

# STC-9100 INSTRUCTIONS

## Main functions and features:

- 1.Multi-control mode among refrigeration , defrost, etc.
- 2.User menu and administrator menu can be set separately. Not only convenient for user operation, but also left enough space for the adjustment of high-level management.
- 3.Differential control mode, and the resolution of temperature display is 0.1
- 4.Multi-protection and alarm mode optional
- 5.COPYKEY function ( optional ) .

## Main technical parameters:

- 1.Temperature measuring and controlling range:-50~50℃
- 2.Power supply:220VAC 50Hz
- 3.Power consumption: < 5W
- 4.Ambient temperature: 0~60℃
- 5.Relative humidity:20%~85%(No condensate)
- 6.Accuracy: ± 1℃
- 7.Product size: 75x34.5x85(mm) Installation hole size:71x29(mm)
- 8.Relay capacity of compressor:8A/220VAC
- 9.Relay capacity of alarm and defrost:8A/220VAC
- 10.Digital display:Three-digit LED + Minus digit + Status indicator light (set; refrigeration; defrost; alarm)

## Descriptions of Indicator Light:

Indicator light	Status	Meaning
Refrigeration Indicator Light	Light off	Compressor stops
	Light flashes	Compressor delays
	Light on	Compressor works
	Light flashes quickly	Forcible refrigeration
Defrost Indicator Light	Light off	Defrost stops
	Light flashes	Defrost dripping
	Light on	Defrost works
	Light flashes quickly	Forcible defrost
Alarm Indicator Light	Light off	Alarm stops
	Light on	Alarm works
Set Indicator Light	Light off	Normal working status
	Light on	Under setting mode

## Keystroke function and set mode:

Keystroke operation	Function 1 (normal status)	Function 2 (menu status)	Function 3 (parameters setting status)	Remark
SET		Enter into parameters set	Save the parameters and return to set interface	
SET.....3S	Enter into user set	Quit from set status	Quit from set status	
SET+ ▼ .....10S	Enter into administrator menu			Press SET , hold on and then press key▼
▼	Check the defrost temperature	Check the menu items	Modify the parameters	
▼ .....3S	Check the defrost temperature	Promptly go forward the menu items	Modify the parameters promptly	
▲		Check the menu items	Modify the parameters	
▲ .....3S	Enter into forcible refrigeration	Promptly go upward the menu items	Modify the parameters promptly	
⊞ .....3S	Enter into forcible defrost			
▲+▼ .....10S	Keyboard-lock status switch			

## Parameters items:

Menu level	Menu items	Parameter ranges	Default	Remark
User menu	SEt	Temp. min. set value-max. set value	-5℃	Tem. Set parameter
	HY	1℃ ~25℃	2℃	Return difference setting
Administrator menu	US	SET~50℃	+20℃	Max.temp. set value
	LS	-50℃~ SEt	-20℃	Min. temp. set value
	AC	0~50min	3	Compressor delay protection
	IdF	0~120hours	6.	Defrost cycle
	MdF	0~255min	30	Defrost time
	dTE	-50℃~50℃	10℃	Defrost termination temp.
	Fdt	0~100min	2	Water-dripping time after defrost
	tdF	EL: Electric-heating defrost HTG: Thermal	EL	Defrost mode
	dct	rt: the interval of defrosting actually CoH:the accumulated time of compressor operation	rt	Count mode of defrost cycle
	dFd	rt:normal temp. display it: defrost start-up temp.	rt	Display mode when defrost
	Dmo	N-C: not use A-C: alarm relay, abolishable A-A: alarm relay, not abolishable	N-C	Alarm output setting mode
	ELL	-50~defrost upper limit temp.	-50℃	Defrost exceeds lower limit alarm.
	EOd	0s~255s	0s	Defrost exceeding limit start delay
	ELU	Defrost lower limit temp ~50℃	50℃	Defrost exceeding upper limit alarm
	ALU	ALL ~50℃	50℃	Alarm value when exceed upper limit
	ALL	-50℃~ ALU	-50℃	Alarm value when exceed lower limit
	ALd	0~99min	15	Temp. alarm delay
	ot	-10℃~10℃	0℃	Temp. calibration

## Function description:

### 1、Compressor

#### A、under electric-heating defrost status:

Activation condition: Relay of the compressor connects when it meets both a)、b) or both a)、c).

- a) Compressor delay time exceeds the set delay time
- b) The storage temperature is higher than the set temperature, and the forcible refrigeration starts
- c) Under non-defrost status , the storage temperature is above the sum of the set temperature and differential set value.

Stop condition: Relay of compressor disconnects when meet any of the ff. conditions.

- a) Storage temperature is lower than the set temperature.
- b) At start-up of defrost.
- c) Forcible refrigeration stops.

#### B、under thermal defrost status:

Activation condition: Relay of the compressor connects when it meets both a)、b),a)、c)or a)、d).

