

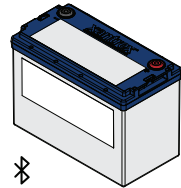
# Xantrex Lithium-ion Batteries Quickstart Guide

<http://www.xantrex.com>



**Xantrex 50Ah 24V Battery**  
886-0050-24

**Xantrex 50Ah 36V Battery**  
886-0050-36



## ⚠️ DANGER

### HAZARD OF FIRE, ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

This Xantrex Lithium-ion Batteries Quickstart Guide is in addition to, and incorporates by reference, the relevant product manuals for each product in the power system. Unless specified, information on safety, specifications, installation, and operation is as shown in the primary documentation received with the product. Ensure you are familiar with that information before proceeding.

**Failure to follow these instructions will result in death or serious injury.**

### Exclusion for Documentation

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**NOTE:** Visit <http://www.xantrex.com>, click Products, select a Product category, select a Product, and search the Product Documents panel for a translation of the English guide, if available.

### Contact Information

**Telephone:** +1-800-670-0707 / +1-408-987-6030  
**Email:** <https://xantrex.com/support/get-customer-support/>  
**Web:** <http://www.xantrex.com>

## IMPORTANT: ON FIRST USE

Perform a full charge, discharge, and charge cycle to ensure maximum battery life. For information, see Specifications.

## Important Safety Information

### READ AND SAVE THESE INSTRUCTIONS

Electrical equipment shall be installed, operated, serviced, and maintained only by qualified personnel. Certain configuration tasks shall only be performed by qualified personnel in consultation with your local utility and/or an authorized dealer. Servicing of batteries and the BMS shall only be performed or supervised by qualified personnel with knowledge of lithium-ion batteries and their required precautions. Qualified personnel have training, knowledge, and experience in:

- Installing electrical equipment
- Applying applicable installation codes
- Analyzing and reducing the hazards involved in performing electrical work
- Installing and configuring lithium-ion batteries
- Selecting and using Personal Protective Equipment (PPE)

No responsibility is assumed by Xantrex LLC for any consequences arising out of the use of this material.



⚠️ An example of an arc flash event could be a direct short circuit caused by a metallic object such as a tool bridging between the positive and negative of an energized circuit.

## ⚠️ DANGER

### HAZARD OF FIRE, ELECTRIC SHOCK, EXPLOSION, BURN, OR ARC FLASH

- This battery shall be installed and serviced only by qualified personnel.
- Always wear proper PPE (safety glasses and clothing) when working on the Li-ion battery and follow safe electrical work practices according to local codes.
- Do not wear metallic items such as watches or bracelets when working on the battery. Use insulated tools to prevent accidental short circuit.
- Do not install the Li-ion battery module adjacent to any heat source. Keep away from sources of ignition.
- Do not install or operate any of the system devices in a compartment containing flammable materials or in locations that require ignition-protected equipment.
- Do not use in vital, medical, or life-support applications.

**Failure to follow these instructions will result in death or serious injury.**

## ⚠️ DANGER

### HAZARD OF FIRE, ELECTRIC SHOCK, EXPLOSION, BURN, OR ARC FLASH

- No user-serviceable parts. Do not attempt to open or dismantle the Li-ion battery. If the battery module is damaged, do not touch the corrosive electrolyte or powder, and consult your dealer.
- When the battery module is damaged, it can release harmful gases. Ensure the surrounding environment is well-ventilated.
- In case battery content comes in contact with skin or eyes, immediately flush the affected area with large amount of clean water and seek medical help.
- In case of fire, use only a Class ABC (dry chemical) or CO<sub>2</sub> type fire extinguisher. Water can be a dangerous extinguishing medium for energized equipment because of the risk of electric shock.
- Dispose of Li-ion batteries through a local recycling center. Do not mix batteries with other wastes. Contact your local recycling center for proper disposal information.
- Do not crush, puncture, drop, disassemble, or dispose of in fire.

**Failure to follow these instructions will result in death or serious injury.**

## ⚠️ WARNING

### HAZARD OF FIRE, ELECTRIC SHOCK, EXPLOSION, AND PERSONAL INJURY

- Do not expose the Li-ion battery to rain, snow, or liquids of any type. Products are designed for indoor use only.
- Do not step or stand on the battery module enclosure.
- Always use proper lifting techniques when handling the battery module. Battery is heavy.
- Do not charge the battery in ambient temperature below freezing.
- Do not disconnect the battery while it is being charged.

**Failure to follow these instructions can result in death or serious injury.**

## NOTICE

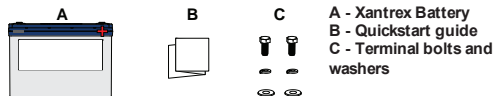
### RISK OF EQUIPMENT DAMAGE

- Do not allow the battery to be depleted.
- Charge the battery module with an approved charger. Contact Xantrex for details.
- Do not charge the battery above the recommended voltage.

**Failure to follow these instructions can result in damage to equipment and may void the warranty.**

## Introduction

The Xantrex Lithium-ion Batteries are lithium iron phosphate (LiFePO<sub>4</sub>) chemistry batteries used in conjunction with the internal Battery Management System (BMS) unit which protects the batteries and monitors state-of-charge (SoC), voltage, current, and temperature.



A - Xantrex Battery  
B - Quickstart guide  
C - Terminal bolts and washers

## BATTERY DISPOSAL

At the end of the battery's useful life, proper disposal is required. Do not dispose the battery with ordinary household waste. Refer to your local codes for proper disposal of lithium-ion batteries.

## Installation

1. Check the battery for visible damage including cracks, dents, chips, and deformations.
2. Select a location for the battery that is stable, clean, away from heat sources, dry, and well-ventilated.
3. Mount the battery with the terminals pointing up.
4. Orient the devices so that the cables avoid sharp bends. Follow the bending radius recommendation (*Figure 1*). This applies to all DC cables.

## NOTICE

### BATTERY DAMAGE

- Check the cable polarity before making the final DC connection to avoid damage due to reverse polarity.
- Do not connect multiple batteries in series to avoid damaging the battery.

**Failure to follow these instructions can result in battery and equipment damage and may void the warranty.**

5. Install your DC-rated circuit protection device (*Figure 2*) in line with the positive battery cables.
6. Attach the positive (+) battery cable to the positive (+) battery terminal.
7. You may connect multiple batteries in parallel.

### ⚠️ Overcurrent Protection (OCP) & Ampere Interrupting Current (AIC)

Use a mechanical fuse or manually resettable DC breaker with AIC  $\geq 5,000$  A per 100 Ah of battery capacity or the battery's maximum short-circuit current (600A for the 24V and 720A for the 36V batteries), whichever is greater. Solid-state OCP may be used only in branch circuits, not as the main battery protection device. Off or control wiring (if used) is low-voltage signal only—not for direct power switching of loads.

Figure 1 Avoiding sharp bends

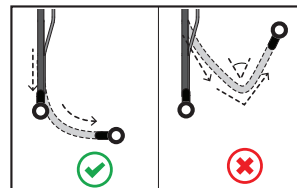
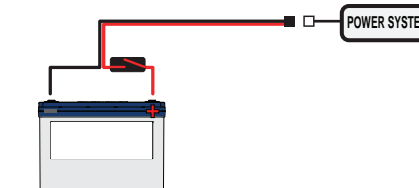


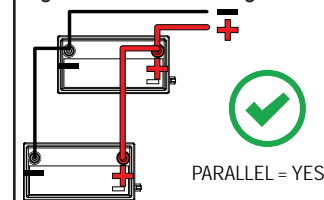
Figure 2 Battery cabling



This is for illustration purposes only.

## Parallel Stacking

Figure 3 Parallel stacking



This is for illustration purposes only.

**NOTE:** You can stack up to four batteries in parallel to increase power capacity up to 200 Ah. When connecting batteries together in parallel, check that the voltage difference between batteries is within 0.2V. If this is not the case, charge the batteries and re-check the voltage difference to make sure it falls within 0.2V.

⚠️ Battery cables used in connecting the batteries must be as short as possible.

# Operation

1. Fully charge the battery on first use.
2. Select one of the following methods for charging.
  - a. Charging with an AC-DC Battery Charger.
  - b. Charging with Solar.
  - c. Charging with an Alternator via a DC-DC Charger.
3. Follow the guidelines below for charging and discharging the battery.
4. When the battery is fully discharged, it must be recharged within 48 hours. Failure to do so may result in the battery becoming irrecoverable.

| Model                    | Max Charging Voltage | Cutoff Voltage | Max Charging Current | Recommended Charging Current | Operating Temperature |   |
|--------------------------|----------------------|----------------|----------------------|------------------------------|-----------------------|---|
| Xantrex 50Ah 24V Battery | 29.2V                | 20.0V          | 1C (50A)             | 0.5C (25A)                   | Charge                | 0 ±5 °C to 55 ±5 °C (32 ±9 °F to 131 ±9 °F)   |
|                          |                      |                |                      |                              | Discharge             | -20 ±5 °C to 65 ±5 °C (-4 ±9 °F to 149 ±9 °F) |
| Xantrex 50Ah 36V Battery | 43.2V                | 30.0V          | 1.6C (80A)           | 0.5C (25A)                   | Charge                | 0 ±5 °C to 55 ±5 °C (32 ±9 °F to 131 ±9 °F)   |
|                          |                      |                |                      |                              | Discharge             | -20 ±5 °C to 65 ±5 °C (-4 ±9 °F to 149 ±9 °F) |

5. Follow the guideline below when planning to remove the battery pack from a live system.

⚠ Remove all loads in the system. Then, carefully remove the positive (+) battery cable followed by the negative (-) battery cable.

During regular use, the battery will self-discharge at a rate of 12.5% State of Charge (SOC) per month. If the battery is not used for 10 consecutive days, it will switch to low power mode, where the self-discharge rate drops to 3% SOC per month. Any charge or discharge activity including Xantrex App initiated activity will bring the battery out of low power mode, restarting the 10-day counter.

### NOTICE

**BATTERY DAMAGE**

- Recharge the battery at least every six months.
- Do not allow the battery to discharge while in storage to 0% SOC. The battery discharges at a rate of 3% SOC per month.

**Failure to follow these instructions can result in battery and equipment damage and may void the warranty.**

# The Xantrex App

The battery has a built in BLE (Bluetooth Low Energy ) module for basic communication and troubleshooting with the battery. The BLE module app (the Xantrex App) can be found by scanning the QR code on the battery or below or searching for "Xantrex App" on the Play Store or the App Store respectively.

Figure 4 Xantrex App



1. Acquire the Xantrex App on your smart phone.
2. Open the Xantrex App.
3. Select the correct battery from the Devices tab.

**NOTE:** If you have multiple batteries, only one battery at a time can be viewed from the Xantrex App.



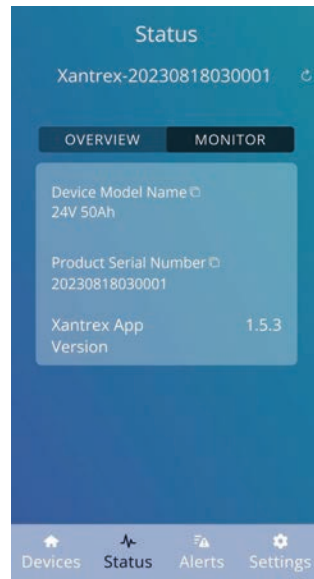
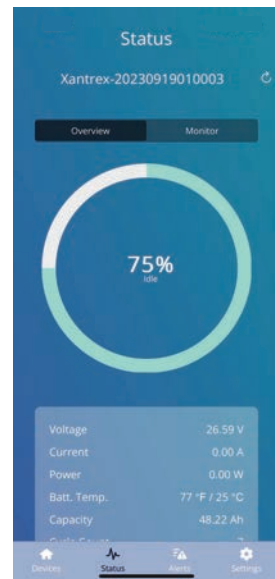
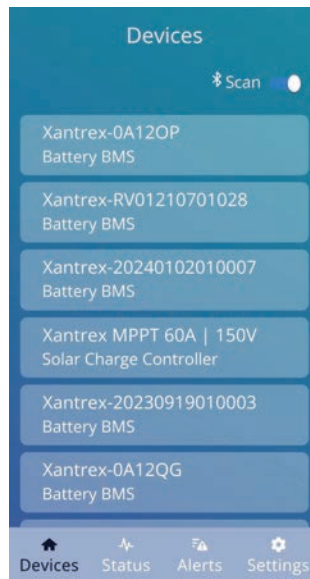
Android smartphones



iPhones

## Devices Tab

## Status Tab



## Troubleshooting

| App Alerts | Description   | Troubleshooting Steps   |
|------------|---|---|
| HV         | High Voltage - Maximum voltage on the battery terminals has been exceeded. See Specifications.                        | <ol style="list-style-type: none"> <li>1. Stop charging. Disconnect the battery.</li> <li>2. Discharge slightly by applying a load.</li> <li>3. Ensure the charging source is within the Max Charge voltage.</li> <li>4. If unresolved, contact customer support.</li> </ol>  |
| LV         | Low Voltage - Battery capacity been depleted past its minimum voltage. See Specifications.                            | <ol style="list-style-type: none"> <li>1. Stop discharging the battery by removing or turning off the load.</li> <li>2. Charge the battery immediately. Otherwise, the battery will continue to slowly deplete under its own power beyond recovery.</li> <li>3. If unresolved, contact customer support.</li> </ol> |
| OCC        | Over Current when Charging - Exceeded maximum current the battery can accept. See Specifications.                     | <ol style="list-style-type: none"> <li>1. Reduce the charging current from the charging source.</li> <li>2. If unresolved, contact customer support.</li> </ol>   |
| OCD        | Over Current when Discharge - Exceeded maximum discharge current limit. See Specifications.                           | <ol style="list-style-type: none"> <li>1. Reduce load/s on the battery.</li> <li>2. If unresolved, contact customer support.</li> </ol>   |
| LTD        | Low Temperature when Discharging - Below allowable operating temperature range when discharging. See Specifications.  | <ol style="list-style-type: none"> <li>1. Warm up the battery to within battery specifications.</li> <li>2. If unresolved, contact customer support.</li> </ol>   |
| LTC        | Low Temperature when Charging - Below allowable operating temperature range when charging. See Specifications.        | <ol style="list-style-type: none"> <li>1. Warm up the battery to within battery specifications.</li> <li>2. If unresolved, contact customer support.</li> </ol>   |
| HTD        | High Temperature when Discharging - Above allowable operating temperature range when discharging. See Specifications. | <ol style="list-style-type: none"> <li>1. Cool the battery to within battery specifications.</li> <li>2. Stop charging or discharging the battery at high rates.</li> <li>3. If unresolved, contact customer support.</li> </ol>  |
| HTC        | High Temperature when Charging - Above allowable operating temperature range when charging. See Specifications.       | <ol style="list-style-type: none"> <li>1. Cool the battery to within battery specifications.</li> <li>2. Stop charging or discharging the battery at high rates.</li> <li>3. If unresolved, contact customer support.</li> </ol>  |

## Specifications

**NOTE:** Specifications are subject to change without prior notice.

| Feature                             | 886-0050-24   | 886-0050-36                                   |
|-------------------------------------|---|---|
| Nominal Capacity                    | 50Ah  | 50Ah  |
| Nominal Voltage                     | 25.6V   | 38.4V   |
| Charging Voltage (max)              | 29.2V   | 43.8V   |
| Float Voltage                       | 27.6V   | 41.4V   |
| Low Battery Cutoff Voltage          | 20.0V   | 30.0V   |
| Recommended Charge Current*         | ≤ 25A   | ≤ 25A   |
| Maximum Short-Circuit Current (SCC) | 600A  | 720A  |
| Max Charge Current* (continuous)    | 50A   | 50A   |
| Recommended Discharge Current*      | ≤ 25A   | ≤ 25A   |
| Max Discharge Current* (continuous) | 50A   | 80A   |
| Max Pulse Discharge Current         | < 170A for 3 seconds  | < 170A for 3 seconds                          |
| Internal Impedance                  | ≤ 30mΩ @1kHz AC   | ≤ 30mΩ @1kHz AC                               |
| Weight                              | 12.5Kg (27.5lbs)  | 15.5Kg (34.1lbs)                              |
| L x W x H                           | 330 x 173 x 240 mm (13 x 6.8 x 9.4 in)  | 330 x 173 x 240 mm (13 x 6.8 x 9.4 in)        |
| IP Rating                           | IP 54   | IP 54   |
| Charging Temperature                | 0 ±5 °C to 55 ±5 °C (32 ±9 °F to 131 ±9 °F)   | 0 ±5 °C to 55 ±5 °C (32 ±9 °F to 131 ±9 °F)   |
| Discharging Temperature             | -20 ±5 °C to 65 ±5 °C (-4 ±9 °F to 149 ±9 °F)   | -20 ±5 °C to 65 ±5 °C (-4 ±9 °F to 149 ±9 °F) |
| Storage Environment                 | ≤3 months -10 to 45 °C (14 to 113 °F) 5-75%RH<br>>3 months 0 to 30 °C (32 to 86 °F) 5-75%RH<br>Recommended Environment 15-35 °C (59 to 95 °F) 5-75%RH |   |

\* Current rating at 25 °C (77 °F)