













### Notice:

1. Ensure the power is turned off before installation to avoid electric shock.
2. Avoid installing the controller in humid areas to prevent malfunction.
3. Waterproofing must be properly applied during installation to avoid water leakage that could cause damage.
4. Before supplying power, verify that wiring and power input are correct.
5. To ensure safety, follow the wiring diagram and observe current limits during installation to prevent errors or overload risks.
6. It is strictly prohibited to bundle the temperature sensor cable, panel connection wires, power lines, or load lines (e.g., fan) together during installation.

### Key Functions and LED Indicators

	<b>Power Key</b>	Controls power to the controller		Green	Light on-Power indicator
	<b>Up/Down Key</b>	Increase/decrease value and check the setting difference value		Green	Light flashing- Compressor preparing to run Light on- Compressor running
	<b>SET Key</b>	Function setting key		Green	Light on- Defrosting in progress
	<b>Pause Kay</b>	System suspending		Green	Light on- Fan operating
	<b>1.Setting completed 2. Force Defrost</b>	1.When the data is setting done: Finished 2.Controller running: Defrost		Green	System suspending

### Specifications

- <b>Input Voltage:</b> 100-240V AC, 50-60Hz	- <b>Temperature Detection Range:</b> -50°C to +80°C
- <b>Display Type:</b> 7-segment display	- <b>Operating Environment Temperature:</b> -15°C to +70°C
- <b>Installation Method:</b> Snap-in (Panel)	- <b>Resolution:</b> 0.1°C
- <b>Installation Dimensions:</b> 171 *141 *39mm <sup>3</sup>	- <b>Accuracy:</b> ±1°C
- <b>Maximum Output:</b> 10A / 250V (resistive load only; higher currents require an electromagnetic contactor).	

### General Parameter Table

No	Code	Parameter	Description	Range	Default
1	tS	Temperature Setting	Shutdown temperature setting	-50.0°C to +80.0°C	2.0°C
2	Td	Temperature Differential	Temperature difference required to restart	+0.1°C to +15.0°C	4.0°C
3	Sd	Initial Delay Time	Initial power-on delay for compressor	0 to 15 mins	2 mins
4	AC	Segment Delay Time	Delay time to restart compressor after stop	0 to 15 mins	0 mins
5	di	Defrost Cycle	Hours of operation before defrosting	0 to 24 hrs.	4 hrs.
6	dd	Defrost Duration	Duration of defrosting	0 to 60 mins	20 mins
7	tA	Temperature Calibration	Calibration for internal sensor temperature	-10.0°C to +10.0°C	0°C
8	S3	Radiator Temperature Alarm	Alarm when temperature exceeds 45°C	y/n	n
9	Ut	Temperature Unit	C: Celsius / F:Fahrenheit	C/F	C
10	Adr	485 Address	Address for 485 communication	1 to 240	1
11	bAU	485 Communication Rate	Baud rate for communication	384/192/96	192
12	Pty	Parity Detection	Parity detection settings	non/odd/eve	non

### Protective system parameters

No	Code	Parameter	Description	Range
1	<b>Lo</b>	General Parameter Lock Selection	y: Locked / n: Unlocked	y
2	<b>tH</b>	Maximum Temperature Limit	tS ~ +80.0°C	+50.0°C
3	<b>tL</b>	Minimum Temperature Limit	-50.0°C ~ tS	-50.0°C
4	<b>AH</b>	High-Temperature Alarm Threshold	tS ~ +80.0°C	+50.0°C
5	<b>HT</b>	High-Temperature Alarm Delay Time	0 ~ 180 mins	90 mins
6	<b>AL</b>	Low-Temperature Alarm Threshold	-50.0°C ~ tS	-50.0°C
7	<b>LT</b>	Low-Temperature Alarm Delay Time	0 ~ 180 mins	90 mins
8	<b>do</b>	Defrost Display Status	1=Pre-defrost temp; 2=Display DEF; 3=Actual temperature	1
9	<b>Po</b>	Power Key Shutoff Capability	Y (Yes) / N (No)	Y
10	<b>rd</b>	Electromagnetic Valve Timing	0 ~ 180 seconds	0 seconds
11	<b>PD</b>	Pause Recovery Time	0 ~ 60 mins	30 mins

#### [Notice]

- ★1. When “Lo” is set to “y” (locked), only the “tS” parameter can be adjusted within the ranges of “tH” and “tL”. Other general parameters will not be accessible
- 2. Example of the defrost process with default values:  
When the Force Defrost Key is pressed or the di (defrost cycle) time is reached, defrosting begins, and the display shows the pre-defrost temperature.

### Error Codes

Display Symbol	Description	Display Symbol	Description
<b>E1H</b>	The sensor in the freezer is short-circuited or the temperature exceeds +80.0°C.	<b>E1L</b>	The sensor in the freezer is disconnected or the temperature is below -50°C.
<b>E3H</b>	The sensor in the cold radiator is short-circuited or the temperature exceeds +80.0°C.	<b>E3L</b>	The sensor in the cold radiator is disconnected or the temperature is below -50°C.
<b>AH</b>	High-temperature alarm (temperature > AH and persists for HT time)	<b>AL</b>	Low-temperature alarm (temperature < AL and persists for LT time)
<b>HS</b>	The cold radiator temperature > 45°C	<b>PAS</b>	System paused. Press the pause key again to resume normal operation.



