QNK®

User Manual for Portable Car Refrigerator



Model: EF12/15

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① Email: service@qnktec.com

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*** Read this manual carefully for optimal product performance.**

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General Safety Rules

- Do not touch exposed wires with your hands.
- Do not touch power sockets or power strips with wet hands.
- Please ensure that power supply lines and fuses have sufficient current carrying capacity when using the product in a car or ship.
- Please ask professionals for installation if an AC device is used on cars, RVs, or yachts.
- Make sure that the power is connected correctly.
- Do not submerge the product in water.
- Do not freeze cans, beers, etc. at a low temperature in the refrigerator.
- Do not place any electrical equipment in the refrigerator.
- Professionals are required for maintenance service, or please contact your seller.
- Do not expose the product to rain, long-term strong sunlight or high temperatures.
- After receiving and unpacking the refrigerator, please leave it upright for more than 6 hours before turning it on for use.

Product Introduction

Perfect for trucks, offices, cars, camping, and picnics, QNK portable car refrigerator comes with a fridge compartment and a freezer compartment, which offer enough space to store beverages, ice cream, yogurt, milk, beef, bacon, fruit, etc. at your desired temperature. It is ideal for vehicles with 12 or 24 V DC power. You can move it seamlessly from home to your vehicle, keeping your food fresh and preserving the taste of the real thing everywhere.

Product Features

- A high-quality DC variable frequency compressor and a drive module are adopted to build an energy-efficient and reliable mobile cooling system.
- A microcomputer-based intelligent system is easy to operate with accurate temperature control. The temperature can be set at will to meet different storage needs.
- Compatible with a variety of power inputs and able to identify DC 12/24 V voltage, it is suitable for cars, ships, homes, and the outdoors as you like.
- With voltage detection and protection against low voltage, it can effectively prevent the car battery from overdischarging.
- The inner container is made of environment-friendly plastic material, which is safe, anti-leakage, and anti-odor.

- Designed with a high-definition LED digital display screen.
- Smart touch buttons and the child lock button prevent accidental touch.

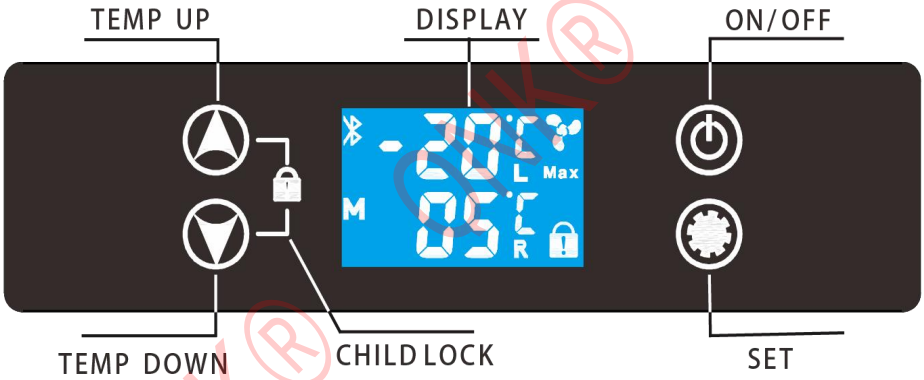
Product Structure



General Operation Notes

- When using the refrigerator, please place it in a well-ventilated area to facilitate heat dissipation. In particular, the gap between the cooling hole of the compressor and other objects must be larger than 100 mm to prevent high temperatures from causing malfunctions or affecting the cooling effect.
- Do not leave the door open for a long time. The temperature difference between the inside and outside of the refrigerator will cause the formation of frost and affect the cooling effect.
- Do not wash the refrigerator under running water.
- Do not use the refrigerator near heat sources, which will reduce the cooling performance of the refrigerator.
- Please place the refrigerator on a flat surface and do not use it on uneven ground for a long time, which may affect the service life of the refrigerator and reduce the cooling efficiency.

Operation Instructions



Temperature control range : -20 ℃~20 ℃ (-4 ℉~68 ℉)

Temperature display range: -30 ℃~40 ℃ (-22 ℉~104 ℉)

Input voltage range: DC 12 V/24 V, the maximum can not exceed DC 30 V

Power On/off

Connect the refrigerator to the DC 12/24 V power supply. If the refrigerator is in standby mode ("OFF" is displayed when you touch the button), you need to press and hold the " ⏻ " button for 3 seconds to turn on the refrigerator, after which the display screen shows the current temperature and working mode. After the power-on delay (set at 1 minute when the refrigerator is finished at the factory), the refrigerator will enter the working mode, and the compressor will start to work. To turn off the refrigerator, press and hold the " ⏻ " button for 3 seconds when the control panel is unlocked.

