Installation Manual

TP-P-605

P.O. Box 3377
Springfield, MO 65808-3377

Toll Free : 888-776-1427
Web: www.vivecomfort.com
Hours of Operation: M-F 9AM - 6PM Eastern

VM-605-IM-2443

Thermostat Application Guide

Description	
Gas or Oil Heat	Yes
Electric Furnace	Yes
Heat Pump (No Aux. or Emergency Heat)	Yes
Heat Pump (With Aux. or Emergency Heat)	No
Multi-Stage Systems	No
Heat Only Systems	Yes
Heat Only Systems - Floor or Wall Furnace	Yes
Cool Only Systems	Yes
Millivolt	Yes

Table of Contents

Power Type

Battery Power
Hardwire (Common Wire)
Hardwire (Common Wire) with Battery Backup

A trained, experienced technician must install this product.

Carefully read these instructions. You could damage this product or cause a hazardous condition if you fail to follow these instructions.

Una version en espanol de este manual se puede descargar en la pagina web de la compania.

Specifications

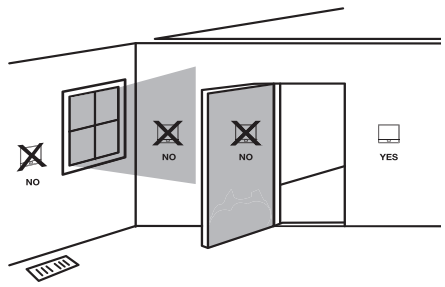
The display range of temperature ... 41˚F to 95˚F (5˚C to 35˚C)
The control range of temperature.... 44˚F to 90˚F (7˚C to 32˚C)
Swing (cycle rate or differential) ..... Heating is adjustable from 0.2˚ to 2.0˚
Cooling is adjustable from 0.2˚ to 2.0˚
Power source .....18 to 30 VAC, NEC Class II, 50/60 Hz for hardwire
Battery power from 2 AA Alkaline batteries
Operating ambient ..... 32˚F to +105˚F (0˚C to +41˚C)
Operating humidity ..... 90% non-condensing maximum
Dimensions of thermostat ..... 4.7"W x 4.4"H x 0.8"D

Rev. 2443

Installation Tips (For professional technicians only)

Wall Locations

The thermostat should be installed approximately 4 to 5 feet above the floor. Select an area with average temperature and good air circulation.



Do not install thermostat in locations:

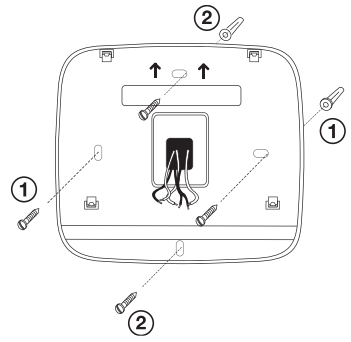
- Close to hot or cold air ducts
- That are in direct sunlight
- With an outside wall behind the thermostat
- In areas that do not require conditioning
- Where there are dead spots or drafts (in corners or behind doors)
- Where there might be concealed chimneys or pipes

Installation Tip

Pick an installation location that is easy for the user to access. The temperature of the location should be representative of the building.

Subbase Installation

① Horizontal Mount
② Vertical Mount



For vertical mount put one screw on the top and one screw on the bottom.
For horizontal mount put one screw on the left and one screw on the right.

Installation Tip: Electrical Hazard

Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.

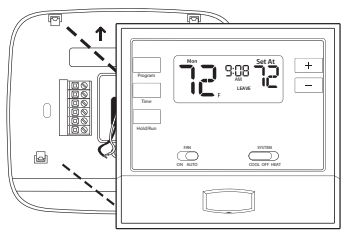
Mercury Notice

All of our products are mercury free. However, if the product you are replacing contains mercury, dispose of it properly. Your local waste management authority can give you instructions on recycling and proper disposal.

