

verdant[®]

VX-TW
Network
Installation

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Whitelisting the Server

THE SERVER REQUIRES A LIVE ETHERNET PORT FOR MAC ADDRESS PRINTED ON THE SERVER WITH DHCP AND THE ABILITY TO CONNECT OUTWARD VIA TCP TO A REMOTE MACHINE.

CONTACT THE PROPERTY SYSTEM ADMINISTRATOR TO WHITE LIST THE SERVER MAC ADDRESS FOR CONNECTING TO THE INTERNET.

THE SERVER MAC ADDRESS IS PRINTED ON THE SERVER.

Installing the Online Connection Kit

BEFORE YOU BEGIN

DETERMINE THAT THE SERVER INSTALLATION LOCATION IS SUITABLE.

INSTALL THE SERVER IN A ROOM ADJACENT TO ROOMS IN WHICH VERDANT THERMOSTATS WILL BE INSTALLED. THE MAXIMUM DISTANCE WILL VARY DEPENDING ON THE TYPE OF THE BUILDING CONSTRUCTION.

DO NOT INSTALL THE SERVER IN THE BASEMENT

1. Connecting the Antenna Module



- 1.1. Screw the Antenna onto the Wireless Receiver;
- 1.2. Connect the Wireless Receiver to the Server using the supplied USB cable;
- 1.3. Fix the Wireless Receiver to the wall with double-sided adhesive tape.

Orient the antenna to be parallel to the closest room in which Verdant thermostat will be installed;

WIRELESS RECEIVER AND THE ANTENNA MUST NOT BE INSTALLED NEAR METAL STRUCTURES OR SURFACES.

METAL STRUCTURES AND SURFACES SIGNIFICANTLY REDUCE THE RANGE OF THE WIRELESS SIGNAL.

Installing the Online Connection Kit

2. Connecting the Ethernet Cable

- 2.1. Connect the Server to the LAN port with the supplied RJ-45 cable;



3. Powering on the Server

- 3.1. Plug the Server into an electrical outlet with the supplied power cord;



TO PREVENT POWER RELATED ISSUES PLUG THE SERVER INTO A UPS (UNINTERRUPTED POWER SUPPLY) UNIT.

LOGIN TO THE REMOTE MANAGEMENT WEBSITE TO CONFIRM THE SERVER IS CONNECTED TO THE INTERNET. IF THE SERVER IS NOT CONNECTED TO THE INTERNET, STOP THE INSTALLATION AND CONTACT VERDANT TECHNICAL SUPPORT.

Installing Thermostats

START BY FIRST INSTALLING A THERMOSTAT IN THE ROOM CLOSEST TO THE SERVER.

CONTINUE BY INSTALLING ADJACENT ROOMS ONLY AFTER CONFIRMING THAT INSTALLED THERMOSTAT(S) HAVE CONNECTED TO THE WIRELESS NETWORK.

THE ROOMS FURTHEST AWAY FROM THE SERVER SHOULD BE INSTALLED LAST.

DETERMINE THE APPROPRIATE INSTALLATION LOCATION FOR THE THERMOSTAT - THE THERMOSTAT SHOULD FACE THE BED AREA OF THE ROOM.

THERMOSTAT 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.

Installing Thermostats

4. Pairing the Thermostat and the Wireless Control Card



- 4.1. Plug one Network Programmer connector into the T-shape opening on the Thermostat;
- 4.2. Plug the other Network Programmer connector into the T-shape opening on the Wireless Control Card;
- 4.3. Push the Black Button on the Network Programmer.

The red light on the Network Programmer will turn on and remain steadily lit;

If the red light on the Network Programmer is blinking or is not steadily lit, the thermostat and the control cards have not been programmed correctly. Unplug the Network Programmer connector from the thermostat and the control card and repeat the steps above.

