



Scientific Refrigerator Operation Manual

The following product models are applicable:

UC130RG

UP395RG









UP650RG








GCI
LIFE SCIENCES

Table of Contents

1. Application Notes	1
2. Safety Instructions	2
3. Precautions	4
4. Installation and Commissioning	4
4.1 Installation Environment	4
4.2 Installation Site	4
4.3 Preparation before Use	5
4.4 First Power-on	5
4.5 Operation after Power Failure	6
5. Product Composition and Overview	7
6. Operating Instructions	9
6.1 Function Introduction	9
6.2 Optional Function	17
7. Maintenance and Service	18
7.1 Equipment Maintenance	18
7.2 Equipment Discontinuation	18
7.3 Maintenance, Replacement, and Battery Recovery	18
8. Troubleshooting and Maintenance Services	19
9. Specifications	20
10. Packing List	20

	This equipment contains a refrigeration system that may be damaged if subjected to tilting or sudden impact. Do not tilt the unit more than 45° when moving, lay it on its side, or expose it to physical shock
	Please place the equipment in a dry and dust-free environment to avoid risks such as overheating, and short circuit.
	If abnormal noise, odor, or smoke is detected during operation, immediately disconnect the power supply and contact the manufacturer or supplier for assistance
	Install the equipment in a dry, well-ventilated area. Keep ventilation openings and surfaces clear of obstructions. Do not operate in poorly ventilated spaces, as heat buildup may result in damage
	Unauthorized disassembly or modification of this equipment is strictly prohibited. The manufacturer or supplier will not be responsible for any resulting damage or accidents.
	Do not store flammable or explosive materials, strong corrosive acids, alkalis, or other items unsuitable for the equipment inside the unit. The product is not designed for this application.
	When storing toxic, harmful or radioactive materials, please use the equipment in safe areas. Improper use may cause harm to human health or environment.
	Maintain a minimum clearance of 30 cm or 12 inches between the back, left, and right sides of the cabinet and any walls to ensure proper operation, ventilation, and heat dissipation. Ensure that the air inlets and outlets remain unobstructed

	Note: Failure to observe the precautions may result in personal injury or equipment failure and related property losses.
	Only use the door handle when opening or closing the door. This practice will avoid the potential of pinching fingers.
	When restarting the equipment after a power failure or shutdown, verify the system settings before operation to prevent potential damage to stored items.
	Handle the equipment carefully to prevent tipping, which may cause equipment damage or personal injury.
	If transporting the equipment is necessary, only lift the unit from the base and do not tilt the equipment beyond 45° and ensure the equipment is upright 24 hrs before operating. Operate the equipment only in safe, suitable environments, as improper use may pose risks to human health or the surrounding environment.

4.3 Preparation before use

1. Remove the outer packaging including the protective foam in the packaging box.
2. Verify all accessories and materials are installed or available in accordance with the packing list.
3. Clean the product once before use.
4. Installation of door handles (UP650RG).

The handles are packaged with the accessories.

Handle installation method:

- a. Open the door handle as shown in the following figure I ;
 - b. Remove the screw for installing the door handle on the cabinet, and install the handle seat with this screw; Install the handle cover, insert both ends of the handle cover into the corresponding grooves of the handle seat, and then press it to close it.
5. Install the wall mounting brackets (If applicable ,you can refer to Figure II .).
 - a. Remove the two mounting brackets and check for consistency.
 - b. Remove the bolts from the mounting brackets and attach to the back of the refrigerator.
 - c. Connect the mounting brackets to the wall and the back of the refrigerator. Verify the refrigerator is secure and stable.

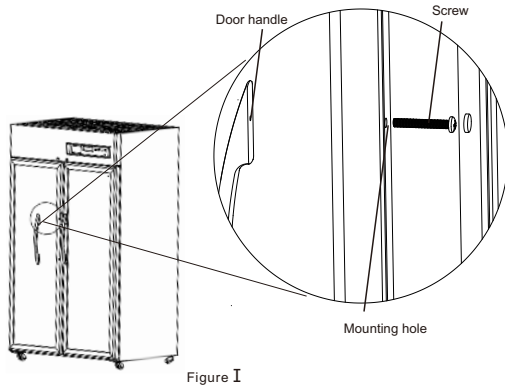


Figure I

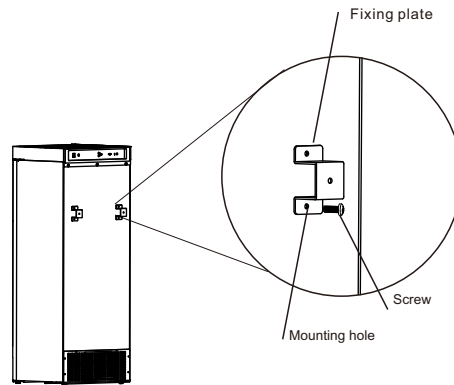



Figure II

6. Please check whether the liquid level in the glycol bottle is within the standard range (see Figure III). If the liquid level is below the minimum level mark, add simulated solution. The liquid level after refilling must not exceed the 100 mL level mark. (Simulated solution composition: glycerol and purified water mixed at a ratio of 1:9.) The simulated solution should be inspected once every year.

7. After the unit is placed in the designated location, it must be secured. If the front casters are equipped with brakes, press down the brakes. If leveling feet are provided, lower the leveling feet by turning them downward (see Figure IV). The detailed operation procedure is as follows:

- There are adjustable anti-skid leveling feet in front of the two front casters at the bottom of the equipment. Please use accompanying tools  to turn the leveling feet downwards after the equipment is placed securely, so as to stabilize the machine.

- When you need to move the equipment, please turn the leveling feet upwards. Do not move it forcibly so as to avoid damage!

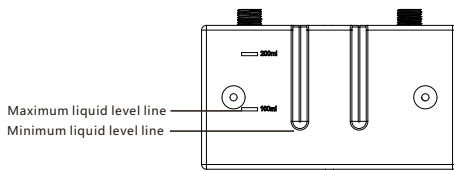


Figure III

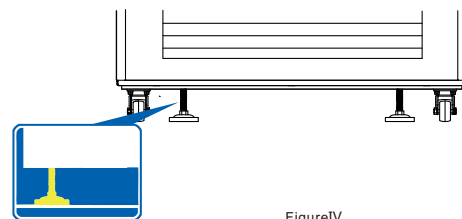




Figure IV


4.4 Initial Power-on

When using the equipment for the first time, please follow these steps:

1. Ensure the equipment is level, clean and in the upright position for a minimum of 24 hours.
2. With the unit deenergized and in the off condition, connect the AC power cord to a dedicated outlet with appropriate specifications.

-
3. Toggle the main power and battery backup switches to the ON position. Upon the initial power up, the display will initiate a startup sequence (all digits counting from 000.0 to 999.9). Once completed, the display may flash LOF and sound an audible alarm. LoF indicates that the internal data recorder is not activated. To initialize the recorder, press the  and  keys for 3 seconds. "LoF" will no longer appear in the display and the recorder has started.

Note: All Freezers and Refrigerators are pre-set to default temperature set point values. (See Reference Parameter Display table).

4. The main display may flash H1, indicating a high temperature alarm. If present, the audible alarm will sound. Press  to silence the audible alarm while the operating temperature drops below the high alarm default value. See function settings to change alarm values.
5. Allow the equipment will reach the set point value and operate at set point for a period of 24 hours before loading with product.
6. Load items in small batches not exceeding 1/3 of the cabinet volume at a time. Ensure that the equipment is running properly for more than 12 hours before putting in the next batch of items).

4.5 Operation after Power Failure

1. All products are equipped with a memory function that will preserve all preset values in the event of an AC power failure.
2. To avoid potential damage to the compressor, it is recommended to wait at least 5 minutes before restarting the unit.
3. While this equipment is designed to operate reliably under specified conditions, the manufacturer cannot be held responsible for any loss or damage to stored items resulting from a power failure.



