User Manual of STC-8080A+ Thermostat

Refrigeration and Defrosting Controller

(Version 22.11.06GEN)

STC-8080A thermostat with one sensor and two output relays to connect and control the refrigeration and the defrosting unit, by the preset aim temperature range (-40 to 50°C) and the time setting, with a fixed delay time for protecting the compressor.

1. Package

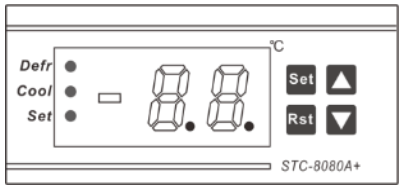
Controller: 1PCS; Fasteners: 2PCS; Sensor: 1PCS; Manual: 1PCS; Waterproof Cover: 1PCS.

2. Specification

Input Power	220V AC ± 10% 50/60HZ; (12/24/48/110V Option)
Maximum current	10A (Default) under 220V AC
Sensor	NTC, 25°C /10 KΩ, the sensor cable 200cm
Protection Class	IP65 to the front panel
Storage	-10°C ~ 60°C, RH<90%, without condensation
Measurable Range	-50°C ~ +99°C
Controllable Range	-40°C ~ +50°C
Resolution	1°C
Accuracy	± 1°C from -40°C to +50°C; ± 2°C in other range
Power Consumption	≤ 3W

3. Interface & Operation

3.1. Front Panel & Icon



Under normal status

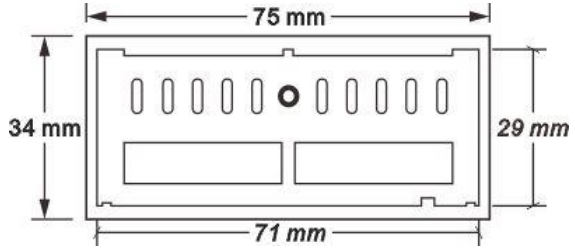
1) **Hold the** Set **key for 3s** to enter the setting mode;
2) **Hold the** ▼ **key for 3s** to start the forced-defrosting mode; do it again to stop defrosting.
3) Press the ▲ key to check the Upper limit F1 for the set-point, default as -10 °C;
4) Press the ▼ key to check the Lower limit F2 for the set-point, default -20 °C;
5) Press the Set key to check the Defrosting Cycle / Interval Time F4, default 8 Hours;
6) Press the Rst key to check the defrosting lasting time F5, default 15 Minutes;

The screen will back to normal status after 3s if without operation.

3.2. Indicator / Character

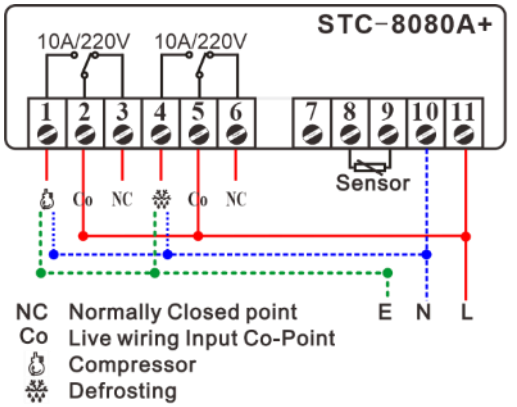
Indicator	Meaning	On	Hide	Wink
Defr ●	Defrosting status	Working	Stop	N/A
Cool ●	Compressor status	Working	Stop	Delay
Set ●	Setting Status	Setting	Normal	N/A

3.3. Dimensions & Installation



A. Suggested amount dimension: 71*29*85+ mm (W*H*D)
B. Detach the slide fasteners, put the controller into the hole, wiring follow the diagram
C. Install the fasteners, and install the waterproof cover.
D. Please **avoid** installing in the below environments:
   - Relative humidity > 90%, have condensation
   - The places that temperature <-10°C or >60°C;
   - The places that have inflammable and explosives;
   - Strong vibration or struck
   - Exposed to the continuous water mist spraying;
   - Exposed to the dust;
   - Exposure to corrosive and pollution gas (for example, the gas, smoke, or salt fog that contain sulfur or ammonia;
   - Wireless electromagnetic interference or strong magnetic fields (near to transmitting antenna or switch board room);

3.4. Wiring Diagram



A. 10K NTC sensor, Need not to distinguish + or - when wiring it.
B. The input voltage must within the marked voltage ±10%
C. Suggest: Load Power ≤ $\frac{\text{The voltage of load} * \text{Max current of Relay}}{\text{Factor}}$

4. Configurations

4.1. Code and Function Menu

Code	Function	Min	Max	Default	Unit
F1	Temperature for Refrigeration Starts	F2	50	10	°C
F2	Temperature for Refrigeration Stops	-40	F1	-20	°C
F3	Temperature Calibration	-5	5	0	°C
F4	Defrosting Cycle / Interval Time	0	99	8	Hour
F5	Defrosting Lasting Time	0	99	20	Min
F6	Over-temperature to Trigger Alarm (more than F1)	0	50	15	°C

4.2. How to Correct Measured Temperature?

F3 = Real Temperature – Measured Temperature

4.3. How to Set Parameters?

Step1 Hold the Set key for 3s, and the code F1 will appear.

Step2 Press the ▲ or ▼ keys to get the aim function you want to update;

Step3 Press the Set key to check to exist value,
Hold the Set key meanwhile press the ▲ or ▼ key to change the value;

Step4 Release all keys once it reaches your aim value;
Repeat operation from Step 2 / 3 / 4 to adjust other parameters;

Step5 **Press the** Rst key to save data and back to normal monitor status.
Attention: the modified value **will be saved automatically** and back to normal status if **without operation in 30 seconds.**

4.4. When will the Compressor Start/Stop Work?

Two conditions

1) The time should be later than
the compressor last stops moment + 3 minutes (not editable),

2) Room Temperature ≥ F1
In other words,
F1 is the **upper limit** to trigger refrigeration, and
F2 is the **lower limit** to stop cooling.

But if found sensor error, the compressor works 15mins then stops 30mins.

4.5. When will the Defrosting Start/Stop Work?

Firstly F4 ≠ 0 and F5 ≠ 0, and there are two defrosting modes:

A. **Manual Forced-Defrosting:**
Under refrigerating status, if a user holds the ▼ button for 3s, the defrosting begins at once; oppositely, this operation will stop the defrosting.

B. **Automatically defrosting:**
It will work according to the F4 and F5 values; time counts from the controller power on.

5. Error & Alarm

A. If F6 = 0, the alarm function was banned.

B. If F6 ≠ 0, the alarm will be triggered once:
Instant Room temperature ≥ F1 + F6 or Instant temperature ≤ F2 - F6
When an alarm occurs, the buzzer is screaming; meanwhile, the readout and error code is alternatively flashing; press any key to stop screaming, but the error code will not disappear until all problems were fixed.

Code	Reason	Troubleshooting
E1	Memory unit broken	Press the Set key to restore the default data or reset it to the factory setting.
E2	Sensor error	Ensure the sensor was installed firmly or replace a new sensor. The alarm will disappear in 15s once the problem is fixed.
HH	99°C < Instant temp. < 120°C	Check the room temperature, then change the compressor / defrosting device's working status manually if necessary.

6. Environmental Information

Recyclable

The package's material is 100% recyclable. Just dispose of it through specialized recyclers.
The electro components can be recycled if it is disassembled for specialized companies.
Please do not burn or throw the controllers in domestic garbage; observe the respective law in your region concerning the environmentally responsible manner of disposing of its devices.

Video on YouTube

Haswill Electronics
https://www.thermo-hygro.com