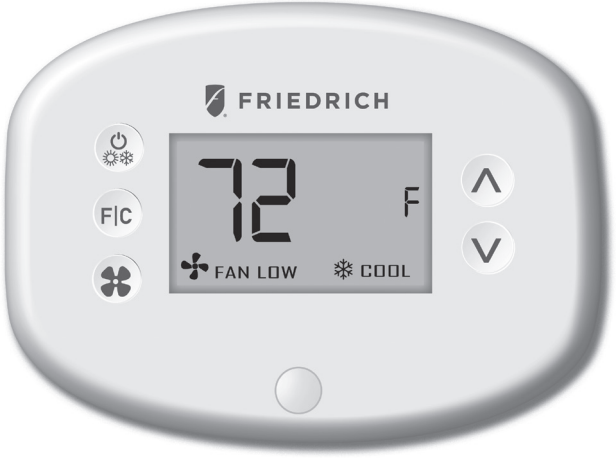
FRIEDRICH

VRPXEMRT2

VRP® & FreshAire® PTAC Energy Management Wired Wall Controller with an Occupancy Sensor



INSTRUCTION MANUAL

PART NO. 20201009 Rev 00

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Introduction

Friedrich VRPXEMRT2 Energy Management Wall Controllers deliver unprecedented energy savings without compromising occupant comfort.

An Integrated occupancy sensor uses a combination of motion and thermal sensing technologies for accurate occupancy detection. Reliable occupancy detection allows for energy savings when rooms are unoccupied.

Energy saving presets eliminate the guesswork and make it easy to adjust the energy saving settings. (Patent Pending)

The Wall Controller has RS485 connectivity needed for connecting the Wall Controller to Friedrich's VRP® and FreshAire® PTAC units with RS485 interface.

Built-in wireless mesh-networking enables optional remote management.

FOR INSTALLATION OF NETWORKING WALL CONTROLLERS WITH REMOTE MANAGEMENT, REFER TO THE NETWORK INSTALLATION MANUAL.
LOGIN TO THE REMOTE MANAGEMENT WEBSITE TO CONFIRM THE SERVER IS CONNECTED TO THE INTERNET BEFORE INSTALLING WALL CONTROLLERS. DO NOT INSTALL WALL CONTROLLERS IF THE SERVER IS NOT CONNECTED TO THE INTERNET. STOP THE INSTALLATION AND CONTACT TECHNICAL SUPPORT. START BY FIRST INSTALLING A WALL CONTROLLER IN THE ROOM CLOSEST TO THE SERVER.

LOG IN TO REMOTE MANAGEMENT WEBSITE TO CONFIRM THAT THE WALL CONTROLLER IS ON THE REMOTE MANAGEMENT WEBSITE WITH THE CORRECT ROOM NUMBER. CONTINUE BY INSTALLING ADDITIONAL WALL CONTROLLERS IN ADJACENT ROOMS ONLY AFTER CONFIRMING THAT INSTALLED WALL CONTROLLER(S) HAVE CONNECTED TO THE WIRELESS NETWORK AND THE REMOTE MANAGEMENT WEBSITE .
IF INSTALLED WALL CONTROLLER(S) ARE NOT CONNECTING TO THE NETWORK AND DO NOT APPEAR ON THE REMOTE MANAGEMENT WEBSITE WITH THE CORRECT ROOM NUMBER, STOP THE INSTALLATION AND CONTACT TECHNICAL SUPPORT THE ROOMS FURTHEST AWAY FROM THE SERVER SHOULD BE INSTALLED LAST.

Before You Begin

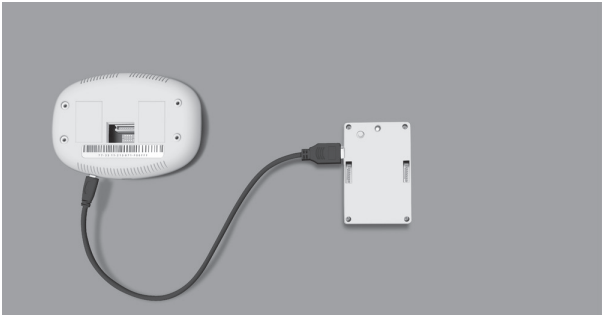
Determine the appropriate installation location for the Wall Controller.
The Wall Controller should face the bed area of the room.

WALL CONTROLLER MUST NOT BE INSTALLED NEAR OR ON METAL STRUCTURES OR SURFACES INCLUDING METAL AIR DUCTING THAT MAY BE IN THE WALL. METAL STRUCTURES AND SURFACES SIGNIFICANTLY REDUCE THE RANGE OF THE WIRELESS SIGNAL.

Before You Begin

Programming a Wall Controller with a Network Programmer

In case of Network Installation with Remote Management, the Wall Controller must be programmed with a Network Programmer specific to the property before the installation.

