

RS Series

Packaged Terminal Air Conditioner



R454b Refrigerant



Made In North America



Purchaser		P.O.#	Date
Project		Location	
Engineer		Architect	
Submitted By		For Approval	For Reference

ITEM	PLAN DESIGNATION	QUANTITY	MODEL	COOLING Btu	HEATING Btu	VOLTAGE



1st year parts and labor.
 2nd to 6th year sealed system parts.
 Free shipping on warranty parts.
 (Canada & Continental USA)
 Additional extended warranty for purchase.

General Information

The Applied Comfort's RS Series is designed and built for through the wall installation in either new or existing buildings. The self contained refrigerant system delivers cooling while the resistance heaters provide the heating. Additionally, the heat pump delivers reverse cycle refrigerant heat when the outdoor temperature is moderately cool.

Features

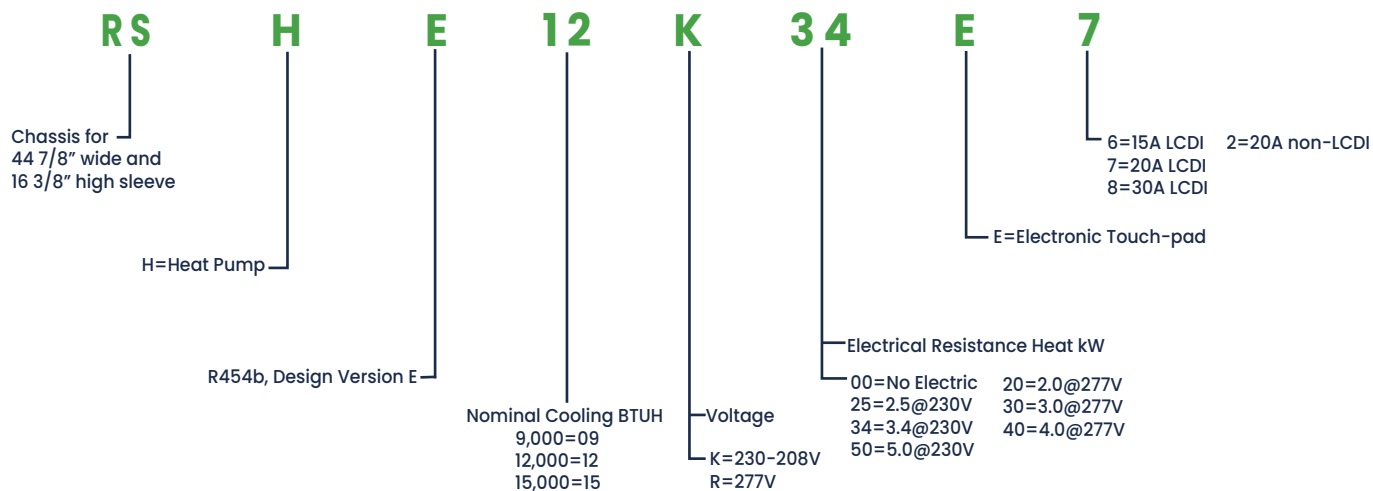
- R454b Refrigerant
- Low Noise Operation
- Digital Control Display
- Room Freeze Protection
- Electronic Defrost Control
- Dip Switch Setting for Temperature Limiting
- Temperature Display on Unit
- Front Desk Ready
- Large Slow-Turning Outdoor Blower
- Low Decibels Inside and Outside

Accessories

ACCRS_FTCOVER_BOTTOMFL
ACCRSFTCOVER_FRONTFL
ACCRSEARETROFITKIT
ACCRSSLEEVE
ACCRSFILTER
ACCEAAGRILLE_ANODIZED
ACCEAOUTLETGRILLE
ACCRSOUTLETGRILLE
ACCRS_ESDRAINKIT

Plug Type

			
15 Amps 250 Volts	20 Amps 250 Volts	30 Amps 250 Volts	20 Amps 265 Volts



General Specifications

Heating/Cooling Chassis:

- Safety Compliance- The RSHE is a listed product eligible to bear the CSA Mark, cCSAus Mark (US and Canada Safety Compliance). The RSHE is produced in a CSA inspected factory in Cambridge, Ontario, Canada.
- 3rd Party Energy Performance Verification- The cooling Capacity and Energy Performance Verification Testing for the RSHE Series of chassis is conducted by Intertek Labs. These tests cover the full range of cooling outputs available for the RSHE Series. The cooling capacity tests were conducted in accordance with ANSI/ASHRAE Standard 310/380.

Certified Reports are available upon request.

General Construction- Complete air cooled refrigeration system with R454b refrigerant.

Control Options:

- Electronic Controls
- Wall Thermostat

*See pg. 11-14

Wall Sleeve:

- 44 7/8 X 16 3/8, made of galvanized, phosphatized, heavy-gauge steel. Coated with electrostatically applied, baked on, industry standard beige urethane powder paint for maximum corrosion protection.

Front Cover:

- Room Front Cover- Single panel powder coated and insulated. No air return on panel (evap air through sleeve bottom). Includes aluminum filter for replacement in bottom of sleeve.
- Room Front Cover with Air Flow in Through Front Panel- For RSHE installed in EA sleeves. Single panel powder coated and insulated; evap air return through front panel. Washable aluminum mesh filter included.

Grille:

- Aluminum mesh filter.

EA Outlet Grille:

- In-room outlet grille assembly for EA & RS including control door. Useful for in-room outlet grille replacements in older EA sleeves and Applied Comfort RS sleeves.

RS Outlet Grille

- In-room outlet grille assembly including control door. Used for in-room outlet grille replacements in older RS/ER/MQT sleeves. Not for use in Applied Comfort RS Sleeves (ACCRSSLEEVE). For that, use ACCEAGRILLE and discard filler plate.

RS Drain kit

- Due to the design of the wall sleeve, it does not allow for an external drain kit.

