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- › [ATEM POWER 40A DC to DC Battery Charger User Manual](#)

## ATEM POWER 40A

# ATEM POWER 40A DC to DC Battery Charger User Manual

Model: 40A

## 1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your ATEM POWER 40A DC to DC Battery Charger. This charger is designed to efficiently charge various battery types, including AGM, Gel, Calcium, Lead Acid, and LiFePO4, in 4WDs, RVs, campers, and trailers. Please read this manual thoroughly before use to ensure proper function and safety.



## 2. SAFETY INFORMATION

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Observe the following safety precautions to prevent injury or damage to the charger and connected equipment:

- Ensure all connections are secure and correctly polarized before operation.
- Do not expose the charger to rain, moisture, or extreme temperatures.
- Install the charger in a well-ventilated area to prevent overheating.
- Always disconnect power before performing any maintenance or installation procedures.
- This device is intended for 12V DC systems only. Do not connect to 24V or higher systems.
- Consult a qualified electrician for complex installations or if you are unsure about any wiring procedures.

## 3. PRODUCT FEATURES

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The ATEM POWER 40A DC to DC Battery Charger incorporates several advanced features for optimal battery management:

- **Reverse Charging Capability:** Allows charging of the start battery from the auxiliary battery.
- **Wide Battery Compatibility:** Supports AGM, Gel, Calcium, Lead Acid, and LiFePO4 battery types.
- **MPPT Solar Input:** Integrated Maximum Power Point Tracking (MPPT) controller for efficient solar charging.
- **Intelligent 3-Stage Charging:** Optimizes charging for efficiency and extends battery lifespan.
- **LiON Mode:** Automatically activates sleeping LiFePO4 batteries.
- **Comprehensive Protection:** Includes reverse polarity, overvoltage, over-temperature, charge timeout, and lithium battery BMS safeguards.
- **DC Charging Priority:** Prioritizes vehicle battery input over solar input when both are available and meet startup conditions.

# EXCELLENT COMPATIBILITY

Designed to seamlessly work with a wide range of battery types, including AGM, Gel, Calcium, Lead Acid, and LiFePO4 batteries.



Image 3.1: The charger is compatible with multiple battery chemistries.

# INSTALL THE CHARGER

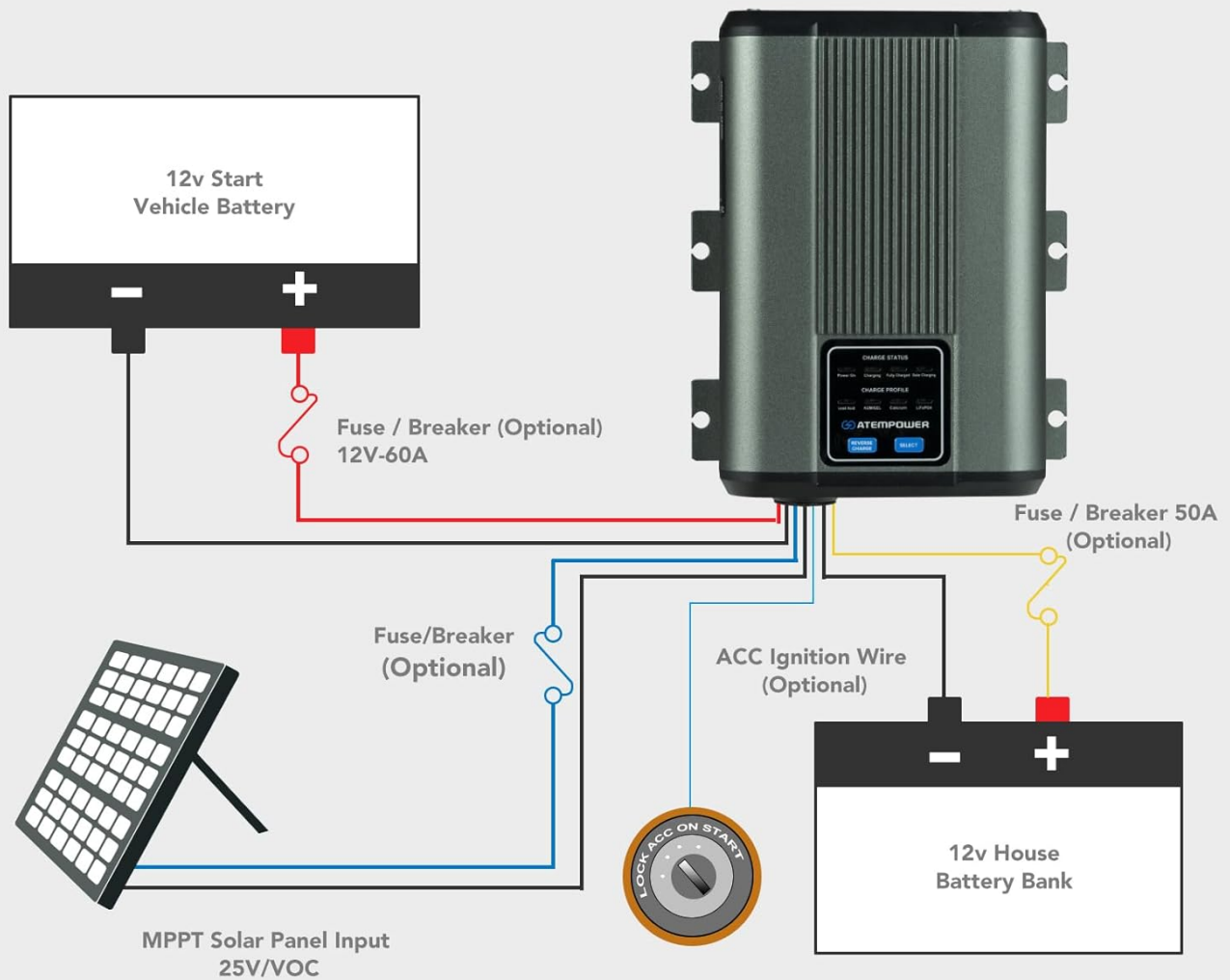


Image 3.2: The charger includes multiple protection features for safe operation.

## 4. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1 x ATEM POWER 40A DC to DC Charger with Anderson Style Plugs
- 3 x Anderson Style Plugs (additional for custom wiring)
- 1 x User Manual



# PACKAGE INCLUDING



Image 4.1: The complete package contents.

## 5. SETUP AND INSTALLATION

### 5.1. Connection Overview

The charger is equipped with Anderson style plugs for convenient wiring. Refer to the diagram below for connection details:



## ANDERSON STYLE PLUG EQUIPPED

This DC to DC charger is equipped with Anderson style plugs to make wiring more convenient.

<b>1</b> Blue: Solar Input (+)	<b>2</b> Black: GND	
<b>3</b> Yellow: Output (+)	<b>4</b> Black: GND	
<b>5</b> Red: DC Input (+)	<b>6</b> Black: GND	<b>7</b> ACC Ignition Line

Image 5.1: Anderson style plug connections and their functions.

1. **Blue:** Solar Input (+)
2. **Black:** Ground (GND) for Solar Input
3. **Yellow:** Output (+) to Auxiliary Battery
4. **Black:** Ground (GND) for Output
5. **Red:** DC Input (+) from Start Battery
6. **Black:** Ground (GND) for DC Input
7. **ACC Ignition Line:** Connect to an ignition-switched power source (optional, for smart alternator compatibility).

### 5.2. Wiring Diagram

Follow the wiring diagram for a typical installation in a vehicle with both a start battery and an auxiliary (house) battery, including an optional solar panel connection.

# PROLONG BATTERY LIFESPAN



Input/Output Reverse  
Polarity Protection



Input/Output  
Over-voltage Protection



Over-temperature  
Protection



Over-charge  
Protection



BMS Protection  
for Lithium Battery



With an intelligent 3-stage charging process that optimizes efficiency and maximizes the lifespan of your batteries.

Image 5.2: Comprehensive wiring diagram for installation.

## Important Considerations:

- Ensure appropriate fuses/breakers are installed on all positive lines as indicated in the diagram.
- The ACC ignition wire is recommended for vehicles with smart alternators to ensure proper charging initiation.
- Maintain proper cable gauge for the current draw to prevent voltage drop and overheating.

## 6. OPERATING INSTRUCTIONS

### 6.1. Battery Type Selection

Press the **"SELECT"** button on the charger to cycle through and choose the appropriate battery type for your auxiliary battery (AGM, Gel, Calcium, Lead Acid, or LiFePO4). The selected battery type will be indicated by an illuminated LED.

### 6.2. Reverse Charging Function



To activate reverse charging and revive a flat start battery from your auxiliary battery, press the **"REVERSE CHARGE"** button. This feature ensures your starter battery remains charged for off-road use.

# REVERSE CHARGING READY

This DC to DC battery charger allows to charge in both directions. Keep your starter battery fully charged and ready for thrilling off-road experiences.

Reverse Charge



Image 6.1: Location of the Reverse Charge button.

## 6.3. DC Charging Priority

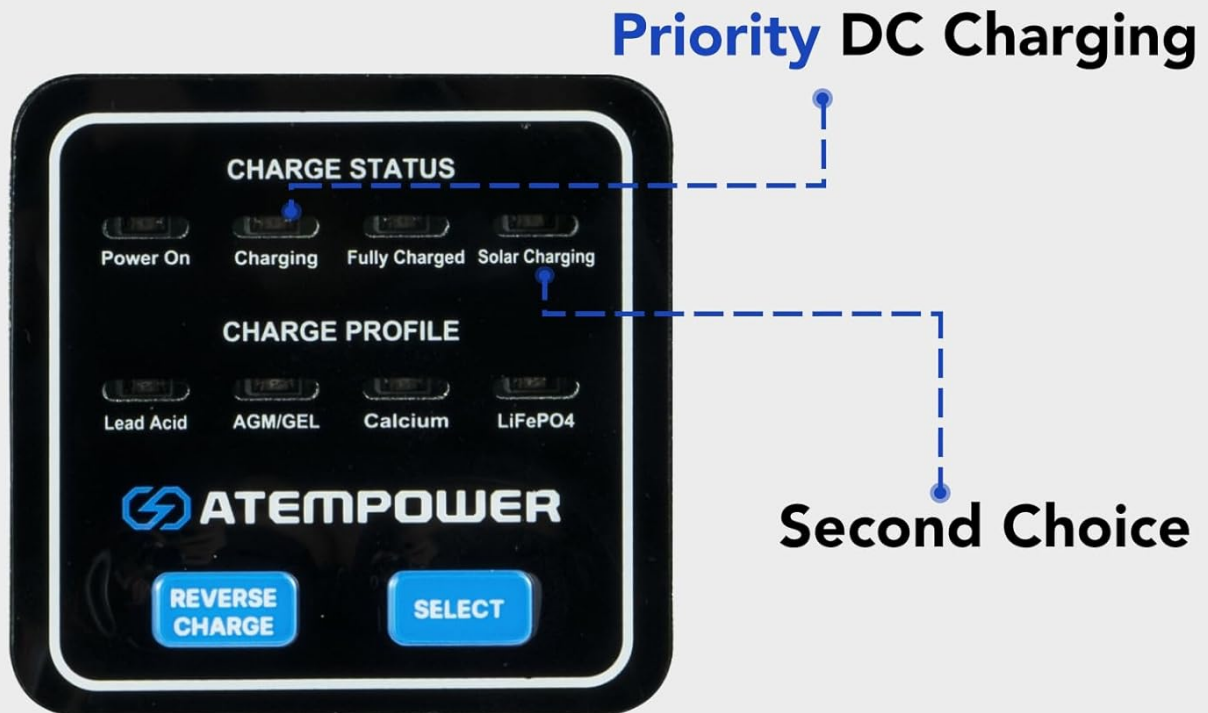
The charger is configured with DC charging priority. When both the vehicle's start battery (DC input) and solar panels are connected and meet the startup conditions, the charger will prioritize the vehicle battery input. If solar charging is already active, the system will continuously monitor the DC input and automatically switch to DC power if conditions are met.

- **Startup Conditions:**
  - DC Input: 13-24V
  - Solar Input: 13-26V



# PRIORITY DC CHARGING

This dc-dc battery charger is set with DC priority. When both vehicle's battery and solar panels meet the startup conditions, the vehicle battery input would be selected preferentially.



## Startup Conditions

- DC INPUT 13-24V
- SOLAR INPUT 13-26V

Image 6.2: DC Charging Priority logic.

### 6.4. LiON Mode for LiFePO4 Batteries

For LiFePO4 batteries, the intelligent LiON mode automatically activates a sleeping battery, ensuring prolonged and reliable use without manual intervention.

# ACTIVATES SLEEPING LiFePO4 BATTERY

This charger features an intelligent LiON mode that automatically activates your sleeping LiFePO4 battery, ensuring prolonged and reliable use.



Image 6.3: The charger's LiON mode activating a LiFePO4 battery.

## 7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your charger:

- Periodically inspect all wiring and connections for signs of wear, corrosion, or looseness.
- Keep the charger clean and free from dust and debris. Use a dry cloth for cleaning.
- Ensure adequate ventilation around the unit to prevent heat buildup.
- Check the condition of fuses/breakers regularly and replace if necessary with the correct rating.

## 8. TROUBLESHOOTING

If you encounter issues with your charger, refer to the following common troubleshooting steps:

- **Charger Not Activating:**

- Verify that both DC input (from start battery) and/or solar input meet the minimum voltage requirements (DC: 13-24V, Solar: 13-26V).
- Check all connections for proper seating and polarity.
- Inspect fuses/breakers for continuity.
- Ensure the ACC ignition wire (if used) is receiving power when the vehicle is running.

- **Low Charging Output:**

- Confirm the correct battery type is selected on the charger.
- Check for excessive voltage drop in wiring due to undersized cables or long runs.
- Ensure solar panels are clean and receiving adequate sunlight if solar charging is active.
- Verify the alternator is functioning correctly and providing sufficient voltage.

- **Overheating:**

- Ensure the charger is installed in a location with sufficient airflow.
- Remove any obstructions around the cooling fins.
- Reduce load if possible, or ensure the charger is not operating beyond its rated capacity.

If the issue persists after performing these checks, contact ATEM POWER customer support.

## 9. SPECIFICATIONS

Feature	Specification
Model	40A DC to DC Battery Charger
Product Dimensions	5.59"D x 7.48"W x 1.97"H (14.2cm D x 19cm W x 5cm H)
Item Weight	3.19 pounds (1.45 kg)
Output Voltage	12 Volts (DC) (Note: Input voltage range is 13-24V for DC, 13-26V for Solar)
Battery Compatibility	AGM, Gel, Calcium, Lead Acid, LiFePO4
Manufacturer	ATEM POWER
Color	Gray



# PRODUCT DIMENSIONS




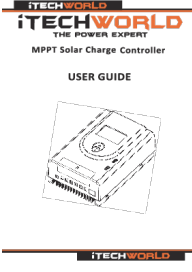

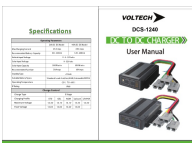
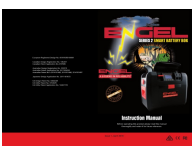

Image 9.1: Product dimensions.

## 10. WARRANTY AND SUPPORT

The ATEM POWER 40A DC to DC Battery Charger comes with a **1-year warranty** from the date of purchase, covering defects in materials and workmanship.

For technical support, warranty claims, or further assistance, please contact ATEM POWER customer service through their official website or the retailer where the product was purchased. Please have your purchase receipt and product model information ready.

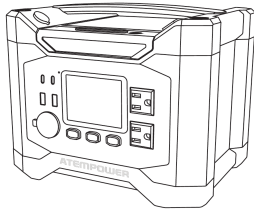
## Related Documents - 40A

	<p><a href="#">Ridge Ryder 20A &amp; 40A DC-DC Battery Charger with Solar Input Manual</a></p> <p>Comprehensive manual for the Ridge Ryder 20A and 40A DC-DC Battery Chargers with Solar Input, covering features, safety instructions, installation, operation, specifications, charging voltages, and warranty information.</p>
	<p><a href="#">iTechworld MPPT Solar Charge Controller User Guide: Operation, Installation, and Specifications</a></p> <p>Comprehensive user guide for the iTechworld 20A/40A MPPT Solar Charge Controller. Covers safety precautions, product overview, installation, unit operation, troubleshooting, specifications, and maintenance.</p>
	<p><a href="#">iTECHDCDC40 40A Intelligent DC-DC Battery Charger User Guide   iTECHWORLD</a></p> <p>Comprehensive user guide for the iTECHDCDC40, a 40A intelligent DC-DC and MPPT solar battery charger. Learn about safety precautions, product function, installation, wiring, and specifications for charging lead-acid and LiFePO4 batteries in vehicles.</p>
	<p><a href="#">Voltech DCS-1240 DC to DC Charger User Manual and Specifications</a></p> <p>Comprehensive user manual and technical specifications for the Voltech DCS-1240 DC to DC charger. This guide covers product features, safety precautions, installation, wiring, and troubleshooting for optimal performance in automotive and recreational applications.</p>
	<p><a href="#">Engel Series 2 Smart Battery Box Instruction Manual</a></p> <p>Comprehensive instruction manual for the Engel Series 2 Smart Battery Box, covering setup, operation, charging, power output, troubleshooting, and specifications. Learn how to connect, charge, and use the battery box for various applications.</p>
	<p><a href="#">ATEM POWER AP20DC DC-DC Charger User Manual and Installation Guide</a></p> <p>Comprehensive user manual for the ATEM POWER AP20DC DC-DC charger. Covers features, safety instructions, installation, usage, deep cycle battery maintenance, troubleshooting, technical specifications, and warranty information for charging auxiliary batteries in vehicles, caravans, and RVs using DC or solar power.</p>



PORTABLE POWER STATION

## USER MANUAL



PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION AND MAINTENANCE.  
FOLLOW ALL PROVIDED WARNING & SAFETY GUIDANCE, AND KEEP IT FOR FUTURE REFERENCE.

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AP PTPS 500W User Manual Administrator Atem Power AP500X Portable Generator — New Age CampingAtem Stationcdn shopify s files 1 0786 6892 3181 Station v 1702512521 |||

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LITHIUM IRON PHOSPHATE BATTERY

## USER MANUAL



AP20LFP-12V AP50LFP-12V AP100LFP-12V AP150LFP-12V AP200LFP-12V  
PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION AND MAINTENANCE.  
FOLLOW ALL PROVIDED WARNING & CAUTION, AND KEEP IT FOR FUTURE REFERENCE.  
V2.1

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AP20LFP 12V AP50LFP AP100LFP AP150LFP AP200LFP User Manual V2 1 Administrator Atem Power 100Ah Lithium Battery — New Age CampingAtem Manualcdn shopify s files 0786 6892 3181 v 1702442627 |||

LITHIUM IRON PHOSPHATE BATTERY USER MANUAL AP20LFP-12V AP50LFP-12V AP100LFP-12V AP150LFP-12V AP200LF ... el Standard Operation Temperature Storage Temperature Relative Humidity Certification 20Ah 10A 20A **40A** 32700 Cylindrical LiFePo<sub>4</sub> Battery Cell 50Ah 100Ah 150Ah 2,000 Cycles 10m 2 12.8V 10V-1...

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DC-DC CHARGER

AP20DC

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V3.1

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AP20DC User Manual VABG007A V3 cdr Administrator Atem Power 12V 20A DC to Battery Charger MPPT Dual System K 1 v 1670313998 cdn shopify s files 0271 4340 5666 |||

DC-DC CHARGER USERMANUAL AP20DC V3.1 ABOUT US ATEM POWER, born in June 2017, as a synonym for ex ... rytotheinputoftheDC-DCinthe appropriatepositiveandnegativeterminals.

Itishighlyrecommendedtoinstalla**40A**mpcircuitbreaker notincludedinthispackage thatshould beinstallednearthestarterbattery. Checkwheth...

lang:en score:25 filesize: 1.62 M page\_count: 9 document date: 2022-12-06





[ATEMPOWER VABG008A DC-DC Charger User Manual](#)

Comprehensive user manual for the ATEMPOWER VABG008A DC-DC charger, detailing features, installation, operation, safety instructions, troubleshooting, technical specifications, and warranty information for 12V vehicle and solar charging applications.

lang:en score:24 filesize: 4.05 M page\_count: 9 document date: 2021-11-03



[ATEMPOWER AP40DC DC-DC Charger User Manual | Installation, Operation & Safety Guide](#)

Comprehensive user manual for the ATEMPOWER AP40DC DC-DC charger. This guide covers installation instructions, operation for DC battery and solar input, safety precautions, troubleshooting, technical specifications, charging algorithms, and warranty information.

lang:en score:24 filesize: 1.59 M page\_count: 9 document date: 2022-12-06



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AP20LFP 12V AP50LFP AP100LFP AP150LFP AP200LFP User Manual V2 1 Administrator Atem Power 100AH LiFePO4 Lithium Iron Phosphate Battery Replace AG AP LFP BLK 20 50 VABY103A VABY104A VABY107A v 1716343821 cdn shopify s files 0061 7775 1143 |||

LITHIUM IRON PHOSPHATE BATTERY USER MANUAL AP20LFP-12V AP50LFP-12V AP100LFP-12V AP150LFP-12V AP200LF ... el Standard Operation Temperature Storage Temperature Relative Humidity Certification 20Ah 10A 20A **40A** 32700 Cylindrical LiFePo4 Battery Cell 50Ah 100Ah 150Ah 2,000 Cycles 10m 2 12.8V 10V-1...

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#### [\[pdf\] User Manual Accessories](#)

V2 Administrator User Manual ATEM POWER Portable Power Station 518Wh 500W Backup Lithium Battery Supply Built In MPPT Pure Sine Wave Inverter with LED Light Lightweight Emergency Solar Generator for RV Travel Camping Amazon au Garden A1OASwz92TL m media amazon images I ||| PORTABLE POWER STATION USER MANUAL PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION AND MAINTENANC ... A output3 USB-A output4 Li NiCoMn O2; 18650; 3,000mAh 48 21.6V\*24Ah=518Wh 8P6S 24.9V 24V 16.2V 18V **40A** 33.18A 100.5A,1S 0-40C -20-60C Support Support 16.2V-25.2V 115-120V,60Hz US ; 230V-240V,50Hz AUS...

lang:en **score:22** filesize: 1.93 M page\_count: 8 document date: 2022-02-07



#### [ATEMPOWER AP40DC DC-DC Charger User Manual](#)

User manual for the ATEMPOWER AP40DC DC-DC Charger. Covers key features, installation, usage, safety instructions, troubleshooting, technical specifications, and warranty information for charging auxiliary batteries in vehicles and RVs.

lang:en **score:21** filesize: 3.93 M page\_count: 9 document date: 2022-05-04



#### [ATEMPOWER AP30DC DC-DC Charger User Manual](#)

Comprehensive user manual for the ATEMPOWER AP30DC DC-DC Charger, covering installation, operation, safety, troubleshooting, and technical specifications for charging auxiliary batteries in vehicles, RVs, and boats.

lang:en **score:20** filesize: 3.6 M page\_count: 9 document date: 2022-05-04



[ATEM POWER AP20DC DC-DC Charger User Manual and Installation Guide](#)

Comprehensive user manual for the ATEM POWER AP20DC DC-DC charger. Covers features, safety instructions, installation, usage, deep cycle battery maintenance, troubleshooting, technical specifications, and warranty information for charging auxiliary batteries in vehicles, caravans, and RVs using DC or solar power.

lang:en score:20 filesize: 4 M page\_count: 9 document date: 2022-05-04



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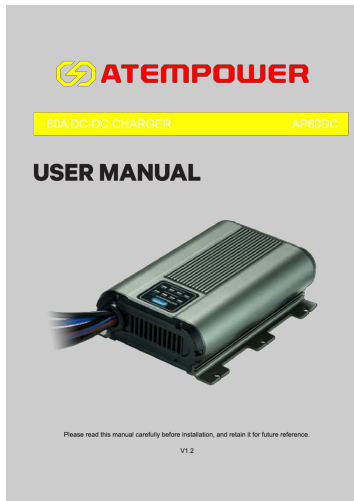
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AP25DC 3P AP40DC USER MANUAL V1 1 Administrator Atem Power 40A DC to Battery Charger MPPT Dual System 12V Smart HubVABG007A VABG008A User Manual 1cdn.shopify/s/files/0271/4340/5666/VABG007A v 1743387399 |||

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lang:en score:19 filesize: 3.87 M page\_count: 12 document date: 2024-12-09





### [ATEMPOWER AP60DC 60A DC-DC Charger User Manual](#)

Comprehensive user manual for the ATEMPOWER AP60DC 60A DC-DC Charger, covering installation, operation, safety instructions, technical specifications, error codes, maintenance, and warranty information. Designed for RVs, 4x4s, boats, and solar systems.

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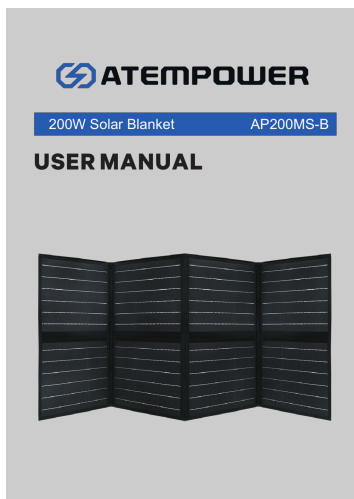


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AP100DCHP MP USER MANUAL V1 cdr Administrator Atem Power 12V 100Ah Slimline Lithium Battery Built in 40A DC ChrgAP PC CY5 A 0cdn shopify s files 1 0271 4340 5666 AP v 1699944452 User ManualAtem — New Age CampingAtem ChrgAtem to Charger ManualAP 0786 6892 3181 Manual 1730105135cdn ||| |||

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200W Solar Blanket USER MANUAL AP200MS-B ABOUT US ATEM POWER, born in June 2017, as a synonym for ... be followed when installing this unit. 12V Start / Vehicle Battery Fuse / Breaker Optional 12V - **40A** MPPT Solar Panel Input 300 W 30A/Isc / 25V/OC Fuse / Breaker Optional ACC Ignition Wire Opt...

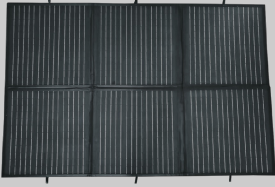
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300W Solar Blanket

AP300MS-B

## USER MANUAL



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300W Solar Blanket USER MANUAL AP300MS-B ABOUT US ATEM POWER, born in June 2017, as a synonym for ... be followed when installing this unit. 12V Start / Vehicle Battery Fuse / Breaker Optional 12V - **40A** MPPT Solar Panel Input 300 W 30A/Isc / 25V/OC Fuse / Breaker Optional ACC Ignition Wire Opt...  
lang:en score:11 filesize: 5.98 M page\_count: 16 document date: 0000-00-00