








# NA3539 User Guide

## Technique Index

-  **Temperature display range:** -50~150°C, step 0.1°C
-  **Temperature setting range:** -45~145°C
-  **Power supply:** 220V AC
-  **Operation 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 (NA3539-CTAX)

## Operating Guide

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

The function of the LED on the panel is as follows:

LED	Light	Flash
Current temperature	Display the current temperature	-
Temp upper limit	Set the temp upper limit	-
Temp lower limit	Set the temp lower limit	-
Alarm temperature	Set the alarm temperature	-
Compressor overload	-	Compressor overload alarm
Water level alarm	-	Water level alarm
Flux alarm	-	Flux alarm
Phase sequence alarm	-	Phase sequence alarm

State index:

LED	Red	Green	Flash
Refrigeration	-	Refrigerating	Compressor delay protect
Flux output	Flux alarm output	-	-
Over temp output	Over temp alarm output	-	-
Power supply	-	System start	-

### The meaning of the LED display

The LED usually displays temperature, if it shows “SHr”, it means the temperature sensor is short, and “OPE” means the temperature sensor is open. The LED displays the alarm code A21 when the temperature sensor is error, and the controller will turn off the compressor..

### How to start up and shut down?

The controller can startup or shut down through the “power” key on the panel.

In off state, press the “power” key and hold it for 1 second, you will hear the sound “doo”, and at the same time the light of the “power” lights, it means that the controller starts up, here the controller enters the controlling state.

In on state, press the “power” key and hold it for 1 second, then the light of the “power” extinguishes, here the controlling part stops working, but the temperature display part is still working.

### How to set the upper limit and lower limit temperature?

Press the key “set” and hold it for at least 2 seconds, the Micro-controller displays temperature that is “upper limit”, also “Upper limit” LED lights, then using the key “▲” or “▼” can adjust the parameter. After setting, press “set”, then enter the “lower limit”, using the key “▲” or “▼” can adjust the parameter, press the key “set”, press the key “set” again, then exit the state of setting parameter. (the key“▲”adds 0.1°C, the key“▼”minuses 0.1°C, press and hold 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 no one presses the key within 30 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 eliminate the alarm sound?

Press any key to eliminate.

### How to use external alarm?

The controller has 4 switch value input: compressor overload(always closed, unlocked), water level alarm(always closed, unlocked), flux switch(always closed, unlocked), phase sequence alarm(always closed, unlocked). “Always closed” means in normal state, external alarm signal is short, if open, the controller will give an alarm; “Always open” is on the contrary. “Unlocked” means that when external alarm signal becomes normal, the controller enters the normal state at once.

## ✓ 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-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”, thereinto 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” keys 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 key “set”**)

Internal parameter code is as follows:

Sort	Code	Parameter Name	Range	Factory Setting	Unit	Remark
Temperature	F13	Max setting temperature	-50 -- 150	150.0	°C	Used for controlling operating temperature range: F14<F13
	F14	Min setting temperature	-50 -- 150	-50.0	°C	
	F19	Temp sensor adjustment	-20 -- +20	0	°C	Adjust the temperature sensor bias
Compressor	F21	Compressor delay time	0 -- 10	3	min	
Testing	F98	Reserved				
	F99	Test self	<b>This function can attract all relays in turn, and please don't use it when the controller is running!</b>			
	F00	Exit				

## ❄ Basic Operation principle

### 🌀 Temperature controlling

Controlling temperature can set according to “Upper limit” and “Lower limit”. If “Upper limit” is 20°C, “Lower limit” 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 starting the compressor next time, the program will immediately start the compressor if the calculagraph reach 3 minutes ,if the calculagraph doesn't reach 3 minutes ,it will start 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.

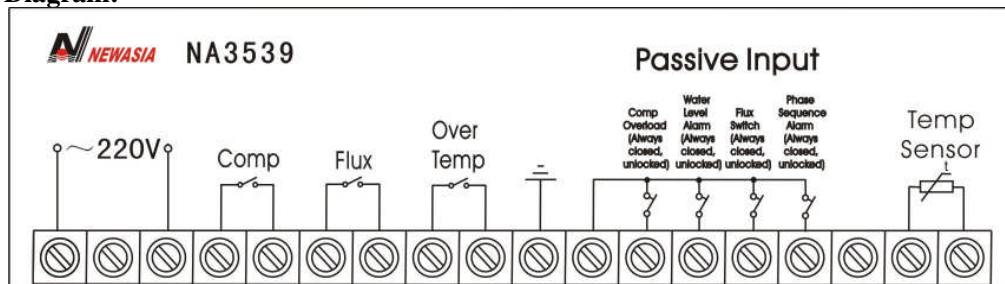
In addition, the controller doesn't boot the compressor within 3 minutes after turning on the power supply, thus the compressor can also be protected in the state of power cut and then power on.

(\*Annotation: The time of boot delay protection can be adjusted, it sets to 3 minutes above.)

### 🌀 Water level control

The LED of water level alarm lights afer water level alarm switch is open for 10 seconds, and buzzer give an alarm sound, meanwhile, the compressor doesn't stop; The LED of water level alarm extinguishes when water level alarm switch is closed, and the buzzer stops giving an alarm sound.

## Wiring Diagram:



### Notice:

1. Please short the “Cooling water pressure” and “Freezing water pressure” signal if you don't use the signal of the hydraulic pressure, or the compressor can not startup normally.
2. Please use the sensor which is supplied by our company.