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> OBDResource CP20 Automotive Circuit Tester User Manual

OBDResource CP20

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Model: CP20

1. INTRODUCTION

The OBDResource CP20 is a versatile 4-in-1 automotive electrical system diagnostic tool designed for 0-80V vehicle electrical systems. It integrates the functionalities of a digital multimeter, digital oscilloscope, automotive circuit tester, and component activation tool into a single portable device. This manual provides detailed instructions for its safe and effective use.

The CP20 features enhanced protection mechanisms against reverse polarity, excessive input voltage, and overloaded current, ensuring safe and convenient operation for various automotive diagnostic tasks.

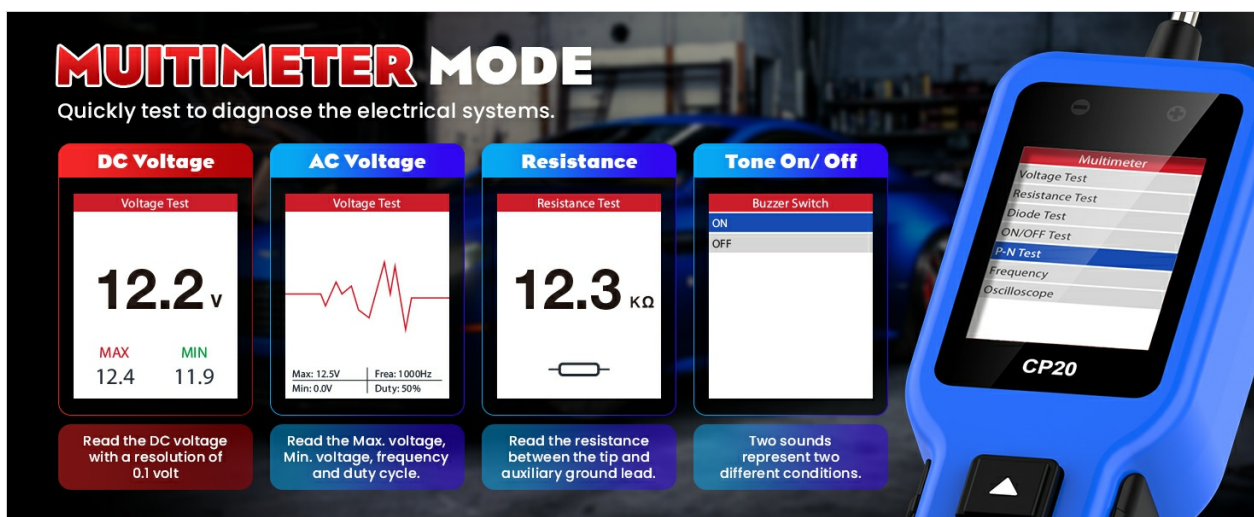


Figure 1.1: Overview of OBDResource CP20 functions including Multimeter, Oscilloscope, and Component Activation.

2. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1 × Power Scan Unit

- 1 × Probe Tip
- 1 × Hookup Clips
- 1 × User Manual
- 1 × 16.5FT Extension Cable

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Video 2.1: An unboxing and practical testing demonstration of the OBDResource CP20 circuit tester.

3. DEVICE OVERVIEW AND COMPONENTS

Familiarize yourself with the main components of the CP20 circuit tester:



Figure 3.1: Exploded view illustrating the CP20's components, including the removable probe, head lights, TFT display, LED indicator, Up/Down buttons, OK key, Back key, and buzzer.

4. SETUP AND CONNECTION

To begin using the CP20, connect it to your vehicle's 12V or 24V electrical system:

1. Connect the red battery clip to the positive (+) terminal of the vehicle's battery.
2. Connect the black battery clip to the negative (-) terminal of the vehicle's battery or a reliable chassis ground.
3. Ensure connections are secure before proceeding with any tests.



Figure 4.1: The CP20 connected to a vehicle battery, ready for operation.

5. OPERATING MODES AND FUNCTIONS

The CP20 operates in two primary modes: Multimeter and Oscilloscope Combination Mode, and Component Activation Mode. Use the navigation buttons to switch between modes and functions.

