Temperature Controlled Container RKN-AT1
Operation Manual

Qingdao HB TempCon Aviation Co., Ltd.

Green Tech Better Life

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Revision Record

Edition	Revision No.	Revision Description	Revision Date
A	V0.0	First release	Sep 15, 2021
B	V0.0	Revised the format of the manual; added Copyright Notice, Loading Precautions, Preconditioning, Standby Mode, FAQ and Troubleshooting and etc.	Mar 16, 2022
C	V0.0	Changed company name, manual name and default values of L1 and L2; added L1 and L2 setting procedures; revised specific data, troubleshooting and etc.	Oct 22, 2022
C	V0.1	Revised the container tare weight in the Weight Parameter	Feb 01, 2023
C	V0.2	Added linkage rules between high/low temperature alarm default value and inner temperature setting value; revised temperature setting interface; added description of PTI; revised E2 and E4 alarm handling methods; added requirements for the USB devices and etc.	Mar 31, 2023
C	V0.3	Revised specific item names	Dec 15, 2023

1. Overview

1.1. Scope of the Manual

• This Manual provides information on the operation of the Temperature Controlled Containers RKN-AT1.

• For questions regarding this manual, contact Qingdao HB TempCon Aviation Co., Ltd. (hereinafter referred to as HB TempCon)

1.2. Copyright Notice

• This Operation Manual is published by HB TempCon.

• HB TempCon reserves the right to amend or revise the product design and manual. The content of this manual is for your information and may be changed without notice.

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• HB TempCon bears no liability for any incorrect or missing information, or any use of the information herein.

1.3. The Container

• RKN-AT1 is defined as Type 2 ULD in C/TSO-C90e with its C/TSO function designed for aircraft cargo restraint and transportation.

• It is integrated with non-C/TSO function of an active temperature control system and equipped with a rechargeable battery to ensure operation without external available power supply (e.g. on an aircraft). It meets the applicable requirements of AS 6163™(2015) and is used to store and transport high value temperature sensitive cargo at its preconditioned set point.

• The container consists of a thermally-insulated compartment to hold cargo, a control system and a temperature control system. The control system (battery and mainboard) and the temperature control system (refrigeration and heating) are contained in the machine compartment. Besides, the container is capable of logging data including inner temperature, battery level, alarm(s) and etc.

• This container meets the minimum requirements of C/TSO-C90e and the quality control standard.

• Installation or operational use of this container requires separate approval.

1.4. Safety Instructions

• Always follow the safety instructions and rules in this manual as well as all statutory regulations and laws as they may apply, such as IATA Dangerous Goods Regulations, Import and Customs Regulations, and etc.

• Read this Manual prior to using the container. All warnings and safety precautions listed therein must be observed. Furthermore, all warning labels, decals and instruction on the containers must be followed.

indicates warning.

indicate prohibition.

• The design minimizes hazards to personnel and equipment during use. No material used constitutes a risk to the health of the personnel involved. Every attemp has been made to avoid potential dangers and incorporated various protective measures to prevent injury to personnel.

• Use proper protection when operating container door, door locks and the charging unit.

• Take properly protective measures when charging.

• The container is a forkliftable LD-3 air cargo container designed to accommodate one US-pallet 1220×1016 mm (48×40in) or EURO-pallet 1200×800 mm (47.3×31.5in).

Prohibitions

Unauthorized personnel are prohibited to operate the containers.

Unauthorized personnel or institutions are prohibited to check or repair the containers.

Do not block the air inlets and outlets.

Do not use the containers in a smoky environment. Otherwise, the smoke sensor will be triggered and the system will shut down.

Do not charge the containers inside the aircraft or charge with any electrical outlets onboard.

Do not charge the containers in an outdoor or humid environment so as to avoid short circuits.