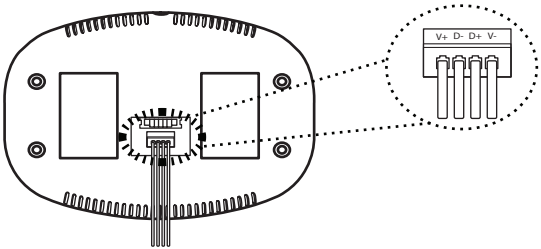


Wall Controller must not be powered during the pairing procedure.

- Plug one programmer connector into the Wall Controller;
- Push the black button on the programmer. The red light on the programmer should turn on and remain steadily lit; If the red light on the programmer is blinking or is not steadily lit, unplug the programmer from the Wall Controller and repeat the steps above.
- Unplug the programmer from the Wall Controller;

Wall Controller Installation

- Unplug the VRP® or FreshAire® PTAC unit;
- Remove the Wall Controller cover;
- Connect the supplied Wiring Harness to the wiring in the wall;
- Plug the wiring connector into the Wall Controller;
- Use the supplied wall anchors and mounting screws to secure the Wall Controller to the wall;
- Follow the “Wall Controller Configuration” instructions;
- Replace the Wall Controller cover
- Plug in the VRP® or FreshAire® PTAC unit.



Wall Controller Wiring Installation

There are four sets of connections for the VRPXEMRT2 Wall Controller. The supplied cable from the VRPXEMRT2 Wall Controller as shown in Figure 1, has four color coded wires. Each of these wires must be connected to two Cat6 wires (not supplied) as shown in Figure 2. Each connection is made with a lever type connector. Four connectors will be needed to complete unit wiring. Each connector is capable of connecting three wires.

Figure 1

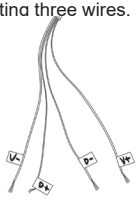


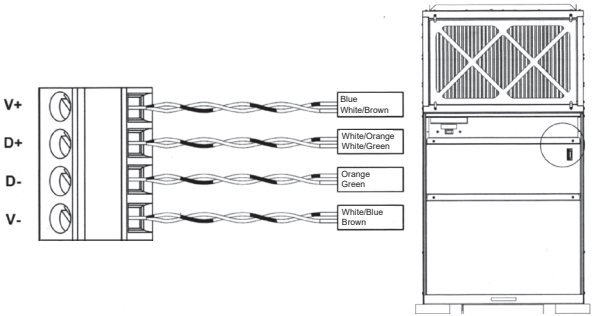
Figure 2

	WIRE COLOR	LABEL
Blue	Connection 1	V+ Red
Brown/White		
Green	Connection 2	D- Blue
Orange		
White/Green	Connection 3	D+ Brown
White/Orange		
White/Blue	Connection 4	V- Green
Brown		

Wall Controller Wiring Installation

VRP® Wiring Installation (Cat6 to VRP®)

- Strip 2" off outer sheath of each end of Cat6 Wire (not supplied);
- Twist the exposed wires as indicated below;
- Connect one end of Cat6 Wire to the appropriate VRP® terminals as shown in wiring table below.



VRP Terminal	Cat6 Wire Color
V+	Blue
	White/Brown
D+	White/Orange
	White/Green
D-	Green
	Orange
V-	White/Blue
	Brown

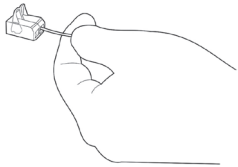
Wall Controller Wiring Installation

General Connection Procedure:

1. Remove 2” of the outer sheath of the CAT6 cable (not supplied) including the shield and strip the wires.

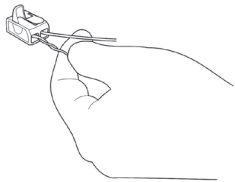
2. Insert the specified wire from the Wall Controller into a slot of the lever connector as shown in Figure 3 and close lever as shown in Figure 4.

Figure 3.



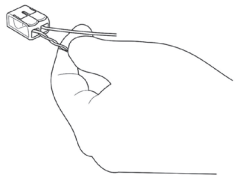
3. Insert the twisted wires from the CAT6 cable into the remaining lever connector slot as shown in Figure 4. Each twisted, paired wire should be inserted into its own separate slot in the lever connector.

Figure 4.



4. Close the orange lever on the lever connector as shown in Figure 5. Make sure the levers seat properly.

Figure 5.



Wall Controller Wiring Installation

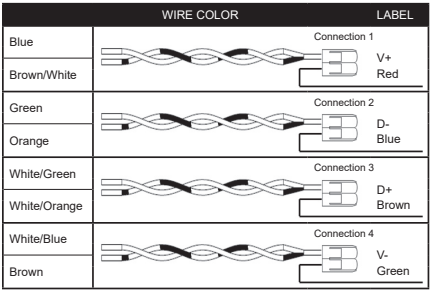
VRP Wiring Installation (Wall Unit to Lever Connector)

Connection 1: Insert the Orange (V+) wire from the Wall Controller into a lever connector slot and close the orange lever on the connector.
Insert the twisted Orange and Green/White Cat 6 wires into the remaining lever connector slot and close the orange lever on the connector.

