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Innovation Preceding All

Smart Retail Controller User Manual



EMS-60

Product overview

EMS-60 is 4G network integrated beverage cabinet intelligent thermostat series products, the series of products are divided into three models according to different configurations, respectively:

- (1) Without display reserved display panel table communication interface (A type).
- (2) Model with display and built-in infrared sensor (B).
- (3) Model with display and external infrared sensor (Model C).

Basic function products include 4G network remote control, base station positioning, energy saving mode, remote timing switch, and backup lithium battery box, to ensure the normal upload of data after power failure, with LED lighting current detection and other functions. Extended function WiFi scan positioning and infrared pyroelectric sensor human flow statistics function

1.1 Technical parameters

- 1) Power supply: 220VAC±10%, 50/60Hz;
- 2) Measuring range: -40°C ~ 90°C (only when the sensor calibration is set to 0);
- 3) Temperature measurement accuracy: ±1 °C ±0.5 words when -15°C ~ 70 °C, other ±2 °C ±0.5 words;
- 4) Display resolution: 0.1 °C;
- 5) Use environment: -10°C ~ 60°C, humidity 20% ~ 90% (no condensation)
- 6) Storage environment: -30°C ~ 70°C, humidity 20% ~ 90% (no condensation)
- 7) Input port: cabinet temperature sensor, evaporator sensor, condenser sensor, door switch, infrared sensor (external model), external lithium battery, LED light detection
- 8) LED lamp current detection range: 0.5A-3.5A
- 9) Relay output: 30A/240VAC for controlling refrigeration; 10A/250VAC for lighting control; 10A/250VAC for evaporator fan control; 10A/250VAC, for defrosting control.
- 10) Spare lithium battery parameters: Voltage: 3.7V Capacity: 2500mAh; (Data is required to be uploaded to the platform once a day, and the battery life is not less than 6 months.)
- 11) Power consumption: < 10W (including communication module);
- 12) Frequency band: 4G LTE FDD: B1/B3/B5/B8 TDD: B34/B38/B39/B40/B41 does not support 2G GSM band;

1.2 Operation and display panel



From left to right: Reserved display panel table communication interface without display (Model A), model with display and built-in infrared sensor (model B), model with display and external infrared sensor (model C)

1.2.1 Display Description:

The data display area of the hand operator board displays temperature, system parameters, alarm code and other data; The flashing period of each field is 1Hz; After the power is powered on, it is obvious that the software version number is displayed for 15 before normal work.

Indicator name	Indicator light	Indicator	Meaning
Refrigeration		bright	Refrigeration work
		destroy	Cooling stops
		Flicker	Cooling delay
Heating		-	Reserved
Fan		bright	Fan work
		destroy	Fan stopped
defrost		bright	Defrosting work
		Flicker	Dripping
		destroy	Defrost stop
Internet		bright	Networking normal
		Blinking	Being networked
		destroy	Unable to connect to the
Locked		-	Reserved

Timing light		bright	The controller is in the timer on/off state
		destroy	The controller is on and off normally
Lighting		bright	Turn on lighting output
		destroy	Off lighting output
Energy saving mode	ECO	bright	Energy saving mode
		Flicker	Sleep mode
		destroy	Exit the energy saving and sleep mode
Gate Signal		bright	Door switch works
		destroy	Invalid door switch
Defrosting		-	Reserved
AC power off indication		Flashing	AC power off
		destroy	AC power supply is normal
Alarm		bright	Alarm
		destroy	No Alarm
Set mode		bright	Parameter Settings
		destroy	Normal Mode

1.2.3 Key Definition Instructions:

The names of the keys are as follows:

Type B: Light key; refrigeration switch key;

C type: up/on/off key; Down/defrost key; Set/Exit key; The main functions of each key are as follows:

Type B -- Light key: light on/off control; Refrigeration on key: refrigeration function switch control

C -- up-key: open, shut down, go through the next parameter, parameter value increase;

Down key: manual defrosting or manual defrosting stop; Traversing the previous parameter, parameter value decreasing;

Setting key: enter parameter setting, exit setting;



1.3 Key Operation instructions

Type B:

Serial number	Key name	Icon	Function description
1	Lighting Keys		Short press the control to turn on and off the light while the display displays "ON" or "off", and the normal display will be restored after 1 second; In the fault state, you can press the key for fault noise reduction.
2	Refrigeration switch		1. Hold down the key for more than 3 seconds to turn off or on the cooling function of the controller. When the cooling function is turned off, "----" is displayed; When the refrigeration function is turned on, the cabinet temperature is displayed; 2. In the fault state, you can press the key for fault noise reduction.

