

T8131A,B,C; T8132A,B,C Programmable Thermostats

The T8131 and T8132 Thermostats provide energy savings for single-stage heating and cooling applications while providing reliable, precise temperature control.



T8131C
T8132C

T8131/T8132 Models

- HEAT-OFF-COOL system switch.
- AUTO-ON fan switch.
- Separate programs for weekdays and weekends 5 day/2 day.
- Digital LCD display.
- Easy to program and install.
- Precise temperature control.
- Four daily energy saving programs.
- Available in taupe and Premier White™.
- Compatible with most 24 Vac standing pilot, gas electronic ignition, oil or central electric systems.

T8131 Models Only

- Powered directly from 24 Vac system transformer.
- Green light emitting diode (LED) lights when properly connected.
- Two AA alkaline batteries for backup power recommended.

T8132 Models Only

- Requires two AA alkaline batteries.
- LCD flashes “bAt Lo” indicating low battery power.
- Isolated heating/cooling circuits.

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Specifications

IMPORTANT: *The specifications given in this publication do not include normal manufacturing tolerances; therefore, an individual unit may not exactly match the listed specifications. Also, this product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.*

MODELS:

T8131A/T8132A Programmable Thermostats: Provide eight program keys; with keyboard door.

T8131B/T8132B Programmable Thermostats: Provide eight program keys; without keyboard door.

T8131C/T8132C Programmable Thermostats: Deluxe models, provide twelve program keys including usage key; with keyboard door.

ELECTRICAL RATING: T8131: 24 Vac.

T8132: Battery operated (2 AA alkaline batteries).

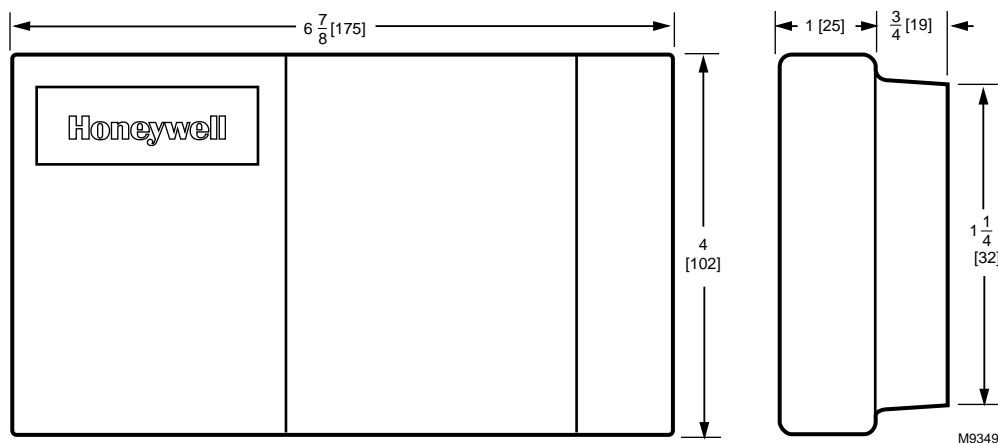
SYSTEM AND FAN RATINGS:

1.2A run; 7.5A inrush.

Total cooling and fan load not to exceed 1.2A.

DIMENSIONS: See Fig. 1.

Fig. 1—Dimensions in in. [mm] of T8131 and T8132 models.



MOUNTING MEANS: Position mounting plate directly on wall using two mounting screws and wall anchors provided (See Fig. 2).

LIGHT EMITTING DIODE (LED): One LED on T8131 models only; lights to indicate proper operation when both sides of the 24 Vac system transformer are properly connected. See Fig. 2 for position of LED.

SET POINT RANGE: 45° F to 88° F [7° C to 31° C].

OPERATING AMBIENT TEMPERATURE RANGE: 40° F to 110° F [4° C to 43° C].

SHIPPING TEMPERATURE RANGE: -20° F to 120° F [-29° C to -49° C].

OPERATING RELATIVE HUMIDITY: 5 percent RH to 90 percent RH; noncondensing.

TIME INDICATION: 12 hour with AM, PM indication.

Ordering Information

When purchasing replacement and modernization products from your TRADELINE® wholesaler or your distributor, refer to the TRADELINE Catalog or price sheets for complete ordering information, or specify—

1. Order Number.
2. Accessories, if desired.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Home and Building Control Sales Office (check white pages of phone directory).
2. Home and Building Control Customer Satisfaction
Honeywell Inc., 1985 Douglas Drive North
Minneapolis, Minnesota 554212-4386 (612) 951-1000.