Connection 2: Insert the Brown (D+) wire from the Wall Controller into a lever connector slot and close the orange lever on the connector.
Insert the twisted Brown and Blue/White Cat 6 wires into the remaining lever connector slot and close the orange lever on the connector.

Connection 3: Insert the Blue (D-) wire from the Wall Controller into a lever connector slot and close the orange lever on the connector.
Insert the twisted Blue and Brown/White Cat 6 wires into the remaining lever connector slot and close the orange lever on the connector.

Connection 4: Insert the Green (V-) wire from the Wall Controller into a lever connector slot and close the orange lever on the connector.
Insert the twisted Green and Orange/White Cat 6 wires into the remaining lever connector slot and close the orange lever on the connector.

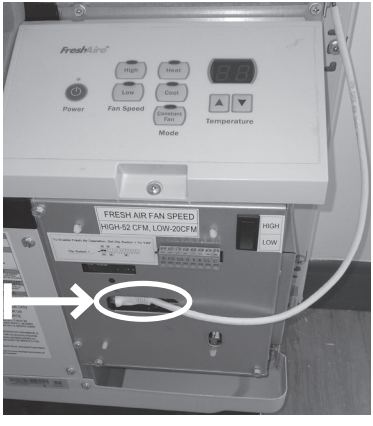


Wall Controller Wiring Installation

FreshAire® PTAC Installation (Cat 6 to FreshAire® PTAC)

Note: Friedrich FreshAire® PTAC models with a SKU ending in 'A' are **not** compatible with the VRPXEMRT2 thermostat.

- Connect one end of the Cat6 wire to the FreshAire® PTAC using the RJ45 port on the PTAC unit.



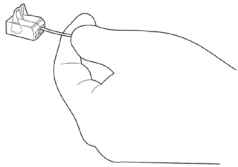
Wall Controller Wiring Installation

General Connection Procedure:

1. Remove 2” of the outer sheath of the CAT6 cable (not supplied) including the shield and strip the wires.

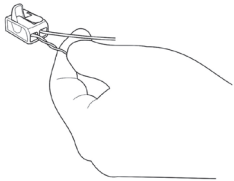
2. Insert the specified wire from the Wall Controller into a slot of the lever connector as shown in Figure 3 and close lever as shown in Figure 4.

Figure 3.



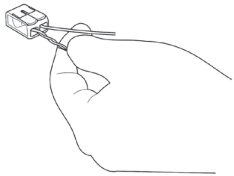
3. Insert the twisted wires from the CAT6 cable into the remaining lever connector slot as shown in Figure 4. Each twisted, paired wire should be inserted into its own separate slot in the lever connector.

Figure 4.



4. Close the orange lever on the lever connector as shown in Figure 5. Make sure the levers seat properly.

Figure 5.



Wall Controller Wiring Installation

FreshAire® PTAC Installation (Wall Controller to Lever Connector)

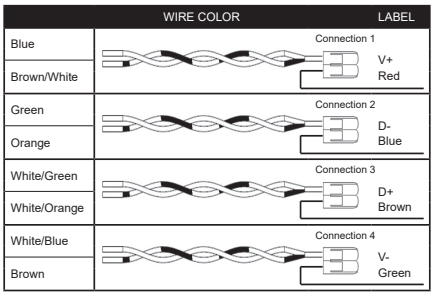
Connection 1: Insert the Red (V+) wire from the Wall Controller into a lever connector slot and close the orange lever on the connector.
Insert the twisted Blue and Brown/White Cat 6 wires into the remaining lever connector slot and close the orange lever on the connector.

Connection 2: Insert the Blue (D-) wire from the Wall Controller into a lever connector slot and close the orange lever on the connector.
Insert the twisted Green and Orange Cat 6 wires into the remaining lever connector slot and close the orange lever on the connector.

Connection 3: Insert the Brown (D+) wire from the Wall Controller into a lever connector slot and close the orange lever on the connector.
Insert the twisted White/Green and White/Orange Cat 6 wire into the remaining lever connector slot and close the orange lever on the connector.

Connection 4: Insert the Green (V-) wire from the Wall Controller into a lever connector slot and close the orange lever on the connector.
Insert the twisted White/Blue and Brown Cat 6 wire into the remaining lever connector slot and close the orange lever on the connector.

Figure 6



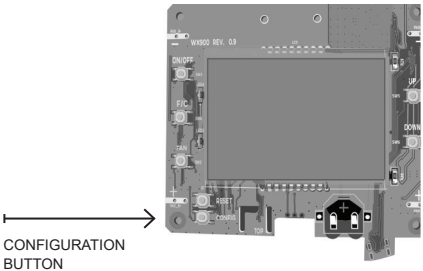
Wall Controller Configuration

Once the Wall Controller is powered, Wall Controller configuration settings will appear on the Wall Controller screen.