Type C:

Serial number	Key name	Icon	Function description
1	Set/exit key		1. in the temperature display interface, long press the "Set" button 3S to enter the set temperature, the set temperature flashes; Continue to press the "Set" button for more than 5S until PS is displayed, and enter the user setting menu; 2. in the setting temperature interface, press the "up" key, "down" key to modify its parameters, short press the "Setting" key, exit the setting temperature interface, save the set value, display the cabinet temperature; 3. in the user setting menu, press the "up" key, "down" key to traverse the parameter list, press and immediately release the "Set" key, enter the parameter modification interface, blink to display the parameter value; Press the "up" key, "down" key to modify its parameters; Long press the "Set" key 3S, save the modified parameters to exit the setting mode, display the cabinet temperature; 4. In the setting temperature interface and user setting menu, 60S without pressing operation exit setting mode to save parameters and display cabinet temperature;

2	Down-button/defrost button		1. Press Down for more than 3S during power-on, rst is displayed, and all parameters are restored to factory defaults; 2. In the temperature display interface, hold down the "Down" key for 5S, you can manually defrost and manually stop defrost (if the parameter D0=0, you cannot enter the defrost state); 3. In the interface of setting temperature and user setting menu parameter value, short press "Down" key to decrease the value, and long press "Down" key to decrease the value continuously; In the user setting menu interface, short press "down" key to traverse the previous parameter, and long press "Down" key to do not continuously traverse the previous parameter;
3	Up-turn/on-off key		1. In the temperature display interface, long press the "Up" key for 3S to turn OFF the controller and display "OFF"; Then, long press the "Up" key for 3S to open the controller and display the cabinet temperature; 2. In the interface of setting temperature and user setting menu parameter value, short press "Down" key to decrease the value, and long press "Down" key to continuously decrease the value; In the user setting menu interface, short press "down" key to traverse the previous parameter, and long press "Down" key to do not continuously traverse the previous parameter;

Note: H2 =0, disable the key function. Set the temperature value to read only, class A parameters are read only except H2; Class B parameter is forbidden to view; The ON/OFF function of the controller is disabled; Manual defrosting function of controller is prohibited;

H2 =1: enable all functions of the key;

H2 =2: enable all functions of the key, only the controller ON/OFF function is disabled;

Type C parameters are divided into A and B two types, A type when the conventional parameters; Type B protection type parameters, need to set PS parameter to 22 to view, set (password input is valid once);

1.4 Modifying Parameters

Only with the display and external infrared sensor model (C) support parameter viewing and modification;









Controller parameters can be set by pressing ( , ). Parameters are divided into A and B

two types, A series of more commonly used parameters, type B parameters are password protected; After entering class B parameters, class A parameters are also displayed (not read-only), and can also be set;













1.4.1 Setting control temperature

Display or set the current setting temperature:  press 3S, digital tube display the current setting temperature; Use  or  to increase or decrease the set temperature value until the expected value is reached; Then  press to determine the new value or 60S no key operation, store the modified value and exit the setting control temperature;

1.4.2 A type parameter query and setting

- 1)  The key is greater than 5S, and the numeric tube displays the parameter code "PS" (password);
- 2) Use  the or  key to roll the parameter name until the target parameter is found;
- 3) Press the  key to display the corresponding parameter value;
- 4) Use  or  increase or decrease the value;
- 5) Press  Key temporarily store the modified value, return to the display parameter code;
- 6) If you modify other parameters, repeat steps 2 to 5;
- 7) Press the  key is larger than 3S or 60S, no key operation will be held, the modified parameter will be stored and the parameter setting will exit;