Notes:

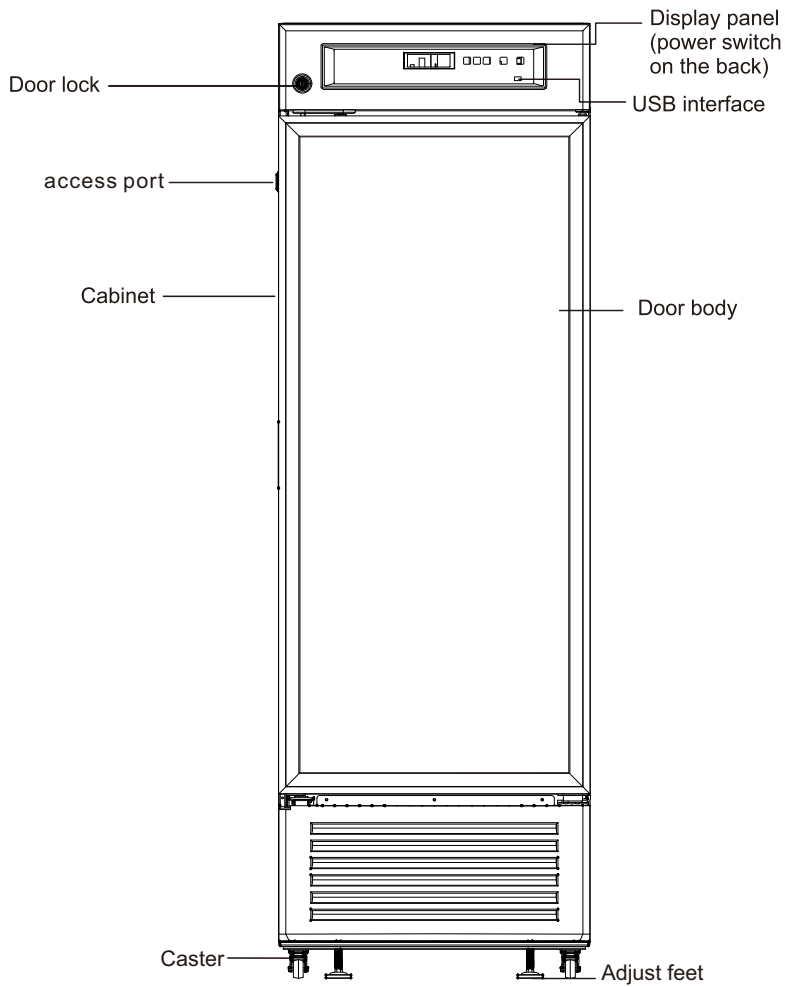
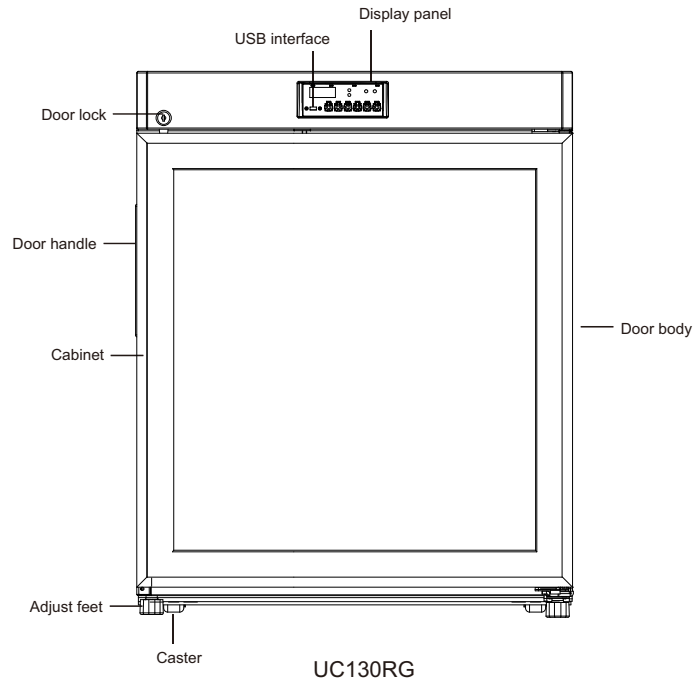
- ◆ Before placing items into the equipment, verify the temperature range meets the storage requirements of the items to prevent potential damage. When loading items, ensure that the air inlet and outlet vents remain unobstructed to maintain proper airflow.
- ◆ Due to the refrigeration lag and variations with respect to product loading, the temperature display on the main panel may temporarily differ from the set point.
- ◆ Avoid changing the setpoint frequently, as this may prevent the unit from reaching the desired temperature.
- ◆ When loading product, allow for 1" of clearance of space to allow for adequate air flow and circulation. Allow for clearance from the internal temperature sensor, as this may affect temperature stability and control accuracy.
- ◆ Electrical appliances without production license shall not be used inside the equipment.
- ◆ The bottom (floor) of the equipment is not intended as a storage location. Only store items on shelves.
- ◆ Items with high or low moisture content can affect the internal humidity of the cabinet; therefore, it is recommended that all items be properly sealed. Additionally, frequent door openings or improper door closure may impact the cabinet's humidity levels.

