Heating/air conditioning room thermostat
2 810 23xx xx:MW MB MG DS DB CH
2 810 23xx yy yy:MY SG

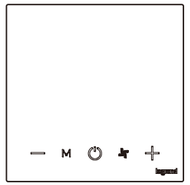
⚠ Safety instructions

GB CA IN IE US SG

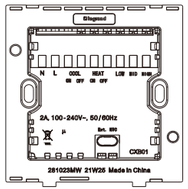
When use this product, please install a fuse or protective device to protect the product in the line of COM input, the protective device should be equal to 10A/100~240V.
This product should be installed preferably by a qualified electrician. Incorrect installation and use can entail risk of electric shock or fire.
Before carrying out the installation, read the instructions and take account of the product's specific mounting location.
Do not open up the device. All Legrand products must be exclusively opened and repaired by personnel trained and approved by LEGRAND.
Any unauthorized opening or repair completely cancels all liabilities and the rights to replacement and guarantees.
Only use genuine accessories.

Description

This product is applicable to the standard 86 type installation bottom box, and the bottom box depth is ⩾35mm.
Product appearance

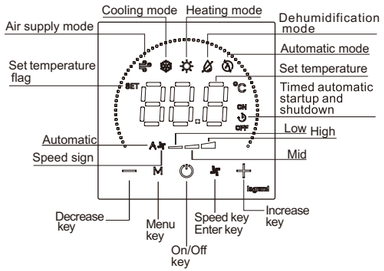


Front view



Rear view

Display description:



Main functions and features:

1.The appearance of the product is simple and generous, and the installation and disassembly are simple.
2. Standby off state.
3. Touch key design, display the set temperature when there have operation.
4. Two pipe and four pipe fan coil control.
5. Working mode: air supply, cooling, heating, dehumidification and automatic mode.
6. Speed mode: low, mid, high, automatic.
7.24-hour regular startup and shutdown function, with a minimum adjustment time of 0.5 hours.
8. Overcooling protection and prompt function to avoid equipment damage caused by too low ambient temperature.
9. Preset "user mode" and "engineering mode". In "user mode", the user can operate and set the functions of on-off, working mode, temperature, wind speed and timing on-off, which is simple and easy to use. In the "engineering mode", the operation coefficients of the temperature controller can be set according to the engineering requirements.

Technical data

Rated voltage	100～240V 50/60HZ
Rated output current	2A
Rated output power	200～480VA
Standby power	<1W
Temperature range	16℃～32℃
Control accuracy	25℃, ±1℃
Display accuracy	0.1℃
Wind speed step	Low, mid, high, automatic
Number of control valves	2
Overall dimension	86x86x30(mm)
Install the bottom box	Standard 86 type installation bottom box, and the bottom box depth is = 45mm.
Working environment	-10～+60℃, RH<90%
Storage environment	-20～+60℃, RH<90%

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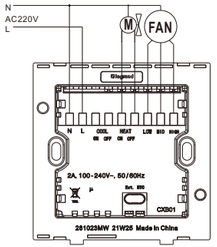
Engineering mode parameters