- 4.4. Unplug the Network Programmer from the thermostat and the control card;

THERMOSTAT AND CONTROL CARD MUST NOT BE POWERED DURING THE PAIRING PROCEDURE. DO NOT INSERT BATTERIES IN THE THERMOSTAT AND DO NOT CONNECT THE CONTROL CARD TO THE HVAC UNIT DURING THE PAIRING PROCEDURE.

Installing Thermostats

5. Installing the Wireless Control Card

IF THE HVAC UNIT OUTPUTS AC POWER, MAKE SURE THAT THE JUMPER ON THE WIRELESS CONTROL CARD IS IN THE AC POSITION - JUMPER IS CONNECTING "R" AND "COM" PINS (DEFAULT).

IF THE HVAC UNIT OUTPUTS DC POWER, MAKE SURE THAT THE JUMPER ON THE WIRELESS CONTROL CARD IS IN THE DC POSITION - JUMPER IS CONNECTING "COM" AND "C" PINS.

Wiring Table - 24V AC

Wire Color	Terminal Letter	Terminal Connection
Black	C	Common
Red	R	24V
Yellow	Y	Compressor
White	W	Heat
Orange	O or B	Reverse Valve
Green	GH	Fan High
Purple	GL	Fan Low

Wiring Table - 24V DC

Wire Color	Terminal Letter	Terminal Connection
Black	R	24V
Red	C	Common
Yellow	Y	Compressor
White	W	Heat
Orange	O or B	Reverse Valve
Green	GH	Fan High
Purple	GL	Fan Low

NOTE: If the PTAC unit has only one (1) fan speed, connect both fan control wires – Green and Purple – to the fan terminal (G).

5.1. Set the HVAC unit to "External Thermostat" (Class 2) mode. Consult the HVAC unit documentation to determine how to set the HVAC unit to "External Thermostat" mode.

5.2. Power Off the HVAC unit;

5.3. Connect the Wireless Control Card to the thermostat terminals on the HVAC unit.

Refer to the Wiring Tables to determine proper wiring.

Use the supplied molex connector to connect to HVAC units with pin connectors.

Clip and strip wires to connect to HVAC units with screw-terminals.

WIRELESS CONTROL CARD ANTENNA MUST NOT BE TOUCHING ANY METAL COMPONENTS OF THE HVAC UNIT.

WIRELESS CONTROL CARD ANTENNA MUST FACE THE THERMOSTAT ON THE WALL AND BE ORIENTED SO THAT ANY METAL PARTS OF THE HVAC UNIT DO NOT OBSTRUCT THE WIRELESS COMMUNICATION TO THE THERMOSTAT AND, IN CASE OF A NETWORK INSTALLATION, TO OTHER WIRELESS CONTROL CARDS AND THE SERVER.

WIRELESS CONTROL CARD MUST NOT BE PLACED IN THE HVAC UNIT CONDENSATION PAN AND MUST BE MOUNTED SO IT CANNOT FALL INTO THE HVAC UNIT CONDENSATION PAN.

5.4. Mount the control card inside of the HVAC unit.

5.5. Power On the HVAC unit.

Installing Thermostats

6. Mounting the thermostat to the wall;

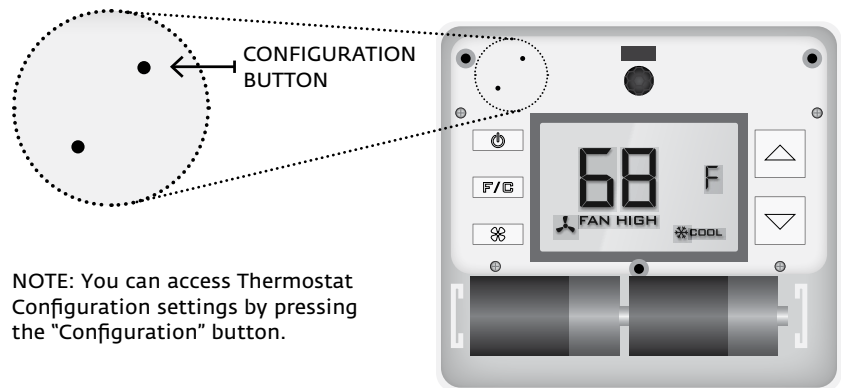
- 6.1. Remove the thermostat cover;
- 6.2. Use the supplied wall anchors and mounting screws to secure the thermostat to the wall;
- 6.3. Insert two (2) C-cell batteries (not supplied) into the thermostat battery compartment;
- 6.4. Follow the "Thermostat Configuration" instructions to correctly configure the thermostat.
- 6.5. Replace the thermostat cover and screw in the fixing screw;