In Canada—Honeywell Controls Limited/Honeywell Limitée, 740 Ellesmere Road, Scarborough, Ontario M1P 2V9. International Sales and Service offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

CYCLES PER HOUR ADJUSTMENT:

Heating: Field adjustable to 3, 6, or 9 cph ±10 percent.
 Cooling: Factory-set at 3 cph ±10 percent (not field adjustable).

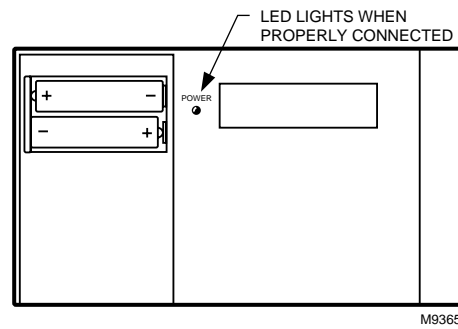
CALIBRATION: Thermostat and thermometer self-calibrating to ±1.25° F.

FINISH: All models available in taupe and Premier White™.

ACCESSORIES:

- 205013 Isolation Relay kit.
- 205014 Transformer Plug-in Kit.
- 205015 International Organization for Standardization Relay and Transformer.

Fig. 2—T8131 LED.



Installation

WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully. Failure to follow instructions can damage product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product and the compatibility chart below to make sure the product is suitable for your application.
3. Make sure installer is a trained, experienced service technician.
4. After completing installation, use these instructions to check out product operation.

COMPATIBILITY

Check Table 1 to make sure the thermostat is compatible with the intended system.

TABLE 1—COMPATIBILITY CHART.

System Type	Compatible with T8131/T8132
Gas—Standing Pilot	Yes
Gas—Electronic Ignition	Yes
Gas-Fired Boilers	Yes ^a
Gas— <i>Millivolt</i>	<i>No</i>
Oil-Fired Boilers	Yes ^a
Oil-Fired Furnace	Yes
Electric Furnace	Yes
Electric Air Conditioning	Yes
<i>Baseboard Electric (120/240 Line Volt)</i>	<i>No</i>
<i>Heat pumps/Multistage Equipment</i>	<i>No</i>

Not compatible with any 120/240 volt circuit.

Not designed for steam or gravity systems.

^a Compatible with 2-wire Honeywell zone valves. Isolating relay required for 3-wire thermostats for zone valves. Not compatible with 2-wire White Rodgers no. 1361 Valves.



WARNING

ELECTROCUTION HAZARD CAN CAUSE PROPERTY DAMAGE, SEVERE INJURY, OR DEATH.

Disconnect power supply before wiring to prevent electrical shock or equipment damage.

LOCATION

Locate the thermostat about 5 ft [1.5m] above the floor in an area with good air circulation at average temperature. Do not mount the thermostat where it may be affected by:

- drafts or dead spots behind doors and in corners.
- hot or cold air ducts.
- concealed pipes and chimneys.
- unheated (uncooled) areas such as an outside wall behind the thermostat.

MOUNT THERMOSTAT MOUNTING PLATE (FIG. 2)

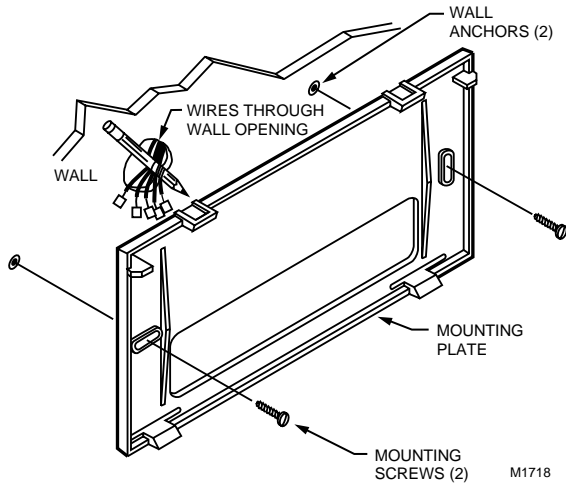
Position mounting plate on wall. Use spirit level to make sure mounting plate is level. Use a pencil to mark the two mounting holes.

Level for appearance only; thermostat will function properly even when not level. Tighten mounting screws.

Remove mounting plate from wall, and drill 3/16 inch holes in wall (if drywall) as marked. For firmer material such as plaster or wood, drill 7/32 inch holes. Gently tap anchors (provided) into drilled holes until flush with the wall.

Reposition mounting plate over holes, pulling wires through wiring opening. Loosely insert two mounting screws into holes.

Fig. 3—Mounting thermostat mounting plate.



WIRING

All wiring must comply with all applicable electrical codes, ordinances, and regulations. Follow instructions provided with the controlled equipment.

Loosen the terminal screws and slip each wire beneath its matching terminal. See Fig. 4 for wiring insertion techniques. Tighten terminals securely.

