



# CPT100 3H/2C Wi-Fi Thermostat



Installation Manual



## Regulatory Statements

### FCC

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.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

### FCC AND INDUSTRY CANADA

RF Radiation Exposure statement: This equipment complies with FCC and Industry Canada RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the antenna and all persons.

Cet appareil est conforme aux limites d'exposition au rayonnement FR du FCC et d'Industrie Canada pour un environnement non contrôlé. Cet appareil devrait être installé et devrait fonctionner de sorte qu'il se trouve à une distance d'au moins 20 cm entre l'antenne et toute personne.

### INDUSTRY CANADA

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 radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## Safety Instructions

Please read these instructions carefully **BEFORE INSTALLING AND USING** the CPT100 Thermostat. This manual is meant to be used as a reference guide for the installation, configuration and maintenance of your device.

- Follow all regulations required by the local jurisdiction and electricity supplier regarding the installation or replacement of a thermostat. An authorized, qualified installer may be required
- **DO NOT CONNECT ANY TERMINALS TO 110 VAC or 220 VAC SUPPLY VOLTAGE.** The CPT100 Thermostat uses a 24 VAC power source.
- **DO NOT** expose the unit to voltage fluctuations of more than  $\pm 10\%$ .
- **DO NOT** cover any of the vents on the thermostat.
- **DO NOT** allow the unit to get wet. This device serves as a temperature control system in dry, closed living and office spaces.
- **DO NOT** place the thermostat in a bathroom or area of excessive moisture
- where relative humidity exceeds 90%.
- **DO NOT** expose the thermostat to temperatures below 14°F (-10°C) or above 140°F(60°C).
- **DO NOT** install this unit in an altitude of over 6,500 feet (2,000 meters).
- **DO NOT** use solvents or aggressive cleaning agents. A soft dry cloth is recommended.

***The manufacturer accepts no responsibility for any damage caused by failure to follow these instructions.***

## Using this Manual

For the latest Instructions go to: [WWW.INVERTERCOOL.COM](http://WWW.INVERTERCOOL.COM)

### Special Attention Boxes

This manual uses special attention icons to alert the reader of important safety concerns, information important to reliable operation of the controls or helpful installation/setup information.



#### **Safety:**

Indicates a condition which may cause severe personal injury, death or major property damage



#### **Important Information:**

Indicates information which requires special attention for correct operation of the control



#### **Your Benefit:**

Indicates helpful installation or setup information

# Contents

|   |             |
|---|-------------|
| <b>REGULATORY STATEMENTS</b> .....          | <b>i</b>    |
| <b>SAFETY INSTRUCTIONS</b> .....            | <b>ii</b>   |
| <b>USING THIS MANUAL</b> .....              | <b>.iii</b> |
| <b>IN THE BOX</b> .....                     | <b>1</b>    |
| <b>INSTALLING THE THERMOSTAT</b> .....      | <b>2</b>    |
| Tools .....                                 | 2           |
| Turn Off Power to HVAC System .....         | 2           |
| Determine Wiring Configuration .....        | 3           |
| Remove Old Thermostat .....                 | 5           |
| Install Mounting Plate .....                | 6           |
| Attach Wiring .....                         | 7           |
| Attach Display to Mounting Plate .....      | 8           |
| Turn on Power to HVAC System .....          | 9           |
| <b>DEVICE BOOT SEQUENCE</b> .....           | <b>9</b>    |
| <b>MOBILE SETUP</b> .....                   | <b>9</b>    |
| <b>SCREEN DISPLAY &amp; CONTROLS</b> .....  | <b>10</b>   |
| <b>PARAMETER SETTINGS</b> .....             | <b>11</b>   |
| <b>SPECIFICATIONS/TROUBLESHOOTING</b> ..... | <b>13</b>   |
| <b>INVERTERCOOL WARRANTY</b> .....          | <b>14</b>   |
| <b>APPENDIX A - WIRING DIAGRAMS</b> .....   | <b>16</b>   |

## In The Box



CPT100 Thermostat  
with Mounting Plate



Wall Plate (if required)



Mounting Screws & Anchors

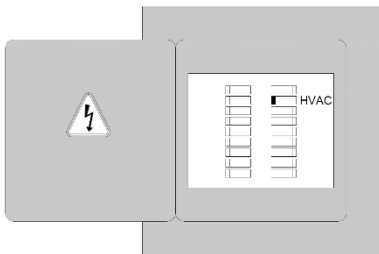


Installation Manual

## Installing the Thermostat

There are five steps to installing the thermostat:

1. Determine Wiring Configuration
2. Remove Old Thermostat
3. Determine if Wall Plate is required to cover opening, damage, or discoloration of wall surface.
4. Install CPT100 Base
5. Connect Wires
6. Attach Display



## Tools

You may need the following tools to install the CPT100 Thermostat:

- #1 Phillips or flathead screwdriver
- Power drill with 3/16"bit (if new mounting holes are required)
- Smartphone/camera to photograph wiring for reference (optional)
- Screwdriver to disconnect wires existing thermostat
- Pencil

## Turn Off Power to HVAC System

Locate the HVAC panel breaker and turn OFF the system. Before removing the old thermostat, change the temperature setting to cause a heating or cooling call. When the thermostat indicates there is a call, make sure the HVAC System is not operating.

## Determine Wiring Configuration

If the CPT100 Thermostat is being installed in a new system or if wiring changes are intended, refer to Appendix A for the wiring configurations and skip to Install Mounting Plate.

When replacing a thermostat and replicating the wiring of the existing thermostat is desired on the CPT100 the following applies.

- Remove the old thermostat to expose the wiring terminals.
- Photograph the wiring for reference or use the table below to note the wire colors.
- Use the **Wire Color Record** to note the wire color and function of each wire. If the terminals of the existing thermostat are unmarked, determine the wire functions for each color wire at the appliance.

