eControls

Homeowner Manual

Model ZTWD11 Thermostat with Integrated Equipment and 2-Zone Control

Ver409 Jan 2024

The ZTWD thermostat controls the heating and cooling system and the distribution of heating and cooling to the upstairs and downstairs zones to provide a uniformly comfortable home.

The ZTWD thermostat is installed in the downstairs zone (living space), a temperature sensor is installed in the upstairs zone (sleeping space) and two modulating dampers are installed in the duct work to control the distribution of heating and cooling to the downstairs and upstairs zones. Some installations may have two sensors - one in the bedroom hallway and one in the master bedroom.

During heating and cooling calls, the thermostat checks the temperature at the sensor and the temperature at the thermostat every 2 minutes and if there is a 2 degree or more difference, the thermostat automatically directs more heating or cooling to the space that needs it for a uniformly comfortable home.

Or, you can manually distribute more heating or cooling to the upstairs or downstairs as desired.

Patent US 10,520,212 B1

Understanding Airflow

Uniform Comfort

Thermostat automatically adjusts the distribution of heating and cooling to the upstairs and downstairs to keep the spaces within 2 degrees of each other.

Automatic Operation - Factory Default.

Upstairs Comfort

Homeowner directs more heating or cooling to the upstairs zone and less to the unoccupied downstairs. The upstairs temperature sensor is used to control heating and cooling calls.

Manual Operation.

Downstairs Comfort

Homeowner directs more heating or cooling to the downstairs zone and less to the unoccupied upstairs. The thermostat is used to control heating and cooling calls.

Manual Operation.

Night Comfort Option

This option improves comfort and energy savings in two story homes where the bedrooms are located upstairs. Thermostat automatically directs 30% more heating or cooling to the upstairs sleeping zone at night and uses the upstairs sensor to control heating and cooling calls.

Factory Set to Off.

What's Inside

Understanding Your Thermostat .....Page 2
Heating and Cooling Operation .....Page 2
Distribution of Heating and Cooling Airflow .....Page 3
Setting the Time .....Page 4
Setting the Schedule .....Page 4
Display Downstairs or Upstairs Temperature .....Page 4
Installing Batteries .....Page 4
Cleaning the Touchscreen .....Page 4
Troubleshooting .....Page 4

Patent US 10,520,212 B1

Made in the USA

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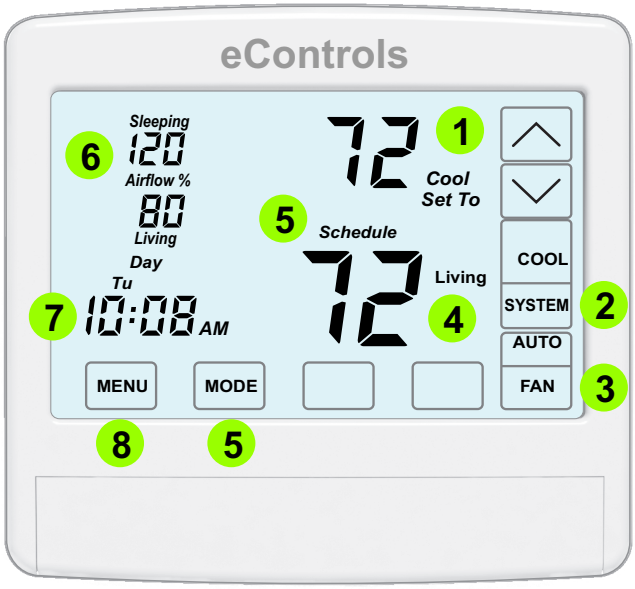
UNDERSTANDING YOUR THERMOSTAT

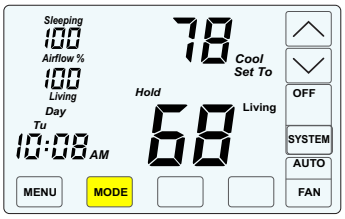
1. Set To is the temperature you want your space to be. Use the ^ or v key to adjust.
2. Displays the system mode - Off, Heat or Cool. To change, press the SYSTEM key.
3. Displays the fan mode - Auto or On. To change, press the FAN key. Auto is typically used.
4. Displays the room temperature for the downstairs zone (Living) or upstairs zone (Sleeping). Press this area to display the Sleeping or Living temperature.
5. Displays the thermostat mode - Hold or Schedule. To change, press the MODE key.
6. Displays the amount of heating or cooling being distributed to the downstairs zone (Living) and upstairs zone (Sleeping). Press this area to select Uniform Comfort, Upstairs Comfort or Downstairs Comfort.
7. Displays the time and day of the week. To change, press the area where the Time is displayed.
8. Press the MENU key to access homeowner options.



