

# Under-Floor Heating LCD Thermostat

HTW-31-H17-EN

## λ Features

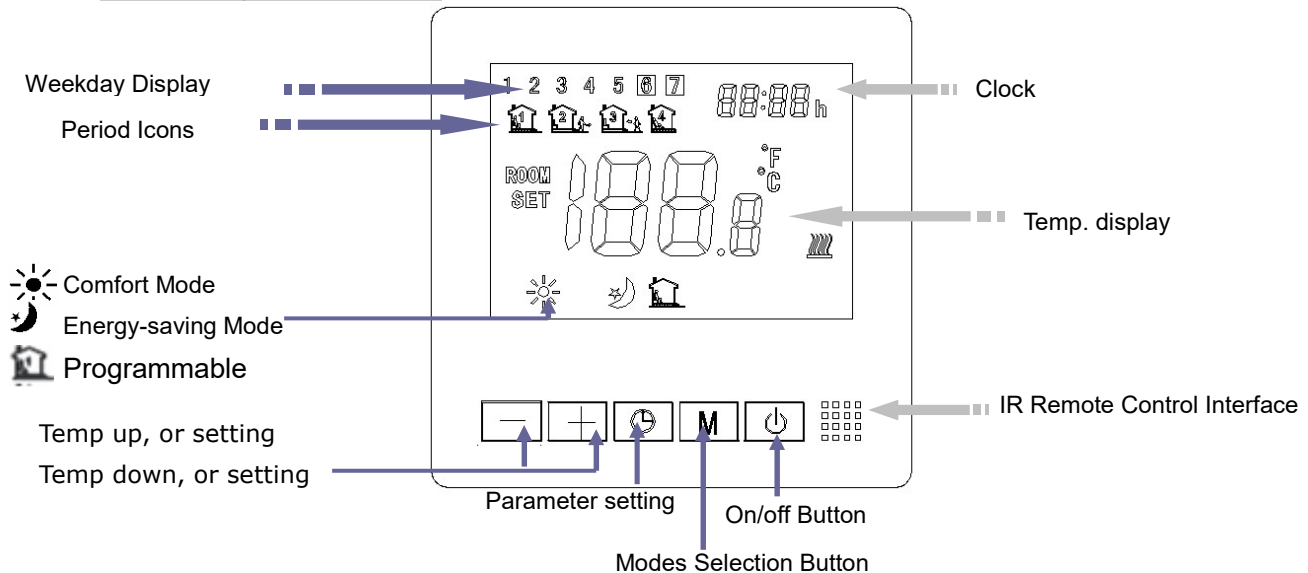
- Attractive and Big LCD Display
- Adjustable Comfort, Energy-saving and Prog. mode control
- Electric Heating System(Max.16A)  
Water Heating System(Max.3A)
- 7 days Programmable (5+1+1)
- Clock
- 86\*86 mm Mounting



## λ Technical Data

Power Supply	- 100~240Vac, 50/60Hz	Backlight	- Blue
Power Consumption	- 1 A	Sensor	- NTC 3950, 10K ohms at 25 °C
Set Point Range	- 5~35 °C	Accuracy	- ±0.5 °C (step control by +0.5 °C)
Ambient	- 0~50 °C	Protection Class	- IP30
Relative Humidity	- 85%	Housing	- ABS to UL94-5 fire retardant plastic

## λ Displays & Buttons



## λ Parameter Settings

Under power off mode, to access MENU mode, please press M and + buttons simultaneously for 3 seconds until the MENU appear showing 01 which is menu 1 and Each press of the M button will go to the next MENU.

Menu	Description	Range	Default
01	Temp. Offset	-8 °C ~8 °C	0
02	Set Point Max.	5 °C ~80 °C	35 °C
03	Set Point Min.	5 °C ~80 °C	5 °C
04	Room & SET temp. Display Select	Room; SET;	Room
05	Dead Band	0~3 °C	1 °C

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06	Sensor Select	IN: Room	
		OUT: Floor	
		ALL: Room & Floor ( Room sensor to probe room temp. floor sensor temp. as high temp. protection) .	ALL
07	Floor Temp. Display	Read Only	
08	Frost Protection Temp.	- - : OFF 5 °C ~15°C	5 °C
09	High Temp. Protection (SET FLOOR)	10 °C ~80°C	32 °C
09	Modbus address	10~233	233
10	Reset	rE(Yes)	
	Software version	7043	

Please notice, only when Menu 04 configured as ROOM & FLOOR, then menu 06 and menu 07 can be displayed.

## λ Working modes selection

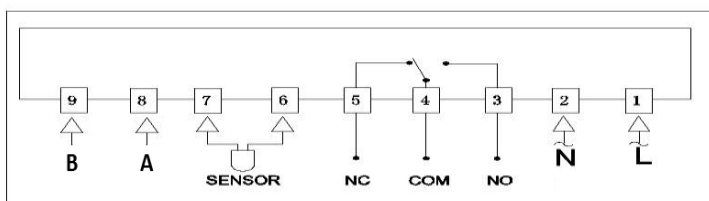
Please press "M" button to select comfort mode ☀️, energy-saving mode 🌙, and Programmable mode 🏠. Then thermostat can run at your desired mode.

## λ Clock & 5+1+1 Programmable mode setting

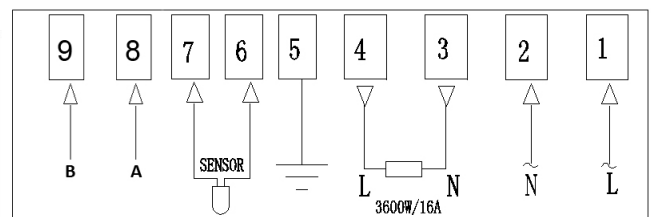
Long press "⌚" button for 5 seconds to enter clock time setting and 5+1+1 programmable mode setting  
 1). press "+" and "-" to adjust the clock (min-hour-weekday), each press of "⌚" will go into next time setting  
 2). after clock adjustment, press "⌚" to 5+1+1 mode setting. By pressing "+" and "-", you can set the desire time and temp. of each period and each mode. (Weekday- period- time- temp.) Each press of "⌚" button will go into next item setting.