5.1 Multimeter and Oscilloscope Combination Mode

This mode allows for comprehensive electrical system diagnostics.

- **Voltage Test:** Measures DC voltage with a resolution of 0.1V. Displays maximum and minimum voltage readings.
- **Resistance Test:** Measures resistance and can be used to diagnose component status, such as fuses, and check grounding.
- **Diode Test:** Checks the condition of diodes.
- **Continuity (ON/OFF) Test:** Tests the continuity of a circuit to identify open or short circuits. Two distinct sounds indicate different conditions.
- **Polarity (P-N) Test:** Determines the polarity of the circuit. The device features red/green polarity indicator lights and an audible beep.

- **Frequency Test:** Measures the frequency and duty cycle of a signal.
- **Oscilloscope Mode:** Provides real-time waveform monitoring for signals such as camshaft, crankshaft, injector, throttle, and CAN bus polarity detection. Displays maximum/minimum voltage, frequency, and duty cycle.

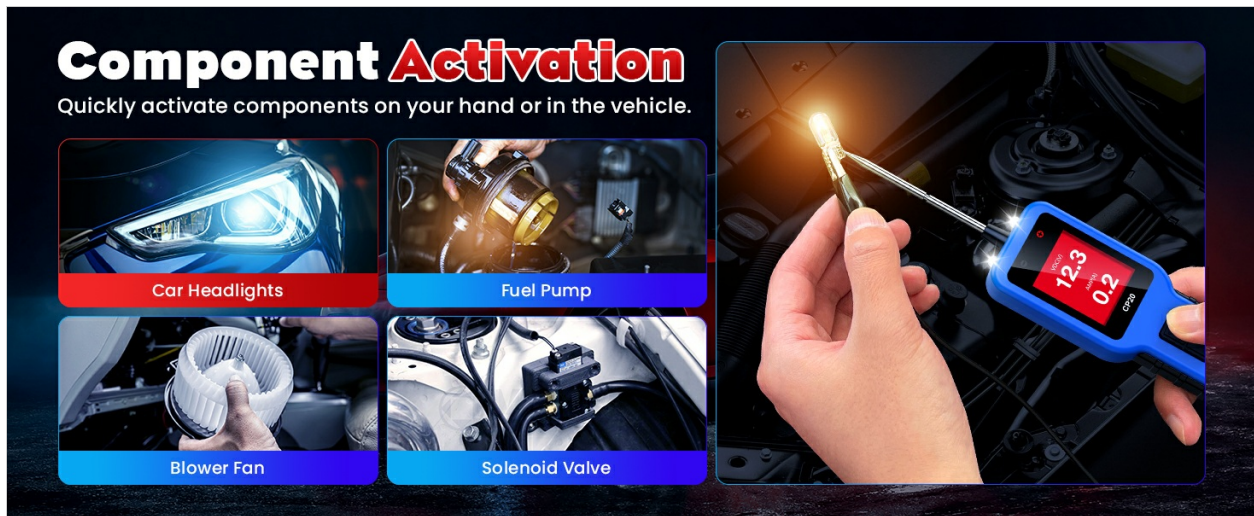


Figure 5.1: Visual representation of various test results and modes on the CP20's display.



Figure 5.2: Display features including 180° screen rotation and data freeze for detailed analysis.

5.2 Component Activation Mode

This mode allows you to activate automotive components directly via the probe to verify their operation. This is useful for testing lights, motors, wipers, cooling fans, relays, and injectors.

- Connect the probe to the component you wish to activate.
- Use the device controls to send power to the component.
- The CP20 features a dual protection system against overcurrent and overheating with millisecond response times, preventing short-circuit damage during activation.

