BN-LINK®

PRODUCT # BNQ-T9

Digital Temperature Controller

Please keep this handbook

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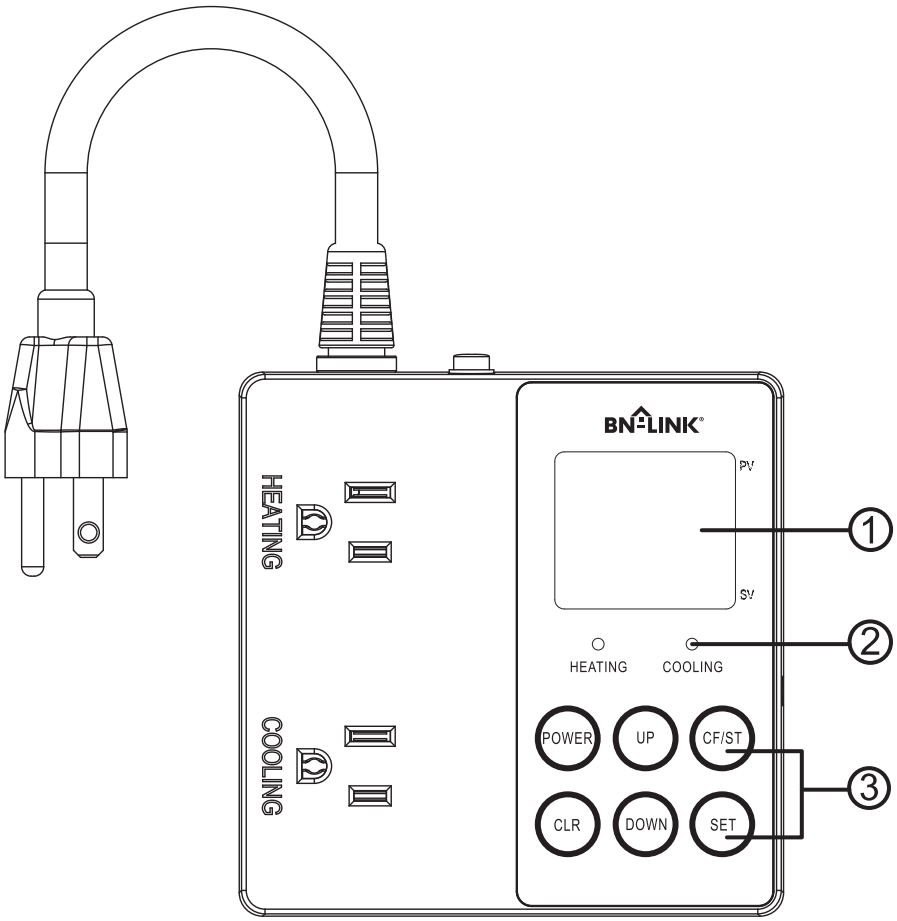
Designed in California, Made in China

ENERGY SAVING

PRODUCTS VIEW



① Screens

PV: Process Value. Under working status, display current probe temperature. Under setting status, display menu code.

SV: Set Value. Under working status, display set temperature. Under setting status, display set value of each parameter displayed in PV screen.

② Indicators

Heating Indicator:
The indicator is on when the heating device is woirking.

Cooling Indicator:
The indicator is on when the cooling device is on. It flickers when the compressor is under delay protection.

③ Buttons

POWER + CLR:
Press POWER and CLR at the same time to turn off the controller and cut off power output.

POWER:
1. Press POWER to turn on the controller when it is OFF.
2. In setting process, press POWER once to save and quit.

SET:
1. Press once to initiate the setting process.
2. In setting process, press to toggle through the setting items.

UP:
1. Press and hold UP to view the Hd value.
2. In setting process, press UP to increase a setting value or hold to fast scroll.

DOWN:
1. Press and hold DOWN to view the Cd value.
2. In setting process, press UP to decrease a setting value or hold to fast scroll.

RATINGS

125VAC, 60HZ
15A/1875W Resistive and general purpose
10A/1250W Tungsten and Electronic Ballast
1/2 HP, TV-5
Temperature Accuracy: 0.1
Probe measurement range: -58ºF~230ºF/-50ºC~110ºC
Working temperature for the controller: -40ºF~176ºF/-40ºC~80ºC
The sensor probe is waterproof, but the controller is not. Don't get water into the outlet.
The controller is overload protected. In case an overload occurs, the power output and screen display will be cut off. Please push the overload reset button located on the top of the controller.