In order to properly operate the VRP® or FreshAire® PTAC unit:

- Set the Wall Controller clock;
- Enter the room number;
- Configure the Equipment Type
- Select Energy Savings Preset;

The Wall Controller configuration screens have a 30-second time-out. If no action is taken within thirty (30) secondss, the Wall Controller will exit configuration settings.



NOTE: You can access Wall Controller Configuration settings at any time by pressing the “Configuration” button.

NOTE: If the Wall Controller is connected to a network, the equipment and the energy saving settings configured on the Wall Controller will be ignored and the settings configured on the Remote Management Website will be applied.

Wall Controller Configuration

Setting the Wall Controller Clock

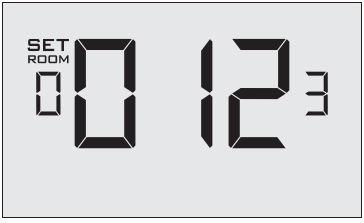
Set the Wall Controller clock to current time in 24 hr. (Military Time) format.

- Use the “Up” and “Down” buttons to set the hours;
- Press the “Fan” button to advance to the minutes setting;
- Use the “Up” and “Down” buttons to set the minutes;
- Press the “F/C” button to advance to the next menu;

Setting the clock correctly is crucial for proper operation of the Wall Controller.

Wall Controller Configuration

Entering the Room Number



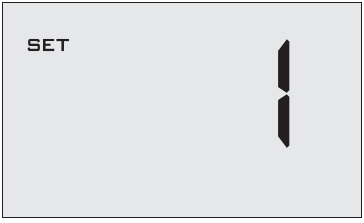
Enter the room number by changing the digits on the screen. Leading zeros “0” preceding other digits will be ignored, i.e. Room number “123” should be entered as “00123”.

- Use the “Up” and “Down” buttons to change the digit;
- Press the “Fan” button advance to the next digit;
- Press the “F/C” button to advance to the next menu;

Entering the room number correctly is crucial for proper operation of remotely managed Wall Controllers.

Wall Controller Configuration

Configuring the Equipment Type



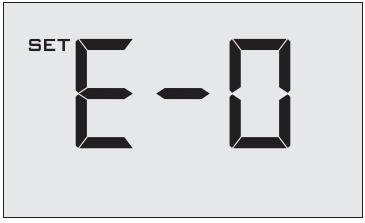
Use the “Up” and “Down” buttons to select the Equipment Type:

01 * VRP® Units
02 FreshAire® PTAC units;

* Indicates default setting;

Wall Controller Configuration

Configuring the Energy Savings Settings



Use the “Up” and “Down” buttons to select the Energy Saving preset:

E-0* Energy Savings Off - No Temperature Setback;
E-1 Lowest Energy Savings;
E-2 Lower Energy Savings;
E-3 Standard Energy Savings;
E-4 Higher Energy Savings;
E-5 Highest Energy Savings;

Refer to the APPENDIX 1 for Energy Saving Preset details.

E-C Indicates “Custom Energy Savings Settings” in case the active Wall Controller savings settings differ from any Energy Saving preset;

For details, refer to the “Custom Energy Savings Settings” section;
Press the “Power” button to save the Wall Controller Configuration and start using the Wall Controller;

* Indicates default setting;

Wall Controller Configuration

Testing the Wall Controller

Following the Wall Controller configuration, test if the Wall Controller is controlling the VRP® or FreshAire® PTAC unit.

- Press the “Power” button to turn the Wall Controller ON;
- Press the “Up” and “Down” buttons to change the temperature set point above and below the current room temperature to test if the Wall Controller initiates heating and cooling - the VRP® or FreshAire® PTAC should turn heating and air conditioning on and off.
- Change the fan speed by touching “Fan” button to test if the Wall Controller is controlling the fan speed.

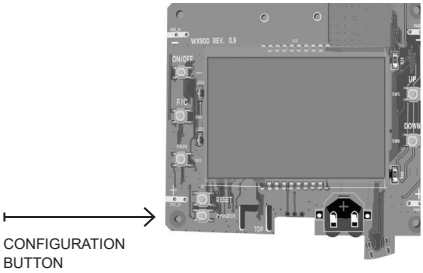
Custom Energy Savings Settings

If you don't want to use the one of the energy saving presets listed on page 15 and detailed in the Appendix 1, you can enter the custom energy savings settings.

Accessing the Wall Controller Settings

- Press and hold the "Configuration" button until the first Wall Controller settings screen appears.

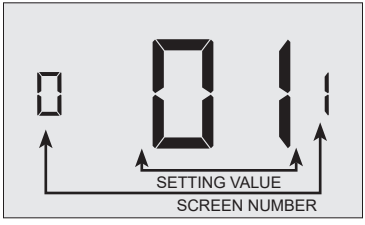
The Wall Controller must be turned on to access the Wall Controller settings.
NOTE: If the Wall Controller is connected to a network, the equipment and the energy saving settings configured on the Wall Controller will be ignored and the settings configured on the Remote Management Website will be applied



NOTE: You can access Wall Controller Settings by pressing and holding the "Configuration" button.

