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Renogy 12V 20A DC to DC

Renogy 12V 20A DC to DC On-Board Battery Charger User Manual

Brand: Renogy | Model: 12V 20A DC to DC

1. INTRODUCTION AND OVERVIEW

The Renogy DCC12 Series battery chargers provide an effective solution for charging auxiliary or house batteries directly from your vehicle's alternator or starter battery. This charger is designed for compatibility with a wide range of battery types, including Flooded, Gel, AGM, and Lithium deep cycle batteries, ensuring optimal and automatic charging through its advanced 3-stage charging process. Built with multiple electronic protections, the DCC12 Series offers enhanced safety and reliability for various applications such as RVs, commercial vehicles, boats, and yachts. Its compact and robust design allows for easy installation even in limited spaces.



Figure 1: Renogy 12V 20A DC to DC Battery Charger, front view.

2. KEY FEATURES

- **Compatible Multiple Battery Types:** Offers correct charging for AGM, Flooded, Gel, and Lithium batteries.
- **Smart Multi-Stage Charging:** Utilizes a 3-stage charging process (Bulk, Boost, and Float) to ensure optimal and automatic charging to 100%.
- **Various Protections For Ultra Safety:** Includes Over-voltage Protection, Over-temperature Protection, and Reverse Polarity Protection. It also isolates input and output to prevent voltage transmission errors.
- **Protect Your Starter Battery:** Capable of identifying when the generator is started to prevent over-discharge of the starting battery.
- **Reliable Quality & Easy Installation:** Features a compact and robust design suitable for various conditions and limited spaces.



Figure 2: Visual representation of the charger's key features including multiple alternator types, multi-battery chemistry, and smart protection.

3. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your Renogy DC to DC Battery Charger. Follow these steps carefully:

3.1 Wiring Connections

Connect the charger to your starter battery and deep cycle (house) battery using appropriate gauge cables. Ensure all connections are secure and properly insulated.

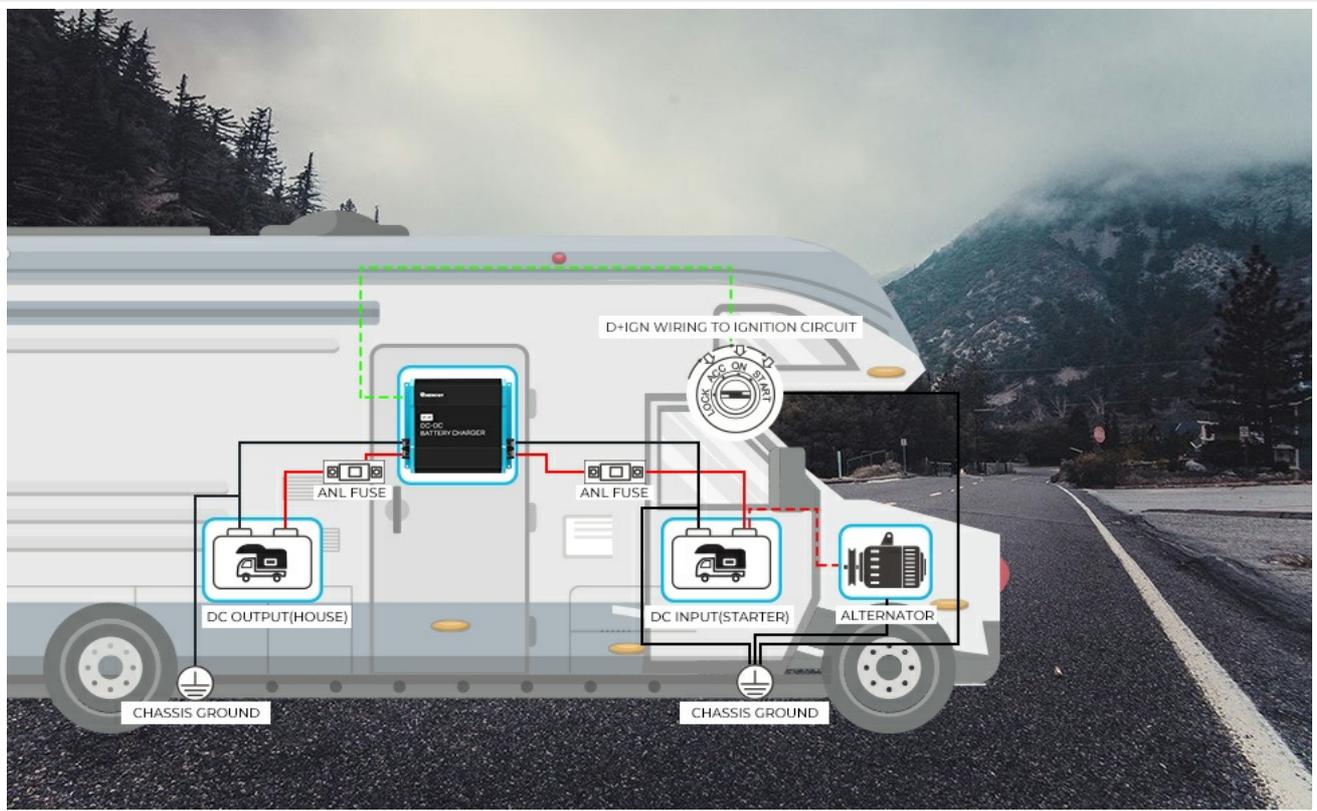


Figure 3: Typical wiring diagram showing connections between the starter battery, deep cycle battery, alternator, and the DC to DC charger in a vehicle setup.

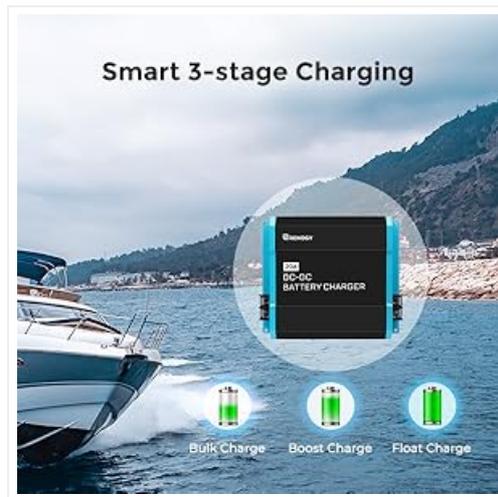


Figure 4: Connection point for the D+ Ignition Cable, which ensures the charger activates only when the vehicle's engine is running, protecting the starter battery from over-discharge.

3.2 Battery Type Selection (DIP Switches)

The charger features DIP switches to select the appropriate battery type for your deep cycle battery. Refer to the manual's specific instructions for the correct switch configuration based on your battery chemistry (Flooded, Gel, AGM, or Lithium).

