

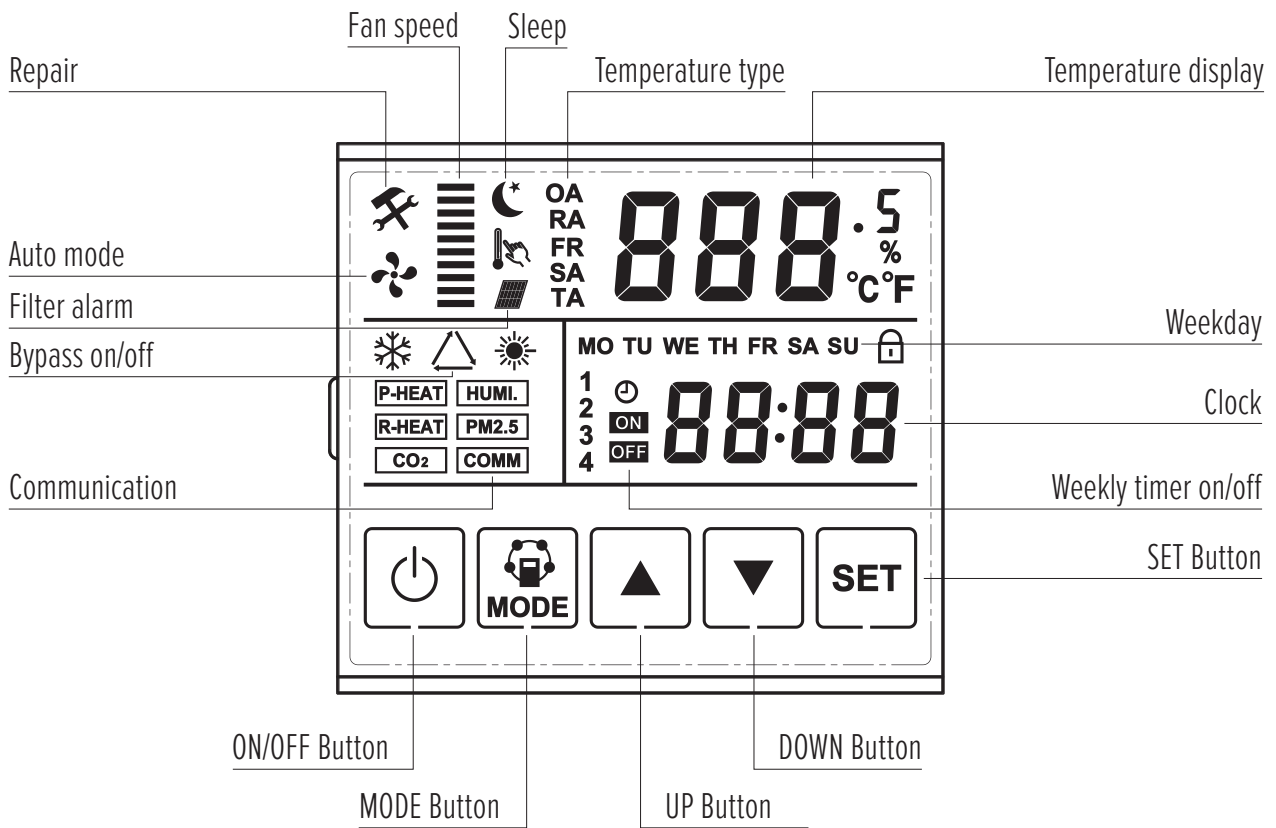


# OPERATION MANUAL

## WALL TOUCH SCREEN CONTROLLER FOR MCFA SERIES

Please read this manual before operating this unit  
and keep it securely for future reference.

# I. DISPLAY SCREEN AND BUTTONS



## II. OPERATION INSTRUCTIONS

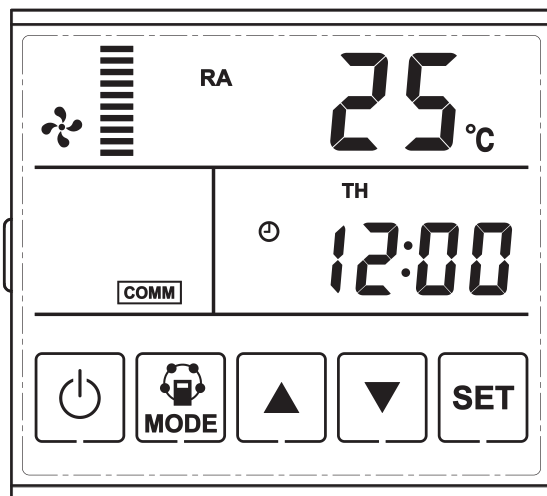
### 1. On/off button

When it is turned on, the back light of the display screen will be on, and it will be off if there is no operation within 30 seconds; when the back light is off under the power on state, press any button and it will be on again; press On/off button for more than 6 seconds to lock the screen, and press it again for more than 6 seconds to unlock it. No operation can be performed in the locked screen state. When turned on again, the device will run according to the status before turned off. When turned on again, the device will run according to the status before turned off.

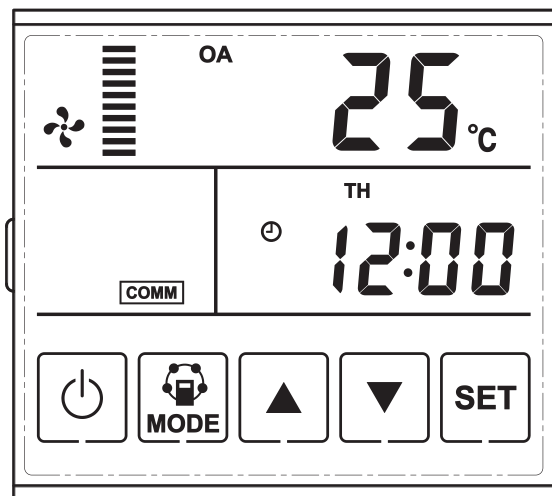
### 2. Press MODE to switch the display

The default interface in starting up is RA. Pressing lightly the MODE button, the users can choose or switch to the state of other detected items. The sequence is RA-OA-FR(EA)-SA-Setting-CO<sub>2</sub><sup>1</sup>-Humidity<sup>1</sup> (indoor temperature – outdoor temperature – exhaust temperature – supply temperature – setting temperature – concentration of carbon dioxide<sup>1</sup> – humidity<sup>1</sup>) – timer on/off mode – sleep mode, which will be switched in cycle. Interface display of timer on/off mode: time, week, timer on, timer off, air volume and indoor temperature.

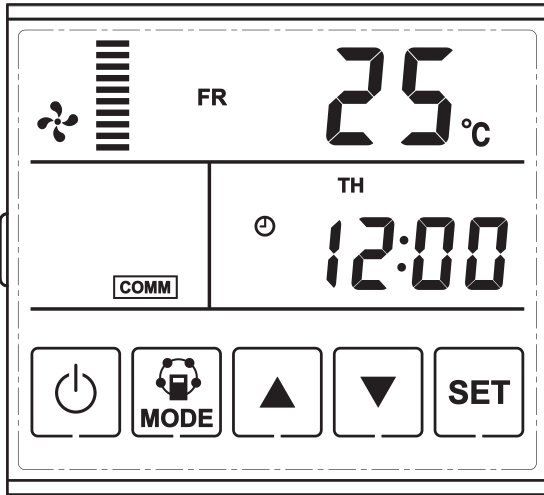
**Note:** 1 – temperature set and CO<sub>2</sub> concentration can only be displayed and controlled if function is active in service menu and corresponding hardware is installed.



