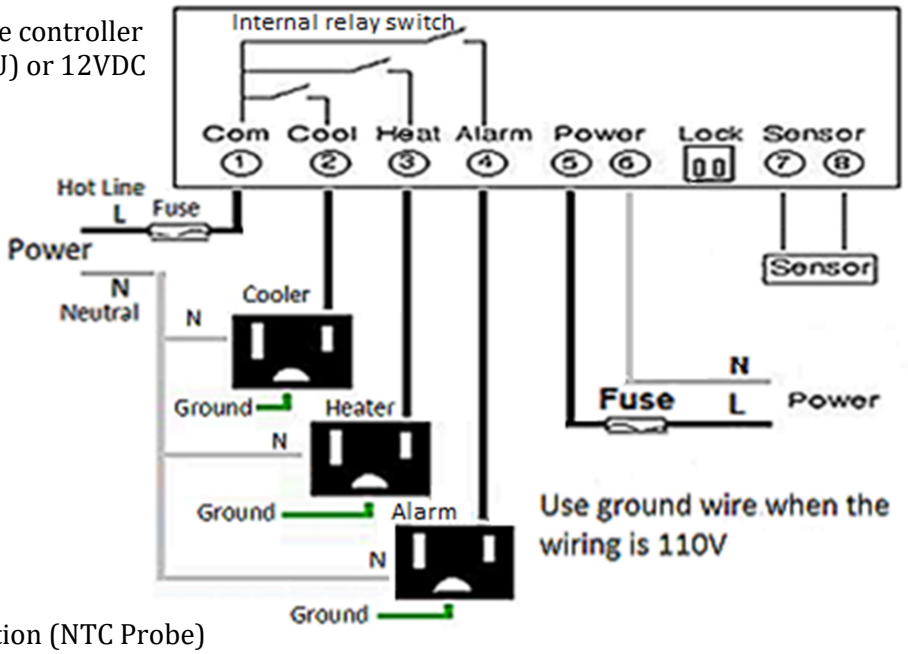
DWH7016HF www.thermomart.com

Please check your controller label to know if the controller should be Powered up with a 110V or 220V (EU) or 12VDC (12VDC controller does not need ground wire)



① Dimensions:

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

② wiring diagram:

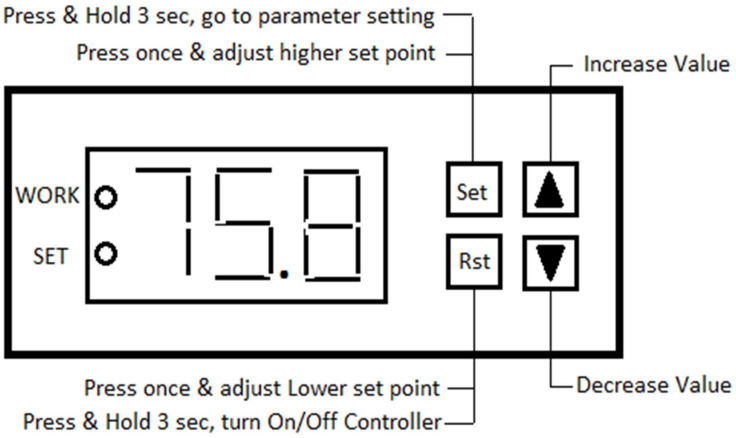
Terminals 1 & 2: Cooling output:
Contact relay switch (normally open).
Terminals 1 & 3: Heating output:
Contact relay switch (normally open).
Terminals 1 & 4: Alarm output:
Contact relay switch (normally open).
Terminals 5 & 6: Power supply connection
Lock switch: Locking the Parameter Settings
Terminals 7 & 8: Temperature sensor connection (NTC Probe)
Depends on each application, you can either wire all 3 outputs or only one or two of them.

