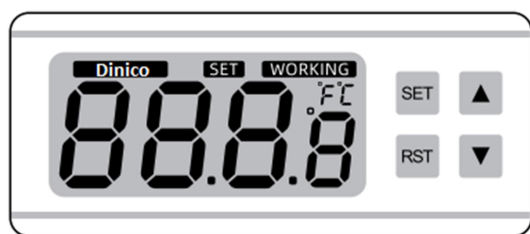# DIN-S-CF

Product size: 75L x 34.5W x 85D (mm)
Mounting size: 71L x 29W (mm)
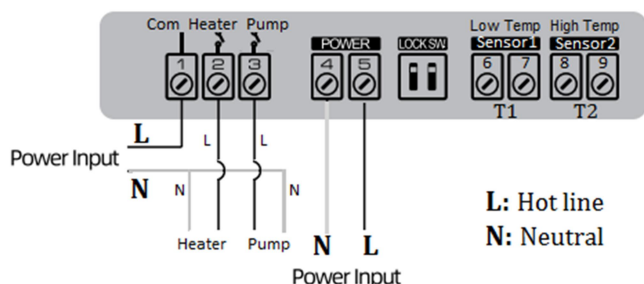Temperature range: -50°C~110°C (-58°F ~ 230 °F) with NTC10K
Control accuracy: 1 °C
Maximum power consumption: 2W
Resolution: 0.1 °C
Control output load: 10Amp or 5Amp (check the model no.)

1 Wiring Diagram :

L: Hot line
N: Neutral

Terminals 1 & 2: Heating/Anti-freeze output:
  Contact relay switch (normally open).
Terminals 1 & 3: Differential Temp output (Pump, Valve):
  Contact relay switch (normally open).
Terminals 4 & 5: Power supply connection
Lock switch: Locking Parameter Settings
Terminals 6 & 7: Temperature sensor1
(lower Temperature T1: storage tank or swimming pool,...)
Terminals 8 & 9: Temperature sensor2
(Higher Temperature T2: solar collector)

2 LED Light Indication:

SET light on: in setting mode
SET light off: in running mode
WORKING light on: the load is on
WORKING light off: the load is off

3 Turn On/Off The Thermostat:

TURN OFF: Press RST and hold the button for three seconds.
TURN ON: Press RST button once.

4 Advanced 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
" Advanced Parameter Setting" menu. By pressing ▲ or▼
keys you can select the required parameter from the menu.

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When the needed parameter is found, press SET key once and
then by pressing ▲ or ▼ keys, you can change the parameter
value. When the Parameter is set, you can save and exit
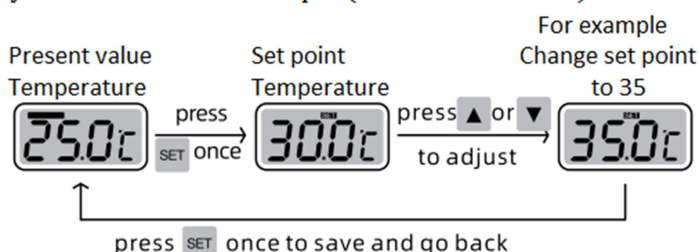"parameter setting mode" by pressing RST key.
*Every time you go to advanced parameter setting (Level 1) ,
the basic parameter setting (Level 2) goes back to factory
default setting values. So, it is recommended to set up Level 1
Parameters before Level 2.

| CODE	Description	RE	
CF	Celsius/Fahrenheit	C : Celsius	F : Fahrenheit
S7	Decimal point	01: turn on decimal point	
		10: turn off decimal point	
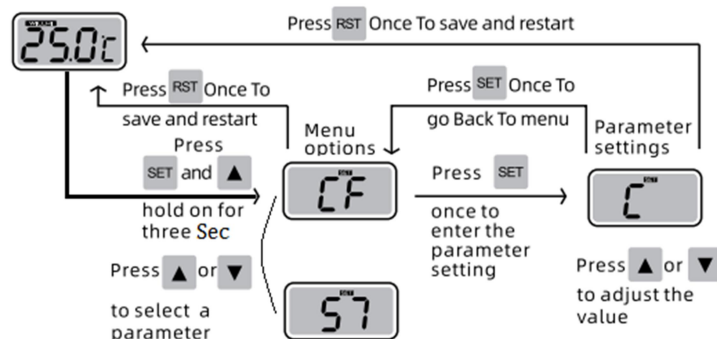
5 Define the set point:

If you need to use a heater or freeze protection circulation pump,
you can use the heater output (works with sensor1).

