

## ETC-961 User manual

### 1、 Working conditions:

- 1.1、 Power supply: 230VAC±10% 50/60Hz
- 1.2、 Rated current of the relays(refrigeration, defrost and fan): 8A/220VAC
- 1.3、 Use temperature: -5℃~55℃ Relative humidity: 10%~90% RH (not condensing)
- 1.4、 Storage temperature: -30℃~85℃

### 2、 Specification:

- 2.1、 Product: Length 77× Width 34.5 × Depth 58 (mm)
- 2.2、 Mounting size: Length 71 × Width 29 (mm)
- 2.3、 Probe wire length: 2M (including the probe)




### 3、 Technical parameters:

- 3.1、 Temperature controlling range:
  - NTC probe: -50...110 °C (-58...230°F)
  - PTC probe: -55...140 °C (-67...284°F)
- 3.2、 Display resolution: 1℃/0.1℃ (With the switch mode between integer and decimal)
- 3.3、 Accuracy:
  - NTC:±0.5℃ (-30℃-50℃), others,±1℃
  - PTC:±1℃ (-30℃-50℃), others, ±2℃
- 3.4、 Probe type: NTC (-50℃~120℃) PTC (-50℃~150℃)

### 4、 Operation and display panel

FNC key: Exit                  SET key: Set

⌞ key: Up                      ⌞ key: Down

Position	Related Function	Status
	Compressor	ON when the compressor is started up; blinking in case of delay, protection or blocked enabling
	Defrost	ON when defrosting;
	Alarm	ON when the alarm is enabled; blinking when the alarm is silenced

### 6、 Parameter table

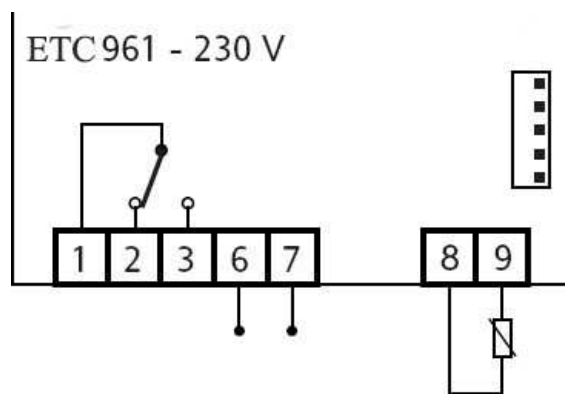
COMPRESSOR REGULATOR (folder with “CP” label)					
	Parameter code	Description	Set range	Default value	Unit
1	diF	COMPRESSOR REGULATOR (folder with “CP” )	(0.1 ... 30.0)	<b>2.0</b>	°C/F
2	HSE	Higher SEt. Maximum possible setpoint value.	(LSE ... 302)	<b>99.0</b>	°C/F

3	LSE	Lower SEt. Minimum possible setpoint value.	(-55.0 ... HSE)	<b>-50.0</b>	°C/F
4	Ont	On time (compressor). Compressor activation time in the event of faulty probe. If set to "1" with OFt at "0" the compressor is always on, while at OFt >0 it functions always in duty cycle mode.	(0 ... 250)	<b>0</b>	min
5	OFt	OFF time (compressor). Compressor in disabled state time in the event of a faulty probe. If set to "1" with Ont at "0" the compressor is always off, while at Ont >0 it functions always in duty cycle mode.	(0 ... 250)	<b>1</b>	min
6	dOn	delay (at) On compressor. Delay time in activating the compressor relay after switch-on of instrument	(0 ... 250)	<b>0</b>	S
7	dOF	delay (after power) OFF. Delay after switch off; the indicated time must elapse between switch-off of the compressor relay and the successive switch-on.	(0 ... 250)	<b>0</b>	min
8	dbi	delay between power-on. Delay between switch-ons; the indicated time must elapse between two successive switch-ons of the compressor.	(0 ... 250)	<b>0</b>	min
9	OdO	delay Output (from power) On. Delay time in activating the outputs after switch-on of the instrument or after a power failure.	(0 ... 250)	<b>0</b>	min
<b>DEFROSTING REGULATOR (folder with "dEF" label)</b>					
10	dit	defrost interval time. Interval between the start of two successive defrosting operations.	(0 ... 250)	<b>6</b>	hours
11	dCt	defrost Counting type. Selection of count mode for the defrosting interval.	(0 ... 2)	<b>1</b>	number
		0 = compressor operating hours;			
		1 = Real Time – appliance operating time;			
2 = compressor stop.					
13	dOH	defrost Offset Hour. Start-of-defrosting delay time from start up of instrument.	(0 ... 59)	<b>0</b>	min
14	dEt	defrost Endurance time. Defrosting time-out; determines duration of defrosting.	(1 ... 250)	<b>30</b>	min
16	dPO	defrost (at) Power On. Determines if at the start-up the instrument must enter defrosting (if the temperature measured by the evaporator allows this operation). y = yes; n = no.	(0=n ... 1=Y)	<b>n</b>	flag
<b>DISPLAY (folder with "diS" label)</b>					
13	LOC	(keyboard) LOCK. Keyboard locking. However, you can enter parameter programming modify them along with the status of this parameter in order to allow keyboard locking. y = yes; n = no	(0=n ... 1=Y)	<b>n</b>	flag
14	PA1	PAssword 1. When enabled (value other than 0) it	(0 ... 250)	<b>0</b>	number

		constitutes the access key for level 1 parameters.			
15	CA1	CAlibration 1. Calibration 1. Positive or negative temperature value added to the value read by probe 1.	(-120 ... 120)	<b>0</b>	°C/F
16	ddL	defrost display Lock. Viewing mode during defrosting.	(0 ... 2)	<b>1</b>	number
		0 = shows the temperature read by the controller probe;			
		1 = locks the reading on the temperature value read by controller probe when defrosting starts, and until the next time the Setpoint value is reached;			
		2 = displays the label "deF" during defrosting, and until the next time the Setpoint value is reached.			
17	dro	display read-out. Select °C or °F for displaying the temperature read by the controller probe. 0 = °C, 1 = °F.		<b>0</b>	number
<b>CONFIGURATION (folder with "CnF" label)</b>					
18	H00	Probe type selection, PTC or NTC. 0 = PTC; 1 = NTC.	(0...1)	<b>1</b>	number
19	rEL	reLease firmware. Device version: read only parameter.	/		
20	tAb	tAble of parameters. Reserved: read only parameter.	/		
<b>COPY CARD (folder with "Fpr" label)</b>					
21	UL	Up load. Programming parameter transfer from instrument to Copy Card.		/	
22	dL	Down load. Programming parameter transfer from Copy Card to instrument		/	

*Note: After setting the parameters about timing, it is suggested to power on the instrument again.*

## 7、Wiring Diagram



### WIRING

1 - 2	N.C. compressor relay output
1 - 3	N.O. compressor relay output
6 - 7	Power supply
8 - 9	Sensor input
A	TTL input for Copy Card

### ★Caution:

- 1、 Confirm whether the power voltage meets the requirements of controller power supply, or else, the instrument might work improperly even burnout.
- 2、 Probe down-leads and power wires should be kept for a proper distance to avoid possible interference.

### Appendix 1 Character Set:

