

OWNERS' MANUAL

Disclaimer

This manual is intended as a resource to provide the operator with instructions on the proper use and maintenance of particular Horizon Scientific, Inc. products.

Failure to adhere to the instructions as herein could result in improper product operation, injury, and potentially void product warranties. Horizon Scientific, Inc. accepts no liability or responsibility for results stemming from improper use or maintenance of its products.

The content within this guide is provided for illustrative purposes only and may vary from the actual hardware or software photos, screen shots or illustrations.

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1. GENERAL

1.1 INTENDED AUDIENCE

This manual is intended for authorized service technicians and end users. The information herein pertains only to the specifically indicated products.

1.2 INTENDED USE

This unit is intended for medical and laboratory use.

1.3 SAFETY AND NOTICES

Symbols found in this manual



This is a general warning, caution, hazard, or important consideration symbol.



This is an electrical hazard caution / warning symbol.



This is a hot surface hazard caution / warning symbol.



This is a flammable hazard caution / warning symbol.



This is a pinch or potential injury hazard caution / warning symbol.

Warnings, cautions, and important considerations



WARNING: This product can expose you to chemicals including chromium which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov



WARNING: Electric Shock Hazard. Do Not Remove top electrical cover. Contact a qualified service representative.



WARNING: Do not remove electrical system components access unless instructed to do so.



WARNING: Do not modify, change, damage, refrigeration circuit or electrical components, unless work is performed by a certified technician.



WARNING: Only use manufacturing supplied power cord, never use an extension cord.



WARNING: The controller automatically switches power to devices such as the light circuit, perimeter heaters, or evaporator fans. Always unplug before making repairs.



WARNING: Do not overload shelves with heavy products or concentrated loads, this increases the likelihood of items falling and causing injury.



WARNING: Do not store any unsealed chemical material in this cabinet. Corrosive fumes from chemical material can linger inside of the chamber and cause serious damage to the refrigeration coils. Storing unsealed chemical material in this equipment will void the factory product warranty.



WARNING: Do not store or use gasoline, or other flammable liquid in this cabinet. This equipment is not rated to be a flammable material storage.



WARNING: Do not operate this equipment in the presence of explosive fumes.



WARNING: This equipment is not rated as a hazardous locations storage cabinet.





CAUTION: Before moving the unit, make sure the door is closed, casters are unlocked and free of obstructions, and disconnect the power cord (make sure cord is secured).





CAUTION: Do not touch the hot surfaces associated with the condenser system.


 **CAUTION:** Do not use any devices to accelerate the defrosting process.


 **CAUTION:** Avoid any sharp edges or points when working on or in the unit.

 **CAUTION:** Keep fingers out of pinch point areas; clearances between the doors and between the doors and cabinet are necessarily small; be careful closing doors.


 **CAUTION:** While cleaning condenser coil, care should be taken when lifting the canopy to prevent the canopy from falling.

 **IMPORTANT:** Only use manufacturer supplied or approved components and authorized personnel, when servicing the unit.

 **IMPORTANT:** This unit must be properly installed and located in accordance with the Installation Instructions before it is used.

 **IMPORTANT:** This unit must be decontaminated prior to sending for repair or service. Contact Horizon Scientific or your distributor for decontamination instructions.

Specific to hydrocarbon refrigerants only:

 **DANGER:** Risk of fire or explosion, flammable refrigerant used. Do not use mechanical devices to defrost the unit. Do not puncture refrigerant tubing.

- **DANGER:** Risk of fire or explosion, flammable refrigerant used. To be repaired only by trained service personnel. Do not puncture refrigerant tubing.
- **CAUTION:** Risk of fire or explosion, flammable refrigerant used. Consult repair manual/owner's guide before attempting to service this product. All safety precautions must be followed.
- **CAUTION:** Risk of fire or explosion, flammable refrigerant used. Dispose of properly in accordance with federal or local regulations.
- **CAUTION:** Risk of fire or explosion, flammable refrigerant used. Do not puncture refrigerant tubing; follow handling instructions carefully.
- **Environment:** Proper ventilation must be provided, and all ventilation openings kept free of obstruction

1.4 RECEIVING AND SHIPPING DAMAGE HANDLING

Each unit is carefully inspected to meet our high quality standards before it ships to you. Unfortunately, shipping damage can happen during transportation to you. There are two general types of shipping damage. The first is visible damage. This type of damage includes visible loss, damage, shortage or any external evidence of loss or damage that is visible at the time of delivery. This type of damage must be noted in detail on your delivery receipt. Make sure the driver signs and dates the delivery receipt, acknowledging the damages. We also recommend taking many pictures to demonstrate and document the damaged area(s). This must happen at the time of delivery. Keep a copy for your records and send another to the carrier's damage claims department along with a formal request for an inspection report. Follow up with a phone call. Their contact information can be found on the carrier's web site.

The second type of shipping damage is concealed damage. This type of damage will probably not be apparent at time of delivery and may not be discovered until unpacking and inspecting the unit. Remember, time is of the essence. You should unpack and inspect the unit as soon as possible. Each day that passes reduces the likelihood that the carrier will pay the claim. As soon as the concealed damage is discovered, stop unpacking and retain all packing materials. Take many pictures to demonstrate and document the concealed damage area(s). Contact the carrier by phone to report the claim. Note the date and time and person you spoke with. Get a claim number. Follow up with a written letter referencing the claim number and including a formal request for an inspection. Again, consult the carrier's website for specific claim instructions and follow them precisely.

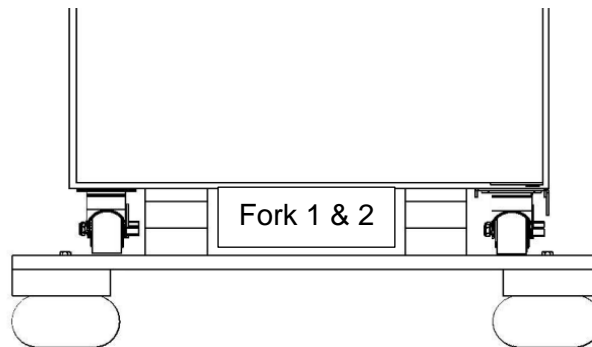


AS STATED ABOVE, THE CARRIER IS YOUR SOLE SOURCE FOR SATISFACTION OF A DAMAGE CLAIM. UNDER NO CIRCUMSTANCES SHOULD THE MERCHANDISE BE RETURNED TO THE MANUFACTURER. NO RETURNS WILL BE ACCEPTED WITHOUT PRIOR AUTHORIZATION.

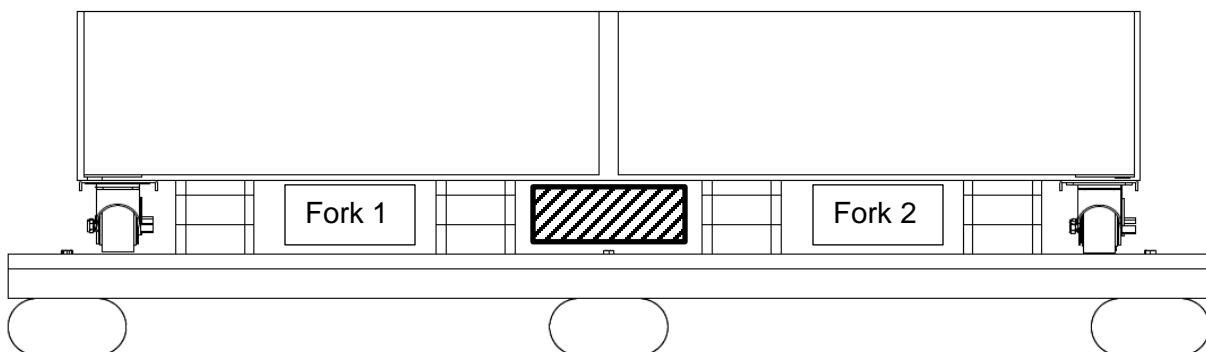
2. INSTALLATION

2.1 UNPACKING

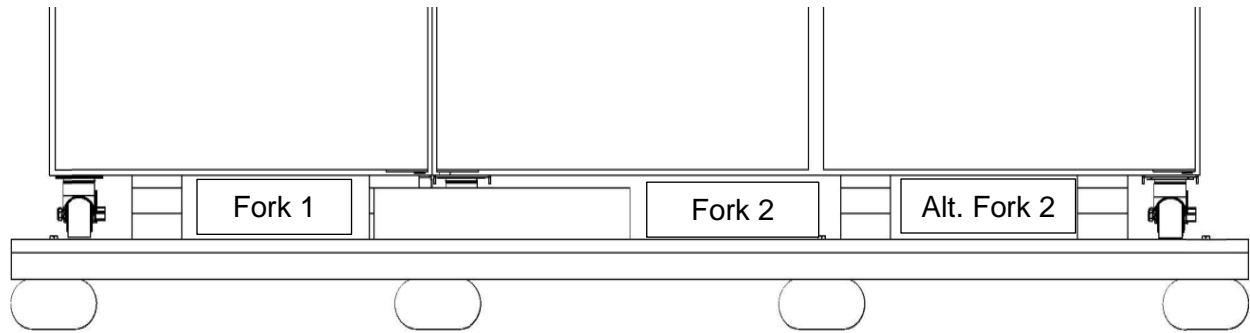
- A fork truck or pallet jack is required to remove the unit from the pallet. Remove packaging for unobstructed access under the unit.
- When using a fork truck, place forks under the unit from the front or rear of the unit. Forks should be set as wide as possible for stability. DO NOT place forks in the center of the unit to avoid tip over (except for the single door unit as this is the only location to lift it from the pallet without damaging the casters).
- When using a pallet jack, align forks directly in front or back of the unit, making sure to avoid the casters. Lift forks to the same height as the top runners supporting the unit. Slide unit straight forward or backward until casters are free from the skid, then lower unit to the floor.
- For a double door unit, avoid placing the forks in the center of the unit. Place them in the positions shown below to ensure stability when lifting from the pallet.
- For a triple door unit, the pallet features a wood blocker to prevent caster damage from forks. Instead, place the forks in the positions shown or, if your lift can extend out to the alternate fork 2 location, use that to ensure even weight distribution when lifting the unit.



Pallet and Fork Positions – Single Door



Pallet and Fork Positions – Double Door



Pallet and Fork Positions – Triple Door

Remove foam/cardboard shipping supports from the inside of the chamber prior to powering on unit. Make sure to do this after the unit is set in place to prevent damage.

2.2 GENERAL RECOMMENDATIONS

- Allow the unit to come to room temperature before starting. The high temperature alarm will sound until the unit is able to bring the internal temperature down from initial start-up.
- Allow for the set point to be reached and for the unit to stabilize before storing products.
- Do not overload the unit.
- Only store items on the shelves. Products on the floor, against walls, or against the door(s) may obstruct air flow and impair the performance of the unit.

2.3 LOCATION AND FUNCTIONAL INSPECTION

Ambient conditions: Unlike household units, this equipment is designed for scientific and medical applications. Many components are heavy duty and optimized to meet demanding temperature performance requirements. Therefore, the sounds generated from its operation may not be accepted by everyone in the room. Please take the operation sound factor into consideration and locate the unit accordingly.

Please ensure the ambient temperature is typically climate-controlled, +18°C to +26°C (+65°F to +78°F), <70% RH, to ensure efficiency and strong thermal performance. Some ambient state excursions are acceptable, but performance may be impacted if used in other environmental conditions. Please refer to the Product Specifications section of this manual for guidance.

Clearance Space: This model requires a minimum of two (2) inches of clearance space around the unit. This will allow good airflow and access to the unit for periodic maintenance, or service.

The cabinet must be located within reach of an outlet that has an appropriate power supply as listed above with a protective earth ground. The outlet should be easily accessible when installation is complete as this is the only method for powering off the equipment.



IMPORTANT: Do not stack items on top of the unit. This can damage sheet metal components and block airflow, compromising performance.

2.4 LEVELING AND ANCHOR INSTALLATION (Anchors are optional accessories)

Leveling

Ensure that the placement chosen for installation has a level floor. The unit must be level side to side and front to back. If the unit is not level, corrections can be made using hard and durable shim stock (hard plastic or corrosion resistant metal sheets) under the casters. Ensure that the caster locks are engaged.



IMPORTANT: If the unit is not level, automated door closure and drawer operation may be negatively impacted.

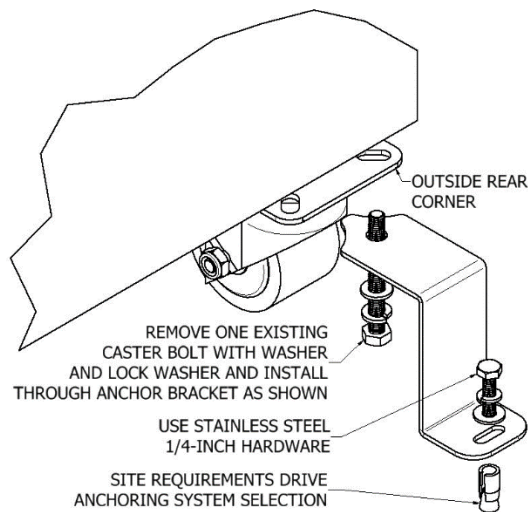
Anchor Brackets (optional)



CAUTION: It is highly recommended that the system is anchored in some manner to resist tip over. Since different installations have different requirements, the optional anchor system may not meet your requirements.



IMPORTANT: Anchors brackets provide tip over resistance only. This is not a seismic rated system. Application performance is not warranted since the installation is not controlled by Horizon Scientific, Inc.



Anchor Bracket Installation

Anchors brackets are attached to the unit using the exterior, rear caster bolts. One anchor bracket is required for each rear caster. The following process is suggested but on-site conditions may require adaptation. Only qualified technicians should perform this operation.

The anchor bolt and type must be selected and installed by a qualified, on-site technician. It is recommended that ¼" diameter stainless steel bolts and washers be used for installation to prevent corrosion. The anchor bracket provides flexibility to accommodate most floors, but shims can be used if necessary.

1. On each of the rear casters, remove the rear most, outboard bolt. Be careful to retain the washers.
2. Position an anchor bracket on each side and reuse the removed bolts to attach the bracket. Firmly tighten the bolts.
3. Position the unit exactly as it is to be installed in the facility.
4. Mark the slot position on the floor for each side once the installation position is finalized.
5. Drill and install floor anchor hardware as appropriate on one anchor bracket without fully tightening the floor anchor bolt.
6. Verify the position of the remaining slot is still properly aligned.
7. Drill and install the second set of floor anchor hardware and anchor bracket.
8. Firmly tighten both anchor bolts.

2.5 DOOR ALIGNMENT

Verify that each door is level and opens and closes easily. If adjustment is needed, the bolts for the top hinge bracket may be loosened and moved by a qualified technician to properly align the door.

2.6 WIRE SHELVES

Product Storage Setup

The cabinet comes standard with wire shelves. Pilasters are factory installed and allow user to select spacing between each shelf.



IMPORTANT: For shelves to remain level and strong; it is critical that the shelf clips are properly installed and locked securely into position.



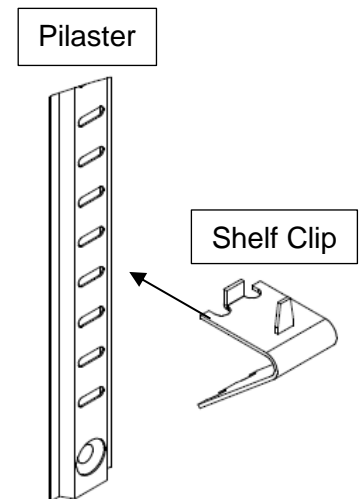
CAUTION: The shelf clip(s) present pinch points when assembling and disassembling.



WARNING: Do not use pliers or any crimping tools when installing shelf clips. Altering shelf clips in any way can lead to shelving instability.

Shelf Installation and Repositioning

1. Locate shelf clips delivered in a plastic bag with the unit.
2. Start at the bottom in terms of shelf installation and work your way up.
3. Properly insert the shelf clips in the desired height (Remember all shelf clips will need to be installed at the same height to keep the shelf level.)
4. Always lay the back of each shelf down on the rear clips before the front.
5. The Bottom tab of the shelf clip will fit tightly. You may need to squeeze or twist the bottom of the shelf clip to install.
6. After installation, the shelf clip will fit snug into the shelf standard. The shelf clip should not be loose or able to wiggle out of the shelf standard.
7. When placing the shelves on the shelf clips ensure the shelf is pushed back as far as it can go to ensure proper temperatures across the entire shelf.



2.7 DRAWERS

Product Storage Setup

The cabinet may come with repositionable and removable drawers supported by high-capacity sliding rails. Pilasters are factory installed and allow the user to select spacing between each drawer. Drawers are rated to 65 lbs. (29.5 kg) each.



IMPORTANT: Drawers are designed for a precision fit; it is critical that they are properly installed and locked securely into position.

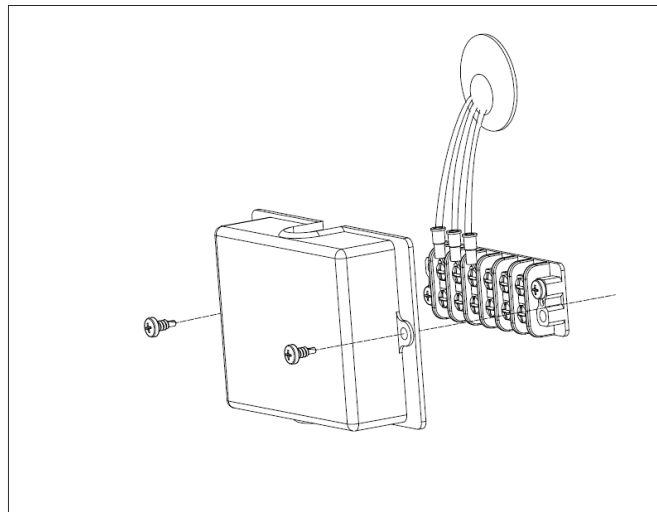


CAUTION: The drawers and drawer hardware present pinch points when assembling and disassembling.

2.8 ELECTRICAL COMPONENTS

Remote Alarms Contacts

The remote alarm contacts terminal block is located at the back of the cabinet as shown. Terminals are labeled NC (normally closed), COM (Common), and NO (normally open). Terminal connections are rated per the included specification table. The end user is responsible for proper field installation.



**Remote Alarm Contact (RAC) Terminal Block on The Back of The Unit:
Black and White – Normally Closed, Green and White – Normally Opened**

2.9 ELECTRICAL INSTALLATION

Check the proposed external power outlet/supply to be used to ensure that the voltage, phase, and current carrying capacity of the circuit from the electrical panel correspond to the requirements of the cabinet.



The supply circuit to this cabinet must conform to NEC (National Electrical Code). Consult the cabinet Serial-Data plate for voltage, cycle, phase, and amperage requirements before making connection.



Supply voltage should not vary more than 10% from the serial plate ratings.



DO NOT connect this equipment to a GFI (Ground Fault Interrupt) circuit.



Do not use an extension cord or any multi-outlet strip or plug. Using such devices can lead to insufficient power and component failure, such as the compressor or starting components.



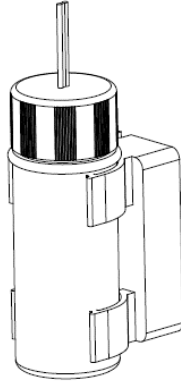
If the power cord is damaged, it should be replaced immediately by an authorized service technician.



Be sure your unit is properly grounded. Use the 3-prong plug provided into a 3-prong grounded outlet. Unless the above grounding method is followed, you are not protected against severe or lethal shock in the event of a short circuit of an electrical component or wiring of the unit.

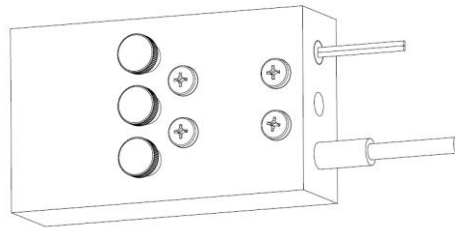
2.10 TEMPERATURE PROBES

A primary temperature monitoring probe (a bottle containing a glass bead thermal media) has been provided with the unit. This probe is located on the right side, near the top of the cabinet interior. The bead thermal media is designed to simulate the temperature of stored product during normal operation. Failure to maintain a full probe bottle may cause the display to report temperatures that do not represent the stored product temperature accurately.



Glass Bead Thermal Ballast

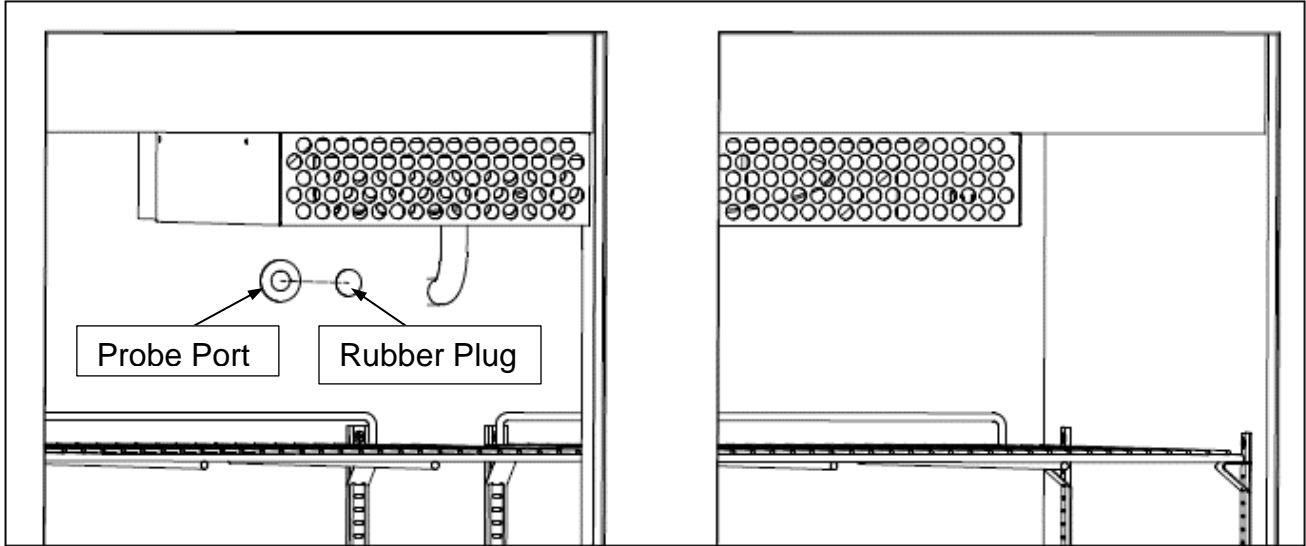
A secondary temperature monitoring probe (solid ballast) may also have been provided with the unit. This probe is located on the right side, near the bottom of the cabinet interior.



Solid Thermal Ballast

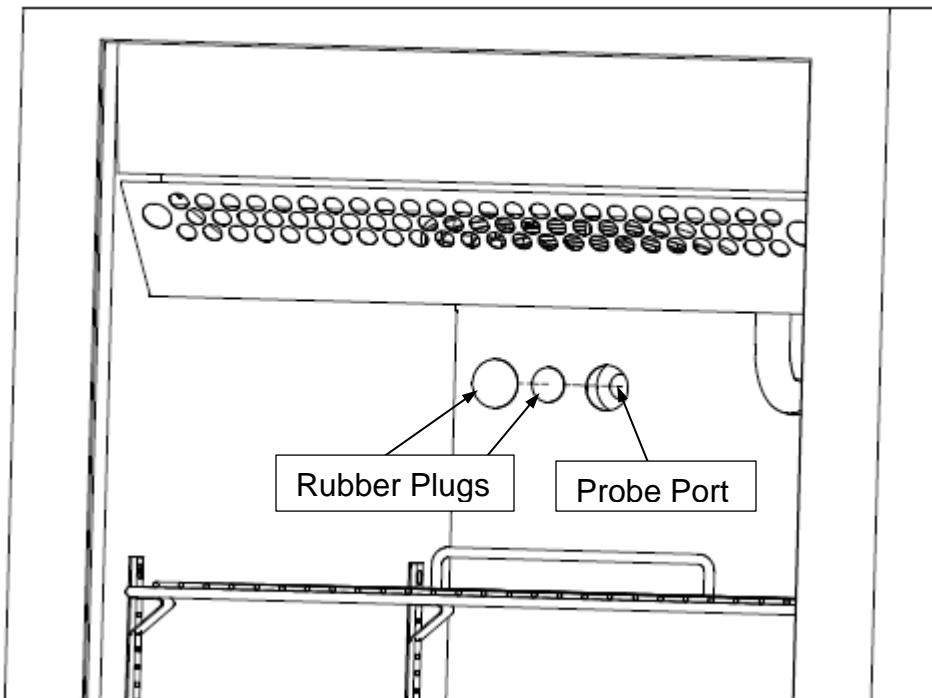
2.11 EXTERNAL PROBE ACCESS PORT

This unit is equipped with a $\frac{3}{4}$ " (19 mm) port that can be used for external monitoring devices. This port is located on the back of the unit. Remove the rubber plug in the port for routing. For single door units there is a secondary plug that needs to be removed.



Double Door Probe Access Port

*Refrigerator shown, Freezer interior will look different. Representative of Triple Door Location as well.



Single Door Probe Access Port

*Refrigerator shown, Freezer interior will look different

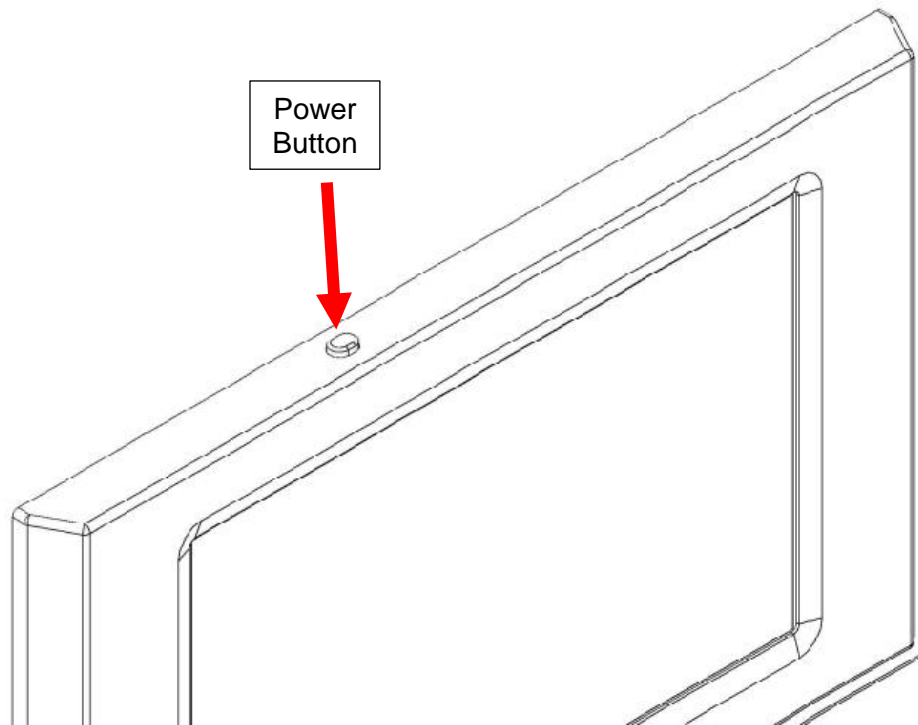
2.12 BATTERY INFORMATION

The controller has a single, 12V, rechargeable, lead acid battery to maintain temperature display and alarms in the event of main power loss to the unit. Cooling and fan function are not available during a main power loss.

If a low battery is detected, the battery will be disconnected from the unit. The battery is automatically reconnected when main power is restored.

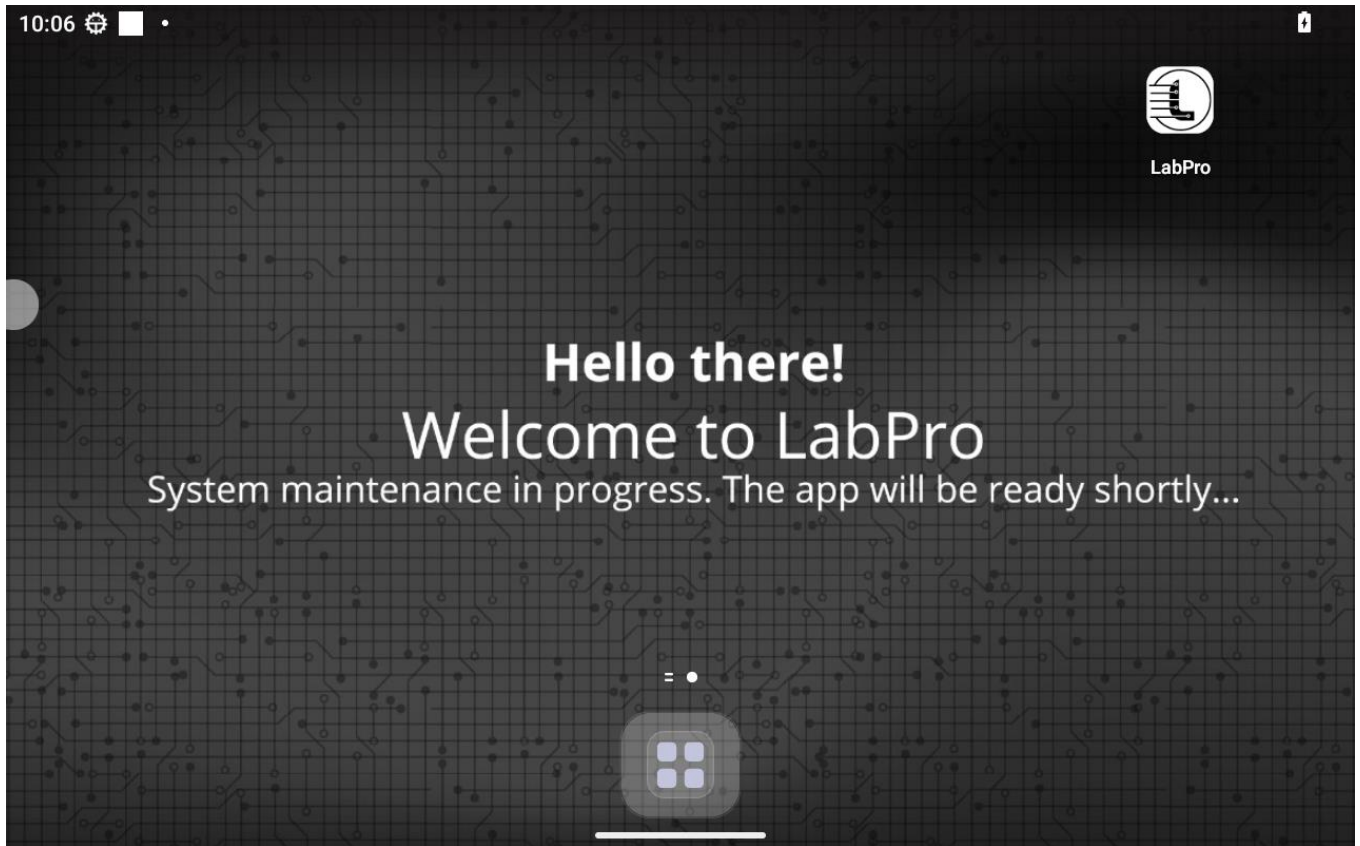
2.13 INITIAL POWER UP AND OPERATION

Once all elements of the installation and any on-site IQ (Installation Qualification) have been completed, your unit is ready for startup. Plug the unit into a grounded outlet that meets the electrical requirements. After plugging in the unit, long-press the power button on the touchscreen until the touchscreen powers on. You should see a black screen with the Lenovo logo pop up. This is your indicator that the touchscreen is powering on.



