



CELLSTORE REVELLA

Cell Thawing System

User Manual

Model: CS-THAW-01



CellStore Biotechnology Co., Ltd.



About This Manual



Thank you for choosing the CellStore Revella Cell Thawing System. This manual describes the instrument, its controls, and the procedures required for safe operation. Read this manual in full before installing or operating the instrument, and retain it for future reference.



Receiving and Unpacking Inspection



When the shipment is received, inspect the instrument and accessories for visible damage and verify all items against the packing list. If an item is missing or damaged, do not operate the instrument; contact your CellStore representative or authorized distributor.

Table of Contents

01	IMPORTANT SAFETY INFORMATION	03
	READ BEFORE USE	03
	GENERAL SAFETY PRECAUTIONS	03
	CLEANING AND ROUTINE CARE	04
02	PRODUCT OVERVIEW	05
	INTENDED USE AND KEY FEATURES	05
	OPERATING ENVIRONMENT	05
	SPECIFICATIONS	05
03	INSTRUMENT DESCRIPTION	06
	INSTRUMENT COMPONENTS	06
04	OPERATION	07
	POWER ON AND LOG IN	07
	MAIN MENU	07
	THAWING SCREEN	08
	SYSTEM LOGS	08
	THAWING RECORDS	09
	AUDIT TRAIL	10
	ALARM LOG	10
	SYSTEM SETTINGS	11
	BASIC SETTINGS	12
	RUN SETTINGS	12
	COUNTDOWN SETTINGS	13
	WI-FI SETTINGS	13
	EMAIL SETTINGS	14
	USER MANAGEMENT	14
	CREATE USER	15
	USER PERMISSIONS	15
	PASSWORD ADMINISTRATION	17
	CHANGE PASSWORD	17
05	TROUBLESHOOTING	18

01 Important Safety Information

Read Before Use

Safe and effective use requires familiarity with the instrument and its operating procedures. Read this manual before use.

WARNING: Do not operate the instrument until you have read and understood this manual.

WARNING: Failure to follow these instructions may result in burns, electric shock, equipment damage, or other injury. Observe all safety statements in this manual.

General Safety Precautions

Observe the following precautions whenever the instrument is operated, cleaned, maintained, or serviced. Failure to follow these precautions may impair the protection provided by the instrument.



This instrument is classified as Class I, Type B equipment under GB 9706.1 and is intended for indoor use only.



Only trained personnel who understand the installation and operation of electrical laboratory equipment may operate this instrument.

Do not open the enclosure or attempt unauthorized repairs. Doing so may expose the operator to hazardous voltage and may void the warranty. Contact CellStore or an authorized service provider for service.

To reduce the risk of electric shock, connect the instrument only to a properly grounded outlet. Use the supplied three-conductor power cord and a grounded power receptacle. Never defeat the protective earth connection.

Before connecting power, verify that the supply voltage and outlet rating meet the requirements on the instrument label and in the Specifications section.

If the power cord is damaged, replace it with a cord of the same type and rating. Route the cord so that it cannot be pinched, compressed, or walked on.

Insert the plug fully into the outlet. When disconnecting power, grasp the plug - never pull on the cord.

WARNING - HOT SURFACE:



The metal heating module can become hot during normal operation. Avoid contact with the module and use care when handling tubes to prevent burns or liquid release.



This instrument should be stored in a low-humidity environment with minimal dust, away from water sources and direct sunlight or strong light sources. Ensure proper indoor ventilation, free from corrosive gases or strong magnetic interference, and keep it away from heating systems, stoves, and other heat sources. Avoid placing the instrument in damp or dusty areas. The ventilation openings on the instrument must not be blocked or covered to prevent overheating. When using multiple instruments simultaneously, maintain a minimum distance of 30 cm between each device.



When stopping operation, the power supply should be turned off. If the instrument is not used for an extended period, the power plug should be unplugged and the instrument covered with a soft cloth or plastic sheet to prevent dust ingress.



In the following circumstances, the power plug of the instrument should be immediately unplugged from the power socket, and contact the supplier or have it handled by trained maintenance personnel:

- * Liquid has been spilled inside the instrument;
- * Instrument has been exposed to rain or water;
- * Instrument is not working properly, particularly if unusual sounds or odours are present;
- * Instrument has been dropped or case damaged;
- * There is a noticeable change in the functioning of the instrument.

