

Ultra Low Temperature Freezer Manual

Thank you for your purchase.

This manual contains: set-up instructions, unit specs, safety information, controller operation and maintenance steps.



L2X-5-ULT85

IMPORTANT:

Your unit is preprogrammed

Place your unit in the desired location. Plug the unit in and allow it to cool and become stable for a minimum of 24 hours before logging temperature or stocking products.

Be careful when setting or changing temperatures

WARNING: Changing some controller parameters can damage your unit and/or result in a loss of product. Will not be held responsible for losses due to unauthorized parameter changes.



Changing advanced parameters may damage the unit or void your warranty. Please contact Technical Support before attempting to change advanced parameters.

CONTENTS

- | | |
|-------------------------------|------------------------|
| 1. Warnings | 5. Product Description |
| 2. Installation and Operation | 6. Maintenance |
| 3. Temperature Controller | 7. Temperature Logging |
| 4. Parameters | |

1 Warnings



Important operating and/or maintenance instructions. Read the accompanying text carefully.



Hot surface(s) present which may cause burns to unprotected skin or to materials which may be damaged by elevated temperatures.



Potential electrical hazards. Only qualified persons should perform procedures associated with this symbol.



Extreme temperature hazards, hot or cold. Use special handling equipment or wear special, protective clothing.

Safety Information

- All internal adjustments and maintenance must be performed by qualified service personnel.
- Do not use this appliance for other than its intended use.
- Do not cover the front grille or block the rear air entry by placing object up against the cabinet. Ensure adequate ventilation.
- If the main supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified and skilled persons in order to avoid hazard.
- Do not store explosive substances, such as aerosol cans with flammable propellant.
- Do not use mechanical devices or other means to accelerate the defrosting process.
- Disconnect the main power supply before attempting any cleaning, removal of any covers, or maintenance work.

2 Installation and Operation

Assembly

- Remove the appliance from the packaging and peel off any protective film from all surfaces.
- Ensure that this product is positioned on a level surface, so as to allow the door(s) to shut and seal correctly, as well as to allow proper drainage from the evaporator tray, to prevent any overflow.

Ventilation

- All models must have clear and unobstructed ventilation from the entire surface area of the front grille.

3 Temperature Controller



SET

- Enter a parameter setting
- Switch between menu and parameter



- Adjust menu and parameters
- After 3s, parameter setting uploads



- Clear alarm
- The mandatory cooling mode will be activated or 10s

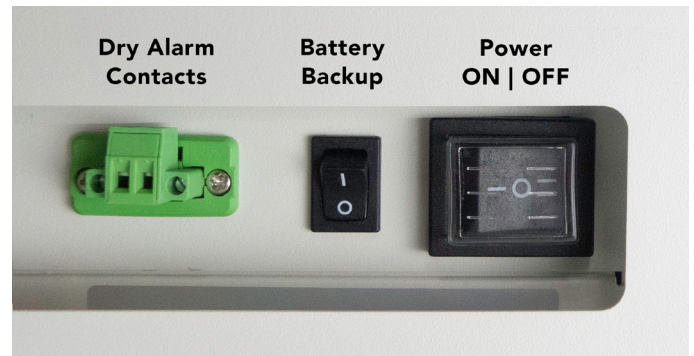


- Adjust menu and parameters
- After 3s, parameter setting downloads





RST

- Exit from parameter settings
- Press for 3s to force stop capillary heating output

3 Power and Contacts



Indicator light status description

| Symbol | Status | Meaning |
|---|--------|---|
| Set | ON | Parameter setting |
| | OFF | Status of temperature measuring and controlling |
|  | ON | High temperature compressor work |
| | OFF | High temperature compressor stop |
| | FLASH | High temperature compresso time delay |
|  | ON | Low-temperature compressor work in non-forced refrigeration mode |
| | OFF | Low temperature compressor is closed in non-forced refrigeration mode |
| | FLASH | Forced refrigeration mode |
|  | ON | Capillary heating starts |
| | OFF | Capillary heating is closed |
| E2H | ON | High temperature alarm of secondary system condenser |
| E2P | ON | High temperature protection of secondary system condenser |
| Erd | ON | Door open alarm |
|  | ON | Grid power supply anomaly |
| | OFF | Normal power supply |

