

BACnet FCU Thermostat

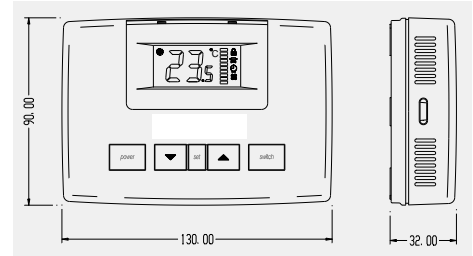
With modulating (0-10V) & 3-speed fan

Model:F08-PSB-A

User's Manual

Important safety information Warning

- ◆ Always turn off power before mounting, removing, cleaning the thermostat.
- ◆ Read all the information in this manual before mounting the thermostat.
- ◆ Notice of the supply power voltage of the thermostat is 24VAC. Do not use it on voltages higher than marked in thermostat.



Mounting and Wiring Diagram

- ◆ To open the thermostat, simultaneously depress the 2 clips on either of the sides of the thermostat gently with your nails or other unships tools. Move the main part (face part) from the base part.
- ◆ Mount the base part first: mark placement of mounting holes. See Fig 1. There are two usable dimensions.
- ◆ Connect wires to terminal strips. See figure 2 wiring diagrams. Make sure wiring connections are correct and secure.
- ◆ Cover the face part on the base part.
- ◆ Mount thermostat on the wall, 1.2-1.4 meter above the floor. Do not behind a door, in a corner, near diffuser, in direct sunlight, or near any heat or steam generating fixtures.

Figure1

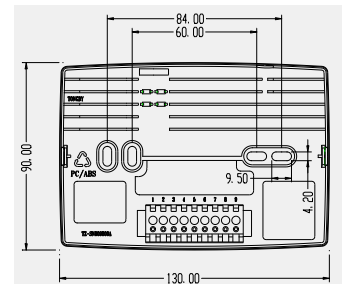
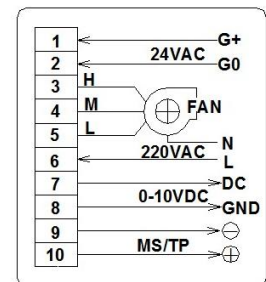


Figure.1 (base part)

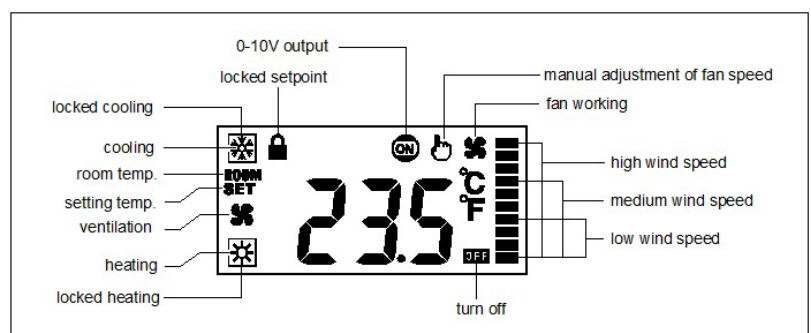
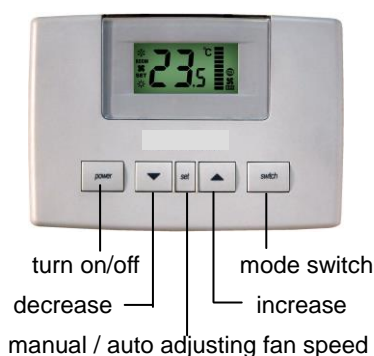
Note: when electrify, do not touch the circuit plate and other parts directly in order to avoid human injury.

Figure2 Wiring Diagram



F08-PSB-A-(C)

Buttons and LCD Display



Operation

1. After electrifying, **OFF** displays on the right-down corner of LCD, which means that thermostat is turning- off.
2. Press **power** key to turn on the thermostat. Measurement temperature appears on the LCD with **ROOM** symbol on the left of LCD.
3. Setting temperature: Press **▼** or **▲** with **SET** symbol appearing on the left of LCD, which means it is in the condition of setting temperature. When adjusting, the symbol of temperature blinking, which means that the setting is not be confirmed until the symbol not blinking after 6 seconds and returning back to room temperature display with **ROOM** symbol appearing. So the set point temperature is confirmed.

4. Locking set point temperature: After set point temperature is confirmed. Press ▼▲ at the same time for more than 6 seconds, then  symbol appears on the top right of LCD and the temperature is locked. Later on the thermostat returns back to normal display (displaying room temperature with **ROOM** symbol). After that, you cannot adjust room temperature by pressing ▼▲.
5. Unlocking set point temperature: When  appears at the right top of LCD, indicating the temperature is locked. Then press ▼▲ at the same time for about 6 seconds until  disappears and the temperature is unlocked. Later on the thermostat returns back to normal display with **ROOM** symbol.
6. Selecting the working mode: Press **switch** key and cooling  → ventilating  → heating  is displayed in circles. When selecting working mode, the corresponding symbol blinks and **SET** symbol appears on the left of LCD, you must confirm it by waiting for 6 seconds up to the mode symbol will not be blinked.
7. Locking the cooling/heating/ventilating mode: Press **switch** to change to cooling/heating/ventilating mode, then press **switch** for about 6 seconds until  appears on the right down of LCD and cooling/heating/ventilating mode is locked. After that, you cannot change mode by pressing **switch**.
8. Unlocking the cooling/heating/ventilating mode: when  appears on the right down of LCD, indicating the cooling/heating/ventilating mode is locked. Then press **switch** for about 6 seconds until  disappears and the cooling/heating/ventilating is unlocked.
9. Fan speed adjusting: you can adjust the fan speed manually or automatically. If you want to adjust fan speed manually, press **set** key with  symbol appearing on the top right corner, then you can adjust the fan speed by next pressing **set** key ( icon—low speed,  icon—middle speed,  icon—high speed). Then press **set** key again with  symbol disappearing, then the fan speed can be adjusted  automatically.
10.  symbol appears when analog output above 0, and  disappears when analog output is 0.
11. Working period setting: in normal operation, press **set** for more than 2 seconds until “——” displaying on the middle of LCD, then you can set the working period. Then press **set** again to set the working period from 0.5 hour to 9.5 hours and 0.5 hour will be changed each time. When time is set to zero with “——” displaying next to 0.5 hour setting, it indicates that the working time setting un-effective. If you set 3.0 hour working period, that means the thermostat will be turned off automatically after 3.0 hours and the thermostat begin to count down.
After finish setting, press **set** again for more than 2 seconds until the thermostat return back to normal operation.
In normal operation, you may press **set** for more than 2 seconds to check the left working time.
12.  appears when pre-set the low temperature protection (please see follows parameter setup).