Cleaning and Routine Care

- * Turn off and unplug the instrument before cleaning.
- * Clean exterior surfaces regularly with a soft, damp cloth. Do not use strong alkaline solutions, concentrated alcohol, organic solvents, or other corrosive cleaners.
- * Keep the heating modules and tube wells dry and free of residue or contaminants.

02 Product Overview

Intended Use and Key Features

The CellStore Revella Cell Thawing System is designed to thaw cryopreserved samples in compatible cryogenic vials. Film-heating technology, automatic vial clamping, and non-contact temperature sensing support rapid, controlled, and water-free thawing.

Key Features Include:

- * Automatic vial clamping enables dry thawing and helps reduce contamination risk associated with water baths.
- * Designed for cryopreserved biological samples, including mesenchymal stem cells, CAR-T cells, and established cell lines.
- * 7-inch color resistive touchscreen with 800 x 480 resolution.
- * Embedded operating system for responsive, reliable operation.
- * Thawing records can be exported by USB for review and traceability.
- * Wi-Fi connectivity supports record export by email.
- * Supports connection to a compatible thermal printer for printing thawing results.
- * Automatic fault detection and audible/visual alarms.
- * Three role-based user access levels.

Operating Environment

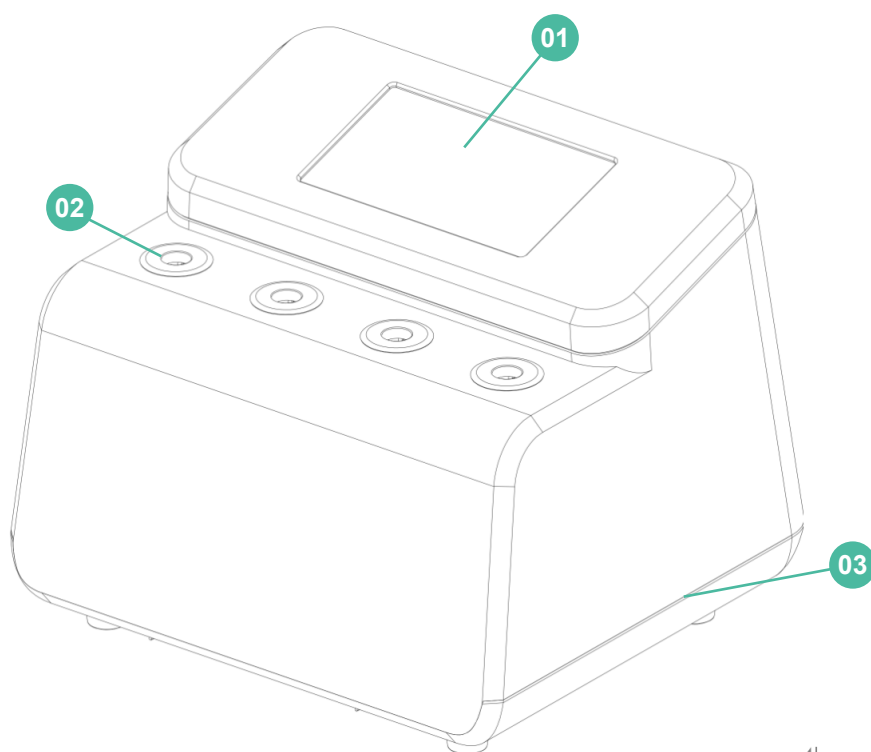
- * **Ambient temperature:** 0 to 35°C
- * **Relative humidity:** ≤70%
- * **Power supply:** 100-240 VAC, 50/60 Hz