Product Specifications

RSHE Heat Pump with Electric Resistance Backup Heat (230-208V)

Model	Voltage	Cooling					Resistance Heat		Reverse-Cycle Heat		Min. Circuit Amps	MOP* Fuse Amps	Electrical Plug (Nema)	Indoor CFM HIGH ^o	Indoor CFM LOW ^o	Net Wt. lbs.
		BTU/Hr.	EER	Amps	S/T	Pts/Hr.	kW	Amps	BTU/Hr.	COP						
RSHE09K00_6	230-208	9200	11.4	3.9/4.1	.80	1.7	----	----	8300	3.3	5.7	15	#6-15P	390/375	345/315	138
RSHE09K00_7	230-208	9200	11.4	3.9/4.1	.80	1.7	----	----	8300	3.3	5.7	20	#6-20P	390/375	345/315	138
RSHE09K25_6	230-208	9200	11.4	3.9/4.1	.80	1.7	2.5/2.1	11.4/10.4	8300	3.3	14.3	15	#6-15P	390/375	345/315	138
RSHE09K25_7	230-208	9200	11.4	3.9/4.1	.80	1.7	2.5/2.1	11.4/10.4	8300	3.3	14.3	20	#6-20P	390/375	345/315	138
RSHE09K34_7	230-208	9200	11.4	3.9/4.1	.80	1.7	3.4/2.8	15.3/14.0	8300	3.3	19.1	20	#6-20P	390/375	345/315	138
RSHE09K50_8	230-208	9200	11.4	3.9/4.1	.80	1.7	5.0/4.1	22.3/20.3	8300	3.3	27.9	30	#6-30P	390/375	345/315	138
RSHE12K00_6	230-208	12300	10.5	5.5/5.8	.73	3.2	----	----	11900	3.2	8.1	15	#6-15P	390/375	345/315	138
RSHE12K00_7	230-208	12300	10.5	5.5/5.8	.73	3.2	----	----	11900	3.2	8.1	20	#6-20P	390/375	345/315	138
RSHE12K25_6	230-208	12300	10.5	5.5/5.8	.73	3.2	2.5/2.1	11.4/10.4	11900	3.2	14.3	15	#6-15P	390/375	345/315	138
RSHE12K25_7	230-208	12300	10.5	5.5/5.8	.73	3.2	2.5/2.1	11.4/10.4	11900	3.2	14.3	20	#6-20P	390/375	345/315	138
RSHE12K34_7	230-208	12300	10.5	5.5/5.8	.73	3.2	3.4/2.8	15.3/14.0	11900	3.2	19.1	20	#6-20P	390/375	345/315	138
RSHE12K50_8	230-208	12300	10.5	5.5/5.8	.73	3.2	5.0/4.1	22.3/20.3	11900	3.2	27.9	30	#6-30P	390/375	345/315	138
RSHE15K00_6	230-208	14500	10.2	6.6/7.0	.70	4.1	----	----	14000	3.0	9.9	15	#6-15P	390/375	345/315	138
RSHE15K00_7	230-208	14500	10.2	6.6/7.0	.70	4.1	----	----	14000	3.0	9.9	20	#6-20P	390/375	345/315	138
RSHE15K25_6	230-208	14500	10.2	6.6/7.0	.70	4.1	2.5/2.1	11.4/10.4	14000	3.0	14.3	15	#6-15P	390/375	345/315	138
RSHE15K25_7	230-208	14500	10.2	6.6/7.0	.70	4.1	2.5/2.1	11.4/10.4	14000	3.0	14.3	20	#6-20P	390/375	345/315	138
RSHE15K34_7	230-208	14500	10.2	6.6/7.0	.70	4.1	3.4/2.8	15.3/14.0	14000	3.0	19.1	20	#6-20P	390/375	345/315	138
RSHE15K50_8	230-208	14500	10.2	6.6/7.0	.70	4.1	5.0/4.1	22.3/20.3	14000	3.0	27.9	30	#6-30P	390/375	345/315	138

^oDry Coil

Time Delay Fuse or HACR circuit breaker

Not to be used with a duct system

RSHE Heat Pump with Electric Resistance Backup Heat (277V)

Model	Voltage	Cooling					Resistance Heat		Reverse-Cycle Heat		Min. Circuit Amps	MOP* Fuse Amps	Electrical Plug (Nema)	Indoor CFM HIGH ^o	Indoor CFM LOW ^o	Net Wt. lbs.
		BTU/Hr.	EER	Amps	S/T	Pts/Hr.	kW	Amps	BTU/Hr.	COP						
RSHE09R00_2	277	9200	11.4	3.3	.80	1.7	----	----	8300	3.3	5.4	15	#7-20P	380	335	138
RSHE09R20_2	277	9200	11.4	3.3	.80	1.7	2.0	7.6	8300	3.3	9.5	15	#7-20P	380	335	138
RSHE09R30_2	277	9200	11.4	3.3	.80	1.7	3.0	11.2	8300	3.3	14.0	15	#7-20P	380	335	138
RSHE09R40_2	277	9200	11.4	3.3	.80	1.7	4.0	14.8	8300	3.3	18.5	20	#7-20P	380	335	138
RSHE12R00_2	277	12300	10.5	4.6	.73	3.2	----	----	11900	3.2	7.2	15	#7-20P	380	335	138
RSHE12R20_2	277	12300	10.5	4.6	.73	3.2	2.0	7.6	11900	3.2	9.5	15	#7-20P	380	335	138
RSHE12R30_2	277	12300	10.5	4.6	.73	3.2	3.0	11.2	11900	3.2	14.0	15	#7-20P	380	335	138
RSHE12R40_2	277	12300	10.5	4.6	.73	3.2	4.0	14.8	14000	3.2	18.5	20	#7-20P	380	335	138
RSHE15R00_2	277	14500	10.2	5.6	.70	4.1	----	----	14000	3.0	8.8	15	#7-20P	380	335	138
RSHE15R20_2	277	14500	10.2	5.6	.70	4.1	2.0	7.6	14000	3.0	9.5	15	#7-20P	380	335	138
RSHE15R30_2	277	14500	10.2	5.6	.70	4.1	3.0	11.2	14000	3.0	14.0	15	#7-20P	380	335	138
RSHE15R40_2	277	14500	10.2	5.6	.70	4.1	4.0	14.8	14000	3.0	18.5	20	#7-20P	380	335	138