Installation Tips

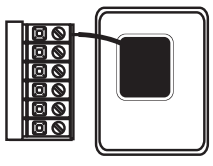
Mount Thermostat

Align the 4 tabs on the subbase with corresponding slots on the back of the thermostat, then push gently until the thermostat snaps in place.



Battery Installation

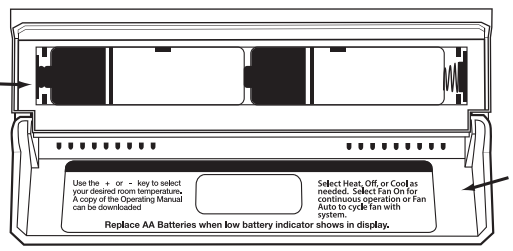
Battery installation is recommended even if thermostat is hardwired (C terminal connected). When thermostat is hardwired and batteries are installed, the thermostat will activate a compressor delay of 5 minutes when the thermostat detects a power outage from the hardwired power supply.



Important:

High quality alkaline batteries are recommended. Rechargeable batteries or low quality batteries do not guarantee a 1-year life span.

Insert 2 AA Alkaline batteries (included). High quality alkaline batteries are recommended.

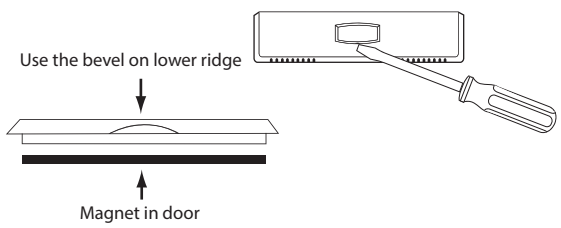


Simple operating instructions are found on the back of the battery door.

About The Badge

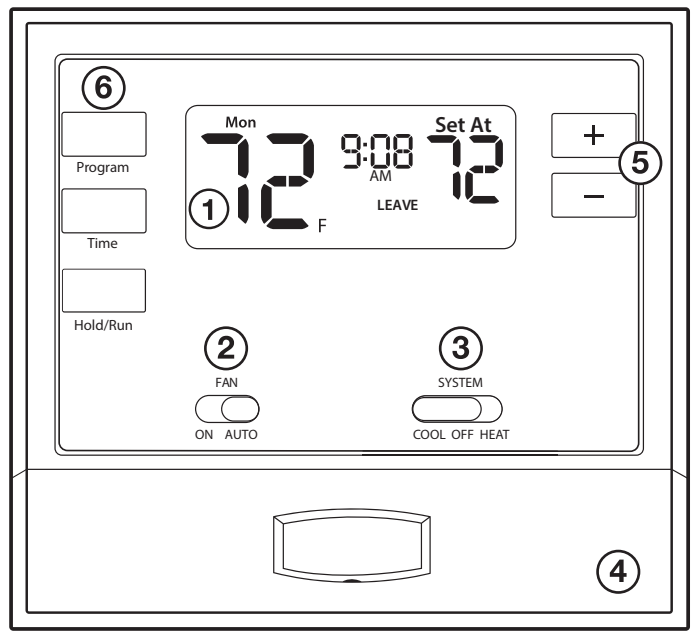
All of our thermostats use the same universal magnetic badge. Visit the company website to learn more about our free private label program.

Gently slide a screwdriver into the bottom edge of the badge. Gently turn the screwdriver counter clock-wise. The badge is held on by a magnet in the well of the battery door. The badge should pry off easily. **DO NOT USE FORCE.**



Thermostat Quick Reference (For professional technicians only)

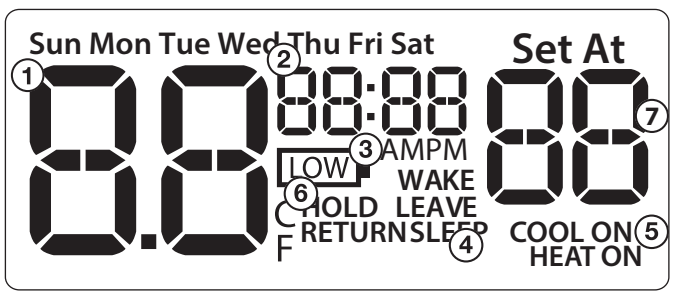
Getting to know your thermostat



① LCD Display
② Fan Switch
③ System Switch
④ Easy change battery door
⑤ Temperature Setpoint Buttons
⑥ User Buttons

