

WS3 Series Wall Module

For use with fan coil units

Product Data

Application

WS3 WMC and WMR Series wall modules are designed based on the 70-mm wall-mounted installation box for indoor temperature control. It has a large LCD display showing real-time room temperature or set temperature. With the temperature set, it will provide a modulating control signal to the fan coil valve for temperature regulation.

WS3 WMC and WMR Series wall modules are suitable for fan coil units which regulate the room temperature by fan speed and valve control; while fan speeds control can be selected to automatic or manual.



Key Features

- Extra-large LCD display and operating interface
- Temperature display options (room temperature or set temperature)
- Manual or automatic fan speed selection
- Anti-freeze protection
- Operating buttons lock/unlock
- Temperature range setting
- Standard 70-mm wall-mounted installation box
- Modulating valve control
- Support remote temperature sensor
- Support energy saving activation by dry contact (key card)
- Timed Shutdown

Technical Specification

Operating voltage:	24V AC 50/60 Hz
Control accuracy:	± 1°C
Control signal:	Modulating
Load capacity:	Fan: resistive load 4A; inductive load: 3A Valve: 0~10V output
Protection rating:	IP20
Temperature setting range:	10~32°C
Temperature display range:	-10~50°C
Operating temperature:	-10~49°C
Transportation temperature:	-30~60°C
Relative humidity:	5~90%RH, non-condensing
Remote sensor:	NTC20K

Ordering Part Numbers

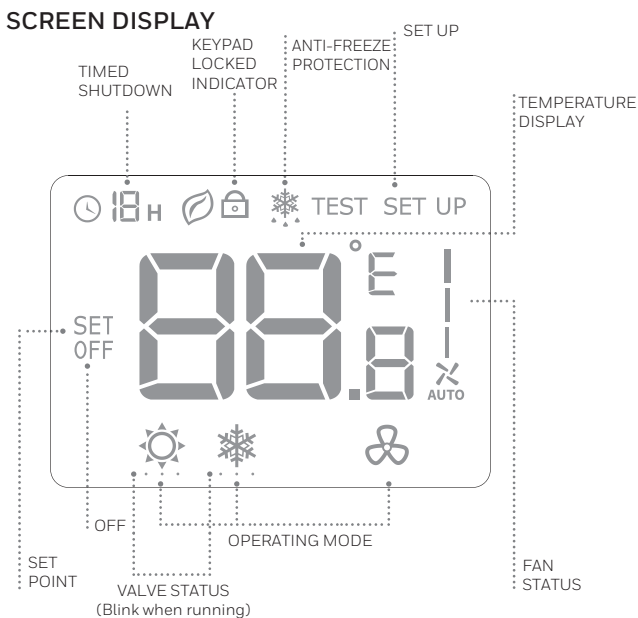
Model	Operating voltage	Applications	Backlight	Ventilation mode	Fan control default (@ set temperature)	Others
WS3E2WMC/U	24VAC±10%	2-pipe	White	Yes	Fan kept running	Support key card
WS3E2WMR/U	24VAC±10%	2-pipe	White	Yes	Fan kept running	Support remote sensor

Product Details

Outlook design



LCD Screen



Functions

Valve and Fan Control

The wall module reads the indoor temperature through a built-in temperature sensor or remote sensor and commands the valve to be opened or closed to achieve the set temperature. There are three fan speeds, which can be set manually or automatically. In the manual mode, the fan speed is adjusted by FH, FM, and FL outputs. In the automatic mode, the fan speed will depend on the difference between the room temperature and set temperature. The fan will be kept running when the room temperature reaches the set value.

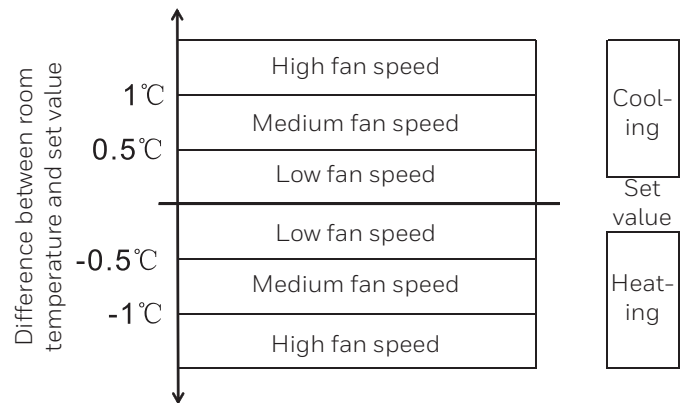


Fig. 1. Automatic fan speed control algorithm.

Temperature display

Room temperature or set temperature can be displayed on the screen and is selectable during the installation of the wall module.

Backlight

The backlight can be activated by pressing any button and will last for 8 seconds after the last button is pressed. In the setting mode, the backlight will remain on for 60 seconds after pressing the last button.