③ Technical information:

- Temperature range: -58 °F ~ 230 °F
- Temperature measurement error: ± 1 °F
- Control accuracy: 1 °F
- Maximum power consumption: 2W
- Resolution: 1 °F
- Sensor Type: NTC (10K/3435)
- Contact Relay (Output 1,2–Cooling): (10Amp/110Vor12V), 5A/220V
- Contact Relay (Output 1,3–Heating): (10A/110Vor 12V), 5A/220V
- Contact Relay (Output 1,4 – Alarm): (10A/110Vor12V), 5A/220V

④ Define the set points:

This controller has two set points,
Lower set point: Press RST key once and by pressing ▲ or ▼ keys you can adjust the lower set point.
For example you can set it at 32 °F. You can exit the setting mode by pressing RST key or wait for 5 seconds.
Higher set point: Press the SET key once & by pressing ▲ or ▼ keys you can adjust the higher set point.
For example you can set it at 200 °F. You can exit the setting mode press RST key again or wait for 5 seconds.



⑤ Operating Instructions:

LED Status (light display):
- When the red light next to "Work" is ON, it shows that one of the outputs (heating or cooling or alarm) is working.
- If the light next to "Work" flashes, it shows that the controller is on delay.
- If the light next to "Set" is ON, it shows that the controller is on setting mode.

Turn On/Off controller:
To turn the controller ON press the RST key. To turn the controller OFF press and hold the RST key for 3 seconds.
Parameter Setting:
Press and hold SET key for 3 seconds to enter "parameter setting menu". By pressing ▲ or▼ keys you can select the 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 the RST key or wait for 5 seconds.

◆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. Press and hold "SET" key for more than 3 seconds, find the "LS" or "HS" parameters by pressing ▲ or▼ keys. When you find the "LS" or "HS" parameter, press "SET" key and then by pressing "▲" or " ▼" change the temperature range. "LS" parameter is for lower temperature range and "HS" is for higher temperature range.

◆Hysteresis or Temperature Band ("Cd" and "Hd" parameters):

To prevent the frequent ON/OFF action of the output, a temperature band (called hysteresis or differential) is created between the ON and OFF operations. The controller will use a range (a maximum and minimum) for process control action. For example when the cooling hysteresis "Cd" is set on 5 and the higher set point is 200°F, the cooling output works when the temperature goes higher than 205°F and output is off when the temperature goes less than 195°F. Or, when the heating hysteresis "Hd" is set on 3 and the lower set point is 32°F, the heating output works, when the temperature goes lower than 29°F and output is off when the temperature goes higher than 35°F. You can adjust "Cd" or "Hd" to any number from 1 to 25. "Hd" parameter is for heating hysteresis and "Cd" is for cooling hysteresis.

◆ 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.

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

- If the temperature exceeds the higher alarm temperature "Higher set point temperature + AH" the alarm output works and the controller makes beeping sound and the display will alternately flashes between "H" and the current temperature. By pressing any key the buzzer alarm will stop and alarm relay output will be closed.
- If the temperature get down the lower alarm temperature "Lower set point temperature - AL" the alarm output relay works and the controller makes beeping sound and the display will alternately flashes between "L" and the current temperature. By pressing any key the buzzer alarm will stop and alarm relay output will be closed.

Setting "AL" and "AH" parameters on zero will turn the alarm function off. You can adjust them to any number from 0 to 25. For example if the higher set point is 200 °F and "AH" parameter is 20, so the alarm output works when the temperature exceed from 220 °F and alarm output is off when the temperature goes lower than 220 °F .

◆ Parameters setting and definitions:

Symbol	Details	Setting range	Factory settings	Units
Hd	Heating Hysteresis or Heating Differential Set Value	1 to 25	5	°F
Cd	Cooling Hysteresis or Cooling Differential Set Value	1 to 25	5	°F
LS	Lower temperature range	-58 ~ HS	-58	°F
HS	Higher temperature range	LS~ 230	230	°F
CA	Temperature Calibration	-9 to +9	0	°F
PT	Delay Protection time	0 ~30	1	Minutes
AH	Higher temperature alarm setting	0 to 25	1	°F
AL	Lower temperature alarm setting	0 to 25	1	°F

⑥Error messages and troubleshooting:

1) When the controller displays "--- "it shows that the sensor is disconnected. The 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.

DWH7016HF-New2 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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