HYPERION®
BY DelTran

SOLAR COVER, SOLAR PANEL & SOLAR CONTROLLER INSTRUCTION MANUAL

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

392-0422-RA

CONTENTS

SOLAR COVER IMPORTANT SAFETY WARNINGS

WARNING

1. **ALLOW YOUR VEHICLE TO COOL DOWN BEFORE INSTALLING THE COVER.** A hot engine/exhaust/muffler/radiator can cause extreme damage to your cover and the vehicle.
2. The cover must be completely removed prior to starting or operating the vehicle. Failure to do so could result in serious injury and/or property damage.
3. Do not cover a recently painted vehicle immediately. Check with your painter or body shop for recommended cure time. Premature use of a cover in this situation could result in damage to repainted surfaces or lacquer paint.
4. Do not cover a wet vehicle.
5. Do not cover a vehicle with convertible top down, windows or sunroof open, or T-tops removed.
6. Do not use a cover while trailering vehicle.
7. Do not rely solely on the elasticized bottom of the cover even in moderate wind conditions. Utilize the integrated straps to hold the cover in place.
8. Make sure the vehicle is clean and dust free to prevent scratching the paint while installing or removing the cover.
9. Use a damp cloth and water to clean your cover.

IMPORTANT SAFETY INSTRUCTIONS & WARNINGS

SAVE THESE INSTRUCTIONS: This manual contains important safety and operating instructions for the HYPERION® Cover/Solar Controller/Solar Panel. **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 battery charger with damaged DC input cords or DC output cords or accessories - Replace Cords or accessories immediately if damaged.

CAUTION

WORKING WITH LEAD ACID BATTERIES AND BATTERY 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

CHARGER VOLTAGE COMPATIBILITY: NEVER use a battery charger unless the battery voltage matches the output voltage rating of the charger. For example, do not use a 12-volt charger with a 6-volt battery and vice-versa.

CHARGER LOCATION: LOCATE the charger as far away from the battery as is allowed by the length of the output cable harness. **NEVER** set the charger on a surface constructed from combustible material. **EXCESSIVE MOISTURE:** Do not submerge the Battery Charger/Panel in any liquid.

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.

HANDLING POWER CORDS: When handling electric power cords, always pull by the plug rather than by the cord. This will reduce the risk of damage to both the plug and cord, and it will minimize the likelihood of electric shock resulting from that damage.

LOCATION OF POWER CORDS: Make sure all electric power cords are located so that they cannot be stepped on, tripped over, or otherwise subjected to damage or stress.

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 charger where ventilation is restricted. The intent here is to allow sufficient airflow to minimize and dissipate the heat generated by the charger and to diffuse the gasses that may be emitted by the battery.

CHARGER MAINTENANCE: NEVER DISASSEMBLE OR ATTEMPT TO DO INTERNAL REPAIRS. THIS VOIDS THE WARRANTY. Assembling the charger incorrectly may result in the risk of electric shock or create a fire hazard.

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;
6. **Use HYPERION® Solar Chargers for charging lead-acid batteries only.** They are not intended to supply power to an extra low-voltage electrical system or to 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 HYPERION® Solar Charger 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.

7. **NEVER** charge a visibly damaged or frozen battery.

WARNING

IF THE BATTERY MUST BE REMOVED FROM THE VEHICLE:

1. To avoid an electric arc (or spark), turn off or disconnect all of the accessories in the vehicle. Then always remove the cable that is connected to grounded terminal from battery first;
2. If necessary, clean the battery terminals. Be careful to keep the corrosion and other debris from coming in contact with your eyes;
3. If the battery is not a sealed battery, then if necessary, add distilled water to each cell until the battery acid solution reaches the level specified by battery manufacturer. Do not overfill;
4. Before connecting the charger to the solar panel, check the polarity of the battery posts, and attach at least a 24 inch long 6 (AWG) insulated, battery extension cable to the negative battery post. Then connect the appropriate charger DC output connectors to the battery and the extension cable, positive to positive and negative to negative. Never allow the alligator clips or terminal rings to touch each other after they are connected to the battery charger.
5. Connect the charger's Input Leads to the solar panel.

WARNING

IF THE BATTERY REMAINS INSTALLED IN THE VEHICLE:

1. DO NOT CONNECT THE CHARGER'S INPUT LEADS TO THE SOLAR PANEL UNTIL ALL OTHER CONNECTIONS ARE MADE!
2. Place both the INPUT and OUTPUT DC power cords in the best position to avoid accidental damage by movable vehicle parts, i.e. hoods, doors, or moving engine parts (fan blades, belts, or pulleys).
3. Check the polarity of the battery posts. If the positive (pos, p, +) post is connected to the vehicle chassis, then the vehicle has a positive ground system. If the negative (neg, n, -) post is connected to the vehicle chassis, then the vehicle has a negative ground system. Negative ground systems are the most common.
4. For negative ground systems, connect the positive (red) alligator clip, or ring terminal to the positive battery post. Then connect the negative (black) alligator clip, or ring terminal to the vehicle chassis. Do not make the negative charger clip or ring connection to the carburetor, fuel lines, or thin, sheet metal parts. Make that connection to the engine block or a heavy gauge metal part of the frame.
5. For positive ground systems, connect the negative (black) alligator clip, or ring terminal to the negative battery post. Then connect the positive (red) alligator clip, or ring terminal to the vehicle chassis. Do not make the positive charger clip or ring connection to the carburetor, fuel lines, or thin, sheet metal parts. Make that connection to the engine block or a heavy gauge metal part of the frame.
6. Connect the DC input to the solar panel.

PRODUCT SPECIFICATIONS

SOLAR CONTROLLER	
Input	15 Volt DC, 45Watt MAX
Output	12V DC, 1A, (3A MAX)
Part Number	400-0365-HY-WH
Working Temperature	-49-185°F (- 45 - 85°C)
Warranty	2 years
Certification	FCC, ICES-001

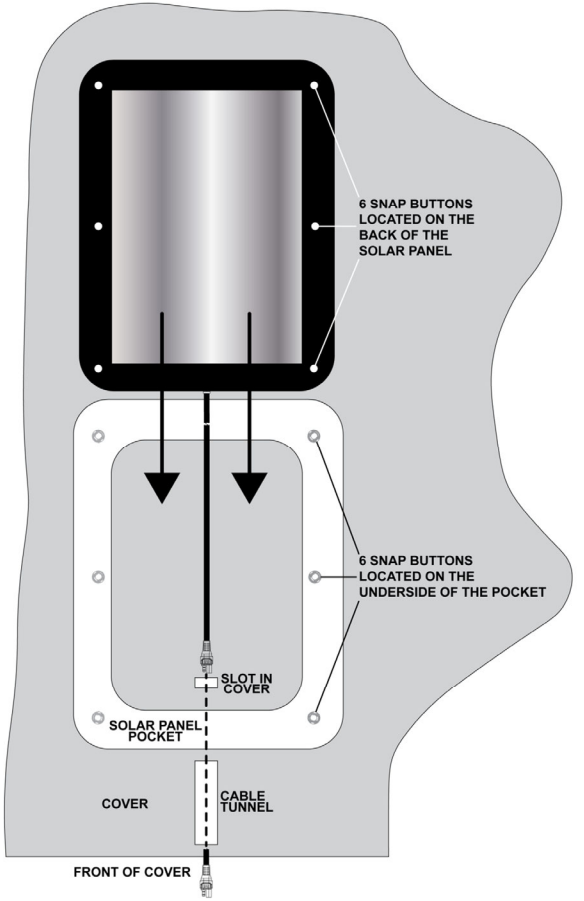
PRODUCT OVERVIEW

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

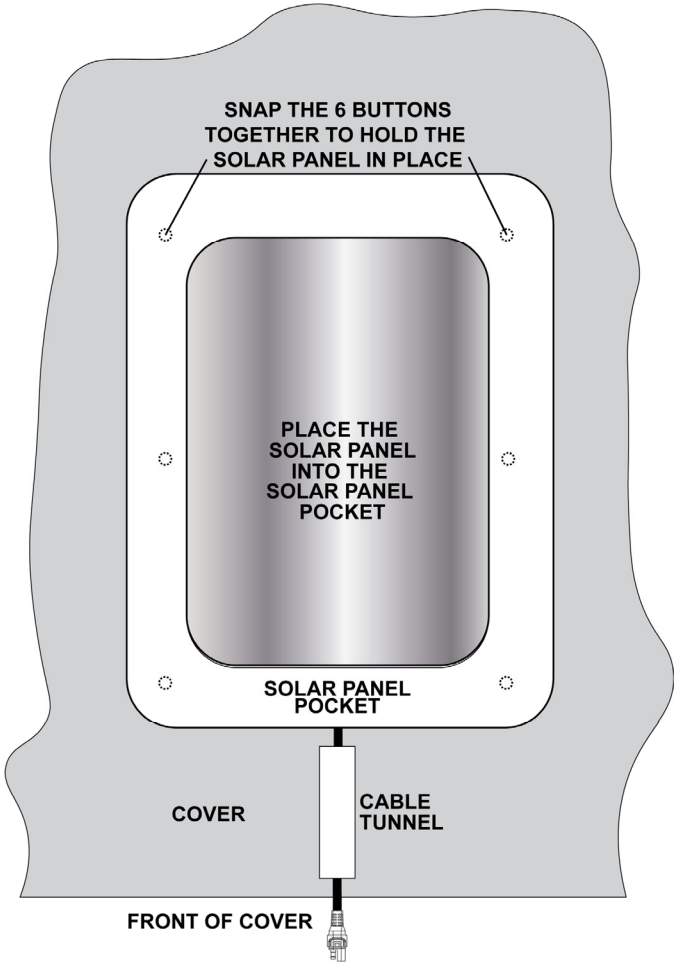
1) Vehicle Cover
2) Solar Panel
3) Solar Controller
4) 6´ Extension Cable
5) Ring terminal Battery Cable
6) Instruction Manual

SOLAR PANEL/SOLAR CONTROLLER OPERATION AND INSTALLATION

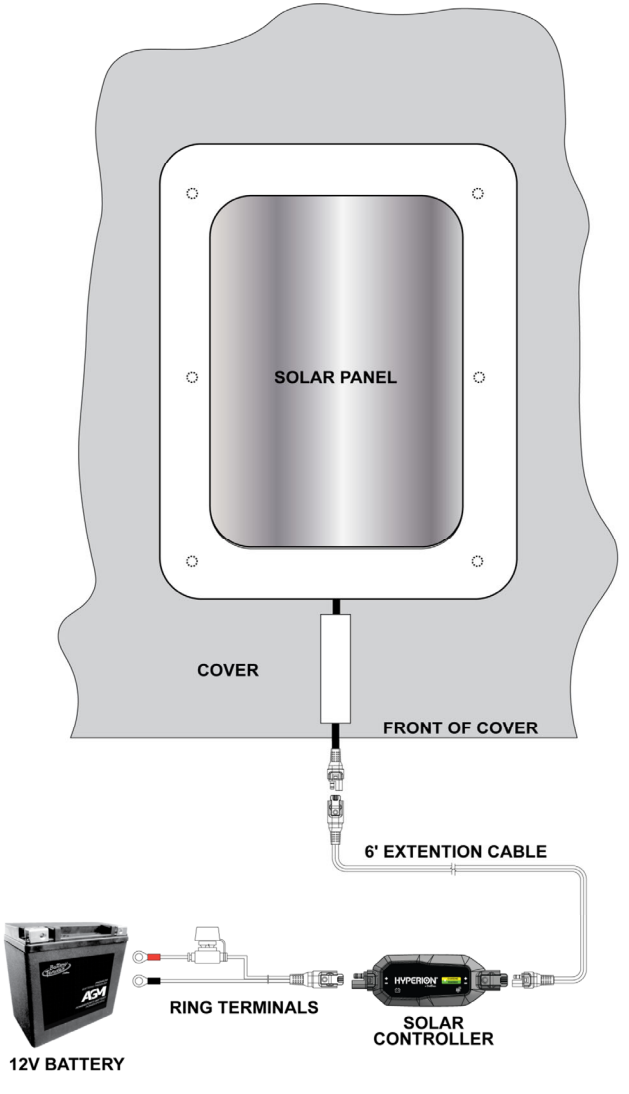
SOLAR PANEL INSTALLATION



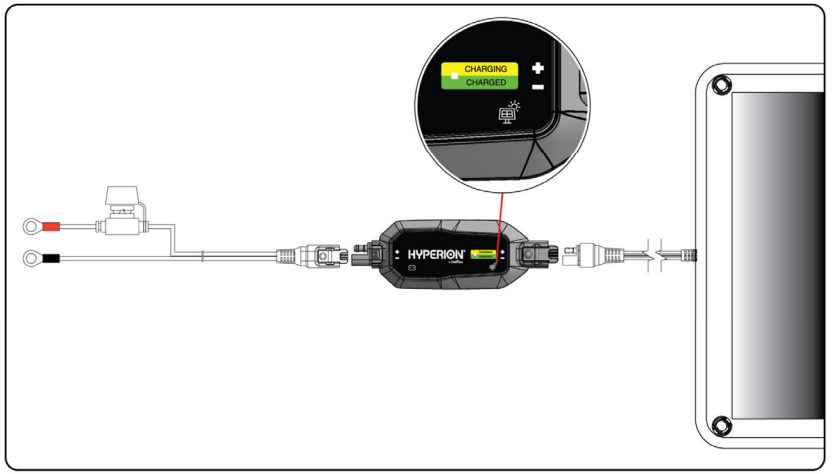
SOLAR PANEL INSTALLED ONTO COVER



SOLAR CONTROLER/CABLE INSTALLATION



SOLAR CONTROLLER LED INDICATOR



Solar Controller LED Indicator: The following describes the indicator LED light operation.

LED State	Solar Controller Status
Off	Insufficient power from solar panel
LED Flashing Green/Amber	RPP Mode: Polarity on battery connection reversed
LED Flashing Amber	Standby Mode: Solar controller is ready to charge a battery and no battery is detected.
LED Steady Amber	Charging Mode: Battery is charging
LED Steady Green	Charged Mode: Battery is charged

ADDITIONAL CHARGER INFORMATION

AUTOMATIC CHARGING AND BATTERY STATUS MONITORING: The HYPERION® Solar Charger is completely automatic and may be left connected to both solar panel and to the battery that it is charging for long periods of time. However, it is prudent to periodically check both the battery and the charger for normal operation during these extended charging periods.

The charger output power, voltage, and current all depend on the condition of the battery that is being charged and the available input power from the solar panel. HYPERION® Solar Chargers have a status light that indicate the operating mode of the charger, and the condition of the battery that is connected to the charger.

The charger operates in two charge modes: maximum voltage and current limited by what the solar panel is able to produce and then maintenance charge mode. If there is insufficient sun light on the solar panel, the charger will not attempt to charger or maintain the battery. Once the battery is fully charged, the green status indicator light will turn on-solid and the charger will switch to a storage/maintenance charge mode. HYPERION® Solar Chargers will automatically monitor and maintain the battery at full charge.

The HYPERION® Solar Charger charges at up to 1.0 Amp (1.0 Amp-Hour per hour). Therefore, a fully discharged 5 Amp-Hour battery will take approximately 5 hours, to recharge to 80% capacity with a HYPERION® Solar connected to the included 12 Watt panel. Some large automotive or marine, deep cycle type batteries may take several days to fully recharge. Please note this condition assumes full sunlight and optimal tilt angle.

SPECIAL FEATURES: The HYPERION ® Solar Charger has the following special features:

SPARKPROOF: The battery charger DC output ring terminals must be connected to a battery before an output voltage is developed by the battery charger, therefore no spark will be produced.

SHORT CIRCUIT PROTECTION: The battery charger can sustain a short circuit connection directly across its DC output terminals indefinitely without any risk of either electric shock or excessive heat.

REVERSE POLARITY PROTECTION: The battery charger is protected internally against any damage due to the DC output leads being connected to the opposite polarity battery post. No damage will result to either the battery or the battery charger.

TIME REQUIRED TO CHARGE A BATTERY: The HYPERION® Solar Charger charges at up to 1.0 Amps (1.0 Amp-Hours per hour). Therefore, a fully discharged 15 Amp-Hour battery will take approximately 15 hours, to recharge to 80% capacity with a HYPERION® Solar connected to a 12 Watt panel. Some large automotive or marine, deep cycle type batteries may take several days to fully recharge. Please note this condition assumes full sunlight and optimal tilt angle.

WORKING WITH A DEAD BATTERY OR A BATTERY WITH A VERY LOW VOLTAGE: If you try to charge a dead battery having a voltage below 3 Volts, the HYPERION® charger will not start to charge because an internal safety circuit prevents the battery chargers from generating any DC output voltage.

NOTE:

If a 12 Volt, Lead-Acid battery has an output voltage of less than 9 volts when it is at rest, when it is neither being charged nor supplying electrical current to an external load, there is a good chance that the battery is defective. As a frame of reference, a fully charged 12-Volt, Lead-Acid battery will have a rest-state, no-load voltage of approximately 12.9 volts. A fully discharged 12-Volt, Lead-Acid battery will have a rest-state, no-load voltage of approximately 11.4 volts. That means that a voltage change of only 1.5 volts represents the full range of charge 0% to 100% on a 12-Volt, Lead-Acid battery. Depending on the manufacturer, and the age of the battery, the specific voltages will vary by a few tenths of a volt, but the 1.5-volt range will still be a good indicator of the battery charge %.

TROUBLE SHOOTING

1. **THE CHARGER LED LIGHT REMAINS OFF AFTER THE CHARGER IS CONNECTED TO THE SOLAR PANEL:** Check the charger DC input power connection at solar panel and the charger. Verify that the solar panel has at least 15 volts output with a voltmeter.
2. **THE CHARGERS GREEN LED ILLUMINATED IMMEDIATELY WHEN DC POWER IS APPLIED TO THE CHARGER:** The DC ring terminals or gator clips connection at the battery may be intermittent, the battery may be defective, or the battery might already be fully charged.
3. **CHARGER IS CHARGING BUT THE GREEN LED DOES NOT ILLUMINATE IN A REASONABLE AMOUNT OF TIME:** The battery may be too large and requires more time to fully charge than originally expected, there may be another appliance drawing electric power from the battery while it is charging, or the battery may be defective. A newly purchased battery may not be fully charged and may take longer to charge initially. Also, there may be insufficient sun light on the solar panel.
4. **THE LED REVERTS TO ILLUMINATING AMBER AFTER TURNING GREEN.** There may be another appliance drawing electric power from the battery causing its voltage to drop below the reset level. The battery charger then goes back into full charge mode. The charger connections at the battery may be intermittent or the battery may be defective. Also, there may be insufficient sun light on the solar panel.

FCC WARNING

Title 47 Subpart, 15.105(b)

Note: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ICES-001: Industrial, Scientific, and Medical (ISM) Radio Frequency Generators

This product has been tested with the listed standards and found to be compliant with the Code of Industry Canada ES-001 and the measurement Procedure according to CISPR 11.

CAN ICES-1/NMB-1

CUSTOMER SERVICE

For customer support please visit Deltran-Global.com/Hyperion. You can also call our customer service hotline 877-456-7901

WARRANTY

The Hyperion ® Cover/Solar Panel/Solar Controller comes with a twenty four (24) month 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, or vibration beyond our recommendations for safe and effective use.
2) The product is misused, subjected to careless handling, or operated under conditions of extreme temperature, shock, or vibration beyond our recommendations for safe and effective use.
3) The product is disassembled or repaired by anyone who is not an authorized service representative.
4) The product was purchased from an unauthorized source. Warranty is not transferable from the original purchaser.
5) Any physical damage to any of components or any accessory after purchase.
6) Any modifications to any of the components.