

Technical data:

Operating voltage	: AC 230V, 50 Hz
Max. Power consumption	: 100W (pump running)
Operating pressure	: PN10
Temperature setting range	: +15°C ~ +90°C (factory setting: +45°C)
limited water temperature protection	: +5°C ~ +50°C (factory setting: +35°C)
Switching differential	: 0.5°C ~ 3°C (factory setting: 0.5°C)
Pump head	: 6m

This system is designed for using in the floor heating system with supply water temperature no more than 95°C, the heat area should be no more than 200m². The default supply water inlet is left-side, while you can change it to the right-side inlet in the field.

The programmable thermostat with temperature-limitation function is monitoring the supply water temperature at anytime to control the supply water under acceptable temperature range for floor heating systems.

(The pump will be stopped when the supply water is lower than 35°C, which can be adjusted from 5°C~50°C)

Main components:

1. Programmable thermostat RTC81.723H
2. Circulation pump RS15/6
3. 3-port valve VSI46.25
4. Electro-thermal actuator SEH30.23
5. Sensor MR7-3382

Working principle

primary circulation: hot water became acceptable floor heating water when the supply water temperature falls below the required temperature setpoint, "A" port of the 3-port valve will be open, the mixed water will flow into the supply manifolds, which distributes the heat water to your individual room by the control of room thermostats and actuators fitted on the return manifolds

Secondary circulation: individual room floor heating circulation

When the supply water temperature exceeds the required temperature setpoint, the "A" port will be closed, and the heat water will be circulated inside the under floor heating pipes with the help of circulation pump to keep the room warm

Pump will be stopped when the temperature of supply water is lower than the setted limitation temperature, and the system will stop working

Packing:

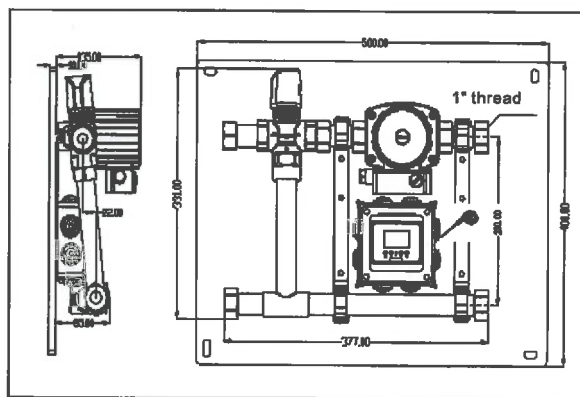
preassembled controls set	one
manual	one
fuse 3A	one
O-ring	four
bolt	four

Mounting steps:

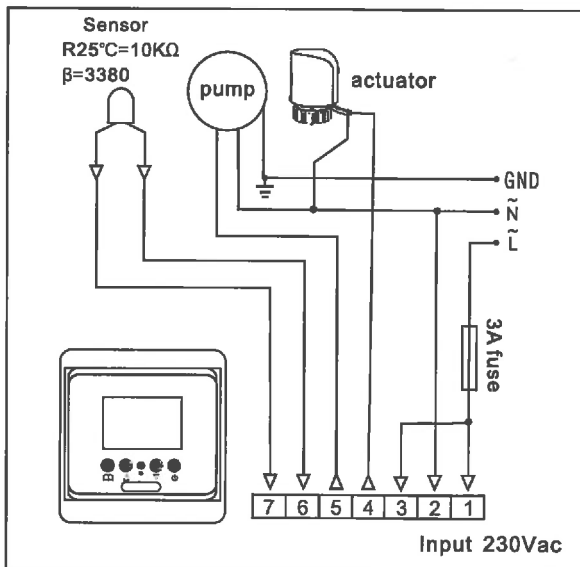
1. Fixing the mounting brackets and installing the manifolds to it
2. Taking off the actuator SEH30.23 so that the air can be discharged
3. Connecting the inlet pipe and letting water flow into the main-supply pipe
4. Checking the water flow in the main-return pipe until there is no bulbs
5. Making sure correct connection of electric wires before supplying power
6. If the inlet water of main-pipe is cold water, please enter into mode "2PFT" in the advanced setting of thermostat RTC81.723H, decrease the factory setted limitation temperature 35°C to 5°C, then exit the setting mode, and open the air vent on the return manifold after running the system for a short while
(this step is no need if the inlet water of main pipe is hot water)
7. Fitting on the actuator SEH30 when there is water flow without bulbs in the main-return pipe, then close the air vent on return manifolds
8. When the inlet water of main pipe is hot water, please enter into mode "2PFT" in the advanced setting of thermostat RTC81.723H again, increase the adjusted limitation temperature from 5°C to 35°C, then exit the setting mode, and connecting the main-return pipe

NOTE: THE PUMP SHOULD NOT BE RUNNING ON EMPTY !