4Parameters

Temperature parameter setting

| Parameters | Description | Min | Max | Unit | Default |
|------------|--|-----|-----|-------|---------|
| St | Temperature set value | C13 | C14 | °C/°F | -80 |
| A8 | Over temperature alarm upper deviation | 0.1 | 20 | °C/°F | 10 |
| A9 | Over temperature alarm lower deviation | 0.1 | 20 | °C/°F | 10 |
| C13 | Set Minimum temperature | -95 | C14 | °C/°F | -90 |
| C14 | Set Maximum temperature | C13 | 85 | °C/°F | -50 |
| C1 | Temperature difference | 0.1 | 20 | °C/°F | 0.4 |

Setting the Temperature

- Press Set key for 3 seconds. it display the code St.
- Press Set key again to display the temperature SETPOINT.
Modify by pressing the UP or DOWN keys.

Changing Parameters - Enter Admin Section

- Press Set key for 3 seconds, it will display the code St.
- Press DOWN arrow to Po. Press Set - 00.
- Press DOWN arrow to password (55). Press Set.
- Choose parameter by scrolling with UP or DOWN arrows.
Select parameter by pressing Set.
- Change parameter settings with the UP and DOWN arrow
- When finished changing parameters press Set.

| Parameter | Description | Setting scope | Default |
|---------------------------|--|--|----------|
| User menu | | | |
| St | Set cabinet temperature point | LS to US | -80 |
| Administrator menu | | | |
| Po | Administrator menu password | (The password is 55 and cannot be changed) | 55 |
| C8 | Cabinet temp. probe calibration when below 0° Use this parameter to match temp display with datalogger | -15.0~15.0 | 0 |
| C9 | Condenser probe calibration (High-temp. compressor loop) | -15.0~15.0 | 0 |
| C10 | Ambient temp. probe calibration | -15.0~15.0 | 0 |
| C11 | High-temp. evaporator probe calibration | -15.0~15.0 | 0 |
| C13 | The Minimum set temp. of cabinet | -95.0~C14 | -86 |
| C14 | The Maximum set temp. of cabinet | C13~50.0 | -40 |
| C15 | Maximum temp. of high-temp. evaporator when low-temp. compressor turned off | C7~10.0 | -12 |
| H1 | The cycle time of capillary heating wire | 1~300 | 108 |
| H2 | The working time of capillary heating wire | 1~90 | 3 |
| H3 | Maximum delay time of capillary heating | 1~90 | 60 |
| A3 | Alarm output delay after opening cabinet door | 0~60 | 1 |
| A4 | Alarm ringback time when the alarm is not cleared | 0~60 | 10 |
| A5 | Maximum temp. of over-temp. alarm of ambient (A5>A6) | A6~70.0 | 40 |
| A6 | Minimum temp. of over-temp. alarm of ambient (A6<A5) | -10.0~A5 | 5 |
| A7 | Delay time of over-temp. alarm of ambient | 0~60 | 10 |
| do1 | Door switch controls output | 0:Cancel door switch 1:Alarm when the door open | 0 |
| do2 | Whether a buzzer response is required when the door is open | 0:No 1:Yes | 1 |
| Cd1 | High temperature alarm starting value of condenser | 30.0~Cd3 | 38 |

5 Product Description

| | | |
|----------------------|-----------------------------------|--|
| Technical Data | Cabinet Type | Chest |
| | Climate Class | N |
| | Cooling Type | Direct cooling |
| | Defrost Mode | Manual |
| | Refrigerant | CFC-Free |
| Performance | Cooling performance(°C) | -86 |
| | Temperature Range(°C) | -40~-86 |
| Control | Controller | Microprocessor |
| | Display | LED |
| Material | Interior | stainless steel |
| | Exterior | Galvanized steel powder coating |
| Dimensions | Capacity(L) | 128 |
| | Interior Dimensions(W*D*H) | 640×450×470 (mm) |
| | Exterior Dimensions(W*D*H) | 820×690×1030 (mm) |
| | Thickness of Cabinet Foamed Layer | 90mm |
| | Thickness of Door | 90mm |
| | | |
| Power Supply(V/Hz) | | 220V/50Hz or 115V/60Hz |
| Controller Functions | Display | Large digital display & adjusting keys |
| | High/Low Temperature | Y |
| | Hot Condenser | Y |
| | Power Failure | Y |
| | Sensor Error | Y |
| | Low Battery | Y |
| | High Ambient Temp | Y |
| | Alarm mode | Sound and light alarm, remote alarm terminal |
| Accessories | Caster | Y |
| | Test Hole | Y |
| | Chart Temperature Recorder | Optional |
| | Door locking device | Y |
| | Handle | Y |
| | Pressure balance hole | Y |
| | Racks & Boxes | Optional |
| | | |

