

# BD4004 Series Touch Screen Heating Thermostat Manual

## Product Summary

This new design heating thermostat aims at market demand, it has large LCD display. Easy operation, complete functions. It can control motorized ball valve, motorized valve, thermal valve, solenoid valve, heater, electric heating film, electric heating carbon crystal. It is used for floor heating.

## Technical Data

- ❖ Power Supply: AC 12V, 24V, AC85~240V, 50/60HZ
- ❖ Load Current: 3A; /16A
- ❖ Accuracy: ±0.5°C
- ❖ Set-point Temperature Range: 5°C - 60°C
- ❖ Limit Temperature Range: 5-99°C
- ❖ Consumption: <0.3W
- ❖ Temperature Sensor: NTC
- ❖ Size: 86\*86\*17mm (H\*W\*D)

## Features

- ❖ Large LCD touch screen with blue backlight display and double temperature display mode
- ❖ Time display (minutes, hours, weeks)
- ❖ 6 period programmable controlling temperature setting
- ❖ Internal and external temperature sensor for choice
- ❖ Room temperature display precision is 0.5, inner precision is 0.1
- ❖ Setting temperature meet user's demand of room temperature
- ❖ Memory function when power failure, protect your setting from power failure
- ❖ Room temperature automatic calibration function

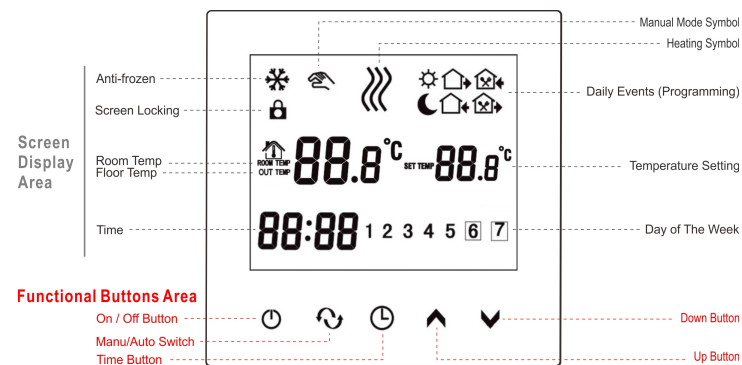
## Button description

NO.	signal	Description
1		on / off
2		Mode key: switch over auto/manual time interval control and temporary manual, long press enter into time interval setting function
3		Time setting: hours, minutes, weeks setting.
4		Higher temperature setting,  +  and  +  to increase programmable parameter
5		Lower temperature setting,  +  and  +  to decrease programmable parameter

## Function and display

- “” manual control (temporary manual control when flashing, auto control when no this sign display);
- “” it is heating;
- “” open anti-freezing function;
- “” get up in morning, the first time interval; “” go out in morning, the second time interval;
- “” back home at noon, the third time interval; “” go out at noon, the fourth time interval;
- “” back home at night, the fifth time interval; “” sleep at night, the sixth time interval;
- “” long press open lock or close lock;

## Operation diagram



## Time and time interval setting

### 1) Time setting

Press time key “”, time zone display minute, hour, week, press key “” or “” to adjust time.

### 2) Time interval temperature auto control setting

First step, select time interval first, press “” screen display “LooP” (cycle control), then press “”, screen display “12345” (Monday to Friday control mode); press “” for 2 times, screen display “12345” (Monday to Saturday control mode); press “” for 3 times, screen display “12345 ” (Monday to Sunday control mode);

Second step, time interval time and temperature setting, when screen display “12345” or “12345” or “12345 ”, press “” enter into time interval temperature setting, press “” enter into time interval time setting, press “” or “” to adjust and save automatically.

Note: when auto control “” will disappear, if need re-set temperature when auto control, can press “” or “” to adjust.

### 3) Modify interval time control setting

Press “” first, then press “” switch to the time option to modify time of time interval.

## Time interval programming

Press menu key “”, can enter into time interval setting, then press time key “” can enter into interval time setting.

	Period	Icon	Default Period Time	Default Period Temperature
Working Day	1		06:00	20°C
	2		08:00	15°C
	3		11:30	15°C
	4		12:30	15°C
	5		17:30	22°C
	6		22:00	15°C
Weekend	1		08:00	22°C
	2		23:00	15°C

## Note:

1, The factory default temperature value of time interval 3 and 4 are the same as period 2, please modify default temperature when it's necessary.

2, Setting temperature is “00”, this time interval is shutdown.