Plug the hole in the wall with insulation to help prevent drafts from adversely affecting thermostat operation.

T8131 Models

Run the required number of wires to the thermostat location (check the appropriate wiring diagram). Refer to Figs. 5 through 7 for typical wiring diagrams.

T8132 Models

Run the required number of wires to the thermostat location (check the appropriate wiring diagram). Refer to Figs. 8 through 11 for typical wiring diagrams.

In 5-wire installations only, be sure to remove the factory-installed jumper connecting terminals R and Rc.

Fig. 4—Proper wiring technique.

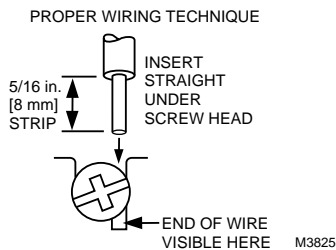


Fig. 5—3-wire heat-only application.

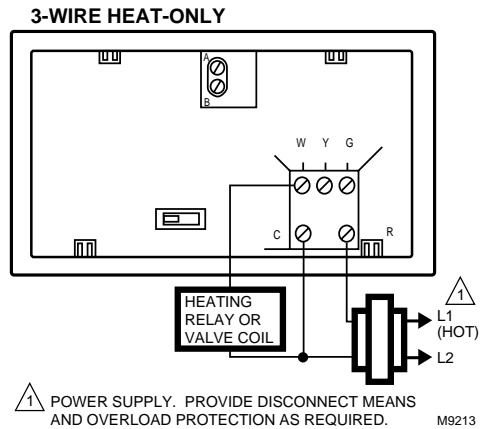


Fig. 6—4-wire cool-only application.

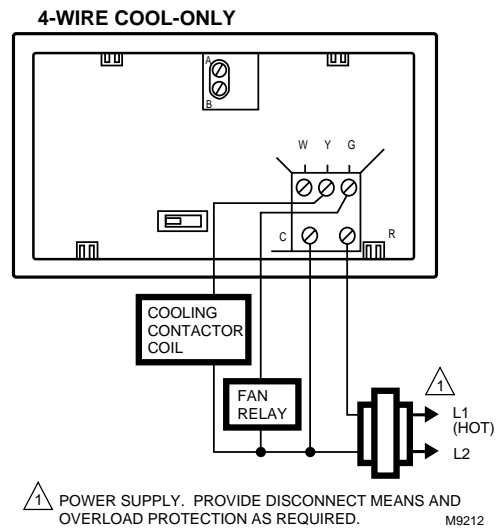


Fig. 7—5-wire heat/cool application.

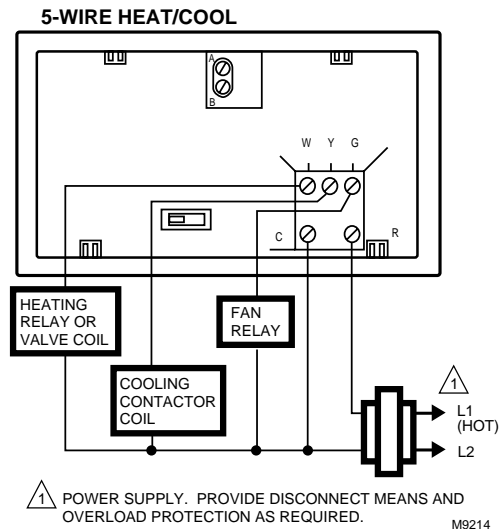


Fig. 8—2-wire heat-only application (jumper intact).

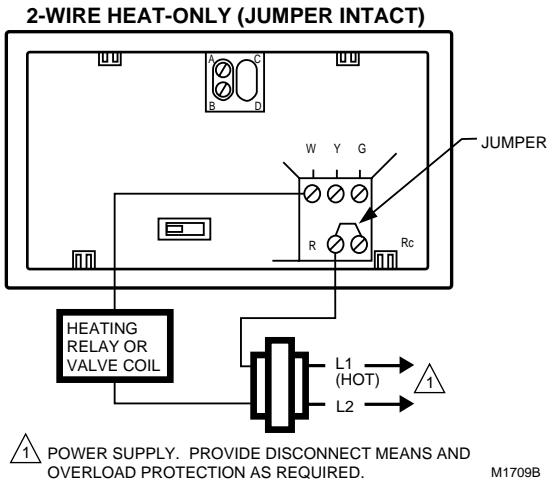


Fig. 9—3-wire cool-only application (jumper intact).

