



## Elitech ECS-180 Operating Manual

*Thank you for your purchase.*

*This manual contains: set-up instructions, unit specs, safety information, controller operation and maintenance steps.*

### **K202, K204, K210**



#### **IMPORTANT:**

#### **Your Unit is Preprogrammed**

Place your unit in the desired location. Plug the unit in and allow it to cool and become stable for a minimum of 24 hours before logging temperature or stocking products.

#### **Be Careful When Setting or Changing Temperatures**

WARNING: Changing some controller parameters can result in potentially damaging your unit and/or losing your products. K2 will not be held responsible for losses due to improper controller programming.

#### **Unfamiliar with the operation of a K2 controller?**

Use the video tutorials on our website resources page or call us for assistance with special parameters.

*Some K2 units can be changed from Celsius to Fahrenheit. We do not recommend changing your unit to Fahrenheit. Your controller has operational parameters that rely on data in Celsius to maintain proper function.*

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## 1 Operation and Display Panel



## 2 Key Functions

### Keys Description

Keys	Function
Set	Enter the status of parameter setting
	Switch between menu and parameter
	Adjust menu and parameters
	Open/close light(only valid for the model with light control)
	View condenser sensor temperature
	Adjust menu and parameters
	Press more than 10s to execute parameter one-key recovery
	View evaporator sensor temperature
	Exit from parameter setting
	Exit from one key recovery status
	Press 3s to forced switch between refrigeration, defrost/defrost delay, defrost dripping

## Keys Operation

**1. In the status of temperature measuring and controlling, press Set key for three second to enter user menu, it displays the code St, then press Set key again, display the value of St. It can be modified by pressing the key:  or **

- When it displays the code St, press the key  to display the code Po
- Press Set key to display 00, at this time, press  or  to input the password of administrator menu.
- Press Set key again to confirm the password input, and the controller will automatically verify the correctness of password
- When it passes, it can select parameter items St, Po, C1, C2 ..... Cd3 (that is, any parameter items both in the administrator menu and user manuals) by pressing the key:  or  (Or else, only the parameters items St and Po available, others could not be displayed.)
- When the parameter item is selected, press Set key to enter to the setting of the current item
- Press:  or  to modify the value
- Press Set key to return to the menu
- Under the status of parameter setting, press  key, or no key operation within 30s\*, it will exit from parameter setting and automatically save the current parameter value

**Note:** The password input of administrator menu only is valid for single entering. After exit from the parameter setting by pressing , it needs to input the correct password again for next parameter adjustment

## 2. Temperature viewing

- In the status of temperature measuring and controlling, press  to view the current evaporator sensor measured temperature value

**Note:** evaporator sensor is enabled and works properly

- Press  to view the current condenser sensor measured temperature value

**Note:** condenser sensor is enabled and works properly

## 3. Manually forced operation

- In the status of temperature measuring and controlling, press  for three seconds to force the switch between refrigeration, defrost/defrost delay, defrost dripping
- Press  to open or close the light (Only valid when Light/alarm relay is used as light and there is no linkage between light control and door switch.)

## 4. Parameter recovery

- In the status of temperature measuring and controlling, press the key  for 10s, it displays the code H0 and enter to the operation of one-key recovery.
- It could continue to select the parameter recovery items by pressing  key, and the selection range is H0-H7
- Press key  to execute the parameter recovery and then exit. If there is no parameter recovery operation within 30s, it will automatically exit from the mode without recovery of parameters.

**Note:** This operation needs a stable power supply. If the power supply is abnormal, it needs to re-electrify the controller with stable power supply and execute the one-key recovery again.

### 3 Indicator Light Status Description

Indicator light	Symbol	Status	Meaning
Setting	Set	ON	Parameter setting
		OFF	Status of temperature measuring and controlling
Refrigeration		ON	Refrigeration work
		OFF	Refrigeration stop
		FLASH	Refrigeration time delay
Defrost		ON	Defrost work
		OFF	Defrost stop
Fan		ON	Fan work
		OFF	Fan stop
Defrost dripping	drip	ON	Start defrost dripping
		OFF	Stop defrost dripping
Door switch		ON	Cabinet door open
		OFF	Cabinet door close
Off power detection		ON	Controller power off