6 Maintenance

| Fault | Probable Cause | Action |
|--|---|--|
| The appliance is not working | The unit is plugged in correctly | Check the unit is plugged in correctly |
| | Plug or lead is damaged | Call our agent or qualified technician |
| | Power supply | Check power supply |
| | Internal wiring fault | Call our agent or qualified technician |
| The appliance turns on, but the temperature is too high or too low | Filter or condenser blocked with dust | Clean filter or condenser |
| | Doors are not shut properly | Check doors are shut and seals are not damaged |
| | Appliance is located near a heat source or air flow to the condenser is being interrupted | Move the appliance to a more suitable location |
| | Ambient temperature is too high | Increase ventilation or move appliance to a Low Temperature Freezer position |
| | Insufficient airflow to the fans | Remove any blockages to the fans |
| | Appliance is overloaded | Reduce the amount stored in the appliance |
| | Factory default parameters adjusted | Call our agent or qualified technician |
| The LED lights not working | Led light short Leaded damage | Call our agent or qualified technician |
| The appliance is unusually loud | The appliance is touching a neighboring object | Check installation position and change if necessary |
| | The appliance has not been installed in a level or stable position | Check installation position and change if necessary |

Alarm Code

| Alarm Code | Fault Description |
|------------|--|
| E1 | Cabinet temperature sensor failure |
| E2 | Condenser temperature sensor failure |
| E3 | Ambient temperature sensor failure |
| E4 | Evaporator temperature sensor failure |
| E1H | Temperature of inner cabinet with high temperature alarm |
| E1L | Temperature of inner cabinet with low temperature alarm |
| E3H | Ambient temperature with high temperature alarm |
| E3L | Ambient temperature with low temperature alarm |
| E2H | High temperature alarm for condenser probe |
| E2P | High temperature protection for condenser |
| Erd | Door ajar alarm |

7 Temperature Logging

When storing vaccines you may be required to preform a field validation test. A NIST calibrated external data logger may be used for this purpose. A logger with text, email or online access is an added layer of protection for your product load in the event of a temperature excursion.

| Parameter | Description | Setting scope | Default |
|---------------------------|--|--|----------|
| User menu | | | |
| St | Set cabinet temperature point | LS to US | -80 |
| Administrator menu | | | |
| Po | Administrator menu password | (The password is 55 and cannot be changed) | 55 |
| C8 | Cabinet temp. probe calibration when below 0° Use this parameter to match temp display with datalogger | -15.0~15.0 | 0 |
| C9 | Condenser probe calibration (High-temp. compressor loop) | -15.0~15.0 | 0 |
| C10 | Ambient temp. probe calibration | -15.0~15.0 | 0 |
| C11 | High-temp. evaporator probe calibration | -15.0~15.0 | 0 |
| C13 | The Minimum set temp. of cabinet | -95.0~C14 | -86 |
| C14 | The Maximum set temp. of cabinet | C13~50.0 | -40 |
| C15 | Maximum temp. of high-temp. evaporator when low-temp. compressor turned off | C7~10.0 | -12 |
| H1 | The cycle time of capillary heating wire | 1~300 | 108 |
| H2 | The working time of capillary heating wire | 1~90 | 3 |
| H3 | Maximum delay time of capillary heating | 1~90 | 60 |
| A3 | Alarm output delay after opening cabinet door | 0~60 | 1 |
| A4 | Alarm ringback time when the alarm is not cleared | 0~60 | 10 |
| A5 | Maximum temp. of over-temp. alarm of ambient (A5>A6) | A6~70.0 | 40 |
| A6 | Minimum temp. of over-temp. alarm of ambient (A6<A5) | -10.0~A5 | 5 |
| A7 | Delay time of over-temp. alarm of ambient | 0~60 | 10 |
| do1 | Door switch controls output | 0:Cancel door switch 1:Alarm when the door open | 0 |
| do2 | Whether a buzzer response is required when the door is open | 0:No 1:Yes | 1 |
| Cd1 | High temperature alarm starting value of condenser | 30.0~Cd3 | 38 |