Thermostat Quick Reference

Getting to know your thermostat



1. **Indicates the current room temperature**
2. **Time and day of the week**
3. **Low Battery Indicator:** Replace batteries when this indicator is shown.
4. **Program Time Periods:** This thermostat has 4 programmable time periods per day.
5. **System Operation Indicators:** ON will display when the COOL or HEAT is on. Compressor delay feature is active if Flashing.
6. **Hold** is displayed when the thermostat program is permanently overridden.
7. **Setpoint:** Displays the user selectable setpoint temperature.

Important

The low battery icon is displayed when the AA battery power is low. Whenever the thermostat detects low battery voltage from the AA batteries, the low battery icon will begin flashing on the screen for 21 days (if the batteries are not changed). If the batteries are not changed 22 days after the thermostat detects low battery voltage, the thermostat screen will only show the flashing battery icon until buttons are pressed. If the batteries are not changed 43 days after the thermostat detects low battery voltage, the thermostat screen will only show the flashing battery icon until buttons are pressed and the set points will offset to 85°F/29°C in cooling and 55°F/13°C in heating. At this stage, set point changes can be made temporarily but, the set points will change back to defaulted values after a 4-hour period. The thermostat will continue to perform this low battery flashing, temperature offset condition until the internal voltage threshold is reached. When the thermostat internal voltage threshold is reached, all relays will be opened and the thermostat will become inoperable until new batteries are installed.

Wiring (For professional technicians only)

Wiring

1. If you are replacing a thermostat, make note of the terminal connections on the thermostat that is being replaced. In some cases the wiring connections will not be color coded. For example, the green wire may not be connected to the **G** terminal.
2. Loosen the terminal block screws. Insert wires then retighten terminal block screws.
3. Place nonflammable insulation into wall opening to prevent drafts.

Caution: Electrical Hazard

Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.

Warning:

All components of the control system and the thermostat installation must conform to Class II circuits per the NEC Code.

Terminal Designations

- **C** Common wire from system transformer
- **O** Heat pump changeover valve energized in cooling
- **B** Heat pump changeover valve energized in heating
- **W** Heat relay
- **RH** Transformer power for heating
- **RC** Transformer power for cooling
- **G** Fan relay
- **Y** Compressor relay

Wiring Tips

RH & RC Terminals

For single transformer systems, leave the jumper wire in place between RH and RC. Remove jumper wire for two transformer systems.

C Terminal

The C (common wire) terminal does not have to be connected when the thermostat is powered by batteries.

Heat Pump Systems (With NO AUX or Emergency Heat)

If wiring to a heat pump, use a small piece of wire (not supplied) to connect terminals W and Y.

Wire Specifications

Use shielded or non-shielded 18-22 gauge thermostat wire.

Installation Tip: Do not overtighten terminal block screws, as this can damage the terminal block. A damaged terminal block can keep the thermostat from fitting on the subbase correctly or cause system operation issues. **Max Torque = 6in-lbs.**

Features

Temporary and Permanent Hold Feature

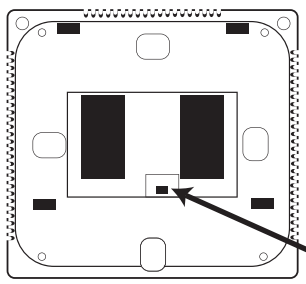
Note: This is a programmable thermostat, and will always be running a programmed schedule. However, it can be overidden with a Temporary or Permanent Hold.

Temporary Hold: With the system in Heat or Cool, anytime the SET-AT temperature is changed with the + or - buttons, the thermostat will enter a Temporary Hold. This will be indicated by "HOLD" flashing and will remain in this hold until the next programmed time period begins.

Permanent Hold: To enter a Permnent Hold, press the Hold/Run button while "HOLD" is flashing. The word "HOLD" will remain on continuously, indicating a Permanent Hold.

To Return to Running Schedule: To manually exit permanent hold and return to scheduled program, press Hold/Run button.

Gas or Electric Setup



Gas: For systems that control the fan during a call for heat, put the fan operation switch to the GAS position.
Electric: For systems that do not control the fan during a call for heat, put the fan operation switch tothe ELECTRIC position.

Fan Operation Switch

Gas: For all systems that control the fan during a call for heat, put the fan operation jumper pin to the **GAS** position.

Electric: Select Electric to have the thermostat control the fan during a call for heat.

Technician Setup (For professional technicians only)

Technician Setup Menu

This thermostat has a technician setup menu for easy installer configuration. To setup the thermostat for your particular application:

The Technician Setup Menu

1. To enter all other steps press and hold [+] and [−] buttons together for 3 seconds. This 3 second delay is designed so that homeowners do not accidentally access the installer settings.
2. Use [+] and [−] buttons to set.
3. Press the Program button to advance to the next step.
4. Press the time button to go back to the previous stop.
5. Press the Hold/Run button to exit.

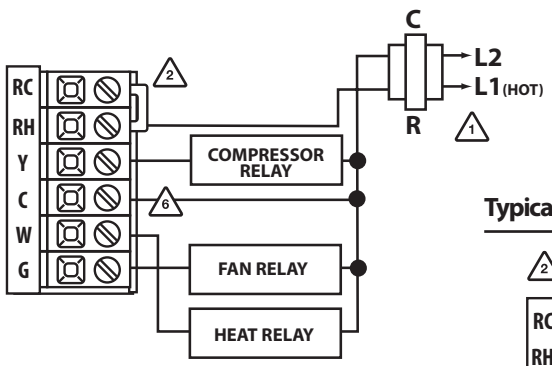
Swing Setting Tip

Temperature swing, sometimes called differential or cycle rate, can be customized for this individual application. For most applications choose a swing setting that is as long as possible without making the occupants uncomfortable.

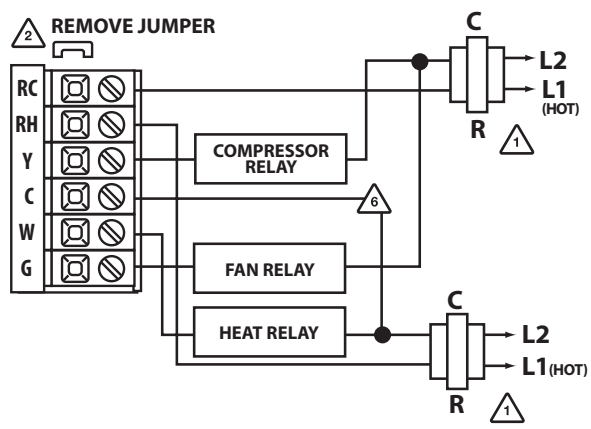
Tech Settings		LCD Will Show	Adjustment Options	Default
Room Temperature Calibration	This feature allows the installer to change the calibration of the room temperature display. For example, if the thermostat reads 70˚ degrees and you would like it to read 72˚ then select +2.	Next Step CAL 0 Prev Step	You can adjust the room temperature display to read 4˚ above or below the factory calibrated reading.	0
Compressor Short Cycle Delay	The compressor short cycle delay protects the compressor from short cycling. This feature will not allow the compressor to be turned on for 5 minutes after it was last turned off.	Next Step Cd ON Prev Step	Selecting "ON" will not allow the compressor to be turned on for 5 minutes after the last time the compressor was switched off. Select "OFF" to remove this delay.	ON
F or C	Select F for Fahenheit temperature read out or select C for Celsius read out.	Next Step FC F Prev Step	F for Fahrenheit C for Celsius	F

1. Power supply
2. Factory-installed jumper. Remove only when installing on 2-transformer systems
3. Use either O or B terminals for changeover valve
4. Use a small piece of wire (not supplied) to connect W and Y terminals
5. Set fan operation setting to Electric
6. Optional 24 VAC common connection when thermostat is used in battery power mode

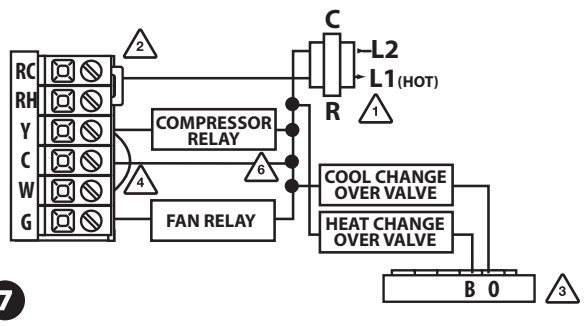
Typical 1H/1C System: 1 Transformer



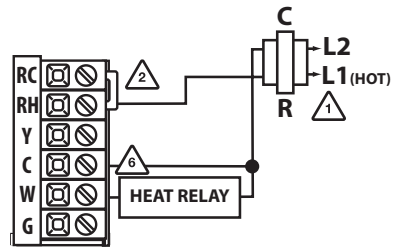
Typical 1H/1C System: 2 Transformer



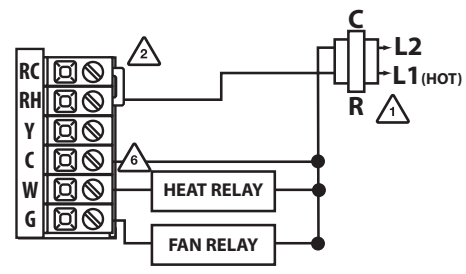
5 Typical 1H/1C Heat Pump System



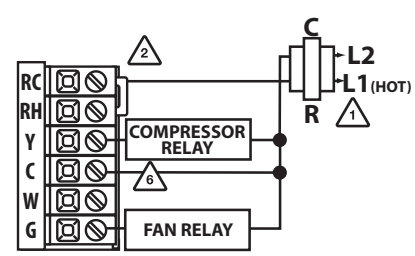
Typical Heat-Only System



Typical Heat Only System With Fan



Typical Cool-Only System



Tech Settings		LCD Will Show	Adjustment Options	Default
Cooling Swing	The swing setting often called "cycle rate", "differential" or "anticipation" is adjustable. A smaller swing setting will cause more frequent cycles and a larger swing setting will cause fewer cycles.	dFCO Next Step 0.5 Prev Step	The cooling swing setting is adjustable from 0.2˚ to 2˚. For example: A swing setting of 0.5˚ will turn the cooling on at approximately 0.5˚ above the setpoint and turn the cooling off at approximately 0.5˚ below the setpoint.	0.5
Heating Swing	The swing setting often called "cycle rate", "differential" or "anticipation" is adjustable. A smaller swing setting will cause more frequent cycles and a larger swing setting will cause fewer cycles.	dFHE Next Step 0.4 Prev Step	The heating swing setting is adjustable from 0.2˚ to 2˚. For example: A swing setting of 0.5˚ will turn the heating on at approximately 0.5˚ below the setpoint and turn the heating off at approximately 0.5˚ above the setpoint.	0.4
Cooling Setpoint Limit	This feature allows you to set a minimum cool setpoint value. The setpoint temperature cannot be lowered below this value.	CO L Next Step 44 Prev Step	Use the + and - key to select the minimum cool setpoint.	44
Heating Setpoint Limit	This feature allows you to set a maximum heat setpoint value. The setpoint temperature cannot be raised above this value.	HE L Next Step 90 Prev Step	Use the + and - key to select the maximum heat setpoint.	90
Morning Recovery	This feature will start heating early to bring the building temperature to its programmed setpoint by the beginning of the WAKE, OCCUPIED time period.	ON MORN RECOV	Use the + or - key to turn on or off.	ON
Program Options	You can configure this thermostat to have 7 Day or 5+1+1 programming.	Pr-OS Next Step 5d Prev Step	Use the + and - key to select **7d** for 7 Day or **5d** for 5+1+1 programmable.	5d

Set Time

1. Press **TIME**
2. Day of the week will be flashing. Use the + or - key to select the current day of the week.
3. Press **PROGRAM**
4. The current hour is flashing. Use the + or - key to select the current hour. When using 12-hour time, make sure the correct a.m. or p.m. choice is selected.
5. Press **PROGRAM**
6. Minutes are now flashing. Use the + or - key to select current minutes.
8. Press the **TIME** button in order to go back a step.
7. Press **HOLD/RUN** when completed.

Programming

All of our programmable thermostats are shipped with an energy saving pre-program. You can customize this default program by following the steps on page 14.

Your thermostat can be programmed to have all the weekdays the same, a seperate program for Saturday, and a seperate program for Sunday. There are four time periods for each program **(WAKE, LEAVE, RETURN, SLEEP).**

Factory Default Program				
Day of the Week	**Events**	**Time**	**Setpoint Temperature (HEAT)**	**Setpoint Temperature (COOL)**
Weekday	Wake	6 AM	70˚F (21˚C)	75˚F (24˚C)
	Leave	8 AM	62˚F (17˚C)	83˚F (28˚C)
	Return	6 PM	70˚F (21˚C)	75˚F (24˚C)
	Sleep	10 PM	62˚F (17˚C)	78˚F (26˚C)
Saturday	Wake	6 AM	70˚F (21˚C)	75˚F (24˚C)
	Leave	8 AM	62˚F (17˚C)	83˚F (28˚C)
	Return	6 PM	70˚F (21˚C)	75˚F (24˚C)
	Sleep	10 PM	62˚F (17˚C)	78˚F (26˚C)
Sunday	Wake	6 AM	70˚F (21˚C)	75˚F (24˚C)
	Leave	8 AM	62˚F (17˚C)	83˚F (28˚C)
	Return	6 PM	70˚F (21˚C)	75˚F (24˚C)
	Sleep	10 PM	62˚F (17˚C)	78˚F (26˚C)

You can use the table below to plan your customized program schedule.

Custom Program				
Day of the Week	**Events**	**Time**	**Setpoint Temperature (HEAT)**	**Setpoint Temperature (COOL)**
Weekday	Wake			
	Leave			
	Return			
	Sleep			
Saturday	Wake			
	Leave			
	Return			
	Sleep			
Sunday	Wake			
	Leave			
	Return			
	Sleep			

Set Program Schedule

To customize your program schedule, follow these steps

Weekday:

1. Select **HEAT** or **COOL** with the system switch. **Note:** You have to program heat and cool each seperately.
2. Press the **PROGRAM**
3. Monday-Friday is displayed and **WAKE** is shown. You are now programming the wake time period for the weekday setting.
4. Time is flashing. Use the [+] or [-] key to make your time selection for the weekday **WAKE** time period.
5. Press **PROGRAM**
6. The setpoint temperature is flashing. Use the [+] or [-] key to make your setpoint selection for the weekday wake period.
7. Press **PROGRAM**
8. Repeat steps 4 thru 7 for weekday **LEAVE** time period, for weekday **RETURN** time period, and for weekday **SLEEP** time period.

Saturday:

Repeat steps 4 thru 7 for the Saturday **WAKE** time period, **LEAVE** time period, **RETURN** time period, and for the Saturday **SLEEP** time period.

Sunday:

Repeat steps 4 thru 7 for the Sunday **WAKE** time period, **LEAVE** time period, **RETURN** time period, and for the Sunday **SLEEP** time period.

If using 7-Day Programming use previous steps for every individual day.

Warranty Information

Please Register Your Thermostat Here

Warranty Registration

Your new thermostat has a 5 year limited warranty. You must register your thermostat within 60 days of installation. Without this registration the warranty period will begin on date of manufacture. For warranty issues please contact the HVAC professional that installed this product. Please register your new thermostat online.

www.vivecomfort.com/warranty