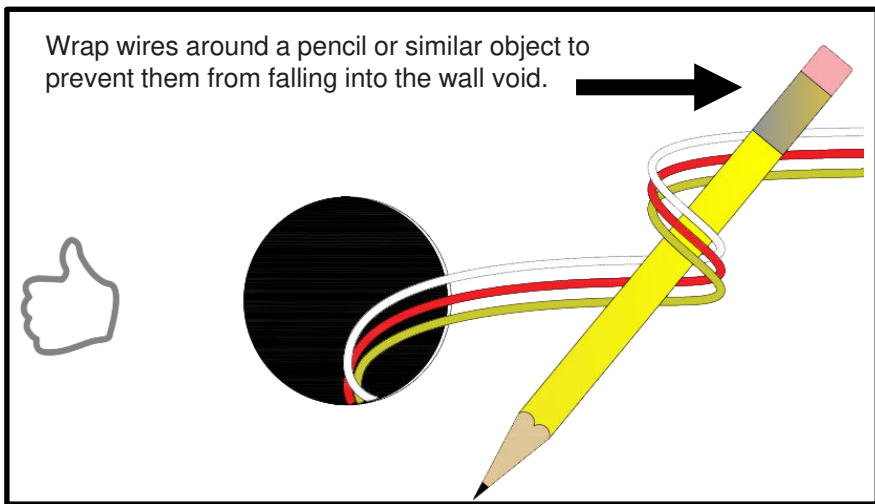


### Wire Color Record

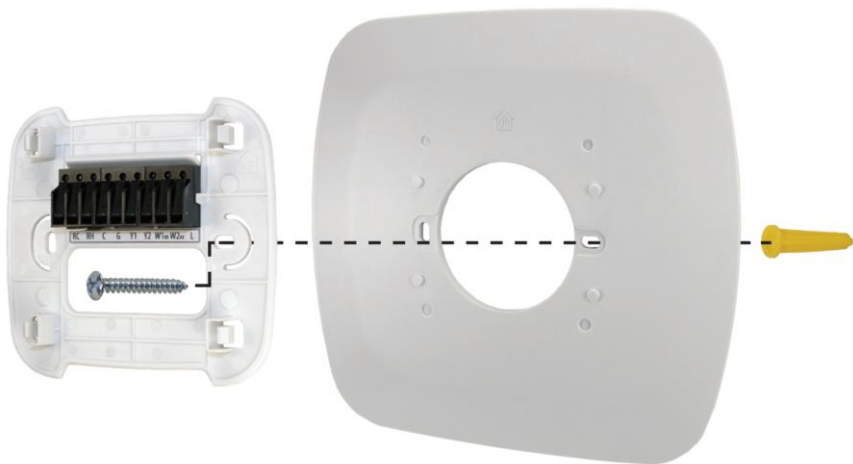
| HP  | NON-HP | Wire Color |
|-----|--------|------------|
| RC  | RC     |            |
| RH  | RH     |            |
| C   |        |            |
| G   |        |            |
| Y1  |        |            |
| Y2  |        |            |
| O/B | W1     |            |
| AX  | W2     |            |
| L   |        |            |

## Remove Old Thermostat

Remove the old thermostat from the wall, taking care not to allow the wiring to fall inside the wall.



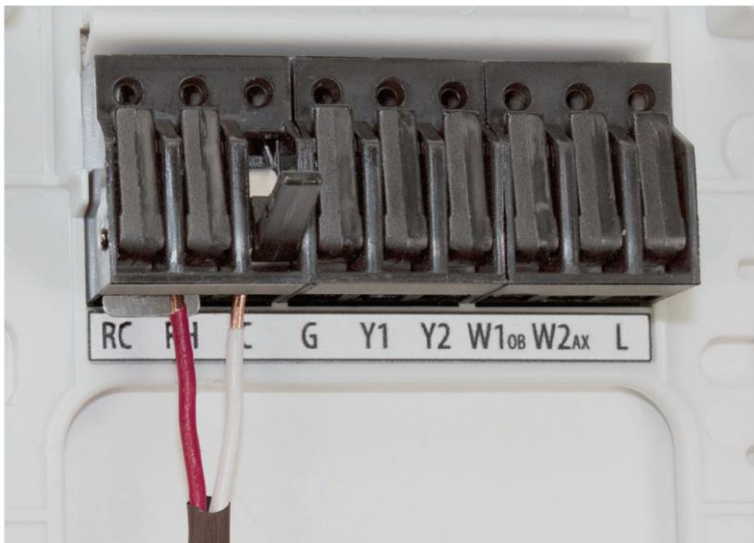
The CPT100 Thermostat **IS NOT COMPATIBLE** with supply voltages above 30 VAC. If the old thermostat is connected with thick wire and wire nuts or voltages higher than 30 VAC are noted on the connections, **DO NOT INSTALL** the Thermostat.



**Install Mounting Plate (with Wall Plate, if required):**

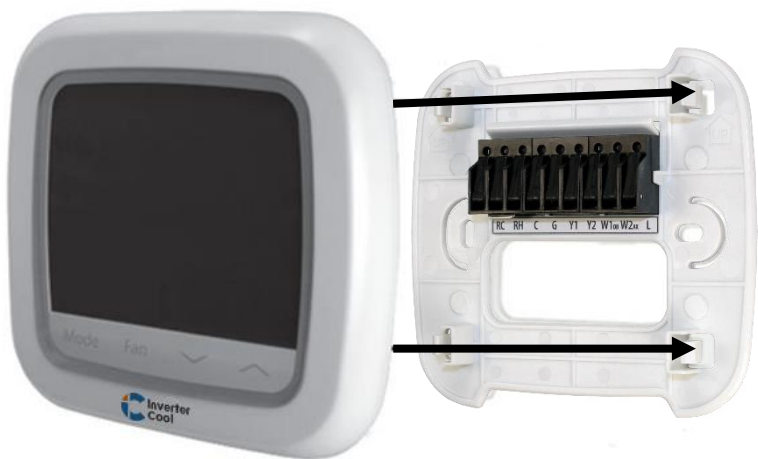
Use the included wall anchors and screws to attach the Mounting Plate to the wall, making sure the wires run through the center opening.