1.4.3 B Type parameter query and setting

- 1)  The key is larger than 5S, and the numeric tube displays the parameter code "PS" (password);
- 2)  Key to enter the password input;
- 3) Use the  Or  key to roll the number to "22" (the password to access parameter B);
- 4) Press the  key to confirm the password;
- 5) Roll the parameter name with the  or  key until you find the target parameter;
- 6)  Key to display the corresponding parameter value;
- 7) Use  or  increase or decrease the value;
- 8)  Key temporarily store the modified value, return to the display parameter code;
- 9) If you modify other parameters, repeat steps 5 to 8;
- 10) Press the  key is larger than 3S or 60S, there is no key operation, the modified parameter is stored and the parameter setting is exited;

1.5 Control logic

1.5.1 Refrigeration

1) Cabinet temperature sensor is normal:

Normal mode:

Boot: cabinet temperature \geq set temperature St + temperature difference rd ; And the compressor starts the minimum interval time after running to open refrigeration;

Stop: cabinet temperature \leq set temperature St ; Energy-saving mode:

Boot: cabinet temperature \geq set temperature $St + rE +$ temperature difference rd ; And the compressor starts the minimum interval time after running to open refrigeration;

Stop: cabinet temperature \leq set temperature $St + rE$; Hibernation mode:

Boot: cabinet temperature \geq set temperature $St + rS +$ temperature difference rd ; And the compressor starts the minimum interval time after running to open refrigeration;

Stop: cabinet temperature \leq set temperature $St + rS$;

Note: The minimum startup interval of the compressor is calculated according to the compressor startup delay ($c0$) after the controller is powered on for the first time after the controller is powered on, and then calculated according to the compressor minimum shutdown time ($c1$). When the compressor running time exceeds the compressor maximum running time ($C2$), the compressor stop $C1$ time ($C2=0$, indicating no maximum running time limit);

2) Cabinet temperature sensor failure:

When the compressor working time ($c4$) is equal to 0 when the sensor is faulty, the refrigeration is closed;

When the working time of the compressor is not equal to 0 when the sensor is faulty,

work according to the set start-stop ratio (working $C4$ time, stopping $C5$ time);

3) Forced refrigeration:

Through the background command can enter the forced refrigeration state, the state, the compressor runs continuously until the running time exceeds the forced refrigeration time $c6$, the forced refrigeration mode ends.

1.5.2 Defrost

1) Defrosting is prohibited when defrosting mode $d0=0$ or defrosting cycle $d1=0$;

2) When defrosting mode $d0 \neq 0$ and defrosting cycle $d1 \neq 0$, non-defrosting and non-defrosting drip state:

a. When the defrosting sensor is enabled ($/ZE=1$) and the defrosting sensor temperature is greater than or equal to the defrosting termination temperature (dt), defrosting cannot be started;

b. when the defrosting sensor is enabled ($/ZE=1$) and the defrosting sensor temperature is $<$ defrosting end temperature (dt), or the defrosting sensor is disabled ($/ZE=0$) or the sensor is faulty, defrosting can be started if any of the following conditions are met:

① platform command, forced defrosting;

② Defrosting cycle ($d4$), start defrosting;

③ key more than 5 seconds, start defrosting: (with display and external infrared sensor model (C model))

Note:

① The defrosting timing method is calculated according to the accumulative running time of the compressor ($d2=0$) or the controller running time ($d2=1$);

② Delay output time after defrosting start ($d3$) After running, defrosting output action.

③ The first defrosting output should be greater than the electrochemical frost shielding time $d4$, or the number of power-on and door opening greater than the cumulative number of power-on and door opening $d5$, defrost output action;

3) In defrosting state, defrosting can be closed if any of the following conditions are met:

a. defrosting sensor enabled ($/ZE=1$), defrosting (evaporation) sensor temperature $>$ defrosting end temperature (dt), turn off defrosting;

b. defrosting time (dp) when the operation is finished, turn off defrosting; c. platform command, turn off defrosting;

d. Press the key is greater than 5 seconds; (with display and external infrared sensor (C))

4) Enter the defrosting drip state after defrosting, the refrigeration output is prohibited within the defrosting drainage time (dd), during which the drips generated during defrosting are discharged. After defrosting drip time (dd), enter the refrigeration cycle state after running.

