

SAS921WHL systems thermostat for water floor heating

This manual can apply for SAS921WHL-7,SAS921WHL-7W,SAS921WHL-7W-WIFI

SAS921WHL system thermostat is a programmable thermostat designed for water floor heating system. It can apply for water heating system to control valve and boiler .

SAS921WHL-7: 3(2)A valve and pump voltage output .

SAS921WHL-7W: 3(2)A valve and pump voltage output, and with 3(2)A passive and linkage output.

SAS921WHL-7W-WIFI: 3(2)A valve and pump voltage output, and with 3(2)A passive linkage output. Can remote control by mobile phone .

SPECIFICATION:

Power source 100-240VAC 50/60Hz

Maximum load electric current.....250VAC 3 (2) A

Room temperature setting range.....5℃ to 90℃

Floor temperature control range..... 5℃ to 99℃

Accuracy..... ±0.5℃

Dimensions.....86mm X 86mm X13mm

Color.....White&Black

FEATURE:

- Large LCD display with backlight
- Permanent user setting retention during power loss
- Can control valve and boiler at the same time .
- Optional type of control for different heating application including room thermostat; floor thermostat or room thermostat with floor limitation
- Optional programming Period: 7 individual day programming with 48 separate time to select economic or comfort mode.(Every half hour as a period of time) /cancel the programming function.
- Display temperature recalibrates
- Remote control by mobile phone .

IMPORTANT SAFETY INFORMATION:

- 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.
- Read all of the information in this manual before installing this thermostat.
- Only a professional contractor should install this thermostat.
- All wiring must conform to local and national building and electrical codes and ordinances.
- If system is not operating properly, check wiring and replace fuse if necessary.
- Use this thermostat only as described in this manual.

KEYBOARD, DISPLAY AND SWITCH DESCRIPTION

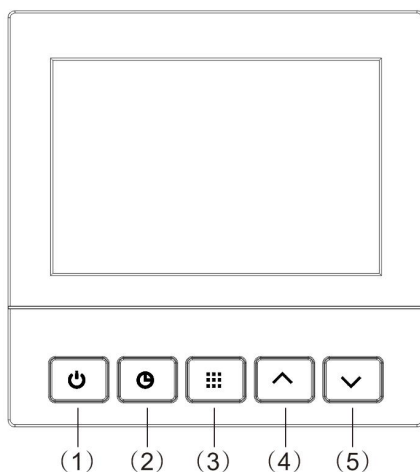


Figure 1

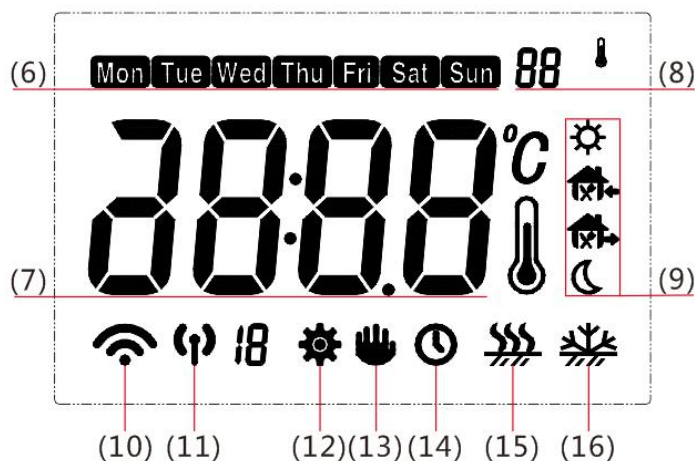
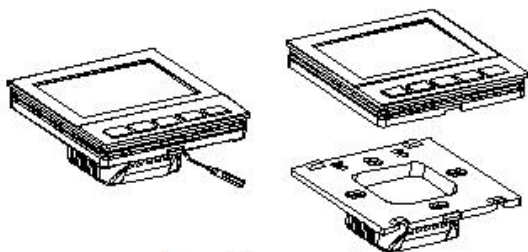