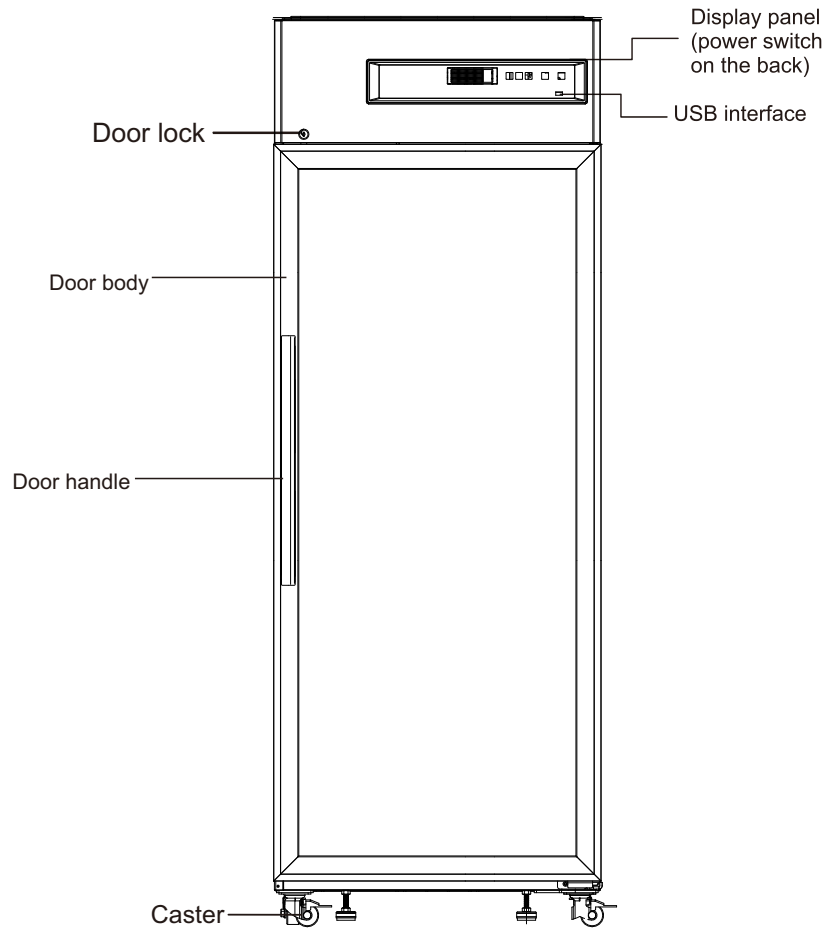


Warning:

- ◆ Modification of the equipment is strictly prohibited.
- ◆ Keep all ventilation openings in the enclosure clear of obstruction.
- ◆ Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

5. Product composition and overview






UP650RG


* The actual equipment may be different from the diagram. The diagram is only used for functional parts identification and description.

Intended use:



* Structure and composition: The product consists of cabinet, door (glass door structure or foam door structure), refrigeration system and control system.


2)  Is the main display for various functions. Under normal operation, the display is presenting average internal temperature in °C;


To view ambient temperature:



In the key lock or unlocked state, press the  key, and the display will indicate ambient temperature. The display will return to the internal temperature after 5 seconds of no key operation


To view humidity (Optional):


In the key unlocked state, press and hold the  and  keys and the display will indicate the internal humidity level in the unit. The display will return to indicating internal temperature after 5 seconds of no key operation.

3)  is the set/mute key;

In the unlock state, press  for more than 3 seconds, to enter the user menu.