To cover paint or screw holes on the wall behind the thermostat, insert the Wall Plate between the Mounting Plate and the wall as shown. Both plates are secured with the same screws.



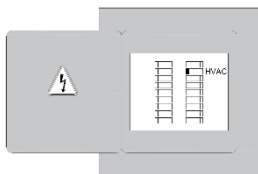
Attach Wiring: To insert a wire into a terminal, flip up the locking tab and slide the wire into the socket directly above the corresponding label. Insert each wire as required for the desired appliance. Once each wire is inserted, flip the tab down to lock it in position. Pull gently on each wire after locking the tab is closed to be sure the wire is secure.

A factory supplied jumper is supplied between RC and RH. This should be removed in two transformer systems (see Appendix A, page 18).



**Attach Display to Mounting Plate:** Line up sockets in the back of the thermostat with the posts on the wall plate and snap it into place. Make sure the connector pins are not bent and wires do not interfere with the thermostat engagement. The thermostat must be fully seated on the wall plate to operate correctly.

## Turn on Power to the HVAC System



Go to the furnace switch or breaker box and turn the HVAC system back on.

## Device Boot Sequence



When the CPT100 is first powered or if a Factory Reset is performed, the above boot sequence will be displayed. The last screen displays the thermostat model and firmware version number.

## Mobile Setup

When the text *MOBILE SETUP* begins scrolling across the text field, the thermostat is ready to connect with the smart device application.

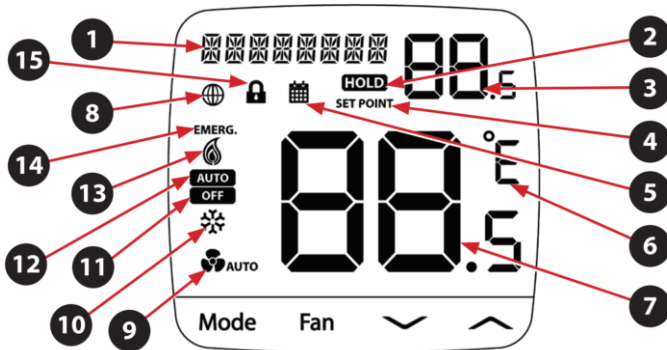


Download the **InverterCool Smart Controller** application on your IOS or Android device. After downloading the application, follow the steps in the InverterCool Mobile Application Guide.



Setup starts or Manual setup, please see page 18-Parameter Settings.


# Screen Display & Controls




|                              |   |                                  |   |
|------------------------------|---|----------------------------------|---|
| 1                            | Alphanumeric text display   |                                  |   |
| 2                            | Schedule Override indicator<br>Temporary:  & <b>HOLD</b> Permanent: <b>HOLD</b> | 9                                | Fan Indicator:<br>Auto-  AUTO On-         |
| 3                            | Setpoint or parameter value   | 10                               | Cooling Mode                              |
| 4                            | <b>SET POINT</b> Setpoint indicator   | 11                               | <b>OFF</b> Off Mode                       |
| 5                            | Schedule running indicator  | 12                               | <b>AUTO</b> Auto Cooling/<br>Heating mode |
| 6                            | Fahrenheit or Celsius units   | 13                               | Heating Mode                              |
| 7                            | Room Temperature  | 14                               | <b>EMERG.</b> Emergency Heat mode         |
| 8                            | Wi-Fi indicator   | 15                               | Key lock indicator                        |
| <b>Mode</b> - Mode Selection |   | <b>Fan</b> - Fan Speed Selection |   |
|                              |   | Increase Value<br>Decrease Value |   |

## Parameter Settings

**Warning:** Only certified person can set the parameters


- Press Mode + Fan for longer than 3 seconds to access Parameter Settings menu
- Press Fan to step down to the sub menu or to save selection
- Press Mode to move up one menu without saving selection
- Use  buttons to step through menu options

| Parameter Name | Description                        | Key   | Settings                                   |              |        |
|----------------|------------------------------------|---|--|--------------|--------|
| SYSTEM         |                                    |  |  |              |        |
| HVAC           | Choose HVAC type                   |   | CONV                                       | HT PUMP      | D Fuel |
| Sys Type       | Choose HVAC type                   |   | HEAT, COOL, or HEATCOOL                    |              |        |
| HP Type        | Set Reversing Valve                |   |  | HP-o or HP-b |        |
| HP STAGE       | Set number of stages               |   |  | 1 or 2       |        |
| AUX HEAT       | Enable Auxiliary Heat              |   |  | 0 or 1       | 1      |
| Fan TYPE       | Set gas or electric heating source |   | Gas or Elec                                |              |        |
| COOL Stage     | Set number of cooling stages       |   | 1 or 2                                     |              |        |
| HEAT STAGE     | Set number of heating stages       |   | 1 or 2                                     |              |        |
| TIME ZONE      | Set Time Zone                      |   | EASTERN, CENTRAL, MOUNT, Pacific or Alaska |              |        |
| TIME DATE *    | Set Time & Date                    |   | Year, MONTH, Day, HOUR, MINUTE             |              |        |
| FORMAT         | Set Hour Format                    |   | 12 or 24                                   |              |        |
| NETWORK        |                                    |   |  |              |        |



\* Time and date are automatically set when the thermostat is connected to the internet therefore the prompts will not appear in the menu.






Continue the form on the previous page.

| Parameter Name | Description                                  | Key   | Settings  |
|----------------|--|---|---|
| NETWORK        |  |   |   |
| STATUS         | Cloud Connection Status                      | Press Fan to display read-only value.   | 0 = No Connection, 1 = Connected, 2 = Lost Connection |
| SSID           | Wi-Fi Network Name                           |   |   |
| IP Address     | Device IP Address                            |   |   |
| MAC Address    | Device MAC Address                           |   |   |
| RSSI           | Wi-Fi Signal Strength                        |   | Typically, -50 is excellent, while -90 is poor        |
| RESET          | Reset Network Settings                       |   | No / Yes  |
| FROST          | Enable Frost Protection                      |  | No / Yes  |
| Temp Cal       | Adjust Temperature Display                   |   | -6° F to +6° F (-3°C to +3°C)                         |
| Span           | Set ON/OFF differential (hysteresis)         |   | 0.5 / 1 / 2 °F (0.25 / 0.5 / 1.0°C)                   |
| DEADBAND       | Set Differential between heating and cooling |   | 2, 3, 4 °F (1/4,1/2, 1 °C)                            |
| FACTORY RESET  | Reset Thermostat to Factory Defaults         |   | No / Yes  |

#### Additional Keypad shortcuts

- Press Mode + Fan briefly (less than 3 seconds) to toggle temperature display between °F and °C
- Press  +  briefly (less than 3 seconds) to toggle between Lock and Unlock keypad
- Press Mode for longer than 3 seconds to toggle between "Run Schedule" or "Non-Programmable"

#### To Factory Reset and return the device to "Mobile Setup" mode

- Press Mode + Fan for longer than 3 seconds – display shows SYSTEM
- Press  button – display scroll FACTORY RESET
- Press Fan – display shows NO
- Press  or  – display shows YES
- Press Fan – the thermostat will display – WAIT then reboot and display will scroll – MOBILE SETUP

## Specifications

|                    |   |   |
|--------------------|---|---|
| Temperature units  | °C or °F  |   |
| Environmental      | Operating:  | 32 to 122°F(0 to 50°C)                      |
|                    |   | 5 to 90% Relative Humidity (non-condensing) |
|                    | Storage:  | 14 to 140°F(-10 to 60°C)                    |
|                    |   | 5 to 90% Relative Humidity (non-condensing) |
| Communications     | 802.11 b/g/n, 2.4 GHz band<br>Bluetooth v4.2 BR/EDR and BLE (for Commissioning) |   |
| AC power           | 18-30 VAC at RC and C terminals<br>5 relay outputs rated for 1A @ 18-30 VAC     |   |
| Dimensions         | 3.9" x 4.2" x 0.9"<br>10.0cm x10.6cm x 2.3cm                                    |   |
| Weight             | 0.6 lbs. (297 g)  |   |
| Compliance         | FCC, Industry Canada  |   |
| Warranty           | 5-year limited warranty   |   |
| Compatible Devices | CPT100-1 Wire Extender Module   |   |

**Note: Specifications subject to change without notice.**

## Troubleshooting

For troubleshooting instructions go to: <https://www.invertercool.com/>

## Warranty

INVERTERCOOL, Inc. ("InverterCool") warrants that for a period of five (5) years ("Warranty Period") from the date of purchase by the consumer ("Customer"), this device, excluding batteries ("Product"), shall be free of defects in materials and workmanship under normal use and service in accordance with all supplied instructions. During the warranty period, InverterCool shall, at its option, repair or replace any defective Products, at no charge for the device. Any replacement and/or repaired devices are warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer.

This warranty does not cover removal or reinstallation costs. This warranty does not apply to any Product (i) which has been modified, repaired, or altered, except by InverterCool or an authorized InverterCool representative, (ii) which has not been maintained in accordance with any handling or operating instructions supplied by InverterCool, or (iii) which has been subjected to unusual physical or electrical stress, misuses, abuse, negligence or accidents.

This warranty is the only express warranty InverterCool makes for the Product. Any implied warranties, including warranties of merchantability or fitness for a particular purpose, are limited to the Warranty Period or the shortest period allowed by law.

INVERTERCOOL SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT.

Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, or limitation on the duration of implied warranties of merchantability or fitness, so these exclusions or limitations may not apply to you.

## Warranty (continued)

No oral or written information or advice given by InverterCool or a InverterCool-authorized representative shall modify or extend this warranty. If any term is held to be illegal or unenforceable, the legality or enforceability of the remaining terms shall not be affected or impaired. Customer's sole and exclusive remedy under this limited warranty is product repair or replacement as provided herein.

If a Product under warranty is defective, the Customer may:

- Contact the party ("Seller") from which the Customer purchased the Product to obtain an equivalent replacement product after the Seller has determined that the Product is defective and the Customer is eligible for a replacement, or,
- Contact InverterCool Service at [support@invertercool.com](mailto:support@invertercool.com), to determine whether the device qualifies for a replacement. If a replacement is warranted and is shipped prior to the return of the device under warranty, a credit card is required and a hold may be placed on the Customer's credit card for the value of the replacement until the returned device is verified as eligible for replacement, in which case, the Customer's credit card will not be charged. This warranty gives you specific legal rights, and you may also have other rights that vary from jurisdiction to jurisdiction.