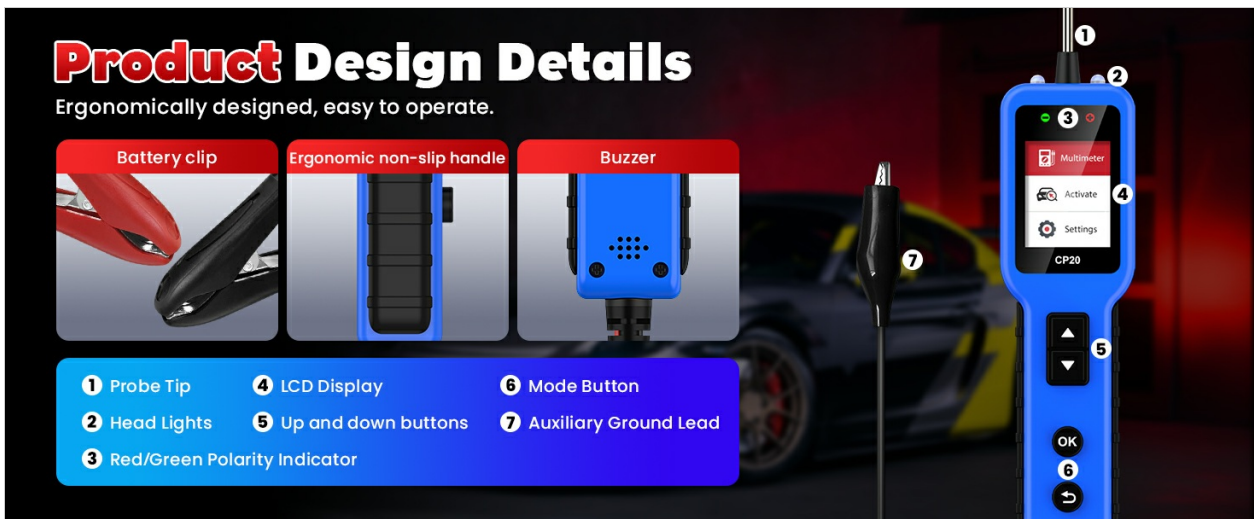


Figure 5.3: Examples of automotive components that can be activated and tested using the CP20.

6. ADVANCED FEATURES

6.1 Polarity Identification

The CP20 quickly identifies circuit polarity using visual and audible indicators. Red lights indicate positive voltage, while green lights indicate negative or ground.

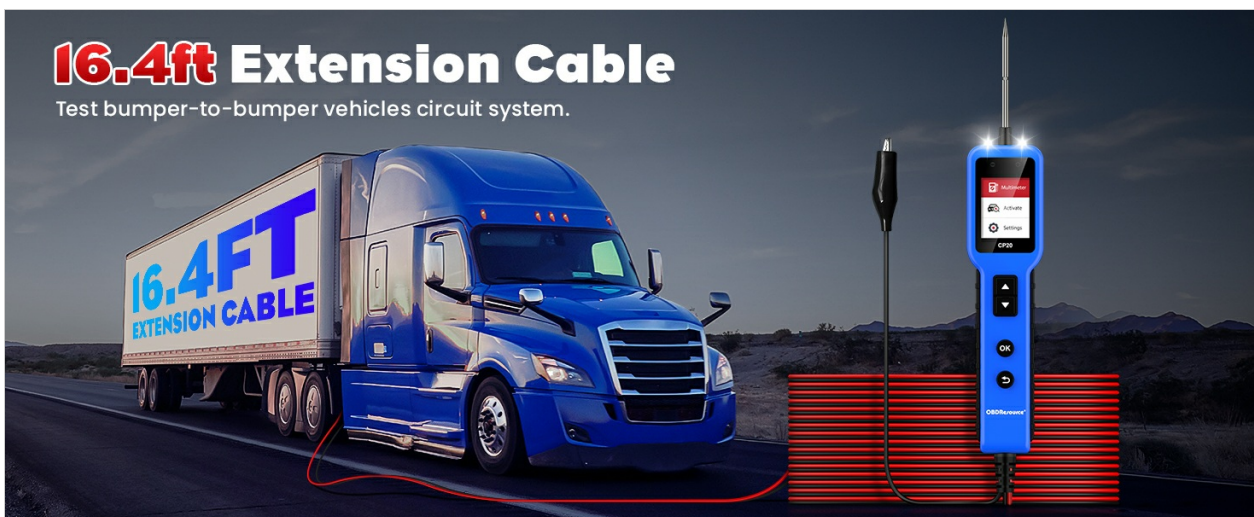


Figure 6.1: Polarity indicator lights on the CP20 display.

6.2 Continuity Testing

Perform fast and accurate continuity tests to efficiently check switches, relays, and diodes, ensuring smooth system operation.

Extremely Wide Application Range

Compatible with 12V, 24V vehicles.



Figure 6.2: Demonstrating continuity testing with the CP20.

6.3 Short Circuit and Ground Fault Location

The CP20 assists in quickly locating bad ground circuits, identifying faulty ground connections, and pinpointing short circuits along the wiring harness, saving time and effort.

Easy To Use And Time Saving

CP20	Multimeter
 <ul style="list-style-type: none">Smaller SizeFewer ButtonsNo JacksSeparate Display For Each FunctionOne Probe & Three ClipsTime saving, easy one-handed operation, clear function understanding	 <ul style="list-style-type: none">Larger SizeMore ButtonsMore JacksNo Separate Function DisplayMore Than One ProbeDifficult to operate with one hand, complicated operation to get results, possible errors, more time spent.

Figure 6.3: Using the CP20 to diagnose wiring harness issues.

6.4 Multi-Language Support

The tool supports 12 languages, including English, German, French, Japanese, and more, enhancing usability for a global audience.

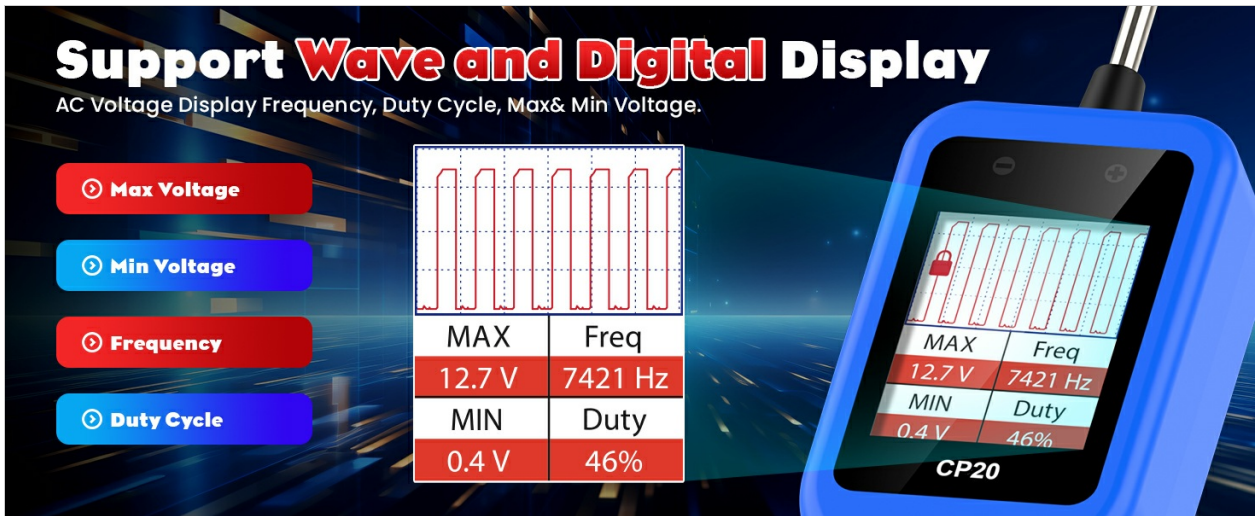


Figure 6.4: Language selection interface on the CP20.

6.5 Wide Compatibility and Extended Cable

The CP20 is compatible with 0-80V vehicle electrical systems, making it suitable for cars, trucks, boats, excavators, motorcycles, and other vehicles. It features a 16-foot extension cable, allowing for bumper-to-bumper circuit system testing.

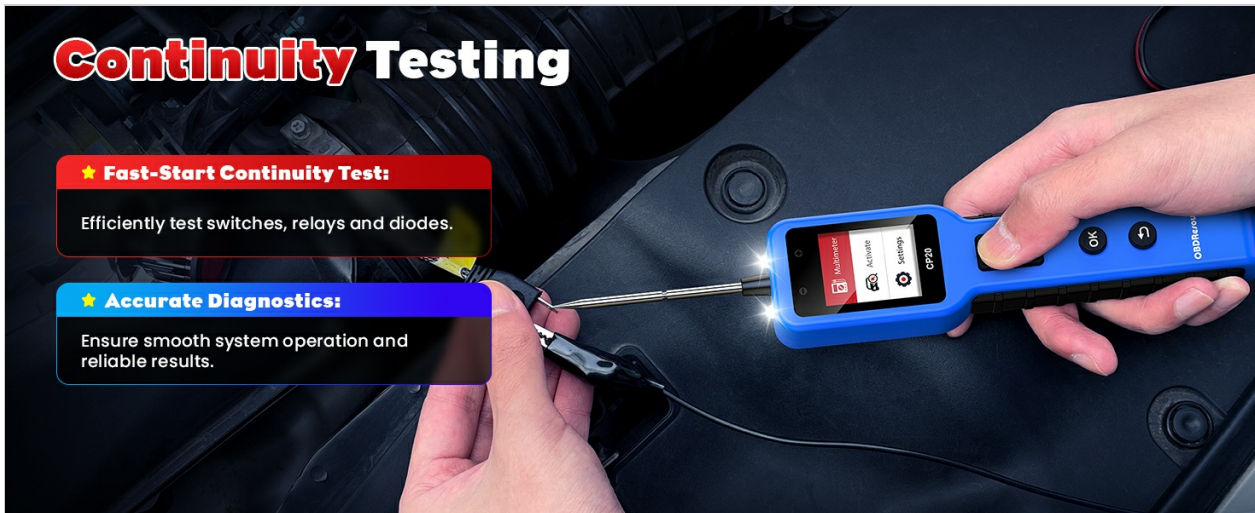


Figure 6.5: The CP20's wide application range and the utility of its 16.4ft extension cable.

7. SPECIFICATIONS

Feature	Description
Brand	OBDRResource
Model	CP20
Power Source	Corded Electric
Measurement Type	Multimeter, Oscilloscope, Circuit Tester, Component Activator

Feature	Description
Compatible Devices	Vehicles (Cars, Trucks, Boats, Excavators, Motorcycles) with 0-80V electrical systems
Cable Length	16.5 feet (5 meters)
Display	2.4-inch High-Definition Color Screen
Overload Protection	Max 8A, with dual protection system
Supported Languages	12 languages (including English, German, French, Japanese)

8. MAINTENANCE

To ensure the longevity and optimal performance of your OBDResource CP20 Circuit Tester, follow these maintenance guidelines:

- **Cleaning:** Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Probe Tip:** Keep the probe tip clean and sharp for accurate readings. Replace if damaged.
- **Cables:** Inspect cables for any signs of wear, cuts, or damage before each use. Do not use if cables are damaged.

9. TROUBLESHOOTING

If you encounter issues with your CP20, refer to the following common troubleshooting steps:

- **Device Not Powering On:** Ensure the battery clips are securely connected to the correct terminals of a functional 12V or 24V vehicle battery. Check for any blown fuses in the vehicle's power supply or the device's internal protection.
- **Inaccurate Readings:** Verify that the probe tip is making good contact with the circuit. Ensure the auxiliary ground lead is properly connected if required for the test. Clean the probe tip if necessary.
- **No Display/Screen Issues:** Check power connections. If the screen is frozen, try pressing and holding the OK key to rotate or reset the display.
- **Component Activation Failure:** Confirm the component is correctly wired and not faulty. Check for overcurrent protection activation (device will indicate if an overload occurs).
- **Overload Protection Triggered:** If the device indicates an overload, disconnect it immediately. Identify and resolve the short circuit or excessive load before reconnecting.

For further assistance, please contact customer support.

10. WARRANTY AND SUPPORT

The OBDResource CP20 Automotive Circuit Tester comes with a 1-year warranty from the date of purchase. Additionally, a 30-day no-questions-asked return policy is offered.

For warranty claims, technical support, or product inquiries, please refer to the contact information provided with your purchase or visit the official OBDResource store:

[Visit the OBDResource Store on Amazon](#)

