Ewelly®
伊尼威利®

Version：T205L.19.05.04

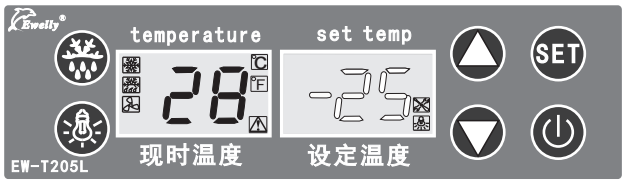
# Microcomputer Thermostat Serial -EW-T205L Operation Manual

**Welcome to choose our instruments. This microcomputer temperature controller is specialized designed for refrigerator and freezer, easy-to-use, accurate control, and strong anti-interference. Our sensor is precisely made and sealed. It is moisture proof, therefore its performances are more stable and reliable.**

## Technical Specifications：

1. Operating voltage: AC220V ±10% 50HZ/60HZ
2. Output Load : Compressor relay 30A/220V/AC, can be used directly in loads lower than 30A, others are 5A/220V/AC (4-OFF).
3. Power Consumption：≤3W
4. Working environment: －10℃～50℃ RH≤90%
5. Control Range：—45℃～45℃（-40℉~120℉）
6. Resolving：＞-20℃ is 0.1℃/1℉
   ≤-20℃ is 1℃/1℉
7. Accuracy：＞-20℃ is ±0. 5℃/℉
   ≤-20℃ is 1℃/1℉
8. Input：1-OFF temp. sensor; 1-OFF defrost sensor
9. Overall Dimension：160mm(length)×45mm(width)×81mm(high)
10. Hole Size: 138mm(length)×32mm(width)

## Appearance Panel




## Operation Instructions

1. Temp. control setting: Press SET to display the set temp., press ▼ or ▲ to change set temperature. Set temp. ≤-20℃ is 1℃, Set temp. ＞-20℃ is 0. 5℃.
2. Parameters setting: Hold SET key for 6s to enter the manual, it display PA , then press ▼ or ▲ to enter menu password, after entering password, press SET to enter menu setting, it displays LS , then press SET continuously to display following parameter codes in sequence: LS —HS— d —Pt—CA—Cb—F0—F1—F2—

F3—F4 —F5—F6—F7—F8— CF —CPA—CPA — bF

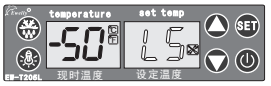
If the password is incorrect, it display CPA and the password is hidden, parameters are read only and cannot be changed.

3. To display temp. of defrost sensor: Press ▲ under unsetting mode. It displays temp. of defrost sensor and does not display current temp.
4. Press and hold ▲ for 5s, it displays the defrost mode or defrost termination remaining time.
5. Press and hold ❄ to force to defrost.
6. Press ▼ for 6s, the display will flash, and all parameters are restored to factory default values. Restart the instrument after parameters are reset.
7. Press ☼ , the lighting relay closes and indicator turns on, then press ☼ again, the lighting relay is off and the indicator turns off.
8. Press ⏻ for 3s to power off the thermostat, then press ⏻ again for 3s to turn on the thermostat.

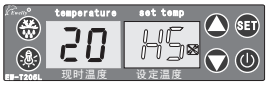
## Display Instruction：




Password setting, press SET for 6s, it displays **PA** and figures 00 , then press or to set password, then press SET again, it displays **LS**.



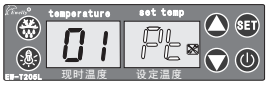

When it displays **LS** , press or to modify temp. from -50℃/-40℉~set temp. -1 ℃/℉.



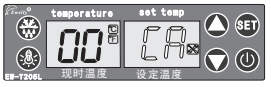

Press SET again, it displays **HS**, then use ▲ or ▼ to modify high temp. limit, from set temp.~ 50℃/ 140 ℉.




Press SET again, it displays **d**, then use ▲ or ▼ to modify return temp. difference, setting range is 1~ 10℃/ 36℉.



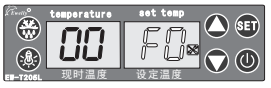

Press SET again, it displays **Pt**, then use ▲ or ▼ to modify compressor start time delay, setting range is 0~10min.



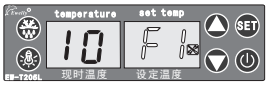

Press SET again, it displays **CA**, then use ▲ or ▼ to modify room temp. calibration, setting range is -15 ~15℃/ -60~60℉.




Press SET again, it displays **Cb**, then use ▲ or ▼ to modify defrost sensor temp. calibration, setting range is -15~15℃/ -60~60℉.



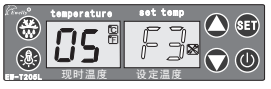

Press SET again, it displays **F0**, then use ▲ or ▼ to modify defrost type, 00 is electrical defrost and 01 is hot gas defrost.



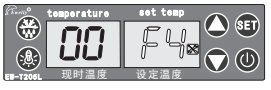

Press SET again, it displays **F1**, then use ▲ or ▼ to modify defrost time, the setting range is 1~60min.




Press SET again, it displays **F2**, then use ▲ or ▼ to modify defrost cycle, the setting range is 0~99hrs.



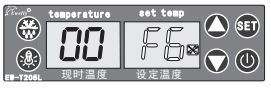

Press SET again, it displays **F3**, then use ▲ or ▼ to modify defrost termination temp., the setting range is 0~35℃/ 30~110℉.



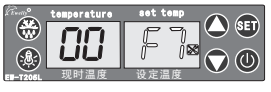

Press SET again, it displays **F4**, then use ▲ or ▼ to select fan running mode, 0 is fan runs or stops synchronically and 1 is normally open.



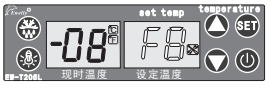

Press SET again, it displays **F5**, then use ▲ or ▼ to modify dripping time after defrost, the setting range is 0~20mins.



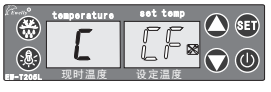

Press SET again, it displays **F6**, then use ▲ or ▼ to select fan re-start mode after defrost, "F7" represents time, and "F8" represents temperature.



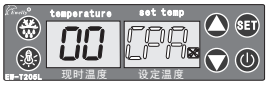

Press SET again, it displays **F7**, then use ▲ or ▼ to modify fan start delay time after defrost, the setting range is 0~20mins.



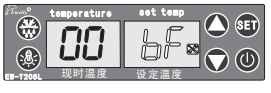

Press SET again, it displays **F8**, then use ▲ or ▼ to modify fan start temp. after defrost, the setting range is -20~20℃/ -4~68℉.




Press SET again, it displays **CF**, then use ▲ or ▼ to select the unit of temperature, ℃/℉.




Press SET again, it displays **CPR**, then use ▲ or ▼ to change password (default 00~99).



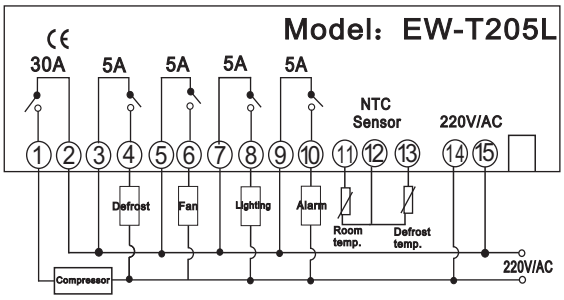

Press SET again, it displays **bF**, then use ▲ or ▼ to set buzzer, 00 is alarm without sound, 01 is alarm with sound.

## Program Parameter Table

| Code | Function | Setting range | Factory Settings | Unit |
|---|---|---|---|---|
| PA | Password input | 00～99 | 00 | — |
| LS | Temp. set lower limit | -45℃ /-40℉ to control temperature-1℃ | -30℃/5° F | ℃/℉ |
| HS | Temp. set upper limit | control temperature+1℃ to 45℃ 120℉ | 20℃/60° F | ℃/℉ |
| d | Temperature return difference | 1-10℃ 1-36° F | 2℃/5℉ | ℃/℉ |
| Pt | Time delay | 0～10 | 1 | min |
| CA | Room Tmep. calibration | -15～15/-60~60 | 00 | ℃/℉ |
| Cb | Defrost calibration | -15～15℃/-60~60 | 00 | ℃/℉ |
| F0 | Defrosting type | 00= electic heating defrosting 01= hot-gas defrosting | 0 | — |
| F1 | Defrosting time | 01～60 | 10 | min |
| F2 | Defrosting cycle | 00～99 | 6 | Hr |
| F3 | Defrost termination temperature | 00～35 35～110 | 05/40 | ℃/℉ |
| F4 | Fan start mode | 00=synchronous operation 01=operation all the time | 00 | — |
| F5 | Dripping time after defrost | 00～10 | 02 | min |
| F6 | Fan running mode after defrost | 00= run as per F7 setting 01= run as per F8 setting | 00 | — |
| F7 | Fan start delay time after defrost | 00～20 | 02 | min |
| F8 | Fan start temp. after defrost (defrost temp. ≤ set temp.) | -20～20℃ -04～68℉ | -08℃/18℉ | ℃/℉ |
| CF | Temperature unit transfer | C-℃； F-℉ | C | ℃/℉ |
| CPA | Password setting | 00～99 | 00 | — |
| bF | Buzzer setting | 00～01 | 00 | — |

Notes: If a password is set, the locking indicator turns on, and only the right (PA) can change other parameters, otherwise the set parameters can only be read and cannot be modified, in addition, the password menu is hidden, but the control temp. still can be modified.
- When F7 is set to "00", F7 is enable, and F8 is disable;
  When F7 is set to "01", F8 is enable, and F7 is disable.
- When transfer the temp. unit, temp. units (℃/℉) are restored to the factory set parameters.
- When defrost cycle is set to "0", defrost function turns off.