Specifications

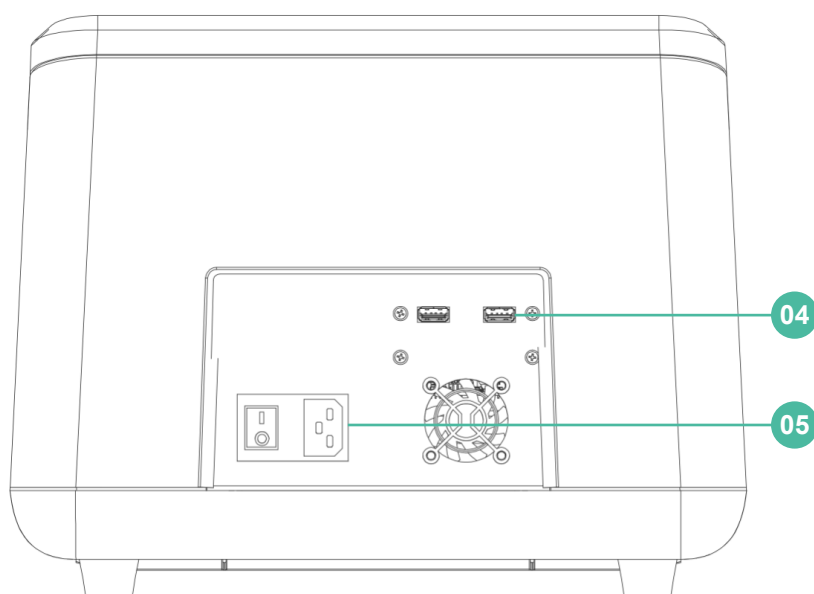
Project	Parameter
Compatible Vial Size	1.8-2.0 mL cryogenic vial
Typical Fill Volume	0.8-1.5 mL
Sample-holder Temperature Accuracy	±1°C at 50°C
Typical Thaw Time	≤3 minutes
Display	7-inch color touchscreen
Display Screen Resolution	800x480
Interfaces	2 USB ports; Wi-Fi
Run-record Export	PDF format
Maximum Power Consumption	300W
Voltage Specification	100-240 VAC, 50/60 Hz
Fuse	250V/3A Φ5×20
Size	335 x 293 x 266 mm
Weight	7 kg

03 Instrument Description

Instrument Components



- 01 Display
- 02 4 Resuscitation ports
- 03 Status indicator light



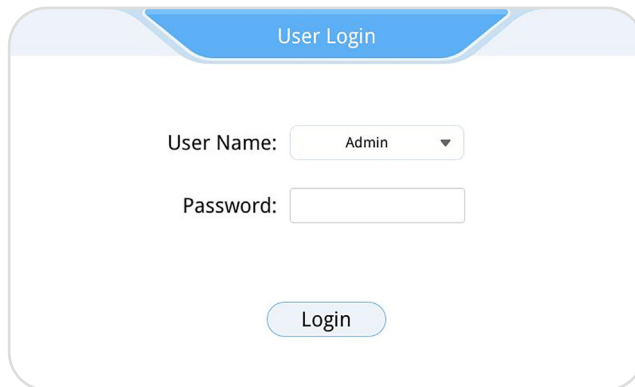
- 04 USB flash drive,
Wifi module interface
- 05 Power switch and socket

04 Operation

Power On and Log In

Connect the device to power and turn on the power switch. Once powered on, each channel will automatically warm up to the preset temperature, with the status indicator light (orange) flashing.

After completing the system self-check, you will enter the user login interface (as shown below). Select a username and enter your password (default username: Admin, default password: abc123). You will need to change the administrator password on your first login.



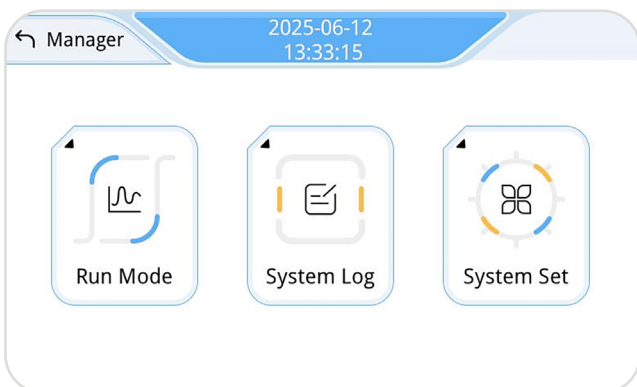
The User Login interface features a blue header with the text "User Login". Below the header, there are two input fields: "User Name:" with a dropdown menu showing "Admin" and a small downward arrow, and "Password:" with a text input field. At the bottom, there is a blue "Login" button.

Button/Label Name	Function
User Name	Select created users
Password	Enter user password
Log In	Go to the main menu interface

This device comes with three default users preconfigured at the factory:

User Name	Initial Password	Role
Admin	abc123	Device parameters, logs, users, and permission allocation management
Manage	abc123	Thawing procedure, device parameters, log management
Operator	abc123	Thawing operation and log management