Present value Temperature → press SET once → Set point Temperature → press ▲ or ▼ to adjust → For example Change set point to 35

press SET once to save and go back

6 Basic Parameter Setting level 2:

Press and hold SET key for 3 seconds until you see HC on the screen.
Press the " ▲ or▼ " key to select a parameter that you want to set.
Press SET key once to enter the selected parameter and then using
" ▲ or▼ " key to modify the value. After you get the desired value
press SET key once to save and go back to the main menu so you can
select and set another parameter.
Press RST key to save and exit. The unit will automatically save your
setting and exit if there's no operation for 5 seconds.

| Symbol	Details	Range	
d	Hysteresis set value for heater output Based on T1 sensor reading	0.1 to 25	
Ld	Lower differential temp setting (T2-T1)	0.1 ~ Hd	
Hd	Higher differential temp setting (T2-T1)	LD ~ 110 °C / 230 °F	
CA1,CA2	Temp calibration for sensor 1 and 2	-9.0 to +9.0	
dP	Display mode show 0, 1, 2	0:T1 1:T2 2:T1,T2	
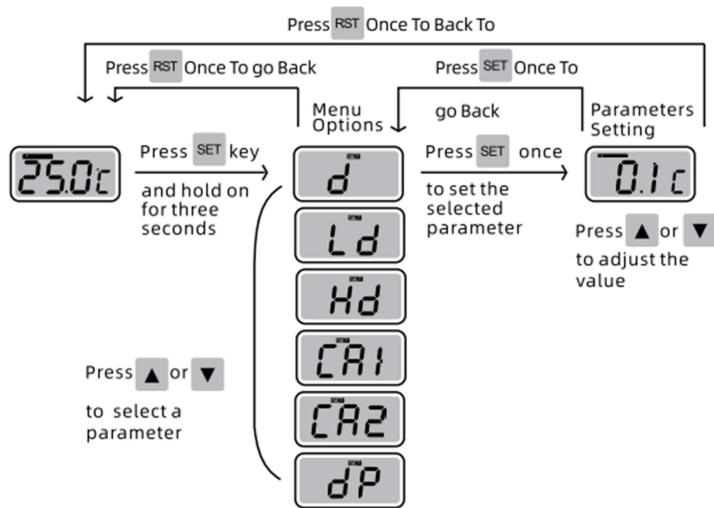
Define the setpoint:

If you need to use a heater or freeze protection circulation pump, you can use the heater output (works with sensor1). To define the set point temperature, press the SET key once & by pressing ▲ or ▼ keys you can adjust the set point value. You can exit the setting mode by pressing SET key or by waiting 5 seconds.

d Hysteresis setting

When the temperature is less than the value of (set point – d), the heating device turns ON. When the temperature is the same or higher than set point, the heating device turns OFF.
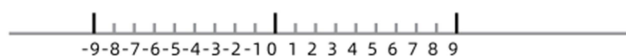


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For example:
Set point temperature=30 d=5
If measured temp >=30, heating device turns off.
If measured temp <25, heating device turns on.
```
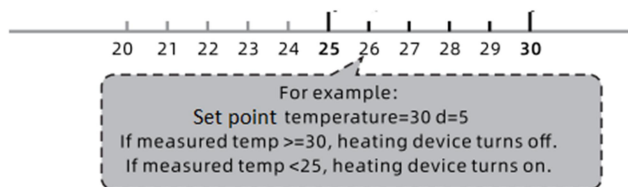
Ld、Hd Setting:

Sensor1 is Low temperature sensor (T1) and sensor2 is High temperature sensor (T2) and (T2-T1) is differential temperature of 2 sensors. "Hd" and " Ld" are called higher and lower differential temperature numbers, that can be changed in parameter setting. So by adjusting Hd (higher range of T2-T1=Hd) and Ld (lower range of T2-T1=Ld) you will define the acting range of your pump (or electric valve) in your solar system.

Find "Hd" or "Ld" in the parameter setting by pressing "▲" or "▼" keys. Press "SET" key when you find "Hd" or "Ld" and then by pressing "▲" or "▼" adjust the value of these parameters. For example when "Hd" is set on 10 and "Ld" is set on 5, the pump (or electric valve) output switch will be ON when T2-T1 is higher than 10 degrees and will be Off when T2-T1 drops to 5 degrees. You can define "Ld" parameter any number more than zero and less than "Hd" and "Hd" parameter can be any number more than "Ld" and less than the max temperature range.

CA1,CA2 Temperature Calibration :

You can calibrate temperature when the reading temperature is not accurate. If the measured temp is 3 degree higher than the correct temprature, set CA=-3 or if it's 3 degree lower, set CA=3.

dP Display Mode setting:

Controller display can be set to show either the temperature of sensor1 or sensor2 or sensor1 and 2. Press and hold "SET" key for more than 3 seconds to enter the "parameter setting menu". Find "dp" parameter by pressing "▲" or "▼" keys. Press "SET" key when you find "dp" and then by pressing "▲" or "▼" adjust this parameter. "dp" can be set on 0,1 or 2 to display sensor1, sensor2 or sensor1 and 2 alternately.

Error messages and troubleshooting:

1) When controller displays "E1 or E2 "it shows that the sensor1 or sensor2 is disconnected. The heating output relay will be closed (the heater will be off for safety).
2) When controller displays LLL it shows that the measured temperature is lower than -58°F (-50°C)
3) When the controller displays HHH it shows that the measured temperature by sensor is higher than 230°F (110°C)

Warnings:

1) The maximum current load of the circuit must not exceed the maximum capacity of the output built-in relay. It will damage the unit and may cause fire.
2) Wrong wiring will damage the controller and may cause fire.
3) Extra force on the terminals screws will break the PCB base.
4) While wiring the controller power supply should be OFF.
5) Do not tight the sensor and power wires together. Power line noise affects the accuracy of measurement.