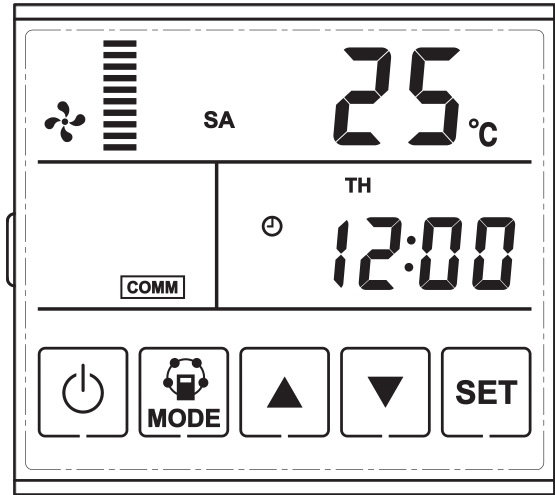
RA temperature



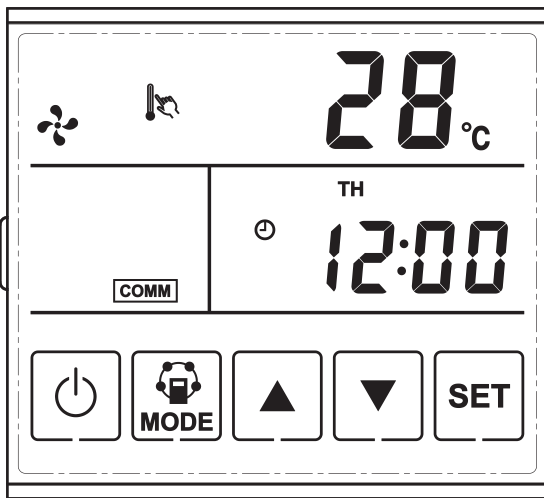
OA temperature



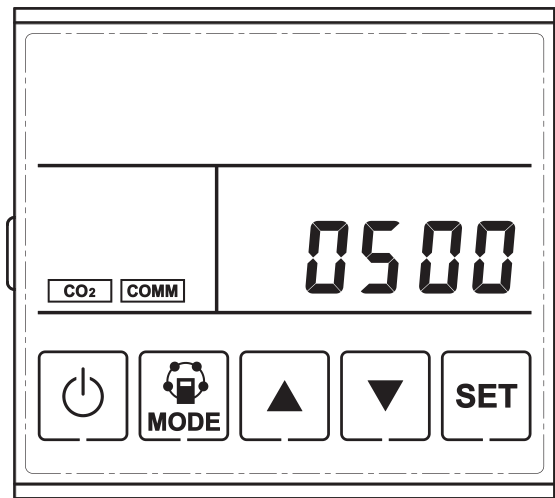
FR temperature



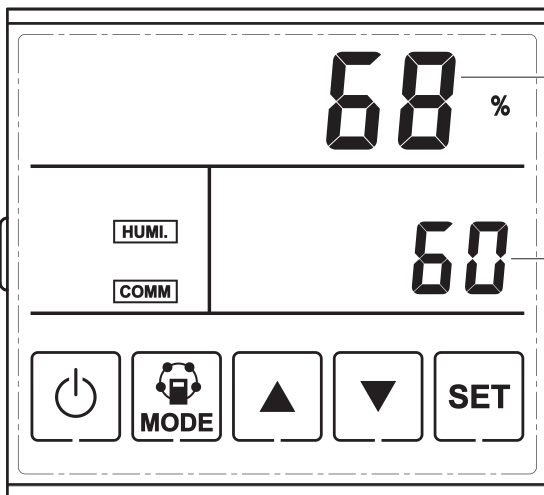
SA temperature



SA temperature setting



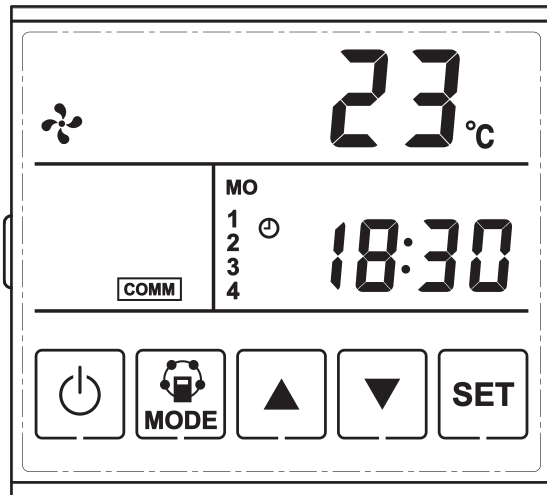
CO<sub>2</sub> concentration



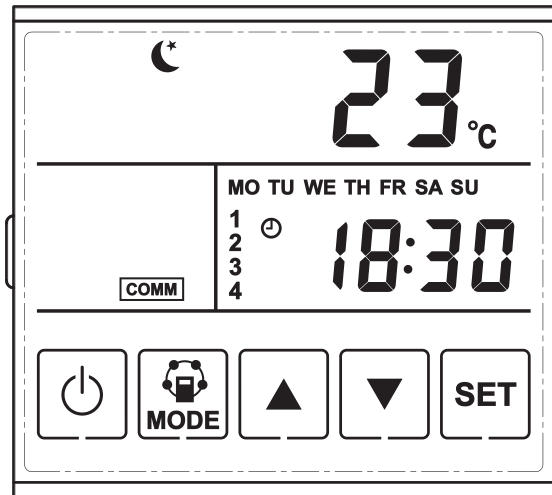
Humidity control

Current humidity

Setting humidity



Timing on/off mode



Sleep mode

### 3. Fan speed setting

#### 1) Fan speed setting in manual mode

Under SA or FR temperature interface, press the arrow keys of “▲” and “▼” to set the fan speed. There are 4 speeds available to choose on the controller. For each speed is available to choose:

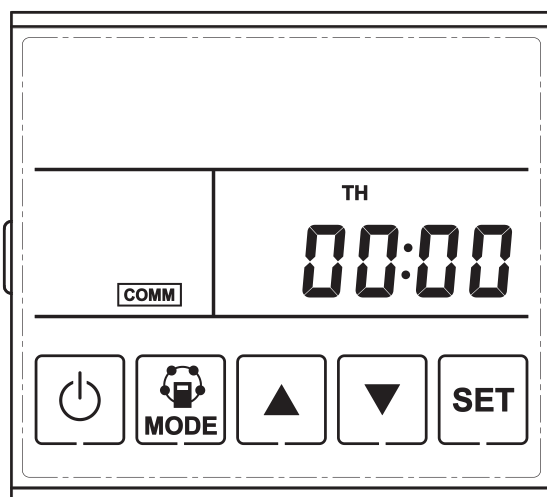
- from 100 to 250 m<sup>3</sup>/h for MCFA250
- from 100 to 350 m<sup>3</sup>/h for MCFA350
- from 100 to 500 m<sup>3</sup>/h for MCFA500

One-key fan Boost

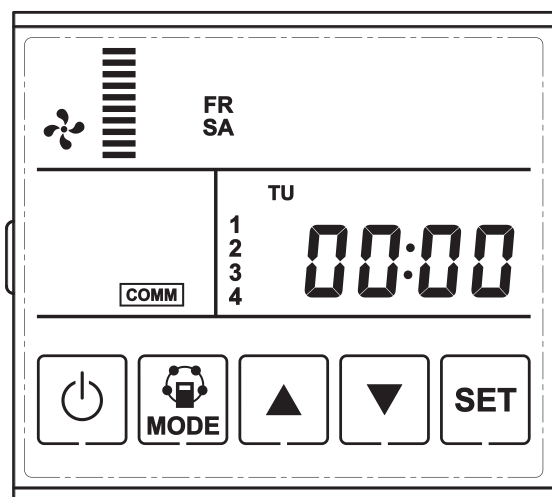
in any display interface, press “▲” and “▼” keys at the same time for 6 seconds and the equipment will run in boost speed. it will automatically return to the previous state in 30 minutes. Operation time can be set in the "Service menu".

