

# SAS920FHL-7

## Thermostat for floor heating

SAS920FHL-7 thermostat is a programmable controller used to control heating device in electric heating system.

---

### SPECIFICATION:

|                                      |                    |
|--------------------------------------|--------------------|
| Power source .....                   | 100-240VAC 50/60Hz |
| Maximum load electric current.....   | 16A/250VAC         |
| Room temperature setting range.....  | 5°C to 35°C        |
| Floor temperature setting range..... | 5°C to 70°C        |
| Accuracy.....                        | 0.1°C              |
| Working environment temperature..... | 0°C to 50°C        |
| The storage temperature: .....       | -10°C to 60°C      |
| Dimensions.....                      | 86mm X 86mm X 13mm |

---

### FEATURE:

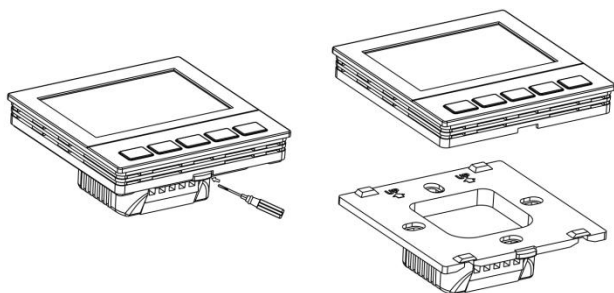
- 3.1 inch large screen display
- Can control 16A high power heating facilities
- Permanent user setting retention during power loss
- Display temperature recalibration
- Optional types of control for different heating application including room thermostat; floor thermostat or room thermostat with floor limitation
- Optional programming Period: 7 individual day programming
- Remote control by mobile phone

### IMPORTANT SAFETY INFORMATION:

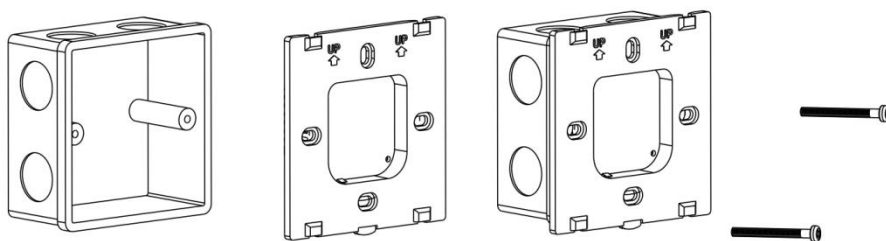
- Read all of the information in this manual before installing this thermostat.
- Always turn off power at the main power source by unscrewing fuse or switching circuit breaker to the off position before installing, removing, cleaning, or servicing this thermostat.
- Only a professional contractor should install this thermostat.
- All wiring must conform to local and national building and electrical codes and ordinances.
- Use this thermostat only as described in this manual.

## INSTALL THE THERMOSTAT:

### ATTACH THERMOSTAT BASE TO WALL

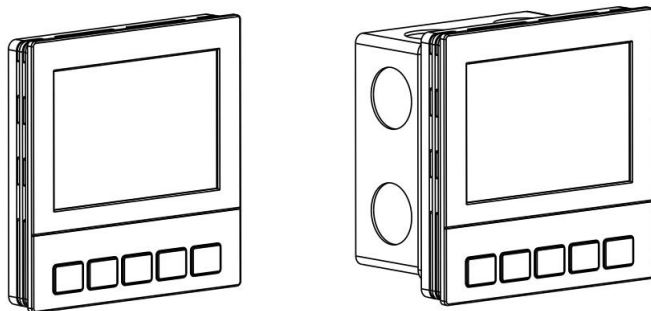


Open the panel



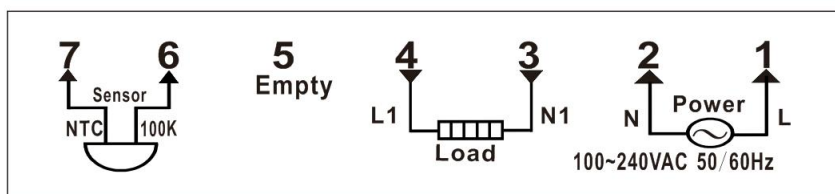
Install the base

Mounting screws

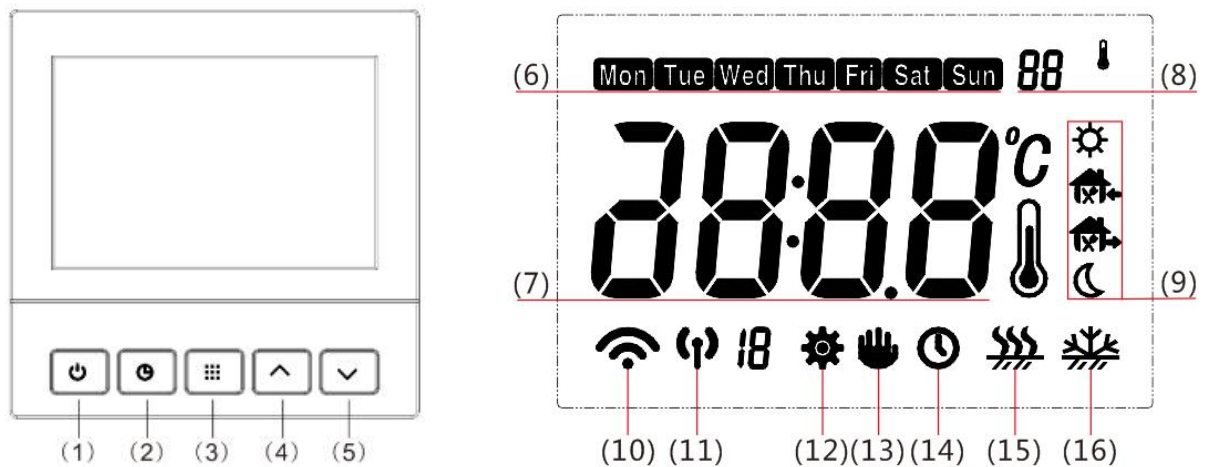


Install the panel

### Elementary diagram:



## KEYBOARD, DISPLAY AND SWITCH DESCRIPTION



- (1) Power/OK button: Press shortly to turn on/off the thermostat.
- (2) Time button: When thermostat turn on press time button shortly to set time. Under the condition of short hours according to the time set in order to enter the minutes, week days set by +/-
- (3) Menu button: To set another implicit parameter, press implicit parameter long to restore factory setting; when thermostat turn on, at programmable mode press the button long to set program, at programmable mode press shortly to set another program, press program long reset parameter.
- (4) Raise temperature setting
- (5) Lower temperature setting
- (6) Weeks show mark
- (7) Temperature shows mark
- (8) Shows implicit parameter setting value
- (9) Shows current programming period
- (10) Shows WIFI in remote mode (not applicable for non-wifi version)
- (11) Shows WIFI in hot mode (not applicable for non-wifi version)
- (12) implicit parameter setting mark
- (13) Shows when thermostat is permanent hold mode
- (14) Shows when thermostat is in programmable operation mode
- (13) +(14) temporary mode
- (15) Shows when thermostat start heating output
- (16) Shows when thermostat is in anti freezing mode

## OPERATION

### 1. Configuration Menu

The configuration menu allows you to set certain thermostat operating characteristics to your system or personal requirements. When thermostat at off mode, Hold button  for 5 seconds to enter the configuration menu. The display will show the first item in the configuration menu. Press

 button to shift to the next menu item. Use  or  to select. When press  will exit menu setting and back thermostat off mode.

To exit the menu, press  button. The thermostat will exit the configuration menu If no action within 20 seconds.

**Restore factory default setting:** In the configuration menu, push  button for 3 seconds. Display will show “DEF” blinking 3 times and return to Menu item 1 indicates all the configuration setting has reverted to factory default setting. The configuration menu chart summarizes the configuration options.

An explanation of each option is given below:

| Item | Press buttons                                                                       | Displayed (factory default) | Press ▲ or ▼ to select | Descriptions                                                                                                                                                                                                                                                                      |
|------|-------------------------------------------------------------------------------------|-----------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    |  | CL (0.0)                    | -6.0 --- +6.0          | Select temperature display adjustment higher or lower                                                                                                                                                                                                                             |
| 2    |  | AH (35)                     | 20℃—70℃                | Select maximum room setting temperature                                                                                                                                                                                                                                           |
| 3    |  | AL (5)                      | 5℃—20℃                 | Select minimum room setting temperature                                                                                                                                                                                                                                           |
| 4    |  | FH (40)                     | 20℃—70℃                | Select maximum floor setting temperature                                                                                                                                                                                                                                          |
| 5    |  | FL (5)                      | 5℃—20℃                 | Select minimum floor setting temperature                                                                                                                                                                                                                                          |
| 6    |  | SEN (AL)                    | AL/In/OU               | Program option<br>AL: Room temperature control is given priority to, the floor temperature controls the function of the protection (electric heating is adopted);<br>In: only the room temperature control (water heating is adopted);<br>OU: only the floor temperature control. |
| 7    |  | bL (2)                      | 1 / 2 / 3              | Backlight mode<br>1.Backlight is not bright<br>2.When press button ,backlight is bright for 30 seconds<br>3.Backlight always bright.                                                                                                                                              |
| 8    |  | P51 (0)                     | 7/0                    | Program option<br>7: 7 days separately (Refer to table 1 and table 2);                                                                                                                                                                                                            |

|    |         |         |            |                                                                                                        |
|----|---------|---------|------------|--------------------------------------------------------------------------------------------------------|
|    |         |         |            | 0: Non program                                                                                         |
| 9  | ■ ■ ■ ■ | ES(OFF) | On/OFF     | Intelligent Recovery Option:<br>OFF: Without intelligent function<br>On: Activate intelligent function |
| 10 | ■ ■ ■ ■ | An (OF) | On/OF      | On: Active anti-freezing function<br>OF: Close anti-freezing function drive is used                    |
| 11 | ■ ■ ■ ■ | Ld (H)  | L / H / HH | HH: the load flow rate is 12-16 (A)<br>H: the load flow is 8-11 (A)<br>L: the load flow is 0-7 (A)     |
| 12 | ■ ■ ■ ■ | Ntc (H) | H/L        | Sensor selection<br>H: 100K Sensor<br>L: 10K Sensor                                                    |

## 1. Manual Operation

### 1) Set current day and time

#### Thermostat On

- Turn on the thermostat , press  button to enter the time setting.
  - Press  button again, The display will only show minutes flashing
  - Press and hold either  or  until you reach the correct minutes
  - Press  button once again. The display will show the hour flashing.
  - Press and hold either  or  until you reach the correct hour
  - Press  button once again. The display will show the day of the week flashing.
  - Press and hold either  or  until you reach the correct day of week
- Press button  once again or any keys are not pressed within 10 seconds, the thermostat will revert to program operation

### 2) Operation mode

#### a Running schedule mode(The factory default is Non programmable.)

Thermostat keep the temperature as setting temperature temporarily, when screen show 

#### b) manual mode

Enter the implicit parameter setting state to set the programming mode to 

Button to  exit the parameter settings and back to off condition

Reopen, the screen will display  thermostat device to enter the manual mode,

Press  or  in running schedule mode to immediately adjust the temperature. Press  to save and exit.

### 3) Temporary hold mode

The thermostat will temporarily keep the room at the setting temperature, and will resume the program operation mode when entering the next program.

Programming operation mode, press  or  shortly enter the temporary hold mode, the screen display  .

Press  or  in running schedule mode to immediately adjust the temperature. Press  to save and exit.

### 4) Program setting

The thermostat can select the program setting only on programming.

When thermostat is on, press  long to set program. If the program had been set OK before thermostat leave factory, press , if without any operation for 10s, thermostat will exit program setting automatic.

Enter the programming settings: press  into the set program, press  can select weeks, time, temperature, the screen flashes and show current selection position.

Press  or  in running schedule mode to immediately adjust the temperature. Press  to save and exit.

**Excel 1 (7days six period factory setting)**

| Heating mode  |             | Morning<br> | Outside<br> | Afternoon<br> | Outside<br> | Back<br> | Night<br> |
|---------------|-------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Monday-Friday | Time        | 6:00                                                                                           | 8:00                                                                                           | 12:00                                                                                            | 14:00                                                                                            | 18: 00                                                                                        | 22: 00                                                                                         |
|               | Temperature | 21℃                                                                                            | 16.5℃                                                                                          | 21℃                                                                                              | 16.5℃                                                                                            | 21℃                                                                                           | 16.5℃                                                                                          |

**Alarm instructions**

| Err. display | Err. condition                   | <b>Result</b>                             |
|--------------|----------------------------------|-------------------------------------------|
| <b>Err.3</b> | Temperature sensor short circuit | Thermostat shuts down all heating output. |
| <b>Err.4</b> | Temperature sensor is broken     | Thermostat shuts down all heating output. |