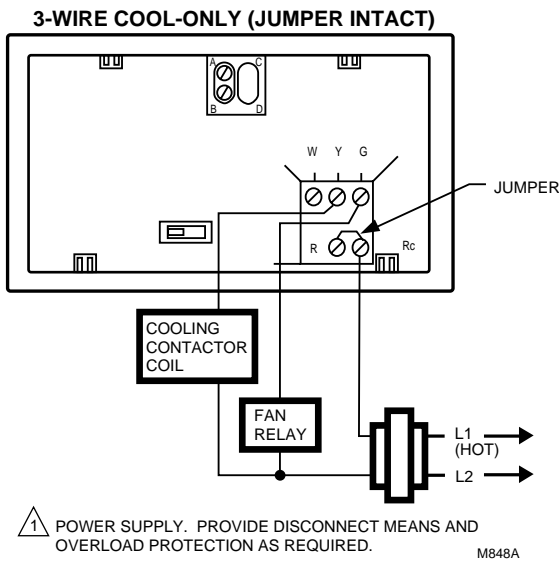


Fig. 10—4-wire heat/cool application (jumper intact).

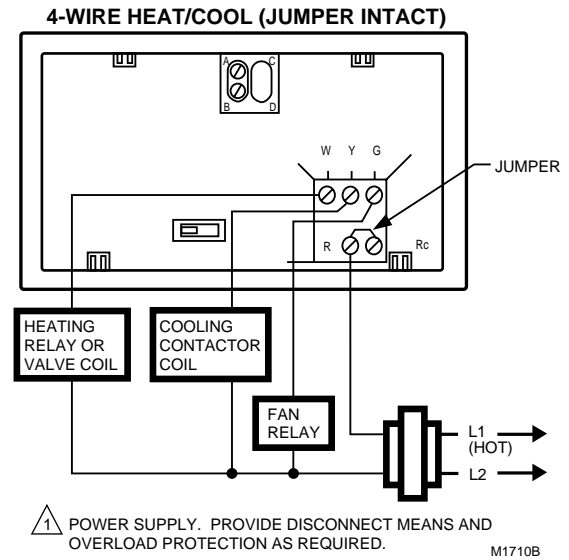
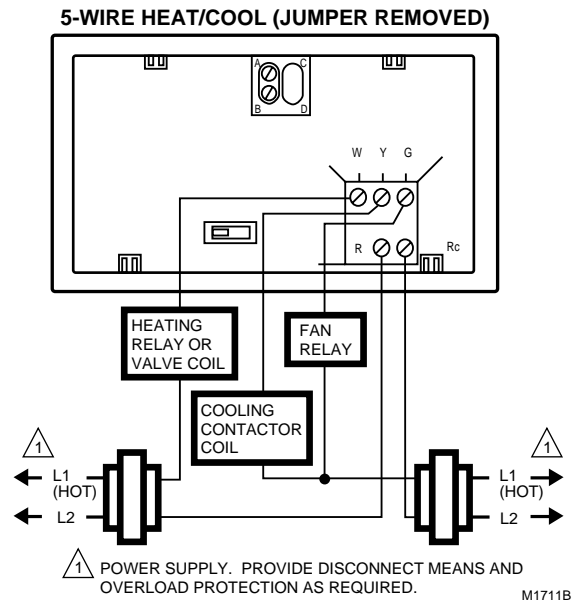


Fig. 11—5-wire heat/cool application (jumper removed).

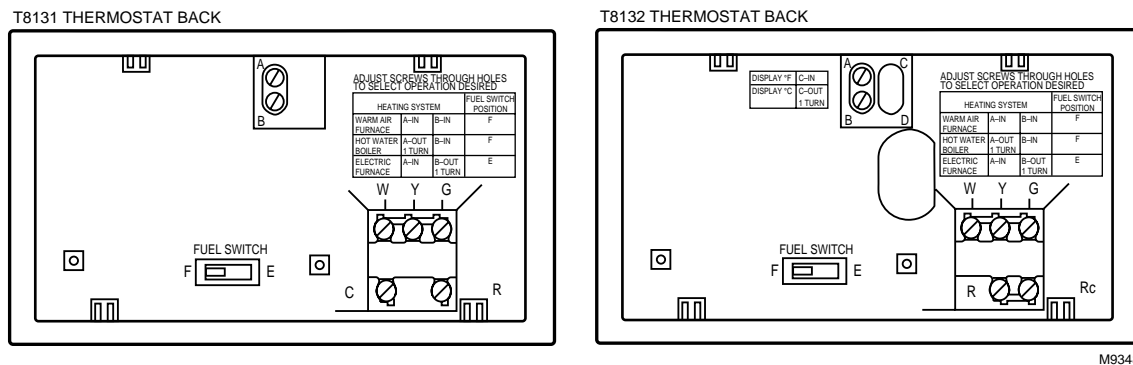


ADJUST FAN OPERATION SWITCH, AS REQUIRED

The thermostat fan operation switch, labeled FUEL SWITCH (see Fig. 12) is factory-set in the “F” position. This is the correct setting for most systems. If this system is

an electric heat system, set the switch to “E.” The “E” setting will allow the fan to turn on immediately with the heating or cooling in a system where the “G” terminal is connected.