HEATING and COOLING OPERATION

Select HOLD or SCHEDULE Mode

The thermostat operates in Hold or Schedule Mode. Press the MODE key to select Hold or Schedule.

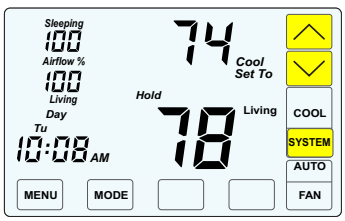


Hold-Thermostat uses the Set To temperatures set by the homeowner.

Schedule - Thermostat follows a set Schedule. See Page 4. Making a change to the Set To temperature when the thermostat is in Schedule will override the schedule for 3 hours. After 3 hours the thermostat returns to the schedule Set To temperatures.

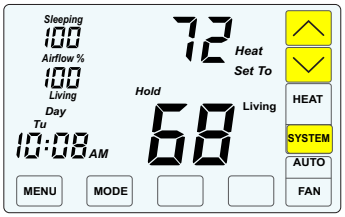
Turn COOLING On

Press the SYSTEM key until COOL is displayed. Press ^ or v to adjust the Cool Set To temperature to your desired comfort temperature. Cooling activates when the Set To temperature is below the room temperature. COOL blinks when the equipment is active and is solid when the equipment is idle.



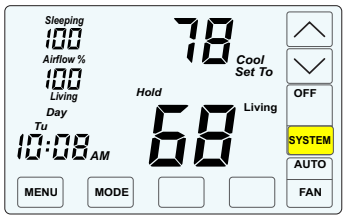
Turn HEATING On

Press the SYSTEM key until HEAT is displayed. Press ^ or v to adjust the Heat Set To temperature to your desired comfort temperature. Heating activates when the Set To temperature is above the room temperature. HEAT blinks when the equipment is active and is solid when the equipment is idle.



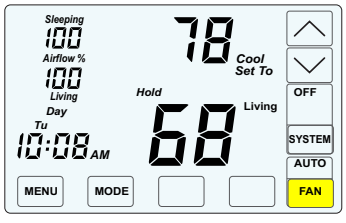
Turn Equipment Off

The equipment can be turned off in mild weather when Cooling and Heating are not used. Press the SYSTEM key until OFF is displayed.



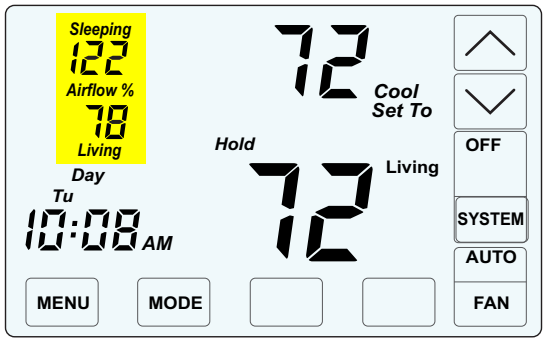
Fan Operation

Fan operation includes AUTO (commonly used) or ON. In AUTO the fan is on during heating and cooling calls only. In ON the fan is on continuously. Press the FAN key to select AUTO or ON.



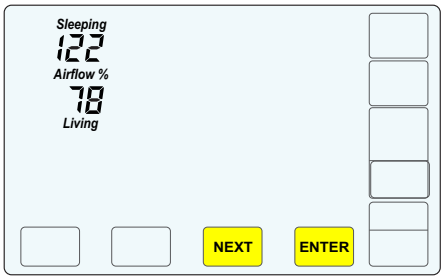
DISTRIBUTION OF HEATING AND COOLING AIRFLOW

The thermostat defaults to Automatic Uniform Comfort and automatically adjusts the distribution of heating and cooling to the upstairs and downstairs to keep the spaces within 2 degrees of each other. The thermostat also enables you to direct more heating or cooling to either the upstairs or downstairs zones as desired to improve comfort and save energy.



To change your comfort focus, press the "Airflow%" area. The last selection is displayed. Pressing NEXT cycles through Uniform Comfort, Upstairs Comfort and Downstairs Comfort.

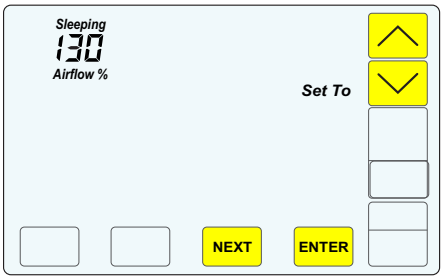
Uniform Comfort



The Sleeping and Living Airflow% are displayed. Press ENTER to have the thermostat automatically adjusts the distribution of heating and cooling to the upstairs and downstairs zones to keep the spaces within 2 degrees of each other.

