NA1646 Milk Jar Controller Instruction

☞ Main Function and Control Logic

The controller is a milk jar special controller, and it controls two compressors, a beater and a milk jar. You can turn on one compressor of two or two at the same time. It contains a power supply switch and a milk pump switch, and you can turn on the beater manually. Control logic is as follows:

1. **Temperature controlling:** It begins to refrigerate when the temperature in the milk jar is higher than the "temperature upper limit", and stops refrigerating when the temperature is below "temperature lower limit".
2. **Compressor:** When refrigerating, the controller first turns on the beater, and turns on the compressor after 30 seconds. Three states can be set: one compressor on, the other compressor on or two compressors on. When two compressors are running synchronously, the system will ensure that the two compressors don't start up at the same time, but the one starts up first, and the other start up after 1 minute. In addition, the compressor has the function of delay protection, the controller will ensure that the compressor starts up again after stopping for above 3 minutes (The delay time can be set).
3. **Beater:** The beater is always running when refrigerating, and the beater will not stop until reaching the "beating time". When not in the refrigerating state, the beater will run according to the "beating alternation" and the "beating time".
4. **Milk pump:** Press the "milk pump switch" to turn on or off the milk pump. The milk pump is not controlled by the "power supply switch".
5. **Power supply switch:** Press the "power supply switch" for 1 second, the controller can be turn on or off, the light of "power supply" lights when on, and the system enters the operating state. The light of "power supply" extinguishes when off, and the system stops, the compressor and the beater don't run, but the part of temperature display still runs.
6. **Manual beating function:** In the non-refrigerating state, press the key "▲" and hold it for 2 seconds, and the beater can be turned on or off. After the beater was turned on or off, the beater will still start or stop periodically according to the "beating alternation" and "beating time" which have been set. In refrigerating state, the beater is always running, and the key of manual beating switch can do nothing.

☞ Technique Index

- **Temperature display range:** -50～125℃, (step 0.1℃)
- **Temperature setting range:** -45～120℃
- **Power supply:** AC 220V±10% or 380V±10% (Refer to the wiring diagram)
- **Operation Environment:** temperature -10℃～45℃, humidity≤85%.
- **Relay contact capability:** 1A/380VAC (Pure resistive load)
- **Temperature sensor:** NTC R25=5kΩ, B (25/50) =3470K
- **Executive standard:** Q/320585 XYK 01-2004 (NA1646-CTX)

🕮 Operating Guide

☝ ***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.

☝ ***How to start up and shut off?***

Press the "power supply switch" for 1 second, the controller can be turn on or off, the light of "power supply" lights when on, and the system enters the operating state. The light of "power supply" extinguishes when off, and the system stops, the compressor and the beater don't run, but the part of temperature display still runs.

Pressing the "power supply switch" and releasing it immediately can do nothing, but until you hold it for 1 second, it is in order to prevent the wrong operation.

Notice that the "power supply switch" key can not affect the milk pump, and it is only controlled by "milk pump switch".

☝ ***How to set the upper limit temperature and the lower limit temperature?***

Press the “select” key to make the light of “temperature upper limit” light, the nixietube shows the upper limit temperature, press the key“▲” and “▼” to change the value (“▲”adds 0.1°C，“▼”minuses 0.1°C，press and hold them over 0.5 seconds can add or minus rapidly), and you can set the lower limit temperature in the same way when you press the “select” key again, and finally press the “select” key to exit the setting state.

☝ ***How to set the beater alternation time and the running time?***

Press the “select” key to select the “beating alternation” or “beating time”, and change the setting value by pressing the key “▲” or “▼”（Press the key “▲” to add，and “▼”key to minus，press and hold them over 0.5 seconds can add or minus rapidly）.

☝ ***How to select the compressor which should be turned on?***

Press the “select” key, and the light of “compressor selecting” lights, then select compressors by pressing the key “▲” or “▼”, “1” means turning on the compressor 1, “2” means turning on the compressor 2, and “12” means turning on the both compressors.

☝ ***How to turn on or off the beater manually?***

In the non-refrigerating state, press the key “▲” and hold it for 2 seconds, and the beater can be turned on or off. After the beater was turned on or off manually, the beater will still start or stop periodically according to the “beating alternation” and “beating time” which have been set. In refrigerating state, the beater is always running, and the key of manual beating switch can do nothing. In the off state (the “power supply” light doesn’t light), manual beating can also do nothing.

✓ 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 Revision	-5 -- +5	0	℃	Revise the sensor bias
Compressor	F21	Compressor delay time	0 -- 10	3	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				