Configuring Thermostats

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

In order to properly operate the PTAC unit:

- Set the thermostat clock;
- Enter the room number;
- Configure the equipment settings;
- Select Energy Savings Preset;



NOTE: You can access Thermostat Configuration settings by pressing the "Configuration" button.

- Use the "Up" and "Down" buttons to change the setting;
- Press the "Fan" button to advance to the next setting;
- Press the "F/C" button to advance to the next configuration screen;
- Press the "Power" button to save and exit configuration;

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

Configuring Thermostats

7. Setting the thermostat clock



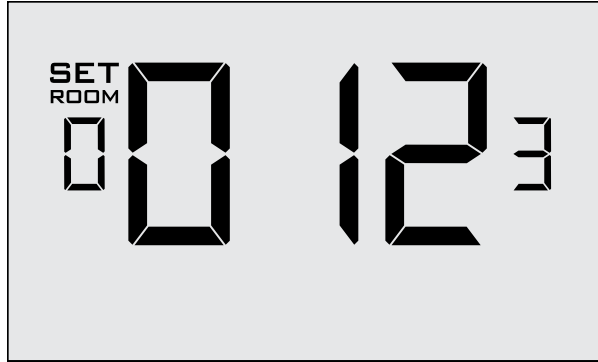
Set the thermostat clock to current time.

- Use the "Up" and "Down" buttons to set the hours;
- Press the "Fan" button to set the minutes;
- 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 THERMOSTAT.

Configuring Thermostats

8. Entering the room number



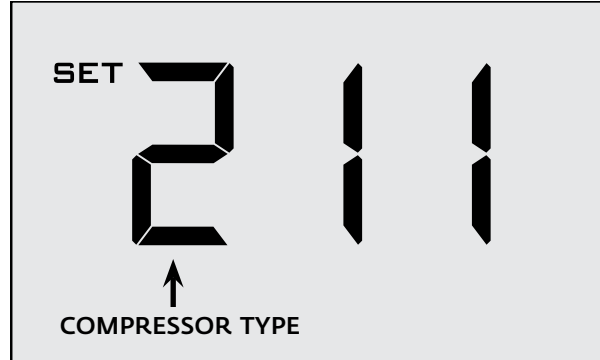
Enter the room number by changing the digits on the screen. Leading zeros "0" preceding other digits will be ignored, i.e. Room number "123" should be entered as "00123".

- 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 NETWORKED THERMOSTATS.

Configuring Thermostats

9. Configuring the Equipment Settings - Compressor Type



- Use the "Up" and "Down" buttons to change the compressor type by changing the first digit;

0 No Compressor

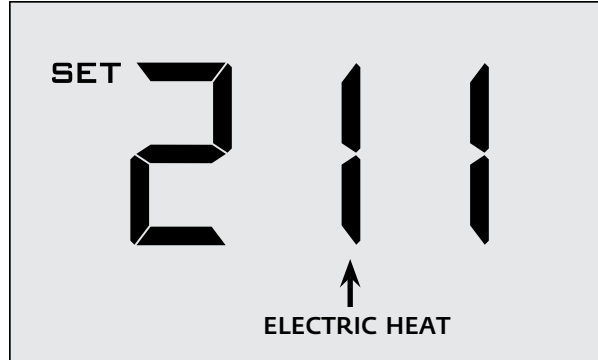
1 Heat Pump

*2** Air Conditioner

- Press the "Fan" button to advance to the next setting;

