NA1558 User Guide

Main Function

☞ **Cooling control:** temperature display, temperature control, compressor delay time, sensor error alarm.

☞ **Defrosting control:** defrost timely, defrost both time-fixed and temperature-fixed, manual defrosting.

☞ **Fan control:** fan delayed running and fan delayed stopping.

☞ **External alarm:** high pressure alarm, overload alarm.

¤ Main Technique Index

Temperature range: -50～125 ℃(The step is 0.1℃when>-9.9℃ or < 99.9℃)

Temperature setting range: -45～120℃

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

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

Output capability: 2A/220VAC

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

Executive criterion: Q/320585 XYK 01-2004 (NA1558-CTDFX)

Operating Instruction

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 Temp	Not modify	Modify
Temp Upper Limit	Not modify	Modify
Temp Lower Limit	Not modify	Modify
Defrost cycle	Not modify	Modify
Overload1	-	Alarm
High Pressure1	-	Alarm
Overload2	-	Alarm
High Pressure2	-	Alarm

State indication:

LED	Red	Green	Flash
Refrigeration 1	-	Compressor1 working	Compressor delays
Refrigeration 2	-	Compressor2 working	Compressor delays
Defrost	Defrosting	-	Dripping water
Power	Power	-	-

The meaning of "-EE" or "EE"

If displaying "-EE" or "EE", refrigerator's sensor errors. "-EE" means that sensor is open, "EE" means that sensor is short.

How to set "upper limit" and "bottom limit"?

In normal temperature state, press "▲" and"▼"at the same time, the Micro-controller displays temperature that is "upper limit", then using "▲" key or "▼" key can change the parameter. After setting, press "▲" and"▼" synchronously, you will enter the "bottom limit", then using "▲" key or "▼" key can change the parameter, press "▲" and"▼", that finish the setting parameter.

Notice：1、 In the state of temperature setting，it will exit the state of setting if don't press the key within 5 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?

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

How to read defrosting temperature?

When displaying current temperature, press "▼" key, Micro-controller will display defrosting temperature. Release "▼" key, then return to current temperature.

How to clear alarm voice?

Press any key to clear alarm.

✓ 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 "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 as follows:

Sort	Code	Parameter Name	Range	Factory Setting	Unit	Remark
Temperature	F19	Temperature adjustable	-5 -- +5	0	°C	Check temperature error
Compressor	F21	Delayed time	0 -- 10	3	minute	
	F22	Compressor running frequency *	0 -- 10	0	-	Refer to the annotation
	F23	Compressor2 running delay	0 -- 10	3	minute	
Defrosting	F31	Defrosting cycle	0 -- 99	12	hour	0 means no defrosting
	F32	Defrosting temperature	5 -- 50	15	°C	
	F33	Defrosting time	1 -- 99	30	minute	
	F34	Dripping water time	0 -- 99	5	minute	
Fan	F42	Fan starts delaying	0 -- 240	60	second	
	F43	Fan ends delaying	0 -- 240	0	second	
Alarm	F51	Alarm lock time	0 -- 240	60	minute	
Testing	F99	testing	**This function can attract all relays in turn, and please don't use it when the controller is running!**			
	F00	Exit				

*Annotation : "Compressor running frequency" is used when temperature sensor is error. This function lets compressor run in the state of protecting. In this state, the cycle is 30 minutes, then compressor runs for F22*3 minutes, and stops for 30-(F22*3) minutes. For example, if the parameter of F22 is set to 3, then the compressor runs for 9 minutes, and stops for 21 minutes, and all that. If you don't need this function, F22 can be set to 0.

❄ Basic Operation principle

Temperature control

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

Micro-controller has "compressor stopping counter", when compressor stops, this counter begins to count. If running compressor next time, first check this counter, if reach the 3 minutes, compressor runs , if don't reach 3 minutes, waits to the 3 minutes, then runs. Through this, compressor can be protected. Compressor delayed time can be adjusted, above all set 3 minutes.

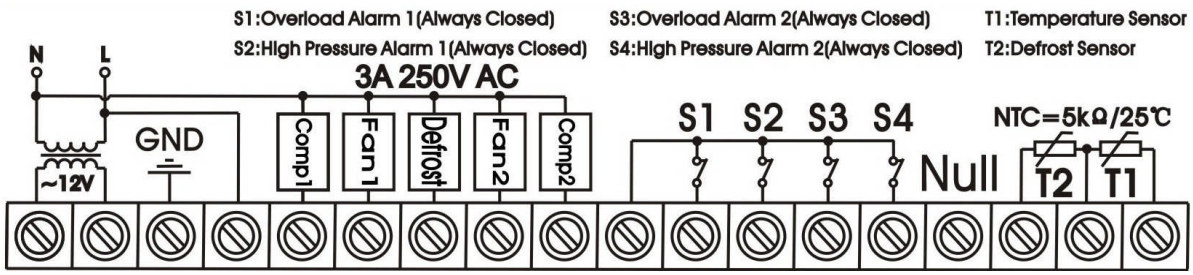
Defrosting Principle automatically

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

Dripping water

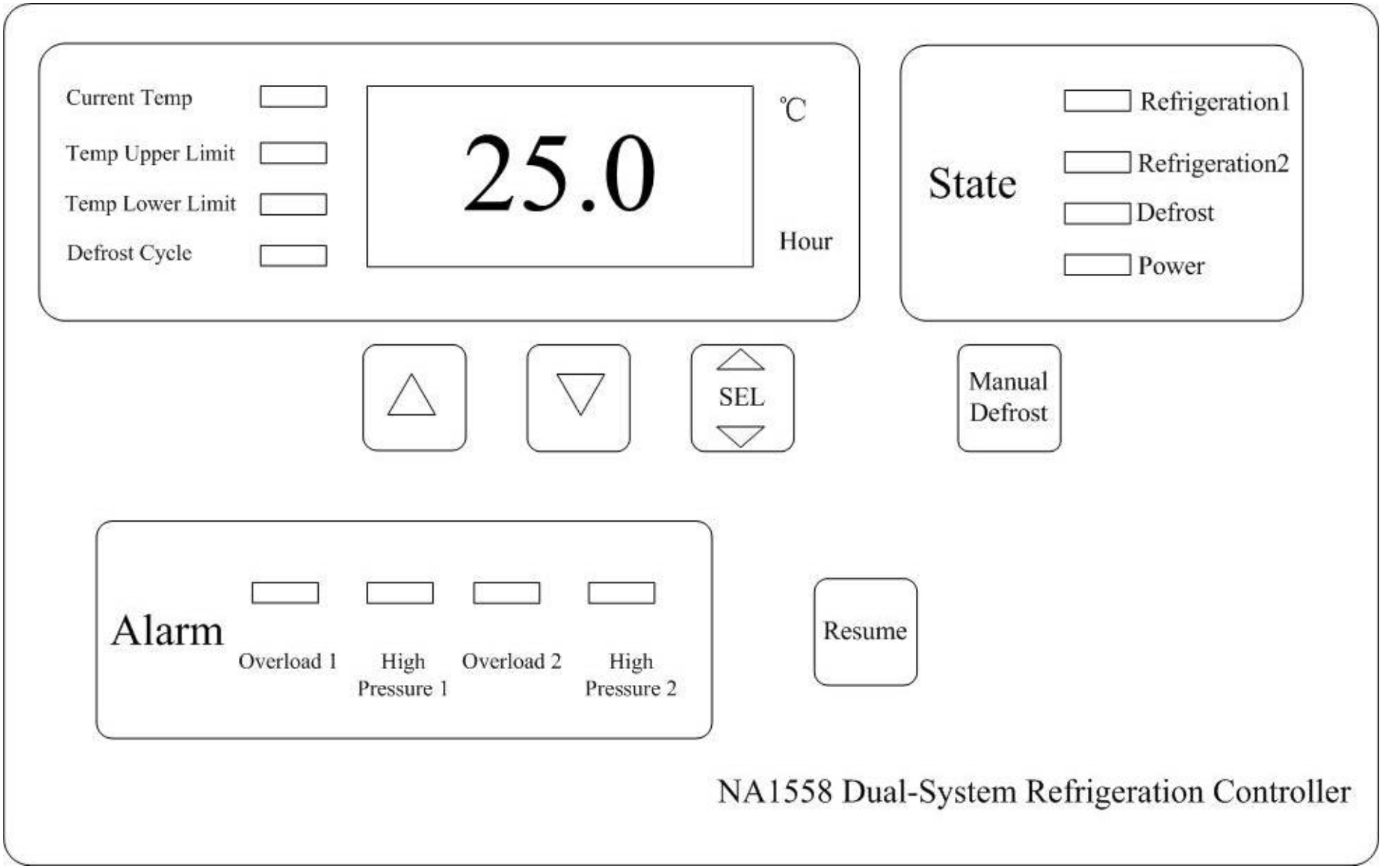
Set a time of dripping, for example, 5 minutes, thus the compressor doesn't start to refrigerate again for 5 minutes after finishing defrosting, here the indicator light of defrosting will flash. Yet controller can not enter the state of dripping in two conditions: one is that finishing the defrosting manually, the other is the error of defrosting sensor.

Wiring Diagram:



Notice：

1. **Please place the temperature sensor to air return of the air cooler, the sensor of defrosting must be fixed on the muffler 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 power supply transformer and temperature sensors with the controller which is supplied by our company.**
4. **Overload alarm and low pressure alarm must be shorted if not using, or the controller will enter the alarm state and can not run normally.**


Current Temp
Temp Upper Limit
Temp Lower Limit
Defrost Cycle
25.0
℃
Hour
State
Refrigeration1
Refrigeration2
Defrost
Power
SEL
Manual Defrost
Alarm
Overload 1
High Pressure 1
Overload 2
High Pressure 2
Resume
NA1558 Dual-System Refrigeration Controller