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Owner's Manual



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Remote Control Module & Mounting Plate

for use with select PowerVerter® Inverters (PV series) or PowerVerter® Inverter/Chargers (APS, RV or EMS series)

The Remote Control Module allows you to remotely monitor and control many of the functions of select* Tripp Lite PowerVerter PV Inverters and PowerVerter APS, RV or EMS Inverter/Chargers.

* Only those models featuring an RJ45 Remote Port.

Installation

Connecting to an Inverter or Inverter/Charger

Connect one end of the included RJ-type cable into the RJ45 Remote Port on the front of your PowerVerter Inverter or Inverter/Charger. Connect the other end into either of the two RJ45 Remote Ports on the bottom of the Remote Control Module.

Connecting to Additional Remote Control Modules (Optional)

You can control a single PowerVerter Inverter or Inverter/Charger with two separate Remote Control Modules. Connect one Remote Control Module directly to the PowerVerter as described above. Connect either of the two RJ45 Remote Ports on the bottom of the second Remote Control Module directly to the remaining RJ45 Remote Port on the bottom of the first Remote Control Module using an RJ-type cable, included.

Connecting to Vehicle's Ignition Switch (Optional)

You can set the Remote Control Module to automatically perform either one of two additional control functions (DISABLE or ENABLE) by connecting the Remote Control Module to the vehicle's ignition switch. These connections are optional; the Remote Control Module will function without these connections.



WARNING! THE IGNITION SWITCH CONTROL FUNCTION IS ONLY FOR USE WITH 12V NEGATIVE GROUND SYSTEMS.

Wiring the Ignition Switch Control Cable to your vehicle's ignition requires a qualified technician, who must determine the proper wiring procedure.

“DISABLE” Control Function: This function automatically disables (turns OFF) the AC power output from the PowerVerter when the vehicle's ignition switch is placed in the “Engine Run” position. This function will satisfy local codes and requirements concerning video monitors (or TVs) that are located within a driver's view by automatically turning them off when the engine is started.

Using the interface cable* (included with select models), connect the black lead to vehicle ground (battery negative). Connect the red lead to the “Engine Run” terminal of the vehicle's ignition switch. Then, connect the interface cable's mini-plug to either of two Ignition Switch Control Jacks located on the side panel of the Remote Control Module: if you are controlling a PV Inverter, insert the mini-plug into the jack labeled “J-1”; if you are controlling an APS, RV or EMS Inverter/Charger, insert the mini-plug into the jack labeled “J-2”. After connecting the interface cable, set the Remote Control Module's switch to either “ON” (for PV models) or “CHRG ONLY” (for APS, RV or EMS models).

* The interface cable (included with select models) has a mini-plug on one end and two wire leads (one black and one red) on the other.

“ENABLE” Control Function: This function automatically enables (turns ON) the AC power output from the PowerVerter when the vehicle's ignition switch is placed in either the “Accessory” or “Engine Run” positions. This function minimizes the risk of discharging the vehicle battery when the vehicle is parked with the engine off for an extended period of time.*

Using the interface cable** (included with select models), connect the black lead to vehicle ground (battery negative). Connect the red lead to the “Accessory” terminal of the vehicle's ignition switch. Then, connect the interface cable's mini-plug to either of two Ignition Switch Control Jacks located on the side panel of the Remote Control Module: if you are controlling a PV Inverter, insert the mini-plug into the jack labeled “J-2”; if you are controlling an APS, RV or EMS Inverter/Charger, insert the mini-plug into the jack labeled “J-1”. After connecting the interface cable, set the Remote Control Module's switch to either “ON” (for PV models) or “CHRG ONLY” (for APS, RV or EMS models).

* Note: a very small discharge current (approximately 18 milliamps) will still exist that should not affect starting ability, even if the vehicle engine has not been turned on for several days. To reduce this current to zero, set the Remote Control Module's switch to either “OFF” (for PV models) or “AUTO” (for APS, RV or EMS models). ** The interface cable (included with select models) has a mini-plug on one end and two wire leads (one black and one red) on the other.

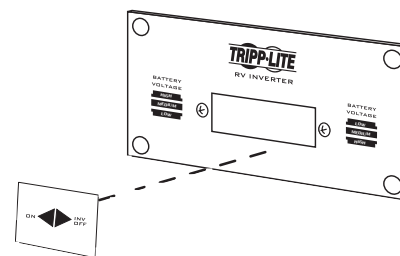
Mounting Without Included Mounting Plate (Optional)

Affix either one of the two included labels to the front panel of the Remote Control Module. The labels identify the Module's LEDs. Choose the label marked "PV" if you are using the Remote Control Module to operate a Tripp Lite Inverter. Choose the label marked "APS" if you are using the Remote Control Module to operate a Tripp Lite Inverter/Charger.

Mount the Remote Control Module in a variety of ways (under-counter, recessed, etc.) using user-supplied hardware inserted through the Module's mounting holes/slots and into the mounting surface.

Mounting with Included Mounting Plate (Optional)

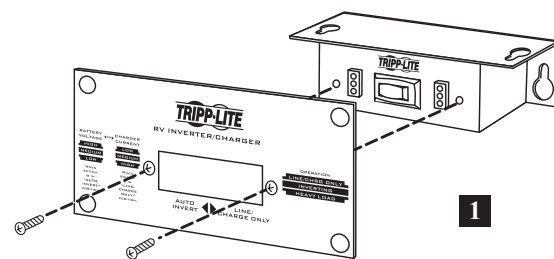
- For PVXXXXHF Model Inverters: Install with Inverter side of plate facing out.
- For PVXXXXFC Model Inverters: Install with Inverter side of plate facing out; place included label on plate as shown.



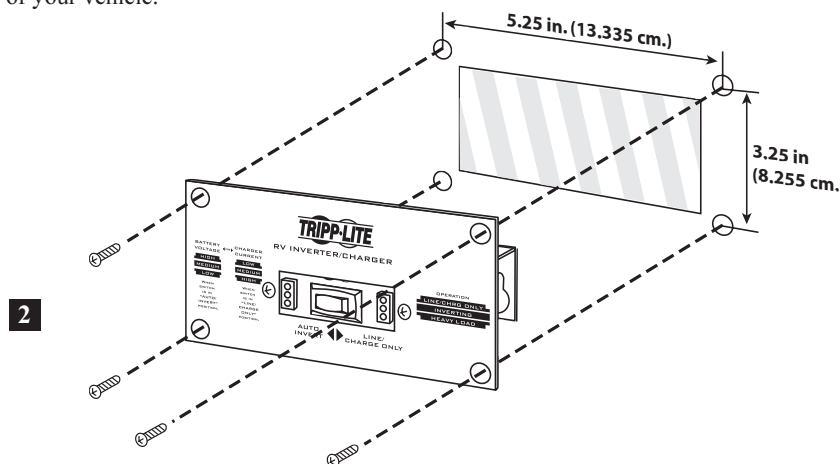
Placement of Label

- For Inverter/Chargers (All Models): Install with Inverter/Charger side of plate facing out.

STEP 1) Using the two included machine screws, attach the Mounting Plate to the front of the Remote Control Module.



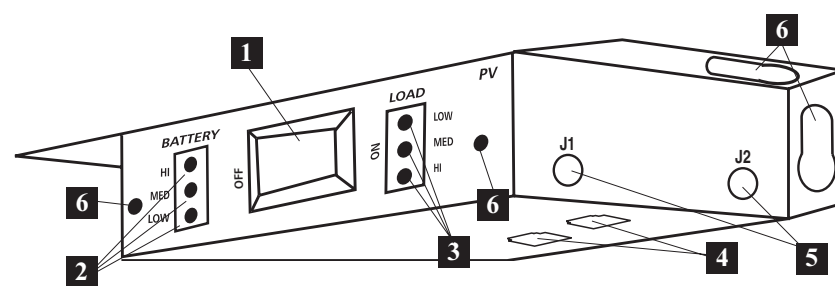
STEP 2) Using the four included sheet metal screws, install the Mounting Plate and Remote Control Module in the panel opening of your vehicle.



Operation

Choose operation based on whether you connect your Remote Control Module to an Inverter (PV series) or Inverter/Charger (APS, RV or EMS series).

INVERTER (PV series)



Module shown without mounting plate

1 OFF/ON Switch:

Move this switch to the “ON” position to have your Inverter provide connected equipment with AC power by converting DC power from an attached battery. To prevent battery drain, leave it in the “OFF” or “INV OFF”* position when not using connected equipment.

2 “BATTERY” LEDs: These three lights show the approximate charge of your connected batteries. See chart below for approximate charges.

LEDs Illuminated	Approximate Charge
Green	96% - Full
Green & yellow	81% - 95%
Yellow	61% - 80%
Yellow & red	41% - 60%
Red	21% - 40%
All three lights off	1% - 20%
Flashing red	0% (Inverter shutdown)
All three lights flash slowly	Excessive discharge
All three lights flash quickly	Overcharge

* “OFF” when used with label; “INV OFF” when used with mounting plate.

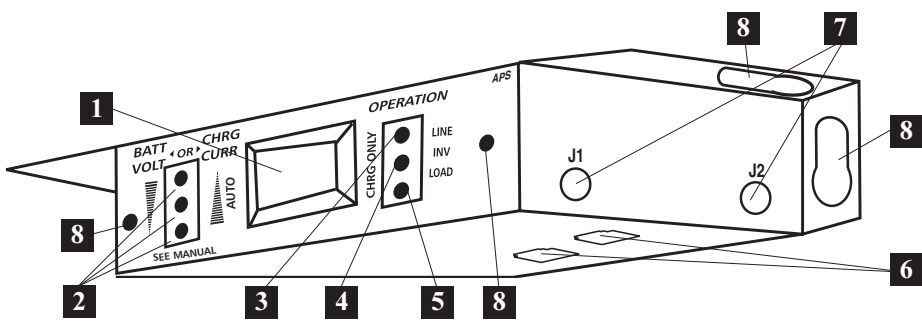
Operation (continued)

- 3 “LOAD” LEDs:** These three lights show the approximate load demand on your Inverter. See chart below for approximate load levels.

LEDs Illuminated	Approximate Load
Green	0% - 20%
Green & yellow	21% - 40%
Yellow	41% - 60%
Yellow & red	61% - 80%
Red	81% - Full
All three lights off	Inverter off
Flashing red	Overload

- 4 RJ45 Remote Ports:** Use to connect the Remote Control Module to either an Inverter or a second Remote Control Module. See Installation section.
- 5 Ignition Switch Control Jacks:** Use to connect the Remote Control Module to your vehicle’s ignition (with cable supplied on select models only) in order to automatically control the Inverter with the vehicle’s ignition switch. See Installation section.
- 6 Mounting Holes/Slots:** Front panel holes can be used either to attach included Mounting Plate or to mount Remote Control Module behind a panel. Top and side panel slots can be used to attach Remote Control Module (without the Mounting Plate) either under or along a variety of surfaces with user-supplied hardware.

INVERTER/CHARGER (APS, RV or EMS series)



Module shown without mounting plate

- 1 CONTROL Switch:** Move this switch to the “AUTO” or “AUTO/INVERT”^{*} position to have your Inverter/Charger provide connected equipment with AC power (converted from DC power from attached batteries) in the event of an AC power outage. Move it to the “CHRG ONLY” or “LINE/CHARGE ONLY”^{*} position when equipment is not in use to conserve battery power by disabling the inverter. The “LINE” LED will flash while the switch is in this position to remind you that battery power will not be available in the event of a blackout or disconnection from utility/shore power. In either position, the Inverter/Charger will supply AC power to connected equipment and charge connected batteries while AC input is present.
- 2 “BATT VOLT/CHRG CURR” LEDs:** These three lights will turn ON in several sequences to show two separate operational conditions depending on the position of the CONTROL Switch.
- If the switch is in the “AUTO” or “AUTO/INVERT”^{*} position, the LEDs indicate the approximate charge level and voltage of your connected battery bank and alert you to several fault conditions. See Chart **2A** for charge and voltage levels.

^{*} “AUTO” and “CHRG ONLY” when used with table; “AUTO/INVERT” and “LINE/CHARGE ONLY” when used with mounting plate.

2A BATTERY CHARGE INDICATION (Approximate)[†] CONTROL SWITCH IS IN THE “AUTO” OR “AUTO/INVERT” POSITION

LEDs Illuminated	Battery Capacity (Charging/Discharging)
Green	91%–Full
Green & Yellow	81%–90%
Yellow	61%–80%
Yellow & Red	41%–60%
Red	21%–40%
All three lights off	1%–20%
Flashing red	0% (Inverter shutdown) ^{††}

[†] Charge levels listed are approximate. Actual conditions vary depending on battery condition and load.
^{††} Inverter shutdown protects battery against damage due to excessive discharge.

LEDs Illuminated	Fault Condition
All three lights flash slowly [†]	Excessive discharge (Inverter shutdown)
All three lights flash quickly ^{††}	Overcharge (Charger shutdown)

[†] Approximately ½ second on, ½ second off. See Troubleshooting section. Inverter shutdown protects battery against damage due to excessive discharge. ^{††} Approximately ¼ second on, ¼ second off. Charger shutdown protects battery against damage due to overcharge. May also indicate a battery charger fault exists.

If the switch is in the “CHRG ONLY” or “LINE/CHARGE ONLY”^{*} position, the LEDs indicate the approximate charge rate of the Inverter/Charger. See Chart **2B** for charge rates. Note: the charge rates in the chart are expressed as percentages of the Inverter/Charger’s rated charging amps, which vary by model. Refer to the Inverter/Charger’s Owner’s Manual to determine the charging amps of your specific model.

^{*} “AUTO” and “CHRG ONLY” when used with table; “AUTO/INVERT” and “LINE/CHARGE ONLY” when used with mounting plate.

2B CHARGE RATE INDICATION (Approximate) CONTROL SWITCH IS IN THE “CHRG ONLY” OR “LINE/CHARGE ONLY” POSITION

LEDs Illuminated	Charge Rate
All three lights on	Overcharge error [†]
Red	75% - 100%
Red & yellow	50% - 75%
Yellow	25% - 50%
Green	0% - 25%
All three lights off	0%

[†] If all three lights remain on, an internal fault may exist. Turn off and disconnect the unit. Then, call Tripp Lite at (773) 869-1234 for assistance.

Operation (continued)

- 3 “LINE” LED:** This green light will turn continuously ON whenever connected equipment is receiving utility-supplied AC power and your Inverter/Charger is set to “AUTO/REMOTE,” meaning that it will automatically switch to battery power if AC power becomes unavailable. The light will flash intermittently when connected equipment is receiving utility power and your Inverter/Charger’s Operating Mode Switch is set to “CHRG ONLY” to indicate that the Inverter/Charger’s inverter is OFF and that the Inverter/Charger will not supply power from connected batteries.
- 4 “INV” LED:** This yellow light will turn continuously ON whenever connected equipment is receiving battery-supplied AC power. It will flash if the Inverter/Charger does not detect the minimum load necessary to activate the inverter.
- 5 “LOAD” LED:** This red light will turn continuously ON when your Inverter/Charger is receiving utility-supplied AC power and the load is between 80% and 110% of capacity to alert you that the inverter might not be able to support the load. The light will flash intermittently after the Inverter/Charger’s inverter shuts down due to a severe overload or overheating.

NOTE!: To remotely reset the Inverter/Charger after a shutdown due to overload, move the Remote Control Module’s “CONTROL” Switch to the “CHRG ONLY” or “LINE/CHARGE ONLY”^{*} position until the LOAD LED goes out. Remove the overload by turning off some connected equipment. After allowing a few moments for the Inverter/Charger to cool, switch the Remote Control Module’s “CONTROL” Switch back to “AUTO” or “AUTO/INVERT”^{*}.

- 6 RJ45 Remote Ports:** Use to connect the Remote Control Module to either an Inverter/Charger or a second Remote Control Module. See Installation section.
- 7 Ignition Switch Control Jacks:** Use to connect the Remote Control Module to your vehicle’s ignition (with cable supplied on select models only) in order to automatically control the Inverter/Charger with the vehicle’s ignition switch. See Installation section.
- 8 Mounting Holes/Slots:** Front panel holes can be used either to attach included Mounting Plate or to mount Remote Control Module behind a panel. Top and side panel slots can be used to attach Remote Control Module (without the Mounting Plate) either under or along a variety of surfaces with user-supplied hardware.

^{*} “AUTO” and “CHRG ONLY” when used with table; “AUTO/INVERT” and “LINE/CHARGE ONLY” when used with mounting plate.

Limited Warranty

Tripp Lite warrants its products to be free from defects in materials and workmanship for a period of one year (domestic) or 120 days (export) from the date of initial purchase. Tripp Lite’s obligation under this warranty is limited to repairing or replacing (at its sole option) any such defective products. To obtain service under this warranty you must obtain a Returned Material Authorization (RMA) number from Tripp Lite or an authorized Tripp Lite service center. Products must be returned to Tripp Lite or an authorized Tripp Lite service center with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment which has been damaged by accident, negligence or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

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WARRANTY REGISTRATION

Visit www.tripplite.com/warranty today to register the warranty for your new Tripp Lite product. You’ll be automatically entered into a drawing for a chance to win a FREE Tripp Lite product!^{*}

^{*} No purchase necessary. Void where prohibited. Some restrictions apply. See website for details.

Regulatory Compliance Identification Numbers

For the purpose of regulatory compliance certifications and identification, your Tripp Lite product has been assigned a unique series number. The series number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to the series number. The series number should not be confused with the marking name or model number of the product.

This product designed and engineered in the USA.

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