HL2023 Series Thermostat User Manual

HL2023 Series Touch Pad fan coil unit thermostats are designed to control the room temperature in air-conditioning fan coil unit system or dust pipe channel system. HL2023 series thermostats with microprocessor and big LCD display. It shows the following items: working status (cool, heat or ventilation), fan speed, room temperature, set-point temperature etc. Keys include on/off （⏻）.mode(M),fan speed ( ) and temperature adjustment (π θ).

MODEL DESCRIPTION

HL2023 □ □ - □

Y： Control damper to open or close

DA/DA2：DA: Control 2-wire valve; DA2: Control 3-wire valve, When the temperature reaches the set-point, it will close the valve with the fan still running.

DB/DB2: DB:Control 2-wire valve; DB2: Control 3-wire valve ,When the temperature reaches the set-point, it will close both the valve and fan.

FCV2： Control 4 pipe fan coil units, Control heating and cooling valves and 3-speed fan, when the temperature reaches the set-point, it will close the valves with the fan still running

L： white backlight. Blank is invalid.

E： auto-restart (Restart the working status of last 6 seconds before power off). Blank is invalid.

BASIC FEATURES

- Room temperature setting
- Manual or auto 3-speed changeover
- Defrost (low temperature protection)
- White backlight (-L, Optional)
- Key lock (Optional)
- Auto-restart (Optional)

LCD Display

- Working Status: Cooling , or Ventilation
- Fan 、Med 、High or **AUTO**）
- FCU valve status
- Room temperature display
- Temperature setting display

SPECIFICATIONS

- Sensing element: NTC
- Accuracy: ± 1℃
- Set-point range: 5℃ to 35℃
- Display range: 0～55℃
- Operation environment: 0～45℃
- Operating Humidity: 5 ～ 90%RH (non-condensing)
- Key: soft touch
- Power supply: AC 85～260V, 50/60Hz
- Wirings: Accepting 2 × 1.5 mm^2 or 1 x 2.5mm^2 wires
- Switch current rating: Resistive: 2 A, Inductive: 1 A
- Housing: PC + ABS Fire Retardant
- Dimensions: 86.6×86.6×15.5 mm (W × H × D)
- Hole pitch: 60 mm (Standard)
- Protection Class: IP30
- Rated Power: < 1W

OPERATION

✍ On/Off: Press ⏻" to turn on, press ⏻" again to turn off thermostat and its output.

✍ Setting temperature: Press "θ" to reduce set-point, press "π" to raise set-point, and 0.5℃ changed once.

✍ Mode Selection: Press " M to change system working in cooling ❄", heating ☀" or ventilation 🌀" mode, the related icon will flash (The ventilation function is invalid for HL2023Y/YE)

✍ Fan Speed Selection not for HL2023Y: Press 🌀" to change fan speed among ▂▃▅▆▇ (Hi)", ▂▃▅ (Med)", " ▂ (Low)" or "AUTO (Auto)".

Under auto fan speed "AUTO", the fan-speed will be changed automatically. Auto LOW-speed When the difference between room-temperature and set-point is 1℃; Auto MED-speed When difference is 2℃; Auto Hi-speed When difference is 3℃.

✍ Control Motorized-Damper (HL2023Y/YE): Under cooling (heating) mode, The damper will be open when the room temperature is 1℃ higher than set-point in cooling, or room temperature is 1℃ lower than set-point in heating, Otherwise the damper will be closed.

✍ Control Motorized Valve under 2-pipe configuration (not for HL2023Y/YE): If the differential temperature between room temperature and set-point exceed 1℃, FCU valve will be open; if room temperature and set-point are equal, HL2023DA/DAE/DA2/DA2E will close the FCU valve with the fan still running, HL2023DB/DBE/DB2/DB2E will close both of valve and Fan.

✍ Control FCU Valve under 4-pipe configuration (HL2023FCV2/FCV2E): In cooling, when the room temperature is higher than set-point, the cooling Valve will be opened. Otherwise it will be closed. Heating valve is always closed. In heating, When the room temperature is lower than set-point, the heating valve will be opened. Otherwise it will be closed. Cooling valve is always closed

Keyboard Lock Function

✍Keypad Lock: its keypad would be automatically locked in 30 seconds in case that no one uses the thermostat, so as to prohibit other persons from operating the thermostat.

✍ Keypad 🌀"for 5 seconds to unlock（In case that no one uses the thermostat, its keypad would be automatically locked in 30 seconds）.

Low Temperature Protection Function

✍ Turn off: When the room temperature is lower than 5℃, the thermostat would automatically turn on the fan and valve with ☼" showing, When the room temperature reaches to 7℃, the thermostat will automatically close the output.