- a) Compressor delay time exceeds the set delay time
- b) Under non-defrost status , the storage temperature is above the sum of the set temperature and differential set value.
- c) The storage temperature is above the set temperature, and forcible refrigeration starts.
- d) when defrost

Stop condition: Relay of compressor disconnects when meet any of the ff. conditions.

- a) Storage temperature is lower than the set temperature.

- b ) When defrost stopping.  
c) Forcible refrigeration stops and not to start up defrost immediately.

## 2. Defrost

Relay of defrost connects when meets all of the ff. conditions:

- Defrost delay time meets the set time of the defrost delay
- Defrost temperature is lower than the temperature of defrost termination
- Defrost cycle is over or forcible defrost is beginning

Relay of defrost disconnects when meet any of the ff. conditions:

- Defrost operation time is over.
- Defrost temperature is higher than the temperature of defrost termination

## 3. Alarm outputs

When alarm outputs setting (Dmo) is N-C, the alarm relay disconnects and the function of relay alarm is canceled.

When alarm outputs setting (Dmo) is A-C, the connection and the disconnection of alarm relay as per the setting of the buzzer alarm.

When alarm outputs setting (Dmo) is A-A, the connection of alarm relay as per the setting of the buzzer alarm, but only after all the alarm conditions cancelled, the alarm relay disconnects automatically.

## 4. Alarm function

◇When storage temperature exceeds the temperature upper limit or lower limit and it runs out of the set delay time, buzzer alarms, LED blinkingly displays “rH” when exceeding the upper limit, and “rL” when exceeding the lower limit.

◇LED blinkingly displays “HHH” and buzzer alarms when storage temperature exceeds the measuring temperature upper limit or the sensor short-circuit. LED blinkingly displays “LLL” and buzzer alarms when storage temperature exceeds the measuring temperature lower limit or the sensor open-circuit. Compressor works as per the mode of “stop 45 minutes, then operate 15 minutes and by turns” when displays “HHH” or “LLL”.

◇When defrost temperature exceeds the measuring temperature upper limit or the sensor short-circuit, “HHH” and storage temperature display by turns. When defrost temperature exceeds the measuring temperature lower limit or the sensor open-circuit, “LLL” and storage temperature display by turns.

◇When defrost temperature exceeds the temperature upper limit or lower limit and it runs out of the set defrost alarm delay time, buzzer alarms and LED blinkingly displays “EH” when the upper limit exceeded, and “EL” when the lower limit exceeded.

◇Under alarm status, press any key to cancel the buzzer alarm, but the alarm status remains.

After canceling the buzzer alarm artificially under alarm status, if the new errors come out, it won't delay and LED blinkingly display the error code, and buzzer won't alarm. Until all the errors are solved, the alarm delay will be valid at this time.

5. Keyboard lock function: Under normal mode, press▲and▼for 10s to open or close the keyboard lock, and display the status of key switch. Loosen the keystroke to display the normal temperature. Under the keyboard locked status, all parameters can be checked but cannot be modified

## 6. Operation of COPYKEY(optional)

While the controller operating, when it needs to upload the parameters to COPYKEY and save, plug into COPYKEY and press▲to display “UPL”. At this time, press SET to upload the parameters to COPYKEY. After finishing upload, LED displays “END”, then turn off the controller and take away the COPYKEY. LED will blinkingly display “Err” if there is error during uploading. If need to download the parameters from COPYKEY to the controller, under the controller power-off mode, plug into the COPYKEY and turn on the controller, the controller will automatically detect the COPYKEY and download parameters from it, LED displaying “doL” and after downloading, it normally works. At the moment, turn off the controller and take away the COPYKEY, and then restart the controller. The machine blinkingly display “Err” if parameter error or controller model error.

7、The modification of part parameters may take into effectiveness during the next working cycle. If it is necessary to operate currently, power off and then restart.

8、When display mode is set as defrost start-up temperature, after defrost, it will display the defrost start-up temperature for 10 minutes.

## Safety Regulations:

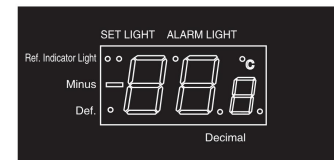
◆Dangers: Prohibit connecting the wire terminals without electricity cut-off

◆Warning: Prohibit using the machine under the environment of over damp, high temp., strong electromagnetism interference or strong corrosion

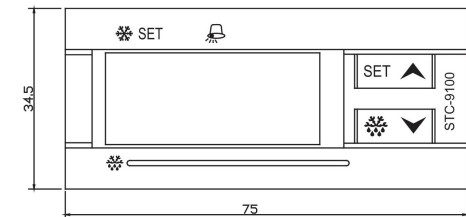
Strictly distinguish the sensor down-lead, power wire and output relay interface from one another, and prohibit wrong connections or overloading the relay.

◆Notes: The power supply should conform to the voltage value indicated in the instruction. To avoid the interference, the sensor down-lead and power wire should be kept a distance. The sensor should be installed away from the venthole to improve the measuring accuracy.

## Indicator light:



## Front panel:



## Wiring diagram:

