NOTE: Append this Operation IB to the Install IB to make one IB-booklet. Need a divider tab between the 2 sections.

Blank page remove before binding
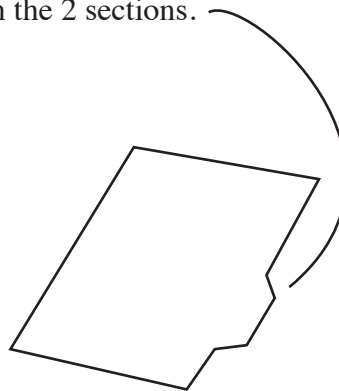
Operation Guide CT100

Radio((⦁))Thermostat

Radio Thermostat Company of America

The CT100 communicating Z-Wave 3 thermostat operates via a high-quality, easy-to-use touch screen. To set or adjust your CT100, simply touch your finger firmly to the screen. The screen will automatically light up and you will hear a "beep." Do not use a sharp or metallic device; it will scratch the screen.

top cover

Reset button

Wire terminals

Save Energy button

Mode button

Power Grid status indicator

MENU butto

PROG button

HVAC selections switches

Touch screen

bottom cover

Statement of use: 100% Compatible with all popular residential HVAC systems; 24VAC single, two stage conventional heating systems (gas/oil/electric), heat pumps, single stage or with auxilliary heat (electric or fossil), zoned forced air and zoned hot water (2 or 3 wire), millivolt systems (with a 12-24 AC or DC source), one or two stage cooling, and hybrid systems.

1105-002-003

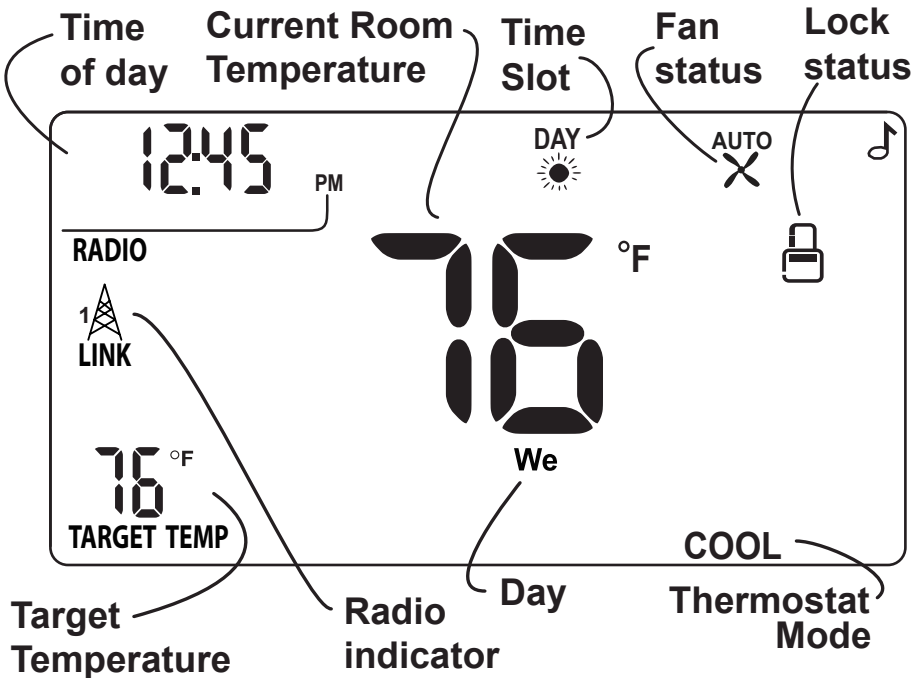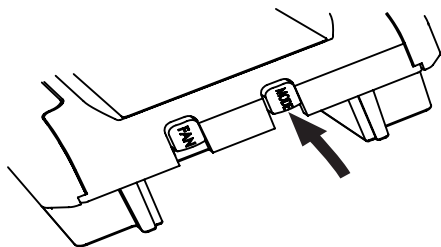**ENGLISH**
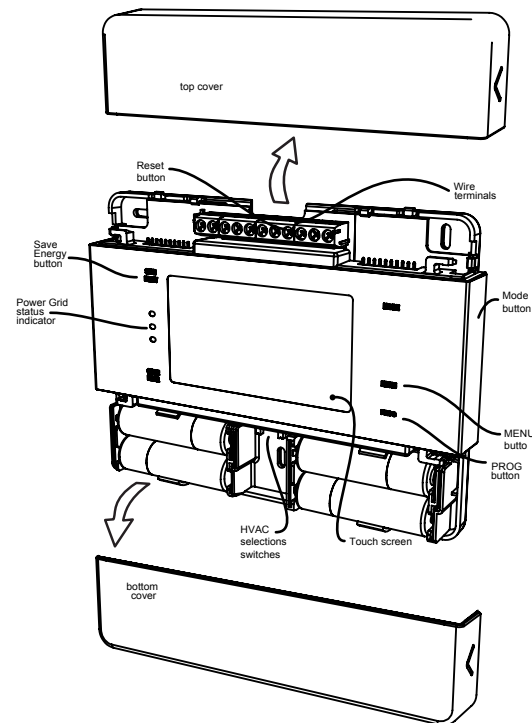
Control Screens