Figure 2

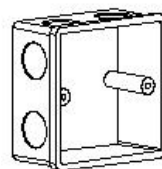
- (1)  Power/OK button : Shortly press to turn on/off the thermostat.
- (2)  Time button:When thermostat turn on press time button shortly to set time .
- (3)  Menu button:To set another implicit paremeter,press implicit paremeter longly to restore factory setting ;when thermostat turn on,at programmable modle press the button longly to set program,at programmable mode press shortly to set another program ,press program longly reset paremeter.
- (4)  Raise temperature setting
- (5)  Lower temperature setting
- (6)Weeks show mark
- (7) Temperature shows mark
- (8) Shows implicit paremeter setting value
- (9) Shows current programming period
- (10)  Shows WIFI in remote mode
- (11)  Shows WIFI in hot mode
- (12)  implicit parameter setting mark
- (13)  Shows when thermostat is permanent hold mode
- (14)  Shows when thermostat is in programmable operation mode
- (15)  Shows when thermostat start heating output
- (16)  Shows when thermostat is in antifreezing mode

INSTALL THE THERMOSTAT

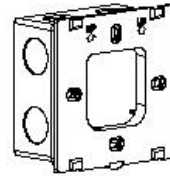
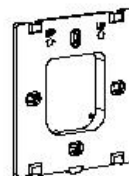
ATTACH THERMOSTAT BASE TO WALL



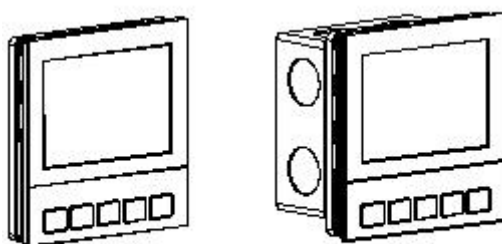
Open the panel



Install the base

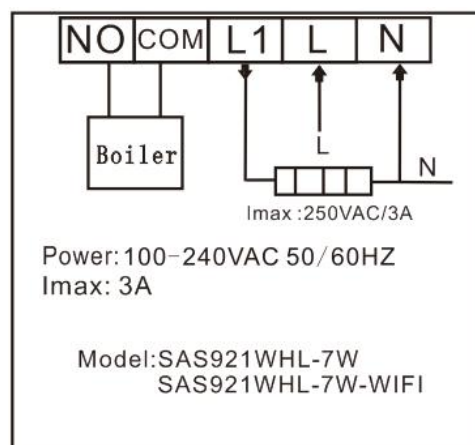
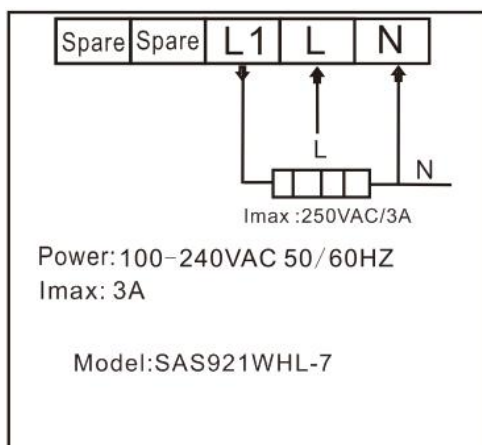


Mounting screws



Install the panel

WIRING DIAGRAM



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	 3 sec.	CL (0)	-6 --- +6	Select temperature display adjustment higher or lower
2		RH (35.0°)	20°C—50°C	Select maximum room setting temperature
3		RL (05.0°)	5°C—20°C	Select minimum room setting temperature
4		bl (2)	1/2/3	Backlight mode 1.Backlight is not bright 2.When press button ,backlight is bright for 10 seconds 3.Backlight always bright.
5		CH (10)	05/10/15/20/25/30/35/40/45/50	Start heating conditions: when Setting temperature < Room temperature+CH Stop heating output, when Setting temperature ≥Room temperature - CH parameters, then start heating
6		PS1 (0)	0/2/3/7	Program option 1: 7 days separately (Refer to table 1 and table 2); 3: 5+1+1(Refer to table 3 and table 4) 2: 5+2 (Refer to table 5 and table 6) 0: Non programmable
7		ES (OFF)	On/OFF	Intelligent Recovery Option: pre-heating according to the programming of heating time of previous 5 days. OFF : Without intelligent function On: Activate intelligent function
8		Rn(OFF)	On/OFF	Anti-freezing Option On: Active anti-freezing function OFF: Close anti-freezing function
9		FR (NC)	NO/NC	Select the valve output mode: NO : Cooperate with the normally open type drive is used; NC : Cooperate with normally closed type drive is used
10		PS2(4)	4/6	Programming period in one day option 6-6 events; 4-4 events;