#### 2) Timer setting

Four periods timer It is allowed to set 4 periods per day, 7 days per week, under every time period, user can set a fan speed, then when the ventilator enter each time period, it will automatically change the fan speed according to the setting.



Time setting



Timer setting

Time setting, In the timer setting interface, long press the SET button to start time setting, at this time “hour” flashes. Press the up and down buttons to adjust the hours, after hours setting one, short press the SET button again to enter “minute” and “week” setting, under the same way to set “minute” and “week”, then press Mode button or On/off button to exit the setting.

### Timer setting

In the timer mode interface, short press the SET button to start timer setting. At this time “week” flashes, press the UP and DOWN button to select the “week”, short press SET button to set the first period “hour”, press the UP and DOWN button to select the hour.

Short press SET button to set the “minute”, press the UP and DOWN button to select the minute.

Short press SET button to set the SA fan speed, press the UP and DOWN button to select the fan speed.

Short press SET button to set the EA fan speed, press the UP and DOWN button to select the fan speed.

After the first period setting is done, system will automatically change to be the second period setting.

After 4 periods setting is done, then system will automatically change to be week setting again. Repeat the setting like the above way then press the MODE button or On/off button to exit setting.

**Note:** if without operation for over 10 seconds, the system will exit setting automatically.

## 4. Bypass function

Refer to the parameter list, the parameter number 2 is to switch manual bypass or auto bypass function.

Value 0=manual bypass, value 1=auto bypass

- 1) Bypass on/off setting in manual mode: under OA temperature interface, press the arrow button of “▲” for 6 seconds until the bypass icon appear, bypass open. While press the arrow button “▲” for 6 seconds, until the bypass icon disappear, bypass closed.
- 2) Automatic bypass function, refer to the “Service menu” number 3 and number 4, if the fresh air temperature within the X and X+Y, then bypass open, if fresh air temperature lower than X, or higher than X+Y, then bypass closed, i.e. by setting X=19, Y=3, then when fresh air between 19 and 22 celsius, bypass open, when fresh air lower than 19 celsius or higher than 22 celsius, bypass closed.

### Humidity control function

When this function is turned on the equipment will run at high speed when indoor humidity value is higher that setted in “Service menu”. When detected indoor humidity will drop to the value below setted then it will back to previous running state. Humidity value is setted in “Service menu”.

### Anti-frost function

In order to prevent frosting inside the equipment due to low temperature, the equipment has frost protection function. when outside temperature is lower than -5 and last for 2 hours then the equipment will conduct defrost operation for 10 minutes. at this time fan supply fan is turned off and only works exhaust fen at highest speed.

## 5. Temperature setting function

This function is only effective when the heating function is active in “Service menu” and heating equipment installed and connected to main board.

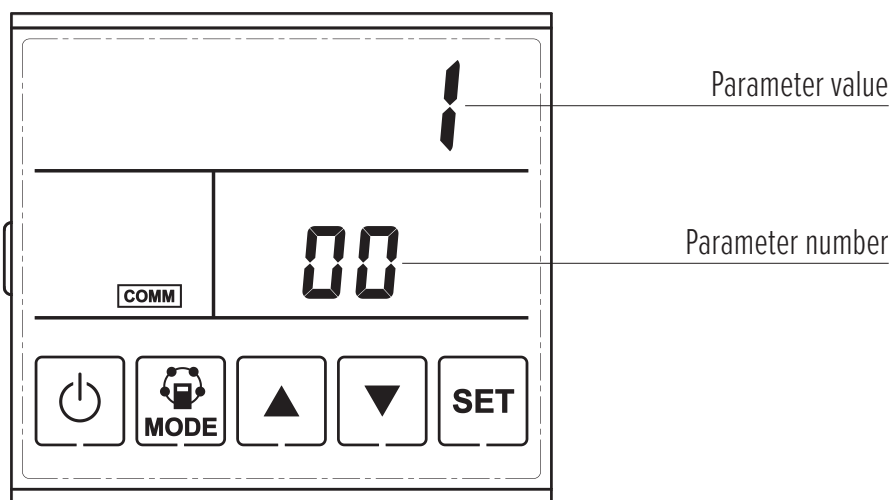
In temperature setting interface, press the arrow buttons of “▲” and “▼” to adjust the setting temperature within the range of 15 to 30 °C. If the supply air temperature is higher than the setting temperature, the electric heater will stop, and the p-heat and r-heat icons will disappear. If the supply air temperature is equal to or lower than the setting temperature (temperature difference within 5 celsius), the first stage electric heater will start and the p-heat icon appear, If the supply air temperature is 5 celsius lower than the setting temperature, the first and the second stages electric heater will both start and the p-heat and r-heat icons appear. If the supply air temperature is 2 celsius lower than the setting temperature, the second stage heater will stop, If the supply air temperature is higher than the setting temperature, 2 stage heaters stop. Please note that this function is only effective when the electric heater is connected to the PCB. And parameter number 5 (heater function) is set to be value 1 to active this function.

## 6. CO<sub>2</sub> control function

This function is only effective when the CO<sub>2</sub> function is active in “Service menu” and CO<sub>2</sub> equipment installed and connected to main board. When indoor CO<sub>2</sub> detected value is higher than setted in “Service menu” then the supply and exhaust fans will run at the maximum speed until the CO<sub>2</sub> value drops below than setted. CO<sub>2</sub> value can be modified only in “Service menu”.

## 7. Power consumption statistics

This device can approximately count the power consumption of the equipment and electric heating. Please refer to “Service menu” parameters 15, 19 and 20.



Setting parameters in “Service menu”: long press the “MODE” button for more than 6 seconds under the power on state to enter into the interface for parameters setting.

And then shortly press the “SET” button, the parameter number will increased accordingly. After choosing the corresponding parameter item, press the arrow buttons of “▲” and “▲” to adjust the parameter values. When all setting is done, press the “SET” button to switch to the next item.

**Attention:**

- 1) After parameters setting, system need around 15 seconds to record, during this period power should not be off.
- 2) Please refer to below valid parameters table to set the suitable parameters according to different re-quests.

No.	Contents	Range	Default	Unit
1	Power to auto restart	0 - invalid, 1-valid	1	
2	Automatic bypass function	0 - invalid, 1-valid	0	
3	Bypass opening temperature X	5-30	19	°C
4	Bypass opening temperature range Y	2-15	3	°C
5	Electric heating setting	Electric heating off Electric heating on	0	
6	Conventional defrosting	0 - invalid, 1-valid	1	
7	Defrost interval	15-99	30	Minute
8	Defrost entering temperature	+5~9	-1	°C
9	Defrosting duration time	2-20	10	Minute
10	CO <sub>2</sub> display/ valid/ invalid	0 - invalid, 1-valid	0	
11	CO <sub>2</sub> setting range	800-2000	1500	800-2000
12	Humidity display	0 - invalid, 1-valid	0	
13	Humidity setting range	50-100%	75	%
14	IP address	1-66	1	
15	ERV model match	250-350-500	1	
16	Filter alarm	0 - useless 1 - clear filter alarm, and recount time	0	
17	Filter alarm set- ting	0:45 days 1:60 days 2:90 days 3:180 days	60	days
18	One key boost time	0-120	30	minutes
19	electrical heater power set	500-3000	500	W
20	Device power	0-9999		kW

**A. Description of Parameter 02, 03 and 04 (automatic bypass function)**

Refer to the parameter list number 3 and number 4, if the fresh air temperature within the X and X+Y, then bypass open, if fresh air temperature lower than X, or higher than X+Y, then bypass closed, i.e. by setting X=19, Y=3, then when fresh air between 19 and 22 celsius, bypass open, when fresh air lower than 19 celsius or higher than 22 celsius, bypass closed.