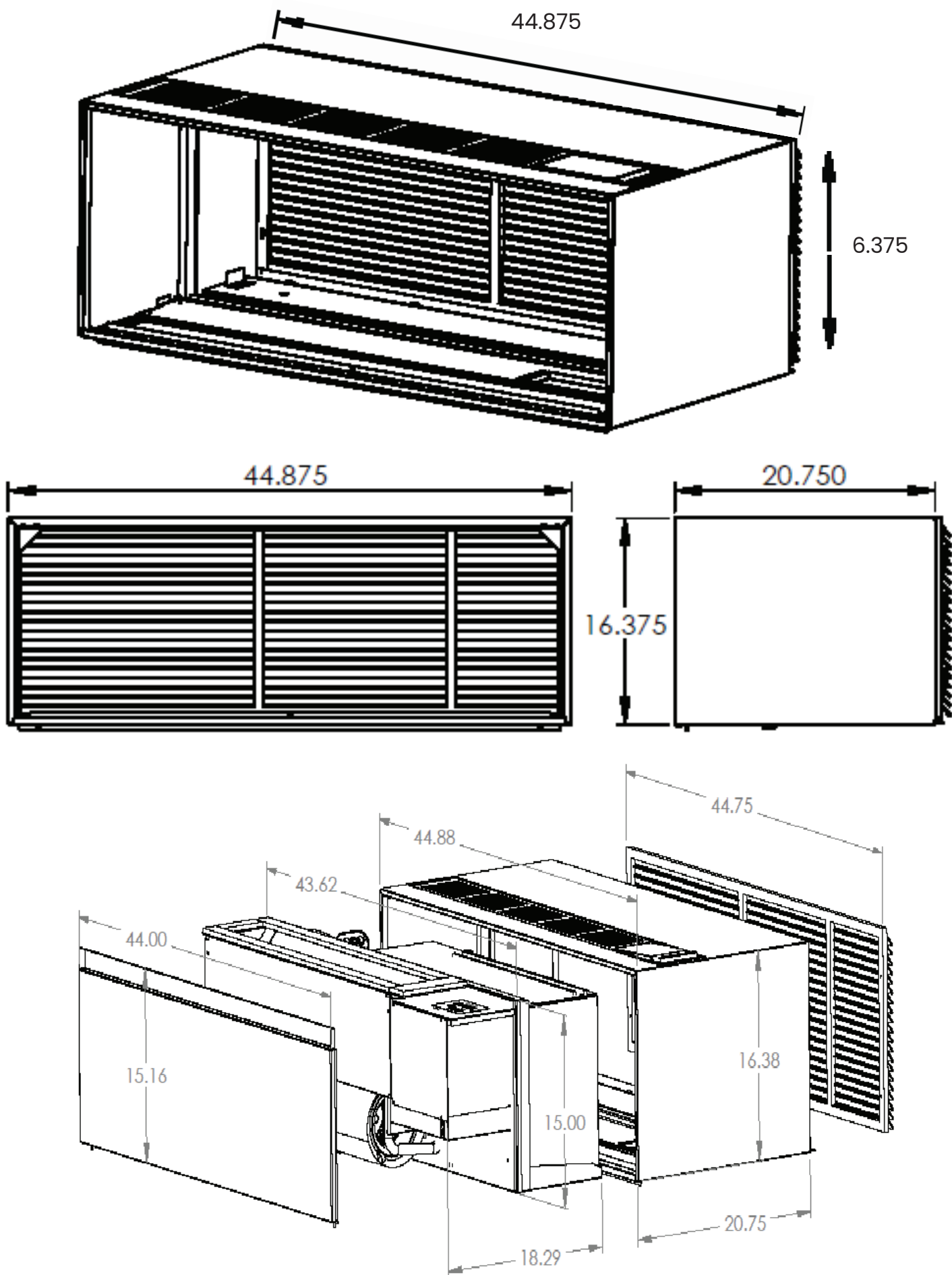
^oDry Coil

Time Delay Fuse or HACR circuit breaker

Not to be used with a duct system

Every effort has been made to ensure information is correct at the time of print.
Errors and omissions excepted.

