

## Model: ED330 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:  $-45 \sim 120^{\circ}\text{C}$  ( $-40 \sim 248^{\circ}\text{F}$ )      Accuracy:  $\pm 1^{\circ}\text{C}$  ( $\pm 2^{\circ}\text{F}$ )  
Resolution:  $0.1^{\circ}\text{C}$  ( $-19.9 \sim 99.9^{\circ}\text{C}$ )
4. Range of set temperature:  $-45 \sim 120^{\circ}\text{C}$  ( $-41 \sim 248^{\circ}\text{F}$ )      Factory default:  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ )
5. Temperature of the operating environment:  $-10 \sim 60^{\circ}\text{C}$  ( $14 \sim 140^{\circ}\text{F}$ );  
Relative Humidity: 20%~90%(Non-condensing)
6. Relay output contact capacity  
Relay output: N.O. 16A/250VAC

### Front Panel Operation

1. Set temperature (compressor stop temperature) adjustment
  - Press **SET** button, the set temperature is displayed.
  - Press **▲** or **▼** button to modify and store the displayed value. The values can be increased or reduced rapidly by pressing **▲** button or **▼** button for more than 2 seconds. Press **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 **SET** button and hold for 6 seconds to enter the parameter setup mode while E1 flashes.
  - Press again **SET** button to select sequentially from the parameters: E2, E3, E4, E5, C1, C2, E1.
  - Press **▲** or **▼** 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	$-45^{\circ}\text{C}$ ~ Set temp. $-41^{\circ}\text{F}$	$-35^{\circ}\text{C}$ $-31^{\circ}\text{F}$
E2	Higher setpoint limit	Set temp. ~ $120^{\circ}\text{C}$ $248^{\circ}\text{F}$	$90^{\circ}\text{C}$ $194^{\circ}\text{F}$
E3	Temp. hysteresis	$0.1 \sim 30.0^{\circ}\text{C}$ $0.2 \sim 54.0^{\circ}\text{F}$	$4.0^{\circ}\text{C}$ $7.0^{\circ}\text{F}$
E4	Comp.start delay time	$0 \sim 10\text{Min}$	2Min
E5	Offset on evap. temp	$-19.9 \sim 20.0^{\circ}\text{C}$ $-35 \sim 36.0^{\circ}\text{F}$	0
C1	Temperature unit	0 = $^{\circ}\text{C}$ 1 = $^{\circ}\text{F}$	0
C2	Temperature control mode	0 = refrigerating    1 = heating	0

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 factory 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 active (factory default is "ON" )

## Function details

### 1. Refrigeration control:

- When temperature control mode (parameter C2) 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 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. Abnormal work mode

- When cold-room sensor is short circuit or overheated (more than  $120^{\circ}\text{C}$  /  $248^{\circ}\text{F}$ ) " HH" is displayed ;when the cold-room sensor is open circuit or temperature is too low (less than  $-45^{\circ}\text{C}$  /  $-41^{\circ}\text{F}$ ), "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  $\phi 3 \times 10\text{mm}$  screw

## Circuit Diagram

