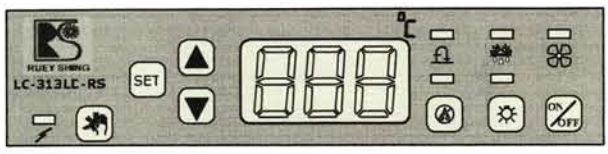
LF-313LD-RS-HP
Refrigeration system controller

Panel :



Technical data :

- **Power supply** : 110V/220V AC/50~60Hz
- **Temperature range** : -50℃~+80℃
- **Display** : Seven segment LED
- **Working temperature** : -15℃~+70℃
- **Mounting** : Snap-in(Panel)
- **Accuracy** : ±1℃
- **Fit-in size** : 137*28*32mm³(Panel) 171*141*39mm³(Rear box)
- **Resolution** : 0.1℃
- **Maximum output rating** : **Compressor** 30A/250V(Resistance load) **Heater** 30A/250V(Resistance load) **Fan、Lamp、Defog** 8A/250V(Resistance load)

System parameter table :

No.	Symbol	Description	Range	Default
1.	tS	Set compressor stop temperature	-50°C ~ +80.0°C	-20°C
2.	td	Define differential temperature	+0.1°C ~ +15.0°C	+4.0°C
3.	Sd	Compressor start time delay after stop	0 ~ 15 Min.	2Min.
4.	dt	Defrost type 『EL』 or 『HS』	EL/HS	EL
5.	di	Defrost interval time	0 ~ 24 Hour	4 Hour
6.	dd	Defrost duration time	0 ~ 60 Min.	20 Min.
7.	dS	Defrost stop temperature	0.0°C ~ +80.0°C	+25.0°C
8.	FS	Fan start temperature	-50°C ~ +30.0°C	0.0°C
9.	CL	condenser cleaning time interval	0~250 day	0 day
10.	rt	Temperature up delay time	0~15 sec.	0 sec.
11.	tA	Sensor calibration adjustment	-10°C ~ +10.0°C	0.0°C

Lock system parameter table :

No.	Symbol	Description	Range	Default
1.	Lo	Select system parameters to lock or unlock	y : lock/n : unlock	y
2.	tH	The upper temperature limit	tS ~ +80.0°C	+50.0°C
3.	tL	The lower temperature limit	-50°C ~ tS	-50°C
4.	AH	High temperature alarm	tS+td~+80.0°C	+50.0°C
5.	Ht	Temperature reach 『AH』, after 『Ht』 value, alarm start working	0~180 Min.	90 Min.
6.	AL	Low temperature alarm	-50°C~tS	-30°C
7.	Lt	Temperature reach 『AL』, after 『Lt』 value, alarm start working	0~180 Min.	60 Min.
8.	tC	Defrost interval time type	ti(hour)/CP(quarter hour)	ti
9.	FL	Fan working type	y : stop/ n : running	y
10.	OF	Fan stop time(option for FL=y)	0~60 Min.	3 Min.
11.	On	Fan run time(option for FL=y)	0~60 sec.	15 sec.

Note: (1).After choose 『y』 on the first lock system parameter『LO』; means you select to lock the system parameters, display will show system parameter 『tS』 only, and it can only be adjusted within the highest 『tH』 and lowest 『tL』 temperature limit, no other system parameters can be changed, thereafter. On the contrary if 『n』 is selected, then all system parameters can be modified.
(2). 『tC』 means defrost time count type. 『ti』 means hour's unit 『CP』 means compressor running time, use quarter hour unit.

Self test function :

Error code	Description	Error code	Description
E1H	Sensor shorted or temperature higher than +80.0°C	AH	High temperature alarm
E1L	Sensor opened or temperature lower than -50°C	AL	Low temperature alarm
E2H	Evaporator sensor shorted or temperature higher than +80.0°C	CLn	Condenser need to be clean
E2L	Evaporator sensor opened or temperature lower than -50°	EHP	High pressure Alarm

Operation :

A. System parameter setting :

1.Press 【SET】 key, the display flashes pattern 『888』 for 3 times, then shows the symbol of the first system parameter 『tS』, this means the controller entering the parameter modifying phase, can press 【▲】 or 【▼】 key to scroll up/down the parameter that is going to be adjust, .Press 【SET】 key, the display shows set value, can push 【▲】 or 【▼】 key to increase or decrease the value by one unit, press the 【SET】 key, the controller goes to modify the next parameter. Press【SET】key, the display shows『888』, then display cabinet-room temperature mean that you finish parameters setting.