Dimension (mm)



Wiring diagram



RTC81.123H Water-mixing Digital Controller

this controller is specially designed for water-mixing floor heating system to control the supply water within the setpoint it will stop the pump running when there is no water in the pipe, also this easy operated controller has the function of anti-freezing

Technical data:

- Voltage : 230Vac
- power consumption : 5W
- setting range : 15°C~90°C (factory setting: 45°C)
- pump protection range : 5°C~50°C (factory setting: 35°C)
- Switching differential : 0.5°C~3°C (factory setting: 0.5°C)
- Ambient temperature : -5°C~50°C
- Protective housing : IP20
- Housing material : self-extinguishing PC

Function:

- Heating on
- "Key-lock" function is activated
- Display with back light, stay on for 20 seconds

1. Supply water temperature and setpoint display

Temperature of the main supply water is displayed on the right side of the controller at accuracy 0.1°C while temperature of your setpoint is displayed on the left side of the controller which can be set from 15°C~90°C

2. Pump protection

The pump will be stopped when the measured temperature of the main supply water is lower than the setted protective temperature, then display will show "ERR!" This protective temperature setpoint must be 10°C lower than the main supply water temperature setpoint **this function can make the pump avoid the damage caused by empty working**

3. Anti-freezing function (optional)

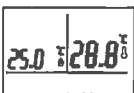
Symbol "❄" will be displayed when this function is activated, and the controller must be under "switched off mode" **please check details on the advanced setting mode 3**

"Key-lock" function

Press both the "▲" and "▼" keys for 5 secs to engage/disengage the "key-lock" function ("🔒" symbol appear means "key-lock" function is activated; disappear means "key-lock" function is deactivated)

Daily use of the controller

1. Menu key "📖"
The key is disabled when the controller is under working mode
2. Plus "▲" & Minus "▼"
Press the "▲" or "▼" key to increase/decrease your set value
3. On/off key "🔌"
Press the "🔌" key switch on/off the controller



Picture 1



Picture 2



Picture 3

Working mode : temperature setpoint (left parameter), measured temperature (right parameter)

Switch-off mode: anti-freezing function is deactivated

Switch-off mode: anti-freezing function is activated

Sensor Failure

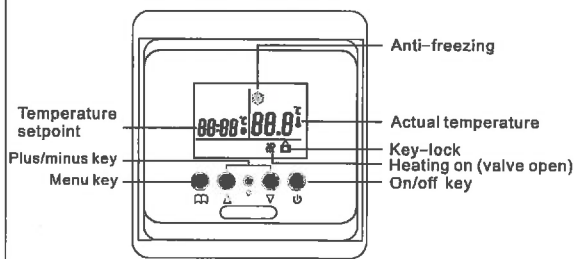
Symbol "Err" will be displayed when the sensor is fault connected or broken, then the valve will be closed, controller & sensor must be checked till the fault is eliminated

Advanced settings (qualified person preferred)

Press the "📖" key simultaneously switching on the controller to enter into the advanced setting mode

Key	Symbol	Setting	▲ or ▼
1	IRdJ	Main supply water	Adjust measured temperature
2	2PFF	Pump protection	Factory setting: 35°C
3	3LFP	Anti-freezing	5°C-12°C: Anti-freezing temp. setpoint OFF: Anti-freezing is deactivated
4	4dIF	Switching differential (0.5°C)	Setting range: 0.5°C-3°C Eg.: setpoint is 20°C, differential is 1°C, the valve will keep status when the temperature changes from 19°C to 21°C
5	5dER	Pump controls	00: pump-controller depended power on: running power off: stopped 01: pump-valve depended valve open : running valve closed: stopped 05: valve closed, pump is running for 5 minutes, then stop for 10 minutes 10: valve closed, pump is running for 10 minutes, then stop for 20 minutes 15: valve closed, pump is running for 15 minutes, then stop for 30 minutes (for item 05, 10, 15, pump will run when the valve is open)

Explanation of symbols



RTC81.123H

RTC80.7XX Weely Programming thermostat

Weekly circulation, It is possible to set 6 periods called events each day with different temperatures. also you can select "manual mode" or "comfort mode" according to your individual requirements. The thermostat is recommended for the control of electric heating devices or on/off valve actuator used in water-based heating systems.