Low Temperature Protection Setting

✍ Turn off the thermostat, M" and hold for 3 seconds, it will display "OF" or "ON", press "▲" or "▼" key to adjust. "OF" indicates low temperature protection invalid, "ON" indicates low temperature protection function valid. The default is "OF".

Temperature Adjustment

Temperature adjustment (±5℃) can be done by following step:

✍Turn off the thermostat, press"▲"and "▼"hold for 3 seconds, it will display "XX ℃"（not displaying the thermostat model）, press "▲"or "▼" to adjust the temperature value, it will be automatically confirmed after 6 second.

Alarm

✍ Once the sensor fails, the thermostat will close the fan and valve, displaying “E1” or “E2”.

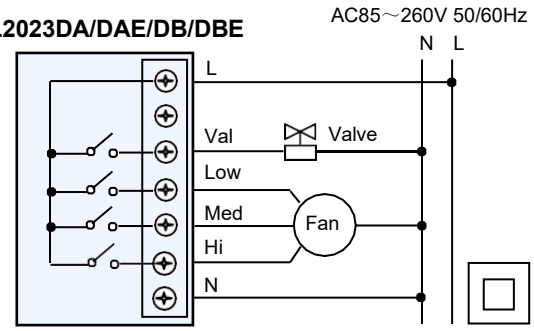
E1：Sensor in short circuit alarm E2：

Sensor in open circuit alarm。

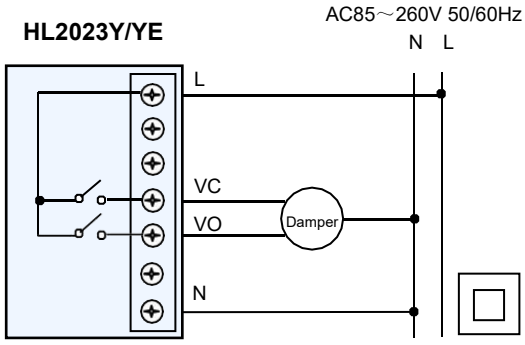
It is displaying “HI” when the temperature is higher than 55℃, displaying “LO” when the temperature is lower than 0℃.

WIRING DIAGRAMS

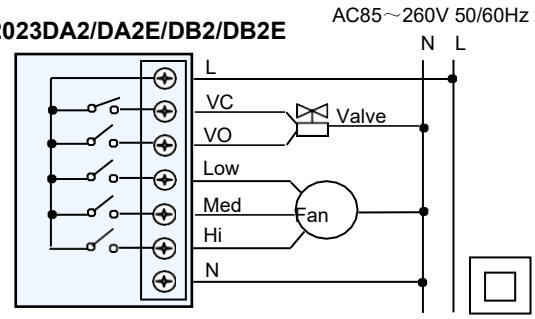
HL2023DA/DAE/DB/DBE



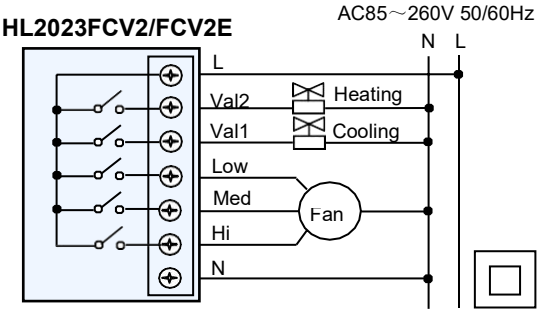
HL2023Y/YE



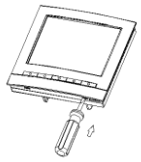
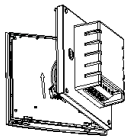
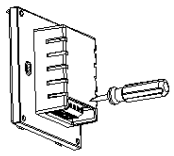
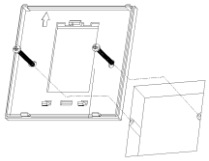
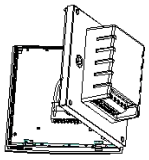
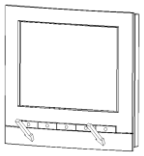
HL2023DA2/DA2E/DB2/DB2E



HL2023FCV2/FCV2E



INSTALLATION

 1.Put 3.5mm width screwdriver into the slot.	 2.Open the face cover.	 3.Remove the cables from the control board	 4 . As per wiring diagram, connect it with terminals,
 5. Fix the installation backboard with two bolts on the wall.	 6. Connect the cables on the control board	 7. Firstly hang up the two hooks with 30 degree angle	 8. Press down the both down sides to fix the cover and finish the installation

Note: Be sure to connect all the wires as per the wiring diagrams and keep it away from water, mud and other material so as to prevent the unit being spoiled!