Power Button Location – Top of Touchscreen


After the boot-up screen, you will briefly see the LabPro System Maintenance screen. This should only last a few seconds then the software will automatically start and connect to your unit. Do **NOT** interrupt this process as it could pose complications.

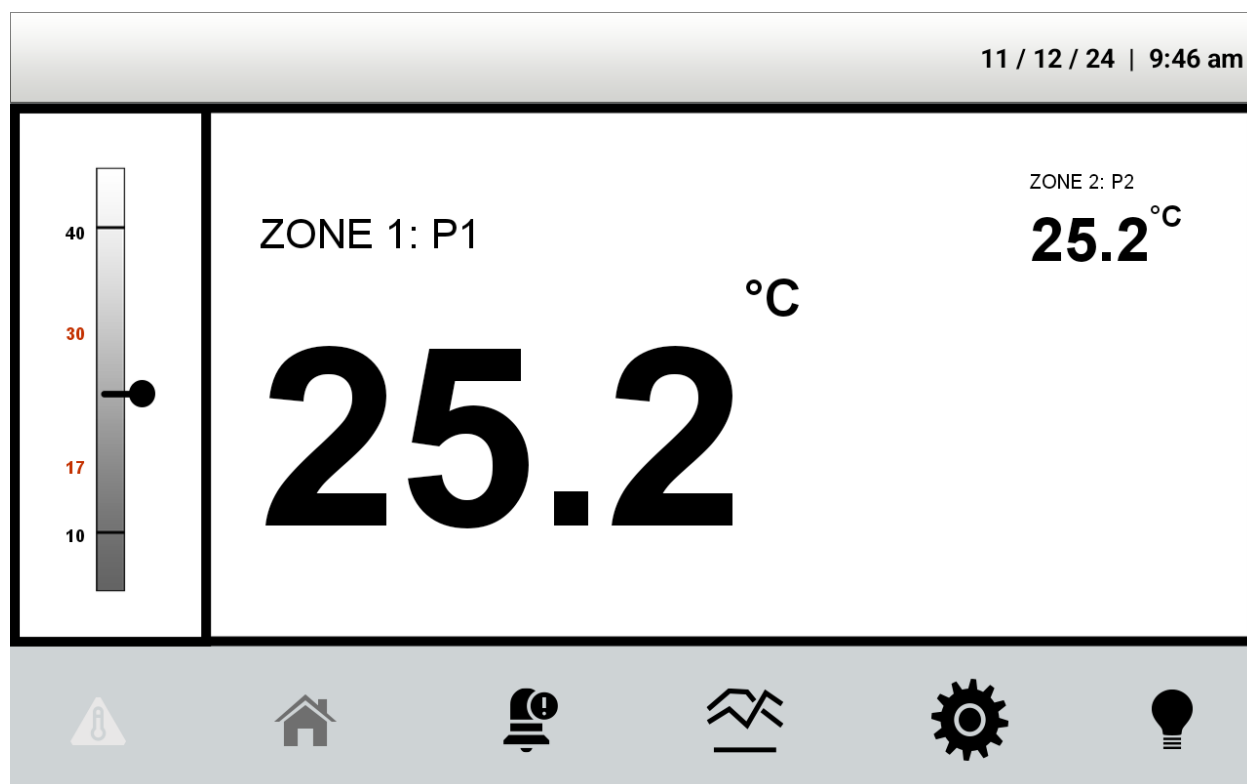


LabPro System Maintenance screen after initial power up

3. SOFTWARE

3.1 SOFTWARE OVERVIEW

 **Important:** The graphics within this manual are for illustration only and do not indicate expected performance, parameter settings, or system response. Some settings, features, or functions described in this section may not apply to your model.



Touchscreen front view

*Temperatures are not representative of a refrigerator or freezer

Key buttons and features on each screen *[Button might look different, similar position]*



ALARM BUTTON: Flashes red when an alarm is active. Tapping on this will mute active alarms.



Although the red flashing will continue until the condition for turning alarm off has been met.



HOME BUTTON: Navigates to the Home Screen, which shows current temperature.



NOTIFICATIONS BUTTON: Navigates to the Notifications section, which shows the active alarms. Can also navigate to the Event Log from this page.



CHART BUTTON: Navigates to the Chart Screen, which displays a line graph for the present and selected zone temperatures.



MAIN MENU BUTTON: Navigates to the Main Menu Screen, which has a list of menus each of which can be navigated to depending on current log in level.



BACK BUTTON: Only visible within any of the Menu screens, navigates back to the Main Menu screen.



DIM BUTTON: Dims the screen to low brightness. Tapping anywhere else on the screen will bring back the original brightness.

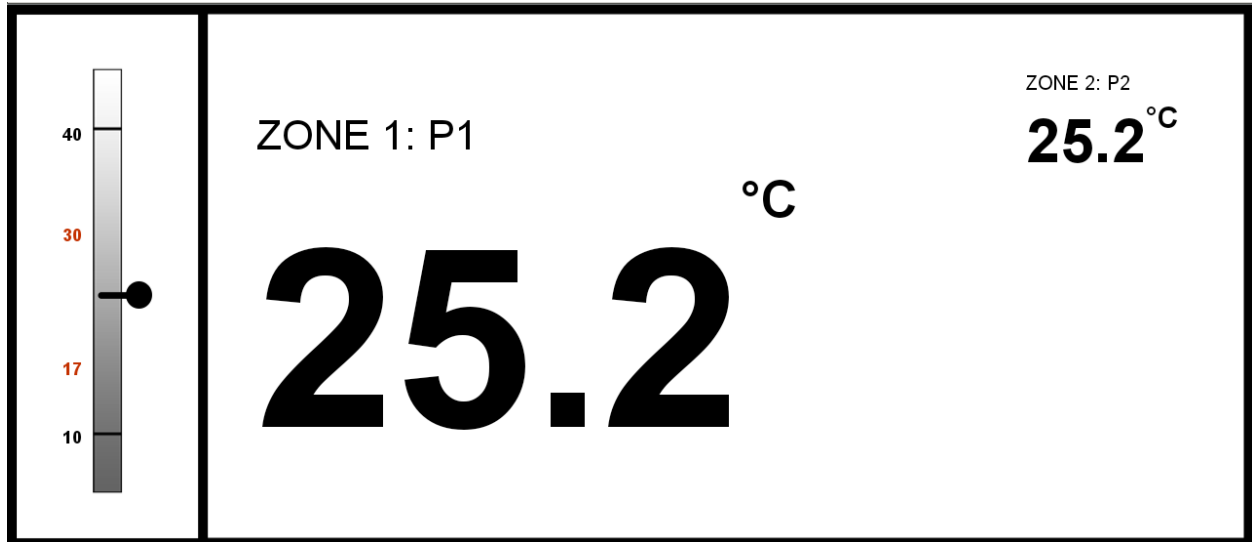
HEADER: Displays the current date and time in the selected format and time zone. Flashes red when an alarm is active.

11 / 26 / 24 | 3:44 PM

11 / 26 / 24 | 3:45 PM

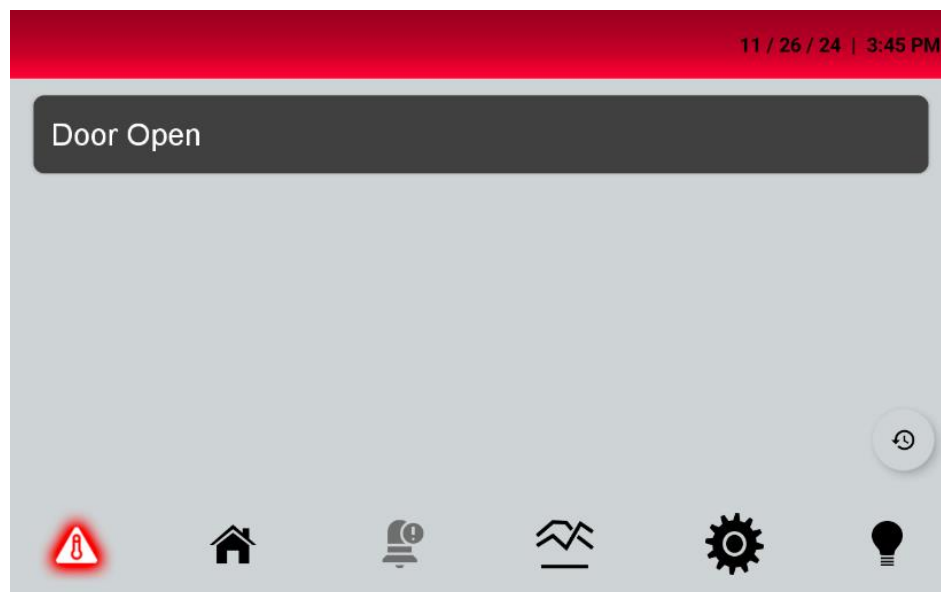
3.2 OPERATING THE SOFTWARE

HOME SCREEN



- The HomeScreen shown above displays the two zon temperatures along with the corresponding Probe Number; the temperature guage showing the set point limits and the set alarm limits in red.
- The needle on the temperature guage changes positions vertically depending on the Zone 1 temperature.
- The unit for the temperature displayed can be switched between degree Celsius and degree Fahrenheit under *Preferences*.

ALARMS/NOTIFICATIONS SCREEN



The Notifications Screen displays the currently active alarms in a list. This list is in reverse chronological order, i.e. the alarm that has become active most recently is at the top of the list. If there are no current alarms, it will show "NO ALARMS".

Tapping on the floating button on the bottom right of the screen will navigate to the Event Log Screen.

EVENT LOG SCREEN

 1. Door Open	10/21 01:42 PM
 2. Main Power Loss	10/21 01:42 PM
 3. Main Power Loss	10/21 01:39 PM
 4. Door Open	10/21 01:39 PM
 5. Main Power Loss	10/21 01:39 PM
 6. Door Open	10/21 01:39 PM

The event log screen shows a history of the alarms that have occurred in reverse chronological order, i.e. most recent alarms show on top. Tapping on the floating button on the bottom right of the screen will navigate back to the Notifications Screen.