Parameter Setup (V.090901)

Cut off the power firstly, simultaneously depress the 2 clips on either of the sides of the thermostat gently with your nails or other unships tools to open the thermostat. Move the main part (face part) from the base part.

There are four Dip switches X1-X4 on the up left of the circuit board. Put them up to ON, down to OFF.

- | | | | |
|-----|---------------------------|-----------------|----------------------|
| X1: | ON —set the parameter | OFF— normal use | (leave factory: OFF) |
| X2: | ON —Fahrenheit | OFF—Celsius | (leave factory: OFF) |
| X3: | un-efficacy for the model | | (leave factory: OFF) |
| X4: | un-efficacy for the model | | (leave factory: OFF) |

When DIPX1=ON, press **switch** key to select the parameters and press ▲ or ▼ key to set values. The parameters guiding symbol will display on the upper line of LCD

item	LCD	Parameter	Setting range	Default
1	A	DEVICE INSTANCE high position	0~999	<u>9</u>
2	B	DEVICE INSTANCE low position	0~999	<u>1</u>
3	C	MS/TP Master communication address	0~128 Auto find MS/TP Master Address	<u>1</u>
4	D	Communication rate selection	1-9600bps; 2-19200bps; 3-38400bps; 4-76800bps	<u>3</u>

5	E	Measuring temperature calibration	$\pm 3^{\circ}\text{C}/\pm 6^{\circ}\text{F}$	<u>0°C/0°F</u>
6	F	The maximum limit of temperature set point in heating	0~50°C/32~122°F	<u>35°C/95°F</u>
7	G	The minimum limit of temperature set point in heating	0~50°C/32~122°F	<u>5°C/41°F</u>
8	H	The maximum limit of temperature set point in cooling	0~50°C/32~122°F	<u>35°C/95°F</u>
9	I	The minimum limit of temperature set point in cooling	0~50°C/32~122°F	<u>5°C/41°F</u>
10	J	Freeze protection	0~12°C/32~54°F if set as 0.0°C/32°F, no freeze protection	<u>0°C/32°F</u>
11	K	The state of the thermostat electrifying again after power failure	0-Turn off as electrifying 1-Turn on as electrifying 2-Hold the last state before power failure	<u>2</u>
12	L	Work mode optional	0: Heating-Cooling 1: Heating-Cooling-Ventilation	<u>1</u>
13	M	Controlled valve	0: 2-pipe, Manual switch heating/cooling 1: 4-pipe, Auto switch heating/cooling	<u>0</u>
14	N	Differential of heating mode changes to cooling mode under auto switch mode	0~4°C/0~8°F Example: if temperature set point is 25°C and this differential is 1.5, when temperature measurement $\geq (25+1.5)$, changing to cooling automatically.	<u>1.5C/3F</u>
15	O	Differential of cooling mode changes to heating mode under auto switch mode	-4°C~0/-8°F~0 Example: if temperature set point is 25°C and this differential is -2, when temperature measurement $\leq (25-2)$, changing to heating automatically.	<u>-1.5C/-3F</u>
16	P	The fan status as temperature measurement over temperature set point	0~3 0: fan stops in heating/cooling 1: keeps low speed in cooling and stops fan in heating 2: keeps low speed in heating and stops fan in cooling 3: keeps low speed in heating/cooling	<u>1</u>
17	Q	PID sampling period for controlling 3-speed fan	1~999 (corresponding to 10~9990ms)	10 (corresponding to 100ms)
18	R	PID proportional coefficient for controlling 3-speed fan	Setting range: 0~100	20
19	S	PID integration coefficient for controlling 3-speed fan	Setting range: 0~120s	10s
20	T	PID differential coefficient for controlling 3-speed fan	Setting range: 0~120s	2s
21	U	PID sampling period for controlling 0~10V	1~999 (corresponding to 10~9990ms)	10 (corresponding to 100ms)
22	V	PID proportional coefficient for controlling 0~10V	Setting range: 0~100	20
23	W	PID integration coefficient for controlling 0~10V	Setting range: 0~120s	10s
24	X	PID differential coefficient for controlling 0~10V	Setting range: 0~120s	2s
25	Y	Maximum output of 0~10V	0~10V	<u>10VDC</u>
26	Z	Minimum output of 0~10V	0~10V	<u>0VDC</u>

Reset: put the X1 to ON, press **switch** continuously about 25 seconds up to turn off the thermostat. Then all parameters return back the default.