Locking and Unlocking the Control Panel

If the control panel is locked with the child lock icon displayed on the lower right corner of the screen, press and hold the " ▲/▼ " buttons together for 3 seconds to unlock it. When the child lock icon is not displayed on the screen, the control panel is locked automatically if there is no operation in 20 seconds.

Temperature Setting

When the control panel is unlocked, press the" ▲/▼ " buttons to adjust the temperature of the refrigerator. (The current set temperature is displayed on the screen, and it rises or falls by 1 degree every time you press it. You can hold the button to quickly adjust to the desired temperature, and once the display shows your desired temperature, don’t press any buttons, and after 5 seconds, the temperature setting will be automatically saved.)

Operating Mode Setting for the Compressor

When the control panel is unlocked, press the " " button to toggle the operating mode between the ECO and MAX operating modes. The MAX operating mode is best used to cool down the temperature rapidly, while the ECO operating mode reduces power consumption in freezer storage and maintaining the temperature.

Low Voltage Battery Protection

This unit has an automatic low-voltage battery protection feature that will automatically switch off the compressor if the DC supply voltage drops below the Cut-Out level to prevent overdischarge from damaging the battery or causing the car to fail to start. This is indicated by the "E1" code on the display. The refrigerator will automatically re-start operation in 1 minute when the DC supply voltage comes back up to the Cut-In level. The Cut-Out level is set at "Medium" protection when the refrigerator is finished at the factory. If you want to change it, follow the steps below:

a: Unlock the control panel.

b: Press and hold the " " button for 6s and release it after hearing the beep sound of the buzzer. Then short press the " " button again, and one of the battery protection icons ("L, M, H") will flash on the display screen. Then press the " / " buttons to change the setting.

See the table below:

Battery protection	12 V Cut-out	12 V Cut-in	24 V Cut-out	24 V Cut-in
Low - L	8.5 V	10.9 V	21.3 V	22.7 V
Medium - M	10. 1 V	11. 4 V	22.3 V	23.7 V
High - H	11.1 V	12.4 V	24.3 V	25.7 V

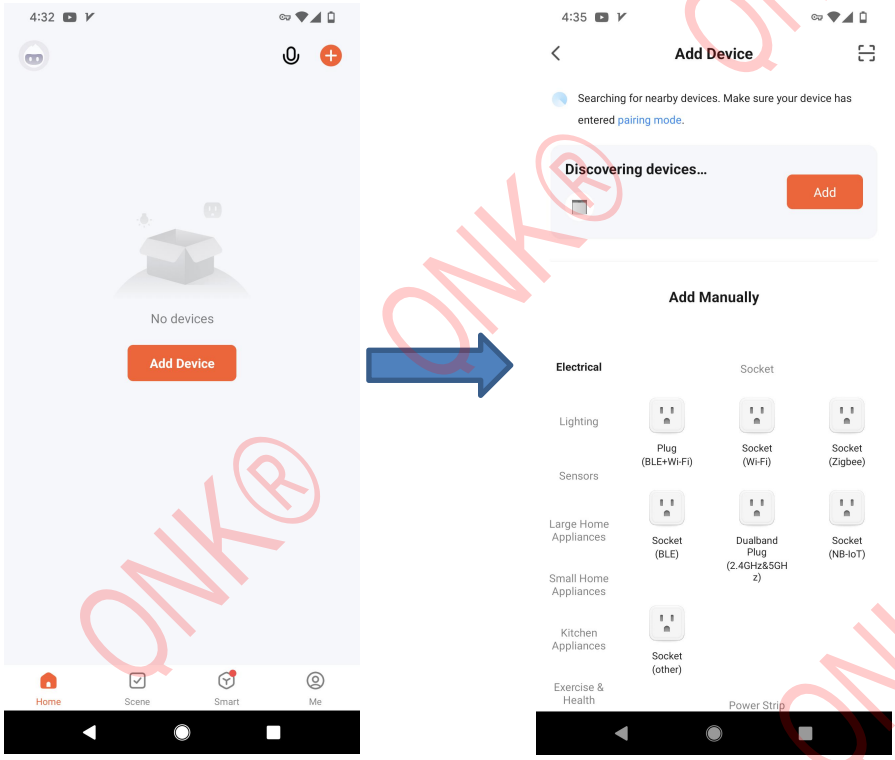
Note: If your refrigerator is cutting out prematurely, it could be due to the low voltage protection being set too high, or your DC supply wiring is not suitable enough to carry the current required. Check supply wiring suitability and consider adjusting the battery protection level accordingly.

In order to ensure that the car can start normally, it is recommended to set the protection level to "H" when using the refrigerator in the car.