Main Menu



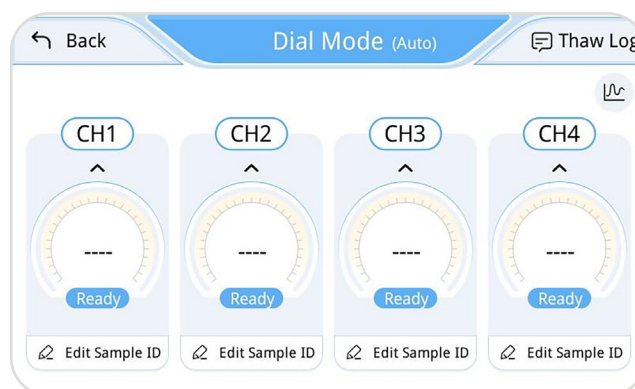
The Main Menu interface has a blue header with a back arrow and the text "Manager". To the right of the header, the date and time "2025-06-12 13:33:15" are displayed. Below the header, there are three large, rounded square buttons with icons and labels: "Run Mode" (with a waveform icon), "System Log" (with a document icon), and "System Set" (with a gear icon).

Button/Label Name	Function
Running Mode	Thawing screen
System log	Go to the log view interface
System Settings	System parameter settings interface

Thawing Screen

Note:

After startup, the thawing interface will be displayed. Thawing procedures must be initiated only after the status indicator light turns blue. Forcibly removing the cryogenic vial during thawing may cause instrument malfunction.



Thawing Procedure:

Insert the test tube to be thawed vertically into the channel and apply appropriate force to ensure complete insertion. The test tube clamping block will automatically close at this point. The device will emit a confirmation sound indicating correct insertion, allowing the user to release their grip. The thawing program will then commence. Upon initiation of thawing, the status indicator light will display orange, and the device will immediately start cumulative timing (minutes: seconds).

After thawing, the cryogenic vial will automatically eject, and the device will emit an audible prompt with the status indicator light rapidly flashing green.

Button/Label Name	Function
Return	Return to the parent menu
 	Switch between graphical and dial modes
Thawing Records	Go to the recovery log interface
Edit Sample ID	Edit sample ID

System Logs

System logs should be exported and backed up regularly and quantitatively to prevent automatic deletion. No user can manually delete logs. Below are the scenarios requiring log export and backup:

Recovery log

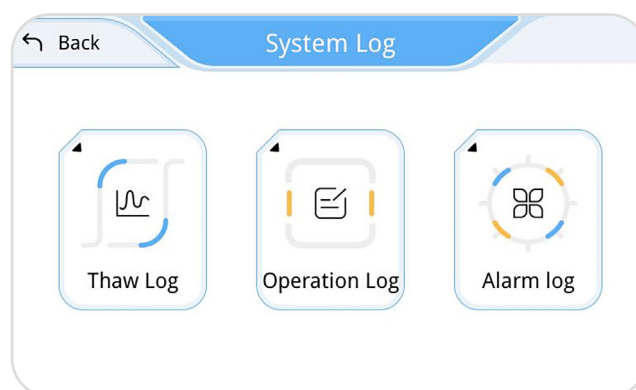
Based on the remaining available storage space as the judgment criterion, when the available storage space ratio is less than or equal to 20%, the system will prompt the user to export thawing logs upon startup, and the earliest 20 days of thawing logs will be automatically deleted during the next experiment.

Operation log

Using the number of operation log entries as a threshold, the system prompts users to export operation logs when the log count exceeds 14,000 entries upon startup. When the count surpasses 15,000 entries, the system automatically deletes the first 3,000 operation log entries.

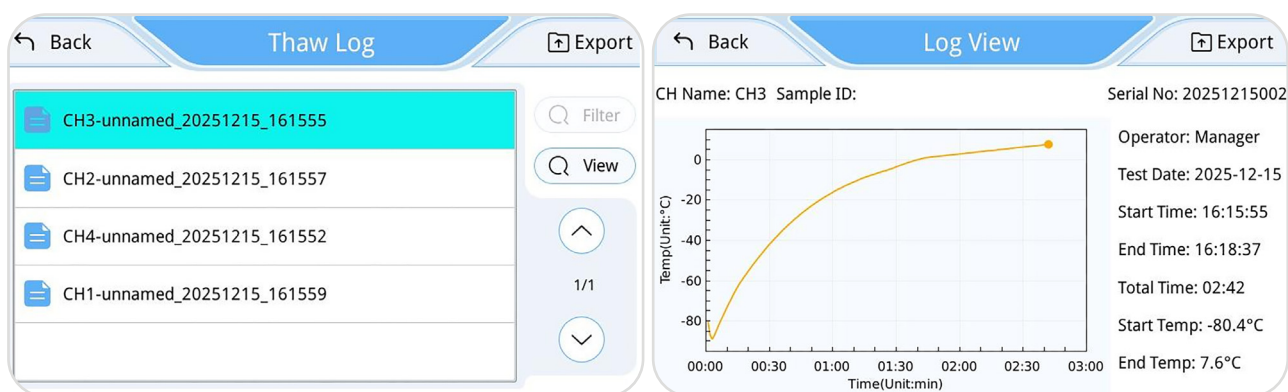
Alarm log

Cannot be deleted, will not overwrite, and will always remain in the device.