If the unit is in the unlocked state and an audible alarm is triggered (example: cabinet high temperature alarm, door opening alarm, sensor failure alarm, etc.), and  is pressed for the first time, the audible alarm will stop sounding, and the ambient temperature will display for 5s, after which the normal display value is resumed. Pressing the mute button will only disable the audible alarm for during the alarm state. If the alarm condition is not cleared and  pressed again, the audible alarm will sound and the display will indicate the ambient temperature for 5s, and resume the display of chamber temperature and alarm state.

While in the unlock state,  can be used as a setting key. In the unlock state and in the parameter setting mode, press this key to display parameter values and parameter names. If the pressing time is longer than 3 seconds, it will save the settings and return to the normal interface.

4)  is the up key;


In parameter setting mode, pressing the up-arrow key will move to the next parameter or increase the parameter value. For example, when setting the set temperature, pressing the up arrow will increase the set temperature value. When setting the parameter value, press and hold the up button, and the parameter will increase rapidly. To export data to a USB flash drive for a period up to 12 months, the unit must first be in normal operation mode, then press and hold the up key for 3 seconds.

5)  is the down key;

In parameter setting mode, pressing the down arrow key will navigate to the previous parameter or decrease the selected parameter value.

For example, if in the temperature set point parameter, pressing the down arrow will reduce the displayed set temperature.

When adjusting a parameter value, press and hold the down button to decrease the value rapidly.


6)  is the interior light on / off key;

Internal lights are deenergized by default. To energize the lights, press the light key.

7) USB data export;

Automatic export: when the USB flash drive is connected to the USB port, the recorder audible tone will chirp once and the display will indicate "on". PDF files of data that have not been previously exported will be copied to the USB disk. After data transmission, the audible tone will chirp once again and will display will indicate "End". After 6s, it will return to the normal display.



Note: If no data is available, the digital screen will not display "on" and "End".

Manual export: While in the key unlock state and when the USB flash drive is connected and the file is not being generated, press the up key for 3 seconds, and "d01" will appear in the display. Press the key up or down key to adjust "d00~d12," and press  key to cancel the file generation (d00) or generate the PDF file of the record data of the previous 12 months. (The temperature and humidity data recorded in the PDF file represent the average temperature and humidity inside the chamber. "Invalid" indicates invalid data, a code error, a communication error with the data logging module, or that the sensor reading is out of range.)


2. Function setting of Type A control panel



1) After powering on, the equipment will initialize and enter the normal operating state.;

2) User parameter settings:



To Unlock the display and while under normal operating state, press  and  keys simultaneously for 3 seconds.

The display will indicate "000"; Press the  to enter the password "005", then press  to unlock.

Then press  key for 3 seconds, the digital screen will display the parameter code "MAX" and enter the setting and adjustment parameters.


a. Use  or  key to scroll the parameters;


b. Press  key to display the corresponding parameter value;

c. Use  or  key to scroll the value within the parameter;

d. Use  to temporarily store the modified values and return to the display parameters;

e. If other parameters are modified, repeat a through above.;

f. Press  for more than 3 seconds, save the modified parameters and return to the display parameter category.

3) Press  for more than 3 seconds, or press no key in 60s to exit the parameter setting program.

4) Parameter display

No.	Menuitem	Parameter Range	Suggested settings	Remarks
1	MAX	—	—	The highest temperature since last clearance
2	MIN	—	—	The lowest temperature since last clearance
3	CLR	—	—	Clearance of the Max and Min temperature records
4	CF	C/F	—	Temperature unit selection, C-degrees Celsius, F-degrees Fahrenheit
5	Set	0.0-10.0	5.0	Temperature setting
6	H	0.0-10.0	5.0	Set value of high temperature alarm set+H; When H =0, High temp alarm is disabled; When the alarm is over high temp alarm set, H1 will be displayed on the controller
7	L	0.0-10.0	5.0	Set value of low temperature alarm set-L; When L =0, Low temp alarm is disabled; When the alarm is below low temp alarm set, L1 will be displayed on the controller
8	n	Set logger module time - year	—	—
9	y	Set logger module time - month	—	—
10	r	Set logger module time - day	—	—
11	s	Set logger module time - hour	—	—
12	F	Set logger module time - minute	—	—
13	Pt	0-240min	20	Print interval
14	tH1	20.0-50.0°C	40.0	Upper limit of ambient temperature alarm