Dimensional Drawings



Wall Sleeve Cabinet Installation

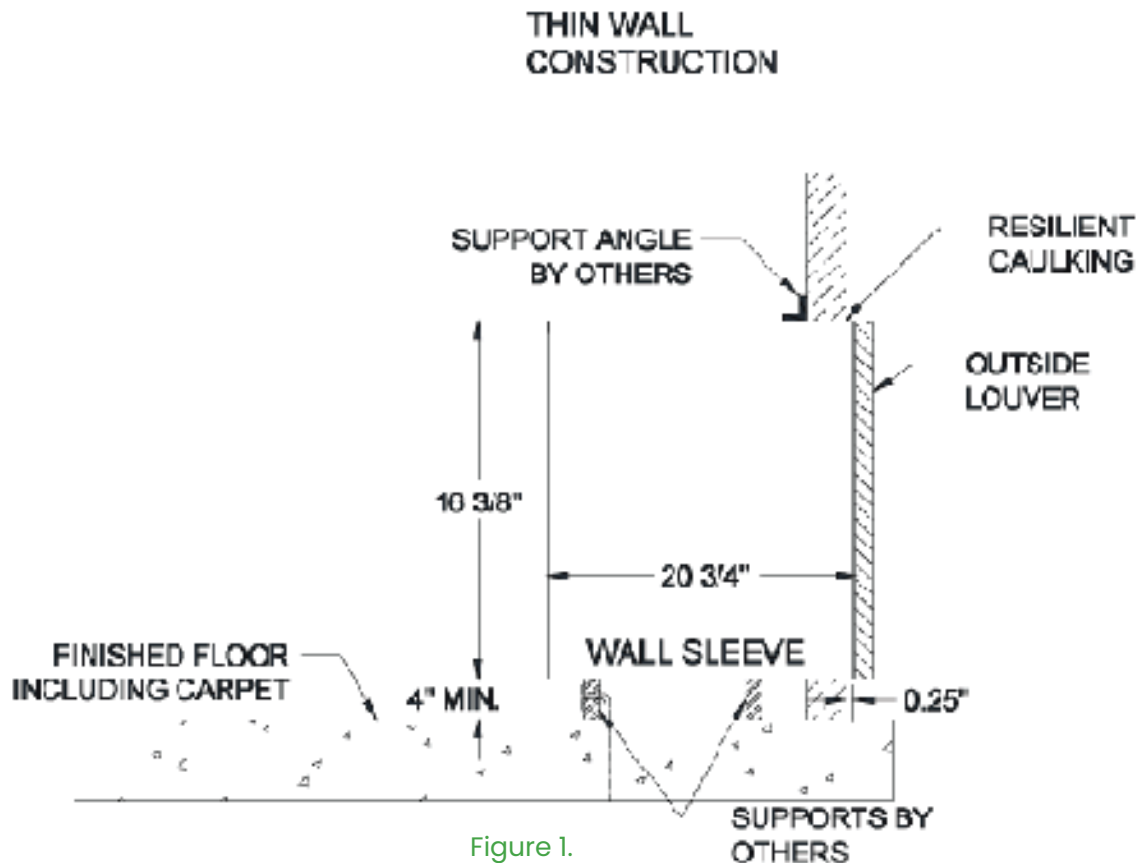
Thin Wall Construction

Installation must be in accordance with local and national building codes.

The standard wall sleeve is designed to be easily installed in a variety of wall constructions. For panel wall and thin wall construction, it is recommended to install a top support angle (supplied by others) to secure the sleeve in the proper position. If the wall projects past the wall sleeve, measures must be taken to assure proper drainage past the outside wall surface, and to stop recirculation of condenser air. Test fit the sleeve in the opening before securing it to the wall. Sleeve must be square and must not bow due to improper opening dimensions, if this happens the opening needs to be re-worked to allow proper installation.

The recommended procedure for installing units in panel wall and thin wall construction is as follows:

1. Clean the opening of all debris that may interfere with installation.
2. Push the sleeve through the wall opening so that a minimum of $1/4"$ (6mm) projects past the outside wall. This will provide a fillet area for caulking (refer to figure 1). The centre of gravity is approximately $10\ 3/8"$ (273mm) from the rear face of the standard wall sleeve. If a sub base is not used or the wall sleeve is more than 4" off the floor, field support must be provided up to the centre of gravity. This support can be metal, wood, or concrete.
3. Level wall sleeve from side to side and then provide a slight slope (maximum $1/8"$ per foot) in the direction from indoor to outdoor, to facilitate positive water drainage to the outdoor side. Anchor sleeve with appropriate fasteners. Drill holes as required to assure sleeve is secured firmly. CAUTION: Do not drill holes in the base of the wall sleeve. Use shims between the wall and the wall sleeve to prevent distortion during anchoring.
4. Caulk the wall sleeve to the wall opening on both the inside and outside perimeter. This can be done from the inside of the building. Be careful NOT to plug the weep holes in the rear, bottom flange of the sleeve.



