Honeywell

LCD Digital Modulation Thermostat – Installation Instruction
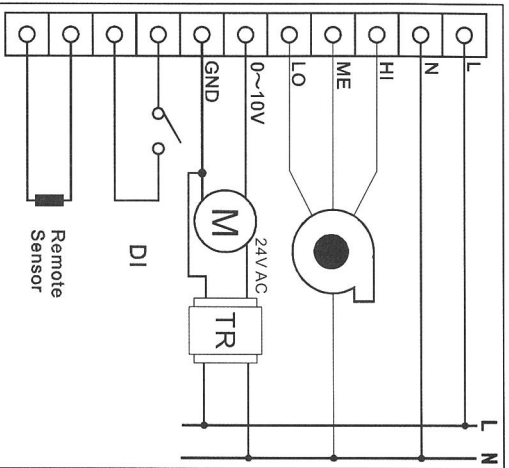
LCD Digital Modulation Thermostats

TFM223KN/U

■ KEYPAD:

'⏻': On/Off
'M': Function mode
'▼': Decrease
'▲': Increase
'⌁': Fan-speed
'⏱': Timer off

■ SPECIFICATION:

- Power : 90~240 VAC   50/60Hz
- Temperature adjustment range: 5~45℃ step 1℃
- Control accuracy: ±1℃
- Diff. Temperature: 1~5℃
- Temperature display resolution: 0.1℃
- Display range: 0～60℃
- Temperature sensor:10K NTC sensor
- RELAY : 5A(resistive) / 2A (inductance) AC250V
- Power consumption : < 2W
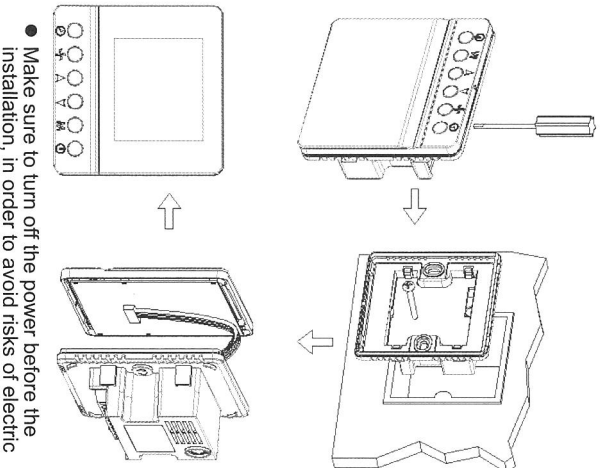- Valve: 0~10V Modulating
- Fan: HI,ME,LO with Auto

■ WIRING :

⚠ CAUTION:

Do not apply power to the system before all wiring connections having been checked. Short circuited or improperly connected wires may result in permanent damage to the equipment.
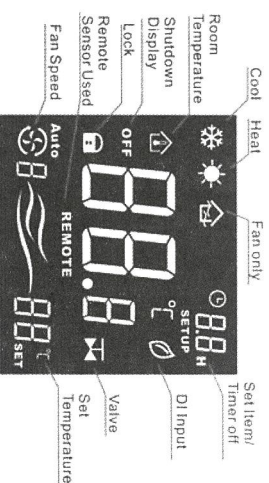
■ INSTALLATION INSTRUCTIONS

- Make sure to turn off the power before the installation, in order to avoid risks of electric

■ LCD icon description:

Room Temperature
Shutdown Display
Lock
Remote Sensor Used
Fan Speed

Cool
Heat
Fan only
Set item/ Timer off
DI Input
Valve
Set Temperature

- shock, or damages to the system components.
- Select the correct installation location, and do not install the product under the direct sunlight or in damp location.
- The rear panel should be screwed to the wall switch box.
- Refer to the wiring diagram, correctly connect the power supply, electric valve and fan motor.

■ POWER-ON:

- Press '⏻' key for power on/off.
- According to item 6 of the internal item, select whether the shutdown interface displays the current temperature and the shutdown interface and the "OFF" icon or does not display the content.

■ MODE:

- Under power-on, press 'M' key to switch on change mode:
  Cool→Heat→Fan
- Mode setting will be stored in memory.

■ TEMPERATURE ADJUSTMENT:

- When the power is on displaying the indoor temperature and temperature setting value: press '▲' or '▼' key to adjust the temperature. At the same time, the "SET" icon will flash.
- Temperature adjustment range: 5~45℃.
- The upper and lower range of temperature can be adjusted into internal-setting item 1 and item 2.
- When upper bound is less than setting value, the temperature cannot be set.
- The adjusted temperature setting will be memorized.

■ FAN-SPEED ADJUSTMENT:

- Under "Cool or Heat" mode :
  Press '⌁' key to select the fan speed.
  Low→Medium→High→Auto
  Low→Medium→High→Auto
- When work-mode as "FAN" only (No Auto) : Press '⌁' key to select the fan speed.
  Low→Medium→High

- The selected fan speed will be displayed on LCD immediately, but the selected fan speed will change to gradient mode, and it takes time to achieve the selected fan speed.
- The adjusted fan speed setting will be memorized.

■ TIMER OFF:

- In the power-on state, press '⏱' key to start the shutdown timer countdown.
- Press '▲' or '▼' key to adjust the hours. Range: 0 ~ 12 hours.When set to 0, the countdown is invalid.
- Automatically confirm after setting 3 sec.
- Timing settings are not saved in memory.

■ PANEL LOCKING:

- **To lock/ unlock the panel**
- In the unlocked state, long press '▲' and '▼' keys for 3 sec, the controller is locked, and the "🔒" icon is displayed;
- In the locked state, long press '▲' and '▼' keys for 3 sec, the controller is unlocked, and the "🔒" icon is hidden.

■ INNER PARAMETER SETTING:

- After power on, long press 'M' key to enter the setting function,and the "SETUP" icon is displayed.
- Press 'M' key to next item.
- Press '▲' or '▼' key to adjust the setting.
- Back to ON status within20 sec, new setting will be memorized.
- Press '⏻' key to quickly exit the internal setting items.
- Inner parameter items

Item	Instruction	Preset value
1	**Set upper liimits Temp.:** Range;lower limit ~ 45 step: 1	30℃
2	**Set lower limits Temp.:** Range: 5 ~ upper limit step: 1	10℃
3	**Temperature calibration setting(offset):** Range: (-5~5)℃ step 1℃	0℃
4	**Diff. temp. setting:** range: (1~5)℃ step 1℃	1℃
5	**After power on status:** 0- Off 1- On	0
6	**Shutdown display :** 0- No content displayed 1- Display current temperature and "OFF" icon	1
7	**Sensor :** 0- Inner sensor 1- Remote sensor	0
8	**PI Time Setting:** Range: 1~50 sec step: 1	1
9	**Kp Setting:** Range: 10~100 step: 10	10

10	ZBAND: 0.0-9.9 step: 0.1	0.5
11	Stop the fan: 0- Off 1- On	0
12	Energy saving Temp.(Cool) Range: 25~30 step: 1	25
13	Energy saving Temp.(Heat) Range: 10~20 step: 1	15
14	DI Function: 0- Energy saving 1- Remote on/off	0
15	Energy saving fan speed control: 0- Low 1- Medium 2- High 3- Auto	3

■ **DI FUNCTION:**
● Set the internal-setting item 14 as **0** : Energy saving function
• When the DI input terminal is shorted, the controller enters the energy saving function and the energy saving icon is displayed. When in the cooling mode, the set temperature is automatically adjusted to the cooling energy saving temperature; when in the heating mode, the set temperature is automatically adjusted to the heating energy saving temperature.All keys cannot be operated.
• When the DI input terminal is opened, the energy saving function is exited, the energy saving icon is hidden, and the set temperature is restored to the original set temperature value.
• Under the energy saving function operation, the set temperature cannot be adjusted, and the set temperature can only be the cooling energy-saving temperature or the heating energy-saving temperature. The "SET" icon flashes slowly to indicate that the current set temperature is not adjustable.
• Only in manual cooling and manual heating mode, the energy saving function will be turned on. When turned on, the fan speed becomes the fan speed of internal-setting item 15.
• After the energy saving function exits, the fan speed returns to the state before entering the energy saving mode.

● Set the internal-setting item 14 as **1** : Remote on/off function
• When the DI input terminal is shorted, the controller is turned off (Remote off)
• When the DI input terminal is opened, the controller is turned on (Remote on)

■ **SENSOR ABNORMAL:**
● When sensor short or > 60°C: LCD shows 'HI'
● When sensor opens or < 0°C: LCD shows 'LO'.
(When above temperature abnormal, the valve and fan output will not affect, just to prompt).