Fig. 12—T8131 and T8132 back.



ADJUST SYSTEM ON-LENGTH, AS REQUIRED

The thermostat on-length is factory-set for a warm air, gas or oil heating system. When installing it on another type of system, adjust the on-length accordingly by setting screws A and B on the back of the thermostat, using the heating system table in Fig. 12 as a guide. To minimize room temperature swings, optimize the on-length according to the type of system. Adjusting the screw “out one turn” means turning the screw approximately 360°, or about one complete turn.

NOTE: These thermostats do not have a setting for steam/gravity air. Cycles would not be long enough for accurate temperature control.

NOTE: For condensing furnaces, follow manufacturer instructions.

If you want a longer on-length, readjust the screws as follows (refer to the heating system table in Fig. 12):

If on-length screws A,B are adjusted to match this system:	For longer on-length, readjust screws A,B to match this system:
Electric furnace	Warm air furnace
Warm air furnace	Hot water boiler

INSTALL BATTERIES

IMPORTANT: All T8132 models require batteries for programming and operation of the thermostat and heating/cooling system. Batteries are optional for T8131 models, but are recommended to retain program memory if ac power is lost.

Use two AA alkaline batteries; nonalkaline batteries will not last as long. We recommend Energizer batteries.

Make sure the thermostat is set to OFF position.

Use a coin to remove battery door (see Fig. 13).

Install the fresh batteries as shown, making sure positive and negative terminals are oriented correctly (see Fig. 14).

Replace battery door.

T8132 Models

As the batteries are running low, a “bAt Lo” indicator will flash for one to two months before batteries run out completely. Replace the batteries as soon as possible after the indicator starts flashing. If the batteries are not replaced sometime during the flashing “bAt Lo” indicator, the indicator will eventually stop flashing. When the batteries are almost completely dead, “bAt Lo” will stay on without flashing to indicate the thermostat and heating/cooling system have stopped working.

The thermostat will not function after the batteries are completely dead, and the “bAt Lo” indicator will disappear, leaving a completely blank display.

Press down on left ends of batteries to remove. If the new batteries are inserted within 20-30 seconds of removing the old ones, the thermostat will not require reprogramming. However, if the display is blank, the batteries are dead or incorrectly installed and the thermostat requires reprogramming. See owner’s manual to reprogram.

T8131 Models

When the batteries are running low, the LED will display “bAtLo” only when 24 Vac is not present, indicated by an unlit LED.

IMPORTANT: Although the thermostat has a low battery indicator, replace the batteries once a year to prevent the thermostat from losing time and program due to lack of battery power.

Fig. 13—Removing the battery door.

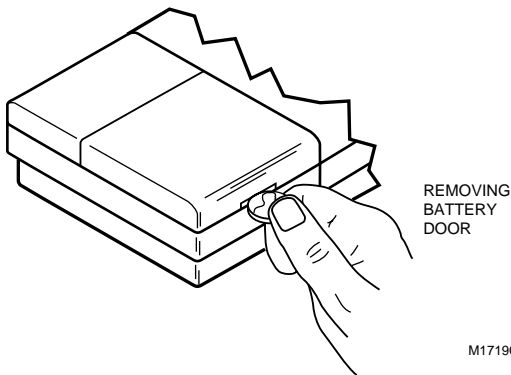
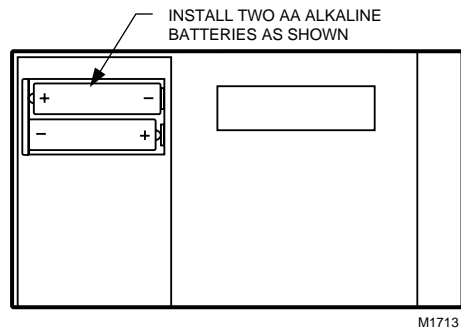


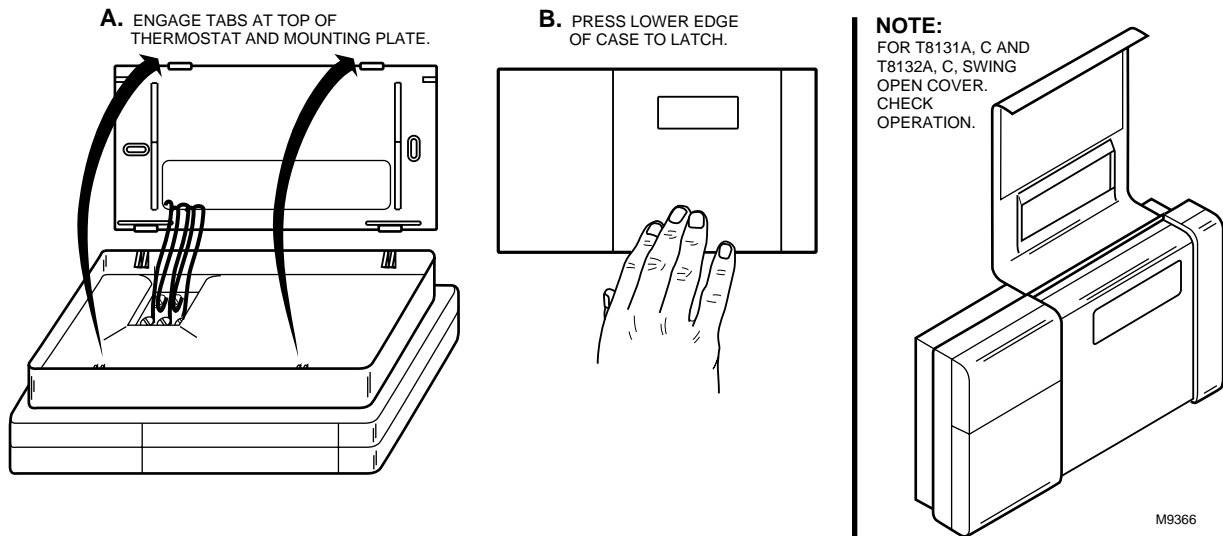
Fig. 14—Installing position for batteries.



MOUNTING THE THERMOSTAT

To mount the thermostat on the subbase, engage the tabs at the top of the thermostat and mounting plate (see Fig. 14) and then press the lower edge of the case to latch.

Fig. 15—Mounting the thermostat on the subbase.



Programming the Thermostat

T8131A AND T8132A MODELS

Set Current Time/Day

To set time, press and release **Set Clock/Day** once, then press **Ahead** or **Back** until the current time displays. To set day, press and release **Set Clock/Day** again, and then press **Ahead** or **Back** until the current day displays; then press **Run Program**.

Heating Program

With the system switch at HEAT, press and release **Set Schedule** once. "WAKE," Mon-Fri and "SET" appear on the display.

Press **Ahead** or **Back** to program "WAKE" time and **Warmer** or **Cooler** to program "WAKE" temperature for Mon-Fri. Repeat this sequence for "LEAVE," "RETURN," and "SLEEP."

Press **Set Schedule** until "SA SU," and "SET" appear on the display. Then press **Ahead** or **Back** to program "WAKE" time and **Warmer** or **Cooler** to program "WAKE" temperature for Sat-Sun. Repeat this sequence for "SLEEP."

Cooling Program

With the system switch at COOL, follow the same instructions as for Heating Program section.

After programming, adjust the fan and system switches as desired. Press and release **Run Program** to start the program.

A Quick Guide for Operating or Making Changes

NOTE: System switch must be set to Heat or Cool to perform the following.

To temporarily change the temperature for the current period only, press **Warmer** or **Cooler**. The temperature will cancel itself at the next scheduled change. To cancel sooner, press **Run Program**.

To hold a temperature indefinitely, press **Hold Temp** then **Warmer** or **Cooler**. To cancel, press **Run Program**.

To check current temperature setting, press **Run Program**. (If using TEMPORARILY CHANGE or HOLD, pressing this key will cancel the change.)

To check programs, press **Set Schedule** repeatedly to see each time and temperature; then press **Run Program**.

To cancel a program, press **Set Schedule** until the program to cancel shows; then press **Ahead** and **Back** together.

To permanently change a program, repeat steps in Heating Program or Cooling Program section as applicable.

To Return to the normal program or the start program, press **Run Program**.

T8131B AND T8132B MODELS

Set Current Time/Day

To set time, press and release **Clock/Day** once, then press **Time ▲** or **▼** until current time displays. To set day, press and release **Clock/Day** again, and then press **Time ▲** or **▼** until current day displays; then press **Run Program**.

Heating Program

With system switch at HEAT, press and release **Schedule** once. "WAKE," Mon-Fri and "SET" appear on the display.

Press **Time ▲** or **▼** to program "WAKE" time and **Temp ▲** or **▼** to program "WAKE" temperature for Mon-Fri. Repeat this sequence for "LEAVE," "RETURN," and "SLEEP."

Press **Schedule** until "SAT SUN," "WAKE" and "SET" appear on the display. Then press **Time ▲** or **▼** to program "WAKE" time and **Temp ▲** or **▼** to program "WAKE" temperature for Sat-Sun. Repeat this sequence for "SLEEP."