Each entry will have the following:

1. A **red** or **green** circle indicating whether the alarm turned on or off respectively.
2. A count of each alarm status change where the most recent alarm would be 1.
3. The alarm description, i.e. Door Open, Temperature Too Low, etc.
4. A time stamp showing the date and time when the entry occurred, in the selected date format and time zone.

CHART SCREEN



- The Chart Screen displays line graphs for the selected Zones.
- The chart can be zoomed in or out vertically or horizontally using pinch zoom.
- Double tap on the screen will zoom the chart along both axes.
- The top X-axis shows the time stamps in the selected range.
- The left-Y axis shows the temperature markings for the chart.
- The right Y-axis shows the minimum and maximum temperature in the given time range corresponding to the graph.
- The legend on the bottom left corner has the following format: “Date; Time; Max/Min; Average Temperatures; n=Number of Samples in the selected time frame”.

The buttons on the bottom of the chart screen do the following:

1. **ZONE 1:** toggles the visibility of the line graph
2. **ZONE 2:** toggles the visibility of the line graph in Zone 2
3. **24 HOURS:** Sets the time frame for chart and statistics to last 24 hours. Each data point marker if visible.
4. **7 DAYS:** Sets the time frame for chart and statistics to last 7 days. Markers are not visible in this selection.
5. **DOWNLOAD:** Lets the user download temperature and event log reports if a USB is connected.

REPORT DOWNLOAD:

This part will guide the user on how to download temperature and event log reports to a connected USB drive.

1. Connect a supported Type-A drive formatted using any Android device to the given slot.
2. Tap on the “DOWNLOAD” button on the Chart Screen.
3. If you get the pop-up saying “Please insert USB storage”, ensure that the USB is properly connected and is of the correct format.

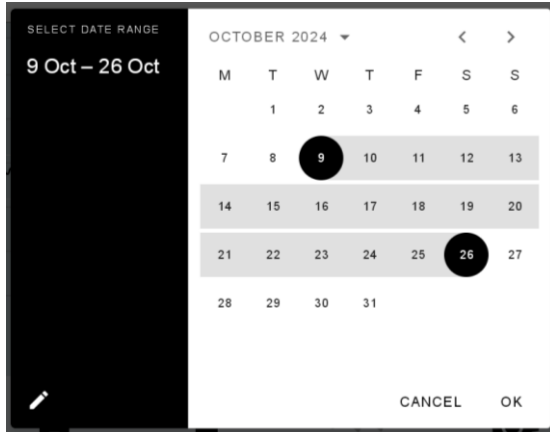


4. If the USB drive is successfully recognized, you will see a pop-up for date range:

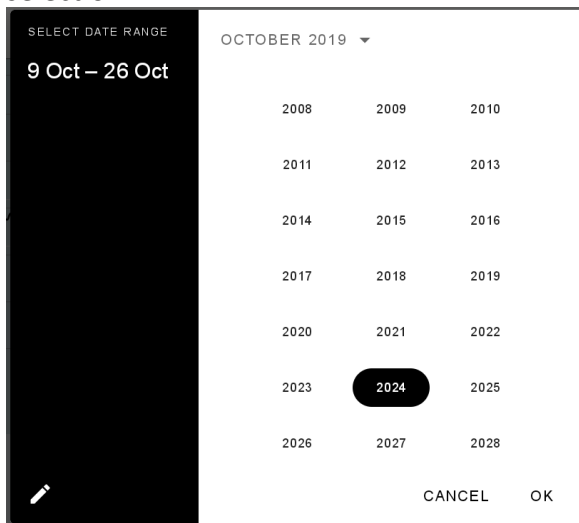


5. Tap on any one of the options – Last 30 Days, Last 90 Days, Last 1 year, or Custom date (Maximum Range is 1 year)

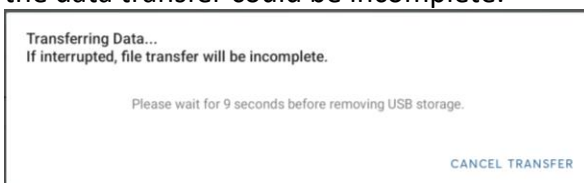
a. If you select Custom Date, a date picker will show up, letting you select a date range:



b. You can tap on the year and month above the calendar to open a year picker for quicker selection:



6. After tapping on the date range options of OK on the date picker, you will see a Transfer pop-up as shown below. Please let the timer run and let the pop-up vanish before unplugging the USB drive, or the data transfer could be incomplete:



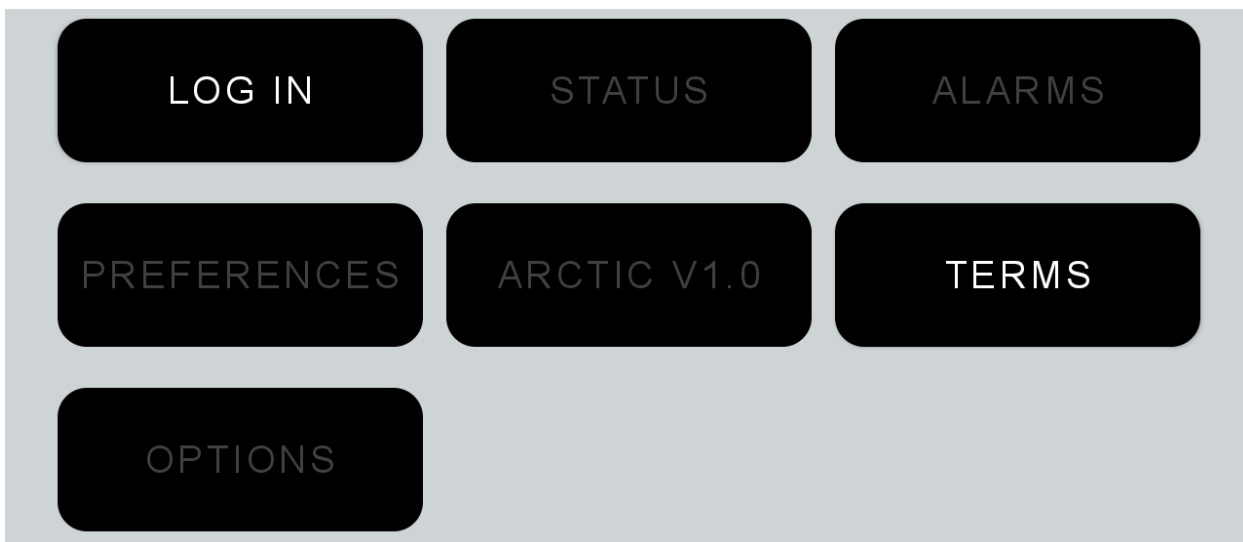
VIEWING TRANSFERRED REPORTS

To view the reports after a successful transfer:

1. Connect your USB drive to a computer that will let you view the content.
2. You might get a pop-up on your computer asking you to format the drive before using it. **DO NOT** continue with formatting the drive, otherwise you will lose the reports and any other data you had on the USB drive.
3. Navigate to your File Explorer. Find the USB drive. Double-click to view its contents.
4. Locate and open the "Temperature-Logs" directory.
5. Within this directory, you will find four files for the selected time frame with the timestamp around when you downloaded your reports.
 - a. chardata_<timestamp>.csv – An editable csv file containing the serial number, date and time, and temperatures for available probes.
 - b. chartdata_<timestamp>.pdf – A non-editable pdf file for the above.
 - c. eventlog_<timestamp>.csv – An editable csv file containing the serial number, date and time, status (ON or OFF), and the description of for the event.
 - d. eventlog_<timestamp>.pdf – A non-editable pdf file for the above.
6. If the reports are empty or show a size of 0KB, please retry the report download and wait a longer time for the transfer to complete successfully.

MAIN MENU SCREEN

On the Main Menu, you will view and be able to access different menus depending on the logged in Level.



- You can log in to different levels by tapping the LOG IN button and then entering the corresponding PIN for **User [1122]**, **Supervisor [112233]**, or **Admin [112244]** and tapping OK.
- Once logged in, the LOG IN button will be replaced by the LOG OFF button and you can log off using that.
- Each log in has a timeout, and if no interaction is happening for a while, the user will be logged out.
- Each role increasingly grants access to functionalities. The buttons for the menus not accessible at

logged in level will be greyed out.

- You can change the PIN for the level you are currently logged in as, and **the CHANGE PIN** button only shows up if you are logged in at any level. Enter the new PIN and tap OK to save.
- As a **User**, you can view the parameters under Status and Alarms Menus but cannot modify them.
- As a **Supervisor**, you can view and edit the parameters under Status, Alarms, Defrost [Freezer Only] Menus, as well as Preferences.
- As an **Admin**, you can additionally view, edit and use the buttons under the Options and Defrost Menu.
- The always greyed-out button in the middle of the Menu buttons displays the current Software Version. Please mention this version when calling tech support to expedite the troubleshooting effort.