No.	Menu item	Parameter Range	Suggested settings	Remarks
15	P1	1. Automatic heating mode 1 2. Automatic heating mode 2 3. Automatic heating mode 3 4. Always on 5. Always off	1. (Set to 4 when the door is with condensation) (Set to 1 when the door is a glass door) (Set to 5 when the door is a foaming door)	Mode 1: It shall be judged as once after the door is opened and closed once and heated for 5min (time setting). If the door is opened and closed again during the heating period, the heating time will be updated again; Mode 2: When the compressor runs, heater is on; When the compressor stops, the heater will turn off after one min Mode 3: When the humidity in the cabinet is more than 80%, the door heating is on, and when the humidity in the cabinet is moderately less than 60%, the door heating is off; Mode 4: Door heating is always on; Mode 5: Door heating is always off.
16	Ps1	0-999	5	User menu password settings
17	b1	—	—	Repair Information 1
18	b2	—	—	Repair Information 2

Quick setting of time after power on

After the power-on self-test on the display board has completed, the quick setting menu is displayed.


Menu item	Menu	Menu description	Set range	Default	Unit
Quick Settings menu	n	Set logger module time - year	10~50		/
	y	Set logger module time - month	1~12	--	/
	r	Set logger module time - day	01~31	--	/
	S	Set logger module time - hour	00~23	--	/
	F	Set logger module time - minute	00~59	--	/
	Pt	Print interval	0~240	20	min
	SCY	Temperature data recording period	0~240 0: shielded recorder	10	min

If there is no operation for 60 seconds under the quick setting menu, it will automatically exit the quick setting menu and return to normal display.



5) Alarm display




Code	Error Description
H1	High temperature alarm
L1	Low temperature alarm
H2	Alarm for high ambient temperature
H3	Condenser overheat alarm
do	Door opening alarm
PF	Power failure alarm
bL	Battery low alarm
Er	The recorder is not connected
LoF	Recorder did not start
EE	Communication failure
E1.2.3....	Sensor (NTC) failure alarm

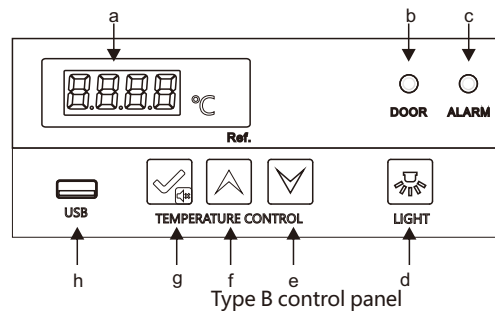
6) Alarm Test Function

To test the alarm demonstration function, start from the "key lock state", then press and hold  for 3 seconds. The audible tone will pulse while the display indicates a warm temperature value, followed by the H1 alarm code, a cool temperature value is displayed followed by L1 alarm code. The display icon indicator panel will illuminate each icon (red or green) in sequential order until complete. Once completed, the audible pulse will stop.

7) Maximum and minimum Temperature display

To view the maximum and minimum recorded temperatures, start from the "key lock state", then press  and "max" will blink 3 times, followed by the maximum temperature value blinking 3 times. Press  and min will blink 3 times, followed by the minimum temperature value blinking 3 times.

To clear the maximum and minimum recorded temperature values, press and hold the 3 keys  +  +  at the same time for 3 seconds. Once cleared, the audible tone beeps as a reminder.




1. Function description of Type B control panel (Applicable to UC130RG)


a. 4.2 Is the temperature display window, which displays the average temperature inside the cabinet in °C under normal operation; Different prompt characters can be displayed in the setting state (see below for details).

b. Door opening indicator: When the refrigerator door is opened, the door indicator illuminates. If the door remains open for more than 1 minute, the door alarm indicator will be illuminated and the audible alarm is triggered, The display will indicate "do". Close the door and "do" is no longer displayed and the audible alarm is silenced.



c. Fault indicator: When the product runs normally, the indicator is not illuminated; When the product is not running normally, the indicator is illuminated.


d. "LIGHT" : Pressing the light button will energize or deenergize the internal light


e. : In parameter setting mode, pressing the down arrow will reduce the parameter value. For example, when setting the setpoint temperature, it will decrease the setpoint. When setting the parameter value, press and hold the down button, and the parameter will decrease rapidly.

f. : In parameter setting mode, this key is used to increase the parameter value. For example, when setting the setpoint temperature, it will increase the setpoint. When setting the parameter value, press and hold the up button, and the parameter will increase rapidly.


