



883-0240-12

⚠️ 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. After reviewing this guide you must read the relevant product manuals. 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.

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IMPORTANT

ON FIRST USE: Perform a full charge, discharge, and charge cycle to ensure maximum battery life. For information, see *Battery Storage Guide* on the reverse side of this document.

1

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.

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- 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.

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

2

Introduction

The Xantrex Lithium-ion Batteries are lithium iron phosphate (LiFePO₄) 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.

⚠️ 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 and the battery cable (if included) for visible damage including cracks, dents, chips, and deformations.
2. Select a location for the battery that is stable, clean, cool, dry, and well-ventilated.
3. Mount the battery in upright (terminals pointing up) or sideways (terminals pointing to one side) position with safety labels still visible and away from heat sources.
4. Orient the devices so that the cables avoid sharp bends. Follow the bending radius recommendation (*Figure 1*). This applies to both the communication and battery cables.

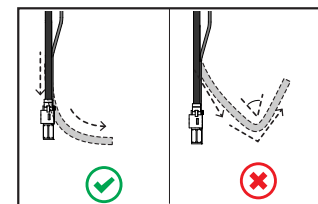
NOTE: Installation and maintenance shall only be performed by qualified personnel as defined in Important Safety Information above. Contact Xantrex for information resources.

Optional: Connect the 12-pin connector cable (see *Table 1*) and route the remote connectors as required.

Table 1 Pin reference guide

Pin #	Function	Signal	Description
1	Engine Running Input	Input High (12V)	Engine running signal instructs the BMS to accept charge.
2	Alternator Activation Output (FCC Enable)	Output High (12V)	This signal shall maintain 12V while the battery is in a normal state and PIN 1 input is high. The PIN 2 signal will open circuit when the battery is about to open its output, either due to an internal fault or out of range conditions. This is intended to allow the alternator to shutdown safely before a change on the DC bus.
3	Remote Button 1	Output	Signal for Remote Push Button
4	Remote Button 2	Return	Return for Remote Push Button
5	LED Output	Output	Remote LED Control
6	LED Return	Return	Remote LED Return
7	Internal Technical Usage	N/A	N/A
8	Internal Technical Usage	N/A	N/A
9	Internal Technical Usage	N/A	N/A
10	Internal Technical Usage	N/A	N/A
11	Output State/Aux output	Output High (12V)	Signal informs remote system that the BMS has closed its output
12	Wake Signal input	Input High (12V)	Signal instructs BMS to close output to accept charge from remote source.

Figure 1 Avoiding sharp bends



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- 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 CO₂ 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.
- Always use proper lifting techniques when handling the battery module. Battery is heavy.
- Do not step on the battery module enclosure.
- 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.

3

Specifications

NOTE: Specifications are subject to change without prior notice.

Feature	883-0240-12
Nominal Capacity	240Ah (3072 Wh)
Nominal Voltage	12.8V
Charging Voltage (max)	14.6V
Float Voltage	13.4V
Low Battery Cutoff Voltage	10.0V
Recommended Charge Current	150A
Max Charge Current (continuous)	150A
Recommended Discharge Current	150A
Max Discharge Current (continuous)	150A
Max Pulse Discharge Current	300A (3 sec)
Internal Impedance	3-4mΩ
Weight	69.4lbs (31.5kg)
Charging Temperature	32 – 140 °F (0 – 60 °C)
Discharging Temperature	-4 – 140 °F (-20 – 60 °C)
L x W x H	19.7 x 7.1 x 10.3 in (500 x 180 x 260 mm)
Cycle Life at 25°C to 80% Capacity	2800 (1C, 100% DOD)

A

Battery Storage Guidelines

In order to keep your Xantrex Lithium-ion Batteries at peak performance and at its healthiest state, you have to store it according to proper storage conditions and also maintain it with proper care.

Storage can be short term, such as less than one month or long term, such as more than three months.

Storage Specifications

Table 2 For batteries with 880-prefix product numbers

Term	Temperature	Humidity	Self-discharge Rate	Duration
< one month	-4 to 95°F (-20 to 35°C)	45 to 75%RH	≤3% per month	Short
< three months	14 to 86°F (-10 to 30°C)	45 to 75%RH	≤3% per month	Short
> three months*	59 to 95°F (15 to 35°C)	45 to 75%RH	≤3% per month	Long

* the approximate voltage should be:
 13.2V for a 12V battery,
 26.4V for a 24V battery,
 52.8V for a 51V battery,
 (~50%SoC) and stored at the recommended storage specifications shown above. Additionally, the battery needs at least one charge-discharge-recharge to 50% SoC cycle every six months (see *Storage and Maintenance Instructions for Long Durations*).

Table 3 For batteries with 883 and 884-prefix product numbers

Term	Temperature	Humidity	Self-discharge Rate	Duration
< one week	-4 to 113°F (-20 to 45°C)	< 85%RH	≤3% per month	Short
< one month	14 to 113°F (-10 to 45°C)	< 85%RH	≤3% per month	Short
< six months	50 to 77°F (10 to 25°C)	< 85%RH	≤3% per month	Short
> six months*	50 to 77°F (10 to 25°C)	< 85%RH	≤3% per month	Long

* For long term duration storage the battery should be kept in a particular charged state such as, 13.2V, ~50% SoC, and stored at the recommended storage specifications shown above.

Storage Instructions for Short Durations

1. Fully charge the battery.
2. Turn off the battery using the ON/OFF button.
3. Keep the battery in an environment according to *Storage Specifications*.

Storage and Maintenance Instructions for Long Durations

1. Reduce the battery state-of-charge (SoC) to 50% ±10% which is approximately,
 - 13.2V for a 12V battery,
 - 26.4V for a 24V battery,
 - 52.8V for a 51V battery.
2. Turn off the battery using the ON/OFF button.
3. Keep the battery in an environment according to *Storage Specifications*.
4. Every six months maintain the battery by charging it to 100% SoC, then discharging the battery to low voltage cutoff (LVC) level, then charging it back to 50% ±10% SoC.

NOTICE

RISK OF BATTERY DAMAGE
 Do not charge the battery in ambient temperature below freezing.
Failure to follow these instructions can result in damage to the battery and may void the warranty.

B

Battery Maintenance Guideline

The Xantrex Lithium-ion Batteries system is designed to require the least amount of maintenance as possible. The battery and internal BMS are contained in a sealed device and do not require disassembly for maintenance reasons.

In general, to properly maintain the battery, follow the storage guidelines in the previous sections.

If the battery/ies are in regular use, then it is recommended that the battery/ies be fully charged a minimum of once per two weeks in order for the BMS to recalibrate its State of Charge (SoC) setting. This process also ensures that the SoC meter maintains its accuracy.

NOTE: For more information, scan and follow the links below.

	<p>Xantrex Lithium Ion Batteries website</p>
	<p>Xantrex Lithium Ion Batteries User and Installation Guides</p>