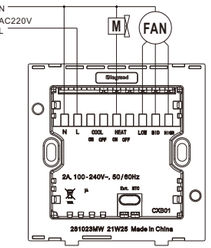
Function	No.1	No.2	Function description
Restore factory settings	1	0	Do not restore factory settings.
		1	Restore factory settings (other functions cannot be set in this state).
Control settings	2	0	Two pipe system(default).
		1	Four pipe system.
Sensor settings	3	0	Use built-in sensor to measure temperature.
		1	The external NTC sensor is used for temperature measurement, and the sensor resistance is 100k.
		2	The external NTC sensor is used for temperature measurement, and the sensor resistance is 47k.
		3	The external NTC sensor is used for temperature measurement, and the sensor resistance is 15k.
		4	The external NTC sensor is used for temperature measurement, and the sensor resistance is 10k.
Fan controlled	4	0	The fan is not controlled. After the temperature reaches the set value, the fan is in low-speed state.
		1	The fan is controlled, and the fan is turned off when the temperature reaches the set value.
Overcooling protection	5	0	Turn off the overcooling protection.
		1	Start, when the temperature is lower than 7 °C, the refrigeration symbol flashes until the temperature is higher than 9 °C.
		2	Start, when the temperature is lower than 7 °C, the refrigeration symbol flashes, and turn on the heating until the temperature is higher than 9°C.
Temperature difference	6	1℃～5℃	Factory default 2°C.
Temperature compensation value	7	-5℃～5℃	Factory default 0°C.
In standby mode	8	0	The screen is not displayed (default).
		1	Low light when standby.
		2	Mid light when standby.
		3	High light when standby.
Refrigeration minimum temperature setting	9	16℃～35℃	The minimum temperature allowed to be set in the refrigeration mode. The factory default is 16 ℃.
Minimum heating temperature setting	10	5℃～32℃	The maximum temperature allowed to be set under heating mode. The factory default is 32 ℃.

Wiring diagrams

1.Two pipe system

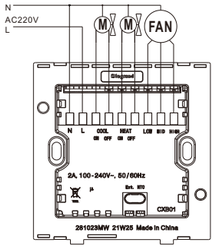


Electric valve

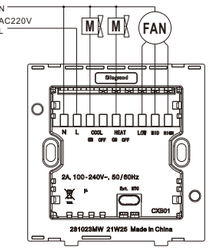


Electron magnetic valve

2. Four pipe system

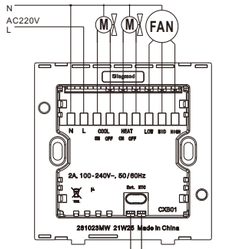


Electric valve



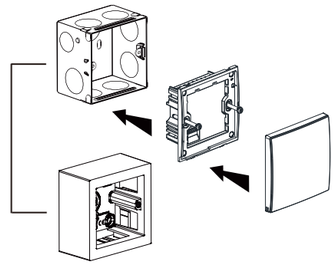
Electron magnetic valve

3.External sensor



If you need to expand the external temperature sensor, please contact our sales department to purchase expansion accessories.

Installation and fixing

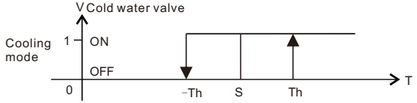


Different installation positions may affect the temperature measurement accuracy. You can setting at this time Engineering mode - > temperature compensation, modify the temperature compensation value as required.

Settings

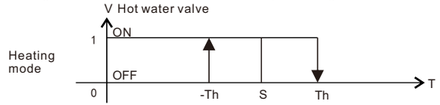
Working process of 2 pipe system and 4 pipe system

1.Cooling mode: when t = - Th, the cooling valve stops working; When t = Th, the cooling valve starts working again.



V:Valve
T:Room temperature
S:Set temperature
Th: Set temperature + (temperature return difference / 2)
-Th: Set temperature - (temperature return difference / 2)

2.Heating mode: when t = Th, the heat valve stops working; When t = - Th, the heat valve starts working again.



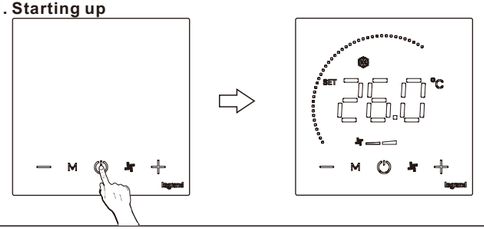
Automatic switching function of four pipe system:
In automatic control mode of four pipe system, in order to achieve the optimal temperature set by the user, the cooling and heating mode is switched automatically. The switching conditions are as follows:
1. Conditions for Automatic switching from cooling mode to heating mode: (indoor temperature) = (set temperature - temperature return difference / 2)
2. Conditions for automatic switching from heating mode to cooling mode: (indoor temperature) = (set temperature + temperature return difference / 2)

Sensor setting: the temperature sensor can choose to use built-in, external or digital connectors according to the actual engineering environment.