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B. Lock system parameter setting :

1.Press 【SET】 key for three seconds, the display begins flashing pattern 『888』. While flashing, press both 【▲】 and 【▼】 keys together until display shows 『Lo』 (which means into parameters lock). Press 【SET】 again, the modified value would be showed. At this time, press 【▲】 or 【▼】 to lock by choosing 『y』 or to unlock by choosing 『n』.

2.After select system parameters to unlock push【SET】key, the display shows pattern 『tH』, can press 【▲】 or【▼】key to scroll-move to the next parameter.

C. Other operations :

1.After sent city power to controller, push 【ON/OFF】 key to Power-on 『Pon』 or Power-off 『Pof』.

2.After power 『**ON**』, the compressor is delaying for protecting. If you want to bypass the delay time and start immediately running the compressor, then you can push 【▼】 key until display shows 『Fon』. The controller then forces compressor to start up immediately. This special function is only effective on the power on stage.

3.**Total operation hours (tot)** : The total compressor running time can be showed on display by showing three sets digits through push Press 【▲】 button and 【▼】 button simultaneously. For example if the total running time is 12345 hours, the display will show first set "**tot**" (means total running time), then followed by the second digit set 『012』, then the last digit set 『345』.

4.If there is no key was pushed within 30 seconds, the controller jump back normal temperature display

****While " CLn " is flashing, press 【▼】 to cease alarm.****

**To reset the "CLn"error code, use 『on/off』 key to trun Off power and turn on power again. The system will re-count the cleaning time.

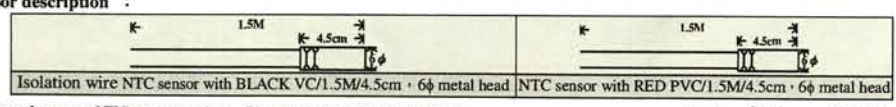
Function keys :

ON/OFF	Power on/off	The controller power supply key
△▽	Increase/ Decrease	To increase or decrease one unit value
SET	Set	Request for setting the parameter
	Manual defrost	Push this key to do manual defrost
	Door heater	To on/off the door heater for clarify the showcase door
	Light on/off	To on/off the indoor light appliance

LED Indicators :

	Yellow	Lamp on, power supply
	Green	Lamp flash, compressor start up delay Lamp on, compressor running
	Red	Lamp on, system defrosting
	Yellow	Lamp on, fan is running
	Yellow	Lamp on, door heater is on
	Yellow	Lamp on, indoor light appliance is on

Sensor description :

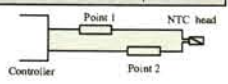


Isolation wire NTC sensor with BLACK VC/1.5M/4.5cm, 6ϕ metal head | NTC sensor with RED PVC/1.5M/4.5cm, 6ϕ metal head

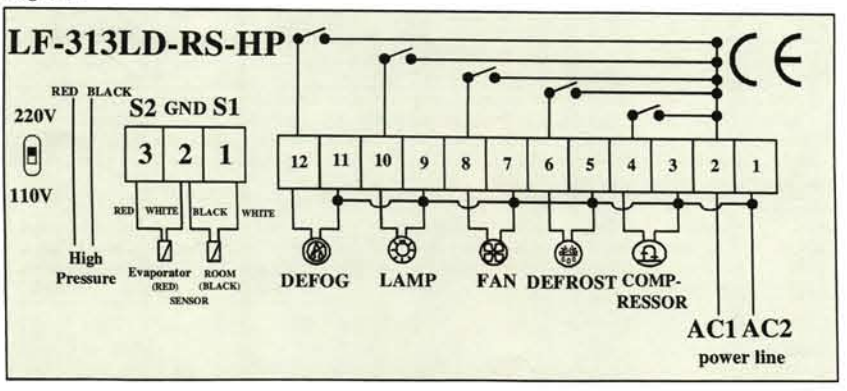
※Lengthen your NTC sensor probe, Please pay attention on below :

(1).Off the system power.

(2).To avoid short circuit, the connection points should be interleaved, as shown right.



Wiring diagram :



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