5) Defrosting process display:

$d6=0$: cabinet temperature temperature and dF display alternately; $d6=1$: display cabinet temperature before defrosting; $d6=2$: shows dF ;

6) defrosting method:

$d0 = 1$, electric heat defrosting, defrosting compressor stop; $d0 = 2$, hot gasification frost, defrosting compressor running;

1.5.3 evaporating fan

1) Fan operation mode $F0 = 0$, fan often rotation (defrosting and drainage by parameter defrosting fan operating state mode $F1$)

Defrosting and drainage, defrosting fan operation mode $F1 = 0$, defrosting and drainage fan operation; When defrosting, the fan operation mode $F1 = 1$, when defrosting and drainage, the fan stops.


2) Fan operation mode $F0 = 1$, the fan starts and stops with the compressor;

3) Forced fan shutdown: when the cabinet temperature is higher than the fan stop temperature ($F4$) and the fan running time is greater than the fan accumulated running time ($F5$), the fan is forced to shut down;

4) Forced shutdown release: when the cabinet temperature is lower than $F4$, the fan running time is cleared, and the fan runs normally in accordance with the set mode;

Note: when $dF = 1$ or 3, when the cabinet door is opened, if the fan is running, the fan will stop running; After the cabinet door is closed, the fan restores the working state before the cabinet door is opened; If the opening time of the cabinet door exceeds the parameter dot time, the fan will operate normally according to the set mode; When the fan is output for the first time, it should be greater than the fan start delay $F2$ after power-on, and after defrosting, the fan start delay $F3$ after defrosting should be met from stop to start.

1.5.4 Lighting

- 1) doL = 0, LED light function shielding.
- 2) When doL = 1 and doF = 0 or 1, the light status is controlled by the  keypad (only for models with display and built-in infrared sensor (Model B)) and the background system.
- 3) doF=2 or 3: the light is controlled by the state of the door switch. When the cabinet door is opened, the light is turned on, and the light is turned

1.5.5 Alarm tips

- 1) Temperature sensor fault alarm:

When the cabinet temperature sensor fails, E1 is displayed; Sensor 2 and 3, if the corresponding parameters /2E and /3E are set to 0, the alarm will not be triggered, and on the contrary, E2 and E3 will be displayed respectively;

- 2) Alarm of cabinet temperature exceeding limit:

When the cabinet temperature > high temperature alarm temperature (AH), and the cabinet temperature overtemperature alarm delay after running Hi; When the cabinet temperature < high temperature alarm temperature (AH) release the alarm;

When the cabinet temperature < low temperature alarm temperature (AL), and the cabinet temperature overtemperature alarm delay after running Lo; When the cabinet temperature > low temperature alarm temperature (AL) release the alarm;

- 3) Open the door to the alarm

When the door is opened, and the door switch alarm delay after running dr; After the door is closed, the alarm is lifted;

- 4) When the buzzer alarm setting is equal to 0 (Ab=0), the buzzer does not sound during the alarm, only the fault code is displayed;

When the buzzer alarm setting is equal to 1 (Ab=1), the buzzer buzzes after the controller appears alarm, and the buzzer turns off after all alarms are lifted, or press any key to turn off the buzzer. After the alarm is muffled, if a new fault occurs or occurs again after the alarm is lifted, the buzzer will continue to sound;

Note: the running time of the first alarm should be greater than the power-on alarm shielding time A1 (except sensor failure), and the new alarm after defrosting should meet the defrosting alarm shielding time d8;

- 5) LED light input detection alarm: when the LED is off, if the input detection value is greater than or equal to 0.5A, LED light fault (E4) alarm; When the LED is turned on, if the input detection value is less than 0.5A or greater than 3.5A, the LED light fault (E4) alarm;

1.5.6 Remote operation

You can perform the following operations on the controller through the client or background:

1. Temperature controller working mode switch (normal/energy saving/sleep);

The thermostat can set the controller working mode through the mobile phone APP and remote platform.

Normal mode: The ECO icon of the controller is off, and the cooling is regulated in normal mode.

Energy saving mode: The ECO icon of the controller is on, and cooling is regulated in energy saving mode.

Sleep mode: The ECO icon of the controller blinks. Cooling is controlled in sleep mode.