### 4 Parameters

#### \* Basic Parameters

Menu	Functions	Setting range	Default		°C/°F
			H1	H7	
User menu					
* St	Temperature set value	Lower limit~Upper limit	4°C	40°F	°C/°F
Po	Administrator menu Password	00~99 (password is 55,unmodified)	00		/
Administrator menu					
C1	Hysteresis value	0.5°C~9.0°C 1°F~20°F	4.0°C	8°F	°C/°F
C2	Compressor start Min. interval	0~60	5	5	min
C3	Compressor initial start Min. interval	0~90	5	5	min
C4	Cabinet sensor calibration	-10.0°C~10.0°C -20°F~20°F	0.0°C	0°F	°C/°F
* C5	Temperature set lower limit	-50°C~temperature set value -58°F~temperature set value	-2°C	28°F	°C/°F
* C6	Temperature set upper limit	temperature set value~85°C temperature set value~185°F	22°C	72°F	°C/°F
C7	Max.standby time after finishing compressor start Min. interval (note①)	0~90 0:Max.standby time calculation is forbidden	9	9	min
C8	Refrigeration Min. running time	0~90 0: Refrigeration Min.running time calculation is forbidden	0	0	min
d1	Evaporator sensor selection	0: Disabled 1: Enabled	1	1	/
d2	Evaporator sensor calibration	-10.0°C~10.0°C -20°F~20°F	0.0°C	0°F	°C/°F
d3	Defrost cycle calculation	0: accumulated refrigeration time 1: natural time	1	1	/
d4	Defrost cycle	0~90 0: Defrost forbidden	2	2	hour
d5	Defrost status display	0:Display cabinet temperature 1:Display dEF during defrost and defrost time delay, display cabinet temperature after finishing defrost time delay. 2:Always display dEF during defrost and defrost dripping 3:Always display start-defrost cabinet temperature during defrost and defrost dripping	2	2	/

d6	The maximum time of defrost	1~90	25	25	min
d7	Defrost termination temperature	0°C~50°C 32°F~122°F	12°C	54°F	°C/°F
d8	Dripping time after defrost	0~60 0: Defrost dripping time forbidden	2	2	min
d9	Cabinet temperature display time delay after defrost	0~90	10	10	min
d10	Time delay after defrost start	0~30 0:Defrost start time delay is canceled	10	10	min
d11	Defrost type	0:Electric heating defrost 1:Hot gas defrost	0	0	/
F1	Fan running mode	0:Fan and compressor run or stop synchronically 1:Fan runs continuously, stops during defrost 2: Fan runs continuously, stops during defrost and defrost dripping 3: Fan runs continuously, stops during defrost, fan time delay after defrost	3	3	/
F2	Fan initial start time delay after electrified	0~60	4	4	min
F3	Fan start time delay after defrost	0~60 0: Fan time delay canceled	2	2	min
A1	Compressor run and stop in a proportional time after cabinet sensor failure	0:Cancel the mode of "Run/stop in a proportional time" 1:Start the mode of "Run/stop in a proportional time"	1	1	/
A2	Compressor stop time in the mode of "Run/stop in a proportional time"	1~60	5	5	min
A3	Compressor running time in the mode of "Run/stop in a proportional time"	1~60	30	30	min
* A4	Buzzer alarm output switch	0: Buzzer output disabled 1: Buzzer output enabled	1	1	/
Me nu	Functions	Setting range	Default		°C/°F
			H1	H7	
A5	Cabinet temperature lower limit alarm value	-50°C~Cabinet temperature upper limit alarm value -58°F~Cabinet temperature upper limit alarm value	-10°C	14°F	°C/°F
A6	Cabinet temperature upper limit alarm value	Cabinet temperature lower limit alarm value~85°C Cabinet temperature lower limit alarm value~185°F	24°C	75°F	°C/°F
A7	Cabinet over temperature alarm time delay	0~60	20	20	3min
A8	The initial cabinet over temperature alarm time delay after electrified	0~60	40	40	3min
* A9	Over temperature alarm upper deviation	1°C~30°C 1°F~60°F	10°C	20°F	°C/°F
* A10	Over temperature alarm lower deviation	1°C~30°C 1°F~60°F	5°C	10°F	°C/°F
* A11	Over temperature alarm mode	0: Absolute temperature point 1:set value+ over temperature alarm deviation	0	0	/
A12	Light/Alarm relay selection	0:Light output 1:Alarm output	0	0	/
* do1	Control output of door switch	0:Doorswitch is canceled 1:Close fan during door open 2: Turn on the light when door open, turn off the light when door closed 3:Close fan and turn on the light when door open,Turn off the light when door closed 4: When door is open, it is the synchronous signal input of defrost, defrost will start.	0	0	/
* do2	Buzzer response when door open	0:NO 1:YES	0	0	/
cd1	Condenser sensor selection	0:Disabled 1:Enabled	1	1	/
cd2	Condenser high temperature alarm start value	30°C~90°C 86°F~194°F	55°C	131°F	°C/°F
cd3	Lower hysteresis of condenser high temperature alarm	1°C~15°C 2°F~30°F	5°C	10°F	°C/°F

## 5 Temperature Logging

When storing vaccines you may be required to perform a field validation test. A NIST calibrated external data logger may be used for this purpose. A logger with text, email or online access is an added layer of protection for your product load in the event of a temperature excursion. K2 offers NIST calibrated data loggers to match your unit at a very affordable rate.

### Service

K2 Scientific want to make sure you are happy with your purchase. There are several ways for you to contact us with questions or service needs. Be sure to include your four digit order number or at least your model number handy to speed up the process.

- 1; Contact us via our chat feature at [www.k2sci.com](http://www.k2sci.com)
- 2: Email [support@k2sci.com](mailto:support@k2sci.com)
- 3: Call 800-218-7613