Cooling Program

With system switch at COOL, follow the same instructions as for Heating Program section.

After programming, adjust fan and system switches as desired. Press and release **Run Program** to start the program.

A Quick Guide for Operating or Making Changes

NOTE: System switch must be set to Heat or Cool to perform the following.

To temporarily change the temperature for the current period only, press **Temp ▲** or **▼**. The temporary indicator will show on the display and will cancel itself at the next scheduled change. To cancel sooner, press **Run Program**.

To hold a temperature indefinitely, press **Hold Temp**, then **Temp ▲** or **▼**. To cancel, press **Run Program**.

To check current temperature setting, press **Run Program**. (If using TEMPORARILY CHANGE or HOLD, pressing this key will cancel the change.)

To check programs, press **Schedule** repeatedly to see each time and temperature; then press **Run Program**.

To cancel a program, press **Schedule** until program to cancel shows; then press **Time ▲** and **▼** together.

To permanently change a program, repeat steps in Heating Program or Cooling Program section as applicable.

To Return to the normal program or the start program, press **Run Program**.

T8131C AND T8132C MODELS

Set Current Time/Day

To set time, press and release **Set Clock/Day** once, then press **Ahead** or **Back** until current time displays. To set day, press and release **Set Clock/Day** again, and then press **Ahead** or **Back** until current day displays; then press **Run Program**.

Heating Program

With system switch at HEAT, press and release **Weekday Schedule** once. "WAKE," Mon-Fri and "SET" appear on the display.

Press **Ahead** or **Back** to program "WAKE" time and **Warmer** or **Cooler** to program "WAKE" temperature for Mon-Fri. Repeat this sequence for "LEAVE," "RETURN," and "SLEEP."

Press **Weekend Schedule** until "SAT SUN," "WAKE" and "SET" appear on the display. Then press **Ahead** or **Back** to program "WAKE" time and **Warmer** or **Cooler** to program "WAKE" temperature for Sat-Sun. Repeat this sequence for "SLEEP."

Cooling Program

With system switch at COOL, follow the same instructions as for Heating Program section.

After programming, adjust fan and system switches as desired. Press and release **Run Program** to start the program.

A Quick Guide for Operating or Making Changes

NOTE: System switch must be set to Heat or Cool to perform the following.

To temporarily change the temperature for the current period only, press **Warmer** or **Cooler**. The temperature will cancel itself at the next scheduled change. To cancel sooner, press **Run Program**.

To hold a temperature indefinitely, press **Hold Temp** then **Warmer** or **Cooler**. To cancel, press **Run Program**.

To check current temperature setting, press **Present Setting**.

To check programs, press **Weekday Schedule** then **Weekend Schedule** repeatedly to see each time and temperature; then press **Run Program**.

To cancel a program, press **Weekday Schedule** then **Weekend Schedule** until the program to cancel shows; then press **Clear**.

To check usage, press **Usage** for the length of time heat or air conditioning has been running today since midnight. Press this key again for yesterday's usage, and again for cumulative usage. Press **Clear** to clear cumulative reading if desired; then press **Run Program**.

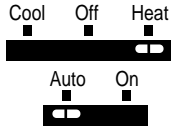




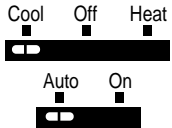




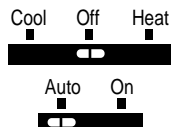
To permanently change a program, repeat steps in Heating Program or Cooling Program section as applicable.

To Return to the normal program or the start program, press **Run Program**.

Checkout and Settings

CHECKOUT

After the thermostat is mounted on the subbase, check operation as follows:

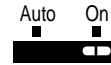
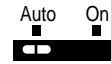
	Model	
	A,C	B
Heating		
For T8131 models only, first check that the green power LED is lit, indicating the thermostat is powered properly.		
Do <i>not</i> check heating system operation by jumpering thermostat terminals at the primary control, such as the gas valve, zone valve, or oil burner control. This will damage the thermostat.		
Move the system switch to HEAT and the fan switch to AUTO.		
Press key until the setting is about 10° F [6° C] above room temperature. After a short delay, heating should start and the fan should run (immediately if fan operation switch is set in E position).		Temp 
Press key until setting is about 10° F [6° C] below room temperature. The heating equipment should shut off.		Temp 
Cooling	A,C	B
For T8131 models only, before continuing check that the green LED is lit, indicating the thermostat is powered properly.		
To avoid possible compressor damage, do not operate the cooling system when outside temperature is below 50° F [10° C]. See compressor manufacturer instructions for further information.		
NOTE: When cooling setting is changed, thermostat may delay up to five minutes before turning on the air conditioner to protect the compressor.		
Move the system switch to COOL and the fan switch to AUTO.		
Press key until setting is about 10° F [6° C] below room temperature. The cooling equipment and fan should start		Temp 
Press key until the setting is about 10° F [6° C] above room temperature. The cooling equipment and fan should stop.		Temp 
Move the system switch to OFF with the fan switch remaining at AUTO. The system and fan should be off.		

SETTINGS AND ADJUSTMENTS**Set the Fan and System Switches**

First set the fan switch

FAN AUTO: Normal setting for most homes. A single-speed fan will turn on automatically with the air conditioner or furnace. A two-speed fan will usually run on high with the air conditioner and on low with the furnace.

FAN ON: The fan runs continuously. Use for improved air circulation during special occasions or for more efficient electronic air cleaning.

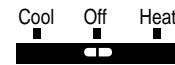


Then set the system switch.

COOL: The thermostat controls the air conditioning system.

OFF: Both the heating and air conditioning systems are off.

HEAT: The thermostat controls the heating system.



Troubleshooting

IF...

Display will not come on.

THEN...**T8131**

- Check that green LED is lit.

T8132

- Set the system switch to OFF; remove batteries; insert backward for at least five seconds to reset thermostat; replace batteries correctly. Display should come on.
- Make sure batteries are fresh and installed correctly.

Temperature display will not go lower than 45° F [7° C] or higher than 88° F [31° C] during programming.

T8131/T8132

- The temperature setting limit has been reached. The setting range is 45° F to 88° F [7° C to 31° C].

Heating will not come on.

T8131

- Check that green LED is lit.

T8132

- If display is blank or says “bAt Lo,” install fresh batteries.

T8131/T8132

- Check that switch on thermostat is set to HEAT.
- Check the system fuse or circuit breaker and replace or reset if necessary.
- If temperature setting is higher than current temperature, and SYSTEM ON indicator is lit, see furnace manufacturer instructions.

Cooling will not come on.

T8131

- Check that green LED is lit.

T8132

- If display is blank or says “bAt Lo,” install fresh batteries.
- If 2- or 4-wire installation, verify that R-Rc jumper is installed.

T8131/T8132

- Check that switch on thermostat is set to COOL.
- Check the system fuse or circuit breaker and replace or reset if necessary.
- The thermostat has a built-in time delay on cooling. Allow five to ten minutes after changing the setting before the air conditioner starts.
- If temperature setting is lower than current temperature, and SYSTEM ON indicator is lit, move system switch from COOL to OFF for ten minutes.

Cooling will not come on (Continued).

After ten minutes, return switch to COOL position. If air conditioner comes on, compressor may have reached its high limit temperature protection and shut down. If air conditioner does not come on after the ten minutes and the SYSTEM ON indicator is lit, see air conditioner manufacturer instructions.

SYSTEM ON indicator is lit, but no heat is coming from the registers.

- Allow time for the furnace to heat up and the fan to come on before checking for heat at the register. Check to make sure system on-length is set correctly according to instructions on page 6.

Furnace or air conditioner cycles too frequently.

- Check system setting on back of thermostat.

The system on-length is too short or too long.

- Readjust according to instructions on page 6.

The thermostat current setting does not match the display temperature.

- Check that the wiring hole in the wall behind the wallplate has been plugged with insulation to prevent drafts that might adversely affect thermostat operation.
- Be aware that it is normal for the current setting and display temperature to differ occasionally.

Cross Reference

T8131/T8132 CROSS REFERENCE CHART.

Model Number	Description	T8131/T8132 Trade Replacement	Remarks
T8131 models:			
C1004	Honeywell logo; TRADELINE® model.	T8131C1004	
C1012	Honeywell logo; TRADELINE® model; Premier White™.	T8131C1012	
T8132 models:			
A1007	Honeywell logo; Honeywell Canada TRADELINE® model; configurable for °F/°C.	T8132C1003	°F only.
		T8132C1011	Replacement is Premier White™, °F only.
A1015	Carrier Weathermaker logo; Carrier part no. HH07AX017; Fixed 6CPH.	T8132C1003	
		T8132C1011	Replacement is Premier White™.
A1023	Enerplus logo; configurable for °F/°C.	T8132C1003	°F only.
		T8132C1011	Replacement is Premier White™; °F only.
B1005	Zone Perfect logo; Carrier part no. HH07AX016; Fixed 6 CPH.	T8132C1003	Replacement has a keyboard door.
		T8132C1011	Replacement has a keyboard door and is Premier White™.
C1003	Honeywell logo; TRADELINE® model.	T8132C1003	
C1011	Honeywell logo; TRADELINE® model; Premier White™.	T8132C1011	

Honeywell

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