WARNING

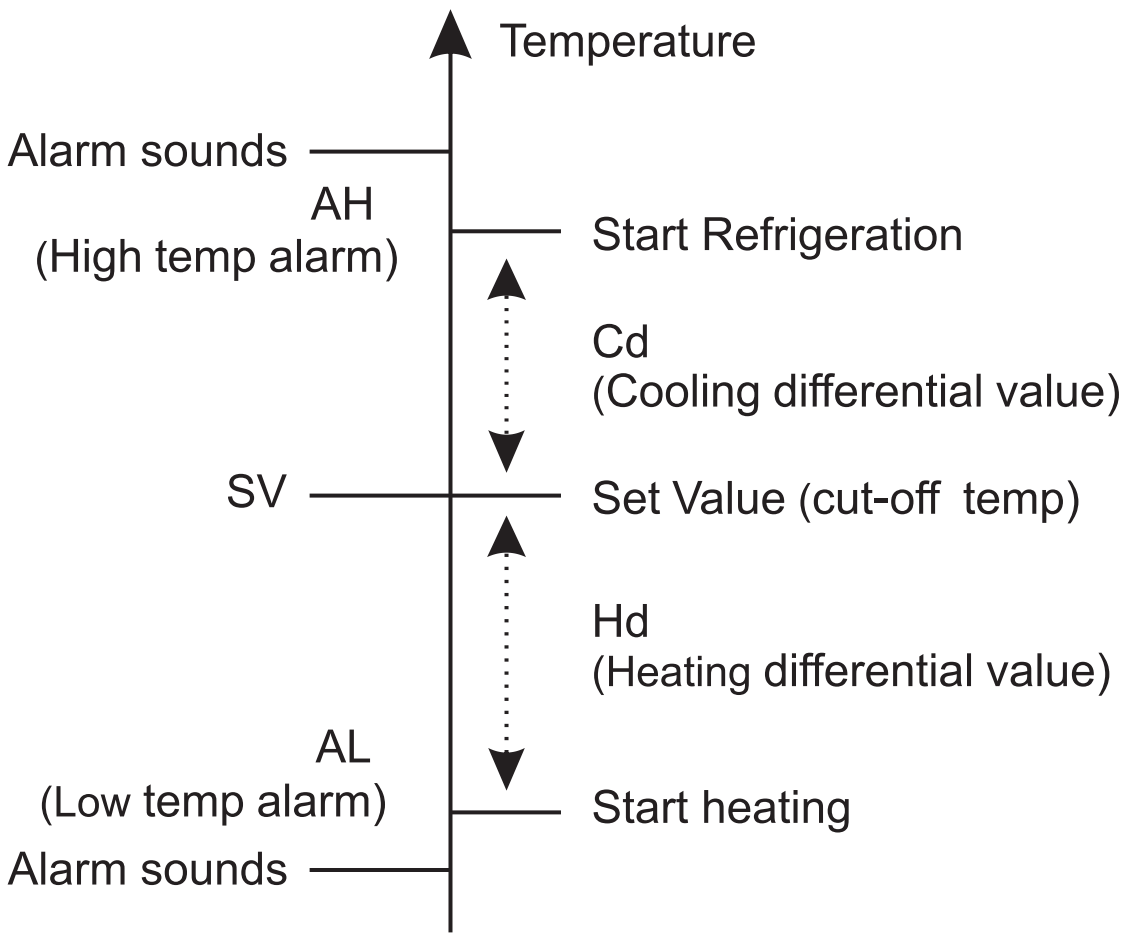
- Electrical shock hazard
- Follow local electrical codes
- Unplug timer before cleaning
- Do not use in wet locations
- Do not exceed electrical ratings
- Use a grounded outlet
- For indoor use only
- Keep children away
- Fully insert plug

OPERATING INSTRUCTIONS

Setting parameters: Press SET once to enter parameters set up mode. PV screen displays the first menu code "SV" and SV screen displays the value of the above code. Press SET to toggle the parameters in PV screen and use UP or DOWN to adjust the value. When all parameters are set, press POWER to save and quit. If there is no button operation within 18 sseconds during the setting, the system will save the changes and quit setting.
Tips: Hold UP/DOWN button allows fas scroll of a value.

Code	Default	Range	Definition	Explanation
Basic Setting				
SV	100	-58ºF~230ºF	Set Value	Cut-off temp. When temp rises and reaches SV, heating device will be turned off. When temp drops and reaches SV, cooling device will be turned off.
Hd	1	0.1~25ºF	Heating Differential Value	When measured temp **PV<SV - Hd**, the controller turns on heating equipment.
Cd	1	0.1~25ºF	Cooling Differential Value	When measured temp **PV>SV + Cd**, the controller turns on cooling equipment.
CA	0	-9~9ºF	Calibrate the reading	*Optional.* If meatured temperature is 3 degree higher than the real temperature, set CA=-3.
PT***	0	0~30	Compressor Time Delay(unit: minute)	*Optional.* It defines the time interval of 2 compressor cycles (On-Off)
AH	0	-58ºF~230ºF	High temperature alarm	*Optional.* It will beep once temp exceeds **AH**. Press any key to stop alarm.
AL	0	-58ºF~230ºF	Low temperature alarm	*Optional.* It will beep once temp exceeds **AL**. Press any key to stop alarm.

Advanced Setting			NOTE: Once you enter advanced setting, all of your former basic settings will be restored.	
CF	F or C	F or C	Temperature unit	The default unit is F
ST	1	01 or 10	Number increment for each click on UP/DOWN button	*Optional.* If you choose 10, the number jumps like 2,3,4... If you choose 01, it jump like 2.1, 2.2, 2.3...



How it works: When the probe measured temp PV > SV + Cd, the controller turns on cooling equipment. The cooling indicator is on. If the indicator is flickering, it means the cooling equipment is under compressor delay protection status. When the probe measured temp PV drops and reaches SV, the controller turns off cooling equipment. The cool indicator is off.
When the probe measured temp PV < SV - Hd, the controller turns on heating equipment. The heating indicator is on. When the probe measured temp PV rises and reaches SV, the controller turns off heating equipment. The heating indicator is off.
When the probe measured temp PV > AH, the beep alarm sounds. Press any button to disable the alarm.
When the probe measured temp PV < AL, the beep alarm sounds. Press any button to disable the alarm.

For example, SV=99.5°F, Cd=0.5°F , and Hd=2°F. Step by step instructions:
Power on the controller→ Press SET once, you will see SV on screen→ Press UP/DOWN to specify 99.5 for **SV**→ Press SET once to select next parameter **Hd**→ Press UP/DOWN to specify 2 for Hd→ Press SET once to select next parameter Cd→ Press UP/DOWN to specify 0.5 for Hd→Press POWER to save and quit.

- Once the detected temperature is below 97.5°F (SV - Hd), the controller turns on the heating device. The heating device will be turned off when temp reaches 99.5°F.
- Once the detected temperature is over 100°F (SV + Cd), the controller turns on the refrigeration device. The cooling device will be turned off when temp reaches 99.5°F.

***Further explanation about Compressor Time Delay (PT):**
The time delay is a way of over-riding the temperature sensor so that regardless of detected temperature the output device will not turn on unless the specified time

duration has elapsed. Under cooling mode, after the power is on, if the measured temperature is higher than (SV + Cd), the device won't start the cooling equipment immediately, but will wait for a delay time. Delay time is counted right after the moment the cooling equipment stops.

When the time interval of two cooling cycles is larger than the preset delay time, the device will start cooling immediately. (For example, PT=2. It's been 3 minutes when the temperature reaches the turn-on temperature again. The cooling equipment starts immediately.)

When the time interval between two cooling cycles is less than the preset delay, the equipment won't start working until preset delay is reached. (For example, PT=5. Your cooler stopped 3 minutes ago. Although it's now reached the turn-on temperature, you have to wait 2 more minutes before your cooler starts again.)

TROUBLE SHOOTING

A. Heating or cooling device does not turn on when specified temperature is reached.

First please understand that the controller turns off the device when the target temperature is reached. It turns on the device only when the specified temperature is exceeded. The device will be turned on only when the temperature is below (SV - Hd) or over (SV + Cd).
Then, check if a PT value is specified. If you've specified a PT value, during the delay time, the COOLING indicator on screen will flash. Your device will be turned on after the specified time delay.

B. The controller displays EEE while beeping.

Please check if the 3.5mm plug of the sensor probe is inserted completely into the jack on side of the controller. If it is plugged in correctly, the probe is likely defective. Please email us at support@bn-link.com for a free probe replacement.

C. The screen displays LLL.

This means the temperature is below the minimum value that this controller can measure.

D. The screen displays HHH.

This means the temperature is over the maximum value that this controller can measure.

E. It keeps beeping when the temperature reaches a certain level.

This is usually because the alarm has been set. When the alarm sounds press any button to disable it.

F. No power output and screen display.

Please check if the load exceeds the rating of the controller. Remove the load from the controller and push the overload reset button on top of the controller.