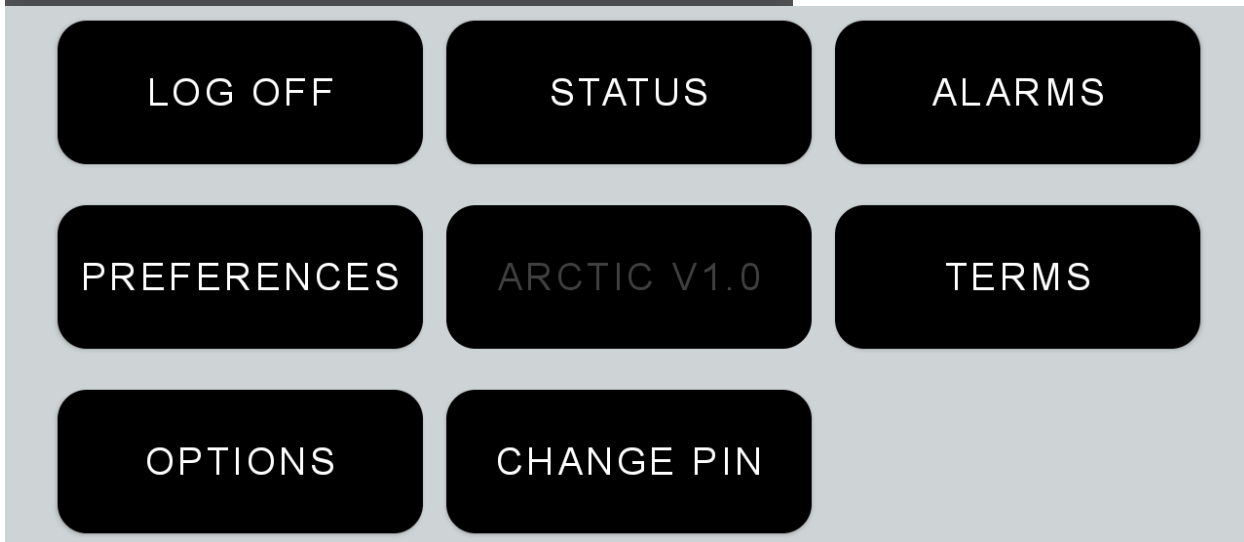
Enter PIN

0 1 2 3 4

5 6 7 8 9

CLEAR

CANCEL OK



Enter new PIN

0

1

2

3

4

5

6

7

8

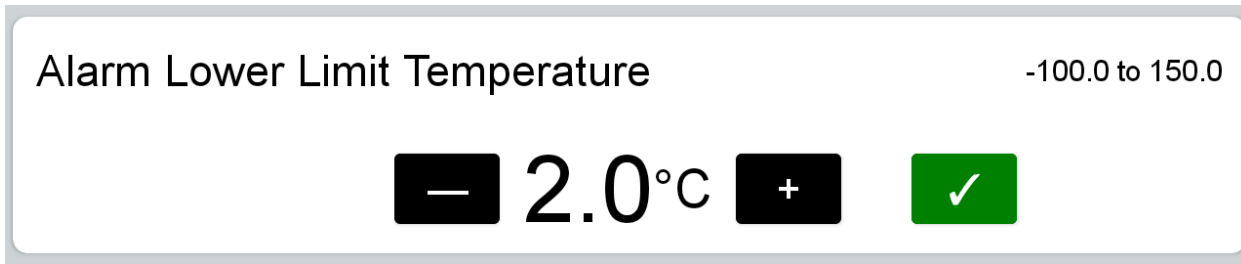
9

CLEAR

CANCEL OK

3.4 PARAMETERS:

On some of the Menu Screens like Status, Alarms, Options, and Defrost; you will find one or more of these parameter controls:



- The top left text on the parameter is the name of the parameter, and this control will display the value of and let the user modify that value for that parameter.
- The number or value in the center below the name is the value of the parameter along with its unit.
- The *Minus* and *Plus* buttons will change the value by one unit.
- Long pressing the buttons will increase the speed at which the value changes.
- The value will NOT be saved until the green Apply button has been pressed.
- If the *Minus* or *Plus* buttons are not visible for a parameter, it could either mean that the parameter is read-only, or that you do not have access to modify it at your current logged in level.
- The numerical values on the top right corner of the parameter control are the lower and upper limit for the parameter. You will not be able to change the parameter to a value beyond these limits.



IMPORTANT NOTE: The list of parameters can be modified without notice. All the parameters mentioned may or may not be present on all units.

4-20mA

The unit has a 4-20mA output that is set on the Zone 1 temperature. The scale is set to be between the minimum and maximum set point that the unit has been configured at.

Status

Probe n Temperature: The read-only display value for the probe temperatures considering any offsets. Probe 1 Temperature would always be available. Probes 2-4 may or may not be available depending on the unit.

- **Latest alarm:** Displays the name of the most recent alarm.
- **Number of Door Openings in the Last 24 Hours**
- **Total duration of Door Openings in the last 24 Hours**
- **Maximum Duration of Door Opening in the Last 24 Hours**
- **Average Duration of Door Openings in the last 24 Hours**
- **Average Temperature in the Last 24 Hours**

- **Minimum Temperature in the Last 24 Hours**
- **Maximum Temperature in the Last 24 Hours**
- **Set Point:** The temperature set point. The limits for this value will be the minimum and maximum available set points for the unit.

Alarms



NOTE: *The High and Low Air Temperature Alarms provide an early warning prior to the product temperature alarm. They should be set to allow the normal rise and fall of the air temperature during normal operation. High ambient temperature and heavy door use may require a longer Alarm Delay.*

Alarm Lower Limit Temperature: The value in selected unit for the lower limit for the temperature. If the temperature drops to or lower than this value, an alarm will ring after the set Temperature Alarm Delay.

Alarm Upper Limit Temperature: The value in selected unit for the upper limit for the temperature. If the temperature increases to or above this value, an alarm will ring after the set Temperature Alarm Delay.

Temperature Alarm Delay: The value in minutes for how long to ignore a lower or upper limit temperature anomaly before an alarm starts ringing.

Door Open Alarm Delay: The value in seconds for how long to ignore a door opening before an alarm starts ringing.

Main Power Loss Alarm Delay: The value in seconds for how long to ignore a main power loss before an alarm starts ringing.

Options



Caution, cooling offset parameters are critical to the function of the system and should not be altered by a user or a technician without first consulting technical service.

Probe n Calibration: The offset to apply on the nth Probe. Only available probes will be visible.

Differential: The set point differential in normal mode.

Defrost [Not for Refrigerator Units]

Defrost Termination Temperature: Sets the temperature to be reached by the defrost probe, which causes the end of defrost cycle.

Defrost Cycle Interval: Interval between two consecutive defrost cycles in hours (0 to 120 hours). Determines the time interval between the beginning of two defrosting cycles.

Defrost Cycle Maximum Length: Maximum length of defrost cycle in minutes (0 to 255 min) sets the maximum length for the defrost cycle.

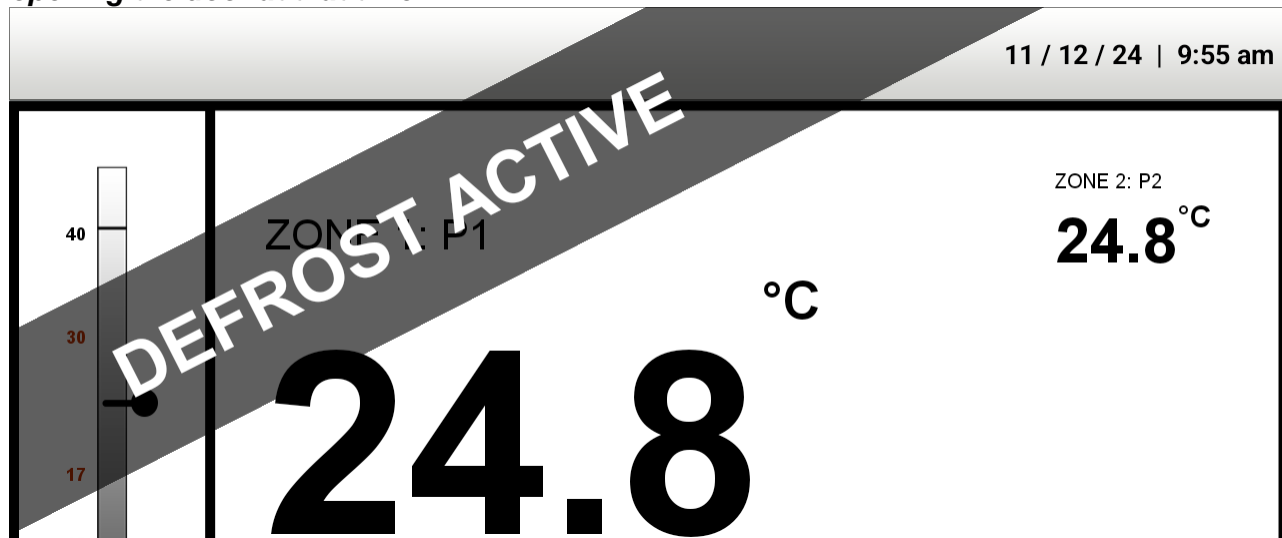
Evaporator Fan Stop Temperature: Above this temperature value the evaporator fans are always OFF.

Evaporator Fan Delay: Delay in minutes before fan activation after any defrosts.

Draining Time: Regulation delay in minutes (0 to 255 min) after finishing a defrost phase.



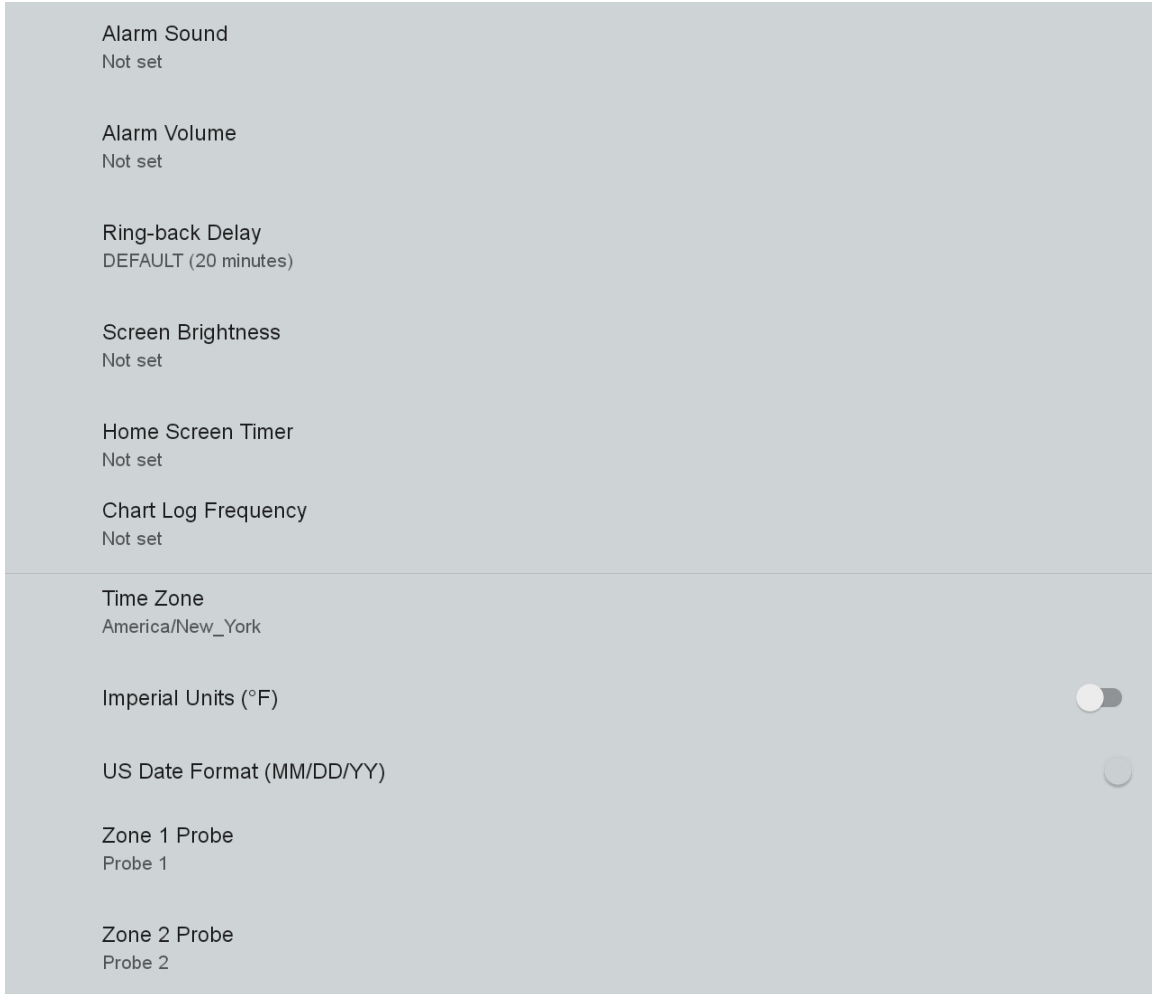
NOTE: There will be a “Defrost Active” banner on the screen whenever defrost is active. Avoid opening the door at that time.



