DIN300A www.thermomart.com

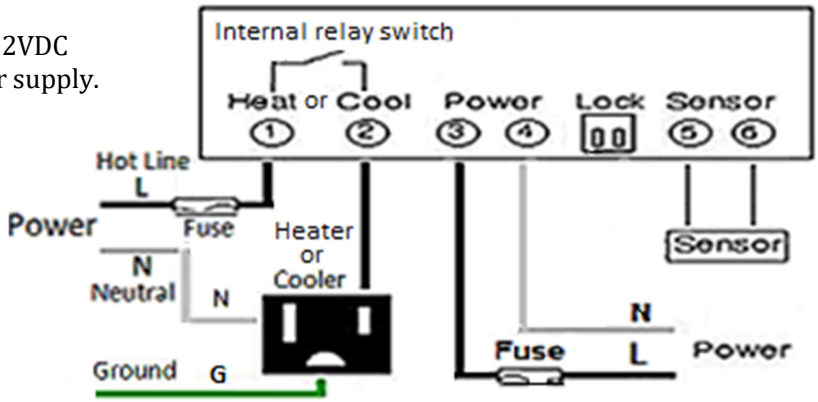
Please check the controller label to know if it should be powered up with a 110V or 220V (EU) or 12VDC (12VDC controller does not need ground wire) power supply.

① Dimensions:

Product size: 75L x 34.5W x 85D (mm)
Mounting size: 71L x 29W (mm)

② wiring diagram:

Terminals 1 & 2: Heating or Cooling output:
Contact relay switch (normally open).
Terminals 3 & 4: Power supply connection
Lock switch: Locking Parameter Settings
Terminals 5 & 6: Temperature sensor connection



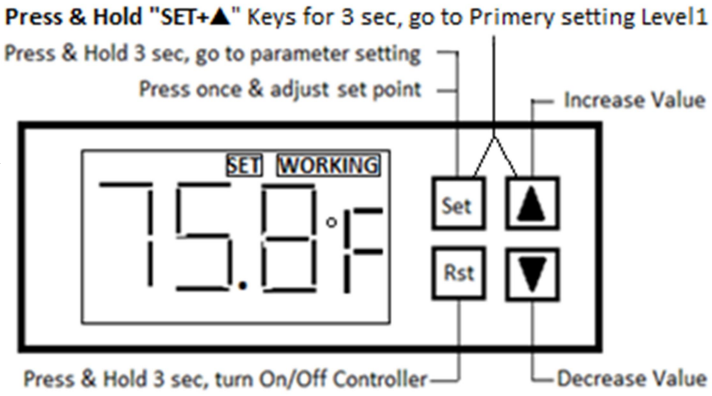
Use Ground wire when the power is 110V

③ Technical information:

- Temperature range: -30°C~300°C (-22°F ~ 572°F) with NTC100K or -50°C~110°C (-58°F ~ 230°F) with NTC10K
- Control accuracy: 1 °C
- Maximum power consumption: 2W
- Resolution: 0.1 °C
- Temperature measurement error: ± 1 °C
- Contact Relay (Output 1,2–Heating or Cooling): (10A/110Vor 12V), 5A/220V
- Temperature sensor: work with both NTC 10K or NTC 100K

④ Primary Parameter Setting (Level 1):

Press and hold the SET key and ▲ key at the same time for more than 3 seconds and the controller will go to " Primary Parameter Setting" menu. By pressing ▲ or▼ keys you can select the required parameter from the menu. When the needed parameter is found, press SET key again and then by pressing ▲ or ▼ keys, you can change the parameter value. When the Parameter is set, you can exit "parameter setting mode" by pressing RST key. Please consider every time you go to primary parameter setting (Level 1) , the Parameter setting (Level 2) goes back to factory setting values. So, it is recommended to set up Level 1 Parameters before Level 2.



Symbol	Details	Setting range	Factory settings
CF	Fahrenheit/Celsius	F / C	C
HL	**HL=H: Sensor NTC100K** (572°F) or **HL=L: Sensor NTC10K** (230°F)	H / L	H
ST	Temperature measuring with or without decimal point (1 or 0.1)	10 / 01	10
dL	Count Down Timer ON/OFF	ON / OFF	OFF
U	Configuring timer setup *	ON / OFF	OFF

*U=OFF: timer starts as soon as thermostat turns ON. U=ON: timer starts when temperature reaches to the set point.

⑤ Operating Instructions:

LED Status (light display):
- When red "WORKING" light is ON, it shows the output (heating or cooling) is working.
- If "WORKING" light flashes, it shows that the controller is on delay.
- If "SET" light is ON, it shows that the controller is on setting mode.

Turning controller ON/OFF:
To turn the controller ON press RST key once. To turn the controller OFF press and hold RST key for 3 seconds.

Define the set point:
Press the SET key once & by pressing ▲ or ▼ keys you can adjust the set point. You can exit the setting mode by pressing SET key or by waiting 5 seconds.

Parameter Setting (level 2):
Press and hold SET key for 3 seconds to enter "parameter setting menu". By pressing ▲ or▼ keys you can select the required parameter from the menu. When the needed parameter is found, press SET key again and then by pressing ▲ or ▼ keys, you can change the parameter value. When the parameter is set, you can exit the "parameter setting mode" by pressing RST key or waiting 5 Sec.

