LABFENG B09QSSCH9C

LABFENG 20L Ultra-Low Temperature Freezer User Manual

Model: B09QSSCH9C

1. Introduction

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your LABFENG 20L Ultra-Low Temperature Freezer. Please read this manual thoroughly before using the appliance and retain it for future reference.
The LABFENG 20L Ultra-Low Temperature Freezer is designed for the precise storage of sensitive biological and chemical samples requiring temperatures as low as -86°C (-122.8°F). Its portable design and advanced temperature control system make it suitable for various laboratory and research environments.

2. Product Overview

The LABFENG 20L Ultra-Low Temperature Freezer features a robust design with excellent thermal insulation and a stable refrigeration system. It includes a precise microcomputer temperature control with an LED digital display and an intelligent temperature alarm system.

Key Features:

- **Ultra-Low Temperature Capability:** Achieves temperatures down to -86°C (-122.8°F).
- **Efficient Insulation:** Dual door gaskets and high-density polyurethane foam insulation minimize cold air loss.
- **Stable Refrigeration:** Self-circulating system ensures consistent performance.
- **Precise Temperature Control:** Electronic control with LED digital display, accurate to 0.1°C.
- **Intelligent Alarm System:** Alerts for temperature deviations with buzzer and flashing display.
- **Portable Design:** Weighs approximately 46 lbs (20.9 kg) for easier relocation.

Included Components:

- Ultra-Low Temperature Freezer Unit
- Power Cable
- Instruction Manual
- Defrosting Scraper

Figure 1: Front view of the LABFENG 20L Ultra-Low Temperature Freezer.

Figure 2: Overview of the freezer highlighting portability, temperature control, cooling, and alarm system.

3. Setup and Installation

Unpacking:

1. Carefully remove the freezer from its packaging.
2. Inspect the unit for any signs of damage during transit. Report any damage to the supplier immediately.
3. Remove all internal packing materials and accessories.

Placement:

- Place the freezer on a stable, level surface capable of supporting its weight when full.
- Ensure adequate ventilation around the unit. Maintain at least 10 cm (4 inches) of space on all sides for proper airflow.
- Avoid placing the freezer in direct sunlight, near heat sources, or in areas with high humidity.
- The unit is designed for indoor use in a controlled environment.

Power Connection:

- Ensure the power supply matches the freezer's requirements (110V AC).
- Plug the power cable securely into a grounded electrical outlet.
- Allow the freezer to stand upright for at least 2-4 hours before plugging it in to allow refrigerants to settle.

Figure 3: The freezer is designed for easy movement, weighing approximately 60 lbs (27.5 kg).

4. Operation

Powering On:

After connecting the power cable, the freezer's digital display will illuminate, showing the current internal temperature. The unit will begin cooling to its default or last set temperature.

Temperature Control:

The freezer features a microcomputer temperature control system with an LED digital display for precise temperature management.

Figure 4: Digital control panel with temperature display and adjustment keys.

Setting the Temperature (SP):

The shutdown temperature (SP) is the primary parameter for temperature control.

1. Press the **SET** key. The display will show "SP".
2. Press **SET** again. The current SP temperature will be displayed.
3. Use the **UP (↑)** and **DOWN (↓)** keys to adjust the desired SP temperature.
4. Press **SET** to confirm the new temperature setting.
5. To exit parameter setting, press the **SET** key and **DOWN (↓)** key simultaneously, or wait for one minute for the display to automatically exit.

Advanced Parameter Settings:

Access to advanced parameters (r0, r1, r2, P1, A0, A1, A2, A8, H5, c0, c2, P4) requires a password (H5). Refer to the detailed parameter table in the Specifications section for their functions and ranges.

Intelligent Temperature Alarm:

The freezer is equipped with an intelligent alarm system to notify you of temperature deviations. You can set custom upper and lower temperature limits. If the internal temperature exceeds these limits, a buzzer alarm will sound, and the display will flash.

- **High Temperature Alarm Value:** (SP + R0 + A1)
- **Low Temperature Alarm Value:** (SP - A1)
- **A0 (Overtemperature alarm return error):** When the temperature returns within (high temperature alarm value - A0) or (low temperature alarm value + A0), the alarm cancels.
- **A2 (Overtemperature alarm prohibited during power-on):** The alarm is suppressed for the duration of A2 minutes after power-on.
- **A8 (Overtemperature alarm delay):** The timer starts when the temperature exceeds limits. The alarm activates after A8 minutes.

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Video 1: Demonstration of the low temperature refrigerator display and temperature setting.

5. Maintenance

Defrosting:

Regular defrosting is crucial to maintain optimal performance and prevent excessive ice buildup, which can reduce cooling efficiency and storage capacity.

1. Turn off the freezer and disconnect it from the power supply.
2. Remove all stored items and transfer them to another suitable cold storage unit.
3. Open the lid and allow the ice to melt naturally. Do not use sharp objects or heating devices to accelerate defrosting, as this can damage the unit.
4. Use the provided defrosting scraper to gently remove ice.
5. Wipe away melted water with a clean cloth.
6. Once defrosted and dry, reconnect power and allow the unit to reach the desired temperature before returning samples.

Figure 5: Product details showing the air-tight seal and air inlet, important for maintenance.

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Video 2: Overview of the 20L Ultra-Low Temperature Freezer, including internal views relevant to cleaning.

Cleaning:

- Clean the interior and exterior surfaces with a mild detergent and water. Avoid abrasive cleaners or solvents.
- Regularly clean the condenser coils (located at the back or side vents) to ensure efficient cooling. Use a soft brush or vacuum cleaner.
- Inspect and clean the door gaskets to ensure a tight seal. A compromised seal can lead to ice buildup and temperature fluctuations.

6. Troubleshooting

If you encounter issues with your freezer, refer to the following common problems and solutions. If the problem persists, contact customer support.

Problem	Possible Cause	Solution
Freezer not cooling	No power; Power cable loose; Temperature setting too high; Vents blocked.	Check power connection; Ensure proper temperature setting; Clear any obstructions from vents.
Temperature too high/low (alarm active)	Door not sealed properly; Excessive door openings; Ambient temperature too high; Faulty sensor.	Check door seal; Reduce frequency of door openings; Ensure proper room temperature; Contact support if sensor suspected.
Excessive ice buildup	Frequent door openings; Damaged door gasket; High humidity environment.	Defrost the unit; Inspect and clean/replace door gasket; Ensure proper room humidity.
Unusual noise	Unit not level; Objects touching the compressor; Fan obstruction.	Ensure unit is level; Check for obstructions; Contact support if noise persists.

7. Specifications

Parameter	Value
Product Dimensions (D x W x H)	30.7" x 16.2" x 20.3" (78cm x 41cm x 51.5cm)
Internal Dimensions (L x W x H)	327mm x 220mm x 305mm
Brand	LABFENG
Model Name	Portable Ultra Low Temperature Freezer
Color	Blue
Door Material Type	Stainless Steel
Item Weight	46 Pounds (20.9 kg)
Wattage	270 watts
Voltage	127 Volts (AC)
Installation Type	Freestanding
Specification Met	CE

Figure 6: Internal and external dimensions of the freezer.

Controller Parameter Description (KELD KHT11-IB):

Code	Parameter	Unit	Range	Factory Setting
SP	Shutdown temperature	degree	r1 ~ r2	On demand
r0	Temperature regression	degree	0.1 ~ 20	2.0
r1	SP minimum	degree	-200 ~ r2	On demand
r2	SP maximum value	degree	r1 ~ 50	On demand
P1	Temperature calibration	degree	-20 ~ 20	0.0
A0	Overtemperature alarm return error	degree	0 ~ 99.9	2.0
A1	Overtemperature alarm	degree	0 ~ 999	0.0
A2	Do not alarm over temperature on power-on	minutes	0 ~ 999	On demand

Code	Parameter	Unit	Range	Factory Setting
A8	Overtemperature alarm delay	minutes	0 ~ 250	On demand
H5	Parameter setting password	number	0 ~ 9999	0
c0	Minimum downtime	minutes	0 ~ 59	0
c2	Compressor start-stop state when the probe is faulty	option	ON/OFF	ON
P4	Indicates whether to display decimals	option	YES/NO	YES

8. Warranty and Support

Warranty Information:

The LABFENG 20L Ultra-Low Temperature Freezer comes with a manufacturer's warranty. For specific details regarding the warranty period and coverage, please refer to the documentation included with your purchase or contact customer support.

Customer Support:

If you have any questions, require technical assistance, or need to report an issue, please contact LABFENG customer support. We provide 24-hour after-sales support to ensure your satisfaction.
For support, please refer to the contact information provided at the point of purchase or visit the official LABFENG website.