2. Defrost/stop defrost;

According to 3.5.2 control logic; 3- Forced refrigeration mode; According to 3.5.1 control logic;

4. Temperature controller parameter change;



Temperature controller parameters can be adjusted through mobile APP and remote platform;

5. Forced shutdown.



Same as 3.5.7 Logic

1.5.7 Controller Shutdown

- a. Model with Display & Built-in Infrared Sensor (Model B)

On the cabinet temperature display interface, press and hold  for 3 seconds to disable the refrigeration function, showing "----". The outputs for the compressor, defrost, and fan will turn off, while light control remains unaffected. In the refrigeration-disabled state, press and hold  for 3 seconds to enable the refrigeration function, displaying the cabinet temperature and resuming normal refrigeration logic.

- b. Model with Display & External Infrared Sensor (Model C)


On the cabinet temperature display interface, press and hold  for 3 seconds to power off the controller, showing "oFF". The outputs for the compressor, defrost, and fan will turn off, while light control remains unaffected. In the powered-off state, press and hold  for 3 seconds to power on the controller, displaying the cabinet temperature and resuming normal refrigeration logic.

1.5.8 Timing switch

Platform setting controller timing switch, the time is 24 hours. If the shutdown time is less than the startup time, the next day intermittently shut down, for example: start time 21:00, shut down time 8:00, then start at 21:00 in the evening, shut down at 8:00 the next day.

Note: The control network is disconnected for more than 24 hours, or after the controller is powered off, the timing switch function is cancelled;

1.5.9 Prompt code and its explanation

Prompt Code	Code explanation
E1	The cabinet temperature sensor is faulty
E2	Evaporator sensor failure
E3	Condenser sensor failure
E4	LED light failure (LdC = 0 shield fault alarm)
Hi	High temperature alarm in cabinet, displayed alternately with temperature
Lo	Low temperature alarm in cabinet, displayed alternately with temperature
dF	Defrost, flashing to indicate defrost delay or defrost display delay.
dr	Door Opening Tips
---	Refrigeration stop (compressor, fan, defrosting output stop) (Type B)
on	Lights on
oFF	Turn off lights (Type B), Stop cooling (Type C)
CC	Forced refrigeration, alternating with temperature display
	The icon flashes to indicate that the external power supply is disconnected.
ES1	No SIM
ES2	SIM lock
ES3	Signal failure
ES4	Connection server failure
ES5	Module communication is abnormal

1.4 Modifying Parameters

Serial Numbers	Parameters	Features	Categories	Description	Default Values
1	/0	Sensor measurement stability	B	1 ~ 15	15
2	/1	Offset of sensor 1	A	-10.0~10.0; Unit ° C	Type B 1.5 Model C 0.5
3	/2	Offset of sensor 2	A	-10.0~10.0; Unit ° C	0
4	/2E	Sensor 2 Enable	B	0: Sensor 2 not used; 1: Sensor 2 as evaporator sensor.	0
5	/3	Offset of sensor 3	A	-10.0~10.0; Unit ° C	0
6	/3E	Sensor 3 Enable	B	0: Sensor 3 not used; 1: Sensor 3 as a condenser sensor.	0

