

CTEK 40-315

CTEK D250SE Battery Charger User Manual

Model: 40-315 | Brand: CTEK

1. PRODUCT OVERVIEW

The CTEK D250SE is a sophisticated, fully automatic 5-step battery charger designed to provide up to 20A of power to 12V lead-acid or lithium (LiFePO4) service batteries ranging from 40-300Ah. It features selectable charge algorithms tailored for AGM and lithium batteries, ensuring optimal charging performance.

This versatile unit supports dual input sources, drawing power from alternators (including smart ECU-controlled alternators), solar panels, and wind power. A key functionality is its ability to automatically redirect maintenance charge power to the starter battery once the service battery is fully charged. Equipped with a built-in temperature sensor, the D250SE optimizes charging regardless of external weather conditions, delivering clean voltage and current without surges or spikes, thus protecting sensitive vehicle electronics.



Figure 1: The CTEK D250SE 20A 12V Battery Charger.

2. INSTALLATION GUIDE

The D250SE is an onboard charger designed for installation inside your vehicle. For optimal performance and ease of cable routing, it is recommended to place the unit as close as possible to the service battery.

2.1 Basic Wiring Connections

For a basic installation, you will primarily need three main cable connections:

- Input Alternator to Starter Battery:** Connect a cable from the 'Input Alternator' terminal on the D250SE to the positive terminal of your starter battery. This allows the charger to draw power from the vehicle's alternator.
- Output Service Battery to Service Battery:** Connect another cable from the 'Output Service Battery' terminal on the D250SE to the positive terminal of your service battery. This is where the charged power is delivered.
- Earth Connection:** Connect a third cable from the 'Earth Connection' terminal on the D250SE to a suitable earth point on your vehicle's body. This ensures proper grounding of the unit.

Refer to the user manual for detailed information on recommended cable sizes and fuse requirements for a safe and efficient installation.

2.2 Alternator and Battery Type Considerations

- Smart Alternators:** If your vehicle is equipped with a smart alternator (ECU-controlled), connect the red cable located on the side of the D250SE to the DIN 72552 ignition feed. This ensures proper communication and charging optimization with smart alternator systems.
- Conventional Alternators:** For vehicles with conventional alternators, the red cable can remain disconnected. The D250SE will still function correctly.

- **AGM Batteries:** If you are using an AGM service battery, connect the black cable on the side of the unit to an earth point on your vehicle's body.
- **Lithium Batteries:** For lithium (LiFePO4) service batteries, connect the black cable on the side of the unit to the positive terminal of your starter battery.

2.3 Temperature Sensor Connection

The D250SE includes a temperature sensor to optimize charging based on ambient temperature. Simply tape the temperature sensor near the positive terminal of your service battery. This allows the charger to adjust its output for maximum efficiency and battery longevity.



Figure 2: Example of D250SE connections (refer to manual for specific wiring diagrams).

3. OPERATING INSTRUCTIONS

Once properly installed and connected, the CTEK D250SE operates automatically. When the green LED indicator illuminates, the unit will initiate its fast, fully automatic 5-step charging program.

3.1 Charging Process

The 5-step charging process is designed to optimize battery performance and longevity. It intelligently assesses the battery's state and delivers the appropriate charge. The D250SE ensures your service battery receives the necessary power and, once fully charged, redirects maintenance power to your starter battery.

3.2 Solar Panel Integration

The D250SE allows for direct connection of a solar panel to its dedicated solar power terminal. This terminal features a built-in Maximum Power Point Tracking (MPPT) regulator, which optimizes the voltage and current from the solar panel to ensure your battery receives the maximum possible charge in the shortest time. The solar panel can be used independently or in conjunction with the vehicle's alternator for enhanced charging capabilities. The easy-to-read LED display on the unit will indicate the power source currently in use.



Figure 3: D250SE showing solar panel input and battery outputs.

4. MAINTENANCE

The CTEK D250SE is designed for durability and ease of use. It is splash and dustproof, making it suitable for various environments. Due to its advanced design, there is generally no need to disconnect the battery during operation, as the unit is specifically engineered to prevent damage to vehicle electronic systems.

Regularly inspect all cable connections to ensure they are secure and free from corrosion. Keep the unit clean from excessive dust or debris. No user-serviceable parts are inside the unit; refer to qualified service personnel for any repairs.

5. SPECIFICATIONS

Feature	Detail
Model Number	40-315
Product Dimensions	7.6 x 4.3 x 2.6 inches (10.9cm D x 19.3cm W x 6.6cm H)
Item Weight	1.54 pounds (700 Grams)
Output Voltage	14.4 Volts (DC)
Brand	CTEK
Manufacturer	CTEK

Color	Black
Country of Origin	China

6. WARRANTY AND SUPPORT




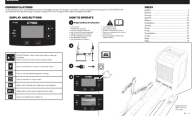
6.1 Warranty Information

The CTEK D250SE comes with a **2-year warranty**. Please retain your proof of purchase for warranty claims. For full terms and conditions, refer to the complete warranty documentation provided with your product or visit the official CTEK website.

6.2 Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact CTEK customer support. You can find contact information on the official CTEK website or through the retailer where you purchased the product. Ensure you have your product model number (40-315) and serial number (if applicable) ready when contacting support.

Related Documents - 40-315

	CTEK D250SE and SMARTPASS 120S User Manual Comprehensive user manual for the CTEK D250SE DC/DC Battery Charger and SMARTPASS 120S Power Management System, covering installation, functions, safety, and technical specifications for lead-acid and lithium-ion batteries.
	CTEK MXS 5.0 Battery Charger User Manual Comprehensive user manual for the CTEK MXS 5.0 (1090) 12V battery charger, covering safety instructions, operating procedures, charging programs, technical specifications, and warranty information.
	CTEK PRO25 CIC Battery Charger User Manual Comprehensive user manual for the CTEK PRO25 CIC battery charger, covering lead-acid and lithium batteries. Includes charging programs, indicators, troubleshooting, and technical specifications.
	CTEK PRO60 Professional Battery Charger Manual A comprehensive guide to operating and understanding the CTEK PRO60 professional switch-mode battery charger, covering its features, charging programs for lead-acid and lithium batteries, technical specifications, and troubleshooting.



[CTEK MXS 7.0 Battery Charger User Manual](#)

Comprehensive user manual for the CTEK MXS 7.0 battery charger, detailing its features, charging programs, technical specifications, and safety guidelines for all types of 12V lead-acid batteries.



[CTEK NXT 15 User Manual - 12V 15A Battery Charger](#)

User manual for the CTEK NXT 15, a 12V 15A battery charger. Provides detailed instructions on safety, operation, charging modes for lead-acid and lithium batteries, technical specifications, and warranty information.