1) Select temperature recalibrates adjustment 6 LO to 6 HI

You can adjust the room temperature display up to 6 higher or lower. Your thermostat was accurately calibrated at the factory but you have the option to change the display temperature to match your previous thermostat. The current or adjusted room temperature will be displayed on the right side of the display. The default setting is 0.

2) Select maximum setting temperature limitation

For room sensor control mode, This feature provides a maximum set point temperature for room setting. The default setting is 35°C, It can be changed between 20°C (68°F) to 50°C.

3) Select minimum setting temperature limitation

For room sensor control mode. This feature provides a minimum set point temperature for room setting. The default setting is 5°C, It can be changed between 5°C to 20°C.

4) Select display backlight mode

The display backlight improves display contrast in low lighting conditions. Factory default is 2.

Select 1 backlight is not bright .

Select 2 When touch any button ,the backlight will bright for 10 seconds

Select 3 Backlight is always bright.

5) Select control precision

when Setting temperature < Room temperature + ΔH ,Stop heating output

when Setting temperature $\geq$ Room temperature - ΔH parameters, start heating

6) Select Programme option.

1: 7 days separately (Refer to table 1 and table 2);

3: 5+1+1 (Refer to table 3 and table 4)

2: 5+2 (Refer to table 5 and table 6)

0: Non programmable

7) Intelligent Recovery Option

pre-heating according to the programming of heating time of previous 5 days.

OFF: Without intelligent function

On: Activate intelligent function

8) Anti-freezing Option

On: Active anti-freezing function

OFF: Close anti-freezing function

9) Select the valve output mode

NO: Cooperate with the normally open type drive is used;

NC: Cooperate with normally closed type drive is used

10) Select Programming period in one day

6-6 events; 4-4 events;

2. Manual Operation

1) Set current day and time

- 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  or  until you reach the correct day of the week. Press button  button once. The display will show the correct day of the week and the time. Press button  once again or any keys are not pressed within 20 seconds, the thermostat will revert to program operation.

2) Operation mode

a Running schedule mode

Thermostat running according to the preset schedule. The factory default is Non programmable.

b Override temperature temporarily

Thermostat keep the temperature as setting temperature temporarily, when operate next program period will recover program running schedule mode.

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

The new temperature will be maintained until the next programmed time period begin.

Shortly press button  to cancel the temporarily setting and return to running schedule mode.

c Override temperature permanently

Thermostat will keep room temperature as setting temperature permanently.

In running schedule mode, shortly press button , thermostat will get into permanent hold mode. Press  or  to adjust temperature.

The new temperature will be maintained 24h a day until manually change it.

3) Program setting

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

Press  shortly to set weeks, time, temperature. Press  or  to select, press  to save and exit.

Excel 1 (7days six period factory setting)

Heating mode		Morning 	Outside 	Afternoon 	Outside 	Back 	Night 
Monday-Friday	Time	6:00	8:00	12:00	14:00	18:00	22:00
	Temperature	21°C	16.5°C	21°C	16.5°C	21°C	16.5°C

Excel 2 (5+1+1 six period factory setting)

Heating mode		Morning 	Outside 	Afrernoon 	Out side 	Back 	Night 
Monday-Friday	Time	6:00	8:00	12:00	14:00	18: 00	22: 00
	Temperature	21°C	16.5°C	21°C	16.5°C	21°C	16.5°C

Heating mode		Morning 	Outside 	Noon 	Outsid e 	back 	Night 
Saturday	Time	6:00	8:00	12:00	14:00	18: 00	22: 00
	Temperatur e	21°C	16.5°C	21°C	16.5°C	21°C	16.5°C