Button/Label Name	Function
Return	Return to the parent menu
Thawing Records	Go to the recovery log interface
Operation log	Go to the operation log interface
Alarm log	Open the alarm log interface

Thawing Records

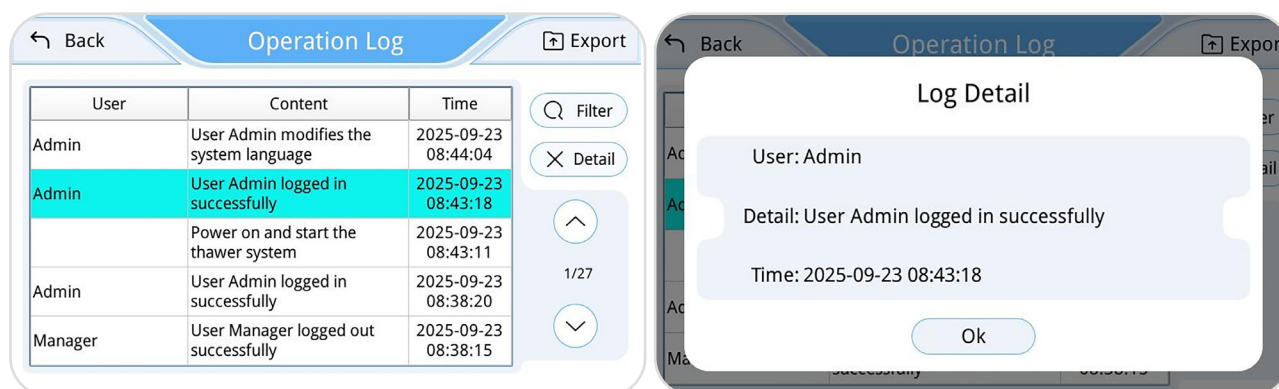


Button/Label Name	Function
Return	Return to the parent menu
View	Go to the log view interface
Export	Export the selected recovery log

Audit Trail

Operation logs Can Record The Following Categories Of Information:

- * User login, sign out, and management operations.
- * Thawing procedures and management of thawing logs.
- * Modify system parameters.

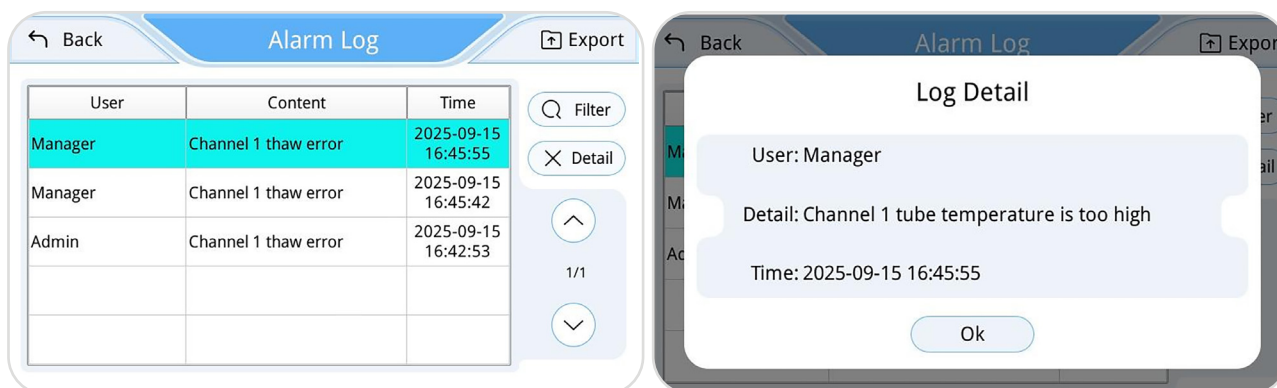


Button/Label Name	Function
Return	Return to the parent menu
Filter	Go to the screening interface
Details	Log Details Interface
Export	Export operation log
^ v	Flip pages up/down