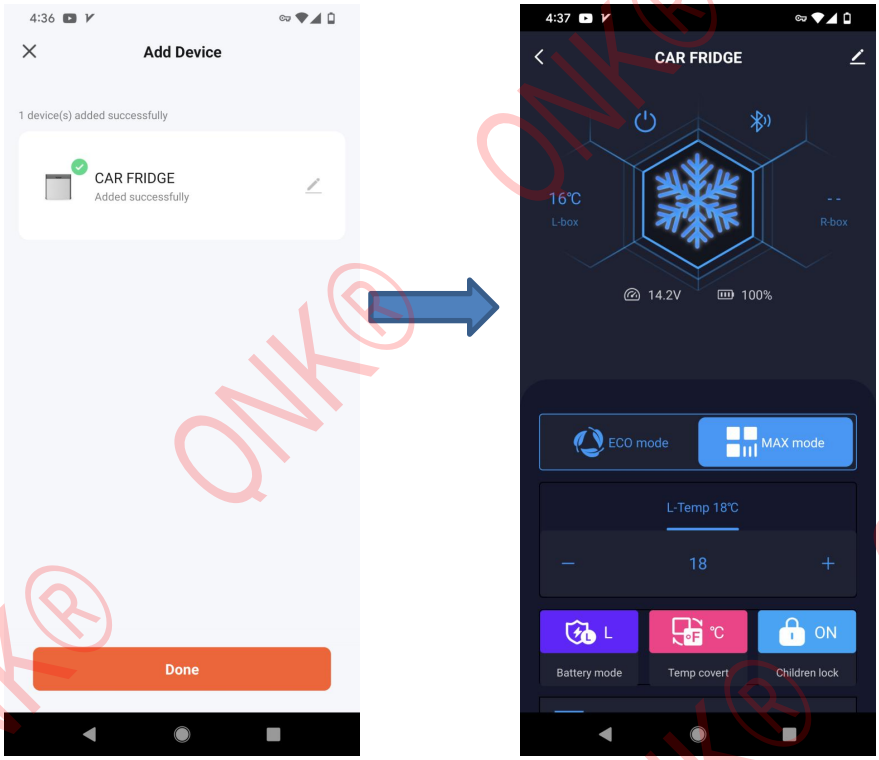
App Control

Before app control, turn on Bluetooth on your phone, download, and open the Tuya Smart app.





1. Click the “Add Device” button----2. Click the “Add” button.



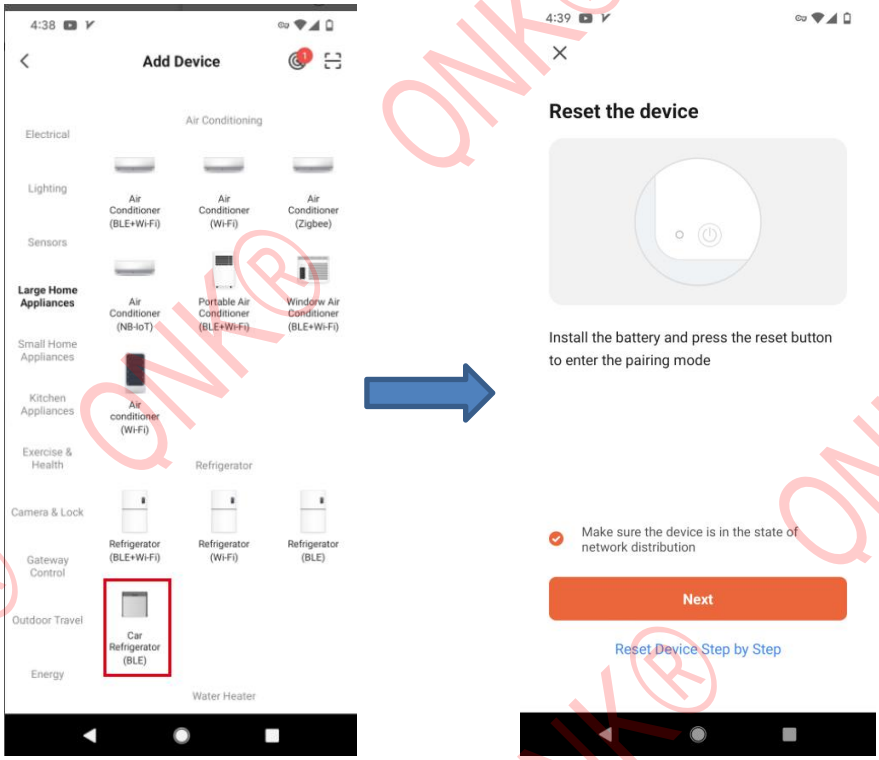
3. Click the “Done” button----4. Enter the Bluetooth app control interface.

Note:

After the car refrigerator is connected to the power supply, the Bluetooth icon on the display screen starts flashing. If not, hold the “ ⏻ “ and “ ⚙ ” buttons together for

5 seconds till the Bluetooth icon flashes, or unplug the refrigerator and plug it back again.

If your phone is unable to recognize the device, follow the steps below to manually add it. (Click the “Add Device” button before the following operations.)



1. Enter the device management interface, and then find and choose the car refrigerator in the large home appliances section.
2. Then the device can be found, and you can click the “Next” button to proceed.
3. Now the device is automatically added. Follow the same steps as described in steps two and three above for further operations.

Cleaning and Maintenance

It is necessary to disconnect the power supply before cleaning. Wipe the inner and outer surfaces of the refrigerator with a cleaning cloth dipped in water or laundry detergent. Don’t clean it in water to avoid damaging the electrical components.
When the refrigerator is not in use for a long time, it is necessary to clean the inside and outside of the refrigerator, keep it dry, and take measures to prevent moisture and dust in order to avoid mildew and odors inside the refrigerator.

Error Code Information

When there is an error in the compressor, module, fan, temperature sensor, or the

input voltage is too low, an error code will appear on the display screen and the compressor will stop working. When the error is eliminated, the temperature of the refrigerator is displayed after unplugging the power supply and plugging it back in again. After 1 minute, the compressor starts to operate in cooling mode.

The code information is shown in the table below.

Error code	Problem	Solution
E 0	Temperature sensor faulty	Please check or replace it
E 1	Low input voltage	Please check the input voltage and adjust the battery protection level
E 2	Overcurrent protection for DC fan	Please check the cooling fan
E 3	Abnormal start of the compressor	Please disconnect the power and let it stand for 30 minutes
E 4	Abnormal compressor speed	Please adjust the operation mode of the compressor (MAX/ECO)
E 5	Module temperature too high	Please move the refrigerator to a ventilated place to lower the module temperature

Troubleshooting

If the unit does not work

- Check the power supply.
- Check if the voltage is too low.
- Check all the connections from the battery to the refrigerator.
- Check the fuse.
- Check whether the refrigerator is turned on.
- Check whether the temperature has been set too high.

Poor refrigeration performance

- Too much food has been put inside the unit.
- The temperature of the food put inside the fridge is too high.
- The door is not closed properly.

- The door seal is damaged.
- There is poor ventilation around the fridge.
- The temperature is not set correctly.
- There is a “water flow” type of noise from inside the unit.
- This is normal and is caused by the flow of refrigerant.
- There is a noise from the unit.
- The unit is not on a flat level surface.
- Check for vibrations in surrounding objects.
- At the moment of starting the compressor, the sound will be a little louder when the motor runs from standstill to high speed. After the speed is stable, the sound will decrease, which is a normal phenomenon.

There are water drops outside of the refrigerator or around the door seal.

It is normal for moisture in the humid air to liquefy and condense into water drops when it contacts the outside of the refrigerator with a low temperature.

Specification

Model	EF12	EF15
Capacity	13 QT（12L）	16QT（15L）
Input Voltage	DC 12V/24V, AC100~240V	
Temperature Control Range	-20 ℃~20 ℃(-4 ℉~68 ℉)	
Refrigerant	R134a	
Insulation Material	Polyurethane foam	
Rated Power	45 W±20%	
Rated Current	3.75 A/1.875 A	
Net Weight	7.7 Kg	8.2 Kg
Unit Dimensions (L*W*H mm)	410*292*404	410*292*454
Package Dimensions (L*W*H mm)	475*370*480	475*370*530
Package Includes	1xCar refrigerator 1xAC adapter 1×DC power cord 1×User manual 2×Ice cube trays 1×Plastic scoop	

Storage Temperature Recommendations

	Purified water	5 °C (41℉)
	Drinks	5 °C (41℉)
	Fresh juice	8-10 °C(46-50℉)
	Red wine	13°C(55℉)
	Fruits	5-8 °C(41-46℉)
	Vegetables	3-10 °C(37-50℉)
	Cooked food	4 °C(39℉)
	Seafood	-3 °C(27℉)
	Meat	-18°C(-0℉)
	Frozen food	-18 °C(-0℉)

Warranty

The refrigerator comes with a 1 year warranty and its compressor 3 year warranty, which commence from the date of purchase, except in the following cases:

- Damage caused by misuse (such as direct washing under water, etc.)
- Damage caused by purchasing parts from other manufacturers or replacing accessories.
- Man-made damage
- Failure or damage caused by an operation that does not follow the precautions in the manual
- Failure or damage caused by disassembly without the permission of the manufacturer
- Failure or damage caused by a force majeure (such as an earthquake, fire, etc.)
- The warranty does not cover the loss of items in the refrigerator.
- The warranty does not include damage to fuses, connectors, sockets, handles, etc.