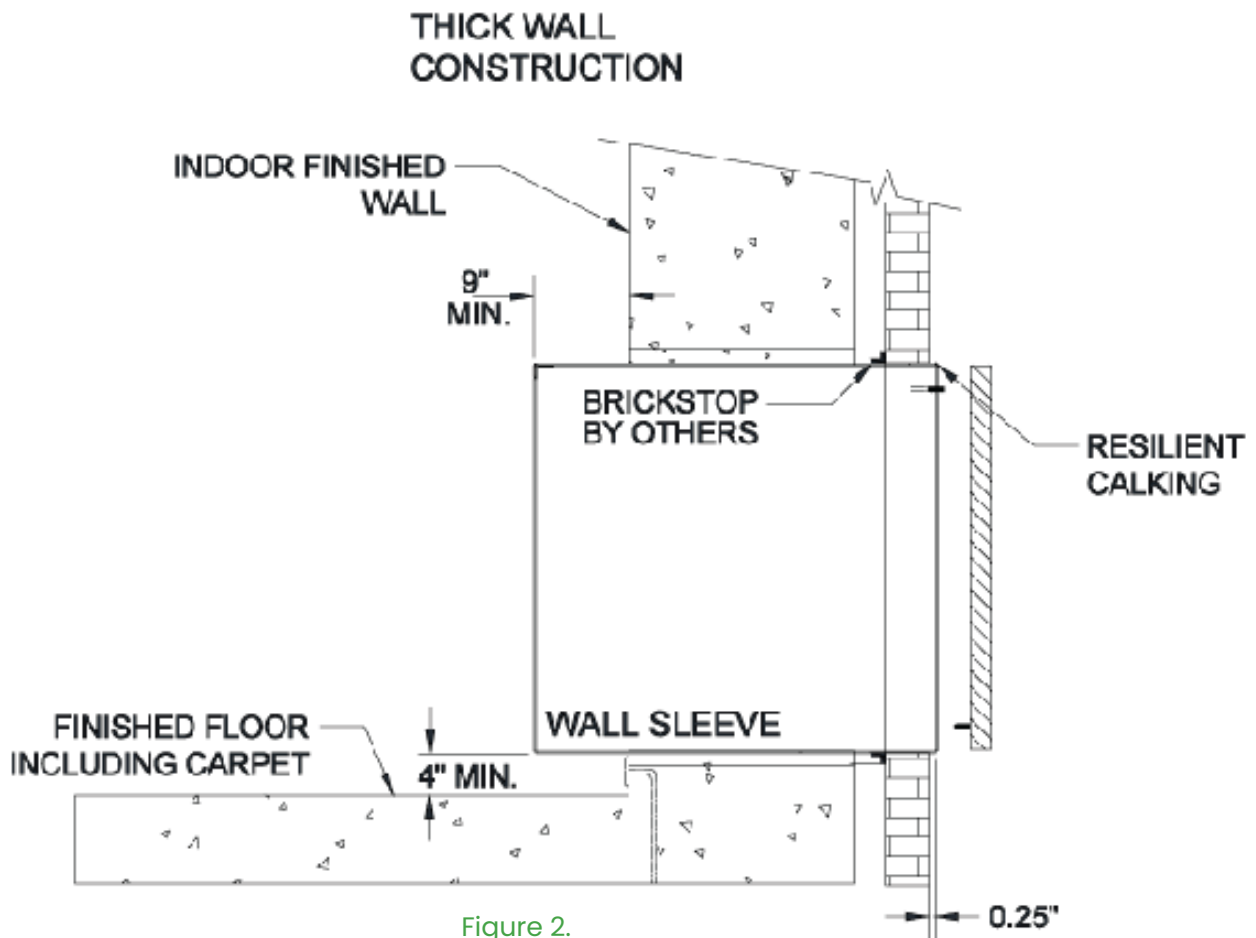
Wall Sleeve Cabinet Installation

Thick Wall Construction

Installation must be in accordance with local and national building codes.

The recommended procedure for installing units in panel wall and thin wall construction is as follows:

1. Clean the opening of all debris that may interfere with installation.
2. Be sure the unit's centre of gravity falls within the load bearing surface of the wall. The centre of gravity is approximately 10 3/4" (273mm) from the rear edge of the wall sleeve. If the centre of gravity is not within the load bearing surface, then additional support must be added. This support can be metal, wood, or concrete.
3. Place a thin pad of mortar on the bottom of the opening. IMPORTANT: Make certain the wall sleeve protrudes into the room a minimum of 9" (228.6mm) beyond the finished wall surface to accommodate the room air inlet. Push the sleeve through the wall opening so that a minimum of 1/4" (6mm) projects past the outside wall. This will provide a fillet area for caulking (refer to figure 2).
4. If a brick stop is employed (by others) slide the wall sleeve into the wall so that it extends into the room a minimum of 9" (228.6mm) beyond the finished interior wall surface. This allows proper spacing for the room air inlet. It should also allow for a minimum of 1/4" (6mm) to project past the outside wall. This will provide a fillet area for caulking (refer to figure 2).
5. After the mortar has dried, remove the masonry support from the wall sleeve. NOTE: the wall sleeve is not intended to replace the lintel and must not be used as such.
6. Level wall sleeve from side to side and then provide a slight slope (maximum 1/8" per foot) in the direction from indoor to outdoor, to facilitate positive water drainage to the outdoor side. Anchor sleeve with appropriate fasteners. Drill holes as required to assure sleeve is secured firmly. CAUTION: Do not drill holes in the base of the wall sleeve. Use shims between the wall and the wall sleeve to prevent wall sleeve distortion during anchoring.
7. Caulk the wall sleeve to the wall opening on both the inside and outside perimeter. This can be done from the inside of the building. Be careful NOT to plug the weep holes in the rear, bottom flange of the sleeve.



Chassis Installation

Unpack heat/cool chassis from shipping carton and check for any shipping damage; report any shipping damage immediately. Check the interior of the installed wall sleeve and clean out any dirt or debris that may have accumulated. Replace air seals that are damaged or missing.

Optional Condensate Connection

If the wall sleeve is equipped with an indoor condensate drain you will need to make the connection to the field supplied drain system installed under the wall sleeve. The unit's outlet drain connection stub is a 5/8" outside diameter tube for connection to drain tubing. The outlet drain connection stub is sealed with a rubber plug as shipped from the factory. Ensure the drain lines do not kink or collapse during installation. Follow all applicable local codes ordinances regarding condensate drainage and proper connection to a drain system, including venting and trapping considerations.

Heating/Cooling Chassis Installation

1. Slide the chassis into the wall sleeve until firmly seated against the seals. Push from the ends of the front cover where they attach to the coil supports. Be careful NOT to push the chassis from the electrical box cover or middle of the front coil cover.
2. There is a vertical air seal at the rear of the unit to isolate the air path between the condenser inlet and outlet. These seals will engage and "seal" against the rear grille. However, in some cases, such as when an extra deep wall sleeve is used, or some other sleeve variation is encountered that prevents the vertical seal from engaging against the outdoor grille, steps must be taken to add anti-recirculation baffles to prevent hot condenser air from short-circuiting back into the air intake via the void space created in behind the outdoor grille.
3. If the optional condensate drain kit is used, install the flexible tube from the chassis spigot to the wall sleeve condensate drain by pressing the tube into the drain assembly. CAUTION: when removing the chassis, remember first to lift the tube from the drain assembly.
4. If the unit is equipped with **electronic controls** and touchpad, locate the 24V wiring harness coiled beneath the control box. The harness is employed if a remote 24V AC wall thermostat will be used. If so, connect the multi-wire 24V wiring harness to the mating plug protruding beneath the control box as applicable, following the detailed instructions on the particular wiring diagram affixed to the specific unit being installed. Insulated crimp-on connectors are provided at the end of every connection lead to facilitate connections/insulation.
5. If the unit is equipped with **mechanical knob controls** this variation cannot be adapted to work with a remote thermostat.
6. Set the manual damper operator in the open or closed position depending on the desired operation.
7. Plug the heat/cool chassis cord into the power receptacle located either in the sub-base or the wall, as applicable.
8. Install the filter and front panel and secure it with the two retaining screws located in its upper corners.

WARNING: Operating the unit without the filter in place can not only damage the unit, but also expose the user to a hazard from rotating parts potentially resulting in bodily injury. The filter is intended to be removable with the use of a tool. The front panel retains the filter, and 2 screws secure the front panel. Always remember to re-install the filter after servicing the chassis, or replacing/cleaning the filters.

9. Wipe unit cabinet/wall sleeve to remove dirt, etc.
10. The unit is now ready for operation, when supplied with power from the distribution panel and wired to a remote thermostat (if applicable).

