NA827 User Guide

Main Function and Technique Index

Main Functions

☞ **Refrigeration controlling:** temperature display, temperature controlling, compressor boot delay protection, temperature sensor error alarm.

☞ **Defrosting controlling:** defrost timely, manual defrosting

Main Technique Index

Temperature range: -50～125°C(when<-9.9 or >99.9 is 1°C)

Power supply: 9～12V AC （we provide transformer，primary voltage 220V±10%）

Operating environment: temperature -10℃～45℃，humidity≤85%。

Relay contact capability: 2A/380VAC

Temperature sensor: NTC R25=5kΩ, B (25/50) =3470K

Executive standard: Q/320585 XYK 01-2004 (NA827-CTD)

Operating Guide

What's the meaning of the LED

LED	light	flash
Temp setting	In the state of temperature setting (not revised)	In the state of temperature setting (has been revised)
Temp difference setting	In the state of temperature difference setting (not revised)	Modify
Refrigeration	Compressor running	Compressor startup delay protection
Defrost	Defrost	Dripping water

The meaning of "-EE" or "EE"

The nixietube usually shows temperature, if it shows "EE", it means the temperature sensor is short, and "-EE" means the temperature sensor is open.

How to set temperature and temperature difference?

Press "▲" and"▼"at the same time, the Micro-controller displays temperature that is "set temperature", then using "▲" key or "▼" key can change the parameter. After setting, press "▲" and"▼" synchronously, you will enter the "temperature difference setting", then use the key "▲" or "▼" to change the parameter, after that, press "▲" and"▼"at the same time again, then the controller will exit the state of parameter setting.

Notice：1. In the state of temperature setting，it will exit the state of setting if no one presses the key within 5 seconds.

2. The value can be only saved after exiting the state of setting. The value which has been set can not be saved if the power is off before exiting the state of setting.

How to defrosting manually?

Press "▼" key at least 5 seconds, and then enter the defrosting state. In defrosting state, press "▼" key at least 5 seconds, this can finish the defrosting.

✓ Advanced Operation

The controller can adjust some internal parameter to meet all kinds of need. The parameter is supplied for special technologist, and common users don't need to know. Please don't change the internal parameter of the controller casually, lest lead to the abnormity of the controller. The way to set the internal parameter is as below:

Use the code to enter the state of parameter setting, the code is "up-down-up-down-up-up-down"，Press the key"▲","▼" continuously in the state of showing current temperature, and it must be finished within 3 seconds，if the code is right, you can enter the state of parameter setting, here the nixietube shows "Fxx"，there into xx is a number，it means parameter code.

Use "▲" or "▼" to select the parameter code，Pressing the both keys at the same time can make it to

show the value of the parameter after select the parameter, here you use"▲" or "▼" to set the parameter, then press the both keys at the same time to return to the state of showing parameter code after finishing setting. （**Notice：The parameter which has been changed can be only saved after returning to the state of "Fxx" by pressing the both keys at the same time**）

Internal parameter code is showing below:

Sort	Code	Parameter Name	Range	Factory Setting	Unit	Remark
Temperature	F19	Temperature adjustable	-5 -- +5	0	℃	Revise the sensor bias
Compressor	F21	Compressor delay time	0 -- 10	3	min	
Defrosting	F31	Defrost cycle	0 -- 99	12	hour	0 means no defrosting
	F33	Defrost end time	1 -- 99	30	min	
Testing	F99	Check	**This function can attract all relays in turn, and please don't use it when the controller is running!**			
	F00	Exit				

❄ Basic Operating Principle

Temperature controlling

Controlling temperature can set according to "Temperature set" and "Temperature difference" .If "set temp" is 20°C, "temp difference" is 2°C, temperature sensor apperceives the temperature higher than 22°C, compressor runs, then the temperature lower than 18°C, compressor stops. Through this, temperature can be controlled between 20±2°C.

Compressor delay time

The controller contains a "compressor halt calculagraph", and it begins to time when compressor stops, the program first check the calculagraph before booting the compressor next time, the program will immediately boot the compressor if the calculagraph reach 3 minutes ,if the calculagraph doesn't reach 3 minutes ,it will boot again when the calculagraph reaches 3 minutes. Thus you can ensure that the boot alternation is over 3 minutes after halt, so it can prevent to breaking the compressor as a result of frequent boot.

Auto defrosting principle

Micro-controller starts the defrosting function according to the defrosting cycle. After defrosted, Micro-controller can apperceive the effect of defrosting by defrosting temperature sensor. If this temperature reach the "Defrosting temperature" defrost will stop, If defrost time is longer than defrosting time, Micro-controller also will finish.

Notice：

1. **Please place the temperature sensor at the place of air return of the air-cooler, and the defrosting sensor above the air return pipe of the air-cooler**
2. **The earth terminal of the controller should be connected with the earth terminal of the electric cabinet reliably，be sure to connect the earth well.**
3. **Please use sensors and transformer which are supplied by our company.**