🏠 HOME Screen

Before you operate the CT100 please get familiar with these basic control screens. All the CT100 functions are accessed through these screens: HOME, MENU, PROGRAM and MANUAL. The CT100 touch screen technology allows you to select (by touching) an item and change it using the +/- arrows or the time arrows.

The **HOME** screen is displayed when the unit is operating. Touching the HOME icon 🏠 on another screen will always return you to this screen.

To set a Mode:
Press the mode button on the side. The CT100 will step through the modes HEAT, OFF, and COOL in order. The LCD shows what mode you are in.

Time of day

Current Room Temperature

Time Slot

Fan status

Lock status

12:45 PM

DAY

AUTO

RADIO

1 LINK

76 °F

We

76 °F
TARGET TEMP

Target Temperature

Radio indicator

Day

COOL

Thermostat Mode

MENU Screen

The **MENU** screen is the gateway to many functions or settings of the CT100. It is displayed when you press the MENU button. [See page 10 for details]

Set Time
Touch this area to set the time of day.
Left arrow goes back, right arrow goes forward.

Filter Timer set
Touch and hold 5 sec to change.

Chirp set
Touch this to turn the audible chirp on or off.

Differential to set for 2nd Stage start.

Temperature Swing set

Set °C -°F
Touch this to set temp display units.

Set Day
Touch this area to set the day of the week.

Lock Program
Touch for 5 sec to lock or unlock.

Calibration control
Use this to calibrate your LCD display match to another thermometer.

HVAC SETUP
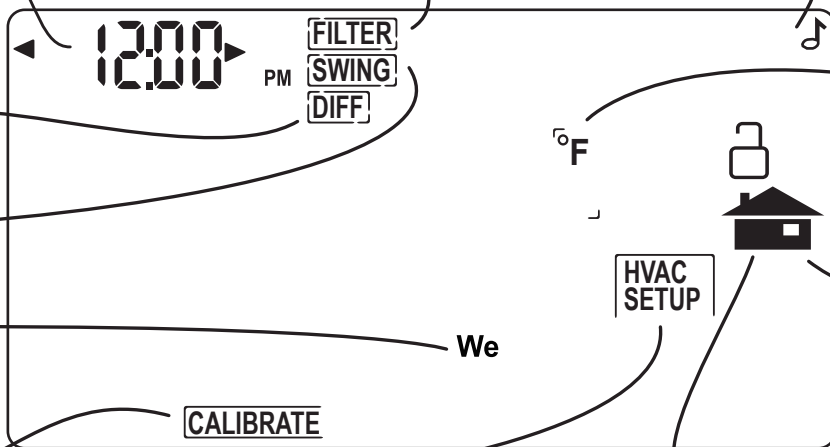Touch this in OFF mode to □ configure the unit to work with your HVAC system.

Return to **HOME** screen.

Display labels: 12:00 PM, FILTER, SWING, DIFF, °F, HVAC SETUP, We, CALIBRATE

MANUAL Screen

The **Manual Screen** control screen is where you can make temporary changes to your CT100's operation. From the Full HOME screen, touch the main temperature display to use this screen. [See page 13 for details]

Room Temperature

Target Temperature

Manual Override Indicator
Shows TEMPORARY when you have modified the Target Temperature

TEMPORARY

75 °F

EMER

HOLD

75 °F

HOLIDAY

HEAT

Temp Up / Temp Down arrows
Touch these to raise and lower the manual override Target Temp

Return HOME

HOLIDAY Touch this to invoke a single program that repeats day after day until you turn it off.

EMER heat for HEAT PUMP systems.

HOLD Touch this area to operate the thermostat as a manual thermostat. It will keep the temperature you set until you change it or cancel **HOLD.**

Initial Settings

Press **MENU** to to access the following commands (from HOME screen).

Set day of the week
Touch the Day of the week area to cycle through the days of the week to select the current day.

Su Mo Tu We Th Fr Sa

Set time of day
Touch the Time of Day arrows to move the time selection forward or backward until it displays the current time. Touch and hold for faster setting.
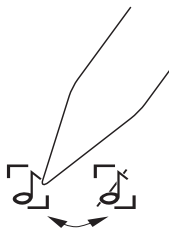
11:86 AM

Backward   Forward

Set ºF-ºC display
Touch the ºF and it will toggle to ºC.

ºF / ºC

Set audible chirp
Touch the musical note icon to select the chirp
or no chirp.

Return **HOME** by touching the home icon.

MENU Screen Functions

Press MENU to bring up MENU screen.

TIME of DAY
Touch the left (down) or right (up) arrows next to the time display to set the current time (1 minute per touch). Touch and hold the arrow for fast time set (15 minute jumps).

DAY of Week Touch DAY area to select present day.

SWING (HVAC cycling rate) This feature allows you to set the desired variance in temperature between the CT100 setting and the room temperature required before the heating or cooling system will turn on—from 0.5° to 2.0° F (.25° to 1° C). For example, if SWING is set to 2.0° F and the CT100 is set to 70°F Target Temperature, the heat cycle will start when room temperature drops to 68°F. Similarly, the cooling system will start when the room temperature increases to 72°F. The HVAC then runs and will shut off at the Target Temperature.
To set **SWING**:
Touch SWING.
Touch the left/right arrows to set the SWING from 0.5° to 2.0°F.
The HVAC will run more frequently at .5°F and less at 2°F. Default is 1°F.

Touch 🏠 to return to the MENU screen.

♪ **Chirp set** - Touch this to turn the audible chirp sound on or off.

°F
°C **Set -** Touch this to switch the temperature display scale from °F to °C .

FILTER - AIR FILTER ALERT - The CT100 can be programmed to remind you when the HVAC sytem's air filter needs changing.
Touch FILTER. The display will show the usage to date.
Touch FILTER for over 3 seconds and the display will change to LIMIT.
Touch arrows to set desired usage limit before filter alert comes on home screen.
When this limit is reached, FILTER will be on home screen and the CHECK FILTER indicator lights.
Limit may be set from 0 to 999 days/99 weeks; default is 90 days/12 weeks. Touch to reset.
To reset the usage back to 0, touch usage number; touching it again restores the displayed usage.
Touch 🏠 to return to the **MENU** screen.

⌗**LOCK** (The CT100 has 2 lock modes)
Touch ⌗ icon for 5 seconds; the unit will go into the PARTIAL lock mode. The user can temporarily override the CT100 target with the +/- buttons only. (1 bar)

For FULL lock : Touch the 🔒 (1 bar) icon again for 5 seconds to go to full lock. No changes can be made in full lock 🔒 (2 bars). Once locked, the CT100 will respond just to **MENU**.

To UNLOCK , Press MENU.
Touch and hold 🔒 icon for 5 seconds for 2 bars (if not there already).
Then touch and hold the 🔒 icon for another 5 seconds. Each 5 second touch and hold must be separate.
Touch 🏠 to return to the Home screen.

CALIBRATE   Your thermostat was accurately calibrated at the factory to ±1° F of actual ambient temperature. You do have the option, however, to change the display temperature to match that of a previous thermostat, or to match another thermostat already in your home. The range of change is from -6°F to +6°F or -3°C to +3°C.

To change your Thermostat Calibration, touch **MENU** and then touch **CALIBRATE.**
Use the + / - to adjust the displayed temperature up or down, as desired.
The DELTA FACTOR that appears on the screen will also automatically increase or decrease for each 0.5° (F or C) adjustment so you can see your change. The large display will show the modified temerature reading that will be displayed on the HOME screen and used as the new room temperature.

Touch 🏠 to return to the Home screen.

DIFF (Used for 2 stage normal or heat pump with auxiliary only, not on screen for single stage)
The differential is the number of degrees between the room temperature and the Target Temperature at which the 2nd stage will be used. Default is 2°F.
Touch MENU and then DIFF. Use the arrows to set the DIFF.
Recommend 2°F for very cold climates and the 4°F for warm climates.

MANUAL Screen Functions

The CT100 has 4 manual override commands. The manual screen is accessed by touching the large current temperature display in the middle of the HOME screen.
IMPORTANT: The Mode must be in HEAT or COOL to access the manual screen.

TEMPORARY override   Touch the + / - arrows to select your desired temporary Target Temperature. Touch HOME to return to operation. The **TEMPORARY** icon will display indicating you have modified the Target Temperature for the current Time Slot only. It goes back to the program target at the next period. Also, when in **TEMPORARY**, if the target is set the same as the programmed target for that period, the word **TEMPORARY** will go out.

HOLD This will hold the target temperature you set indefinitely, until you turn **HOLD** off. **HOLD** will allow you to operate your thermostat as a manual thermostat. It will keep whatever temperature you set until you change it or cancel hold. Take care using the **HOLD** function as the program is now bypassed. To set a hold target temperature, touch **HOLD** and use the +/- icons to select your hold temperature. The **HOLD** icon will display on the HOME screen indicating you have changed the Target Temperature. The system will **HOLD** this temperature until you return to the manual screen and de-select **HOLD** by touching it. Hold is also canceled when you set the mode to OFF.

HOLIDAY   This is a single program that repeats day after day until you turn it off. It supersedes the weekly program. To use it touch **HOLIDAY** on the temporary screen. The default holiday program is shown below. To modify this program, touch the PROGRAM button and then touch the DAY area until HOLIDAY appears (after SAT). The default HOLIDAY program is set as 2 time slots; all day (same target MORN, DAY and EVEN) and a different target for NITE. [Default program: HEAT 70°F all day and 62°F at night. COOL 78°F all day and 82°F at night.]

EMER (in HEAT PUMP type)
If you set your CT100 for HEAT PUMP with auxiliary heat, EMER function is available on the MANUAL screen. If you touch EMER, it displays EMER|ON. Your HEAT PUMP is disabled and auxiliary heat is your sole source of heat. This manual override stays active until you toggle EMER off.   Auxiliary heat is more expensive than the heat pump so use EMER only if the heat pump cannot keep up or is defective.

Other Functions

Save Energy Button

The "Save Energy" feature on the CT100 provides a simple, easy-to-use way to help you manage your energy use. SAVE ENERGY automatically adjusts your Target Temperature up in COOL or down in HEAT by 4°F.   To use Save Energy, press the Save Energy button in the upper left corner of the unit. The screen will now read "Save Energy".   To return to normal operation, press the "Save Energy" button again. This is useful to save energy if you are gone for a short time.

MODE Button

The mode button sets the CT100 to HEAT COOL or OFF modes. Press it once to step to the next mode. If the CT100 is in OFF and you want to return to the mode you were previously in, touch the OFF indicator on screen.

FAN Button

The fan control is normally in AUTO mode, meaning that the fan operates automatically with the HVAC system and the thermostat. When the fan button is pressed the fan goes ON; the fan will run continuously in this manual override until switched back to AUTO by pressing the FAN button again.

[NOTE: Fan **ON** function is available in the OFF mode to allow simple ventilating.]

Simple Screen

This display mode limits the amount of information on screen and limits the functions to just the +/- arrows and the MENU button.
Hold down the PROGRAM button for 12 seconds to access the limited display screen.
Hold down the PROGRAM button for 12 seconds to leave the limited display screen.

RESET button The RESET button re-boots the CT100 processor. It does not effect the user programs that have been stored in permanent memory.

Compressor Protection   The CT100 has a minimum cycle time of 4 minutes to protect your compressor in cool and in heat pump (if you have one). The Home screen will show a small clock and A/C during this time and the compressor will not come on until the 4 minute delay is over.

Communicating Thermostat

The CT100 has a built in Z-Wave radio. This allows your thermostat to communicate with other systems.
To connect to a network -
To remove from a network -
1] Press Add Devices on your Z-wave controller. The controller will go into Discover Devices mode.
2] Press MATE on your CT100. [This is located in the MENU screen]
3] The controller will discover the CT100 and add it to the device list.
1] Press Remove Devices on your Z-wave controller. The controller will go into Discover Devices mode.
2] Press MATE on your CT100. [This is located in the MENU screen]
3] The controller will disconnect from the CT100 and remove it to the device list.

FCC and IC Statement

FCC Regulatory Information:

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 instruction, 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 and correct

the interference by one or more of the following measures:

a) reorient or relocate the receiving antenna,
b) increase the separation between the equipment and receiver,
c) 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.

IC Regulatory Information:
This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. 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 of the device. Cet appareillage numérique de la classe B répond a toutes les exigences de l'interférence canadienne causant des règlements d'équipement. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris l'interférence qui peut causer l'opération peu désirée.

WARNING: Changes or modifications to this receiver not expressly approved by RTCOA. could void the user's authority to operate this equipment.