLER settings (continued)

AUXILIARY HEAT	
STANDARD - COMP =ON	

ADD ON - COMP. =OFF

INSTALL MENU SELECT

RESIDUAL COOL	
SECONDS DELAY	60
INSTALL MENU	SELECT

BALANCE POINTS	
LOW BALANCE HIGH BALANCE	45 °F 95 °F
INSTALL MENU	SELECT

AUTO CHANGEOVER	
DISABLE	
ENABLE	
INSTALL MENU	SELECT

AUXILIARY HEAT

With the 81M28, either an electric or gas heat source can be used as an auxiliary backup to the heat pump. Choose STANDARD-COMP=ON if an electric backup source is to be used. Choose ADD ON-COMP=OFF is a gas backup source is to be used.

RESIDUAL COOL

In order to get greater efficiency from the cooling system, the fan can be programmed to run for 0 (OFF), 30, 60, 90, or 120 seconds after the air conditioner has shut off. Residual cool may interfere with proper system operation. Consult the system operating manual.

BALANCE POINTS

This screen will appear only when the outdoor sensor (Part #46M98) is connected to the 81M28 thermostat. When this sensor is used with the 81M28, you can set the lower and upper temperatures to disable or enable 2nd stage heat.

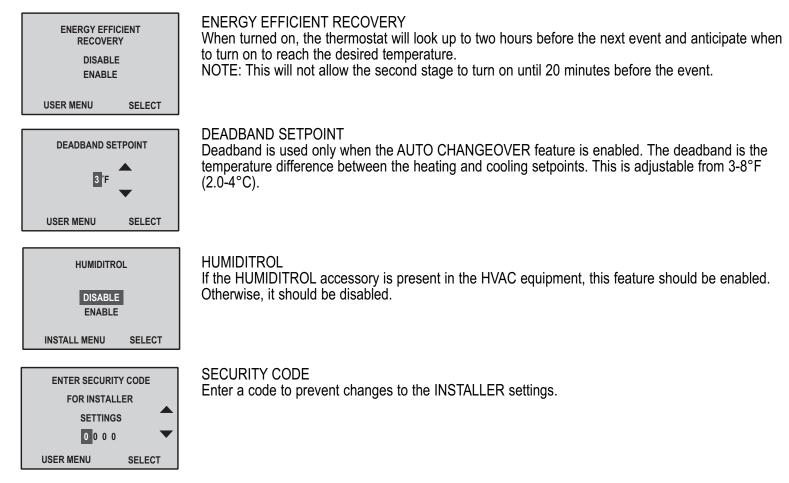
At outdoor temperatures above the high balance point, only the heat pump is allowed to run. At outdoor temperatures below the low balance point, only the auxiliary heat source is allowed to run. At outdoor temperatures between the high and low balance points, both the heat pump and the auxiliary heat source are allowed to run.

AUTO CHANGEOVER

When turned on, the thermostat will switch automatically between heating and cooling to maintain the optimal temperature in your home.

When Auto Changeover is enabled in Installer Settings, it will also appear in the HEAT/COOL menu described earlier. Auto Changeover must be enabled in both places in order to function.

INSTALLER settings (continued)



INSTALLER settings (continued)

CONTACT INFORMATION This allows the servicing HVAC contractor to put their name and phone number into the thermostat to remind you when service may be required.
SERVICE MONITOR MENU Different service monitors are provided, depending on which model you have. The filter monitor is provided on all models. On the 81M26 and 81M27, the heat monitor and cool monitor is also provided. On the 81M28, the system monitor is provided. All monitors can be set based on the HVAC system run time or the calendar. See Reminder Interval.
All Service Monitors can be set from OFF to 360 days in 30 day increments or OFF to 980 in 20 hour increments.
REMINDER PERIOD The Reminder Period can be set for either HVAC system run time or based on the calendar.
If Run Time is chosen, the service reminder will be set in hours. After the HVAC system has been operating for the selected number of hours, a Service Reminder will be displayed informing you that service is suggested for your system.
If Calendar Time is chosen, the service reminders will be set in days. After the selected number of days has passed, a Service Reminder will be displayed informing you that service is suggested for your system.
TEMPERATURE OFFSET The temperature offset feature adds or subtracts the desired amount from the displayed room temperature reading. For example, if the displayed room temperature is 75 and, for some reason, you want it to read 73, simply enter a value of -2 for the temperature offset. The temperature offset is selectable from -3 to +3 degrees.