Custom Energy Savings Settings

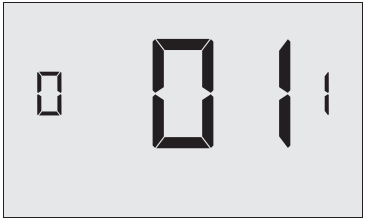
Using the Wall Controller Settings Screens



- Use the “Up” and “Down” buttons to change the setting;
- Press the “F/C” button to advance to the next setting;
- Press the “Fan” button to return to the previous setting;
- Press the “Power” button to save and exit Wall Controller settings;

Custom Energy Savings Settings

01 - Fan Control Mode



Select Fan Control Mode:

00 MANUAL – Occupant can select automatic or continuous fan mode;

01 * AUTOMATIC – Fan runs only when there is a demand for heating or air conditioning

* Indicates default setting;

Custom Energy Savings Settings

02 - 1st Stage Differential - Heat

02-30 (0.2°F - 3.0°F; 0.5°F* default setting)

Select the number of degrees the Wall Controller has to sense between the automatic changeover temperature for heat and the room temperature before a call for the 1st stage heating is initiated.

Custom Energy Savings Settings

03 - 2ND Stage Differential - Heat

10-20 (1.0°F - 2.0°F*; 2.0°F* default setting)
Select the difference between 1st stage heating and 2nd stage heating initiation.

10-20 (1.0°F - 2.0°F*; 2.0°F* default setting)
Select the difference between 1st stage heating and 2nd stage heating initiation.

Custom Energy Savings Settings

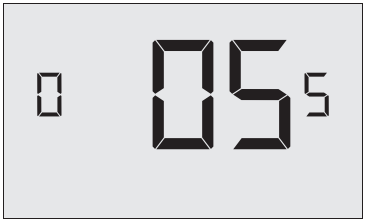
04 - 1st Stage Differential - Cool

02-30 (0.2°F - 3.0°F; 0.5°F* default setting)

Select the number of degrees the Wall Controller has to sense between the automatic changeover temperature for cool and the room temperature before a call for the 1st stage cooling is initiated.

Custom Energy Savings Settings

05 - Incidental Occupancy Threshold



00-60 (05* default setting)

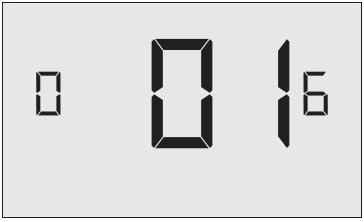
Select the minimum period of time (in minutes) for which occupancy needs to be detected to enter the occupant occupancy mode.
When occupancy is detected, Wall Controller will switch to occupied mode for a duration of “Incidental Occupancy Threshold” selected here.

If occupancy is detected for a period of time shorter than the “Incidental Occupancy Threshold” selected here, the Wall Controller will automatically revert to unoccupied mode at the end of the “Incidental Occupancy Threshold” period and continue to observe energy saving functions that were in effect before the room became occupied.

This setting allows ignoring incidental room visits. If occupancy is detected for a period of time longer than the “Incidental Occupancy Threshold” selected here, the Wall Controller will enter occupied mode. When the Wall Controller is in occupied mode, it will revert to unoccupied mode and initiate the setback temperature only when occupancy is not detected for the duration of the setback delay (Heat or Cool) period.

Custom Energy Savings Settings

06– Night Occupancy Threshold



00-60 (01* default setting)

Select the minimum period of time (in minutes) for which occupancy needs to be detected in order to consider the room occupied during the “Night Occupancy”period.

When occupancy is detected during the “Night Occupancy Period” for longer than the “Night Occupancy Threshold” selected here, the Wall Controller will instantaneously switch to occupied mode.

If occupancy is detected for a period of time shorter than the “Night Occupancy Threshold” selected here, the Wall Controller will automatically revert to unoccupied mode and continue to observe energy saving functions that were in effect before the room became occupied.

If occupancy is detected for a period of time longer than the “Night Occupancy Threshold” selected here, the Wall Controller will disable the occupancy sensor and consider the room occupied until the end of the “Night Occupancy” period.

This feature ensures that energy saving functions that may affect occupant comfort will not come in effect during the “Night Occupancy” period.

Custom Energy Savings Settings

07 – NA

Custom Energy Savings Settings

08 – Night Occupancy Start

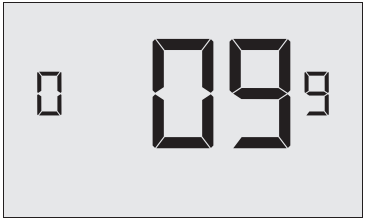
00-23 (21* default setting)

Select the start time (in hours - 24-hour clock) for “Night Occupancy”
If occupancy is detected for a period of time longer than the “Night Occupancy Threshold” during “Night Occupancy” period, the Wall Controller will disable the occupancy sensor and consider the room occupied until the end of the “Night Occupancy” period.

