allsun EM285

All-Sun EM285 Automotive Electric Circuit Tester User Manual

Model: EM285

1. Introduction

The All-Sun EM285 is an automotive electric circuit tester designed for diagnosing electrical systems in vehicles. It operates within a 6-24V DC range and is intended to assist in identifying electrical faults efficiently.

This manual provides instructions for the safe and effective use of the EM285 circuit tester, covering setup, operation, maintenance, and troubleshooting.

Image 1.1: The All-Sun EM285 Automotive Electric Circuit Tester, showing the main unit, probe, and connected red and black alligator clips.

2. Safety Information

- **DC Voltage Only:** This device is designed for DC voltage systems ranging from 6V to 24V.**Do not use on AC voltage.** Using the tester on AC voltage can cause damage to the unit and pose a safety risk.
- **Overload Protection:** The unit incorporates an automatic current disconnection feature. If the current

exceeds 8A, the unit will automatically disconnect the current to prevent damage.

- **Read Manual:** Always read this manual carefully before operating the product to ensure proper and safe usage.
- **Eye Protection:** Always wear appropriate eye protection when working with automotive electrical systems.
- **Insulated Handles:** Ensure hands are dry and use the tool with insulated handles to prevent electrical shock.

3. Product Overview and Components

Familiarize yourself with the components of the EM285 circuit tester before use.

Image 3.1: Labeled diagram of the EM285 components.

- **Probe:** The pointed tip used to contact electrical circuits.
- **LED Indicator:** Lights up to indicate positive or negative voltage.
- **Power Switch:** Used to apply positive or negative voltage to the probe tip.
- **Black Clip:** Connects to the negative terminal (ground) of the vehicle battery.
- **Red Clip:** Connects to the positive terminal of the vehicle battery.
- **Auxiliary Ground Lead:** An additional ground connection for specific tests.

Image 3.2: The probe tip can be detached for maintenance or replacement.

4. Setup

Before using the EM285, ensure it is properly connected to the vehicle's battery.

1. **Connect the Red Clip:** Attach the red alligator clip to the positive (+) terminal of the vehicle's battery.

2. **Connect the Black Clip:** Attach the black alligator clip to the negative (-) terminal (ground) of the vehicle's battery.
3. **Verify Connection:** Once connected, the unit is powered and ready for use. The cable length is approximately 5 meters (16 feet), allowing access to various points around the vehicle.

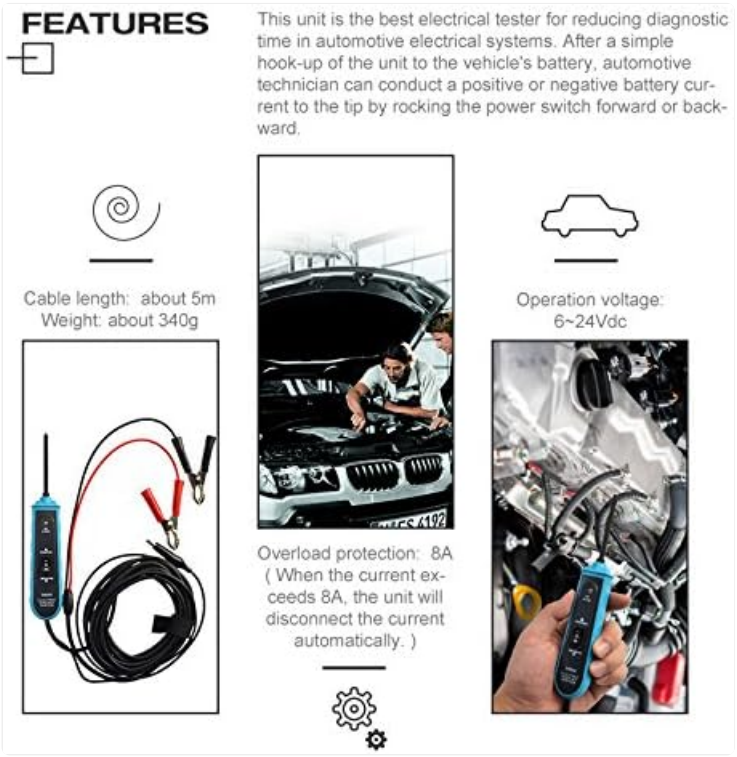

Image 4.1: Red and black alligator clips for connecting to the vehicle battery.

5. Operating Instructions

The EM285 can perform various diagnostic functions. Always ensure the unit is properly connected to the vehicle's battery before proceeding.

5.1. Testing Continuity

- Connect the auxiliary ground lead to a known good ground.
- Touch the probe tip to the circuit or component you wish to test for continuity.
- If the circuit is continuous, the LED indicator will illuminate.

5.2. Testing Polarity of a Voltage

- Touch the probe tip to the point where you want to test the voltage polarity.
- The LED indicator will show red for positive voltage and green for negative voltage.

5.3. Checking Lamps and Electric Motors

- Connect the tester to the vehicle battery.
- Touch the probe tip to the positive terminal of the lamp or motor.
- Use the power switch to apply positive voltage (rock forward) or negative voltage (rock backward) to the component. Observe if the lamp illuminates or the motor operates.

5.4. Locating Short Circuits

- Connect the tester to the vehicle battery.

- Trace the circuit suspected of having a short.
- When the probe tip contacts a shorted point, the LED indicator will change, or the overload protection may activate.

5.5. Testing for Bad Ground Contacts

- Connect the tester to the vehicle battery.
- Touch the probe tip to the suspected ground point.
- If the ground is good, the LED indicator will show a clear negative reading. A weak or absent reading may indicate a poor ground connection.

Image 5.1: The EM285 tester held in hand during operation.

6. Maintenance

- **Cleaning:** Wipe the unit with a soft, dry cloth after each use. Do not use abrasive cleaners or solvents.
- **Storage:** Store the EM285 in a dry place, away from direct sunlight and extreme temperatures.
- **Probe Tip:** Ensure the probe tip is clean and sharp for accurate readings. The probe can be taken apart for cleaning or replacement if necessary.
- **Cable Inspection:** Regularly inspect the cable and alligator clips for any signs of wear, cuts, or damage. Replace if damaged.

7. Troubleshooting

- **No Power/Indicator Light:** Ensure the red and black alligator clips are securely connected to the correct terminals of a functioning 6-24V DC battery. Check for corrosion on battery terminals or clips.
- **Inaccurate Readings:** Verify that the probe tip is making good contact with the circuit. Ensure the battery connections are stable.
- **Overload Protection Activation:** If the unit automatically disconnects, it indicates that the current exceeded 8A. Disconnect the probe, identify the cause of the high current, and rectify it before retesting.
- **Probe Tip Damage:** If the probe tip is bent or dull, it may affect contact and readings. The probe tip can be detached and replaced if needed.

8. Specifications

Specification	Value
Model Number	EM285
Operating Voltage	6-24 Volts DC
Cable Length	Approximately 5 meters (16 feet)
Overload Protection	8A Automatic Disconnection
Measurement Type	Voltmeter or Ohmmeter
Item Weight	272 g
Manufacturer	all-sun
Country of Origin	China

9. Warranty

The All-Sun EM285 Automotive Electric Circuit Tester includes safety insurance as part of its warranty. For specific details regarding warranty coverage and duration, please refer to the product packaging or contact the manufacturer directly.

10. Support

For technical assistance, troubleshooting beyond this manual, or inquiries regarding your All-Sun EM285 circuit tester, please contact the manufacturer or your point of purchase. Ensure you have your model number (EM285) and any purchase details available when seeking support.