

## MTC-5000 Instruction

MTC-5000 accept manual switch between refrigeration, heating and alarm, temperature controlling adopts return difference, user parameters setting and administrator parameters setting, user set upper and lower temperature limits. Compressor timing running when sensor occurs error, compressor delay time adjustable, temperature calibration and alarm protection.

MTC-5000 is universal mode, high proportionment between capability and price, mainly apply for refrigeration cabinet, sea food storage .

### Specification and Parameters:

Whole product max. size: 97.5×50×88 (mm)

Installing hole size: 92×45 (mm)

Operating temperature: -5℃~+60℃

Relative humidity: 20%~85% (No condensate)

Main parameter:

Power Supply: 24VAC±10%

Watt consumption: <5W

Temperature measuring and controlling range: -40℃~+99℃

Temperature controlling range: -40℃~+70℃

Display resolution: 1℃

Measuring precision: ±1℃

Relay contact capacity:7A/250VAC/30VDC

Main Function:

Temperature measuring , display and control

Temperature setting by return difference

Compressor delay protection

Temperature upper and lower limit set

Alarming when sensor error or exceeding the temperature limits

Manual switch between refrigeration, heating and alarm

### Indicating light Descriptions:

Statement indicator light	Setting indicator light	
	Light flashes	Light off
Light shines <td>Light shines <td>Compressor delayed</td> </td>	Light shines <td>Compressor delayed</td>	Compressor delayed
Light off <td>Light off <td>Compressor start work</td> </td>	Light off <td>Compressor start work</td>	Compressor start work
Light shines <td>Light shines <td>Compressor stopped</td> </td>	Light shines <td>Compressor stopped</td>	Compressor stopped
Light off <td>Light off <td>In setting state</td> </td>	Light off <td>In setting state</td>	In setting state
		In normally work state

### Parameter Inspecting and Setting:

Check mode of setting parameters(in the state of nonsetting)

Press "▲" switch to display the setted temperature, and current temperature is restored after 2 seconds.

Press "▼" to display the return difference, and current temperature is restored after 2 seconds.

Setting mode of setting parameters (in the state of nonsetting)

Press "SET" switch for more than 5 seconds to enter the customer's setting state, meanwhile the set

light is shine, LED displays the current setting temperature.

#### Temperature setting method

Under customer setting state, press "▲" or "▼" switch to choose add or minus the temperature setting value. Press "▲" or "▼" continuously the value will increase or decrease automatically.

#### Exit customer setting mode

Under customer setting state, press "SET" 5 seconds or lack of operation within 30 seconds, then auto saving current displays temperature setting value, return to normally work state

#### Enter management menu

Under nonsetting state, press "SET" and "▲" at same time more than 5 seconds to enter management menu, indicator light is shining, LED will display "F0"

#### Setting mode calibration and enter setting state

Under setting state, press "▲" or "▼" to calibrate the setting mode from F0-F5. when the mode is F0, to press "▼" is null. when the mode is F5, to press "▲" is null. when need to change the setting parameters, press "▲" or "▼" to choose the mode, then press "SET" to adjust the parameters, LED display the setting value of this parameter.

#### Parameter calibration and return to setting state

Under parameter calibration state, press "▲" or "▼" switch to choose add or minus the parameter value. When parameter is minimum, to press "▼" is null; when parameter is maximum, to press "▲" is null. press "SET" switch to return setting calibrating state after confirmatio of the parameter, LED indicate current setting mode.

#### Saving parameter and exit setting state

Both setting state and parameter state, press "SET" 5 seconds or no operation in 30 seconds, automatically saving current setting value and exit setting state, return to measuring temperature state.

### Compressor running conditions

Under compressor running state, press power switch more than 3 seconds will quit controller and relay shut off. Under compressor shut state, press power switch to start controller.

#### Refrigeration mode:

compressor delay time exceed the setting delay time, Or sensor measure the temperature higher than setted temperature value + setted return difference value

compressor stop regrigeration when the meansuring temperature is lower than the setting temperature value

#### Heating mode:

compressor delay time exceed the setting delay time Or the measuring temperature is lower than setting temperature value

compressor stop work when sensor measure the temperature higher than setted temperature value + setted return difference value

#### Alarm out-put:

sensor measure the temperature higher than setted temperature value + setted return difference value Or sensor measure the temperature lower than setted temperature value

### Alarm information

Sensor error alarm

Under electrifying state and sensor error, display "E1" when open circuit, display "E2" when short circuit

#### Exceed limits alarm

When the measuring temperature higher than +99jæ or lower than -40℃, display "HHH"or "LLL"

When sensor error occurs, at refrigeration mode compressor start and stop keep to every 15 minutes cycle

### Elementary diagram

Function	Setting range	Default	Code
Return difference	1~15℃	1℃	F0
Compressor delay/time	0~9minutes	5minutes	F1
Set temp,lower limit	-40℃~set temp	16℃	F2
Set temp,upper limit	set temp ~70℃	35℃	F3
Mode choose	1:refrigeration 2:heating 3:alarm	2	F4
Temperature calibration	-5~+5℃	0	F5

### Inspection before use and mounting requirements:

Power supply must be the same as the power labeling on the products and ensure the power supply stably.

Prohibit to use in water and humidity ambient, prohibit to use under the ambients of high temperature, high electromagnetism interference and high corrosive.

Wires of sensor and power supply should be kept for a proper safety distance.

Sensor wire,power supply wire and interface of out-put relay must be distinguished strictly.

Sensor installation should be kept away from the vent hole in order to exactly measure the storage temperature.

### Electric connection paradigm:

