Model: ED330A   Digital Temperature Controller

Dimension:77(Length)×35(Width)×60(Depth)mm
Mounting hole dimension:71(Length)×29(Width)mm

Features of Function
- It is a mini-sized and integrated intelligent controller
- Temperature Control / Refrigerating & heating modes selection / Value Storing / Self Testing

Specifications
1. Power supply:230VAC
2. Temperature sensor: NTC, 1pc, 2m(L)
3. Range of temperature display:－45～120℃ (－40~248℉)   Accuracy:±1℃ (±2℉)
   Resolution:0.1℃ (－19.9～99.9℃)
4. Range of set temperature:－45～120℃ (－45~248℉)   Factory default :0℃ (32℉)
5. Temperature of the operating environment:－10～60℃（14～140℉);
   Relative Humidity:20%~90%(Non-condensing)
6. Relay output contact capacity
   - Control output: N.O. 16A/250VAC
   - Alarm output: N.O. 5A/250VAC

Front Panel Operation
1 . Set temperature (compressor stop temperature) adjustment
 - Press $\boxed{\text{SET}}$ button, the set temperature is displayed.
 - Press $\boxed{\triangle}$ or $\boxed{\triangledown}$ button to modify and store the displayed value. The values can be increased or reduced
   rapidly by pressing$\boxed{\triangle}$ button or $\boxed{\triangledown}$button for more than 2 seconds.Press $\boxed{\text{SET}}$ button to exit the adjustment
   and display the cold-room temperature.
 - If no more button is pressed within 6 seconds, the cold-room temperature will be displayed.
   (Set temperature adjustment range: parameter E1～E2)
2. Refrigerating LED: During refrigerating, the LED is on;when the cold-room temp. is constant,the LED
    is off; during the delay, the LED flashes.
3. Heating LED: during heating, the LED is on; when the cold-room temp. is constant, the LED is off;
    during the delay, the LED flashes.
4. Parameters setup
 - Press $\boxed{\text{SET}}$ button and hold for 6 seconds to enter the parameter setup mode while E1 flashes.
 - Press again $\boxed{\text{SET}}$ button to select sequentially from the parameters : E2,E3,E4,E5,C1,C2,P1,P2,P3,P4.
 - Press $\boxed{\triangle}$ or $\boxed{\triangledown}$ button, the value of parameter will be displayed and can be modified and stored.
 - If no more button is pressed within 6 seconds, it will return to normal operation mode.

Parameter	Function	Set range	Default
E1	Lower setpoint limit	－45℃ －49℉ ～Set temp.	－35℃ －31℉
E2	Higher setpoint limit	Set temp.～120℃ 248℉	90℃ 194℉
E3	Temp. hysteresis	0.1～30.0℃ 0.2～54.0 ℉	4.0℃ 7.2 ℉
E4	Comp.start delay time	0～10Min	2Min
E5	Offset on evap.temp	－19.9～20.0℃ －35.0～36.0 ℉	0
C1	Temperature unit	0=℃ 1=℉	0
C2	Temperature control mode	0=refrigerating 1=heating	0
P1	High temp.alarm value	－45～100℃ －49～212 ℉	45℃ 113 ℉
P2	Low temp.alarm value	－45～100℃ －49～212 ℉	－40℃ －40 ℉
P3	Alarm delay time	0～90Min	60Min
P4	Alarm hysteresis	0.1～10.0℃ 0.2～18 ℉	2.0℃ 3.6℉

5. The factory default resumption: press ▽ button for 1 second and then press △ button simultaneously for 6 seconds, the indicator flashes, all parameters will be resumed to f actory defaults. After 6 seconds, it returns to normal operation mode.
6. Parameters Locking
   In normal operating, press ▽ button and hold for 6 seconds to lock the parameters if "OFF" is displayed or to unlock if "ON" is displayed.Parameters can be displayed only and can not be modified if locked,but the adjustment of the set temp. is still active (factory default is "ON")

Function details

1. Refrigeration control:
- When temperature control mode(parameterC2) is set to 0, and after delay time, the compressor starts operating when cold-room temperature＞(set temp.+hysteresis) and stops operating when cold-room temperature ＜set temperature.
- To protect the compressor, it can not be re-started unless the time when compressor stops every time is longer than the delay time(Parameter E4).
2. Heating control:
- When temperature control mode(parameter C2) is set to 1, and after delay time, the heater starts heating when cold-room temperature ＜(set temp.－hysteresis) and stops heating when cold-room temperature ＞set temperature.
3. Alarm function:
- After the 1st time power off,it alarms when sensor temperature＞P1（the highest alarm value) or ＜P2 (the lowest alarm value).During alarming,alarm LED flashes,alarm relay is put through and the duration exceeds alarm delay time P3.
- Press random key to stop LED flashing, but the LED is still on. When temperature resumes normal, the alarm relay will be cut and LED will be off.
- During high temperature alarm, when cold room temperature ＜(The highest alarm value P1－Alarm hysteresis P4), it exits alarm.
- During low temperature alarm, when cold room temperature＞(The highest alarm value P2+Alarm hysteresis P4), it exits alarm.
- After turning on power for 2 seconds, when cold temperature is in constant state,it starts alarm directly without the first time compressor stop.
- Alarm values just can be regulated in the condition of high temperature alarm parameter(P1 value)＞ low alarm parameter(P2 value).
4. Abnormal work mode
- When cold-room sensor is short-circuited or overheated (more than 120℃ / 248℉), "HH" is displayed ; when the cold-room sensor is open-circuited or temperature is too low (less than －45℃/－41℉)," LL" is displayed. Alarm LED flashes.

Notes for Installation

1. The sensor cable leads must be kept separately from main voltage wires in order to avoid high frequency noise induced. Separate the power supply of the loads from the power supply of the controller.
2. In case of long-distance sensor installation from the controller, the sensor cable may be prolonged up to 100 m max. without any re-calibration.
3.The temperature controller can not be installed in the area with water drops.

Accessories for the temperature controller

1. One pc of temperature sensor
2. One pc of installation stand
3. One pc of cover panel and one pc of φ3×10mm screw

Circuit Diagram