3, View out temperature value (floor temperature)

(1) Touch screen version: when internal control temperature and external limit temperature (high temperature protection), under power on state, press time key not move first, then press on/off key together to switch and view external temperature (this time measure temperature display zone displays OUT TEMP temperature value), press time key to display room temperature;

(2)Button version:when internal control temperature and external limit temperature (high temperature protection),under power on state,press mode key not move first,then press on/off key together to switch and view external temperature (this time measure temperature display zone displays OUT TEMP temperature value),press mode key to display room temperature;

### Advanced Setting(suggestion:operated by technician)

(1)Touch screen version:under power off state, press and hold ⊕ and tap ⊖ enter into advanced setting,it will save after backlight is out,press ↻ to set next data

(2)Button version:under power off state, press ▼ and hold and tap ⊖ enter into advanced setting, it will save after backlight is out,press ↻ to set next data

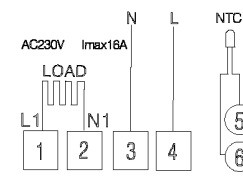
No.	Symbols	Setting Item	Parameter Setting Function	Factory Default
1	SEN	Sensor control option	0:internal sensor 1:external sensor 2:internal control temperature,external limit temperature	0:internal sensor
2	OSV	Limit temperature value of external sensor	5-99°C	42°C
3	dIF	Return difference of limit temperature value of external sensor	1-9°C	0.5°C
4	SVH	Set upper limit temperature value	5-99°C	35°C
5	SVL	Set lower limit temperature value	5-99°C	5°C
6	AdJ	Measure temperature,check and calibration	-5-5°C	0.5°C precision Calibration (actual temperature)
7	FrE	Anti-freezing function	00:anti-freezing function shut down 01:anti-freezing function open	00:anti-freezing function shut down
8	POn	Power on memory	00:Power on no need memory 01:Power on need memory	01:Power on no need memory
9	FAC	Factory default	08:just display,no other meaning 00:Restore factory default	08

**Note:**hysteresis (return temperature) description:the factory default of external sensor limit temperature(OSV) set as 42°C, external sensor limit temperature hysteresis(dIF) set as 2,when temperature up to 44°C,relay stop output,when temperature drops to 40°C,relay output again and heating.(operation when room temperature lower than setting temperature)

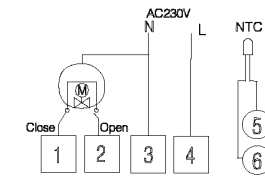
### Sensor fault hint

Please select internal,external sensor working mode correctly.If it is choose wrong or sensor is fault (breakdown),LCD interface will display“Err”,temperature controller stops heating until fault is eliminated. Special Hint:installation cable.Please select:water heating selects 1.5-2.5mm<sup>2</sup> rigid line;electric heating select above 2.5mm<sup>2</sup> rigid line.

### Power wiring diagram

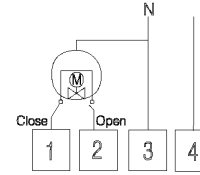


Electric heating wiring diagram



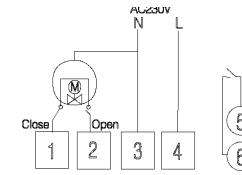
Water heating wiring diagram

(disconnection when electric valve close)



Water heating no external sensor wiring diagram

(disconnection when electric valve close)

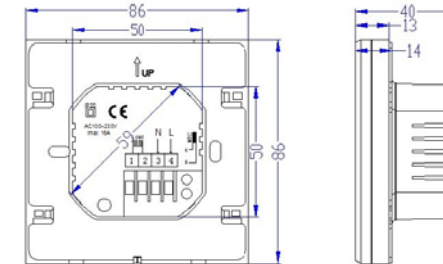


Water heating dry contact wiring diagram

(disconnection when electric valve close)

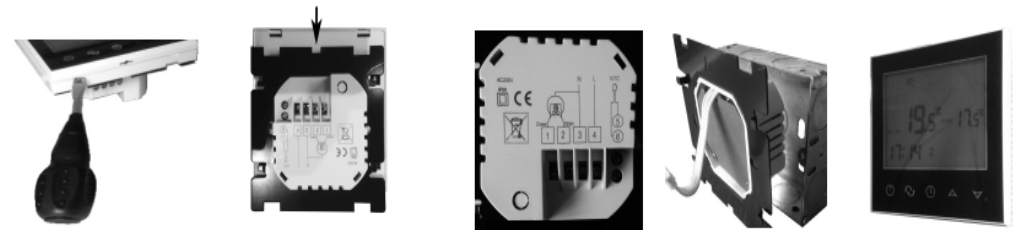
### Installation

**Warning:**please wiring right strictly according to the wiring diagram,do not make water,mud and other debris into the thermostat,otherwise it will cause thermostat damage!



aaaa

### INSTALLATION



To open push a flat screwdriver in to both slots in the bottom of the thermostat

Push the back from the front as shown, remove connecting plug

Connect up wiring as indicated putting actuator live on terminal 2

Screw thermostat back plate to 35mm wall box with screws provided

Re connect plug and snap thermostat on to lugs