Configuring Thermostats

10. Configuring the Equipment Settings - Electric Heat



- Use the "Up" and "Down" buttons to change the Electric Heat setting by changing the second digit;

0 No Electric Heat

1* Electric Heat

- Press the "Fan" button to advance to the next setting;

Configuring Thermostats

11. Configuring the Equipment Settings - Reversing Valve



- Use the "Up" and "Down" buttons to change the Reversing Valve setting by changing the third digit;

0 Energizes the PTAC OB valve to COOL;

*1** Energizes the PTAC OB valve to HEAT;

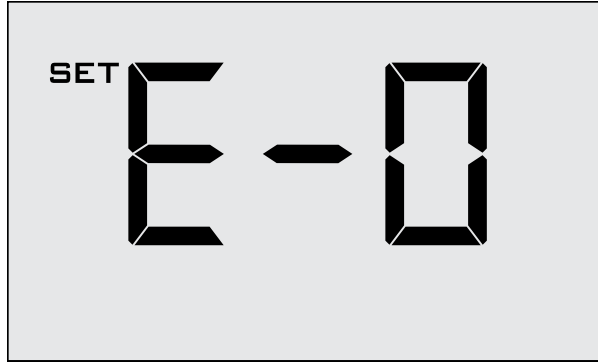
Refer to the PTAC unit documentation to determine the correct OB VALVE setting.

If incorrect OB VALVE Setting is selected, the PTAC unit will turn on the heating when air conditioning is requested and turn on the air conditioning when heating is requested;

- Press the "Fan" button to advance to the next setting;
- Press the "F/C" button to advance to the next menu;

Configuring Thermostats

12. Configuring the Energy Saving Settings



➤ Use the "Up" and "Down" buttons to select one of Energy Saving presets;

*0** Energy Savings Off - No Temperature Setback;

1 Lowest Energy Savings;

2 Lower Energy Savings;

3 Standard Energy Savings;

4 Higher Energy Savings;

5 Highest Energy Savings ;

Testing Thermostats

Following the thermostat configuration, test if the thermostat is controlling the HVAC unit.

- Press the "Power" button to save the Thermostat Configuration and start using the thermostat;
- Press the "Power" button to turn the thermostat ON;
- Press the "Down" button to change the temperature setpoint below the current room temperature to confirm that the thermostat initiates air conditioning.
- Press the "Up" button to change the temperature setpoint above the current room temperature to confirm that the thermostat initiates heating.
- Change the fan speed by touching the "Fan" button to test if the thermostat is controlling the fan speed.

Confirming Network Connectivity

Confirm the thermostat is connected to the network before installing thermostats in additional rooms;

- Log in to Verdant's Remote Management Website;
- Navigate to the property being installed.
- Confirm that the thermostat is on the Remote Management Website with the correct room number;

IF INSTALLED THERMOSTAT(S) ARE NOT CONNECTING TO THE NETWORK AND DO NOT APPEAR ON THE VERDANT'S REMOTE MANAGEMENT WEBSITE, STOP THE INSTALLATION AND CONTACT VERDANT TECHNICAL SUPPORT

Troubleshooting

Thermostat is not controlling the PTAC unit.

1. Check if the HVAC unit is set to "External Thermostat" (Class 2) mode.

2. Verify the status of the red light on the Wireless Control Card;

➤ The red light is off

The control card is not powered. Verify the Wireless Control Card is properly wired to the PTAC unit;

➤ The red light is blinking with one (1) flash

The Wireless Control Card is powered but it is not connected to the thermostat, re-link the Thermostat and the Control card with the Network Programmer.

➤ The red light is blinking with three (3) flashes or continuously flashing.

The Wireless Control Card is connected to the thermostat - check the wireless control card wiring and the thermostat configuration.

Low Battery indicator is displayed on the thermostat screen..

➤ Replace thermostat batteries.