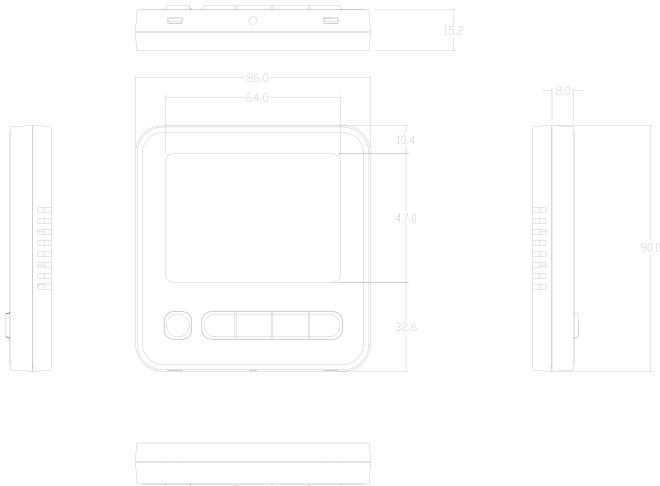
Keypad lockout

It is possible to lock or unlock the keypad while the device is not in the setting mode. In the lock mode, the keypad will be inactive when any button is pressed.

Energy-saving mode

The energy-saving mode can be activated by pressing the power button for 3 seconds or by dry contact which is connected to a NC or NO device. In energy-saving mode activated by the dry contact, all buttons will be locked (except the set up button). In energy-saving mode activated by the power key, you will exit the mode by pressing any button. In energy-saving mode, the set temperature of the room will be automatically adjusted to the default temperature; in heating mode, is 18°C adjustable from 10°C to 21°C and, in cooling mode, is 26°C adjustable from 22°C to 30°C.

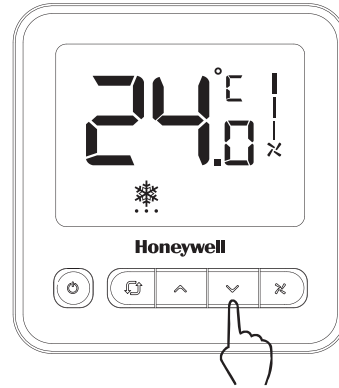
Dimensions (mm)



Operation modes

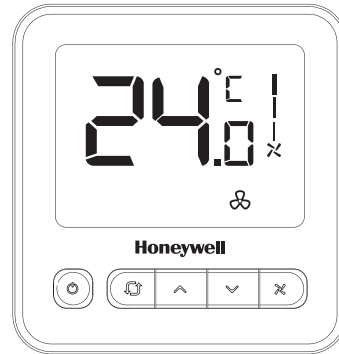
Comfort mode

In the comfort mode, press the up or down button to set the temperature. The comfort mode is included in cooling, heating or automatic application.



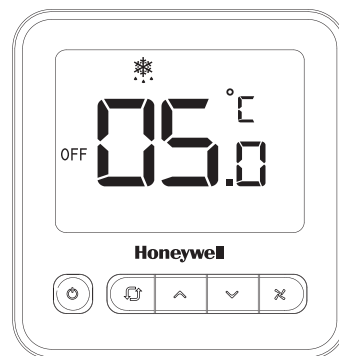
Ventilation mode

Press the mode button to enter the ventilation mode. In this mode, the fan will operate on the manually set fan speed, and the valve will stop working.



Anti-freeze protection mode

The anti-freeze protection mode is optional and is default in the heating mode only. In anti-freeze protection mode, when the room temperature falls below 6°C, the heating mode will be activated until it reaches 8°C.

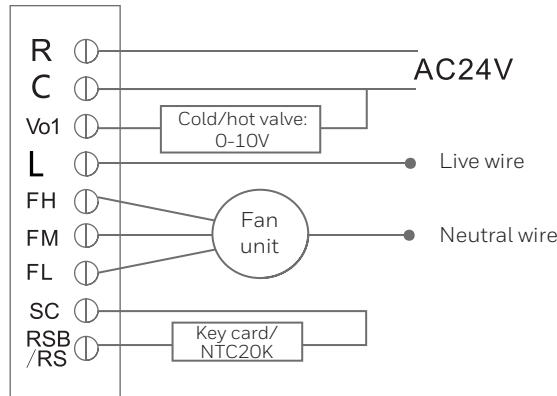


Wiring Diagram

Part number: WS3E2WMC/U, WS3E2WMR/U

Two-pipe application








24Vac motorized
valve wiring
diagram



Definition of Terminals

Symbols	Description
R	AC24V power supply
C	Common terminal
Vo1	Regulatory output of heating/cooling valve
L	230V AC power supply
FH	High fan speed
FM	Medium fan speed
FL	Low fan speed
SC	Common terminal (Key card/NTC20K)
RSB/RS	Key card/NTC20K

Troubleshooting

Malfunction	Solution
 Fails to activate	<ul style="list-style-type: none"> Press  to change the operating mode to "☀" (heating mode) Check if the set temperature is higher than the current indoor temperature Check if the valve status indicator light is blinking Check if the heating system is responding after 5 minutes
 Fails to activate	<ul style="list-style-type: none"> Press  to change the operating mode to "❄" (cooling mode) Check if the set temperature is lower than the current indoor temperature Check if the valve status indicator light is blinking Check if the cooling system is responding after 5 minutes
 Fails to work	<ul style="list-style-type: none"> Check if the button is locked Check if the device is in the OFF mode
 Fails to work	<ul style="list-style-type: none"> Check if the button is locked Check if the device is in the  mode Check if the device is in the OFF mode

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All specifications are subject to change without notice.

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