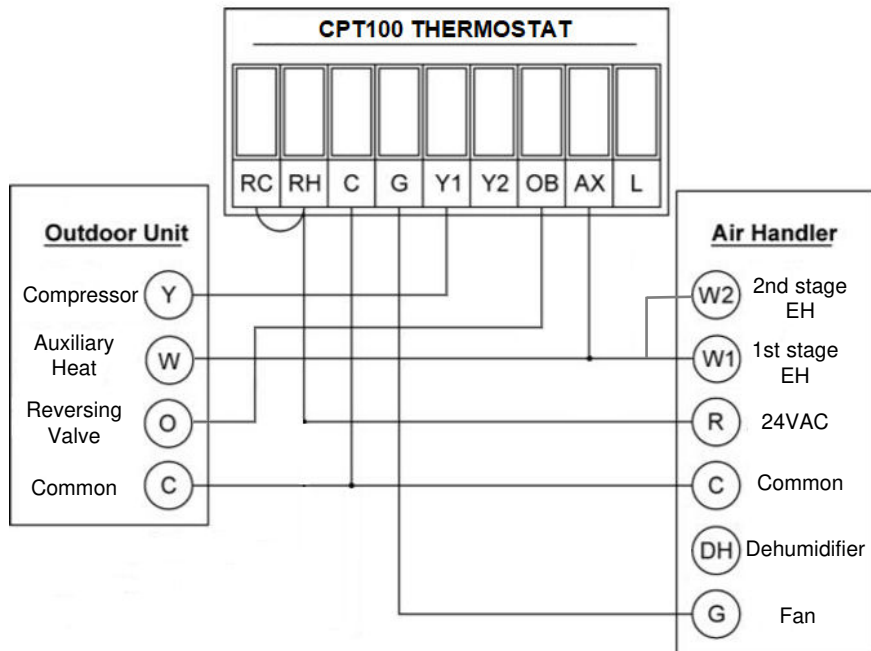
If you have any questions regarding this warranty, please write InverterCool at:

InverterCool, Inc.  
6611 NW 84th Ave, Miami, FL 33166

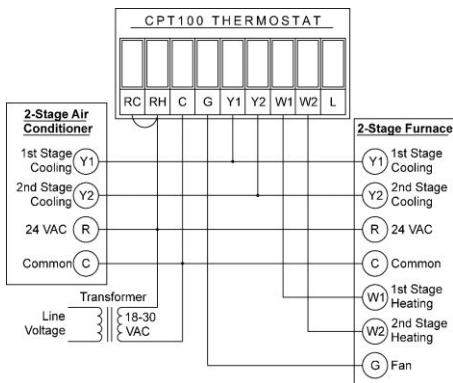
## Appendix A - Wiring Diagrams

| <b>CPT100 Thermostat Terminal Reference</b> |   |                      |
|---|---|----------------------|
| <b>Terminal</b>                             | <b>Non-Heat Pump</b>  | <b>Heat Pump</b>     |
| RC  | 24 VAC Power – Cool   |                      |
| RH  | 24 VAC Power – Heat   |                      |
| C   | 24 VAC Common<br>(Use CPT100-1Wire Extender if C-wire is not available) |                      |
| G   | Fan   |                      |
| Y1  | 1st Stage Cooling   | 1st Stage Compressor |
| Y2  | 2nd Stage Cooling   | 2nd Stage Compressor |
| W1/OB                                       | 1st Stage Heating   | Reversing Valve      |
| W2/AX                                       | 2nd Stage Heating   | Aux/Emergency Heat   |
| L   | Not Used  | Check/Fault Input    |

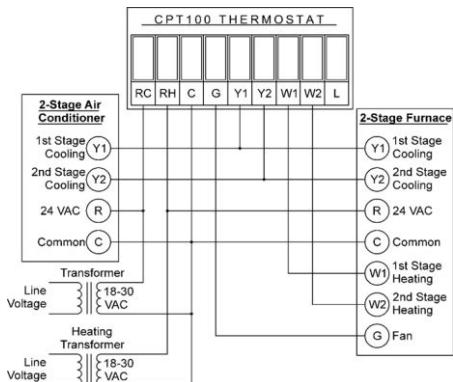
## InverterCool Heat Pump System:



## Conventional Single Transformer Heat and Cool System:



## Conventional Two Transformer Heat and Cool System:





©2022 InverterCool, Inc.

(855) 632-0620 | [support@invertercool.com](mailto:support@invertercool.com) | [www.invertercool.com](http://www.invertercool.com)