## Wiring Diagram




## Feature Descriptions

Cooling:
When the current temperature ≥ set temperature + temp. return difference and reach set "time delay", the load relay is closed.

Stop cooling:
When the current temperature ≤ setting temperature, the load relay is off.

Enter defrost mode:
1. When the instrument finishes running a set "running cycle" after defrost or just after boot, it enters defrost mode (the load relay is off, defrost relay on, defrost indicator is on), and the set temp. displays the defrost temp. (Need to press ▽ after existing defrost mode to check).

Note: Under defrost mode, room temp. sensor is displayed on left hand side, defrost sensor temp. is displayed on right hand side.

Exit defrost mode:
1. Under the defrost mode, when the system runs over the set defrost time, defrost relay off, defrost indicator off, system exits defrost mode and returns to the normal control.
2. The defrost sensor reaches defrost status, the system returns to the normal control.

Note: When pressing, if defrost sensor temp. ≥ defrost termination temp., the system will not enter defrost status, and will remain current operation mode.

Failure mode management:
1. Note: the super temperature processing mode is as follows
1. No warning while defrosting;
2. When temperature exceeds set value +10 ℃/30℉, there will be a HH alarm output, it enters the fault runningg mode, the compressor runs for 45 minutes and stops for 15 minutes;
3. When the temperature is lower than set value -5℃/15℉, there will be a LL output alarm, all operations will be stopped;
4. When sensor is open or short circuit, there will be an E1 alarm output, and it enters the fault running mode.

## Troubleshooting

| Failure | Causes | Solutions |
|---|---|---|
| No display when power is on | Whether the power source is off; Whether the temperature controller is defective. | Check the power supply line, and replace the fuse; Check whether the power end is imputed, or inform the distributor to replace the temperature controller. |
| With display but no operation | Set temperature higher than the current temperature; pressure overrun and overloaded, thermal protection opens; internal thermal protection of compressor opens. | Reset the required temperature control value; Check overrun and overload, check overheat causes, and eliminate the troubles before reset to work. |
| Displayed temperature unstable or malfunction | Sensor circuit interfered; connection poor; binding with other power cords; circuit damage. | Separate sensor with power cord or replace shielded wire, check whether connecting terminal is tightened. |
| Real temp. is much different to thermostat display. | Installation position of sensors incorrect; connecting wire too long; line resistance too large; contact of connecting wire is poor; sensor damaged. | Must install sensors correctly; increase cross section of extension wire; ensure sealing property of connecting wires, water and moisture proofing; replace sensor. |
| Not shut down after temperature reached | Sensor installed incorrectly, unable to measure value correctly; Contactor of compressor defective. | Check whether sensor measures temperature correctly; replace contactor of compressor. |
| "E1"、"E2" is displayed | The sensor circuit is opened or shorted. | Check connection between the sensor wiring and coupling end. |
| LL shown | Ultralow temperature alarm or sensor line off. | Check set data or check whether sensor line connected well with joint. |
| HH shown | Ultralow temperature alarm or sensor line shorted. | |

Note: When LL or HH is shown, the machine will run automatically in the running mode before failure occurred to guarantee the temperature being not affected too much.

## Warnings

1. Please read this product instruction carefully and connect input/output plugs of power & sensor to the corresponding sockets strictly by following connection diagram strictly. Check again to make sure there is no mistake, tighten all the screw of connection plugs again, and then connect the power afterwards. Otherwise wrong connection will affect the usage and control, and even result in parts burning.
2. Keep this product from away moisture, corrosive air and high magnetic field. Otherwise the normal operation of this product will be affected.
3. All our products have passed strict quality inspections before leaving factory. We provide one-year quality guarantee (which is limited to product itself ,and is not responsible for any other joint and several liability) period for this product.

If you have any doubt or problem regarding to our products, please contact our distributors and we will provide you high-quality after-sale services.
Thanks you.

Guangzhou Ewelly Automatic Control Co., Ltd.
http://www.eliweli.com