Selection Table:

Model	Current	Application
RTC80.713	3A	For control of electric actuator or electrothermal actuator
RTC80.723	3A	For control of electric actuator or electrothermal actuator
RTC80.716	16A	For control of heating cable or other heating equipments

Technical data:

- Voltage : AC230V(AC110V / AC24V available)
- Power consumption : 2W
- Setting range : 5°C ~ 90°C
- Limitation range : 4°C ~ 99°C (factory setting: 28°C~32°C)
- Switching differential : ±0.5K
- Ambient temperature : -5~50°C
- Protective housing : IP20
- Housing material : anti-flammable PC
- Floor sensor : rubber-thermoplastic NTC sensor, cable length is 3m

Function:

- manual mode
The scheduled event program is overridden, set the temperature according to your individual requirements and the thermostat will operate at this temperature permanently
- clock-controlled programme mode
The day has been split into 6 events, the thermostat will operate automatically according to the programmed temperature and time
- & comfort mode
The temperature can be temporarily changed for a single event, the comfort mode temperature is reset at the next event, and the thermostat will return to the scheduled event program

- Wake-up, event 1
- Leave (am), event 2
- Return (am), event 3
- Leave (pm), event 4
- Return (pm), event 5
- Sleep, event 6
- Heating on
- "Key-lock" function is activated
- Set sensor mode: built-in/floor/both sensors
- Set vacation operating mode
- Setting Max and Min allowed temperature
- Early-start adaptive function
- Sensor calibration to ensure accurate temperature measurement
- Display with back light, stay on for 20 seconds
- LCD display for better read out
- display actual room temperature when switch-off

"Key-lock" function

Press both the "▲" and "▼" keys for 5 secs to engage/disengage the "key-lock" function (symbol appear means "key-lock" function is activated; disappear means "key-lock" function is deactivated)

Daily use of the thermostat

- 1) menu Press the key to select manual mode or clock-controlled programme mode, use the "▲" or "▼" key to enter into comfort mode in clock-controlled programme mode
- 2) plus "▲" & minus "▼" Press the "▲" or "▼" key to increase or decrease your set value
- 3) clock Press the key to set the time and day press the key till the day start blinking, use the "▲" or "▼" key to set the day, press the key to confirm the setting and the hours start blinking, use the "▲" or "▼" key to set the hours, press the "▲" or "▼" key to confirm the setting and the minutes start blinking, use the "▲" or "▼" key to set the minutes, press the key to accept the settings
- 4) on/off Press the key to switch on or switch off the thermostat the setted temperature and the time will be displayed on left side of screen alternately, and the room temperature can be directly read out on right side of screen

Programming: 6-event time and temperature

Press the key for 5 seconds to begin programming

Key	Event	Symbol	Time	▲ ▼	Temperature	▲ ▼	
	Day 1-5	1		06: 00	Set the start/end time	20°C	Set programmed temperature
		2		08: 00		15°C	
		3		11: 30		15°C	
		4		12: 30		15°C	
		5		17: 00		22°C	
		6		22: 00		15°C	
	Day 6-7	1		08: 00	22°C		
		2		23: 00	15°C		

Note:

- 1) the pre-programmed setpoint (15°C) for event 3 & 4 is the same as event 2, please reset it according to you individual requirement
- 2) symbol "off" will be displayed if the setpoint reaches the minimum set value and the thermostat is switched off in this event

Advanced settings (qualified person preferred)

Press the key simultaneously switching on the thermostat to enter into the advanced setting mode(when the device is switched off)

Key	Symbol	Setting	▲ Or ▼	
	1	ADJ	Temperature calibration	Adjust measured temperature
	2	SEN	Sensor mode	IN : built-in sensor OUT : floor sensor ALL : both sensor (floor sensor is the limit sensor)
	3	HI	Max. Temperature	Max. Limitation temperature setpoint (99°C)
	4	LO	Min. Temperature	Min. Limitation temperature setpoint (4°C)
	5	ADA	Adaptive function	ON : preheating 30minutes early OFF: cancel adaptive function
	6	PRG	Set vacation mode	2: 5/2 day mode 1: 6/1 day mode 0: 7 day mode
	7	FAC	Reset to factory settings	Programming parameters will be reset to factory settings when symbol "---" appears

Sensor failure:

Please select the right sensor mode when operation, it will display the "Err" symbol on screen for sensor failure, thermostat must be checked till the fault is eliminated