When would I need to change the INSTALLER settings? NEVER! The INSTALLER SETTINGS are selected based on the type of equipment you have in your home. This feature should be set only by a certified HVAC technician. Changing these settings could result in higher energy costs and may even damage your equipment. There is a security lock on this feature to prevent tampering. USE IT!

How does Energy Efficient Recovery[™] (EER[™]) work?

Energy Efficient Recovery[™] is an energy saving feature. During a set back period (or set up in cooling), it allows the thermostat to look up to two hours ahead to determine when to turn on the heating (cooling) system. During this time period, the second stage is locked out until 20 minutes before the next programmed event to allow the first (and most efficient stage) to bring your home to the desired temperature.

How does my remote outdoor sensor work?

The remote outdoor sensor (Part #46M98) can be used to aid in the comfort of your home or simply as a sensing device to inquire about outdoor conditions. In most applications, the thermostat will have a display of the temperature sensed by the remote outdoor sensor. With your heat pump system, the remote outdoor sensor can help determine when to turn on the second stage of heating for optimal comfort.

Where should I install a remote outdoor sensor?

The remote outdoor sensor should be installed on the northern wall of your home, away from direct sunlight or other heat sources that may affect its sensitivity.

NOTE: Use twisted pair wire (84X49) for the installation of the outdoor sensor.

What do the lights below the display mean?

The lights indicate different operations of the HVAC equipment.

With a call for heating or cooling, the HEAT or COOL light will be illuminated on the 81M26 and 81M27.

The AUX light indicates the second (backup) stage of heating. This is used only on the 81M28 model.

The CHECK light is used on all models. It indicates the equipment should be serviced by a qualified technician.

The EMER light indicates that the emergency heat is enabled in the HEAT/COOL menu (regardless of heat demand). This light is used only on the 81M28 model.

What should I do if my power goes out?

Make sure your family is safe and don't worry about the thermostat. Your thermostat automatically retains the time of day for approximately two hours in the event of a power outage. All other programmed parameters are stored permanently in memory. So, if your power is out for more than two hours, simply reset the clock. See page 4.

How do I reset the thermostat program to factory conditions?

To reset the thermostat to factory conditions, press the UP button and the LEFT button at the same time. Hold for 8 seconds. The time of day will display 12:00 indicating a reset has occurred.

NOTE: This will erase all programming and return the thermostat to the factory conditions (including the installer settings) along with erasing current security codes. Use this only as a last resort.

How do I know if the heating or cooling is on?

The display of the thermostat will indicate the operating mode, HEAT or COOL. When the temperature in your home decreases or increases, the heating or cooling cycle will come on based on the displayed mode. Also, lights along the bottom crease of the thermostat will indicate various equipment operations.

Who do I contact for more information?

Simply call 1-800-9LENNOX or visit us on the web at www.lennox.com.

My energy bills are too high. Is there anything I can do?

While we can't do anything about the high cost of energy, we can try to use less energy and thereby lower our heating and cooling costs.

Generally, the best way to do this is to use the EPA ENERGYSTAR® recommended setpoints for heating and cooling.

	ENERGYSTAR [®] Setpoints	
	Winter	Summer
	(Heating)	(Cooling)
Morning	70°F (21°C)	78°F (25°C)
Day	62°F (17°C)	85°F (29°C)
Evening	70°F (21°C)	78°F (25°C)
Night	62°F (17°C)	82°F (28°C)

Another way to contain costs is to cycle the heat pump or air conditioner with moderation. The thermostat controls the cycle rate based on temperature differentials. By maintaining a reasonable differential setting, 1°F for 1st stage and 2°F for 2nd stage, your furnace will cycle with moderation.

Finally, using the remote outdoor sensor coupled with the balance point feature (see INSTALLER SETTINGS, page 22) will allow your furnace to cycle to the most efficient stage for your heating or cooling needs.



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