### General Parameter Setting Instructions

- Press the **[SET]** key. The display will flash "888" three times, then enter the first parameter “tS”.
- Press **[SET]** again to show the current value "2.0". Use the **[▲]** or **[▼]** keys to adjust the value.
- To modify the second parameter group, press the **[SET]** key again, and the display will show the parameter code "td." Press **[SET]** once more to display the parameter value for the second group, and use the **[▲][▼]** keys to adjust it. Repeat this process for subsequent groups.
- When "god" is displayed, the current temperature will be shown, and the system will start operating.

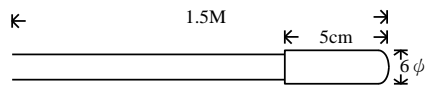
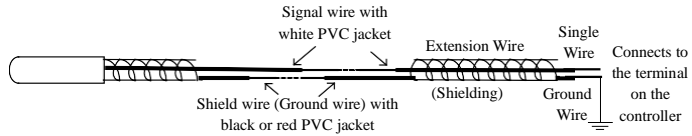
### Lock Code Parameter Setting Instructions

- Press and hold the **[▲]** and **[▼]** keys simultaneously for about 3 seconds. The display will show the lock code parameter “Lo”; press the **[SET]** key, then use the **[▲]** or **[▼]** keys to select y (locked) or n (unlocked).
- After selecting the lock code, press the **[SET]** key again, and the display will show the parameter code "tH"; press the **[SET]** key once more, and the display will show the parameter value "50.0." Use the **[▲]** or **[▼]** keys to adjust to the desired value and press the **[SET]** key again to proceed to the next parameter setting. Repeat this process for subsequent parameters.
- When "god" is displayed, the current temperature will be shown, and the system will start operating.

### Other Operations

- During the parameter display, if no keys are pressed within 30 seconds during parameter display, or if the Force Defrost Key is pressed, the system will return to the temperature display.
- After power is supplied, press the power key  to toggle between shutdown “PoF” and startup “Pon”.
- During compressor delay protection (green indicator flashing), press the **[▼]** key to display "Fon" and immediately start the compressor.
- Press the **[▲]** key to view the radiator temperature(S3=y.)
- If any alarm occurs, press the **[▼]** key to temporarily mute the alarm sound. If the issue persists for more than 60 minutes, the alarm sound will resume.
- Total Operation Time (tot): Press and hold **[▲]** and **[SET]** keys simultaneously to display the total operation time (e.g., tot, "---", "001", "---", "234" indicates 1234 total hours).
- During compressor operation, pressing the Pause Key  will force the compressor, solenoid valve, and fan to shut off. After defrosting or forced defrost, the defrost cycle will reset.
- **To restore factory settings: Press and hold the [SET] key for 8 seconds until "rs" is displayed. The system will reboot and resume operation.**

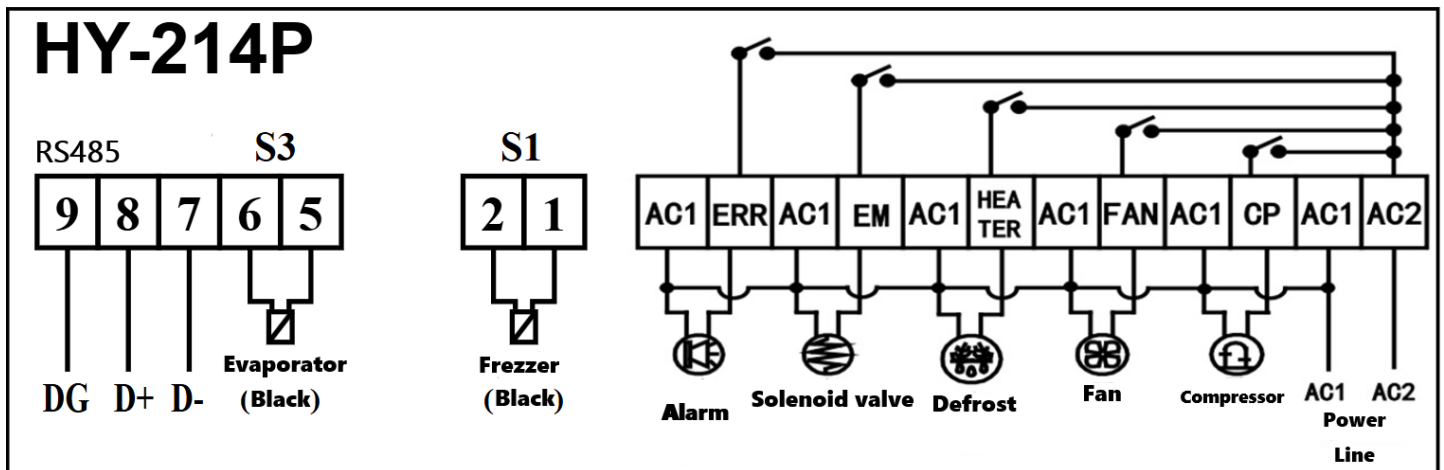
### Sensor Description

	
<p>Isolation wire NTC sensor with BLACK PVC/1.5M/5cm 6φ copper head</p>	<p>When extending the temperature sensor cable, use insulated wires, not non-insulated ones (e.g., 16-core tubing). Ensure the signal and ground wires are not reversed (as shown) to prevent interference.</p>

### Wiring Diagram

★Suggest to separate the wiring of signal and power★

★注意：電路配線建議採訊號及動力線分開走線方式★



### Final Notes:

- When configuring the controller, always adhere to the manufacturer's guidelines for wiring and installation to avoid any electrical hazards or damage to the unit.
- Regularly check for system errors and alarms to ensure the proper functioning of the system.
- If any problems arise that are not resolved through simple troubleshooting, please contact the manufacturer's support team for further assistance.