

ENDURA

Single Unit Rapid Charger FOR IN-VEHICLE USE



User Manual
MODEL TWC1M

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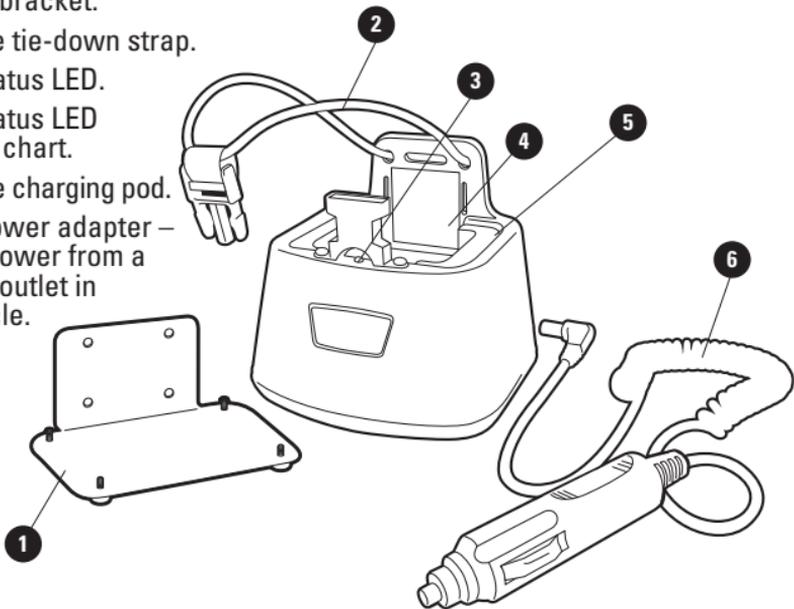
Introduction

Thank you for purchasing an ENDURA™ TWC1M, Single Unit Rapid Charger. This high quality product is designed for charging two-way radio batteries in a vehicle. With the appropriate charging pod installed, it can charge these types of batteries: lithium ion (Li-Ion), lithium polymer (LiPo), nickel-metal hydride (NiMH), or nickel cadmium (NiCd).

For a complete list of charging pods available for this charger, contact your Power Products dealer or call customer service at **800-529-1618**.

ENDURA™ TWC1M Features

1. Mounting bracket.
2. Adjustable tie-down strap.
3. Charge status LED.
4. Charge status LED reference chart.
5. Removable charging pod.
6. Vehicle power adapter – supplies power from a 12V – 24V outlet in your vehicle.



Important

1. Read all Caution statements below and this User Manual before attempting to charge a battery.
2. Check to make sure a charging pod compatible with your battery is properly installed on charger before placing battery in pod.
3. Always charge new batteries completely before initial use. Recycle batteries when they can no longer be used. Do not discard unwanted batteries in the trash or incinerate. Batteries exposed to fire or excessive heat may explode.
4. For best battery performance, charge NiCd and NiMH batteries when they are fully discharged.

Caution

1. Never charge alkaline or dry cell batteries with this charger. They may burst and cause damage or personal injury.
2. Do not charge Li-Ion, LiPo, NiMH, or NiCd batteries unless they are designed with overcharge protection.
3. Use charger inside a vehicle only. Do not expose the charger to rain, any liquids, or excessive moisture.
4. Do not attempt to charge a battery without first installing the appropriate charging pod. Use only charging pods designed for the TWC1M. Disconnect charger from power before installing, adjusting, or removing the charging pod.
5. Make sure contacts in charging pod and battery are clean. Do not allow wire or metal objects to touch contacts in charging pod or any internal part of the charger.
6. Do not remove the charger's housing or make any modification to the charger.
7. Use only the vehicle power adapter supplied with the TWC1M charger. If a replacement is required, order part number TWC1-VPA (standard) or TWC6M-VPA (heavy duty). Use of other vehicle power adapters may damage the charger or batteries you attempt to charge.

Installing ENDURA TWC1M

1. Install TWC1M in an area of the vehicle that is in close proximity to a 12V or 24V outlet. The location selected should allow the vehicle power adapter to be connected without excessive stretching of the cable.
2. Select a flat vertical surface in the vehicle for attaching the mounting bracket. Use the 4 sheet metal screws provided to fasten the smaller section of the bracket to the vehicle. Install the mounting bracket securely and in a manner that allows the larger section of the bracket to be level. (Width of smaller section is about 2.6" and width of larger section is 4.2").
3. After the mounting bracket is installed, fasten TWC1M to the bracket using the 4 brass thumb screws provided. If required, install the charging pod in TWC1M before attaching the charger to the mounting bracket. See section *Replacing A Charging Pod* below.
4. An elastic type tie-down strap is included with TWC1M. The strap is adjustable to hold radios of different heights securely in the charger.
5. To adjust the tie-down strap, place the radio in the charger, bring the strap over the top of the radio, and insert the plastic clip into the metal clip holder on the front of the charger. A clicking sound confirms the clip is properly connected. At the back of the charger, compress the black retaining clip and pull the end of the tie-down strap through the retaining clip until it is snug over the radio.
Note: It may be easier to adjust the tie-down strap before the TWC1M is installed on the mounting bracket.
6. To remove a radio secured with the tie-down strap, press the sides of the plastic clip with your thumb and forefinger and lift the tie-down strap.

Replacing A Charging Pod

The charging pod is made from quality materials and designed to provide years of service when properly used. In most cases, the charging pod will only be replaced when you want to use the charger with a different battery.

Follow these steps to change the charging pod:

1. Obtain a charging pod made specifically for the TWC1M. Confirm that the charging pod is compatible with the battery you want to charge.
2. Unplug the vehicle power adaptor (DC power supply) from TWC1M and remove the radio from the charging pod.
3. Turn the locking screw on the bottom of the charging pod counter-clockwise several rotations. Lift the charging pod from the charging base.
4. Insert the replacement charging pod into the charging base and secure with the locking screw. Do not over tighten the screw.
5. Inspect the charging contacts to ensure they are clean and unobstructed.
6. Connect the vehicle power adapter to TWC1M. You are now ready to charge a battery compatible with the charging pod.

Charging A Battery

Before charging a battery confirm that the charging pod installed in TWC1M and the battery you want to charge are compatible.

1. Connect the large plug end of the vehicle power adapter to the 12V or 24V DC outlet in your vehicle and the small end to the connection point on the right side of the charger.
2. Place battery to be charged in the charging pod. The battery may also be charged while attached to the radio.
3. When a battery is placed in the charging pod, the charge status LED will illuminate ORANGE for a short period while the charger performs a battery diagnostic. If the LED does not illuminate, check to make sure the

power outlet is receiving power. The charge status LED will change from ORANGE to RED once the battery diagnostic is complete.

4. While a battery is charging, the charge status LED will illuminate RED with no flashing. If the charge status LED is red and flashes, a fault has been detected. The flash pattern represents a specific fault condition. See section *Fault Conditions* for details.
5. When the battery is charged to 80% of capacity, the charge status LED will change to GREEN and flash. It is recommended that the battery be charged to at least 80% capacity before use. The charge status LED will illuminate GREEN with no flashing when the battery is fully charged.
6. After removing a fully charged battery, the charge status LED may remain illuminated for a few seconds. Allow the charge status LED to go off before placing another battery in the charging pod.
7. The TWC1M is designed to operate at room temperatures between 15°C and 30°C. Charging batteries at temperatures outside this range may result in under charging of batteries.

ENDURA™ TWC1M Specifications

Dimensions	116 x 98 x 106 mm / 4.6 x 3.9 x 4.3 inches
Weight (Charger Only)	320 g / .7 lbs.
Compatible Chemistries	NiCd / NiMH / Li-Ion / LiPo
Operating Temperature	15° C – 30° C
Storage Temperature	0° C – 65° C
Power Input	12V – 24V DC (1A minimum)
Charge Rate	700 mA (10.6V – 12.4V)

Specifications subject to change without notice.

Fault Conditions

When the charge status LED flashes RED, a fault condition exists. There are three different flash patterns, each indicating a specific type of fault. The flash patterns and fault conditions are as follows:

LED Flash

Flashes 1 Time	Indicates charging complete, but battery is under charged. Battery voltage is below minimum level required. This warning is provided after the rapid charging stage is complete.
Flashes 2 Times	Indicates battery contact is “open” and current is not passing through the (+) and (-) contacts on the battery. This warning is provided after the initial diagnostic stage is complete. Check charging pod to confirm compatibility with battery.
Flashes 3 Times	Indicates over-current condition caused by battery short circuit. Have the battery checked by a qualified technician. Do not attempt charging the battery if a short circuit exists.

Available Accessories

TWC1M-MBH	Metal bracket for mounting TWC1M on a floor or other horizontal surface.
TWC1M-VPA	Standard vehicle power adapter. Supplies power to TWC1M from 12V or 24V outlet.
TWC6M-VPA	Heavy duty vehicle power adapter. Supplies power to TWC1M or TWC6M from 12V or 24V outlet.
TWC6M-HW	Hardwire kit for TWC1M or TWC6M. Supplies power to charger from a vehicle battery or other power connection point.

Warranty And Service During Warranty

The ENDURA™ TWC1M is made from high quality materials and designed to provide years of reliable service. The following warranty applies:

Power Products Unlimited, Inc. (PPU) warrants this product to be free from defects in workmanship and materials for one-year from date of purchase by the end user. This warranty applies to the original purchaser and is void if the product has been altered, misused, damaged, neglected, or if repair is required because of normal wear and tear. This is the only warranty made by PPU. In no event will PPU, its affiliates, subsidiaries, related entities, or their respective directors, officers, or employees, be liable for any damages beyond repair or replacement as described above, including without limitation, indirect, incidental, or consequential damages. For service under warranty, return the product along with dated proof of purchase to the retailer where purchased or to Power Products. If returning directly to Power Products, follow these instructions:

1. Send to Power Products – Warranty Service Department, 2170 Brandon Trail, Alpharetta, GA 30004. For your protection, we recommend you obtain proof of delivery for your shipment.
2. Include with your product, dated proof of purchase, your name and daytime telephone number, and return address (street address only; return shipments cannot be made to a P.O. Box).
3. All items sent become the property of Power Products and will not be returned.



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