Or, press NEXT to go to Upstairs or Downstairs Comfort.

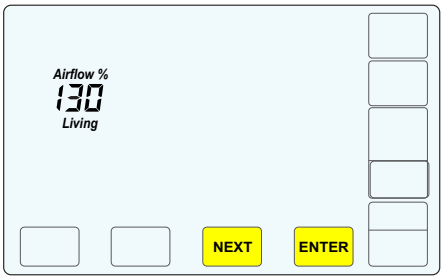
Upstairs Comfort



The Sleeping Airflow% is displayed. Press ^ or v to adjust the amount of heating or cooling to the upstairs sleeping zone. Press ENTER to save the new airflow setting. The upstairs temperature (Sleeping) is displayed and used to control heating and cooling calls.

Or, press NEXT to go to Downstairs Comfort.

Downstairs Comfort



The Living Airflow% is displayed. Press ^ or v to adjust the amount of heating or cooling to the downstairs living zone. Press ENTER to save the new airflow setting. The downstairs temperature (Living) is displayed and used to control heating and cooling calls.

Or, press NEXT to go to Uniform Comfort.

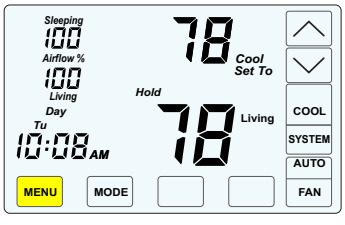
NIGHTTIME COMFORT OPTION

The Nighttime Comfort Option saves energy and improves comfort at night and is ideal for homes where all of the bedrooms are located upstairs.

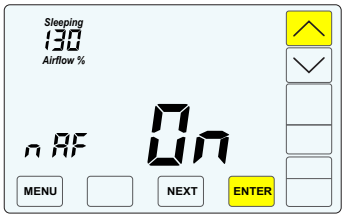
The thermostat automatically directs 30% more heating or cooling to the upstairs sleeping zone and 30% less to the unoccupied downstairs zone, and uses the sensor upstairs to control the heating and cooling calls. Nighttime Comfort starts at the Night schedule (factory set to 10:00PM) and ends at the Morning schedule (factory set to 6:00AM). To adjust the start and end times, see Setting the Schedule on page 4.

If in Uniform Comfort, airflow returns to 100% and then will automatically adjust based on the temperatures in the upstairs and downstairs zones. If in Upstairs or Downstairs Comfort, airflow returns to the previous setting.

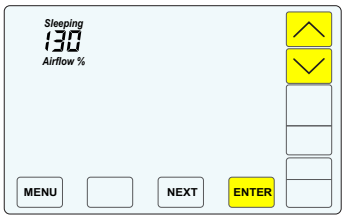
Press the MENU key to display the first option. Continue to press the MENU key until nAF OF option is displayed.



Press the ^ key to turn nAF (Nighttime Airflow Control) On. Press MENU to advance to the next option to adjust the amount of heating or cooling directed upstairs or press ENTER to save the option.



To adjust the amount of heating or cooling to the upstairs zone, press the ^ or v key then press ENTER.



OPERATING YOUR THERMOSTAT

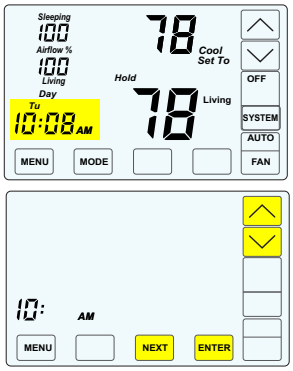
Setting the Time

Press the area where the time is displayed.

HOUR-Press ^ or v to adjust the hour and AM or PM. Press NEXT.

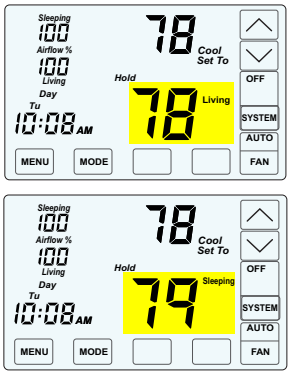
MINUTES-Press ^ or v to adjust the minutes. Press NEXT

DAY-Press ^ or v to adjust the day. Press ENTER.