Alarm Log

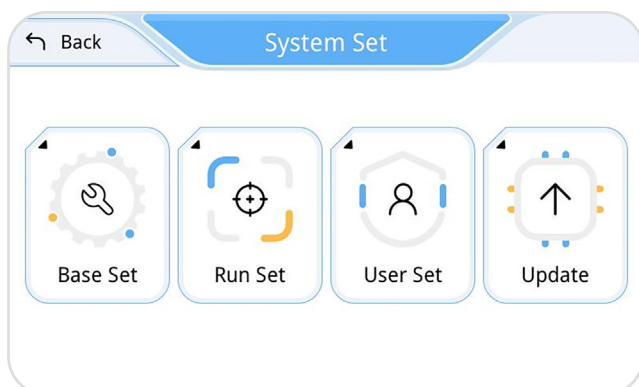
Alarm logs can record the following categories of information:

Class	Alert content
Storage Space	Insufficient remaining storage space
Thawing Procedures	Abnormal termination of thawing procedure: Cryogenic vial overheating
	Abnormal termination of thawing procedure: Cryopreservation tube was removed abnormally
Thawing Error	No thawing permission: illegal insertion of test tube Illegal insertion of test tubes in non-testing interfaces Excessive temperature in the test tube
Temperature Abnormalities	Abnormal temperature in the left module Abnormal module temperature on the right side Abnormal infrared sensor



Button/Label Name	Function
Return	Return to the parent menu
Filter	Go to the screening interface
Details	Go to the log details page
Export	Export alarm logs
	Flip pages up/down

System Settings



Button/Label Name	Function
Return	Return to the parent menu
Basic Settings	Go to the basic settings interface
Run Settings	Go to the run settings interface
User Settings	Go to user settings
Upgrade	Upgrade the software system

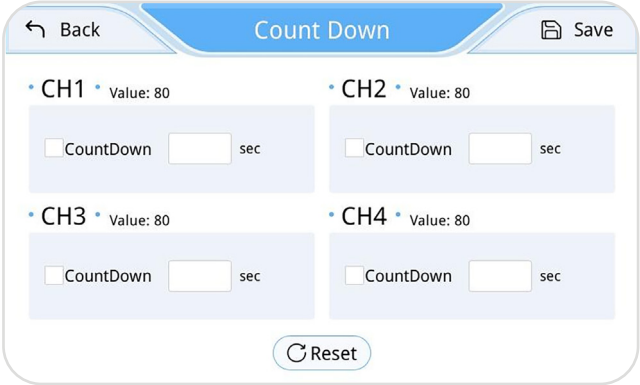
Basic Settings

Button/Label Name	Function
Return	Return to the parent menu
Date/Time	You can modify the current system time
Language	You can modify the current system display language
Auto Logout	Enable or disable automatic sign-out for the current user
Keypad Tone	Enable or disable button sounds
Prompt Volume	You can adjust the alert sound volume
Save	Save modification settings

Run Settings

Button/Label Name	Function
Return	Return to the parent menu
Infrared Metering Mode	For third-party verification of infrared probe accuracy
Countdown	Recovery Countdown Settings Interface
Temperature Correction	Temperature calibration interface of internal heating blocks in the entire machine
Wi-Fi Settings	Wi-Fi settings interface
Mail Settings	Mail Settings Interface
Screen Calibration	Touchscreen calibration

Countdown Settings



The interface shows a 'Count Down' menu with a 'Back' button and a 'Save' button. It contains four channels (CH1, CH2, CH3, CH4), each with a 'Value: 80' display, a 'CountDown' checkbox, and a numeric input field followed by 'sec'. A 'Reset' button is located at the bottom center.

Button/Label Name	Function
Return	Return to the parent menu
Countdown	Set the countdown time for the corresponding channel
Reset	Reset the countdown time for all channels
Save	Save modification settings

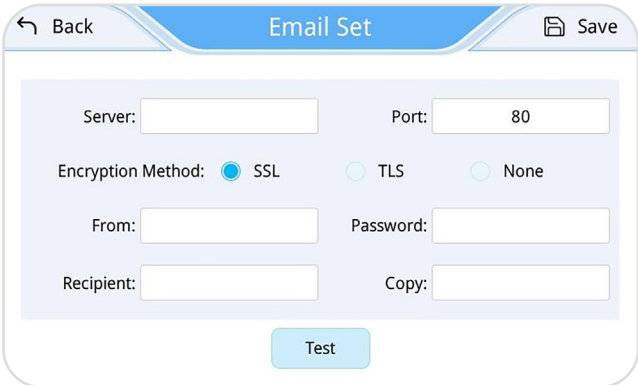
Wi-Fi Settings



The interface shows a 'Wifi Set' menu with a 'Back' button and a 'Save' button. It includes input fields for 'Wifi Name' and 'Password'. Below these is an 'Encryption Method' section with three radio buttons: 'Wap' (selected), 'Wep', and 'None'. A 'Connect' button is at the bottom center.

Button/Label Name	Function
Return	Return to the parent menu
Network Name (SSID)	Set the Wi-Fi name for connection
Password	Set Wi-Fi connection password
Encryption Method	Configure Wi-Fi encryption method
Connect	Connect to Wi-Fi automatically
Save	Save modification settings

Email Settings

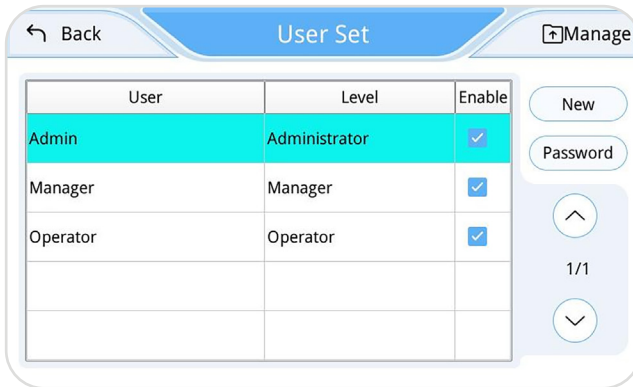


The 'Email Set' screen features a 'Back' button at the top left and a 'Save' button at the top right. The main area contains several input fields: 'Server' and 'Port' (set to 80), 'Encryption Method' with radio buttons for 'SSL' (selected), 'TLS', and 'None', 'From' and 'Password', 'Recipient', and 'Copy'. A 'Test' button is located at the bottom center.

Button/Label Name	Function
Return	Return to the parent menu
Server Address	Set mail server address
port Number	Set the mail server port number
Encryption Method	Set email encryption method
Sender Address	Set sender email
Password	Sender email password
Recipient Address	Set recipient email
CC	Set CC email addresses
Test	Check if the email settings are correct
Save	Save modification settings

User Management

The instrument comes with three default user roles: Admin, Manager, and Operator, all using the initial password abc123.



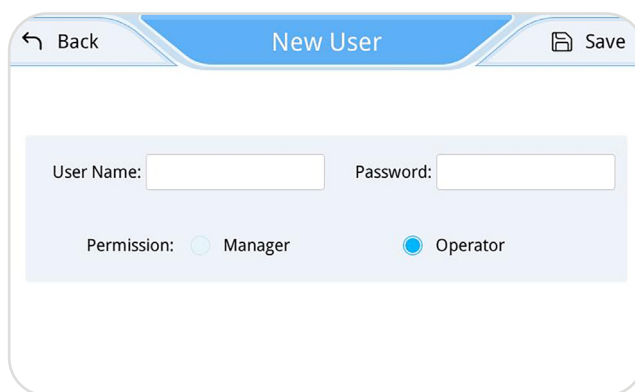
The 'User Set' screen has a 'Back' button at the top left and a 'Manage' button at the top right. It displays a table with three columns: 'User', 'Level', and 'Enable'. The table lists three users: Admin (Administrator, enabled), Manager (Manager, enabled), and Operator (Operator, enabled). To the right of the table are buttons for 'New' and 'Password', and a '1/1' indicator with up and down arrows.

User	Level	Enable
Admin	Administrator	☒
Manager	Manager	☒
Operator	Operator	☒

Button/Label Name	Function
Return	Return to the parent menu
Create User	Create new user interface
Change Password	Change the current user's password
Enable	Click the checkbox below to enable or disable users
Manage	Go to user management interface
^ v	Flip pages up/down

Create User

Only administrators can create users.



Button/Label Name	Function
Return	Return to the parent menu
User Name	Enter username
Password	Enter user password
Role	Select user permission level
Save	Save modification settings

User Permissions

Only administrators have the permission to modify other users' permissions. Administrators cannot restore their operational permissions and are automatically granted all permissions except manufacturer permissions. Screen calibration, temperature calibration, and software upgrades fall under manufacturer permissions.