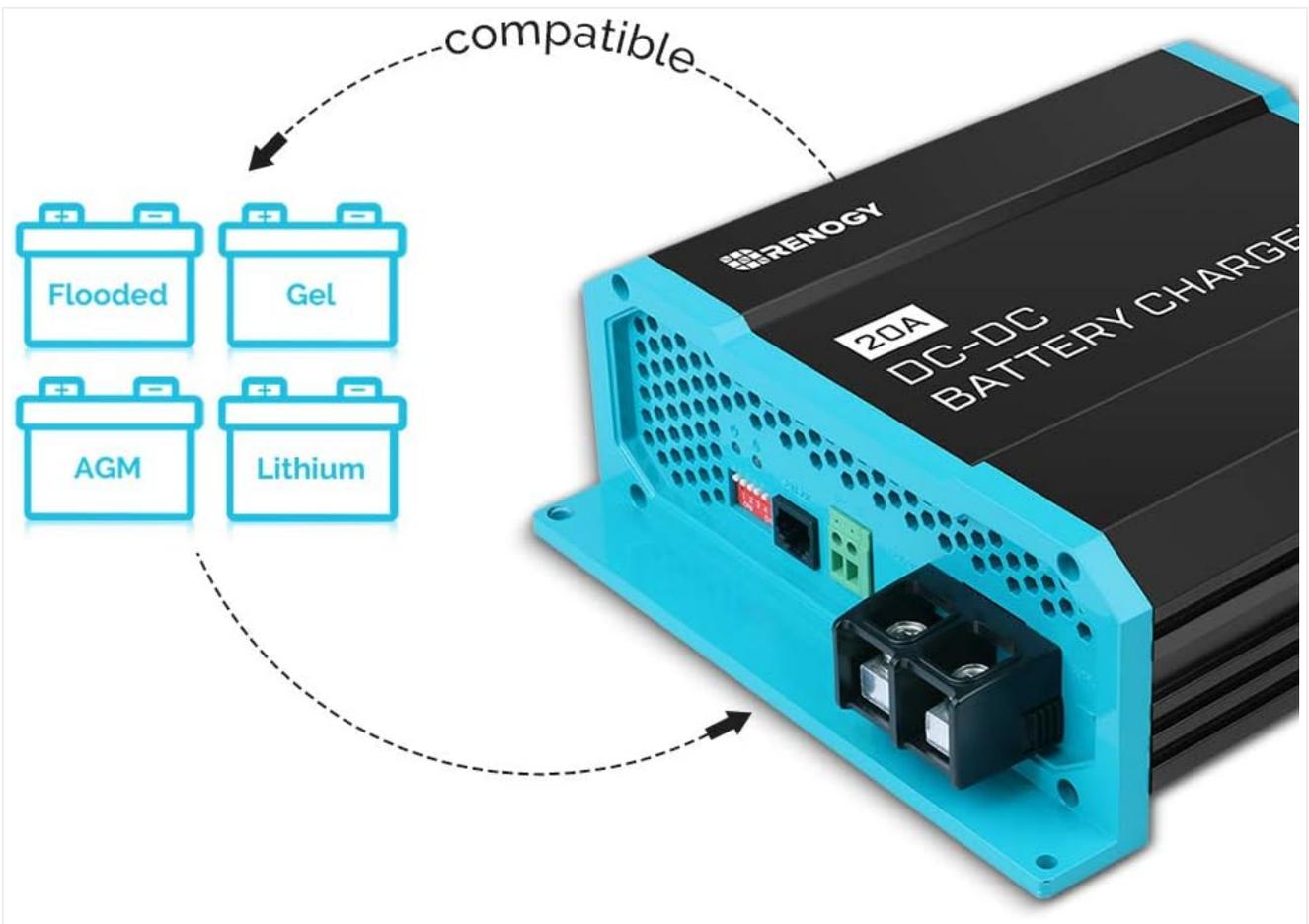


Figure 5: Close-up of the charger's side panel showing the DIP switches used to configure the charging mode for different battery types.

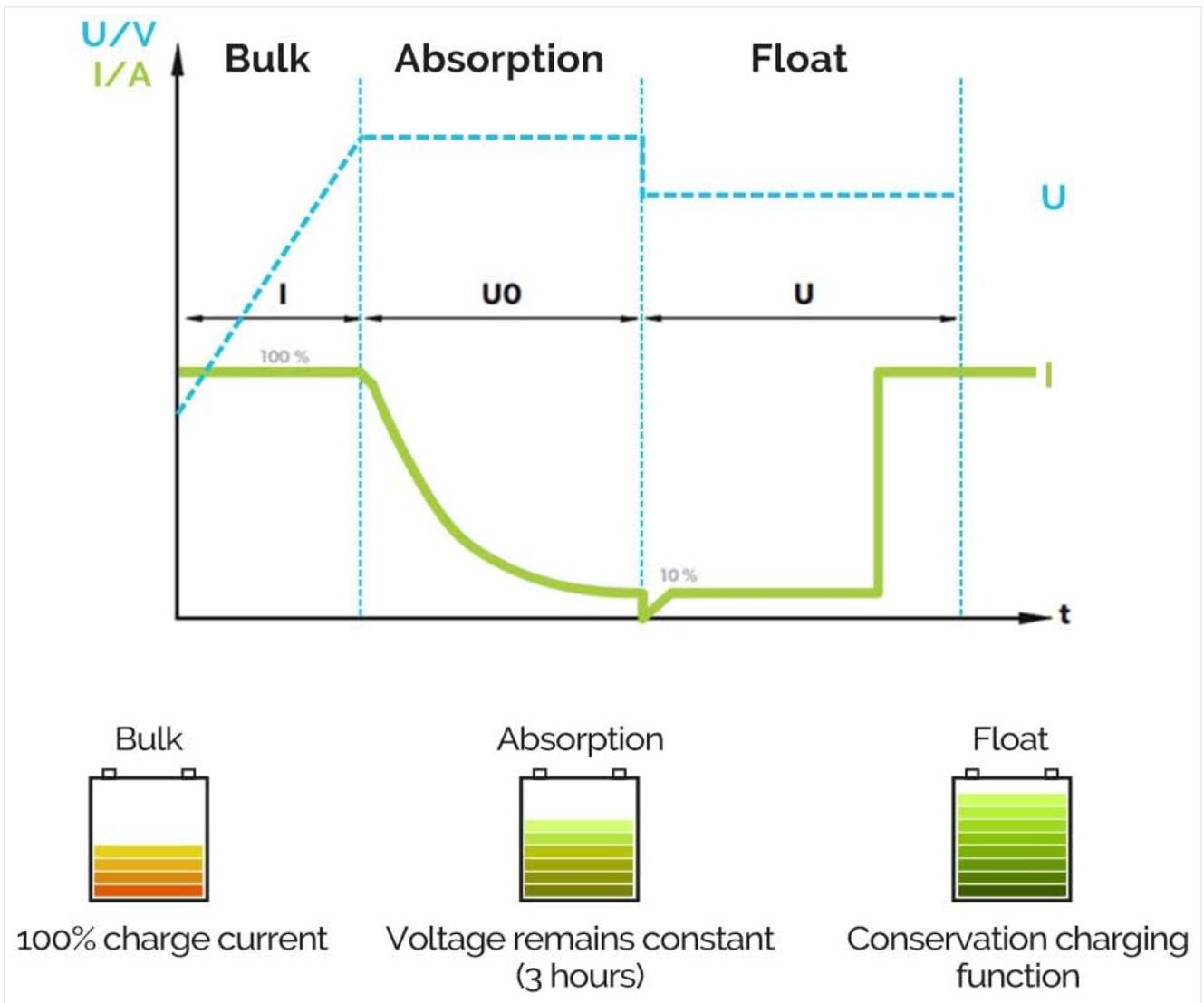


Figure 6: Illustration of the various battery types (Flooded, Gel, AGM, Lithium) compatible with the Renogy DC to DC Battery Charger.

3.3 Optional Temperature Sensor

An optional temperature sensor can be connected to the charger to allow for continuous adjustment of charging voltage based on the battery's temperature, optimizing charging efficiency and prolonging battery lifespan.



Figure 7: The remote temperature sensor port on the charger, which helps in prolonging battery lifespan by adjusting charging based on temperature.

3.4 Installation Video

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4. OPERATING INSTRUCTIONS

Once properly installed and configured, the Renogy DC to DC Battery Charger operates automatically. The 3-stage charging process ensures your battery receives the correct charge for its current state.

4.1 3-Stage Charging Process

- **Bulk Charge:** Delivers maximum current to rapidly charge the battery.
- **Boost Charge:** Maintains a constant voltage to ensure the battery is fully charged without overcharging.
- **Float Charge:** Reduces the voltage to a lower level to maintain the battery at full charge and compensate for self-discharge.

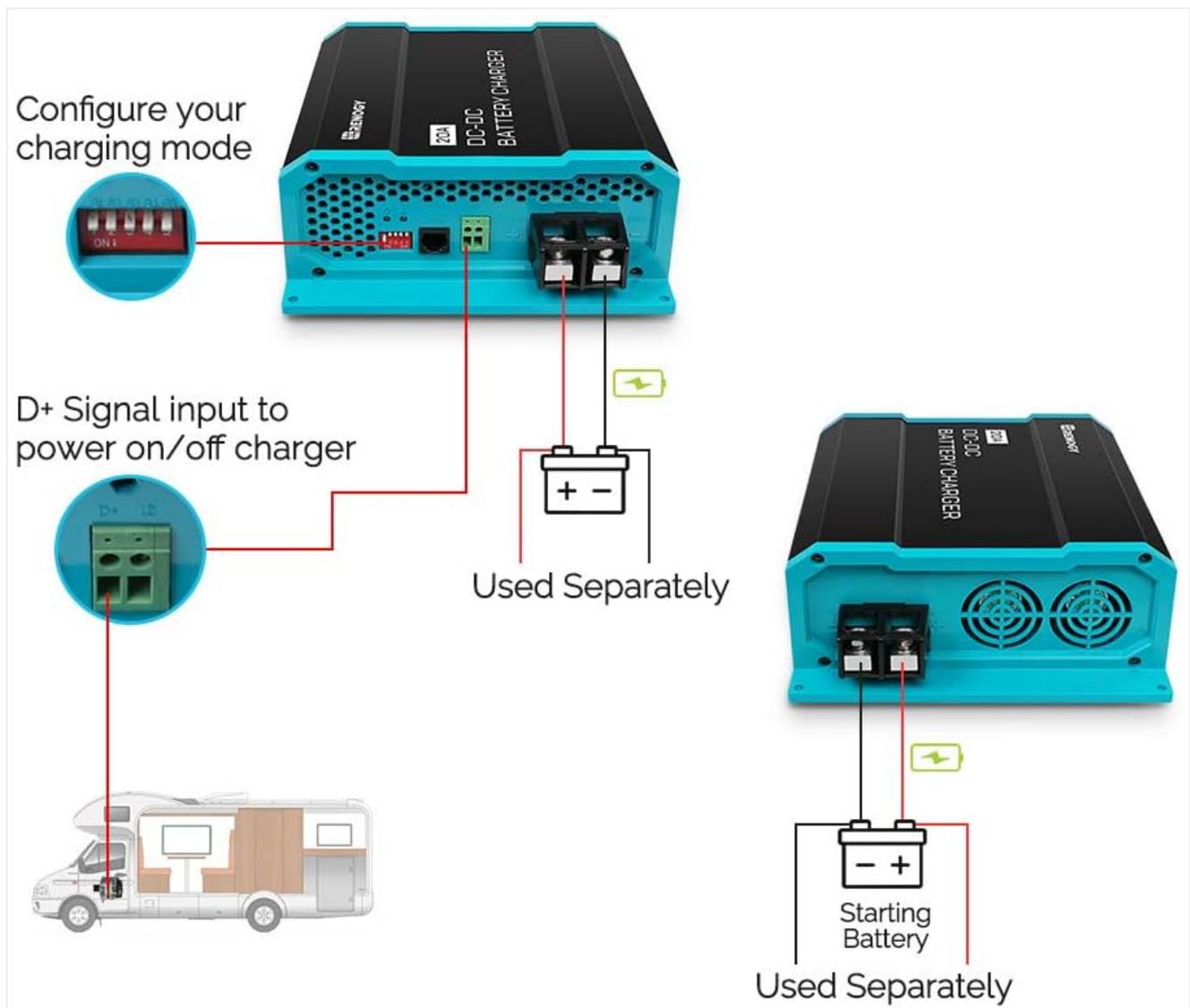


Figure 8: Diagram illustrating the Bulk, Absorption (Boost), and Float stages of the battery charging process.

4.2 Safety Protections

The charger incorporates several safety features to protect both the unit and your batteries:

- Over-voltage Protection
- Over-temperature Protection
- Reverse Polarity Protection



Figure 9: Icons representing the various safety features including over-voltage, high-temperature, reverse polarity, short circuit, and low voltage protection.

5. MAINTENANCE

To ensure the longevity and optimal performance of your Renogy DC to DC Battery Charger, regular maintenance is recommended:

- Periodically inspect all wiring connections to ensure they are tight and free from corrosion.
- Keep the charger's ventilation openings clear of dust and debris to prevent overheating.
- Clean the exterior of the unit with a soft, dry cloth as needed.
- Ensure the environment where the charger is installed is well-ventilated and within the recommended operating temperature range.

6. TROUBLESHOOTING

If you encounter issues with your Renogy DC to DC Battery Charger, consider the following common troubleshooting steps:

- **No Charging Output:** Check all wiring connections, especially the D+ signal wire, to ensure they are secure and receiving power when the vehicle is running. Verify the battery type selection on the DIP switches is correct for your battery.
- **Overheating:** Ensure the charger has adequate ventilation and its cooling fins are not obstructed. Check for excessive load on the deep cycle battery.
- **Unusual Noises:** While some fan noise is normal during high charging loads, persistent loud or unusual noises may indicate an issue. Ensure the unit is securely mounted.

- **Battery Not Reaching Full Charge:** Confirm the correct battery type is selected. Check the health of both the starter and deep cycle batteries. Consider using the optional temperature sensor if not already installed.

For more detailed troubleshooting or persistent issues, please refer to the full user manual or contact Renogy customer support.

7. SPECIFICATIONS

Specification	Value
Product Dimensions	8.4 x 6.9 x 2.7 inches (8.4"D x 6.9"W x 2.7"H)
Item Weight	3.08 pounds (1.4 Kilograms)
Item Model Number	12V 20A DC to DC
Output Voltage	12 Volts (DC)
Color	Black/Blue
Manufacturer	Renogy
Date First Available	April 2, 2019

8. WARRANTY AND SUPPORT

For detailed warranty information and technical support, please refer to the official Renogy resources.

- **User Manual (PDF):** [Download User Guide \(PDF\)](#)
- **Contact Support:** Visit the official Renogy website for customer service and support options.

Related Documents - 12V 20A DC to DC

	<p>Renogy DC-DC Battery Charger Manual: DCC1212-20, 40, 60</p> <p>Comprehensive manual for Renogy DC-DC battery chargers (DCC1212-20, DCC1212-40, DCC1212-60), covering safety instructions, installation, operation, troubleshooting, and technical specifications for charging auxiliary batteries.</p>
<p><small>User Manual of Product 1: Renogy 10 Amp 100/5A PWM Negative Ground Solar Charge Controller Constant Voltage and LCD Display for AGM, Gel, Flooded and Lithium Batteries - Renogy USA</small></p> <p><small>User Manual of Product 2: Renogy Bluetooth Module V1.2 Communication Port Compatible with Renogy/Wanderer Solar Charge Controllers - BT-1 PRO22</small></p>	<p>Renogy Wanderer 10A PWM Solar Charge Controller & BT-2 Bluetooth Module User Manual</p> <p>Comprehensive user manual for the Renogy Wanderer 10A PWM Solar Charge Controller and BT-2 Bluetooth Module. Covers installation, operation, safety, technical specifications, and app connectivity for off-grid solar systems.</p>

	<p>Renogy 100W Solar Suitcase with Voyager Charge Controller Manual</p> <p>Comprehensive user manual and technical specifications for the Renogy 100W Solar Suitcase with Voyager charge controller. Learn about installation, operation, safety guidelines, charging stages, troubleshooting, and detailed product specifications for portable off-grid solar power solutions.</p>
	<p>Renogy 100W Solar Suitcase w/ Voyager User Manual</p> <p>User manual for the Renogy 100W Solar Suitcase with Voyager charge controller, detailing safety, installation, operation, maintenance, troubleshooting, and technical specifications for portable off-grid solar power systems.</p>
	<p>Renogy DC-DC Battery Charger Manual: DCC1212 Series Installation & Operation Guide</p> <p>Comprehensive guide for Renogy DC-DC Battery Chargers (DCC1212-20, DCC1212-40, DCC1212-60). Covers safety, installation, wiring, operation, troubleshooting, and technical specifications for optimal battery charging in RVs, boats, and vehicles.</p>
	<p>Renogy Wanderer Series 30A PWM Solar Charge Controller and BT-2 Bluetooth Module User Manual</p> <p>Comprehensive user manual detailing the features, installation, operation, safety guidelines, and technical specifications for the Renogy Wanderer Series 30A PWM Solar Charge Controller and the Renogy BT-2 Bluetooth Module. Includes troubleshooting, compliance information, and app connection guides.</p>