Period	🏠		🏠		🏠		🏠	
	Time	Temp.	Time	Temp.	Time	Temp.	Time	Temp.
12345(Mon.~Fri.)	8:00	25°C	11:30	26°C	17:00	25°C	20:00	27°C
6(Sat.)	9:00	24°C	12:30	25°C	18:00	25°C	22:00	27°C
7(Sun.)	9:00	24°C	12:00	25°C	18:00	25°C	22:00	27°C

## λ Wiring Diagram



3A Water Radiator Heating



16A Under-Floor Heating

## λ Lock/Unlock Explanation

This thermostat has two lock mode, user can press M and "⌚" simultaneously to unlock after lock.

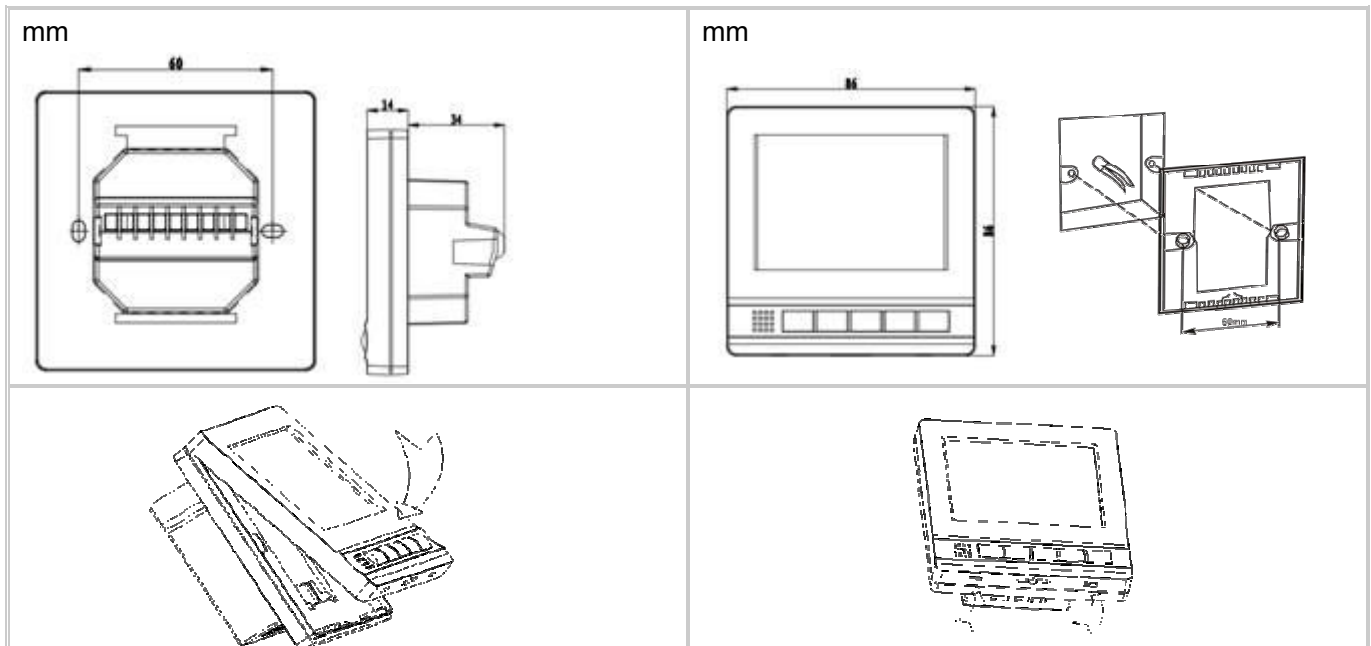
-Mode 1: All buttons are locked except "+" and "-" button(factory default set)

-Mode 2: All buttons can be Locked/Unlocked from RS485 Modbus.

## λ Dimension & Installation

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## Under-Floor Heating Thermostat Modbus Protocol

### MODBUS RTU

*IN OFF Mode, press M and + buttons simultaneously for 10 seconds to get the Modbus address.*

**Baud rate 4800 ; Parity bit NONE ; Data bit 8 ; Stop bit 1;**

Address	Meaning
40000	On/off Control. 0X55=ON, 0XAA=OFF
40001	Working Mode, 0x01=Economy, 0x02=Comfort, 0x03=Programmable
40002	Output Status of Relays. 0x01=has output; 0x00=No output
40003	Room Testing Temp. Communicate Data=Room Temp.*10 (0--800)
40004	Floor Testing Temp. Communicate Data = SET Temp.*10 (0--800)
40005	Holiday Setting Temp. Communicate Data = Testing Temp.*10 (50--300)
40006	Economy Setting Temp Communicate Data = Testing Temp.*10 (50--300)
40007	Comfort Setting Temp. Communicate Data = Testing Temp.*10 (50--300)
40008	mins (0--59)
40009	hours (0--23)
40010	week (1--7)
40011	Lock/Unlock 0:Unlock 1:Lock(Mode 1) 2.Lock(Mode 2)

**For example :**

On commander code : id 06 9c 40 00 55 CRC1 CRC2

Off commander code : id 06 9c 40 00 aa CRC1 CRC2

Read Temp. commander code : id 03 9c 43 00 01 CRC1 CRC2

Write Eco-Setting Temp. commander code : id 06 9c 46 TH TL CRC1 CRC2