



Powerology

Dual Compartment Smart Fridge and Freezer 40L

SKU: PPBCHA57



Table of Contents

Features	2
Charging Instructions	2
App Connectivity	3
Instructions for Use	4
Control Panel Guide	5
Error Guide	7
Troubleshooting	8
Tips and Suggestions	8
Suggested Temperature Settings	9
Maintenance and Clean	9
Specifications	10
Warranty	11
Contact Us	11

Features

- 1.** This model features a highly efficient DC compressor and conversion module, ensuring rapid cooling, extended durability, and effective deep cooling capabilities.
- 2.** It incorporates a high-density polyurethane insulation layer that provides excellent insulation and minimizes energy consumption.
- 3.** Designed for versatility, it operates on both 12V and 24V systems, making it ideal for use in cars and at home.
- 4.** Offers rapid cooling capability down to -20°C across dual zones.
- 5.** An intelligent control system with a memory function enhances user convenience by remembering settings.
- 6.** Includes an auto battery protection system to safeguard your vehicle's battery.
- 7.** Features an adjustable electronic temperature range from $+20$ to -20°C in dual zones for precise control.
- 8.** Boasts a stylish and unique design that is both functional and aesthetically pleasing.
- 9.** Accessible from both sides for ease of use.
- 10.** Equipped with a beer opener and a lid that doubles as a cola drink holder.
- 11.** Includes USB and Type C charging ports on the display panel for added convenience.
- 12.** Powered by a 20.8Ah lithium battery that offers substantial run time and can be charged while the fridge is off.

Charging Instructions

- 1.** AC power can be supplied through the adapter, with an output voltage that supports both 12V and 24V systems.
- 2.** DC power can be utilized via the DC power lead, compatible with 12V/24V systems.

3. Solar panels can be connected using either an Anderson or a DC5521 plug. Ensure that the solar panel voltage is between 16V and 31.5V without exceeding 31.5V.

4. The battery can be charged using a Type C socket. Supported currents and voltages include 5V/3A, 9V/3A, 12V/3A, 15V/3A, and 20V/3A up to a maximum of 60W.

Note:

[1] For solar charging, ensure the solar controller is set to the lithium-ion configuration.

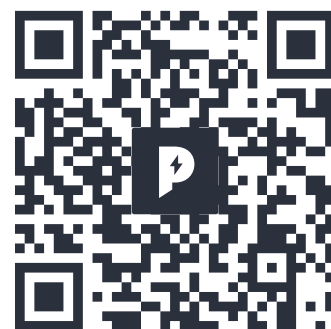
[2] The Anderson plug and DC5521 socket should only be assembled on the device when used with the lithium battery.

[3] The fridge is equipped with a retractable pull rod; to extend the rod, disengage the handle lock, featuring an anti-slip design for secure handling.

Warning: If the fridge is to be stored for an extended period, it is advisable to turn off the battery pack.

App Connectivity

1. To control the fridge using Bluetooth, first download the 'Powerology' app from either the App Store or Google Play Store, or scan the QR code with your smartphone.



2. Download and install the Powerology app.

3. Connect the fridge using either the DC or AC power cord and switch on the fridge.

4. Activate Bluetooth on your phone.

5. Open the app, agree to the user agreement/privacy statement, and complete the registration process. Once registered, the app will display 'Discovering devices'.

6. Select 'Add' to connect the fridge, which will then appear as a device icon in the subsequent interface.

7. Start managing your fridge with the Bluetooth app to utilize the following functionalities:

- [1]** Unlock settings by clicking the lock icon. It will re-lock automatically after 30 seconds of inactivity.
- [2]** Review or adjust the temperature setting or unit preference.
- [3]** Monitor or modify the voltage settings.
- [4]** Alter the compressor speed settings.
- [5]** Power the fridge on or off.
- [6]** Maintain connection within the fridge's Bluetooth range to ensure continuous functionality.



