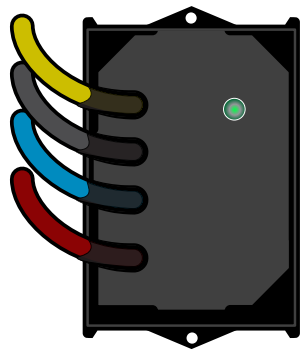




Battery Combiner Accessory User Guide

PN: 881-0030-12



DANGER

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

This Xantrex Battery Combiner Accessory User 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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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.

DANGER

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

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
- Equipment must only be installed and serviced by qualified electrical personnel.
- Equipment may be energized from multiple sources. Never operate equipment energized with covers removed.
- In case of fire, use only a Class ABC type (dry chemical) fire extinguisher. Water can be a dangerous extinguishing medium for energized equipment because of the risk of electrical shock.
- Always use a properly rated voltage sensing device to confirm all circuits are de-energized.

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

NOTE: This product has been tested for use with Cole Hersee 24213 solenoids. It is up to the installer to validate any alternatives.

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Introduction

The Xantrex Battery Combiner Accessory (PN: 881-0030-12) is used to combine the chassis battery pack with the house battery pack when certain conditions are met. The chassis battery pack is typically a lead-acid battery for the vehicle engine and the house battery pack is a lithium-ion battery that supplies power to the coach interior.

The combiner allows both the primary vehicle alternator and the auxiliary alternator in a Xantrex Power System to charge the house battery simultaneously. This results in faster charge times for the house battery.

Installation and maintenance shall only be performed by qualified personnel as defined in Important Safety Information on the left.

CAUTION

HAZARD OF PERSONAL INJURY OR EQUIPMENT DAMAGE

- Place the combiner and the solenoid near the chassis battery.
- Make sure the components are fastened and secured.
- Do not install the components adjacent to any heat source.
- You must install the DC fuse and fuseholder. Replace an expended fuse with a fuse of the same type and rating.
- Do not use stainless lugs on the DC terminals or on any high-current terminals due to heating concerns.
- Components which can be recycled must be recycled and those that cannot be recycled must be disposed of according to local, regional, and national environmental regulations.
- Do not use in a wet environment.
- Do not use in an environment requiring ignition protection.

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

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Basic Wiring

NOTE: The *Wiring Diagram* on the right is for illustration purpose only.

1. Secure the combiner and the solenoid with mounting screws (not provided).
2. Connect the combiner wires [C] to [H] and [B] to [F].
3. Connect the combiner wire [D] to [I].
4. Connect the combiner wire [E] to [G] and a jumper wire to [M].
5. Install a DC fuse [J] on the pos[+] chassis battery cable near the pos[+] battery terminal.
6. Connect a pos[+] battery cable between fuse [J] and the pos[+] battery terminal 1 on the solenoid.
7. Connect a pos[+] battery cable between [I] and [K].
8. Connect a neg[-] battery cable between the neg[-] chassis battery terminal and [M].
9. Connect a DC ground bus wire between [L] and [M].

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Basic Operation

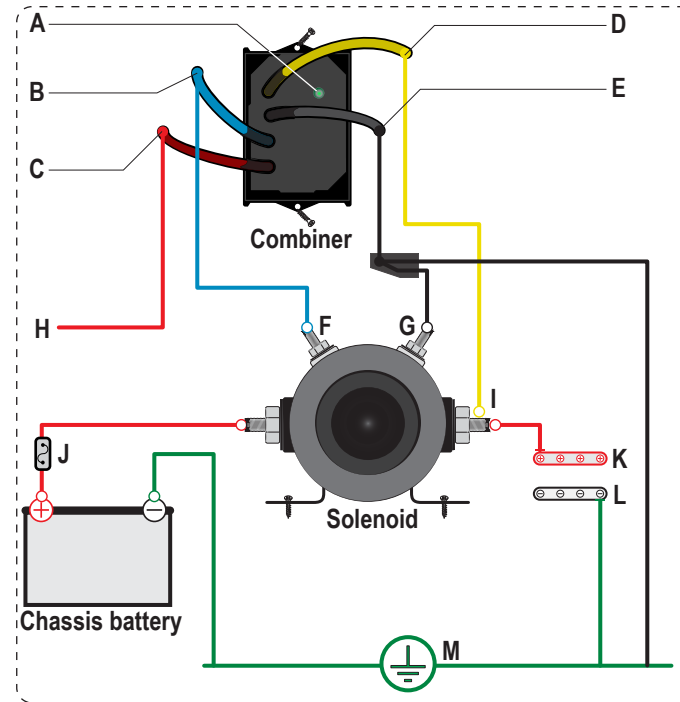
The Battery Combiner will combine the chassis and house battery packs when the following conditions are met:

- Chassis battery > 14 V
- House battery > 11.5 V
- House battery < 14 V

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Wiring Diagram

A	Combiner status LED
B	Blue wire to Solenoid DC Pos[+]
C	Red wire to ignition control
D	Yellow wire to Solenoid Battery pos[+] terminal 2
E	Black wire to Solenoid DC Neg[-] and Chassis Ground connection
F	Solenoid DC Pos[+] terminal
G	Solenoid DC Neg[-] terminal
H	Vehicle ignition control (IGN or ENG/RUN)
I	Solenoid Battery pos[+] terminal 2
J	DC fuse [100A, 32V]
K	Pos [+] DC busbar
L	Neg [-] DC busbar
M	Chassis Ground connection



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Combiner Status LED Operation

Combiner State	LED Behavior
Combiner is booting up.	Two seconds on, eight seconds off ● --- ○ ---
Waiting for engine RPM to stabilize.	One flash per second for 10 seconds ● - ● - ● - ● - ● - ● - ● - ● - ● -
Waiting for Chassis voltage > 14V.	Two flashes ● - ● -
Event: House voltage is too low (< 11.5V).	Two long flashes ● --- ● ---
Combining until House voltage > 14V.	Three flashes ● - ● - ● -
House battery reaches 14V; Combining has stopped; Waiting for House voltage < 12V.	Four flashes ● - ● - ● - ● -

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Electrical and Temperature Specifications

Operating Voltage Range:	5 – 16.5 VDC
Max. Solenoid Drive Current:	6.6 A
Operating Temperature:	-55 – 125 °C