Elitech®

ETC-60HT Operation instruction

General:

ETC-60HT temperature controller has 2 channels of temperature sensors input, specify all the functions as: temperature display, temperature control and automatic defrost when compressor stops running, compressor start up delay time protection function, password lock function in the menu, error code indicating when sensor error, easy operation, more reliable performance.

Main functions:

◆ Cabinet temperature control: Control refrigerating according to the setting value + return difference value.

◆ Defrost control: Defrost when the compressor stops running, control defrost temperature by setting timing defrost + defrost termination temperature.

◆ Dual-sensor input: Cabinet temperature sensor, evaporator sensor (user can decide whether activate this sensor or not).

◆ Passwords lock menu.

Technical parameters:

◆ Temperature measuring range: -40℃～+70℃   ◆ Display resolution: 1℃

◆ Accuracy: ±1℃(between -40℃～+50℃); ±2℃(between -50℃～+70℃)

◆ Cabinet temperature controlling range: -40℃～+50℃

◆ Power supply: 220VAC±10%,50/60HZ   ◆ Power consumption:＜3W

◆ Out put capacity : refrigerating: 30A/240VAC,always on, (can directly drive single phase max load1.5HP(240VAC))
                              defrosting : naturally defrosting (no output)

◆ Size: Installing hole size: 71 X 29 (mm)   Product size: 75X34.5 X 58 (mm)

◆ Operating ambient temperature: 0℃～+60℃

◆ Storage temperature: -30℃～+75℃   ◆ Relative humidity: 20%～85% (No condensate)

Panel diagram:
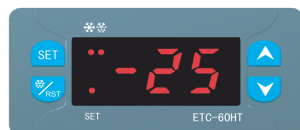
Description of indicator lights:

Indicator light	Symbol	Status	Meaning
Setting indicator light	SET	Light on	Parameter setting
		Light off	Measuring and controlling status
		Light flashes	Check parameter, input password
Refrigerating indicator light	❄	Light on	Refrigerating
		Light off	Refrigerating stops
		Light flashes	Refrigerating delayed
Defrosting indicator light	❄❄	Light on	Defrosting
		Light off	Defrost stops

Parameter instruction:

Code	Function	Set range	Default	Unit
F01	Menu password	00～99 00:cancel the keypad lock function	55	NC
F02	Temperature value setting	−40～+50	2	℃
F03	Temperature return difference setting	1～15	4	℃
F04	Delay time of compressor startup	1～15	3	Min
F05	Cabinet temperature calibration	−5～+5	0	℃
F06	Maximum time of defrosting	1～60	20	Min
F07	Defrosting cycle	1～30	12	30Min
F08	Defrost termination temperature	−20～+30	7	℃
F09	Whether activate evaporator sensor or not	00:inactivate 01:activate	1	NC

Key instruction:

Key	Function
SET	Press it to enter password input status; Parameter setting mode; Switch the mode between menu and parameter
▲	Press it to check temperature setting value; Choose the menu item, Adjust parameter and password value
▼	Press it to check the evaporator sensor value; Choose the menu item, Adjust parameter and password value
❄/RST	Exit parameter setting status ; Manually start or stop defrosting

◆ under temperature measuring and controlling status:

◇ Press "SET" key for 3s:
  When the keypad password is set as "0", the set indicator light on, screen displays "F1" menu, there are no password authentication and directly enter the menu mode to set parameter.
  When the keypad password is not set as "0", the indicator light flashes, and screen displays "00", press "▲" and "▼" key to input the password, press "SET" key to confirm the password input, then system enter menu setting item if the password input is correct, if the input password is incorrect, the "SET" indicator light is off, system back to normal measuring and controlling status.

◇ Parameter check:
  Press "▲" key, the "SET" indicator light flashes, screen displays the setting temperature value.
  Press "▼" key, the "SET" indicator light flashes, screen displays the temperature value of evaporator sensor.

◆ After entering menu setting items, press "▲" and "▼" key to choose desired menu item(from F01 to F09)

◆ After choosing the desired menu item, press "SET" key to set parameter value, press "▲" and "▼" key to adjust parameter value, and then repress "SET" key to back to menu items choosing status.

◆ Under setting status, press "❄/RST" key or no operation within 30 seconds , system will save the parameters and exit from parameter setting mode.

◆ press "❄/RST" for 3 seconds, enter manually start or stop defrosting status.

Output control:

◆ Compressor:
  Compressor will starts up when delay time run over, if measuring temperature is higher than " the fixed temperature value + temperature return difference ".
  Compressor stops running when the measuring temperature is lower than temperature setting value.

◆ Defrosting:
  The system will begin defrosting according to the setting defrosting cycle, or manually start defrosting. If evaporator sensor was activated, and the evaporator sensor temperature is higher than the defrosting termination temperature, manually start defrosting is not available.
 Defrosting will stop when the evaporator temperature reaches the defrosting termination temperature, or when the defrosting time run over, or manually stop the defrosting.
  If the evaporator sensor was not activated or when it is error, defrosting will be stopped when the defrosting time run over, or it can be manually stopped.

Alarm of sensor error:

Alarm code	Reason	Output mode
E1	Cabinet sensor error	Close the compressor , when the troubleshooting is over , system will recalculate the compressor delay time.
E2	Evaporator error	The defrosting termination temperature is invalid.

Wiring diagram:
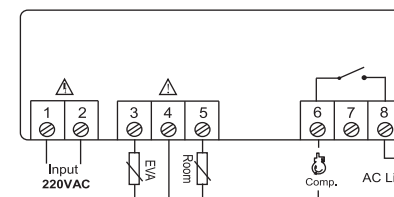
Safety rule:

★ General rule:

1. Strictly distinguish the sensor down-lead, power wire and output interface of the relay, and prohibit wrong connections or overloading the relay.

2. It must cut off the power supply before any connecting of the wire terminals.

★ Warning:
  Prohibit using the machine under the environment of over damp, high temp., strong electromagnetism interference or strong corrosion.

★ Notices:

1. The power supply should conform to the voltage value indicated in the instruction, and make sure the power supply steady.

2. To avoid the possible interference, the sensor down-lead and power wire should be kept a distance.

3. When installing the evaporator sensor, sensor should be close to the copper tube located in 5mm's distance from input of evaporator. Make sure the sensor well contact the tube.

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