**B. Description of Parameter 06, 07, 08 and 09 (Conventional defrosting)**

Conventional defrosting: when the EA temperature lower than the setting defrost temperature (the preset value is 1 °C) and lasts for 1 minute, and it has been exceed the defrosting interval (the preset value is 30 minutes), the supply fan will stop and exhaust fan run at high speed, until the EA temperature is +15 °C and lasts for 1 minute, or the defrosting has been lasting for a certain time (i.e. defrosting duration, whose preset value is 10 minutes), then the ventilator will turn back to the original operation state.

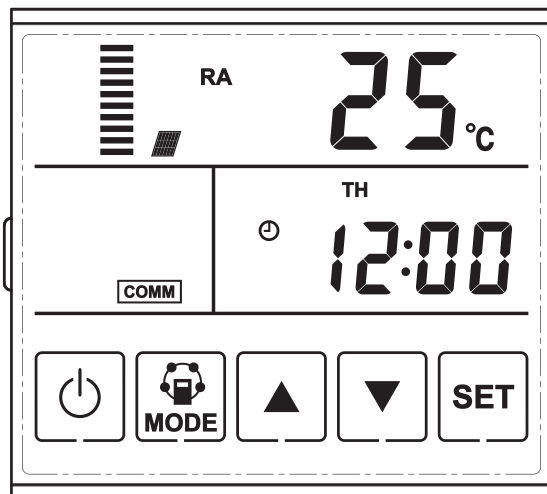
C. Description of Parameter 10 and 11 (CO<sub>2</sub> sensor function)

When the ventilator is in stand by condition or any speeds that are not the highest speed, if CO<sub>2</sub> sensor detects that the CO<sub>2</sub> concentration is higher than the setting value for more than 5 seconds, the ventilator will start up automatically and run at high speed. Only when the CO<sub>2</sub> concentration is lower than the setting value for more than 5 seconds. Ventilator will return to previous condition.

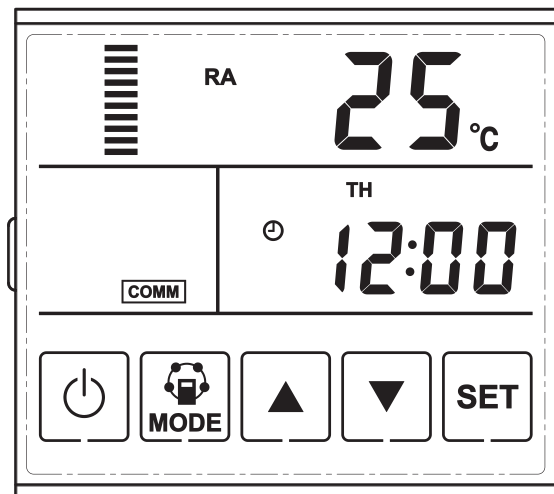
D. Description of Parameter 12 and 13 (Humidity sensor function)

When the ventilator is in stand by condition or any speeds that are not the highest speed, if humidity sensor detects that the humidity concentration is higher than the setting value for more than 5 seconds, the ventilator will start up automatically and run at high speed. Only when the humidity concentration is lower than the setting value for more than 5 seconds. Ventilator will return to previous condition.

E. Filter alarm, Parameter 18 to set the filter alarm time. When the operation time of the ventilator exceeds the setting time, the filter icon will flashes to remind user clean the filter. After cleaning, set Parameter 17 to be 1 to recount the time.