This feature ensures that energy saving functions that may affect occupant comfort will not come in effect during the “Night Occupancy” period if room was occupied for a period of time longer than “Night Occupancy Threshold”.

Custom Energy Savings Settings

09 – Night Occupancy End



00-23 (09* default setting)

Select the time (in hours - 24-hour clock) for “Night Occupancy” to end.
The time of day the “Night Occupancy” ends and the Wall Controller switches back to the room sensing settings chosen in the other occupancy modes.

Custom Energy Savings Settings

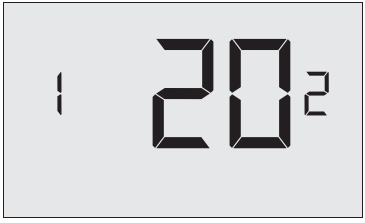
10 – NA

Custom Energy Savings Settings

11 – NA

Custom Energy Savings Settings

12– Temperature Setback Delay - Heat



00-120 (20* default setting)

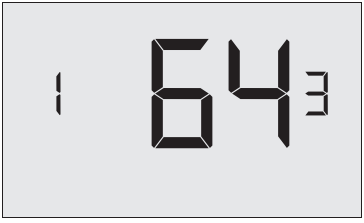
Select the time delay (in minutes) for which the room that is in the occupant occupancy mode needs to be unoccupied before the temperature setback is initiated.

This feature prevents initiating temperature setback prematurely while the occupant is still in the room but in an area where occupancy cannot be detected by the occupancy sensor.

Setting the “Temperature Setback Delay - Heat” to “00”, disables the setback in the heat mode. Set to “00” to disable EMS.

Custom Energy Savings Settings

13 – Minimum Setback Temperature



52-72 (64°F* default setting)

Select the “Minimum Setback Temperature” in °F. Setback temperature is calculated by measuring VRP unit’s ability to attain “Recovery Temperature - Heat” within “Temperature Recovery Time”.

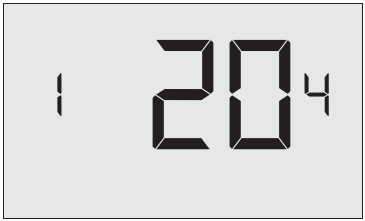
If recovery is disabled (“Temperature Recovery Time” is set to “0”) or if setback temperatures have not yet been calculated, the “Minimum Setback Temperature” value will be used as the setback temperature for heating.

If calculated setback temperature for heating is lower than “Minimum Setback Temperature”, then the “Minimum Setback Temperature” will be used as setback temperature for heating.

This feature allows defi ning the minimum temperature in a room when room is unoccupied and the Wall Controller is in the setback mode.

Custom Energy Savings Settings

14 – Temperature Setback Delay- Cool



00-120 (20* default setting)

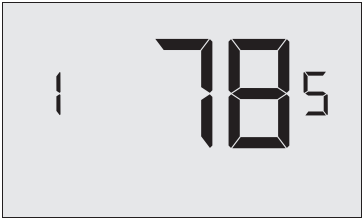
Select the time delay (in minutes) for which the room that is in the occupant occupancy mode needs to be unoccupied before the temperature setback is initiated.

This feature prevents initiating temperature setback prematurely while the occupant is still in the room but in an area where occupancy cannot be detected by the occupancy sensor.

Setting the “Temperature Setback Delay - Cool” to “00”, disables the setback in the cool mode. Set to “00” to disable EMS.

Custom Energy Savings Settings

15 – Maximum Setback Temperature



72-92 (78°F* default setting) Select the “Maximum Setback Temperature” in °F.

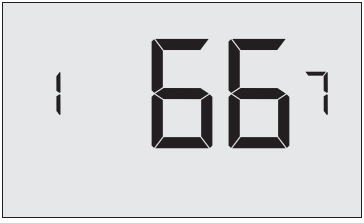
This feature allows defi ning the maximum temperature in a room when room is unoccupied and the Wall Controller is in the setback mode.

Custom Energy Savings Settings

16 – NA

Custom Energy Savings Settings

17 – Minimum Set Point

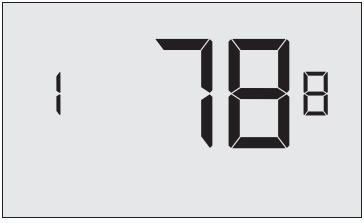


64-84 (66°F* default setting)

Select the minimum set point in °F that a occupant can select.16 – RECOVERY TEMPERATURE - COOL

Custom Energy Savings Settings

18 – Maxmium Set Point

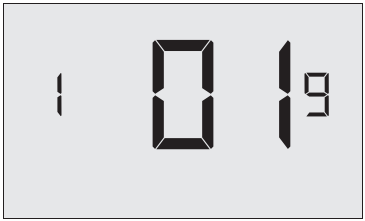


60-82 (78°F* default setting)

Select the maximum set point in °F that an occupant can select.