Instructions for Use

[1] Connect the Appropriate Power Supply Cable Before Use:

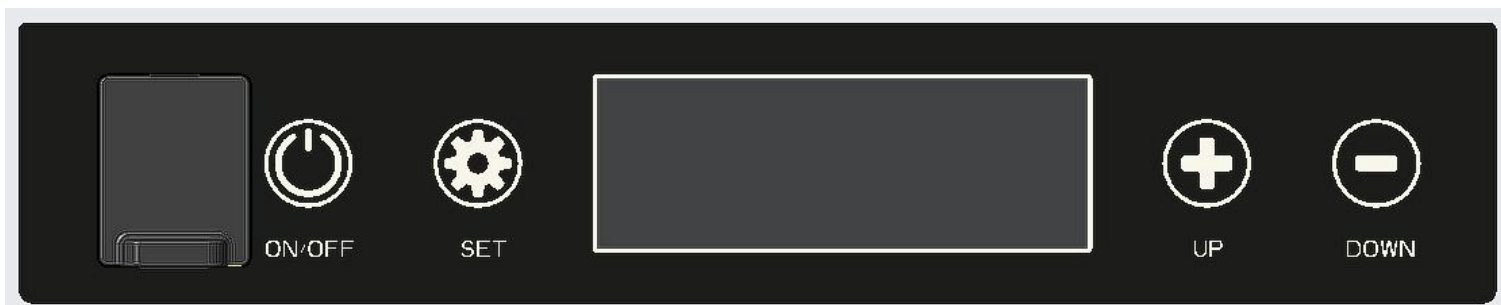
For DC power supply in cars: Utilize the 12V/24V DC power cord available for vehicles (refer to Pic 1).



[2] Display and Control Panel Diagram:




2.1 The panel includes USB, Type C charging ports, and a Bluetooth app control interface.

2.2 The touch panel features four buttons from left to right: power on/off, settings, temperature increase, and temperature decrease.






Control Panel Guide



Note: "LT" refers to operations on the left side of the display panel, while "RT" refers to operations on the right side of the display panel.




1. Long press the power button  to switch the device on or off.
2. To unlock the control panel, press and hold the settings button  for two seconds; the screen will illuminate and the lock icon  will disappear.






3. Setting the Temperature:

[a] Large Zone: Press the temperature increase  and decrease  buttons to set the desired temperature directly on the display.

[b] Small Zone (near to the control panel): After setting the temperature for the large zone, if the display is still blinking, press the settings button  to adjust the temperature for the small zone.




[c] Left Zone: Use the temperature increase  and decrease  buttons to set the desired temperature directly on the display. The display will indicate "LT", meaning the adjustment is for the left zone, which is away from the control panel.

[d] Right Zone: After setting the temperature for the left zone, if the number on the display is still blinking, press the settings button  to adjust the temperature for the right zone. If the number on the right side starts blinking, use the temperature increase  and decrease  buttons to set the required temperature. The display will indicate "RT," denoting that the adjustment is for the right zone, which is closer to the display.




[e] If you wish to have one zone active while the other is inactive, press the settings button  and either the temperature increase  or decrease  button simultaneously. This action will toggle the operation of the corresponding zone on or off. Use the increase  and decrease  buttons for left and right zone control, resp-




ectively. If a zone is deactivated, its temperature display will turn off

Note: The temperature setting range for the dual zone is from +20°C to -20°C. Once the interior temperature of the refrigerator matches the set temperature, the compressor will automatically cease operation.

4. MAX/ECO Mode: To decrease energy consumption, activate ECO mode by pressing the settings button  once and adjusting with the up  or down  button during the blinking of the icon.

Caution: While ECO mode conserves power, reaching the desired temperature may take longer.

5. Voltage Monitor Setting: The device offers three voltage protection stages: High, Medium, and Low. To adjust, press the settings button  twice and select with the up  or down  button while the icon blinks. The default setting for car batteries is Medium (M), and for external or backup batteries, it is set to Low (L).

6. Temperature Unit (°C / °F): To toggle between Celsius and Fahrenheit, press the settings button  three times and make your selection using the up  or down  button while the icon blinks.

Battery Monitoring-(Parameters for three voltage levels of L/M/H)				
Voltage Level	12V	12V	24V	24V
Action	Cut Out	Cut In	Cut Out	Cut In
L	9.6	11.2	21.4	23.0
M	10.4	11.7	22.8	24.2
H	11.1	12.4	24.3	25.7

Error Guide

Error Code	Possible Cause	Solution
E1	Insufficient power supply voltage.	Increase the voltage of the DC power source. Check all connections. Review and adjust the voltage monitor settings.
		Replace the defective 240V AC adaptor.
E2	Malfunction in the condenser fan.	Contact professional service agents.
E3	Excessive pressure build – up within the compressor.	Disconnect the fridge for 20 minutes then restart.
E4	Failure to maintain minimum operational speed of the compressor.	Contact professional service agents.
E5	Excessive heat in the compressor and control unit.	Disconnect the fridge for 20 minutes then restart.
E6	Malfunction or failure of the temperature sensor (NTC).	Contact professional service agents.