Display Temperatures

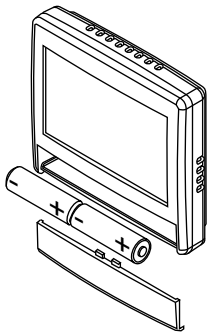
The downstairs zone (Living) temperature is the temperature of the space where the thermostat is located. To display the temperature in the upstairs zone (Sleeping), press the “Living” temperature area. The “Sleeping” space temperature is displayed and after a few moments, the thermostat will return to displaying the temperature in the downstairs Living space.



Installing Batteries

The equipment provides power to the thermostat for thermostat operation. The batteries maintain time if there is a power outage.

Slide the battery cover downward and install the two AA batteries as shown. Change the batteries about every two years.

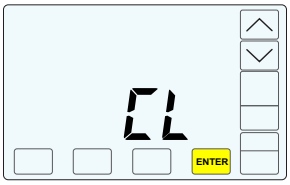


Clean Touchscreen

This option disables the touchscreen for 30 seconds. Use a soft cloth to wipe down the touchscreen.

Press the MENU key to display the first option. Press the MENU key until CL is displayed.

Press ENTER to start the 30 second countdown.



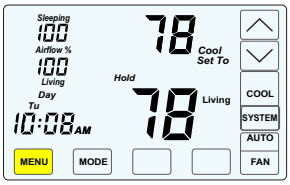
Setting the Schedule

The thermostat is preset with the following schedule for weekdays (Mon-Fri) and weekends (Sat-Sun).

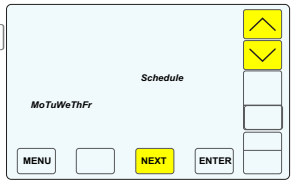
Mon-Fri	Time	Heat	Cool
Morn	6:00 AM	70	75
Day	8:00 AM	62	83
Even	6:00 PM	70	75
Nite	10:00 PM	62	78

Sat-Sun	Time	Heat	Cool
Morn	6:00 AM	70	75
Day	8:00 AM	62	83
Even	6:00 PM	70	75
Nite	10:00 PM	62	78

To change the schedule, press the MENU key to display the Schedule. Press the ^ key to access the weekday schedule or the v key to access the weekend schedule. Press NEXT.

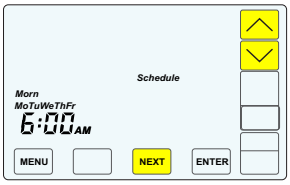


MORNING Start Time - Press the ^ or v key to adjust the Morning start time. Press NEXT.

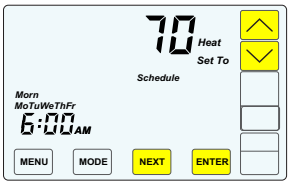


HEATING - Press the ^ or v key to adjust the Heating Set Point for Morning. Press NEXT.

COOLING - Press the ^ or v key to adjust the Cooling Set Point for Morning. Press NEXT.



Continue adjusting the Start Time, Heating Set Point and Cooling Set Point for the each schedule - Day, Evening and Night. Press ENTER once the schedules are completed.



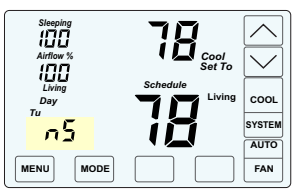
TROUBLESHOOTING

Power Reset

Thermostat acting up? A power reset might help. Carefully remove the thermostat by pulling the thermostat directly away from the subbase. Remove the batteries. Let the thermostat sit for about 30 minutes. Carefully reattach the thermostat to the subbase and replace the batteries.

Sensor Error Message

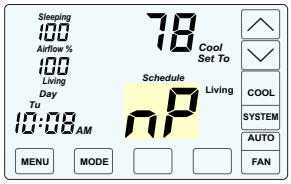
nS is displayed when there is an error with the temperature sensor(s). Technician should check for open wires or shortages.

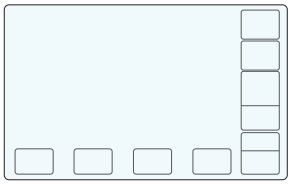


When the nS message is displayed, the thermostat will continue to control the system and automatically opens both dampers and disables airflow control until the sensor error is corrected.

No Power Message

nP is displayed when the thermostat is not receiving power from the equipment. The touch panel is disabled. Technician should check the wiring to the R and C terminals on the subbase and the equipment. Check the R and C pins on the back back of the thermostat. Make sure equipment is powered.



Blank LCD

Install 2 AA batteries. If the display is still blank, the thermostat needs to be replaced. If you receive an nP message, see below.