Custom Energy Savings Settings

19 – Temperature Control Mode



Select Temperature Control Mode:

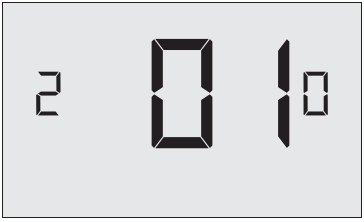
00 MANUAL – Allows users to select HEAT only or COOL only temperature control mode to maintain the room temperature;

01 * AUTOMATIC – Wall Controller automatically turns on heating or air conditioning to maintain the room temperature at the selected temperature set point;

* Indicates default setting;

Custom Energy Savings Settings

20 – Auto Changeover Set Point Offset



00-04 (01°F* default setting)

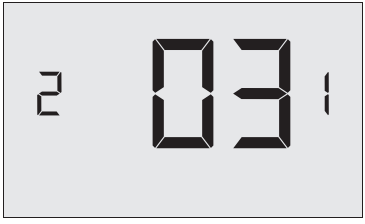
Select the difference between the occupant-selected set point and the heat and the cool set point when the Wall Controller is in the automatic temperature control mode.

This value plus the 1st stage differential defined in steps 02 and 04, defines the temperature at which the Wall Controller would automatically change heating/ cooling modes.

This feature allows adjusting the deadband between the heat and the cool set points in automatic changeover mode in order to avoid the system from bouncing back and forth between heating and cooling under normal operating conditions.

Custom Energy Savings Settings

21 – Setback Set Points / Auto-restore



00 When room is unoccupied and the Wall Controller is in the setback mode or turned off, it will NOT maintain the temperature between heat and cool setback set points;
When an occupant enters the room, the Wall Controller will be turned off - it will not automatically restore the most recent occupant settings;

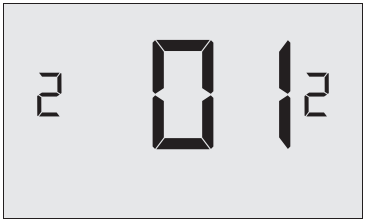
01 When room is unoccupied and the Wall Controller is in the setback mode or turned off, it will maintain the temperature between heat and cool setback set points;
When an occupant enters the room, the Wall Controller will be turned off - it will not automatically restore the most recent occupant settings;

02 When room is unoccupied and the Wall Controller is in the setback mode or turned off, it will NOT maintain the temperature between heat and cool setback set points;
When an occupant enters the room, the Wall Controller will automatically restore the most recent occupant settings;

03 * When room is unoccupied and the Wall Controller is in the setback mode or turned off, it will maintain the temperature between heat and cool setback set points;
When an occupant enters the room, the Wall Controller will automatically restore the most recent occupant settings.

Custom Energy Savings Settings

22 – Automatic Humidity Control†



00 Disable automatic humidity control;
01 * Enable automatic humidity control;

When “Automatic Humidity Control” is enabled, Wall Controller will turn on air conditioning in an unoccupied room when humidity raises above 60% and room temperature is above 72°F until either room humidity is below 55% or room temperature is below 72°F;

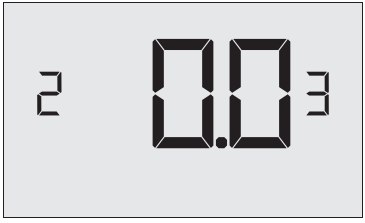
* Indicates default setting;
† This setting is active only on Wall Controllers with enabled humidity features. Changing this setting on a non-humidity Wall Controller will have no effect on Wall Controller operation.

Humidity features can be enabled on compatible Wall Controllers via remote management.

Certain models only. Additional fees apply.

Custom Energy Savings Settings

23 – Temperature Calibration



-5.0 – 5.0 (0.0°F* default setting)

Calibrate the temperature display : -5.0°F - 5.0°F.

Troubleshooting

Error Codes

ERR 1	Wall Controller Temperature Sensor Hardware Defect
ERR 2	Wall Controller Radio Hardware Defect
ERR 3	Wall Controller Radio Software Defect
ERR 5	Wall Controller Memory Defect
ERR 8	Communication Error with VRP® Unit