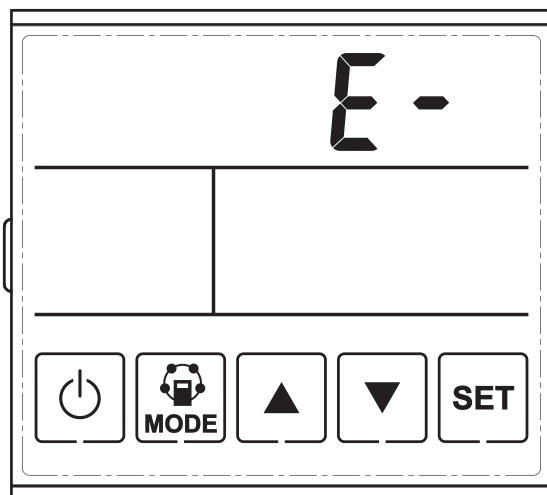


Filter alarm On

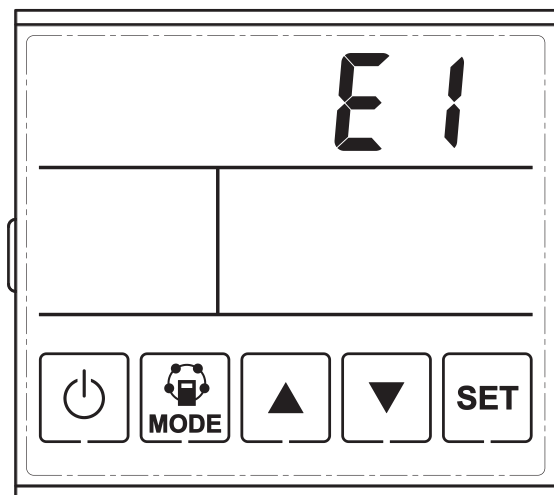


Filter alarm Off

F. Error code checking: under the main interface, press the SET button for short, user can check the error code of ventilator, refer to below table. In fault display interface, press the buttons of “▲” and “▲” to exit.



No Error



Error alarm

Code	Error
E1	OA temperature sensor error
E2	CO <sub>2</sub> sensor error
E3	RA temperature sensor error
E4	EA temperature sensor error
E5	Supply fan error
E6	SA temperature sensor error
E7	Fire alarm error
E8	Communication error
E9	Exhaust fan error

### Modbus Protocol

Baud rate 9600bps,

Even/Odd No,

Date bit 8,

Stop bit 1,

communication interval > 200ms.

Support function code: 0x03, 0x06

Register address	Readable	Writable	Range of value	Function description	Remarks
0(0x0000)	√	√	0-1	on-off state 0 - off 1 - on	
1(0x0001)	√	√	1-10	Supply fan speed	
2(0x0002)	√	√	1-10	Exhaust fan speed	
3(0x0003)	√	√	15-30	Setting temperature	
4(0x0004)	√		0-100	Humidity %	
5(0x0005)	√		0-2000	CO <sub>2</sub> ppm	
6(0x0006)	√		0-120	Fresh air temperature	Positive temperature, When reading value equal to or over 20, then actual temperature is "reading temperature minus 20" Negative temperature, When reading value less than 20, then actual temperature is "20 minus reading temperature"
7(0x0007)	√		0-120	Exhaust air temperature	
8(0x0008)	√		0-120	Supply air temperature	
9(0x0009)	√		0-120	Return air temperature	
10 (0x000a)	√		0	--	
11 (0x000b)	√		0-255	Bit0 fire alarm protection Bit1 OA temperature sensor error Bit2 EA temperature sensor error Bit3 RA temperature sensor error Bit4 SA temperature sensor error Bit5 humidity sensor error Bit6 CO <sub>2</sub> sensor error Bit7 filter alarm	

Register address	Readable	Writable	Range of value	Function description	Remarks
12(0x000c)	√		0-1	Bypass switch, 1=on 0=off	
13(0x000d)	√		0-1	P-heating state 1=on 0=off	
14	√		0-1	R-Heating state 1=on 0=off	
15	√		0	0	
16	√		0	0	
17	√		0	0	
18	√		0	0	
19	√		0	0	
20	√		0	0	
21	√		0	0	
22	√	√	0-23	System time: hour	
23	√	√	0-59	System time: minute	
24	√	√	1-7	System time: Week	
25	√	√	1-99	IP address	