1.5. Compartment Structure

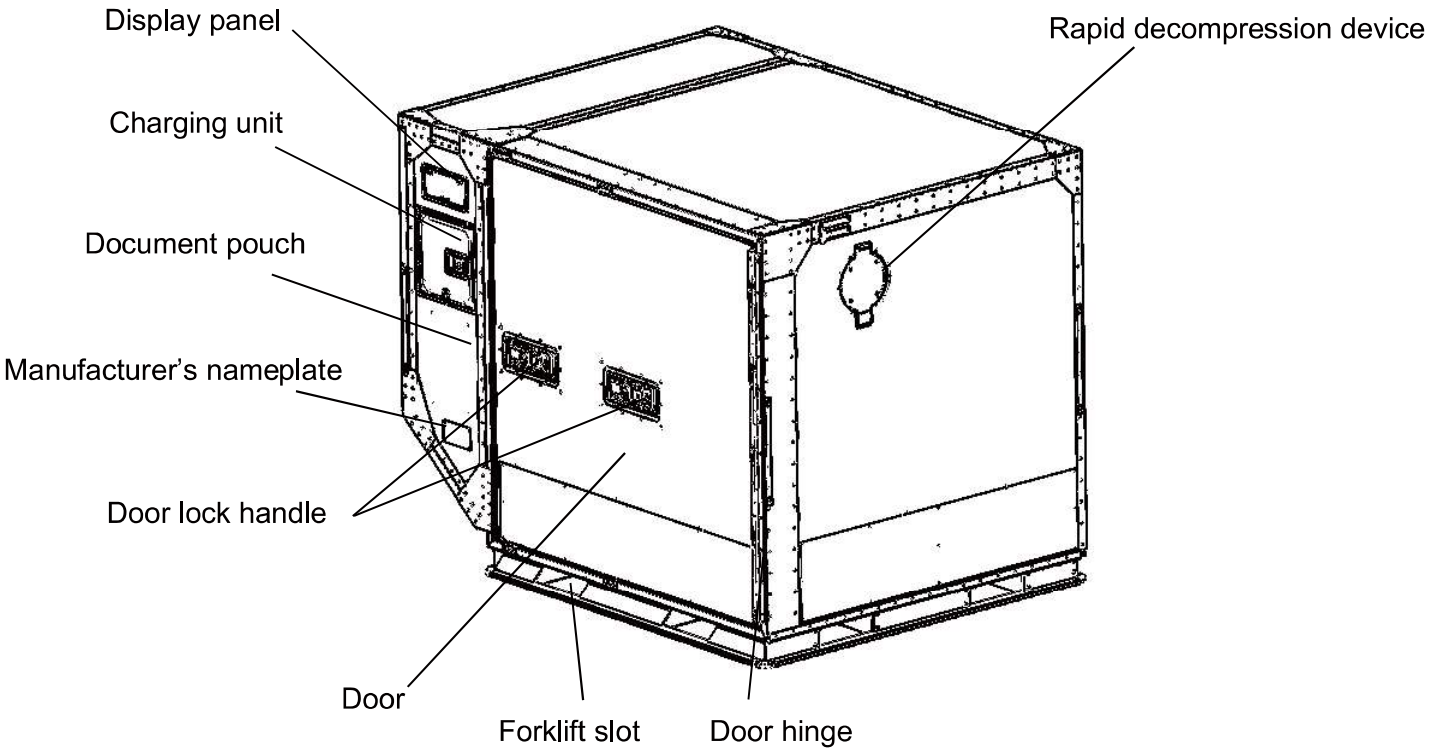


Figure 1.5.1. Front View

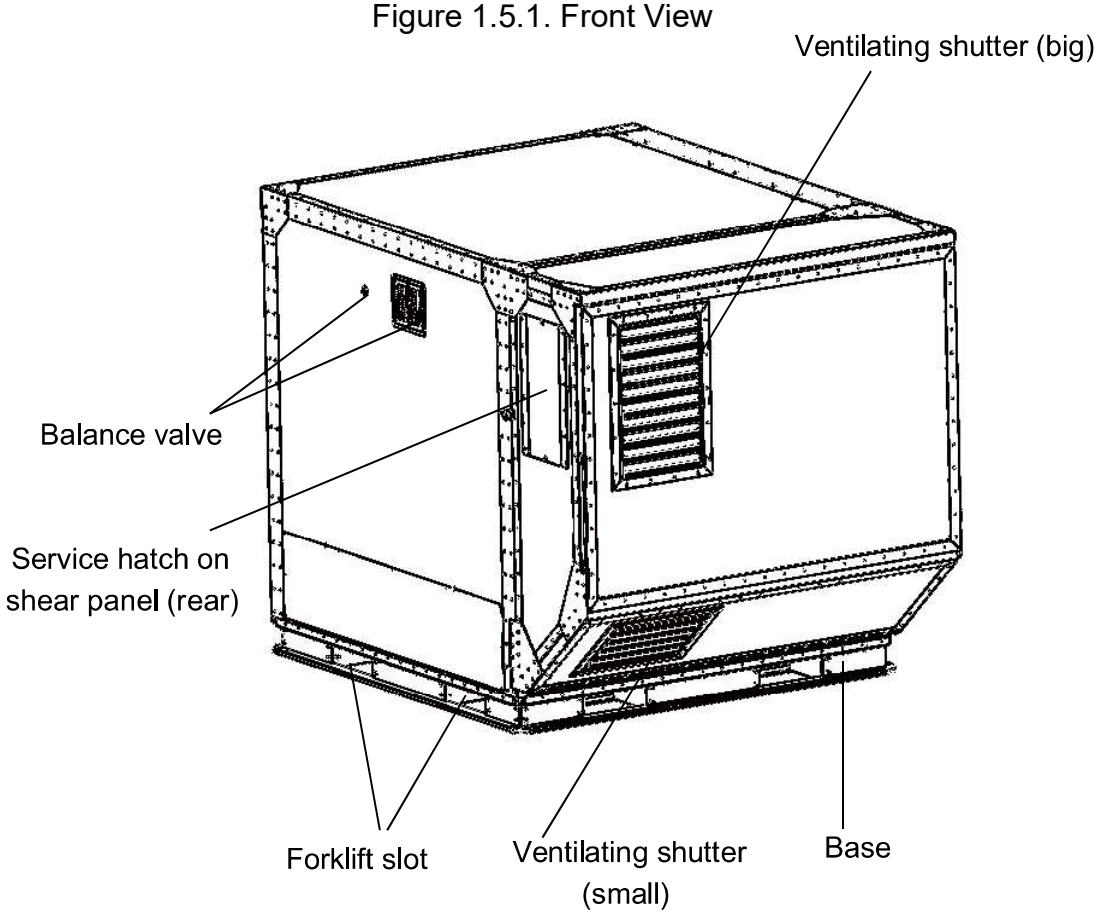


Figure 1.5.2. Rear View

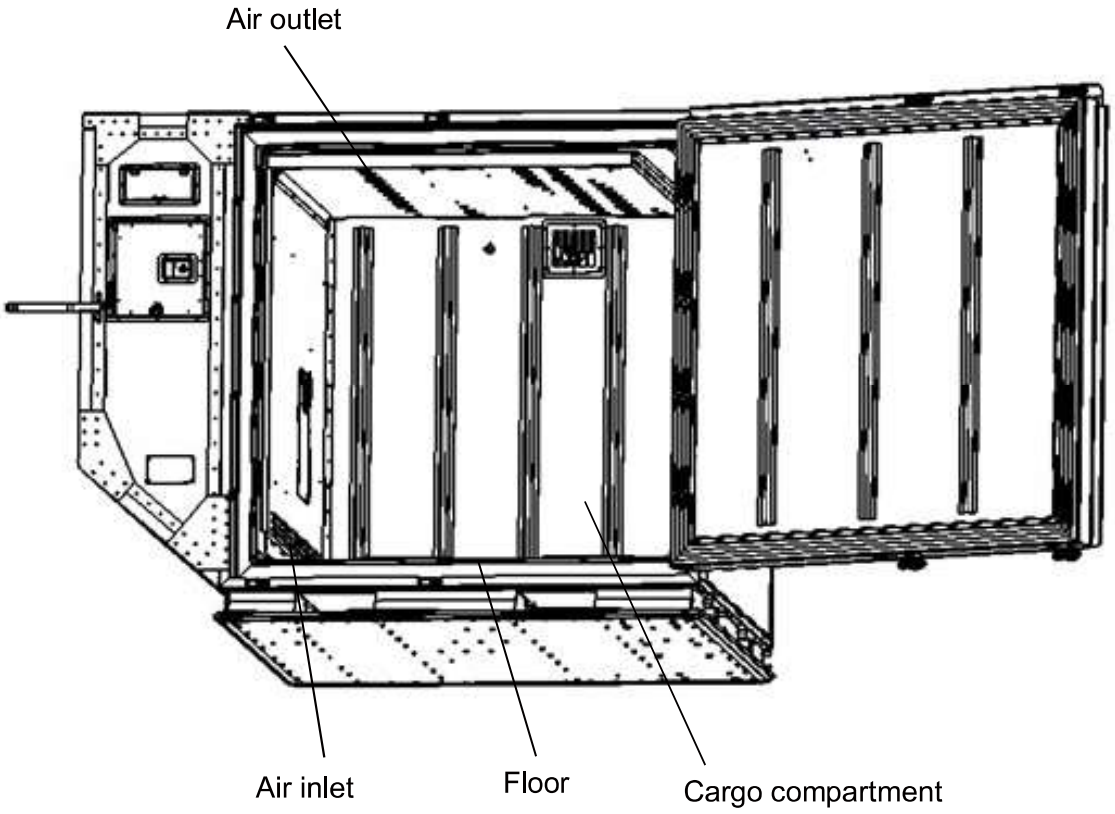


Figure 1.5.3. Door Opening View

1.6. Operation Environment

1.6.1 Storage and Operating Temperature Limit

The containers should be stored in a well ventilated room at ambient temperature -40℃ ~ +55℃ (-40°F~ +131°F), ambient humidity less than 80% and no corrosive gases.

The container shall be operating at ambient temperature -20℃ ~ +43℃ (-4 ℉ ~+109.4 ℉).

1.6.2 Battery Autonomy

The battery autonomy lasts for 50h at set point 5℃ (41 ℉), ambient temperature 20℃ (68 ℉).

Note: The temperature control system will shut down in smoky environment.

1.6.3 RKN-AT1 Operating Specification

Temperature Controlled Container RKN-AT1	Specification
Charging power supply	AC100-240V, 50/60Hz
Maximum power consumption for charging	1100W (charging and operating)
Maximum charging time	10h
Temperature set point	0℃ ~ +20℃ (+32 ℉ ~ +68 ℉)
Set point accuracy: Set point 0℃ ~ +20℃ (+32 ℉ ~ +68 ℉): ± 0.5℃ (± 0.9 ℉)	
Operating temperature limit	-20℃ ~ +43℃ (-4 ℉ ~ +109.4 ℉)
Charging temperature limit Recommended charging temperatures	-20℃ ~ +40℃ (-4 ℉ ~ +104 ℉) 0℃ ~ +30℃ (+32 ℉ ~ +86 ℉)
Storing temperature limit	-40℃ ~ +55℃ (-40 ℉ ~ +131 ℉)

1.7. Check before use

• Prior to the use, the container must be checked to ensure there is no physical damage, the container door can open/close properly, the charging cable and plug are intact, and the container inside and outside are cleaned.

• The container is labeled with an Operational Damage Limits Notice (ODLN) sticker specifying the acceptable damage limits from an airworthiness perspective and can be used for safe loading on to the aircraft. Before every lease, the containers shall be inspected against these limits to make sure they do not exhibit the level of damage as described on the ODLN when released from the operation station.

1.8. Dimensions and parameters

1) Dimensions

Dimension	External (mm/in)	Internal (mm/in)
Width	$1534^{0}_{-1.5}$ ($60.4^{0}_{-0.06}$)	1273 (50.1)
Length	$2007^{0}_{-25.4}$ (79^{0}_{-1})	1294 (50.9)
Height	$1626^{0}_{-25.4}$ (64^{0}_{-1})	1264 (49.8)

2) Internal volume: 2.0m^3 (70.6 Cu.ft) (Nominal)

3）Door opening

Maximum height	1264mm (49.8in)
Maximum length	1294mm (50.9in)

4）Base

Base length	$1562^{0}_{-1.5}$mm ($61.5^{0}_{-0.06}$in)
Base width	$1534^{0}_{-1.5}$mm ($60.4^{0}_{-0.06}$in)
Minimum width of the slot	255mm (10in)
Minimum height of the slot	77mm (3in)

5）Weight

Gross weight	1588kg (3500lb)
Max net weight (incl. the temperature control system)	650kg (1433lb)
Max loading capacity	938kg (2067lb)
Note: The tare weight and max loading capacity may vary due to repairs.	

2. Temperature Controlled Container General Operation Instruction

2.1. Forklift Handling

• The containers, whether empty or loaded, can only be lifted and moved with a forklift. The forklift's shovels must be fully inserted into the slots. The containers must not touch the ground when moved by forklift.

Prohibition It is strictly prohibited to slide the container against the ground with a forklift.

Prohibition It is prohibited to forklift the container from the machine compartment side and its opposite side.

Warning The shovels should be at least 1.2m (47.2in) in length.

Figure 2.1.1 Forklift Handling

2.2. Roller Bed Handling

Use the straps on the container to handle it on the roller beds.

Figure 2.2.1 Roller Bed Handling

2.3. Ambient Conditions

Make sure the container is operated within the limits specified in Section 1.6.

2.4. Shipment Duration

Charge the container whenever the shipment time is longer than 30h, or the container is operating at improper ambient temperature, or the container inner and outer temperature difference exceeds 20℃ (68 ℉).

2.5. Wrapping

The container does not require additional package during use. It will fail to work properly if the air inlets or outlets are blocked.

2.6. Ground Transportation Precaution

Warning Do not expose the containers to extreme temperatures below -20 ℃ (-4 ℉) or above +43 ℃ (109.4 ℉) longer than necessary.

2.7. Air Transportation Precaution

Warning Direct sunlight shall be avoided. Do not expose the containers to extreme temperatures on tarmac longer than necessary.

2.8. Unloading

Check if the container is damaged before unloading. Keep the temperature control system operate when unloading the cargo.

After unloading, close the container door and switch off the container as per Section 2.10.

2.9. Storage

The storage of the container shall note the following:

1.The containers should be stored in a well-ventilated warehouse, ideally at room temperature, but in any case between -40℃ ~+55℃ (-40 ℉ ~+131 ℉), a relative humidity less than 80% without corrosive gases.

2. Charge the battery to at least 95% and then switch off the container. Charge the container at least every 30 days during storage.

Warning Switch on the container first before charging.

2.10. Switch On/Switch Off

The switch is used to connect/disconnect the battery from charging/discharging circuits. Switch off the container, the battery will not work and E4 Alarm will be triggered by AC power connection.

Refer to the operations below to switch on/off the containers:

1) Open the lid of charging unit;

2) Rotate the switch to " — " or " | " position.

Figure 2.10.1 Off (—)

Figure 2.10.2 On (|)

2.11. Discharge Condensate Water

Discharge the condensate water inside the condensate water box every time before releasing the empty container.

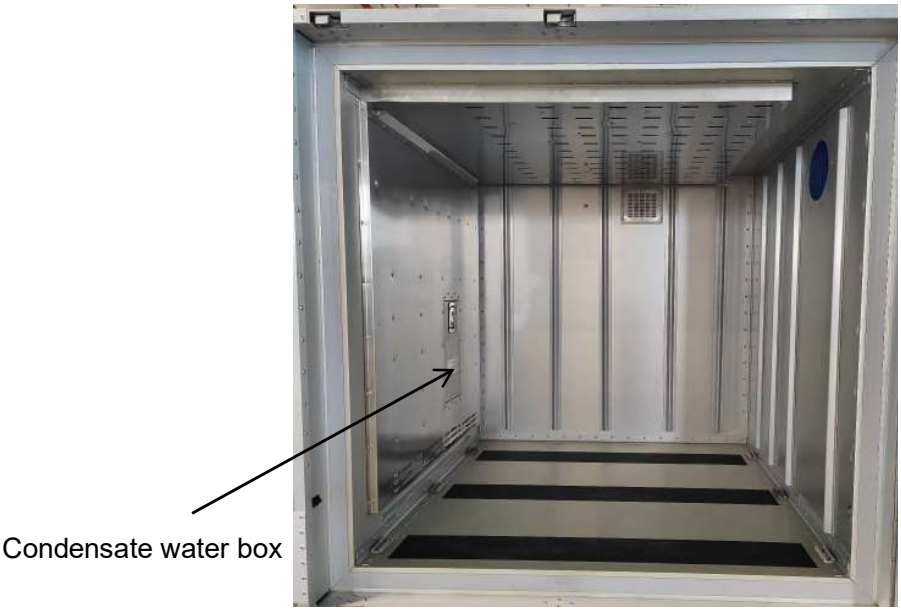


Figure 2.11.1. Condensate Water Box

• Open the container door and find the condensate water box on the partition wall (see Figure 2.11.1). Press the buckle to remove the box. Take the hose out and discharge the condensate water.

• Put the hose back and mount the condensate water box back properly (see Figure 2.11.2).

Figure 2.11.2. Mount Condensate Water Box

2.12. Functional Test

Carry out functional test every time after receiving the containers so as to check their function performance. It can only be conducted by the authorized operation personnel.

3. Charging

• The power required is 850W for charging alone and 1100W for charging together with running the temperature control system. When connecting with AC power, the current shall be no less than 10A and the maximum charging time is 10h. The charging time depends on the initial battery level.

• The battery can be charged when the temperature control system is running or at the STA mode. The charging procedure and the charging time will not be affected by a running temperature control system.

• The optimal charging temperature is 0℃ ~ +30 ℃ (+32 ℉ ~ +86 ℉) where the charging may fail at the temperature beyond this range. Avoid charging outside the temperature range -20℃ ~ +40 ℃ (-4 ℉ ~ +109.4 ℉).

• Pay special attention when moving the container or fully extending the charging power cable. Check whether the cable and plug are intact before power connection. Avoid using any external supplied cable for charging. The cable shall be extended completely during charging. To avoid overload, a power outlet is allowed to connect only one container at the same time.

Warning Do not charge the container inside the aircraft or charge with power supply onboard.

Warning Do not charge outdoors or in humid environment so as to avoid short circuits.

Warning Switch on the container before charging so as to avoid triggering alarm.

Warning It is normal that the charging indicator may not light up when the battery level is above 95%; if the charging indicator does not light up when the battery level is below 95%, check the power outlet connection and the ambient charging environment. Otherwise, connect HB TempCon customer support.

3.1. Charging process

1) Open the lid of the charging unit;

Figure 3.1.1. Open the Charging Unit

2) Switch on the container (see Section 2.10);
3) Fully extend the charging cable. Do not twist or twine it during charging.

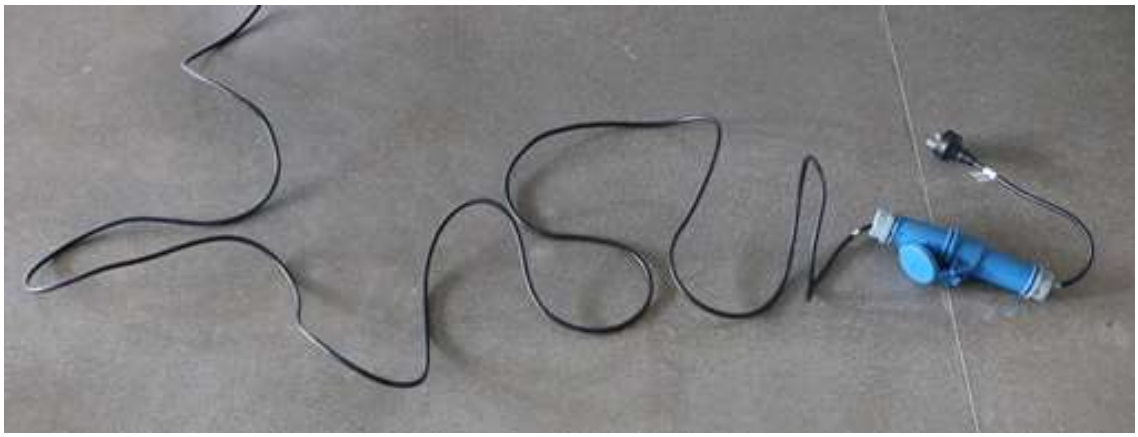


Figure 3.1.2 Extend the Charging Cable

4) Choose an appropriate power adapter.