Heating mode		Morning 	Outside 	Noon 	Outs ide 	back 	Night 
Sunday	Time	6:00	8:00	12:00	14:00	18: 00	22: 00
	Temperat ure	21°C	16.5°C	21°C	16.5°C	21°C	16.5°C

Excel 3 (5+2 six period programmable factory setting)

Heating mode		Mornin g 	Outside 	noon 	outside 	Back 	Night 
Monday	Time	6:00	8:00	12:00	14:00	18: 00	22: 00
	temperature	21°C	16.5°C	21°C	16.5°C	21°C	16.5°C
Heating mode		Morning 	outside 	Noon 	Outside 	Back 	Night 
Saturday,sunda y	Time	6:00	8:00	12:00	14:00	18: 00	22: 00
	Temperatur e	21°C	16.5°C	21°C	16.5°C	21°C	16.5°C

Excel 4 (7days four period program factory setting)

Heating mode		Morning 	Outside 	Back 	Night 
Monday Friday	Time	6:00	8:00	18: 00	22: 00
	Temperat ure	21°C	16.5°C	21°C	16.5°C

Excel 5 (5+1+1days four period program factory setting)

Heating mode		Morning 	Outside 	Back 	Night 
Monday Friday	Time	6:00	8:00	18: 00	22: 00
	Temperat ure	21°C	16.5°C	21°C	16.5°C
Heating mode		Morning 	Outside 	Back 	Night 
Saturday	Time	6:00	8:00	18: 00	22: 00
	Temperat ure	21°C	16.5°C	21°C	16.5°C

Heating Mode		Morning 	Outside 	back 	Night 
Sunday	Time	6:00	8:00	18: 00	22: 00
	Temperature	21℃	16.5℃	21℃	16.5℃

Excel 6 (5+2day four period program factory setting)

Heating Mode		Morning 	Outside 	Back 	Night 
Monday to Friday	Time	6:00	8:00	18: 00	22: 00
	Temperature	21℃	16.5℃	21℃	16.5℃

Heating Mode		Morning 	Outside 	Back 	Night 
Saturday Sunday	Time	6:00	8:00	18: 00	22: 00
	Temperature	21℃	16.5℃	21℃	16.5℃

Tips :The program can be modified individual.

Thermostat communication model introduce

Thermostat with two wifi connection model :

Wifi hot model

When thermostat show , it means thermostat at wifi hot model ,mobile phone can connect with thermostat directly.

Wifi remote control model

When thermostat show  mark ,it means thermostat at remote control model,mobile phone can contact with thermostat though internet to control thermostat.

Thermostat can transfer two model

Thermostat at wifi hot model as factory setting .

Wifi hot model:At any model press thermostat longly to transfer Wifi hot model. When transfer successfully ,thermostat will show mark .

Wifi remote control model :Use phone APP to add thermostat, when add sucefully ,thermostat will transfer Wifi remote control model.If transfer sucefully,thermostat will show  mark ,if mobile phone if connect with thermostat fuiled or are connecting the  mark will flash .

Tips :

Thermostat can connect at most two piece mobile phone directly at same time .And can remote control by more mobile phone at same time .But it can't operate control directly and remote control at same time .

Error Code

LO: Below lowest limitation temperature is detected by floor sensor in MODE *OUT* or *ALL*. Thermostat turn on heating system until the floor temperature is over lowest limitation.

HI :Over high limitation temperature is detected by floor sensor in MODE *OUT* or *ALL*. Thermostat shut down all output

Err.1 flashing in the display: Floor sensor short circuit in type *OUT* or *ALL*. Thermostat shuts down all heating output.

Err.2 flashing in the display: Floor sensor not installed or broken in type *OUT* or *ALL*. Thermostat shuts down all heating output.

Err.3 flashing in the display: Room sensor has short circuited. Thermostat shuts down all heating output.

Err.4 flashing in the display: Room sensor is broken. Thermostat shuts down all heating output.

CUSTOMER ASSISTANCE

After reading this guide, if you have any question about the operation of your thermostat, please contact your installer or service provider.