Caution: Vehicle outputs may vary in voltage. If the error code E1 is displayed, reduce the voltage setting by one stage, for example, from High to Medium or Medium to Low.

Troubleshooting

[A] Refrigerator Doesn't Work:

1. Verify the power source to ensure it provides the correct voltage, which should neither be too high nor too low.
2. Inspect all power cables and connections between the power source and the refrigerator.
3. Check if the power source and the refrigerator are both switched on.
4. Confirm whether the battery is active, applicable when using a lithium battery.

[B] Poor Refrigeration Performance:

1. Make sure the lids are securely closed.
2. Verify that the power source delivers adequate voltage.
3. Ensure there is adequate ventilation around the refrigerator.
4. Avoid overfilling the refrigerator with too much food.
5. Ensure that the food placed inside the refrigerator is not too warm.
6. Confirm the temperature settings are correct.
7. Check if the surrounding ambient temperature is excessively high.

Tips and Suggestions

1. Do not place fresh and frozen foods directly next to each other within the cabinet, as this can cause fresh food to freeze or spoil.
2. When the appliance is set at 0°C or lower, avoid storing glass bottles or liquids such as milk, juices, or soft drinks inside, as they may freeze and cause the containers to shatter, leak, or burst.
3. Store fruits and vegetables closer to the top of the cabinet where it is slightly warmer to minimize spoilage and prevent damage from heavier items.
4. Limit the frequency of door openings to minimize the influx of warm air into the cabinet, thereby enhancing cooling efficiency.

5. When the appliance is located in the rear of a car or trailer, it should be kept away from direct sunlight and well-ventilated to reduce the risk of overheating and ensure efficient power consumption.

Note: When a vehicle is parked in sunlight and the ambient temperature is +30°C, the interior can reach temperatures up to +55°C.

Suggested Temperature Settings

Red Wine Storage (10°C)

Vaccine, Insulin (2°C - 8°C)

Fruit (4°C - 6°C)

Drink (2°C - 5°C)

Meat (-10°C)

Ice Cream (-15°C)

Maintenance and Clean

* Your fridge will be delivered clean from the factory. However, you should clean it before initial use.

* Use a cloth dampened with warm water, ensuring no water drips into the seals or damages the electronics.

* Dry the fridge thoroughly with a cloth after cleaning. Periodically clean your fridge.

Attention:

1. Avoid using solvents or cleaning agents containing abrasive particles or acidic components.

2. Do not use brushes, graters, or any sharp tools for cleaning the fridge.

3. Disconnect the power cable and turn off the fridge before cleaning.

4. For general cleaning, use a damp cloth. For more persistent stains, a solution of baking soda dissolved in lukewarm water may

be used.

- 5. After cleaning, rinse the fridge with clean water and dry it thoroughly.
- 6. When storing the fridge for an extended period, leave the lid slightly open to prevent mildew and odors.

Specifications

Battery Capacity	20800mAh 20.8Ah 11.1V
AC Power Supply	100-240V
DC Power Supply	12V/24V
Rated Power	57W
Type-C Input (Battery)	5V/3A, 9V/3A, 12V/3A, 15V/3A, 20V/3A, PD 60W (Max)
Type-C Output (Battery)	5V/3A, 9V/3A, 12V/3A, 15V/3A, 20V/3A, PD60W (Max)
Anderson Voltage Input	16V-31.5V (Max)
Anderson Nominal Current Input	10mA
USB Output (Battery)	5V/3A,9V/2A, QC 18 3.0W (Max)
Total Capacity	40L
Cooling Range	-20°C to +20°C
Refrigerant	R134A Freon
Climate type	T/ST/N/SN
Fridge Dimension	689×406×440mm
Fridge Gross Weight	22kg

Warranty

Products that you buy directly from our **Powerology** website or shop come with a 24-month warranty.

The 24-month warranty applies to products purchased directly from our **Powerology** website or store. If **Powerology** products are bought from any of our verified retailers, then the product is eligible for only a 12-month warranty. To extend your product's warranty, visit our website **powerology.me/warranty** and fill in your details in the provided form along with an uploaded picture of the product to process your request. Once approved, you will receive a confirmation email of the extended product warranty. Upload the required information within 48 hours of purchase to be eligible for a 24-month warranty period.

For more info, please check:
powerology.me/warranty

Contact Us

If you have any questions about this Privacy Policy, please contact us at: **hey@powerology.me**

Website: **powerology.me**

Instagram: **powerology_official**

Facebook: **powerology.ME**