APPENDIX 1 - Energy Saving Presets

SCREEN NUMBER		Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
1	Fan Control Mode	AUTO	AUTO	AUTO	AUTO	AUTO	AUTO
2	1st Stage Differential Heat	0.5	0.5	0.5	0.5	0.5	0.5
3	2nd Stage Differential Heat	1	1	1	2	2	2
4	1st Stage Differential Cool	0.5	0.5	0.5	0.5	0.5	0.5
5	Occupant Occupancy Threshold	0	5	5	5	5	5
6	Night Occupancy Threshold	1	1	1	1	1	1
7	N/A						
8	Night Occupancy Start	18	19	20	21	22	23
9	Night Occupancy End	12	11	10	9	8	7
10	N/A						
11	N/A						
12	Setback Delay - Heat	0	30	25	20	15	10
13	Minimum Setback Temperature	67	66	65	64	63	62
14	Setback Delay - Cool	0	30	25	20	15	10
15	Maximum Setback Temperature	72	74	76	78	80	82
16	N/A						
17	Minimum Set point	64	64	65	66	67	68
18	Maximum Set point	82	82	80	78	76	74
19	Temperature Control Mode	AUTO	AUTO	AUTO	AUTO	AUTO	AUTO
20	Auto Changeover Set Point Offset (Dead Band)	1	1	1	1	1	1
21	Auto Restore	OFF	ON	ON	ON	ON	ON
21	Setback Set Points	OFF	ON	ON	ON	ON	ON
22	Automatic Humidity Control	ON	ON	ON	ON	ON	ON
23	Temperature Calibration	0	0	0	0	0	0

APPENDIX 2 - Glossary

“Automatic Fan Control Mode” - fan runs only when there is a demand for heating or cooling;

“Manual Fan Control Mode” - occupant can select between automatic or continuous fan operation;

“Minimum Set point” - minimum temperature that a occupant can request;

“Maximum Set point” - maximum temperature that a occupant can request;

“Auto Changeover Set Point Offset” - the difference between the occupant-selected set point and the heat and cool changeover temperatures;

“1st Stage Differential - Heat” - the amount of degrees the Wall Controller has to sense between the automatic changeover temperature for heat and the room temperature before a call for the 1st stage heating is initiated;

“2nd Stage Differential - Heat” - difference between 1st stage heating temperature and room temperature before the 2nd stage heating is initiated;

“1st Stage Differential - Cool” - the amount of degrees the Wall Controller has to sense between the automatic changeover temperature for cool and the room temperature before a call for the 1st stage cooling is initiated;

“Maximum Setback Temperature” - the highest room temperature allowed when Wall Controller is in the setback mode;

“Minimum Setback Temperature” - the lowest room temperature allowed when Wall Controller is in the setback mode;

“Temperature Setback Delay” - the length of time for which the room that is in the occupant occupancy mode needs to be unoccupied before the temperature setback is initiated;

“Incidental Occupancy Threshold” - the minimum period of time (in minutes) for which occupancy needs to be detected in order to enter the “Occupant Occupancy” mode;

“Night Occupancy Threshold” - the minimum period of time during the “Night Occupancy” period for which occupancy needs to be detected in order to enter the “Night Occupancy” mode;

“Night Occupancy Period” - The period of time during the day during which the “Night Occupancy” mode can be activated if occupancy longer than the “Night Occupancy Threshold” is detected;

“Auto Restore On” - Wall Controller will restore the most recent occupant settings when new occupancy is detected;

“Auto Restore Off” - Wall Controller will NOT restore the most recent occupant and will remain turned off settings when new occupancy is detected;

“Setback Set points On” - Wall Controller will maintain setback temperatures when room is unoccupied;

“Setback Set points Off” - Wall Controller will NOT maintain setback temperatures when room is unoccupied;

“Incidental Occupancy” - occupancy shorter than the “Incidental Occupancy Threshold”;

“Occupant Occupancy” - occupancy longer than the “Incidental Occupancy Threshold”;

“Temperature Setback” - Wall Controller maintains setback temperatures and not the occupant set point temperature in order to save energy;

“Night Occupancy Mode” - Wall Controller status during which setback mode is disabled if occupancy longer than “Night Occupancy Threshold” is detected within the “Nigh Occupancy” period;

“Automatic Temperature Changeover” - Wall Controller automatically activates heating or cooling to maintain the desired room temperature;

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radio électrique subi, même si le brouillageest susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotroperayonnéequivalente (p.i.r.e.) ne dépassepasl'intensiténécessaire à l'établissementd'une communication satisfaisante.

COVERED BY ONE OR MORE OF THE FOLLOWING PATENTS. US PATENTS: 8,369,994; 8,141,791; 7,918,406; 7,232,075; 7,185,825; 7,156,318; 7,152,806; 7,145,110; 7,050,026; 7,028,912; 6,902,117; 6,789,739; 6,786,421; 6,619,555; 6,581,846; 6,578,770; 7,838,803; 7,841,542; D556,061; D518,744; RE40,437; CANADIAN PATENTS: 2,633,113; 2,633,200; OTHER PATENTS PENDING.

Technical Specifications

	Wall Controller
Case Dimensions (Imperial)	4.015 x 5.5118” x 0.925”
Case Dimensions (Metric)	102mm x 140mm x 23.5mm
Screen Dimensions (Imperial)	3.625” x 2.125”
Screen Dimensions (Metric)	92mm x 54mm
Operating Voltage	12V DC
Control Outputs	RS485
Occupancy Sensor Beam Width	±47° (94°)
Wireless Frequency	900MHz
Temperature Accuracy	±1°F
FCC ID	XEYWX
IC	8410A-WX

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