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› AUTO METER AMR-SB-5/2 800 Amp Variable Load Battery/Electrical System Tester User Manual

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Model: AMR-SB-5/2

1. INTRODUCTION AND OVERVIEW

The AUTO METER AMR-SB-5/2 is a professional-grade 800 Amp variable load battery and electrical system tester designed for both 6V and 12V automotive and commercial starting batteries. This device allows for comprehensive testing of battery condition, load capacity, alternator regulation, and starter draw.

It features a carbon pile load for precise testing, an analog display for clear readings, and a 15-second timer for controlled load application. The integrated cooling fan ensures optimal performance during extended use.



Image 1.1: Angled view of the AMR-SB-5/2 Battery/Electrical System Tester, showing the front panel with meters and controls, and the side cooling fan.

2. SAFETY INFORMATION

Always observe the following safety precautions when operating the AMR-SB-5/2 tester to prevent injury or damage to the equipment or vehicle.

- Wear appropriate eye protection (safety glasses) and protective clothing.
- Ensure adequate ventilation when testing batteries, as they can produce explosive gases.
- Do not smoke or allow sparks or flames near the battery or tester.
- Connect the tester clamps securely to the battery terminals. A loose connection can cause arcing and sparks.
- Always connect the positive (red) clamp to the positive (+) battery terminal and the negative (black) clamp to the negative (-) battery terminal.
- Avoid touching the battery terminals or clamps together when connected to the battery.
- Keep the tester away from water or other liquids.

- Before disconnecting the tester, ensure the load knob is turned to the "OFF" position and the fan override switch is disengaged to prevent arcing.
- If the fan override switch is used, ensure it is turned off before disconnecting the clamps. This prevents arcing or potential explosion from battery gases.

3. PRODUCT COMPONENTS

The AMR-SB-5/2 tester includes the following main components:

- **Main Tester Unit:** Houses the analog meters, load control, timer, and cooling fan.
- **Analog Ammeter (D.C. AMPS):** Displays the current draw during load tests.
- **Analog Voltmeter (D.C. VOLTS):** Displays battery voltage and charge status.
- **Load Knob (AMPS):** Variable control for applying a carbon pile load.
- **15-Second Timer Button:** Initiates the load test for a fixed duration.
- **Fan Override Switch:** Manually controls the cooling fan.
- **Heavy-Duty Battery Clamps:** Red for positive (+), Black for negative (-).



Image 3.1: Front view of the AMR-SB-5/2 tester, highlighting the dual analog meters for DC Amps and DC Volts, the load knob, and

the 15-second timer button.



Image 3.2: Close-up view of the heavy-duty red (positive) and black (negative) battery clamps.

4. SETUP

Follow these steps to prepare the tester for use:

1. Ensure the work area is well-ventilated and free from flammable materials.
2. Verify the battery terminals are clean and free of corrosion. Clean them if necessary.
3. Ensure the load knob on the tester is turned fully counter-clockwise to the "OFF" position.
4. Connect the red positive (+) clamp to the positive (+) battery terminal.
5. Connect the black negative (-) clamp to the negative (-) battery terminal. Ensure both connections are secure.
6. The voltmeter will now display the battery's open-circuit voltage.

5. OPERATING INSTRUCTIONS

5.1. Battery Check (6V & 12V)

This test measures the battery's open-circuit voltage to give an initial indication of its state of charge.

1. Connect the tester to the battery as described in the "Setup" section.
2. Observe the D.C. VOLTS meter. The needle will indicate the battery's voltage.
3. Refer to the "STATE OF CHARGE" scale on the voltmeter for an approximate charge level.

5.2. Load Test (6V & 12V)

The load test assesses the battery's ability to deliver current under a simulated load, providing a more accurate measure of its health.

1. Ensure the tester is connected to the battery.

2. Press the "PUSH TO START 15 SECOND TIMER" button. The cooling fan will activate.
3. Slowly turn the "LOAD AMPS" knob clockwise to apply the desired load. For a standard battery test, apply a load equal to half the battery's Cold Cranking Amps (CCA) rating.
4. Observe both the D.C. AMPS and D.C. VOLTS meters during the 15-second test.
5. Note the voltage reading at the end of the 15-second period while the load is still applied.
6. Immediately turn the "LOAD AMPS" knob fully counter-clockwise to the "OFF" position once the 15-second timer expires or the test is complete.
7. Compare the observed voltage to the "BATTERY LOAD TEST TEMPERATURE COMPENSATION CHART" located on the side of the unit (refer to Image 5.1) to determine if the battery passes or fails.

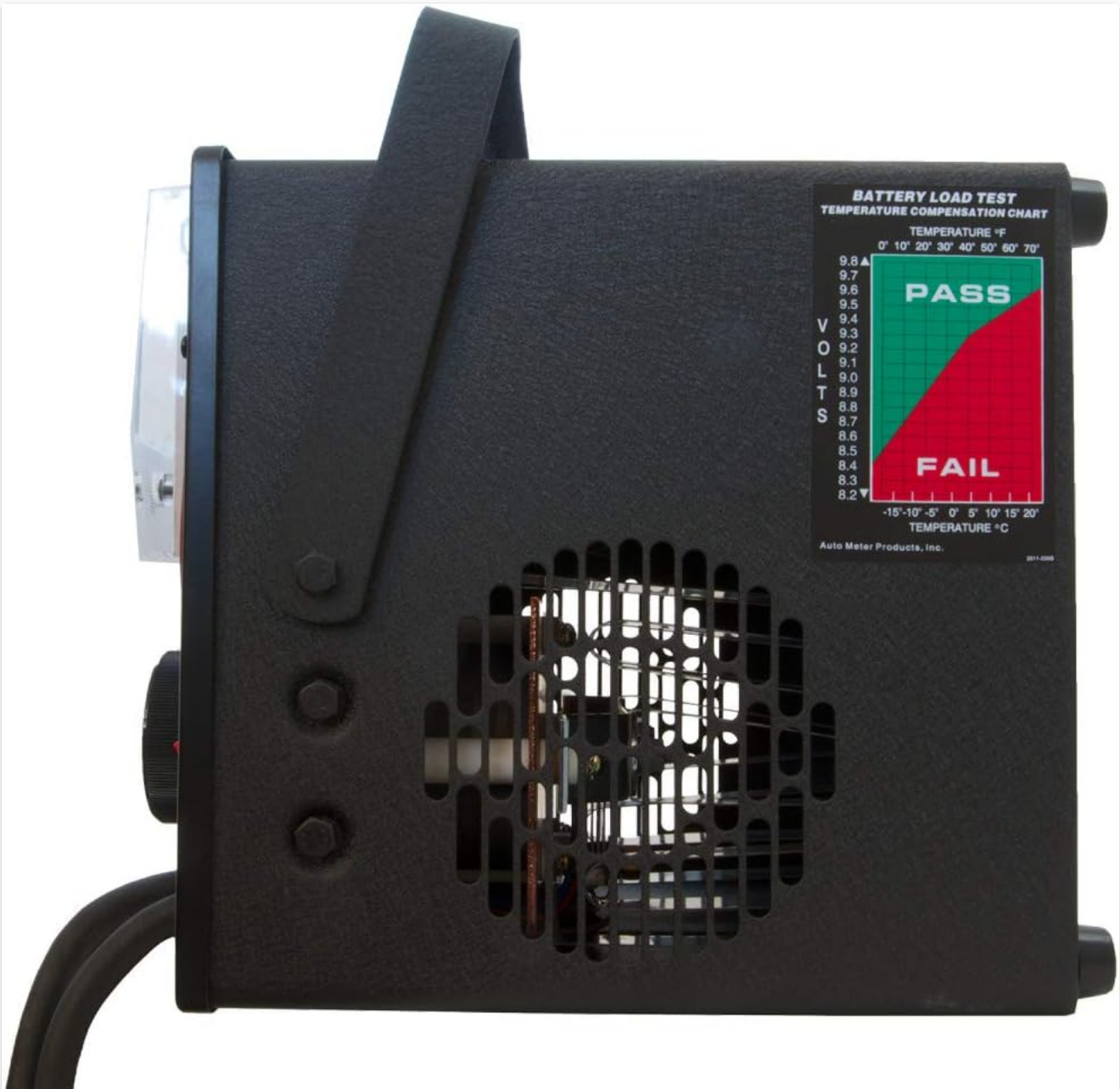


Image 5.1: Side view of the AMR-SB-5/2 tester, showing the cooling fan and the Battery Load Test Temperature Compensation Chart, which helps interpret test results based on ambient temperature.

5.3. Alternator Regulation Test (12V Systems Only)

This test checks if the vehicle's alternator is properly charging the battery and regulating voltage.

1. With the tester connected to the battery, start the vehicle's engine.

2. Increase engine RPM to approximately 1500-2000 RPM.
3. Observe the D.C. VOLTS meter. The voltage should typically be between 13.5V and 14.8V. Refer to the "ALT & REG TEST" section on the voltmeter.
4. If the voltage is outside this range, the alternator or voltage regulator may be faulty.

5.4. Starter Draw Test (12V Systems Only)

This test measures the current drawn by the starter motor during engine cranking, indicating its efficiency.

1. Ensure the tester is connected to the battery.
2. Disable the vehicle's ignition system (e.g., pull the fuel pump fuse or ignition coil relay) to prevent the engine from starting.
3. Crank the engine for a brief period (e.g., 5-10 seconds) while observing the D.C. AMPS meter.
4. Note the maximum current drawn by the starter. Compare this reading to the vehicle manufacturer's specifications.
5. Re-enable the ignition system after the test.

6. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your AMR-SB-5/2 tester.

- **Cleaning:** Wipe the tester's exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Clamp Inspection:** Regularly inspect the battery clamps and cables for signs of wear, damage, or corrosion. Replace if necessary to ensure good electrical contact and safety.
- **Storage:** Store the tester in a clean, dry environment away from extreme temperatures and direct sunlight.
- **Cooling Fan:** Ensure the cooling fan vents are clear of obstructions to maintain proper airflow.

7. TROUBLESHOOTING

If you encounter issues with your AMR-SB-5/2 tester, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No voltage reading on D.C. VOLTS meter.	Loose or incorrect clamp connection; completely dead battery.	Ensure clamps are securely connected to the correct battery terminals. Check battery voltage with a multimeter.
No current reading on D.C. AMPS meter during load test.	Load knob not turned clockwise; faulty internal circuit.	Turn the load knob clockwise to apply load. If still no reading, contact support.
Tester gets excessively hot.	Cooling fan obstructed or not functioning; prolonged load application.	Ensure fan vents are clear. Do not exceed 15-second load test duration. Check fan operation.
Inaccurate readings.	Corroded battery terminals; faulty tester calibration.	Clean battery terminals. If issues persist, contact support for calibration or service.

8. SPECIFICATIONS

Detailed technical specifications for the AUTO METER AMR-SB-5/2 Battery/Electrical System Tester:

Feature	Description
Model	AMR-SB-5/2
Applications	6V & 12V Automotive & Commercial Starting Batteries, 12V Starting and Charging Systems
6 Volt Tests	Battery Check, Load Test
12 Volt Tests	Battery Check, Load Test, Alternator Regulation Test, Starter Draw Test
Carbon Pile Load (12V)	800 Amp
Carbon Pile Load (6V)	400 Amp
Battery CCA Range	0-1600 CCA
Alternator Test	Charging Voltage
Stator Diode Test	No
Starter Draw Test	Yes (Simulated)
External Volt Leads	No
Amp Probe	No
15 Sec Timer	Yes
Voltage Drop Test	No
Cooling	5" Fan
Display	Analog
Volt Scale	0-16 Volts
Item Weight	20 lbs (9.07 kg)
Power Source	Battery Powered
Minimum Operating Voltage	6 Volts (DC)
Measurement Type	Ammeter, Voltmeter
UPC	046074119156

9. WARRANTY AND SUPPORT

For warranty information and technical support regarding your AUTO METER AMR-SB-5/2 tester, please contact the vendor directly. The manufacturer recommends contacting them for specific warranty details and service inquiries.

Manufacturer: AMR (Auto Meter Products Inc.)

Please have your model number (AMR-SB-5/2) and UPC (046074119156) available when contacting support.