

NA327 User Guide

Main Function

- ☞ **Refrigerating controlling:** temperature display, temperature controlling, compressor start delay protection, temperature sensor error alarm.
- ☞ **Beater controlling:** the beater always runs when refrigerating, it can run periodically with the on-off rate when it is not in refrigeration state, and you can turn on or off the beater manually when it is not in refrigeration state.
- ☞ **External alarm:** one channel external alarm, it can be set to 5 modes: always open, always open locked, always closed, always closed locked or forbidden.

⌘ Main Technique Index

- 🔧 **Temperature display range:** -50~125°C(The step between -9.9 and 99.9°C is 0.1°C, else 1°C)
- 🔧 **Temperature setting range:** -45~120°C(The step between -9.9 and 99.9°C is 0.1°C, else 1°C)
- 🔧 **Power Supply:** AC 220V±10% or 380V±10%, 50Hz (Refer to the wiring diagram)
- 🔧 **Operating environment:** temperature -10°C~45°C, humidity≤85%.
- 🔧 **Relay contact capability:** 2A/380VAC (pure resistive load)
- 🔧 **Temperature sensor:** NTC R25=5kΩ, B (25/50) = 3470K
- 🔧 **Executive standard:** Q/320585 XYK 01-2004 (NA320-CTAX)

Operating Guide

What's the meaning of the index lights on the panel?

The function of the LED on the panel is showing below:

LED	light	flash
Temperature upper limit	Set upper limit temperature	-
Temperature lower limit	Set lower limit temperature	-
Beater	Beater running	-
Refrigeration	Refrigerating	The state of compressor start delay protection

The meaning of the nixietube display

The nixietube usually shows temperature, if it shows “EE”, it means the temperature sensor is short, and “-EE” means the temperature sensor is open. The temperature and the alarm code (Axx) will show alternately when in the alarm state.

Alarm codes are as follows:

Code	signification	Explanation
A11	External alarm	External alarm input, refer to the internal parameter code “F50”
A21	Temperature sensor error	Open or short (showing “EE” or “-EE”)

How to set “Temperature upper limit ” and “Temperature lower limit”?

Press “set” at least 2 seconds, the nixietube shows the upper limit temperature, and “upper limit” LED lights, then using “▲” or “▼” can adjust the parameter. After setting, press “set”, then enter the “lower limit”, using “▲” or “▼” can adjust the parameter. (“▲” adds 0.1°C, “▼” minuses 0.1°C, holding it over 0.5 seconds can add or minus rapidly)

Notice: 1. In the state of temperature setting, it will exit the state of setting if don't press the key within 30 seconds.

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

How to defrost manually?

In no refrigeration state, press the key “▼” and hold it for 2 seconds, the controller can turn on or off the beater. In refrigeration state, the beater always runs and can not be turned off manually.

✓ 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 abnormality 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-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 “set” key 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 “set” key 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 “set” key**)

Internal parameter code is showing below:

Sort	Code	Parameter Name	Range	Factory Setting	Unit	Remark
Temperature	F19	Temp sensor revision	-10 -- +10	0	°C	Revise the temp sensor bias
Compressor	F21	Compressor delay time	0 – 10	3	min	
Beater	F41	Beating alternation	0.5 – 360	15	min	
	F42	Beating time	0.5 – 360	5	min	
Alarm	F50	External alarm mode*	0 - 4	0	-	0: nonuse external alarm 1: always open, unlocked 2: always open, locked 3: always closed, unlocked 4: always closed, locked
	F00	Exit				

*Annotation: “External alarm mode”: “Always open” means in normal state, external alarm signal is open, if closed, the controller will give an alarm; “Always closed” is on the contrary. “Locked” means that when external alarm signal becomes normal, the controller is still in the alarm state, and it needs to press the “resume” key to resume.

✳Basic Operating Principle

🌀 Temperature controlling

Temperature controlling can be set according to “upper limit” and “lower limit”. If “upper limit temperature” is 20°C, “lower limit temperature” is 18°C, temperature sensor (refrigerator sensor) apperceives the temperature higher than 20°C, compressor runs, then the temperature lower than 18°C, compressor stops. Thus temperature can be controlled between 18°C and 20°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.

In addition, the controller doesn’t boot the compressor within 3 minutes after turning on the power supply, thus the compressor can also be protected in the state of power cut and then power on. (*Annotation: The time of boot delay protection can be adjusted, it sets to 3 minutes above.)