Power adapter (UK-China)

Power adapter (US-China)

Power adapter (GER-China)

Power adapter (Switzerland-China)

Figure 3.1.3. Power Adapters

5) Connect with the power outlet and "Charge" indicator lights up.

Figure 3.1.4 "Charge" Indicator

6) The "charge" indicator goes dark when the battery is completely charged.
7) Disconnect with the power outlet and pack the charging cable kit back into the charging unit.

Figure 3.1.5 Cable and Plug

4. Preconditioning

The container and cargo shall be preconditioned to the required temperature before loading. The temperature control performance of the containers will be affected by incorrect precondition.

4.1. Cargo Pre-conditioning

1) To avoid the risks of temperature differences, the cargo must be preconditioned to the set temperature of the container and kept at the set temperature for more than 30 minutes.

2) The temperature displayed on the display panel shows the container inner air temperature.

4.2. Container Pre-conditioning

There are two recommended ways to precondition the container: preconditioning in non-temperature controlled room and preconditioning in the temperature controlled room.

1. Preconditioning in non-temperature controlled room:

1) Close the container door.

2) Switch on the container and connect with the power outlet.

3) Set the temperature and ensure that the temperature control system is working. Read the inner temperature on the display panel.

4) The inner temperature reaches the required temperature and must remain stable for at least 30min.

2. Preconditioning in temperature controlled room:

1) Place the container in temperature controlled room and set its temperature to the required temperature.

2) Keep the container door open and secure it.

3) Precondition the container for at least 1h before cargo loading. The container shall be switched off during the preconditioning. Close the container door afterwards, switch on the container and check the preconditioning result.

5. Cargo Loading

Warning The cargo must be packed on pallets in a way allowing free airflow in all directions beneath the cargo, between the cargo with the sidewall spacers and between the top air outlets.

Warning Make sure the cargo does not block the air inlet and outlet.

Warning If the cargo is wrapped with shrink foil, keep the pallet base totally clear from any foil etc. to ensure a free airflow.

Warning Load the cargo properly and make sure to distribute the cargo weight evenly on the pallet.

Warning Make sure the cargo is secured to the tie-down brackets.

Warning Protect the container opening from collision with the pallets or cargo during loading.

Warning The cargo must be preconditioned exactly, and the deviation with the set temperature shall not exceed 1℃ (1.8°F)

Warning The temperature controlled containers shall not be used to store or transport cargo which may possibly damage the containers, including but not limited to unprotected corrosive matters, unsecured materials, or bulk goods that may corrode, oxidize, seriously dent, puncture, contaminate, stain or damage the containers. Additionally, they shall not be used to store or transport any toxic, dangerous, harmful, or filthy matters, including but not limited to all kinds of waste materials and prohibited goods.

5.1. Cargo Loading

1) Switch on the container (if pre-conditioned in temperature controlled room).

2) Make sure the container set temperature is correct and pre-conditioned to the required cargo temperature.

3) Make sure if the battery level of the container is above 90%, and consider charging according to the actual situation.

4) Acknowledge all alarms.

5) Open and secure the container door.

6) Load the container. (Minimize the door opening time, and make sure to protect the container opening from damage during cargo loading)

7) Secure the cargo to the tie-down brackets.

8) Make sure there is cold/hot air blowing out of the air outlets if the space allows.

9) Close the container door. (E1 alarm appears if the container door opens for 15min and disappears when the door is closed properly)

10) Make sure the alarm indicator is not activated. (E9/10 alarm will appear when the door opens during loading. Make sure the temperature recovers and the alarm disappears)

11) Seal the display panel and container door.

12) Place the shipping documents into the document pouch.

6. Display Panel Operation

6.1. Start-up Interface

Figure 6.1.1. Start-up Interface View

1) Switch on the container, all operating parameters remain the same with those set last time before the container is switched off, and the display panel shows the actual inner temperature and battery level.

2) The left screen displays the actual inner temperature, set temperature, and some alarm codes; When the container is switched on for the first time, this screen shows the actual inner temperature (display accuracy: 1℃ (1.8 ℉) when the displayed temperature is ≤-10℃ (+14 ℉), and 0.1℃ (0.18 ℉) beyond this temperature range).

3) The right screen displays the battery level and part alarm codes.

4) There is no temperature jump under normal conditions and the temperature shall change gradually to the actual inner temperature at the speed of 1℃ /min (1.8 ℉ /min). If there is sudden temperature change at the rate exceeding 1℃ /6s (1.8 ℉ /6s), the temperature change will be accelerated to 11℃ /min(19.8 ℉ /min).

5) The temperature display range is -51℃ ~+50℃ (-59.8 ℉ ~+122 ℉).

6) After setting the required temperature, the system will adjust to the cooling/heating mode automatically. The temperature on the panel is measured in Celsius Degree. All settings are stored and will not be lost even if there is a power failure.

6.2. Keys on Display Panel

Figure 6.2.1. Display Panel

There are 6 keys on the display panel. All keys except "Digit Tran", "Alarm Test" and "Silence" will be locked if there is no operation in 10 seconds so as to prevent faulty operation.

1) "Set" key: Unlock the panel and press Set to enter the temperature setting interface, the variable digit will flash. Press Set again after setting the temperature and the set point will be active and saved. If there is no operation for more than 10 seconds, the set point will be automatically saved and the panel will be locked.