7	St	Set temperature	-	Set range: r1 to r2	3
8	r1	Minimum setpoint temperature	A	-50 to r2, unit ° C	1
9	r2	Maximum setpoint temperature	A	r1 to 50, unit ° C	10
10	r3	Work mode	B	0: Refrigeration mode; 1: heating mode	0 (reserved)
11	rd	Temperature difference	A	0.5 to 9.0, unit ° C	3
12	rE	Energy Saving mode Up the temperature	B	0 to 10, unit ° C; Setting temperature upward deviation in energy-saving mode	5
13	rS	Sleep mode up the temperature	B	5 to 20, unit ° C; Setting temperature upward deviation in hibernation mode	12
14	C0	Compressor time-delay start after controller power-up	A	0 to 255, in Sec After the controller is powered on, a delay is required to start it.	5
15	C1	Minimum downtime of the compressor	B	0 to 15, unit: Min After the compressor is stopped, it must be started again after C1 time.	5
16	C2	The maximum running time of the compressor	B	0 to 255, unit: Min The continuous operation time of the compressor exceeds the change time, and the compressor stops C1 time. When C2=0, there is no maximum operating time limit.	0
17	C4	Compressor operating time when the sensor fails	B	0 to 60, unit: Min 0: The compressor stops when the sensor fails.	10
18	C5	Compressor downtime when the sensor fails	B	1 to 60, in Min	15
19	C6	Forced Refrigeration Time	B	The value ranges from 0 to 10, unit: Hour	2
20	H2	Key lock Settings	A	0: Disables the key function. Set temperature value read-only; Class A parameters are read-only except H2; Class B parameters cannot be queried; The ON/OFF function of the controller is prohibited; Manual defrosting function of the controller is prohibited. 1: Enable all functions of the key; 2: Enable all functions of the key, only controller ON/OFF function is disabled;	1
21	d0	Defrost Mode	B	0: Shield defrost; 1: electrothermal defrosting; 2: Hot Gas Defrosting;	1
22	d1	Defrost cycle	B	0 to 90 (unit: Hour). 0:Shield defrosting. Note: Defrosting cycle timing does not include defrosting time.	4
23	d2	Defrost Timing Mode	B	0: compressor cumulative running time; 1: controller operating time	1
24	dt	Defrost Termination Temperature	B	-20 to 60 unit: ° C Valid when the evaporator sensor (/ZE=1) is enabled.	15
25	d3	Defrost Delay Output Time	B	0~60 (unit: Min) Defrost Delay Output	0
26	d4	Power-up Defrost Lockout Time	B	0 to 90 (unit: hour) After the controller is powered on, the controller does not execute the defrost program even if the defrost cycle is reached. Note: 1 Manual defrosting can be performed. 2 This parameter will also take effect if the controller is powered off for more than 1 minute.	Model B 20 Model C 16
27	dp	Defrost time	B	1 to 90 (Min) for maximum defrosting time	20
28	d6	Defrost drain display	B	0: Alternate display of sensor temperature and dF; 1: Display the temperature before defrosting until the cabinet temperature is lower than the temperature before defrosting, or the time is greater than 60min; 2: display dF Note: Only applicable to products with display	2

29	d8	Post-Defrost Alarm Masking Time	B	0 to 90 (unit: Min)	10
30	dd	Drain time	B	0 to 60(unit: Min)	0
31	AL	Low Temperature Alarm Setpoint	B	-40~AH, unit: ° C (valid only in refrigeration mode)	-5
32	AH	High Temperature Alarm Setpoint	B	AL~70, unit: ° C (valid only in refrigeration mode)	30
33	A1	Power-up Alarm Masking Time	B	0 to 60(unit: Hour)	24
34	A2	Condenser Temperature Alarm Delay	B	0 to 199(unit: min)	10
35	Ab	Buzzer Alarm Settings	B	0: Buzzer forbidden; 1: buzzer when the buzzer alarms.	0
36	Ad	Cabinet Temperature Overtemperature Alarm Delay	B	0 to 180(unit: Min)	60
37	AC	Upper Alarm Temperature of Condenser	B	0 to 99 unit: ° C This parameter is valid when the condenser sensor is enabled (/3E=1)	75
38	doP	Door switch polarity	B	0: Switch open when opening the door, switch off when closing the door; 1: switch off when opening the door, Switch open when closing the door.	0
39	doF	Door switch Settings	B	0: Cancel the door switch (upload the number of door switches without shadow ringing); 1: Turn off the fan when the door is open, turn on the air machine when the door is closed; 2: Turn on the light when the door is open, turn off the light when the door is closed; 3: Turn off the fan and turn on the light when the door is open, turn on the fan and turn off the light when the door is closed; Note: do not turn on the lights when doL=0	1
40	dot	Door Switch Alarm Time	B	0 to 30(unit: Min)	5
41	doL	Light Control	B	0: Mask the light control function 1: Turn on the light (controlled by the door switch when doF is set to 2 or 3)	1
42	F0	Fan Operation Mode	B	0: The fan often turns (except when defrosting and draining); 1: start and stop with the compressor;	0
43	F1	Fan Operation Status During Defrosting	B	0: Fan Operation During Defrosting and Drainage 1: Fan Stops During Defrost and Drain Cycles	0
44	F2	Fan Start Delay After Power-On	B	0 to 255(unit: sec)	0
45	F3	Post-Defrost Fan Start Delay	B	0 to 60(unit: Min)	0
46	F4	Fan Cut-out Temperature	B	0 to 60(unit: ° C)	20
47	F5	Fan Cumulative Operating Hours	B	0 to 255 (unit:Hour)	48
48	d5	Power-On Door Open Cycle Count (refers to mains power)	B	0 to 90(unit: times) After the controller is powered on, if the number of times of opening the door exceeds d5, take the shielding time d4 of the electrochemical cream and execute it according to the normal frost time.	5
49	LdC	LED Current Monitoring & Control	B	0: Turn off LED light current detection 1: Turn on LED lamp current detection	0
50	P2	Sensor 2	A	-99 sensor not needed; -98 The sensor is faulty.	Read Only
51	P3	Sensor 3	A		Read Only