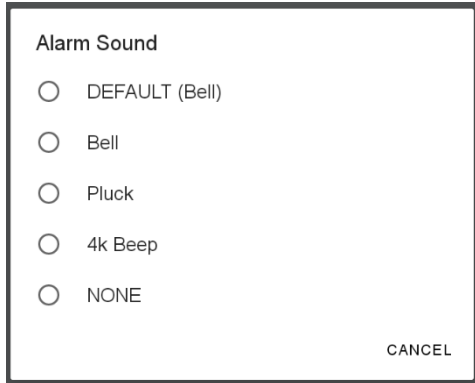
*Refrigerator shown, Freezer temperatures will be different

3.5 PREFERENCES

Preferences can be found under the Main Menu buttons. These settings let the user control the non-essential features of the app. These settings apply throughout the app and can be set by Supervisor or Admin. Shown below are the available settings under Preferences:



1. **Alarm Sound:** Choose between the available sounds for the alarm. Default is Bell.



2. **Alarm Volume:** Choose between five available alarm volumes. Default is Maximum.

The screenshot shows a dialog box titled "Alarm Volume". It contains five radio button options: "Minimum", "Low", "Medium", "High", and "Maximum". The "Maximum" option is selected. A "CANCEL" button is located at the bottom right of the dialog box.

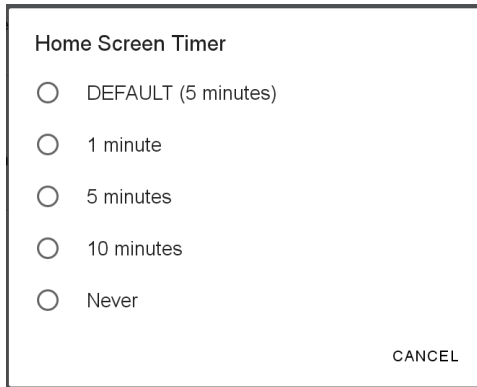
3. **Ring-back Delay:** When an ongoing alarm is muted, it will start ringing again after the delay selected here. Default is 20 minutes.

The screenshot shows a dialog box titled "Ring-back Delay". It contains five radio button options: "DEFAULT (20 minutes)", "5 minutes", "10 minutes", "20 minutes", and "30 minutes". The "DEFAULT (20 minutes)" option is selected. A "CANCEL" button is located at the bottom right of the dialog box.

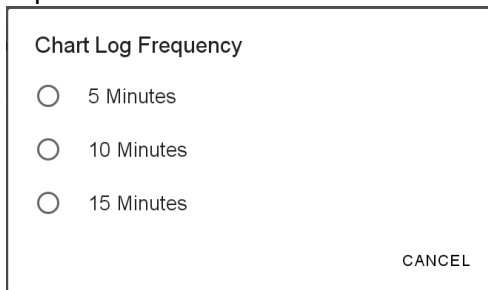
4. **Screen Brightness:** Select the brightness for the app. Helpful to be used according to room brightness levels. Default is Maximum.

The screenshot shows a dialog box titled "Screen Brightness". It contains five radio button options: "Minimum", "Low", "Medium", "High", and "Maximum". The "Maximum" option is selected. A "CANCEL" button is located at the bottom right of the dialog box.

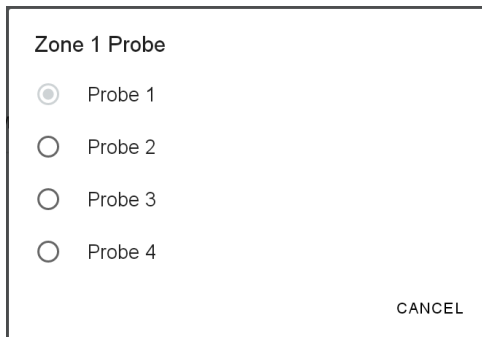
5. **Home Screen Timer:** Timer for the app to go back to the Home Screen after selected minutes of inactivity. Default is 5 minutes.



6. **Chart Log Frequency:** Lets the user select how often a temperature reading get recorded to the charts and reports. Default is 5 Minutes.



7. **Time Zone:** Lets the user select their preferred time zone from a vast variety of available options. Tap on Time Zone and then scroll to find the correct one, then tap to select. This will change the time zone throughout the app and in the downloaded reports.
8. **Imperial Units (°F):** Can be toggled ON (Fahrenheit) or OFF (Celsius) to change units throughout the app and in the downloaded reports.
9. **US Date Format (MM/DD/YY):** Can be toggled ON (MM/DD/YY) or OFF (DD/MM/YY) to change the date format throughout the app and in the downloaded reports.
10. **Probe Selection:** The Probes for temperature visible on Zones 1 and 2 on the Home Screen and the Chart can be selected here. The Probe for Defrost can also be selected (not available for refrigerators).



3.6 TROUBLESHOOTING

Here are some common issues and what steps you can take to solve them:

1) Seeing “---” on the home screen instead of temperature?

- a) Check if the Refrigerator or Freezer has power (power cord connected; cooling, fans, or lights

working)

- b) Check the last-read timestamp on the Chart page at the bottom right corner
 - c) If the timestamp was less than 5 minutes ago, please give the unit another 5 minutes to recover by itself
 - d) If the timestamp was more than 5 minutes ago, please log in as Admin and click on the “RESTART APP” button under the Options menu.
 - e) If it does not change from “---” to temperature values within 5 minutes after restarting the app, please contact technical support
- 2) Not seeing the previous alarms list on the notifications page?**
- a) Please locate the clock icon on the bottom right corner of the Notifications screen to go to the Event Log page
- 3) Seeing the wrong time zone and/or date format?**
- a) Please go to Preferences after logging in as Supervisor or above and select from available time zones and toggle date format to desired options
- 4) No temperature graph available on the Chart page?**
- a) Please wait for up to one minute for the chart to load
 - b) Please check that Zone 1, Zone 2, or both buttons below the chart area are selected
 - c) Please check the Preferences menu to confirm Zone 1 Probe (and Zone 2 Probe, if applicable) have probe selections. If the selected probe is not connected, the home screen should show “No Prb” for a particular zone.
 - d) Please confirm with the person(s) that have Admin password access that all the data was not recently deleted using the “DELETE ALL DATA” button under the Options menu
- 5) Too much data on the 7 Day chart that distinct data is not visible?**
- a) Please use double tap or pinch to zoom to your desired date ranges by looking at the date markers on the top of the chart
- 6) Seeing “Please insert USB storage” even after inserting a USB drive?**
- a) Please make sure that the USB drive being used is in the Android format
 - b) Please use the one provided to you, or use any Android device to format the new USB drive, and then reconnect to the unit
 - c) If you do not have an Android device for formatting, please contact tech support to order a replacement
- 7) Report downloaded but some files empty or not transferred?**
- a) It is possible that the transfer was not able to complete. Please try again and wait at least a 10% longer than the recommended time and check again
- 8) Cannot log in with the PIN you remember last using?**
- a) Please ask your colleagues if anyone has changed the PIN for that level
 - b) Please log in as Admin to tap the “RESET PASSWORDS” button under Options to reset passwords for all the levels to default – User [1122], Supervisor [112233], and Admin [112244]
 - c) If you have trouble logging in to Admin and cannot reset the passwords, please contact technical support
- 9) See the notification “LabPro is not responding?”**
- a) Click on the “Close App” on the notification. Reopen the app by tapping the LabPro icon.

4. PRODUCT SPECIFICATIONS

4.1 OPERATING STANDARDS

These models are designed to operate under the following conditions:

- Indoor use only
- Maximum altitude: 6562 ft. (2000 m)
- Optimal ambient conditions: 18°C to +26°C (+65°F to +78°F), <70% RH
- Short duration ambient conditions: 15°C to 32°C (59°F to 90°), <80% RH

Electrical Specifications:

Model	Input Voltage & Frequency	Voltage Tolerance	Rated Amperage	Power Source	Remote Alarm Maximum Capacity
1 Door Refrigerator	115V 60 Hz	± 10%	3.0	Grounded outlet, meeting national electric code (NEC) in the U.S. and all local electrical requirements	230VAC @ 10A, 115VAC @ 10A and 30VDC @ 10A
2 Doors Refrigerator			4.5		
3 Doors Refrigerator			5.0		
1 Door Freezer			7.0		
2 Doors Freezer			7.6		

5. MAINTENANCE



Observe all Warning Labels. Disconnect power to eliminate injury from electrical shock when servicing equipment or cleaning.



Important: It is critical that cleaning recommendations are followed to ensure optimal performance and longevity of the unit.

5.1 INSPECTION AND SERVICING

Periodic inspections

Every 3 months or as required:

- Check that the condenser coil is free of obstruction.

Every 6 months or as required:

- Clean the condenser coil
- Check the door gasket for proper seal
- Check drain line from evaporator pan for blockage or leaks.

Battery replacement

Battery life should be 2+ years under normal use condition, though frequent power losses may reduce battery life. It is recommended to replace battery at 2-year intervals to maintain the alarm and temperature monitoring functions in the event of a power loss.

1. Disconnect the main power cord from the wall.
2. Remove the top cover from the unit.
3. Locate the battery near the right wall of the cabinet, held in place with a metal bracket.
4. Disconnect the wiring from the 2 battery terminals, noting the polarity of each connection.
5. Remove the 4 screws holding the metal bracket and lift the bracket away from the battery.
6. Remove battery. Replace with new battery in the same location and orientation.
7. Reverse the procedure above to restart the unit.

Cleaning

- Never use abrasive cleaners or instruments (steel pads, wire brushes, etc.) on stainless steel interior or powder coated exterior.
- Never use acid-based cleaners, which will damage the stainless finish. Warm soapy water is best, but if a cleaning solution is required, use only alkaline based cleaners.
- Avoid chlorides during cleaning which could damage the stainless-steel finish. Chlorides are commonly found in hard water, salts, and household or industrial cleaners. If cleaners with chlorides are used, rinse with clean water and dry thoroughly.
- Gaskets should be cleaned only with warm soapy water. Cleaning products could damage gaskets or cause them to embrittle over time. Never use tools which could cut or tear the gasket.
- Refrigerators: The condenser is an anti-fouling design, but inspections should be performed quarterly, and the condenser cleaned as necessary to maintain good thermal transfer properties. A soft bristle can be used to loosen these particles that are attached to the grid so that they may be removed with a vacuum cleaner. Care must be taken not to damage the condenser. It is recommended that the condenser be cleaned at least once every 6 months.
 - Freezers: Inspections should be performed quarterly, and the condenser cleaned as necessary to maintain good thermal transfer properties. A soft bristle can be used to loosen these particles that are attached to the grid so that they may be removed with a vacuum cleaner. Care must be taken not to damage the condenser. It is recommended that the condenser be cleaned at least once every 6 months.
- All moving parts have been permanently lubricated and will generally require no maintenance.



Important: Failure to keep the condenser coil clean and clear of obstructions could result in poor performance and possibly damage to the compressor.

5.2 SERVICE AND ANALYSIS GUIDE

MALFUNCTION

POSSIBLE CAUSE

SOLUTION

Compressor will not start	1.	Service cord unplugged	1.	Plug in service cord
	2.	Overload tripped	2.	Determine reasons and correct
	3.	Control stuck open	3.	Repair or replace
	4.	Wiring incorrect	4.	Check wiring against the diagram
Compressor trips on overload protection	1.	Improperly wired	1.	Check wiring against the diagram
	2.	Low voltage to unit	2.	Determine reason and correct
	3.	Inverter malfunction	3.	Determine reason and replace
	4.	Relay failing to close	4.	Determine reason, correct, or replace
Compressor starts and runs, but short cycles on overload protector	1.	Low voltage to unit	1.	Determine reason and correct
	2.	Overload defective	2.	Check current, replace overload protector
	3.	Excessive head pressure	3.	Check ventilation or restriction in refrigeration system
Inverter malfunction	1.	No Power	1.	Check power / ground wiring
	2.	Frequency input error	2.	Check frequency at CCA
	3.	Improper compressor wiring	3.	Check compressor cable connections
Refrigerated space too warm	1.	Control setting too high	1.	Lower the set point
	2.	Refrigerant overcharge	2.	Reclaim and recharge
	3.	Dirty condenser	3.	Clean condenser
	4.	Evaporator coil iced	4.	Determine reason and defrost
	5.	Not operating	5.	Determine reason, replace if necessary
	6.	Air flow to condenser or evaporator blocked Control	6.	Remove obstruction for free air flow. the control
Product freezes	1.	Set point is too low	1.	Raise the set point
	2.	Control points stuck	2.	Replace the controller
Objectionable noise	1.	Fan blade hitting fan shroud	1.	Align fan and shroud or replace components
	2.	Tubing rattle	2.	Locate and reform
	3.	Vibrating fan blade	3.	Replace fan blade
	4.	Condenser fan	4.	Check motor bracket mounting, tighten. If necessary, replace components.
	5.	Worn fan motor bearings	5.	Replace fan motor
Ice buildup	1.	Poor door seal	1.	Repair or replace door gasket
	2.	Drain Line blocked	2.	Remove obstruction, defrost unit
	3.	Drain line frozen	3.	Replace insulation and/or drain heater
	4.	Defrost disabled	4.	Enable Defrost
	5.	Defrost Settings	5.	Adjust defrost termination, drip time, fan delay

6. WARRANTY

Horizon Scientific, Inc. warrants to the original purchaser every new Horizon Scientific, Inc. refrigerated unit, the cabinet, and all parts thereof, to be free from defects in material or workmanship, when such unit is installed, used, and maintained in accordance with provided instructions. The warranty period starts two weeks from the date of shipment from Horizon Scientific, Inc. This two-week period allows ample shipping time so that the warranty will go into effect at approximately the same time your equipment is delivered. Unless subject to prior written agreement with Horizon Scientific, Inc., this warranty does not allow for any warranty start deferment greater than two weeks from date of shipment due to a delayed installation and/or start-up. By purchasing any product from Horizon Scientific, Inc., you, and any entity for which you are purchasing acknowledge and agree to every provision contained herein, and all other Notices and Terms provided to Purchaser by Horizon Scientific, Inc., which are hereby incorporated.

6.1 FACTORY WARRANTY

Under this warranty, Horizon Scientific, Inc., through its authorized service organizations, will repair, or at its option, replace any part found to contain a manufacturing defect in material or workmanship without charge to the owner for parts and service labor. Replacement or repaired parts will be warranted for only the unexpired portion of the original warranty. Horizon Scientific, Inc. will not assume any shipping or cartage costs for parts under warranty. These costs shall be paid by the customer.

6.2 COMPRESSOR WARRANTY

In addition to the standard warranty, Horizon Scientific, Inc. warrants its hermetically and semi-hermetically sealed compressors to be free from defects in both material and workmanship under normal use and service in addition to the standard warranty period. Compressors determined by Horizon Scientific, Inc. to have been defective within this extended time period will, at Horizon Scientific, Inc.'s option, be either repaired or replaced with a compressor or compressor parts of similar design and capacity.

The compressor warranty applies only to hermetically and semi-hermetically sealed parts of the compressor and does not apply to any other parts or components, including, but not limited to, cabinet, paint finish, temperature control, refrigerant, metering device, driers, motor starting equipment, fan assembly or any other electrical components.

Horizon Scientific, Inc.'s sole obligation under this warranty is limited to either repair or replacement of parts, subject to the additional limitations below.

This warranty neither assumes nor authorizes any person to assume obligations other than expressly covered by this warranty.

6.3 ADDITIONAL WARRANTY INFORMATION

NO CONSEQUENTIAL DAMAGES. Horizon Scientific, Inc. is not responsible for economic loss; profit loss; or special, indirect, or consequential damages, including without limitation, losses or damages arising from contents spoilage claims whether because of refrigeration failure, electrical failure, power failure, or compressor failure.

HORIZON SCIENTIFIC, INC.'S MAXIMUM CUMULATIVE LIABILITY RELATIVE TO ALL CLAIMS AND LIABILITIES, INCLUDING OBLIGATIONS UNDER ANY INDEMNITY, WHETHER OR NOT INSURED, SHALL NOT EXCEED THE COST OF THE PRODUCT(S) GIVING RISE TO THE CLAIM OR LIABILITY.

WARRANTY IS NOT TRANSFERABLE. This warranty is not assignable and applies only in favor of the original purchaser/user to whom delivered. Any such assignment or transfer shall void the warranties herein made and shall void all warranties, express or implied, including any warranty of merchantability of fitness for a purpose.

NO IMPLIED WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE. There are no other warranties, express, implied, or statutory, except the standard warranty and the additional compressor warranty as described above. These warranties are exclusive and in lieu of all other warranties, including implied warranty and merchantability of fitness for a purpose. There are no warranties which extend beyond the description on the face hereof, whether based on contract, warranty, tort (including negligence), strict liability, indemnity, or any other legal theory, and whether arising out of warranties, representations, instructions, installations, or non-conformities from any cause. Purchaser further acknowledges that the purchase price of the Product reflects these warranty terms and remedies.

ALTERATION, NEGLIGENCE, ABUSE, MISUSE, ACCIDENT, DAMAGE DURING TRANSIT OR INSTALLATION, FIRE, FLOOD OR OTHER EXTERNAL CAUSES.

Horizon Scientific, Inc. is not responsible for the repair or replacement of any parts that Horizon Scientific, Inc. determines have been subjected after the date of manufacture to alteration, neglect, abuse, misuse, accident, damage during transit or installation, fire, flood, or other external causes. It does not apply to defects resulting from failure to properly install, operate or maintain the product in accordance with the printed instructions provided, or damage caused by the storage of any corrosive material that comes in contact with the interior or exterior portions of the cabinet, or the use of spark producing equipment or containers (such as galvanized or carbonized steel containers) that come in contact with any interior portion of the cabinet.

OUTSIDE U.S./CANADA. This warranty does not apply to, and Horizon Scientific, Inc. is not responsible for, any warranty claims made on products sold or used outside the United States and Canada.

CHOICE OF LAW/VENUE. The laws of the State of South Carolina shall govern the validity, interpretation, and enforcement of this warranty, regardless of conflicts of law principles. Purchaser agrees that proper venue for any action to enforce the terms of this warranty shall be the Dorchester County District Courts, South Carolina. Purchaser submits the jurisdiction of such courts over the Purchaser and the subject matter of any such action. Any action for breach of these warranty provisions must be commenced within one (1) year after that cause of action has accrued.


6.4 WARRANTY CLAIMS

To obtain prompt warranty service, simply contact the manufacturer at 800-648-4041. Horizon Scientific, Inc.'s shipping records showing date of shipment shall be conclusive in establishing the warranty period. All claims should include model number of the unit, the serial number of the cabinet, proof of purchase, date of installation, and all pertinent information supporting the existence of the alleged defect. Any repairs must be authorized by Horizon for the warranty to be honored.

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COMPLIANCE

7.1 SAFETY

Safety testing: This unit is safety certified by Intertek ETL, CETL Listed ^{US} (certified to UL471 standard, hydrocarbon refrigerant safety).

Microprocessor controller: Complies with the following additional standards electrical safety: EN 60730-1, EN 60730-2-9, EN 61010-1, UL60730. **Electromagnetic compatibility:** EN 61000-6-1, EN 61000-6-2, EN 61000-6-2/EC, EN 61000-6-2/IS1, EN 61000-6-3, EN 61000-6-4; EN 55014-1, EN 55014-2, EN 55014-2/EC, EN 55014-2/A1, EN 55014-2/IS1, EN 55014-2/A2

7.2 ENVIRONMENTAL

EPA: The refrigerant and foaming agents used in this product EPA SNAP compliant hydrocarbon.

Microprocessor controller: Complies with the following additional standards electromagnetic compatibility standards: EN 61000-6-1, EN 61000-6-2, EN 61000-6-2/EC, EN 61000-6-2/IS1, EN 61000-6-3, EN 61000-6-4; EN 55014-1, EN 55014-2, EN 55014-2/EC, EN 55014-2/A1, EN 55014-2/IS1, EN 55014-2/A2

CONTACT US

Technical Support: 1-800-648-4041 x5

Customer Support: 1-800-648-4041 x3

technicalservice@horizonscientific.com