2) "Digit Tran" key: It is used to unlock the display panel and adjust the set point digit.

3) "Temp Adjst" key: It is used to adjust the set point value from 0 to 9.

4) "Alarm Test" key: Press it under locked mode to read and acknowledge alarm codes.

5) "Silence" key: Press it to mute the alarm sounds (except smoke alarm). The alarm indicator will stay lit.

6) "Defrost" key: It is used as a combination key, not for defrosting.

6.3. Unlock Display Panel

1) Press and hold DigitTran for about 5 seconds until F0 appears on the right-side screen.

Figure 6.3.1. Unlock Display Panel

2) Press Temp Adjst and F1 shows.

Figure 6.3.2. Unlock Display Panel

3) Press Set to complete the unlocking process. In this case, the display panel shows the inner temperature and battery level. If there is no operation for 10 seconds, the panel will be locked.

6.4. Set Temperature

1) Press Set under the unlocked state and L0 shows on the left side screen.

Figure 6.4.1 Set Temperature

2) Press Set again to enter the temperature setting mode. (Note that the three digits on the temperature display screen are Hundred, Decade and Unit respectively.)

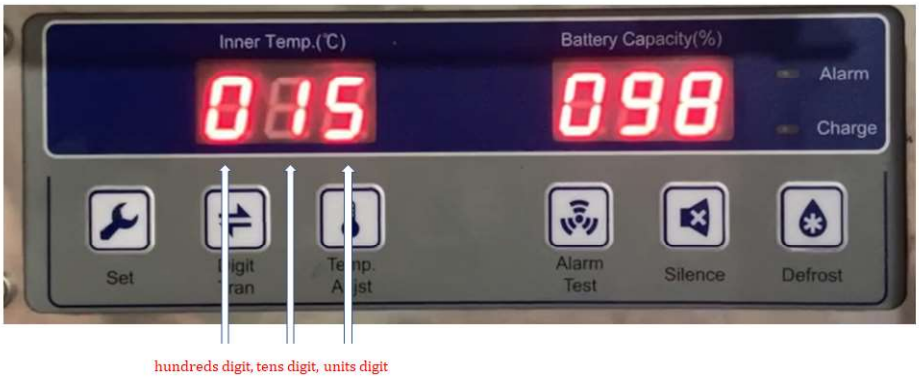


Figure 6.4.2 Set Temperature

3) Press Temp Adjst to adjust the numerical value and press Digit Tran to adjust the numerical digit; press Set to confirm the set point value, and the screen returns to the default view displaying the inner temperature and battery level.

Figure 6.4.3. Set Temperature

6.5. Indicator lights and alarm codes

Charge indicator lights up when the container is charging with AC power. It goes dark when the battery is fully charged or the mains supply is disconnected.

Alarm indicator lights up or flashes when there is fault or error. Most alarms are acknowledged by flashing light, except smoke alarm and low battery level alarm by steady-on light. The smoke alarm light will be acknowledged during charging and it cannot be observed when the container is powered by the battery).

Read Alarm Code:

1. Press Alarm Test when the display panel is locked. E1\E7\E8\E9\E10 will show up on the display panel for 3 seconds.

2. E2\E3\E4\E5\E6 shows up whenever such an alarm occurs.

3. When the alarm light flashes without buzzer sounds and no alarm code shows up on the panel by itself or after pressing Alarm Test, the alarm should be E0.

Acknowledge the specific alarms:

1) E0, ambient temperature sensor fault: Flash light without buzzer sounds.

2) E1, door opening alarm: The indicator flashes at once when the door is opened and the buzzer begins 15min later;

3) E2, smoke alarm: On battery power mode: steady light with buzzer sounds, and later the system stops working and powers off automatically. On mains supply power mode: steady light with buzzer sounds.

4) E3, temperature sensor fault: Flash light with buzzer sounds.

5) E4, battery communication fault: The alarm appears when there is a communication interruption between the temperature control motherboard and the BMS for more than 60s; Flash light with buzzer sounds.

6) E5, battery level lower than 15%: Steady light after 3mins without buzzer sounds. The right side screen displays E5 and battery level alternately.

7) E6, battery level 0%: Steady light with buzzer sounds. In this case, the temperature control system stops working. The container will only record the inner temperature until the container runs out of power.

8) E7, the ambient operating temperature exceeds limits: On battery power mode, flash light without buzzer sounds when the ambient temperature exceeds -20℃ ~ +43℃ (-4 ℉ ~ +109.4 ℉). In this case, the temperature control system will not work properly.

9) E8, ambient charging temperature exceeds limits: On mains power supply mode, flash light without buzzer sounds when the ambient temperature outside 0℃ ~ +30℃ (+32 ℉ ~ +109.4 ℉).

10) E9, high inner temperature alarm: Flash light with buzzer sounds when the inner temperature reaches the high temperature alarm threshold value.

11) E10, low inner temperature alarm: Flash light with buzzer sound when the inner temperature reaches the low temperature alarm threshold value.

12) The steady light or flashing light will be present unless the faults are corrected. A buzzer sound alarm can be muted for 30min by pressing Silence, but it starts again 30 minutes later if the fault is not corrected or new alarm occurs.

6.6. Solutions for Alarms

1) E0: Switch off the container and contact HB TempCon customer support.

2) E1: Close the container door appropriately. Otherwise, switch off the container and contact HB TempCon customer support.

3) E2:

On battery power: Switch off the container, check if there is smoke around the container. Move the container to smoke-free area and switch it on; Otherwise, switch on it directly. Keep using the container if the alarm disappears. Otherwise contact HB TempCon customer support.

On mains supply power: Disconnect with AC power, switch off the container, circle around the container for a quick inspection, switch it on. If the alarm does not appear after 1min, reconnect with AC power. Otherwise contact HB TempCon customer support.

4) E3: Switch off the container and contact HB TempCon customer support.