The up-arrow button can also be used to import data to a flash drive for the last 12 months. If desired, and while Under normal conditions, press and hold the up key for 3 seconds.

g. : is the set/mute key; if the unit is not in alarm state and in the unlocked state, press , and the display will indicate ambient temperature for a period of 5 seconds, then return to normal display.

While in the unlock state, press  for more than 3 seconds to enter the user menu.

If an alarm event is triggered while in the unlocked state, the audible alarm is activated (including cabinet high alarm, door opening alarm, sensor failure alarm, etc.). Press  and the audible alarm will silence and ambient temperature is displayed for 5 seconds then resume to normal display values.

If the alarm condition is resolved during the silence period, the audible alarm will trigger upon the next abnormality.

Press  again, will trigger the audible alarm, the display will indicate the ambient temperature for 5s, and then resume the display of cabinet temperature and alarm state.


 can be used as a setting key while in the unlocked state.



In unlock state and in the parameter setting mode, press this key to display parameter values and parameter names. If pressed more than 3 seconds, the setting will be saved and the display will return to the home screen.

h. USB interface

Automatic export of USB data: When the USB interface is connected to the USB flash drive, an audible tone will beep once, the display will indicate "ON", and PDF files of the data of the current month and the previous month are generated in the USB flash drive. After the data transmission is completed, the audible tone beeps once, displaying "End," and the normal display resumes after 6 seconds.

! **Note:** When there is less data, "on" and "end" prompts are not displayed.





Manual export of USB data: In the key unlock state, when the USB flash drive is connected and the file is not being generated, press the up key for 3 seconds, and the digital screen in the lower chamber will display "d01." Press the key up or down key to adjust "d00~d12," and press  key to cancel the file generation (d00) or generate the PDF file of the record data of the previous 12 months. (The temperature and humidity data recorded in the PDF file represent the average temperature and humidity inside the chamber. "Invalid" indicates invalid data, a code error, a communication error with the data logging module, or that the sensor reading is out of range.)


! **Note:** When the digital display flashes and displays "LoF," and the audible alarm is beeping, this indicates the data recorder is not activated. To activate the data recorder, the display must be in the Unlock state. Once unlocked, then press the  and  key for 3 seconds. "LoF" will disappear and the recorder function has started..

2. Function setting of Type B control panel


1) After powering on, the equipment will initialize and enter the normal operating state;

2) User parameter settings:

To Unlock: under normal operating state, simultaneously press  and  keys for 3 seconds, the digital screen will display "t0000"; Press  to enter the password "0005" and holding  to unlock.

Then press  key for 3 seconds, the digital screen will display the parameter "MAX" and enter the setting and adjustment parameters.


a. Use  or  key to scroll the parameters;

b. Press  key to display the corresponding parameter value;

c. Use  or  key to scroll the values within the parameters;

d. Use  to temporarily store the modified values and return to the display parameters;

e. If other parameters are modified, repeat steps a through above;

f. Press  for more than 3 seconds, save the modified parameters and return to the display parameter category.

3) Press  for more than 3 seconds or press no key in 60s to exit the parameter setting program.