◆Cooling / Heating functions ("HC" parameter):

Press SET key when you find "HC" parameter. By pressing "▲"or "▼" adjust it at "C" for cooling or "H" for heating mode.

◆Hysteresis or Temperature Band ("d" parameter):

To prevent frequent ON/OFF action of the output, a temperature band (called hysteresis or differential) is created between ON and OFF operations. So, the controller uses a range (a maximum and minimum) for operation. For example in the cooling mode (HC=C) when the hysteresis "d" is set on 5 and the set point is 55℃, the cooling output works when the temperature goes higher than 60℃ and will be off when the temperature goes less than 50℃. Or, in the heating mode (HC=H) when the hysteresis "d" is set on 3 and the set point is 55℃, the heating output works, when the temperature goes lower than 52℃ and will be off when the temperature goes higher than 58℃. You can adjust "d" parameter to any number from 1 to 25.

◆ Temperature sensor calibration ("CA" parameter):

You can calibrate the temperature reading with this function. The value can be positive, negative or 0 (from -9 to 9).

◆ Delay Protection: ("PT" parameter):

In the cooling mode, you can use this parameter to set the controller on the state of compressor delay protection. It prevents breaking the compressor as a result of frequent rebooting. It also protects the compressor in the state of power cut and high voltage power on. You can define the delay time (from 0 to 30 minute) for the start-up of your cooling machine.

◆Heating and cooling temperature range settings ("LS" and "HS" parameters):

By adjusting the higher and lower temperature range you will define the display range of your controller. Narrowing down this range will add to the accuracy of the controller. "LS" parameter is for lower temperature range and "HS" is for higher temperature range. You can select the maximum range if you adjust "LS" on -30℃ and "HS" on 300℃ when your sensor is NTC 100K.

◆ High and low temperature alarm functions ("AH" and "AL" parameters):

- If temperature exceeds "set point temperature + AH" controller will make beeping sound and the display will alternately flash between "H" and the current temperature. By pressing any key the beeping sound will stop. For example if set point is 55 ℃ and "AH" parameter is 15, controller makes a beeping sound when temperature exceeds 70 ℃ and beeping sound will be off when temperature goes lower than 70 ℃ .
- If temperature goes lower than "set point temperature - AL" controller will make beeping sound and the display will alternately flash between "L" and the current temperature. By pressing any key the beeping sound will stop. For example if set point is 55 ℃ and "AH" parameter is 25, controller makes a beeping sound when temperature goes lower than 30 ℃ and beeping sound will be off when temperature exceeds 30 ℃. Setting "AL" or "AH" parameters on zero will turn the high or low alarm function off. You can adjust them to any number from 0 to 25.

◆ Time control functions ("AT" parameter):

This parameter will show up when you turn "dL" parameter ON in the Primary parameter setting (Level 1). When AT=0, timer will be off but if you need to use the timer, "AT" should be set at a number between 0-999 minutes.
If U=OFF (in primary setting Level 1), timer starts counting down as soon as the controller turns ON and when the time reaches to 0, the controller output will turn off. If U=ON, timer will start counting down when the temperature reaches to the set point and the controller output will turn off, when the time reaches to 0. Each time you press RST key the timer will restart again.
For setting the timer, find "AT" parameter, press SET key and then by pressing "▲" or "▼" adjust this parameter value by minute. Then, press RST key to turn the timer ON.

◆ Parameters setting and definitions:

Symbol	Details	Setting range	Factory settings
HC	Heating / cooling	H / C	C
d	Hysteresis or Differential Set Value(temperature band)	0.1 to 25	1.0
LS	Lower temperature setting	0 ~ HS	-30 ℃ / -22 ℉
HS	Higher temperature setting	LS ~ 300	300 ℃ / 572 ℉
CA	Temperature Calibration	-9.0 To +9.0	0
PT	Delay Protection time	0 ~ 30	0 Minute
AH	High temperature alarm setting	0.0 ~ 25.0	0
AL	Low temperature alarm setting	0.0 ~ 25.0	0
AT	Count Down Timer 0-999 Minute	0 ~ 999	0 Minute

⑥Error messages and troubleshooting:

1) When the controller displays "--- "it shows that the sensor is disconnected. Controller will make beeping sound and the heating output relay will be closed (so the heater is off for safety).
2) When the controller displays LLL it shows that the measured temperature by sensor is lower than LS value.
3) When the controller displays HHH it shows that the measured temperature by sensor is higher than HS value.

⑦ Caution:

◆ The maximum current load of the heating or cooling source must not exceed the output relay contact capacity. It will damage the unit and may cause fire.
◆ Check the wiring diagram before wiring the unit. Wrong wiring will damage the controller and may cause fire.
◆ Applying extra force on the screws of controller terminals will break the base. Please tighten the screws gently.
◆ For your safety, turn the power supply off when you are wiring the controller.

DIN300A-New Installation and Wiring Guide

For current product information, availability, and compatible options, use the verified ThermoMart links below. The preceding pages remain the original wiring guide content.

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