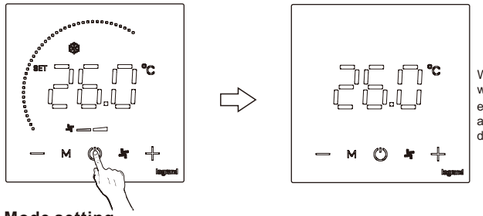
Over-cooling protection:
1. When 1 or 2 is selected in "over-cooling protection" in engineering mode, the thermostat starts the over-cooling protection function.
2. When the temperature is lower than 7 ℃, the screen will flash and display the over-cooling protection information. Until the temperature is higher than 9 ℃, the over-cooling protection information will stop displaying.
3. When "over-cooling protection" is selected as 2, when the ambient temperature is lower than 7 ℃, the thermostat will be forced to operate in the heating mode until the temperature is higher than 9 ℃, and the thermostat will return to the operation state before over-cooling protection.

Operation

1. Starting up

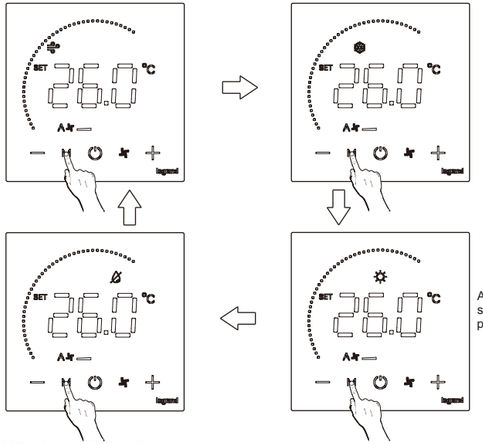


2. Shutdown



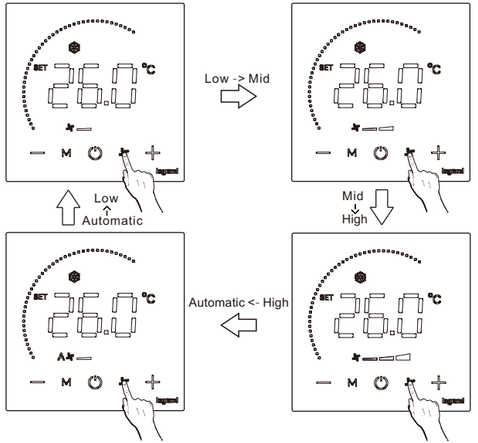
When shutting down, if the fan coil unit is working, the valve will close first, the fan enters the low-speed gear, and shut down after a delay of 20 seconds, otherwise shut down directly.

3. Mode setting

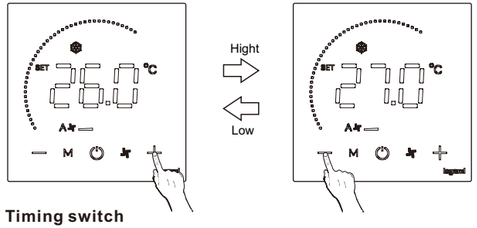


After 5 seconds, it will exit the mode setting ,and the display returns to the preset standby display brightness.

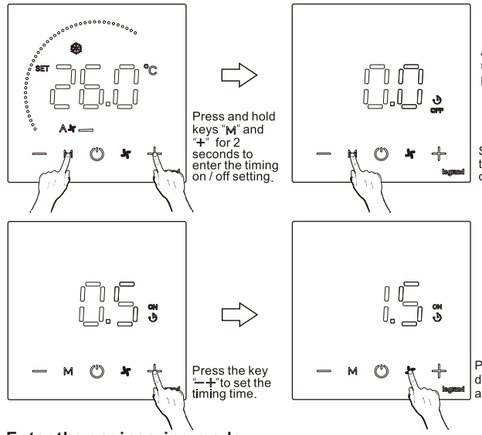
4. Wind speed setting



5. Temperature setting



6. Timing switch



Press and hold keys "M" and "+" for 2 seconds to enter the timing on / off setting.