4) Parameter display

No.	Menu item	Parameter Range	Suggested settings	Remarks
1	MAX	—	—	The highest temperature since last clearance
2	MIN	—	—	The lowest temperature since last clearance
3	CLR	—	—	Clearance of the Max and Min temperature records
4	CF	C/F	—	Temperature unit selection, C-degrees Celsius, F-degrees Fahrenheit
5	Set	0.0-10.0	5.0	Temperature setting
6	H	0.0-10.0	5.0	Set value of high temperature alarm set+H; When H =0, High temp alarm is disabled; When the alarm is over high temp alarm set, H1 will be displayed on the controller
7	L	0.0-10.0	5.0	Set value of low temperature alarm set-L; When L =0, Low temp alarm is disabled; When the alarm is below low temp alarm set, L1 will be displayed on the controller
8	n	Set logger module time - year	—	—
9	y	Set logger module time - month	—	—
10	r	Set logger module time - day	—	—
11	s	Set logger module time - hour	—	—
12	F	Set logger module time - minute	—	—
13	Pt	0-240min	20	Print interval
14	tH1	20.0-50.0°C	40.0	Upper limit of ambient temperature alarm
15	P1	1. Automatic heating mode 1 2. Automatic heating mode 2 3. Automatic heating mode 3 4. Always on 5. Always off	1. (Set to 4 when the door is with condensation) (Set to 1 when the door is a glass door) (Set to 5 when the door is a foaming door)	Mode 1: After the door is opened and closed once and heated for 5min (time setting). If the door is opened and closed again during the heating period, the heating time will be updated again; Mode 2: When the compressor runs, heater is on; When the compressor stops, the heater will turn off after one min Mode 3: When the humidity in the cabinet is more than 80%, the door heating is on, and when the humidity in the cabinet is less than 60%, the door heating is off; Mode 4: Door heating is always on; Mode 5: Door heating is always off.
16	Ps1	0-9999	5	User menu password settings
17	b1	—	—	Repair Information 1
18	b2	—	—	Repair Information 2

Quick setting of time after power on

After the power-on self-test on the display board is completed, the quick setting menu is displayed.


Menu item	Menu	Menu description	Set range	Default	Unit
Quick Settings menu	n	Set logger module time - year	10~50		/
	y	Set logger module time - month	1~12	--	/
	r	Set logger module time - day	01~31	--	/
	S	Set logger module time - hour	00~23	--	/
	F	Set logger module time - minute	00~59	--	/
	Pt	Print interval	0~240	20	min
	SCY	Temperature data recording period	0~240 0: shielded recorder	10	min

If there is no operation for 60 seconds under the quick setting menu, it will automatically exit the quick setting menu and return to normal display.



5) Alarm display




Alarm Code	Error Description
H1	High temperature alarm
L1	Low temperature alarm
H2	High ambient temperature alarm
H3	Condenser overheat alarm
do	Door opening alarm
PF	Power failure alarm
bL	Battery low alarm
Er	The recorder is not connected
LoF	Recorder did not start
EE	Communication failure
E1. 2. 3. . . .	Sensor (NTC) failure alarm

6) Alarm Test Function

To test the alarm demonstration function, start from the "key lock state", then press and hold  for 3 seconds. The audible tone will pulse while the display indicates a warm temperature value, followed by the H1 alarm code, a cool temperature value is displayed followed by L1 alarm code. The display icon indicator panel will illuminate each icon (red or green) in sequential order until complete. Once completed, the audible pulse will stop.

7) Maximum and minimum Temperature display

To view the maximum and minimum recorded temperatures, start from the "key lock state", then press  and "max" will blink 3 times, followed by the maximum temperature value blinking 3 times. Press  and min will blink 3 times, followed by the minimum temperature value blinking 3 times.

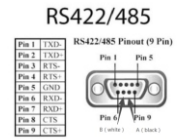
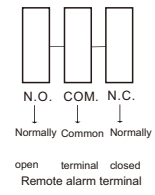
To clear the maximum and minimum recorded temperature values, press and hold the 3 keys  +  +  at the same time for 3 seconds. Once cleared, the audible tone beeps as a reminder.

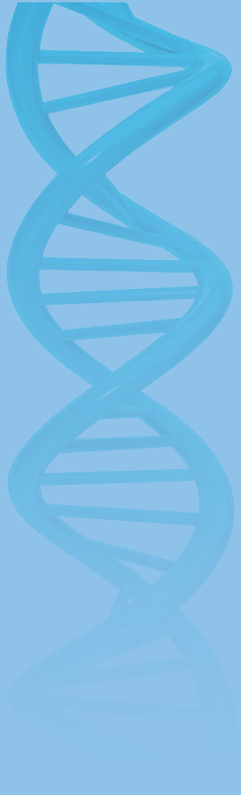
6.2 Optional function

6.2.1 Remote alarm terminal, RS485 interface and network interface

Remote alarm terminal, RS485 interface and network interface are installed in the lower part of the back of the freezer body.

Note: These configurations are standard for some models.





Production Date: See nameplate on the refrigerator body
Prepared in: January 2025
Material Code: