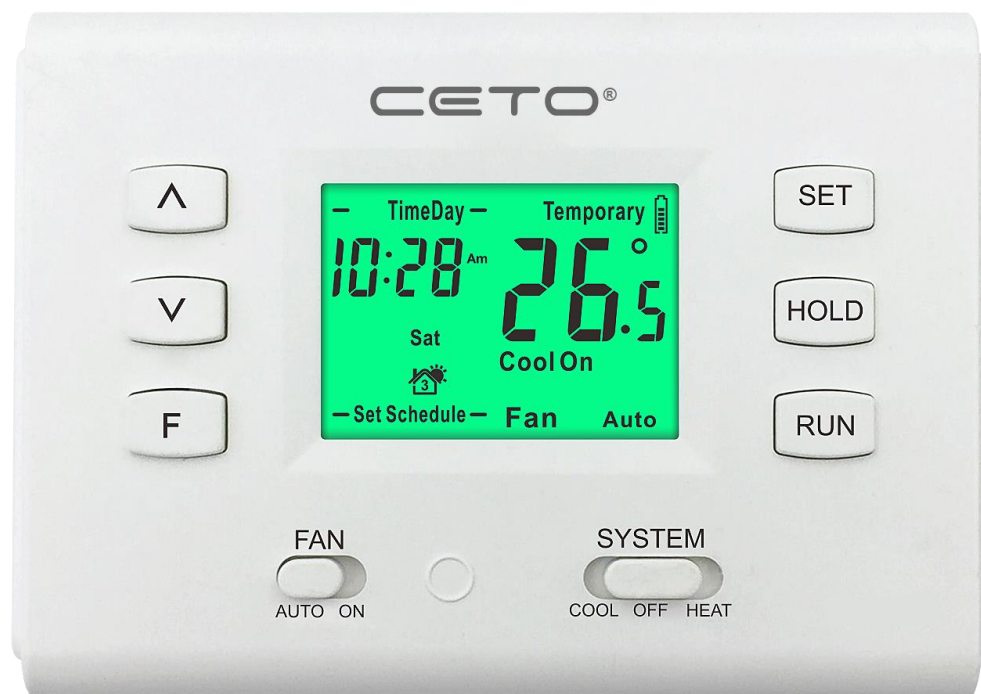




# ***CX024-SP1***

## *Programmable Wall*

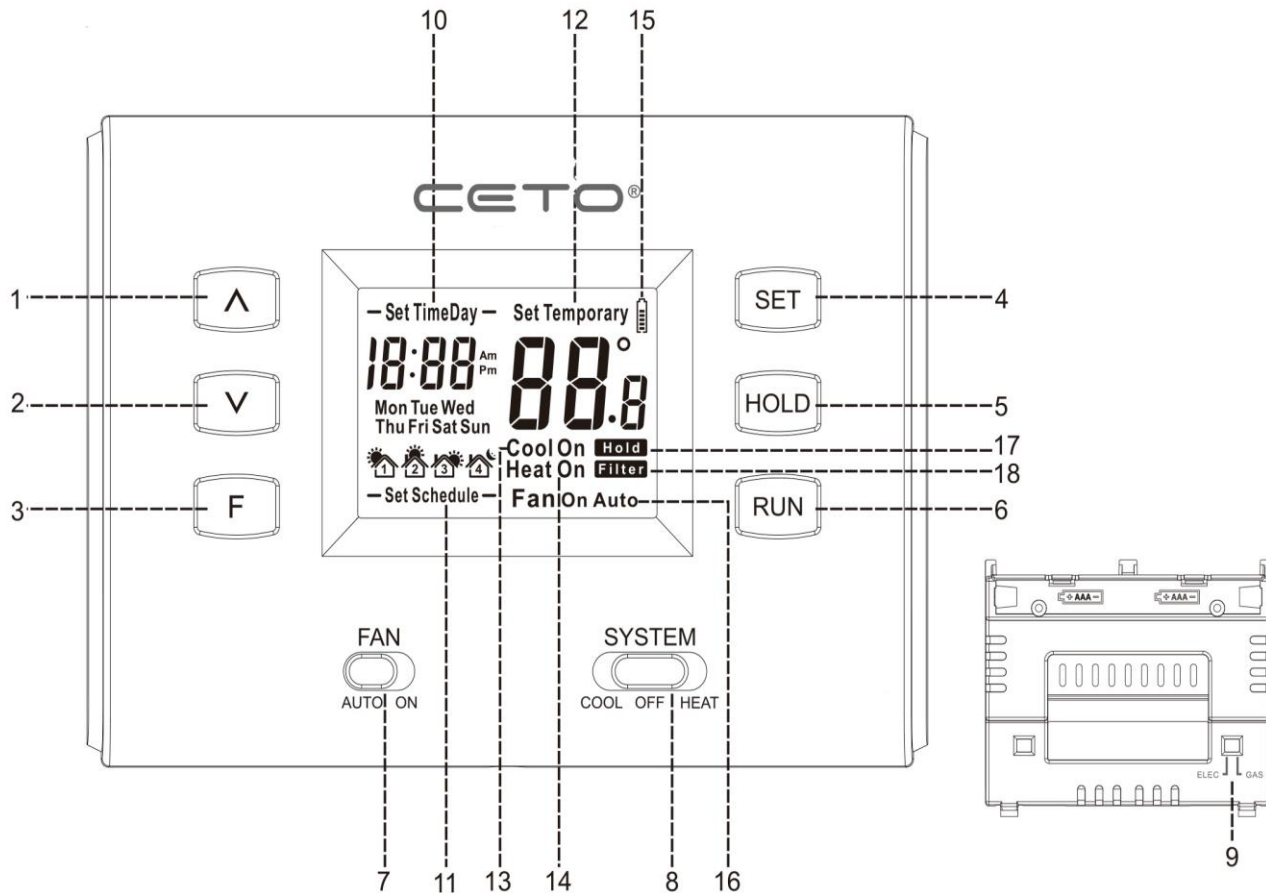
### *Thermostat*



## ***CX024-SP1***

### ***Product Features***

- *24V Hard Wired or 2x AAA Battery Powered*
- *5+2 Weekly Programmable*
- *One Stage Cool and One Stage Heat Operation*
- *Adjustable Cooling Cycle Rate*
- *Fahrenheit or Celsius Temperature Display*
- *Fan On-Auto Function*
- *Fan Operation Display*
- *5 Minute Compressor Delay Protection*
- *Dimensions: 4 5/8" x 3 3/8" x 1" (118x85x25 mm)*



Item	Description
1	Up key: in the cooling/heating mode, it is for raising the setting temperature. When setting the program and changing the system parameter, it is for adjusting the parameter.
2	Down key: in the cooling/heating mode, it is for lowering the setting temperature. When setting the program and changing the system parameter, it is for adjusting the parameter.
3	F key: in the cooling/heating mode, it can be used for inquiry and reset Filter Usage Days.
4	SET key: to enter the parameter changing interface or enter the programming mode
5	HOLD key: In the cool/heat mode, Press it only once, the LCD display "hold", and the thermostat will keep the set temperature,
6	Run key: Press only once, the thermostat operates according to the time programming. After setting the program and changing the system parameter, press the run key to save and exit the setting interface.
7	FAN Switch: For setting fan speed.
8	SYSTEM Switch :For setting mode.
9	Fan Operation Switch: Electric or Gas Setup.
10	Clock/Week: Display the current system time and week.
11	Program setting: it shows the system is in the setting process
12	Temperature: Display the room temperature or setting temperature.
13	Cool symbol: The cooling relay start to work when the symbol displayed. The symbol flashing means the cooling relay is in the set-up delay process.
14	Heat symbol: The heating relay start to work when the symbol displayed. The symbol flashing means the heating relay is in the set-up delay process.
15	Battery symbol: it means low power when the symbol displayed, so please change the battery in time.
16	Fan: display the current mode of the fan.
17	Hold symbol: when the symbol displayed, the setting temperature will be kept, and won't follow the setting program.
18	Filter symbol: when the symbol displayed, it means the number of filter usage days reach the set interval time.

# Installation



## ***Step 1: Electrical Hazard***

- Turn off power to your HVAC system: Before you start installing your thermostat, it's important to turn off the power to your heating and cooling system to avoid any potential electrical hazards. This can typically be done by turning off the circuit breaker that supplies power to your HVAC system or by removing the fuse that controls it.



### **Caution: Electrical Hazard**

Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.



### **Caution: Equipment damage hazard**

Do not operate the cooling system if the outdoor temperature is below 50°F (10°C) to prevent possible compressor damage.

## ***Step 2: Remove Old Thermostat***

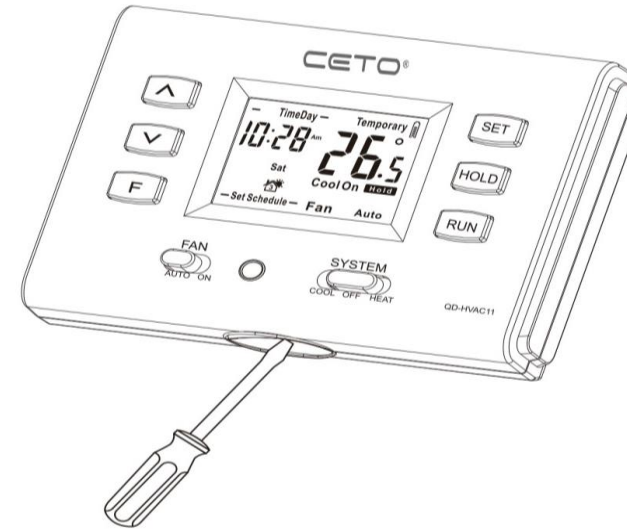
- Once the power is off, take off the cover from your old thermostat and unscrew it from the wall plate. Carefully disconnect the wires from the terminals, being mindful not to damage the wires.

## ***Step 3: Label the Wires***

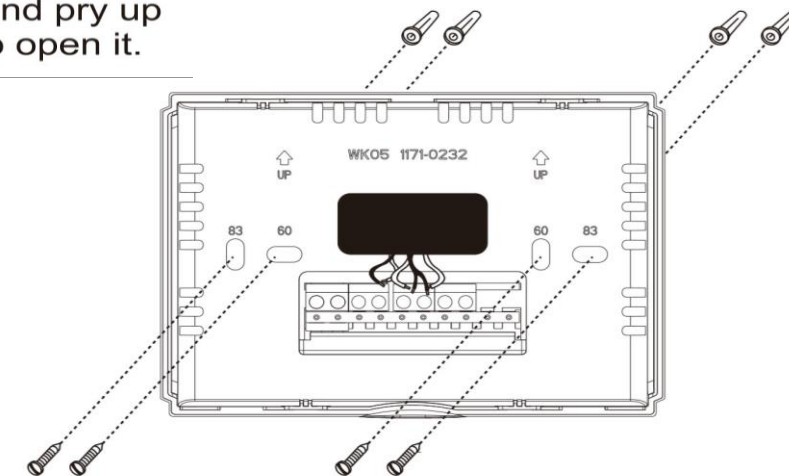
- Label each wire to ensure proper rewiring when you install the new thermostat. This can be done with masking tape and a marker, or you can use wire connectors to keep the wires organized.

## Step 4: Mount the New Thermostat Base

- Attach the new thermostat base to the wall where the old one was located, making sure it's level. Start by removing the front panel of the old thermostat and setting it aside in a safe place where it won't be damaged. Secure the thermostat base to the wall using screws, following the manufacturer's diagram, to ensure it's properly positioned in a leveled and safe location.



Insert the awl into the slot and pry up the front part of the panel to open it.



For horizontal mount put one screw left and one screw right.

## Step 5: Wiring

- Connect the wires to the corresponding terminals on the new thermostat, following the wiring diagram provided by the manufacturer. If your new thermostat has different colored wires than your old one, make sure to match the wires to the corresponding terminals using the wiring diagram.



### Caution: Electrical Hazard

Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.



### Warning :

All components of the control system and the thermostat installation must conform to Class II circuits per the NEC Code.



### Caution:

Do not over tighten terminal block screws, as this can damage terminal block, and keep the thermostat fitting on the sub-base correctly or it will cause system operation issues.

**Max Torque = 6in-lbs**



## Wiring Tips:

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### RH & RC terminals

For single transformer systems, leave the jumper wire in place between RH and RC. Remove jumper wire for two transformer systems.

### Heat pump systems(with no AUX or Emergency Heat)

If wiring to a heat pump,use a small piece of wire(not supplied)to connect terminals W and Y.

### C terminal

The C ( common wire ) terminal does not have to be connected when the thermostat is powered by batteries.

### Wire specifications

Use shielded or nor-shielded 18 - 22 gauge thermostat wire.

## Terminal Designation

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C Common wire from secondary side of cooling system transformer

O Heat pump changeover valve energizes in cooling

B Heat pump changeover valve energizes in heating

W Heat relay

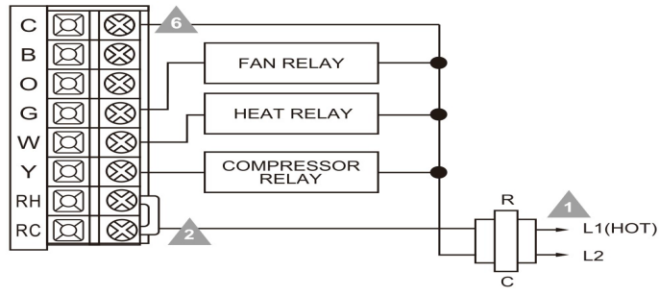
RH Transformer power for heating

RC Transformer power for cooling

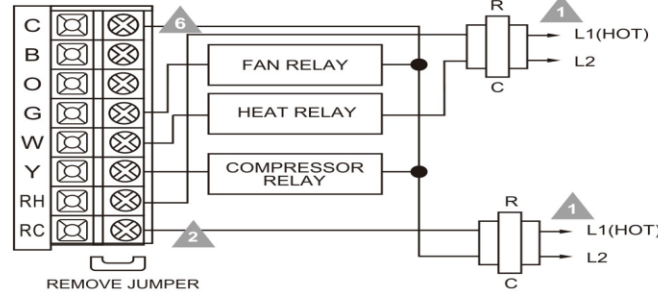
G Fan relay

Y Compressor relay

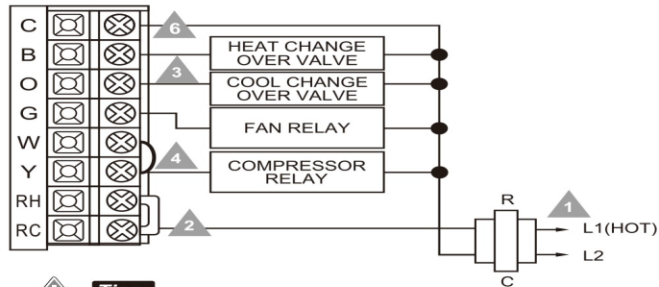
### Typical 1H/1C system: 1 transformer



### Typical 1H/1C system: 2 transformer

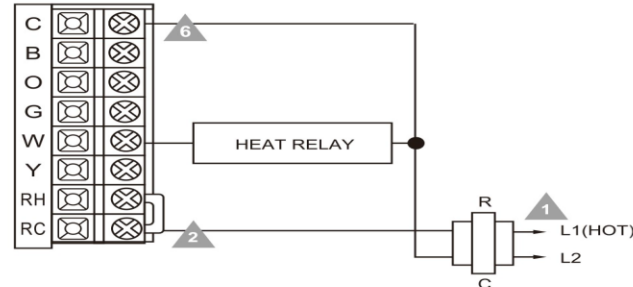


### Typical 1H/1C heat pump system



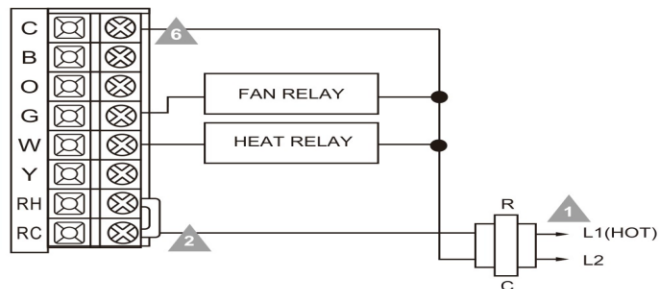
**Tips:**  
1. Please choose the compressor lockout delay (F4=5).

### Typical heat-only system

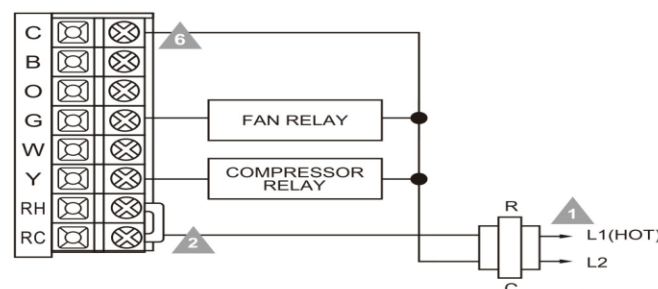


- ▲ 1 Power supply
- ▲ 2 jumper installed on 1-transformer system and removed on 2-transformer system
- ▲ 3 Use either O or B terminals for change over valve
- ▲ 4 Use a small piece of wire (not supplied) to connect W and Y terminals
- ▲ 5 Set fan operation switch to electric
- ▲ 6 Optional 24 VAC common connection when thermostat is used in battery power mode

### Typical heat-only system with fan

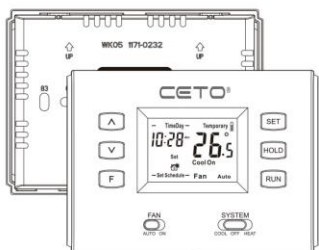


### Typical cool-only system

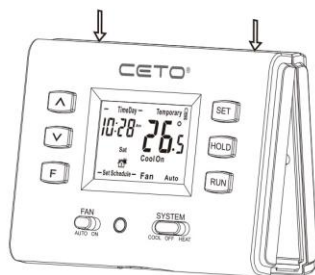


## Step 6: Install Thermostat Cover

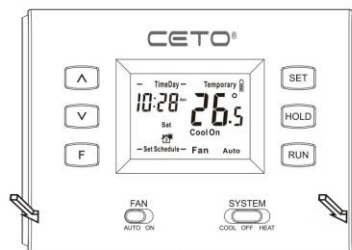
- Attach the thermostat cover and secure it in place. This will protect the wires and terminals and give your thermostat a finished look.



Step 1: Aim at the inner snaps in the higher part of the thermostat.



Step 2: Hang the two hooks of the front part at 30° right to the snaps.



Step 3: Press the lower part of the front display panel to complete the installation.

## Step 7: Turn Power Back On

- Turn the power back on to your HVAC system and follow the manufacturer's instructions to program and set up your new thermostat. This may include setting the current time and temperature, selecting a desired temperature range, and choosing any other options or settings that are available.

## ***Step 8: Test the Thermostat***

- Finally, test your new thermostat to make sure it's working properly. This can be done by setting the temperature to a different value and observing if the heating or cooling system responds accordingly.
  - **Operation**
    1. Select system mode with switch: COOL, OFF, or HEAT.
    2. Select fan mode with switch: AUTO or ON.
    3. Choose control for heat fan: "Gas" for Gas/Oil heating, or "ELEC" for Electric heating.
    4. Set temperature by pressing: “ ↑ ” or “ ↓ ” in main interface and the room temperature will be displayed on LCD.
    5. If there's no operation for 5 seconds, the system will return to the main interface.
    6. To keep the current temperature setting, press the 'Hold' key. The display will show Hold" and the system won't run the program.
    7. Press the 'Run' key to activate the set program
    8. To check the remaining time for filter cleaning, press the 'F' key when the filter function (F6>0) is set. The clock area will display the number of days remaining. To reset the filter timer, press and hold the 'F' key for 5 seconds, the 'Filter' icon will flash, and the timer will start over

## Step 9: Programming

- Programming a thermostat saves energy and improves comfort by allowing you to set a desired temperature schedule for different times of the day. This results in lower energy bills and more efficient use of heating and cooling systems.
  - **Programming Setting**
    - When power on (in cool/heat mode), hold “SET” for 5 seconds to enter programming mode:
      - *To change Time and Day of thermostat follow steps 1 and 2:*
        1. Set the system clock: When the clock area is flashing, press “↑” or “↓” to change the clock. And if you hold “↑” or “↓”, the adjustment will be faster.
        2. Press “SET” again to set the week. When the week flashing, press “↑” or “↓” to change the week
      - *To create a weekly program of the thermostat, follow steps 3-6*
        1. Press “SET” again to set the wake time from Monday to Friday. When the clock area is flashing, press “↑” or “↓” to adjust the time.
        2. Press “SET” again to set the wake temperature from Monday to Friday. When the temperature area is flashing, press “↑” or “↓” to adjust temperature.
        3. Repeat pressing the “SET”, then you can set the time and temperature of Leave, Return, Sleep, from Monday to Friday and Saturday, Sunday by turn.
        4. After finished the setting, press the “RUN” to cancel the setting interface and save the parameter. (If there’s no operation within 30 seconds when setting, the system will exit the setting interface and abandon the changed parameter).

## *Programming – Residential Application*



<https://youtu.be/MelFPHEv-i0>

## *Programming – Office Application*



<https://youtu.be/CrFbEzvxxhU>



# CETO<sup>®</sup> CONTROLS

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