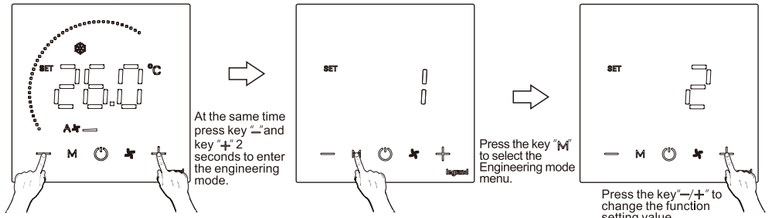
After 20 seconds, it will exit the mode setting ,and the display returns to the preset standby display brightness.

Short press the key "M" to select timed startup or shutdown.

Press the key "—/+" to set the timing time.

Press the key "" to determine the timing time and start the timing switch.

7. Enter the engineering mode

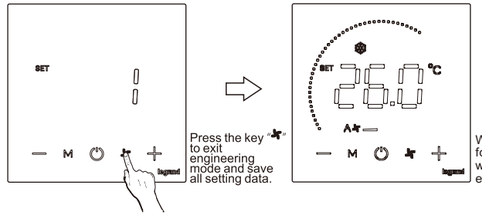


At the same time press key "—" and key "+" 2 seconds to enter the engineering mode.

Press the key "M" to select the Engineering mode menu.

Press the key"—/+" to change the function setting value.

8. Exit engineering mode setting

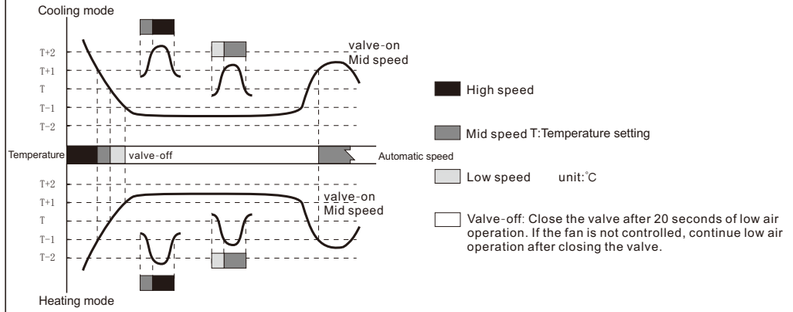


Press the key "" to exit engineering mode and save all setting data.

When the key is not operated for more than 20 seconds, it will automatically exit the engineering mode without.

9. Error display

Automatic air and temperature change chart



Common problems

Please confirm again: the neutral wire and live wire are connected correctly; the setting of air conditioning and heating operation mode is consistent with the requirements.

Abnormal phenomenon	Reason	Processing method
Display off	The on / off key is not turned on	Click the on key
The actual wind speed is different from the display	F1 F2 F3 terminal wiring sequence error	Check external wiring
Display normal control error	Wiring error	Check external wiring
Room temperature (measured temperature) deviation	Temperature uncalibrated	Recalibrate the measured temperature
	Improper installation position	Improve installation environment
Display Err	The current temperature sensor is damaged or installed incorrectly	Please check and replace the sensor
	Sensor setting error	Enter the engineering mode and select the correct probe mode

Attention:

1. The controller must be equipped with independent power control equipment.
If the controller is not used for a long time (more than one month), please cut off the power supply of the control device connected to the controller.
2. The controller shall be correctly installed by professional technicians according to the instructions.
3. Do not install the controller near high-temperature heat source or harsh environment.
4. Before installation, please confirm whether the power supply is consistent with the voltage indicated by the controller.
5. Please read this manual carefully before using this product.