Back
Permission
Save

Select User: Manager

Manager Permission

☒ Time Setting
☒ Sound Setting
☒ Language Setting
☒ Parameter Setting
☒ Log viewing
☒ User Manage
☒ Thaw Operation
☒ Log Manage
☒ Network Setting

Back
Permission
Save

Select User: Operator

Operator Permission

☒ Thaw Operation
☒ Log viewing
☐ Log Manage

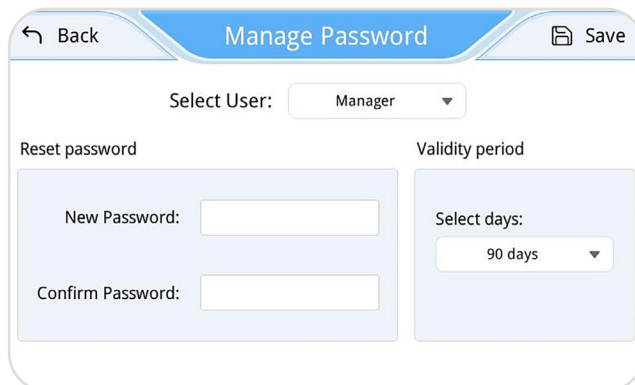
Button/Label Name	Function
Return	Return to the parent menu
Select User	Select users whose permissions need to be modified
Administrator Permissions	Manage user permission modifications
Operator Permissions	Operator user permission modification
Save	Save modification settings

The permission management matrix is shown in the table below. Selecting indicates that users can be granted or revoked these permissions; otherwise, the permissions will be disabled.

Authority/Permissions	Empower/Authorizations		
	Administrator	Manager	Operator
User Management	✓	Only operators can be managed	✗
Permission Allocation	✓	✗	✗
Time Setting	✓	✓	✗
Sound Setting	✓	✓	✗
Language Setting	✓	✓	✗
Infrared Metering Mode Setting	✓	✓	✗
Countdown Setting	✓	✓	✗
Temperature Calibration	✓	✗	✗
Wifi Setting	✓	✓	✗
Email Setting	✓	✓	✗
Screen Calibration	✓	✗	✗
Software Upgrade	✓	✗	✗
Log Management	✓	✓	✓
Log Viewing	✓	✓	✓
ThawingOperation	✗	✓	✓

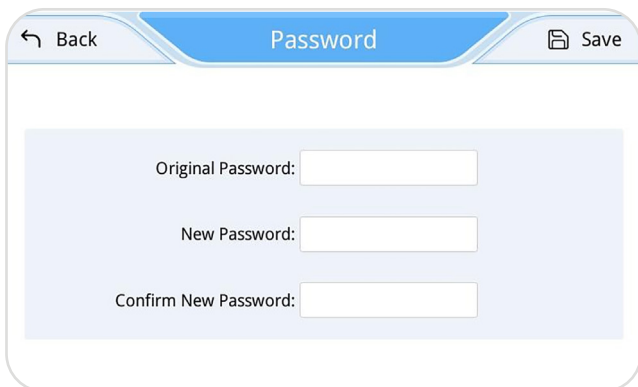
Password Administration

Only administrators can manage other users' passwords.



Button/Label Name	Function
Return	Return to the parent menu
Select User	Select users who need to reset their passwords
New Password	Enter the user's new password
Confirm New Password	Enter the user's new password again
Select Number Of Days	Select the password validity period
Save	Save modification settings

Change Password



Button/Label Name	Function
Return	Return to the parent menu
Current Password	Enter the current user password
New Password	Enter the user's new password
Confirm New Password	Enter the user's new password again
Save	Save modification settings

05 Troubleshooting

Fault Phenomenon	Fault Analysis/Handling
No Response After Startup	Power not connected (a)
No Response After Startup	Blown fuse (b)
The Device Heats Up Slowly Or Fails To Warm Up After Startup.	Heating system malfunction (b)
Fault Code: E1/E2	The left/right temperature sensors of the current channel are damaged (c)
Fault Code: E3	Infrared sensor fault (c)
Touchscreen Button Does Not Respond	Touchscreen fault (c)

- * Check the power cord connection and verify that the external power supply meets the specified requirements.
- * Replace the fuse, then restart the instrument. If the issue persists, contact CellStore or an authorized service provider.
- * Restart the instrument. If the issue persists, contact CellStore or an authorized service provider

WARNING:



Do not disassemble the instrument. Internal components may present pressure and electrical hazards. Service must be performed by authorized personnel.