Operation

User Controls

Electronic Controls:

The chassis incorporating electronic controls is factory-shipped with an active keypad control and display mounted directly to the control panel. The unit functions are controlled by the user by pressing the keys on the keypad, and reading the display. However, the unit also has the latent ability to be field-converted by qualified service personnel for use with a field supplied 24V AC wall thermostat.

The Keypad Control

Display: Red light emitting diodes (LEDs) display the actual temperature of the air entering the unit at floor level. The display can also be used to indicate the desired set point temperature for room comfort. It is important to remember that the temperature displayed is the wall temperature sensed at the unit's indoor air inlet and can be significantly different from the bulk room temperature at a distant from the unit.

On/Off Key: Each press of the key toggles the unit from an OFF state to an ON state or from an ON state to an OFF state. Heating and cooling functions, as well as the display, and all indicating LEDs except for the fan indicators, are enabled or disabled with this key. When toggled OFF, the control preserves only two modes active; fan-only, and room freeze protection.

Fan Key: Each press of the fan key cycles the fan through three modes of operation:

Low speed, high speed and auto.

Small green LEDs will indicate the mode. The on/off key does not need to be ON to operate the fan and set fan speeds. Auto mode will cycle the fan on and off and determine the fan speed, in conjunction with the heating or cooling demand.

Warmer Key: Pressing the warmer key will cause the display to show the set point temperature for 3 seconds, and then increases room temperature by 1 degree for every subsequent press of the key.

Cooler Key: Pressing the cooler key will cause the display to show set point temperature for 3 seconds, and then decreases room temperature by 1 degree for every subsequent press of the key.

°F/°C Key: This key toggles the display between Fahrenheit and Celsius temperature modes, and affects all displayed temperatures.

Heat Key: The heat key toggles the unit in and out of heating mode for every press of the key, provides the On/Off Key is ON.

Cool Key: The cool key toggles the unit in and out of cooling mode for every press of the key, provided the On/Off Key is ON.

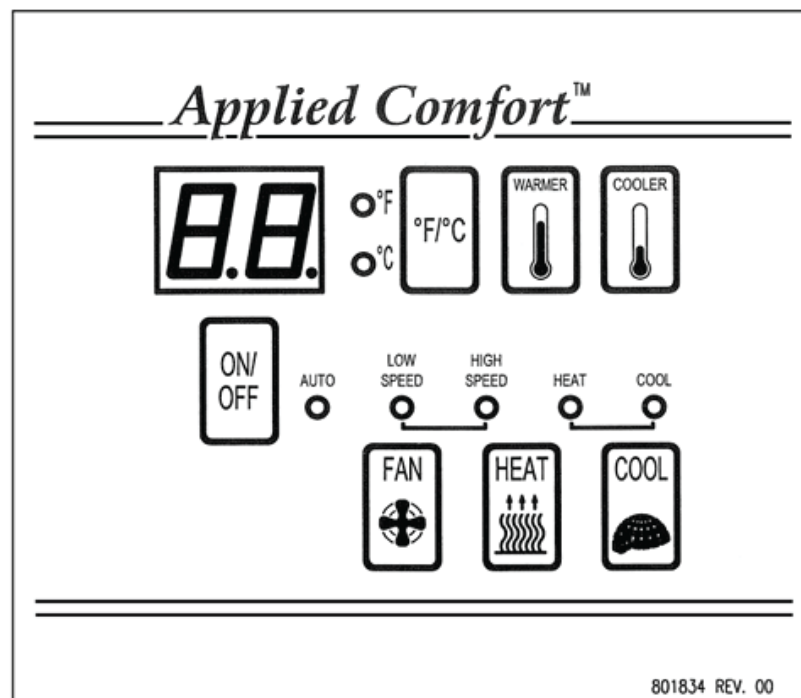


Figure 1.

Wall Thermostat Operation

Wireless, Non-Programmable

- ① LCD
- ② Fan Switch
- ③ System Switch
- ④ Temperature Setpoint Buttons

1: LCD Display
See figure 2.

2: Fan Switch
AUTO will turn the fan on only when the heating or cooling system is on. Select LOW or HIGH for the fan to run continuously at the selected speed.

3: System Switch
Selects the operation mode on your HVAC system. Selecting HEAT turns on the heat mode. Selecting COOL turns on the cool mode. Selecting OFF turns both heating and cooling off.

4: Temperature Setpoint Buttons
Press the + or - buttons to select the desired room temperature.

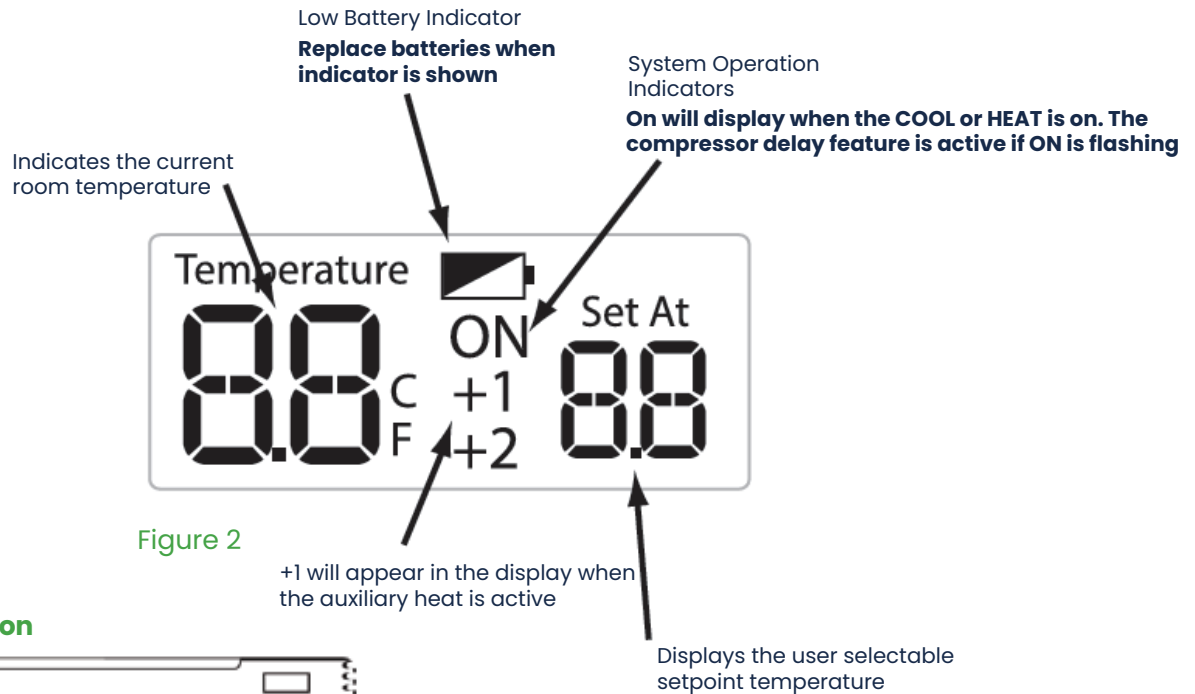
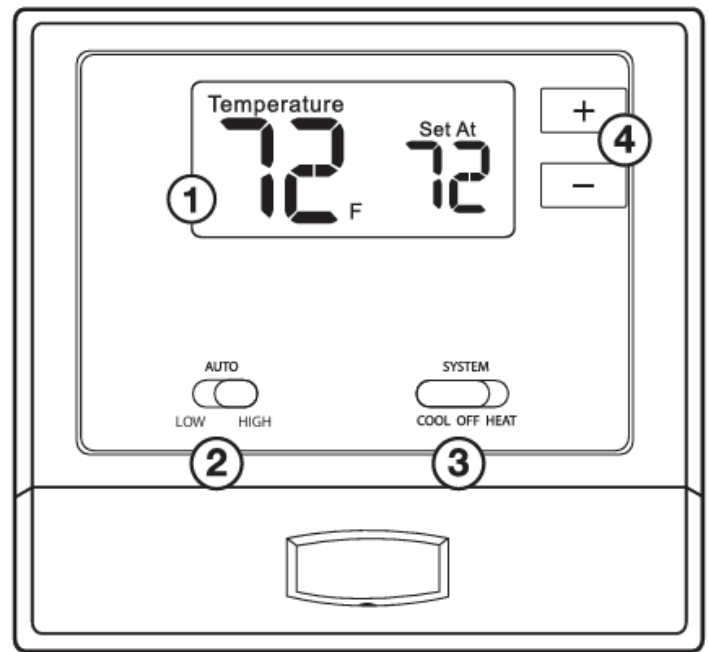
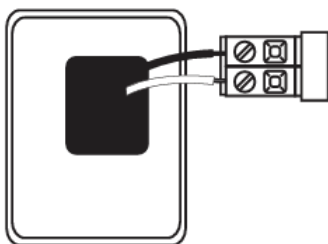


Figure 2

Battery Installation



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



Battery installation is optional if thermostat is hardwired (R and C terminal connected to 24V power).

Wall Thermostat Operation

Wired, Programmable

- ① LCD
- ② Fan Switch
- ③ System Switch
- ④ Easy Change Battery Door
- ⑤ Temperature Setpoint Buttons
- ⑥ User Buttons

1. LCD Display-See figure 3.
2. Fan Switch- Select ON or AUTO. ON will run the fan continuously. AUTO will cycle the fan on only when the heating or cooling system is on.
3. System Switch-Selects the operation mode on your HVAC system. Selecting HEAT turns on the heat mode. Selecting COOL turns on the air conditioning mode. Selecting OFF turns both heating and cooling off.
4. Easy Change Battery Door-See next page for details
5. Temperature Setpoint Buttons-Press the + or - buttons to select the desired room temperature.
6. User Buttons

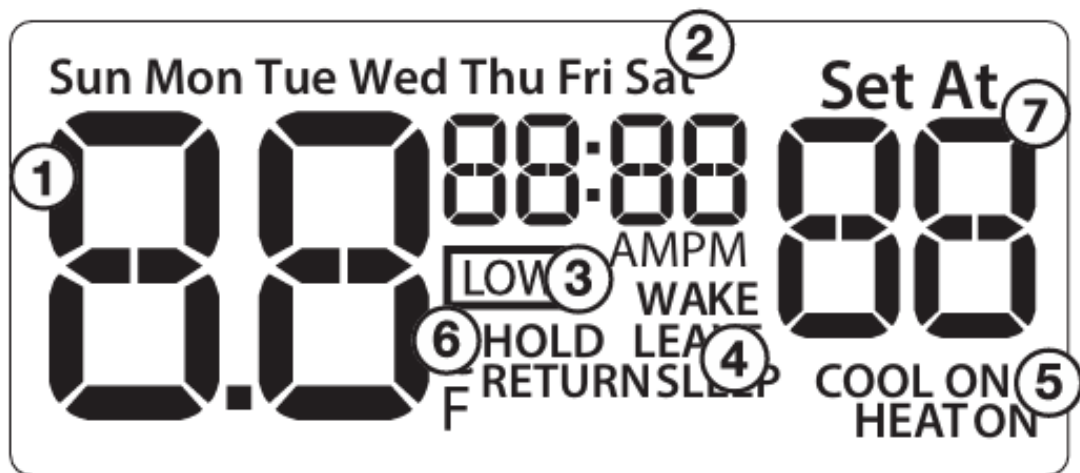
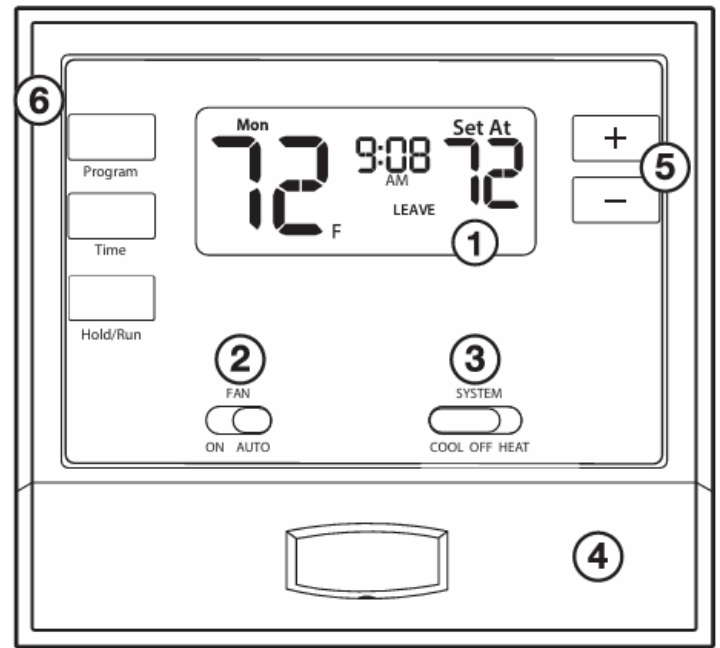
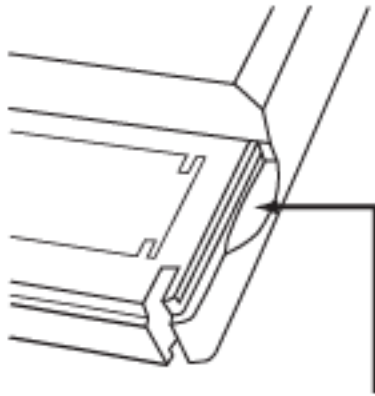