52	dor	Door Switch Status	A	0: Close the door; 1: Open the door	Read Only
53	doC	Door Switch Count	A	Count the number of times the door is opened (999 is displayed Max)	Read Only
54	LEd	LED Light Input Status	A	0: Turn off the lights; 1: turn on the light	Read only
55	pir	Infrared Sensor Count	A	Human body infrared sensor count (maximum display 999).	Read Only
56	bAt	Battery Voltage	A	Battery voltage, unit: V	Read Only
57	nEt	Network Status	A		Read Only
58	VEr	Software Version Number	A		Read Only

Platforms

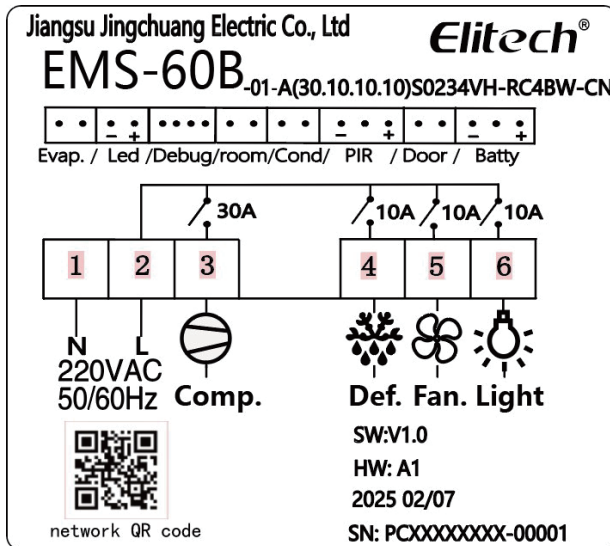
1) Add the device: First, the device is connected to external power, and then the app scans the device model code (@85740000) to add the device;



APP: elitech iclod

2) platforms:<https://www.i-elitech.com/>

1.7 Wiring instructions



Electrical	Terminal function	Model number	Remarks
Weak Current	Backup battery	S03B-XA Red	
	Door switch	S03B-XA	
	Infrared sensor	S02B-XA	
	Condenser sensor	S02B-XA Yellow	Reserved
	Temperature controlled sensor	S02B-XA Red	
	Test port	XH-4AW	
	LED Light Detection	S02B-XA Black	
	Evaporator sensor	S02B-XA Blue	Reserved
Strong electricity	Power N	S3P5-VH P1	
	Power L	S3P5-VH P3	
	Refrigeration output	S3P5-VH P5	
	Defrost output	S3P5-VH P1	Reserved
	Fan output	S3P5-VH P3	
	Light control output	S3P5-VH P5	

1.8 Safety Rules

★ Hazards:

- 1) Strictly distinguish the sensor lead, power line and output relay interface, can not be misconnected, can not overload;
- 2) must be disconnected in the case of wiring connection;
- 3) It must be ensured that the load connection is reliable and the wire diameter meets the standard, and the heating temperature rise caused by the contact resistance must be $< 3\text{ }^{\circ}\text{C}$;
- 4) any abnormal working state must first cut off the controller power supply;

★ Warning:

This machine is not allowed to be used in water or excessive humid environment, do not use in high temperature, strong electromagnetic interference, corrosive environment.

★ Note:

- 1) The supply voltage should be consistent with the voltage marked on the machine, and ensure the stability of the supply voltage;
- 2) In order to avoid possible interference, it is recommended that the sensor lead should be kept at an appropriate distance from the power line;
- 3) When installing the defrosting sensor, the sensor should be close to the copper pipe 5 cm away from the evaporator entrance, and ensure that the sensor and the copper pipe are in good contact;
- 4) When removing the sensor, take out the tail of the sensor downward with slight force.