5) E4:

On battery power: Switch off the container, wait for 15~20s and switch on it. Keep using the container if the alarm disappears. Otherwise, contact HB TempCon customer support.

On mains supply power: Check if the container is switched off, switch it on; If it is switched on, switch it off first and then switch on 1min later. Keep using the container if the alarm disappears. Otherwise, contact HB TempCon customer support.

6) E5: Charge the container with AC power as soon as possible.

7) E6: the container cannot keep the inner temperature. Charge the container with AC power immediately.

8) E7: Move the container to an appropriate operating environment (-20℃ ~ +43℃) (-4 ℉ ~ +109.4 ℉).

9) E8: Move the container to an appropriate charging environment (0℃ ~ +30℃) (+32 ℉ ~ +109.4 ℉)).

10) E9:

a. If the alarm is triggered by empty container pre-conditioning or adjusting to a lower set temperature, it is not necessary to handle the alarm. It will disappear automatically when the inner temperature reaches the set value.

b. If the container is loaded with cargo, check if the cargo is pre-conditoned to reach the required temperature. Precondition the cargo to the set temperature before loading. Otherwise, switch off the container and contact HB TempCon customer support.

11) E10:

a. If the alarm is triggered by empty container pre-conditioning or adjusting to a higher set temperature, it is not necessary to handle the alarm. It will disappear automatically when the inner temperature reaches the set value.

b.If the container is loaded with cargo, check if the cargo is pre-conditioned to the required temperature. Precondition the cargo to the set temperature before loading. Otherwise, switch off the container and contact HB TempCon customer support.

6.7. Set Value Adjustment

6.7.1 Setting Code Definition

L0	Inner temperature setting	Default value at 5℃ (+41 ℉)
L1 L2	High-temperature alarm setting Low-temperature alarm setting	When the set point T is 0℃ ~10℃ (32 ℉ ~50 ℉), the high/ low-temperature alarm value changes to T± 3℃ (± 5.4 ℉) automatically; When the set point T is 10℃ ~20℃ (50 ℉ ~68 ℉), the high/ low-temperature alarm value changes to T±5℃ (±9 ℉) automatically;
L3	Battery voltage query	/
L4	Ambient temperature query	/
L5	Software version number	The format is "A.B.C". A refers to display panel version; B.C refers to main board version
L6	Buzzer delay time setting for high and low temperature alarm/door opening alarm	Set range is 1℃ ~30℃ (+33.8 ℉ ~ +86 ℉), 15min at default
L7	Temperature control difference	Set range is 0.2℃ ~ 0.8℃ (0.36 ℉ ~ 1.44 ℉), 0.5℃ (0.9 ℉) at default. Super Administrative Right (SAR) is required to change the value.
L8	Battery alarm	Setting value is 0 or 1. 0 stands for turning off low battery level alarm, and 1 stands for turning on alarm function. The default value is 1. SAR is required to change the value.
L9	Super Administrative Right (SAR)	/

6.7.2. STA (STANDBY) Mode

The STA mode is set as follows: Unlock the display panel, press both Silence and Defrost simultaneously to enter the STA mode.

The temperature control system does not work under STA mode. Repeat the above step to exist the STA mode.

6.8. Alarms

As per Section 6.5, when an alarm appears, the alarm will sound continuously at an interval of 0.5s. Alarm indicator light will be present until the fault is corrected, and the buzzer can be muted by pressing Silence. The container will automatically search once every 30 minutes. If there is any alarm, the buzzer will sound again.

Press Alarm Test when the display panel is locked, the temperature and alarm codes are displayed in the corresponding screens and each alarm code displays 3s. If there are multiple alarms at the same time, the low battery alarm code will be displayed preferentially, and the other alarm codes will display 3s successively.

Warning When the buzzer alarm is muted and a new alarm occurs, refer to section 6.5 to identify the alarm.

6.9. Exporting data records to USB flash disk

The USB module will export container data, BMS data and events including door opening and closing, temperature setting record, time record, smoke alarm and low battery level alarm as well as their corresponding time.

The data is exported as follows:

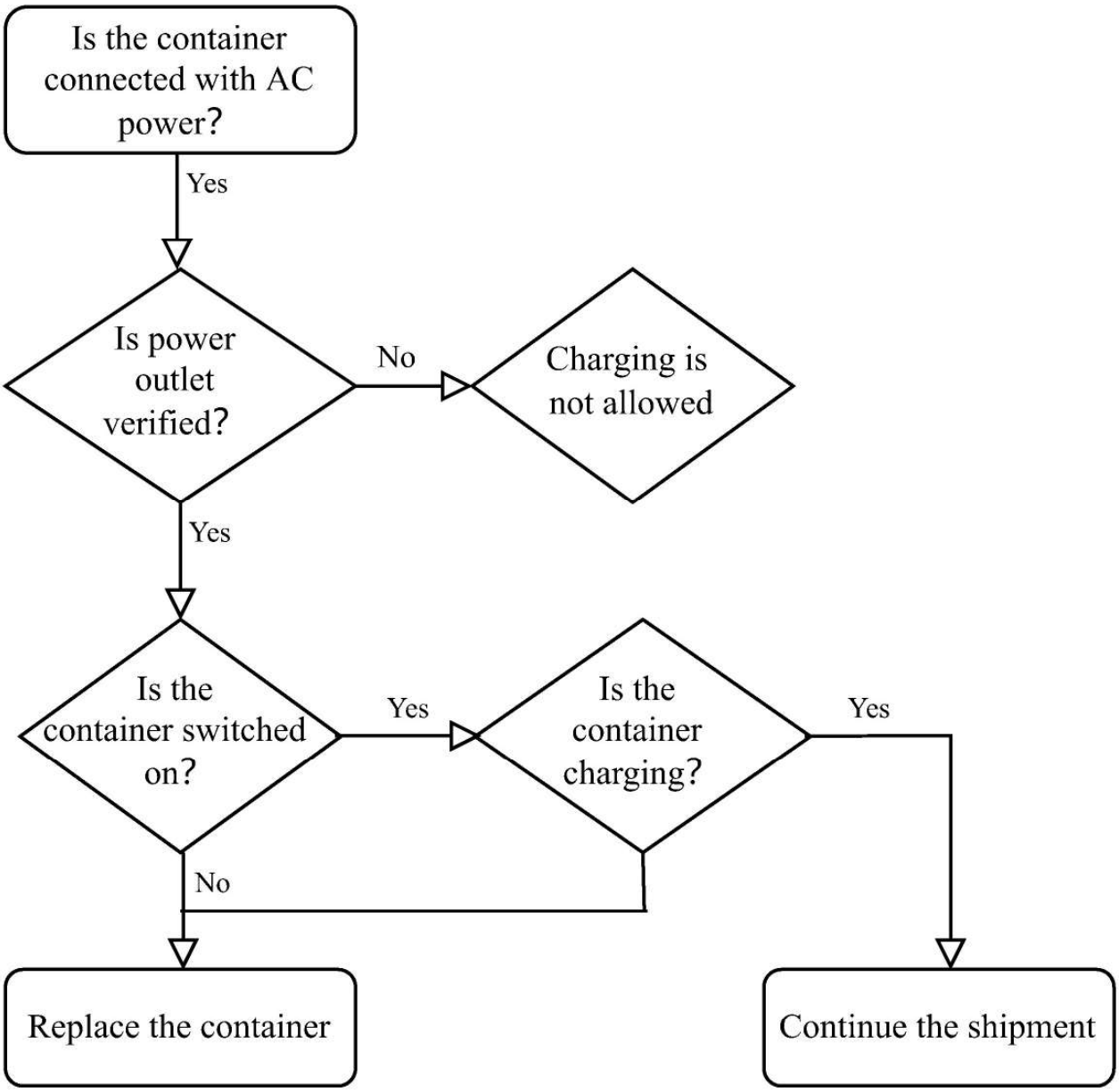
1) Plug a USB flash disk in the port beside the red switch inside the charging unit;
2) Unlock the display panel with reference to Section 6.3;
3) Press and hold Set and Alarm Test at the same time for more than 3s;
4) When the temperature display screen shows USB and ..., it indicates that data is being exported;
5) When the temperature display screen shows USB and OK, it indicates that data is exported;
6) Pull out the flash disk.

Warning The format of USB flash disk should be FAT32 (right click-attribute-general-file system to check).

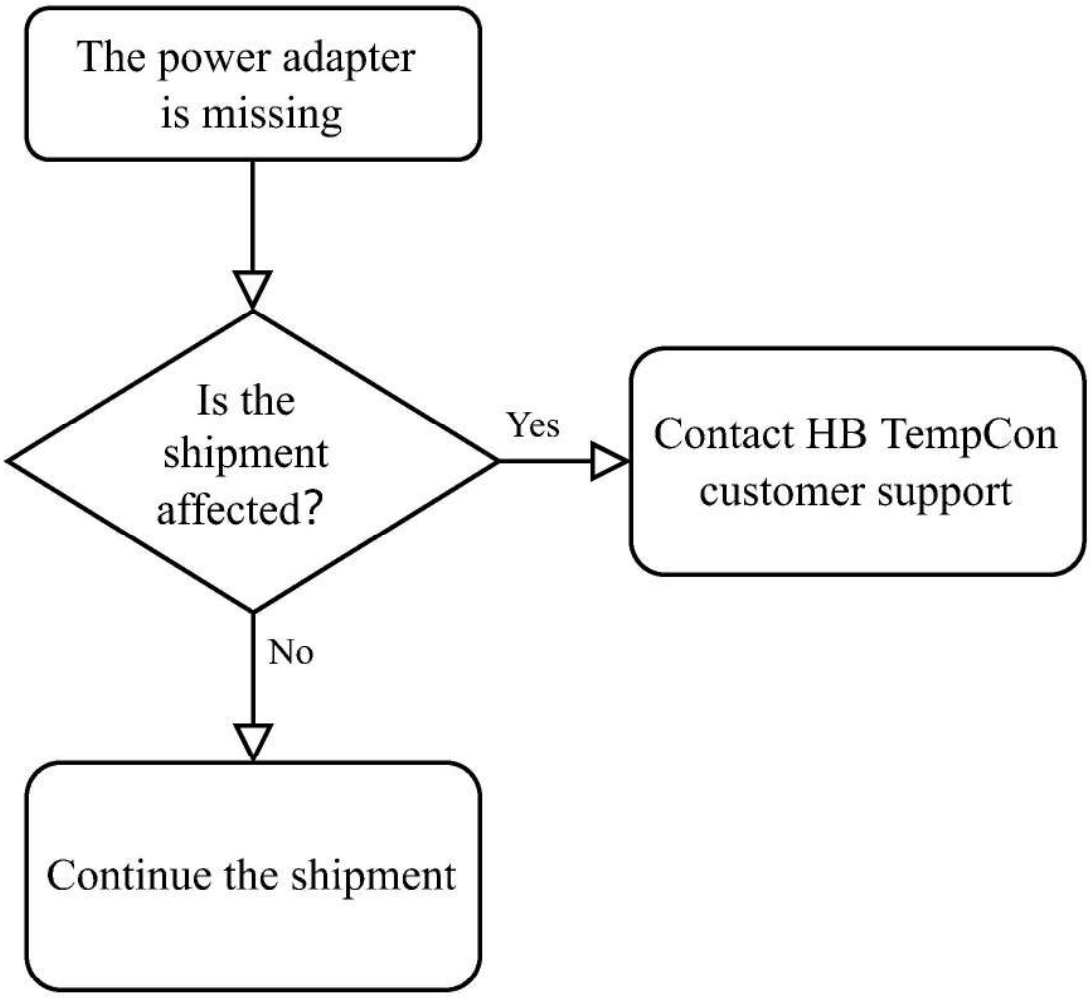
Warning Choose Kingston or SanDisk with a memory no larger than 64GB.

7. FAQs and Troubleshooting

7.1 The battery does not charge



7.2. The power adapter is missing



7.3. The display panel does not display anything