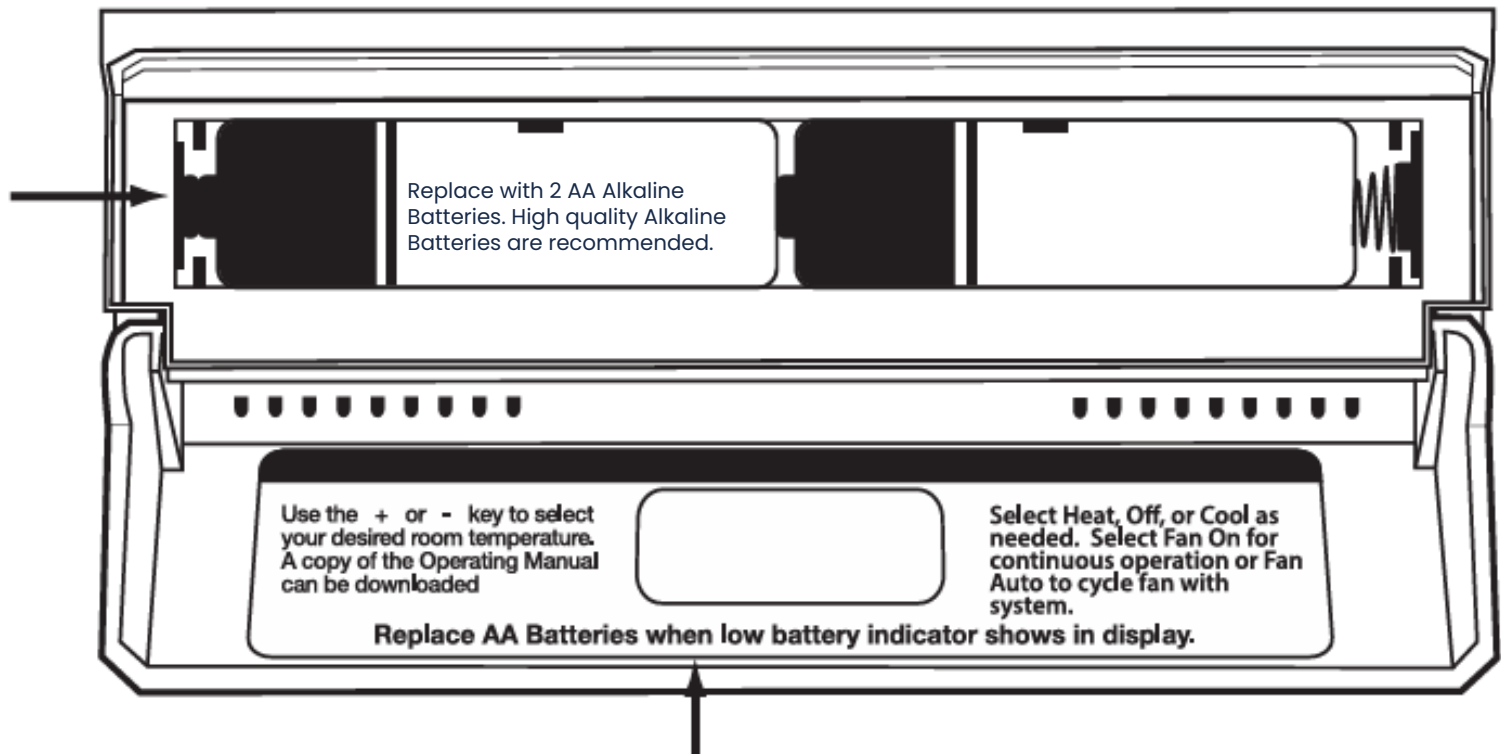
Figure 3

1. Indicates the current room temperature
2. Time and Day of the Week
3. Low Battery Indicator: Replace batteries when 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 when flashing.
6. Hold is displayed when the thermostat program is permanently overridden.
7. Setpoint: Displays the user selectable setpoint temperature

Battery Door Information



Use the finger bevel on the lower portion of the thermostat to open the easy access battery door.



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

Programming the Thermostat

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

Programming the Thermostat

Setting the 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 TIME.
4. The current hour is flashing. Use the + or the - key to select the current hour. When using a 12-hour time, make sure the correct a.m or p.m choice is selected.
5. Press TIME.
6. Minutes are now flashing. Use the + or - key to select current minutes.
7. Press HOLD/RUN when completed.

To customize your program schedule, follow these steps:

1. Select HEAT or COOL with the system switch. NOTE: You have to program heat and cool separately.
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 time 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.

To customize your program schedule for the weekend, follow these steps.

Saturday:

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

Sunday:

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



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**Applied
Comfort** 