



**10 AMP 12V/24V
SOLAR CHARGER CONTROLLER
INSTRUCTION MANUAL
for Part Number: 021-1175**



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**Read this material before using this product.
Failure to do so can result in serious injury.
Save this manual.**

IMPORTANT SAFETY INSTRUCTIONS & WARNINGS

SAVE THESE INSTRUCTIONS: This manual contains important safety and operating instructions for the Battery Tender® Solar Charger Controller.

CAREFULLY READ THESE INSTRUCTIONS BEFORE USING THE BATTERY CHARGER.

WARNING AND CAUTION LABEL DEFINITIONS:

WARNING

WARNING indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death.

CAUTION

CAUTION indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation that if not avoided, may result in property damage.

GENERAL PRECAUTIONS

WARNING

Battery posts, terminals and related accessories contain lead and lead components, and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Always wash your hands after handling these devices.

WARNING

Do not operate the Solar Charger Controller with damaged wiring - Replace wires immediately if damaged.

CAUTION

WORKING WITH LEAD ACID BATTERIES AND CHARGERS: All lead acid batteries have the potential to emit gasses that may combine into a combustible or explosive mixture. In many cases, it is possible that lead acid batteries will emit these gasses during normal discharge and charging operations. Because of this potential danger, it is important that you follow the precautions recommended by both the battery and battery charger manufacturers before using either one. For example, do not exceed the recommended maximum recharge rate (charger output current limit), or remove cell caps while charging flooded batteries.

CAUTION

SOLAR CHARGER CONTROLLER LOCATION: **LOCATE** the Solar Charger Controller as far away from the battery as possible and in a well-ventilated area.

EXCESSIVE MOISTURE: Do not expose the Solar Charger Controller to any rain, snow, spray, or moisture of any kind. This device is **NOT** designed for outdoor use.

CHARGER ATTACHMENTS: Do not use attachments that are not recommended or sold by the charger manufacturer. To do otherwise may result in the risk of electric shock, fire, or possibly some other unforeseen potential personal injury situations.

MONITORING SEALED & NON-SEALED BATTERIES: When leaving a battery charger connected to either a sealed (AGM or GEL) or non-sealed (flooded battery) for extended periods of time (weeks, months, etc.), periodically check the battery to see if it is unusually warm. This is an indication that the battery may have a weak cell and that it could go into a thermal runaway condition. If the battery releases an excessive amount of gas or if the battery gets hotter than 130°F (55°C) during charging, disconnect the charger and allow the battery to cool. Overheating may result in plate distortion, internal shorting, drying out or other damage. For flooded batteries, also check individual cell fluid levels against manufacturer's recommendations for safe operation.

WARNING

ELECTRIC SPARK & OPEN FLAME: NEVER smoke or allow a source of electric spark or open flame in the vicinity of the battery or engine. (For example: Don't charge the battery next to a gas water heater.)

VENTILATION: Do not operate the Solar Charger Controller where ventilation is restricted. The intent here is to allow sufficient airflow to minimize and dissipate the heat generated by the Solar Charger Controller and to diffuse the gasses that may be emitted by the battery.

SOLAR CHARGER CONTROLLER MAINTENANCE: NEVER DISASSEMBLE OR ATTEMPT TO DO INTERNAL REPAIRS. THIS VOIDS THE WARRANTY. Disassembling the Solar Charger Controller incorrectly may result in the risk of electric shock or create a fire hazard.

USE BATTERY TENDER® SOLAR CHARGER CONTROLLER FOR CHARGING 12V/24V LEAD-ACID OR 12V/24V AGM BATTERIES ONLY. Do NOT charge dry-cell batteries. Charging dry-cell batteries may cause them to burst and cause injury to persons and damage to property.

INFORMATION NOTE ABOUT DRY-CELL BATTERIES:

There are some wet, non-spillable, lead acid batteries on the market whose manufacturers' make the claim that they are dry-cell batteries. These batteries are sealed, gas-recombinant, starved electrolyte, possibly with AGM (Absorbed Glass Mat) type construction. It is perfectly safe to use the Battery Tender® Solar Charger Controller to charge these types of batteries. The dry-cell battery warning is intended for rechargeable or non-rechargeable alkaline and other similar types of batteries. If you have any doubt about the type of battery that you have, please contact the battery manufacturer before attempting to charge the battery.

NEVER charge a visibly damaged or frozen battery.

PERSONAL PRECAUTIONS

WARNING

WHEN YOU WORK NEAR LEAD-ACID BATTERIES:

1. Someone should be within range of your voice or close enough to come to your aid if you have an accident.
2. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
3. Wear complete eye protection and protective clothing. Avoid touching your eyes while working near a battery. If battery acid contacts your skin or clothing, wash immediately with soap and water. If acid enters an eye, immediately flood the eye with running cold water for at least 10 minutes and get medical attention as soon as possible.
4. Be extra cautious when handling metal tools around a battery. If you drop a metal tool near a battery it might spark or create a short circuit between the battery terminals and some other metal part. Either event may cause a dangerous electrical shock hazard, a fire, or even an explosion.
5. Remove all personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuited current high enough to weld a metal ring or other piece of jewelry, causing a severe burn.

PRODUCT SPECIFICATIONS

BATTERY TENDER® SOLAR CHARGER CONTROLLER

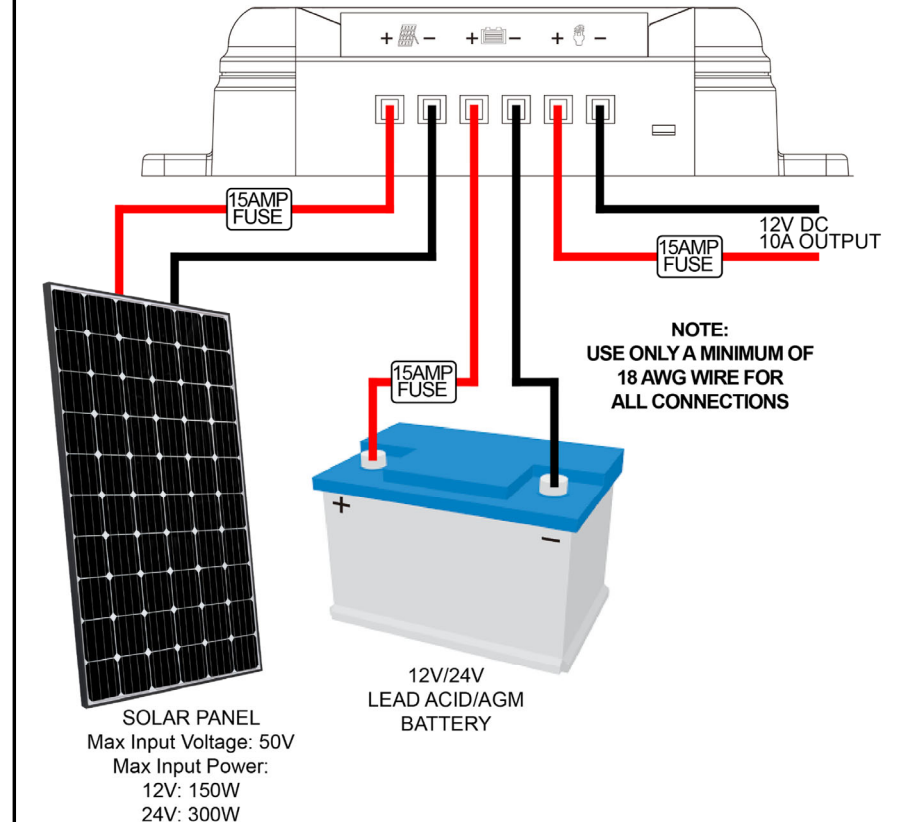
Max Input Voltage	50 Volt
Max Input Power	12Volt 150Watt/24Volt 300Watt
Max Output	12VDC, 10Amp
USB Output	5VCD, 2.4Amp
Controller Part Number	021-1175
Working Temperature	14 to122°F (-10 to 50°C)
Dimensions	Length 4.9", Width 3.2", Height 1.2"
Warranty	2 years
Certification	CE

PRODUCT OVERVIEW

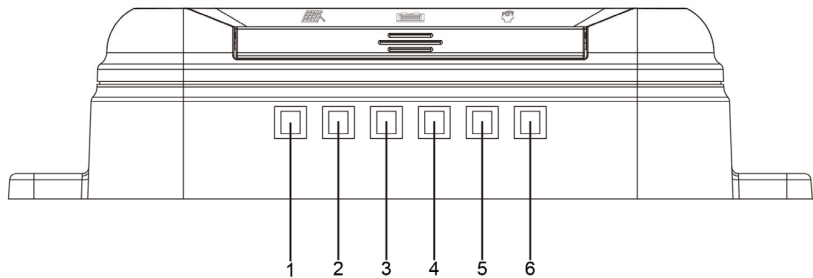
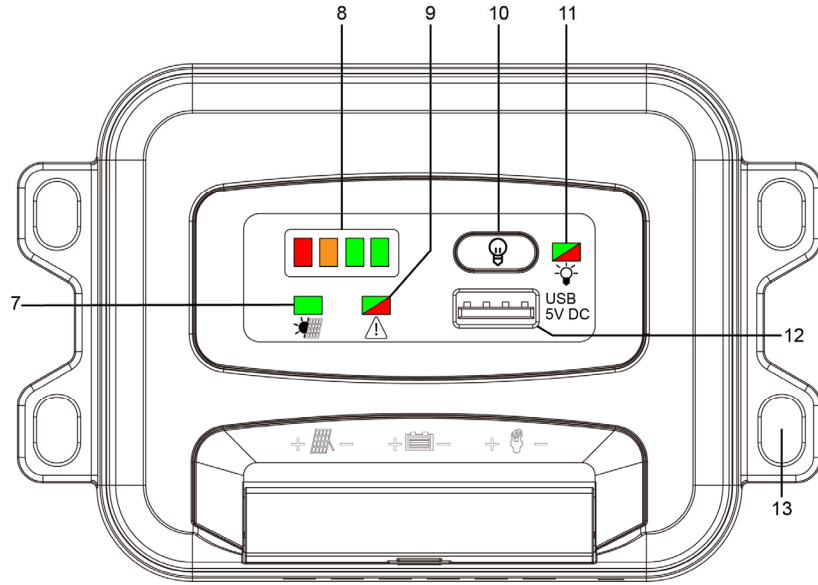
Below is a list of items that should be included in your retail box:

- 1) 1 - Solar Charger Controller
- 2) 1 - Instruction Manual

SOLAR CHARGER CONTROLLER INSTALLATION CONNECTIONS AND OPERATION



FRONT PANEL



SEE NEXT PAGE FOR EXPLANATIONS

EXPLANATIONS

1. Solar panel + positive input
2. Solar panel - negative input
3. Battery + positive output
4. Battery - negative output
5. Load + positive output
6. Load - negative output
7. Solar panel Charging LED – Flashes during charging, turns solid when fully charged. If insufficient sun light the LED will not illuminate.
8. Battery voltage indicator.
9. Error warning LED – Green no issues, Red indicates a fault (see fault section for details).
10. Load output button, press to engage. Press again to disengage. If your battery voltage drops to low the load will automatically disengage.
11. Load output LED – Green load output is on, Red is USB error.
12. USB output – 5VDC, 2.5Amp.
13. One of four mounting slots.

ADDITIONAL SOLAR CHARGER CONTROLLER INFORMATION/WARNINGS

1. This device does **NOT** current limit the output, therefore you must ensure that you **DO NOT EXCEED** the 10Amp output rating. If the 10Amp output is exceeded the RED error LED (#9) will flash on the front panel. The output regulator will then stop, however current will still pass through the regulator. Once the current has dropped below 10Amps the regulator will reboot.
2. **Maximum 150W solar panel at 12V (20-25VDC).**
3. **Maximum 300W solar panel at 24v (40-50VDC).**
4. If you have a 12V (20-25VDC) solar array, your battery must be 12V.
5. If you have a 24V (40-50VDC) solar array, your battery be either 12V or 24V.
6. The load will automatically disengage if the battery voltage gets too low.
7. The solar charger controller will automatically detect if you have connected up to a 12V or 24V battery. It will then charge appropriately at 14.4V for a 12V battery and 28.8V for a 24V battery.

FAULTS

THE RED ERROR LED (#9) ON THE FRONT PANEL WILL BE RED IF THERE IS A FAULT WITH THE OUTPUT REGULATOR.

1. Reverse polarity: Check that your + positive and – negative connections are correct and not reversed.
2. Short circuit: Check there is not a short between the + positive and - negative connections.
3. High voltage: Check the input voltage has not become too high and the regulator has turned off. Current will still be **flowing**.
4. Low voltage: Ensure your 12V battery has sufficient charge in it before connecting. A 24V battery must be at least 16V+.
5. If your 10Amp / 15A cable fuses are continually blowing, you are exceeding the current rating of your cables and the solar charger controller. You need to either reduce the input current or increase the size (AWG) of the cables or solar charger controller. Battery Tender® does sell larger 30Amp and 50Amp solar charger controllers.

CUSTOMER SERVICE

For customer support please visit batterytender.com. You can also call our customer service hotline 877-456-7901. You may also email us Service@batterytender.com or use Chat from our website.

WARRANTY

The Battery Tender® Solar Charger Controller comes with a two (2) year limited warranty against defects or failure (within two (2) years of purchase).

THIS LIMITED WARRANTY IS VOID under the following conditions:

- 1) The product is misused, subjected to careless handling, or operated under conditions of extreme temperature, shock, weather, or vibration beyond our recommendations for safe and effective use.
- 2) The product is disassembled or repaired by anyone who is not an authorized service representative.
- 3) The product was purchased from an unauthorized source. Warranty is not transferable from the original purchaser.
- 4) Any physical damage to any of components or any accessory after purchase.
- 5) Any modifications to any of the components.