Error Codes

ERR1 Thermostat Temperature Sensor Hardware Defect

ERR2 Thermostat Radio Hardware Defect

ERR3 Thermostat Radio Software Defect

ERR4 No link with the Wireless Control Card

ERR5 Thermostat Memory Defect

Warranty

Hardware

Verdant Environmental Technologies ("Verdant") warrants the original end user ("Customer") that new Verdant products will be free from defects in workmanship and materials, under normal use, for one (1) year from the original purchase date.

Software

Verdant Environmental Technologies warrants to Customer that the Verdant thermostat software will perform in substantial conformance to its program specifications for a period of one (1) year from the date of the original purchase.

Exclusions

This warranty excludes (1) physical damage to the surface of the product, including cracks, scratches or marks on the screen or outside casing; (2) damage caused by misuse, neglect, improper installation, unauthorized attempts to open, repair, or modify the product, or any other cause beyond the range of intended use; (3) damage caused by accident, fire, power changes, other hazard, or Acts of God; (4) damage caused by water, liquids, or foreign chemicals including condensation and humidity; or (5) use of the product with any device if such device causes the problem.

Exclusive Remedies

Should a covered defect occur during the warranty period and Customer notifies Verdant's sole and exclusive remedy will be, at Verdant's sole option and expense, to repair or replace the product. Replacement products or parts may be new or reconditioned or a comparable version of the defective item. Verdant warrants any replaced product or part for a period of ninety (90) days from shipment, or through the end of the original warranty, whichever is longer.

Obtaining Warranty Service

To obtain Warranty Service follow Verdant's "Warranty Replacement Procedure".

Warranty Exclusive

THE FORGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED BY VERDANT ENVIRONMENTAL TECHNOLOGIES AND ITS SUPPLIERS.

Disclaimer

NEITHER VERDANT ENVIRONMENTAL TECHNOLOGIES NOR ITS SUPPLIERS SHALL BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE OR USE OF THIS PRODUCT, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE) OR ANY OTHER THEORY, EVEN IF VERDANT ENVIRONMENTAL TECHNOLOGIES HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. VERDANT ENVIRONMENTAL TECHNOLOGIES' ENTIRE LIABILITY SHALL BE LIMITED TO REPLACEMENT OR REPAIR OF THE PRODUCT.

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Technical Specifications

	Thermostat	Wireless Control Card
Case Dimensions (Imperial)	5.125 x 4.6875" x 1.25"	3.875" x 2.125" x 0.75"
Case Dimensions (Metric)	130mm x 119mm x 32mm	98mm x 54mm x 19mm
Screen Dimensions (Imperial)	3.625" x 2.125"	N/A
Screen Dimensions (Metric)	92mm x 54mm	N/A
Operating Voltage	3V DC - 2 "C" Cell Batteries	24V AC/DC
Control Outputs		Fan High (GH)
		Fan Low (GL)
		Compressor (Y)
		Heat Pump (OB)
		Electric Heat (W2)
Occupancy Sensor Beam Width	±47° (94°)	N/A
Wireless Frequency	900MHz	900MHz
Temperature Accuracy	±1°F	N/A



FCC ID: XEYVX
IC: 8410A-VX

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 UNDESIRE OPERATION.

PURSUANT TO PART 15.21 OF THE FCC RULES, ANY CHANGES OR MODIFICATIONS TO THIS EQUIPMENT NOT EXPRESSLY APPROVED BY VERDANT ENVIRONMENTAL TECHNOLOGIES, INC. MAY VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.



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US PATENTS: 8,369,994; 8,141,791; 7,918,406; 7,841,542; 7,838,803; RE40,437; 7,232,075; 7,185,825; 7,156,318; 7,152,806; 7,145,110; 7,058,477; 7,050,026; 7,028,912; 6,902,117; 6,789,739; 6,786,421; 6,619,555; 6,581,846; 6,578,770; CANADIAN PATENTS: CA2615065; CA2633113; CA2633121; CA2633200; OTHER PATENTS PENDING.

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