

TopDiag®

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TopDiag®

Mini Oscilloscope Automotive Circuit Tester

- 1.Power Test Lamp
- 2.MINI Oscilloscope
- 3.AC, DC Voltage Detection



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P50Pro

USER'S MANUAL

Safety Precautions And Warnings

To prevent personal injury or damage to vehicles and / or the scan tool, read this user's manual first carefully and observe the following safety precautions at a minimum whenever working on a vehicle:

Always perform automotive testing in a safe environment.

Do not attempt to operate or observe the tool while driving a vehicle. Operating or observing the tool will cause driver distraction and could cause a fatal accident.

Wear safety eye protection that meets ANSI standards.

Keep clothing, hair, hands, tools, test equipment, etc. Away from all moving or hot engine parts.

Operate the vehicle in a well-ventilated work area. Exhaust gases are poisonous.

Put blocks in front of the drive wheels and never leave the vehicle unattended while running tests.

Use extreme caution when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.

Put the transmission in P (for A/T) or N(M/T) and make sure the parking brake is engaged.

Keep a fire extinguisher suitable for gasoline /chemical / electrical fires nearby.

Don't connect or disconnect any test equipments while the ignition is ON or the engine is running.

Keep the scan tool dry, clean free from oil/ water or grease. Use a mild detergent on a clean cloth to clean the outside of the scan tool when necessary.

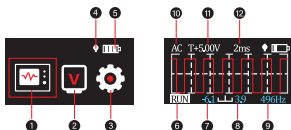
Our company is not responsible for any damage caused by unintentional or deliberate misuse of our products or tools.

Appearance Description



- ① **Probe:** contacts the circuit or component to be measured
- ② **LED test light:** illuminates dark work areas or night work areas
- ③ **Indicator:** Positive and negative indication and LED test light
- ④ **Display:** 80*RGB*160 LCD color screen
- ⑤ **DIAL SWITCH:** Slide up and down to select, press to confirm
- ⑥ **Button 1:** Tap to turn the flashlight on or off, long press to turn the power test light on or off
- ⑦ **Button 2:** Tap to power on or return, long press to power off
- ⑧ **Power test light:** 12V/24V 5W power test light
- ⑨ **Ground clamp:** connected to the ground terminal of the circuit under test
- ⑩ **Small probe:** auxiliary grounding probe
- ⑪ **Reset:** Tap to restore factory settings
- ⑫ **Type-c:** Upgrade and charging port

Function



- ① MINI Oscilloscope
- ② DC Detection
- ③ Set Up
- ④ **Power test lamp status indication:** white indicates that the power test lamp is off, red indicates that the power test lamp is on.
- ⑤ **Battery Level**
- ⑥ **RUN/STOP**
- ⑦ **MAX**
- ⑧ **MIN**
- ⑨ **Frequency**
- ⑩ **AC/DC Function Switching**
- ⑪ **Vertical Gear**
- ⑫ **Horizontal Time Base**

Products

P50Pro multifunctional MINI oscilloscope automotive circuit tester, suitable for all vehicles in the circuit system diagnosis, is 0-45V circuit system testing and repair of the best electrical tester, easy to operate, wide range of practicality. The tool can quickly detect a variety of communication line signals, sensor signals, as well as a variety of test light test and voltage measurement.

Display: TFT color display (80*RGB*160)

DC detection: 0.1 - 45V

AC detection: 0.1 - $\pm 45V$

Working current: 40ma

Battery capacity: 200ma

Battery life: about 4-5 hours

Frequency bandwidth: 10Hz-200KHz

Test lamp power: 12V/24V power 5W

Operating temperature: 0 to 60°C (32 to 140°F)

Storage temperature: -40 to 70 °C (-40 to 158 °F)

MINI Oscilloscope

MINI oscilloscope can be used to detect a variety of vehicle communication line signals and sensor signal failure detection, when the line failure, the traditional LED test light test, is to observe the frequency of LED flashing to determine and guess the fault, and through the MINI oscilloscope can be more intuitive understanding of the line signals to determine the specific cause of the failure and the location of the fault, so as to carry out a rapid repair. The oscilloscope can switch between AC and DC modes, and display the maximum and minimum voltage of the signal waveform and the frequency of the signal in real time. Usage is as follows:

*Check Oscilloscope and press the bobbin switch OK to access the oscilloscope.

*Connect the alligator clips to the car hitch and touch the probe to one end of the circuit under test.

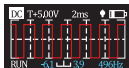
*This time you can observe the waveform data on the LCD display to determine whether the communication status of the line is normal, you can use the jog wheel switch to adjust the oscilloscope's horizontal time base, vertical stop, AC/DC, RUN/STOP parameters

AC/DC: Press the jog wheel switch to select, switch AC or DC mode left and right by the jog wheel switch.

Vertical Block: Press the dipswitch to select, and modify the voltage value of each frame from 1V to 50V through the left and right of the dipswitch.

HORIZONTAL TIME BASE: Dial switch press to select, modify each frame time 500us-500ms by dial switch left or right.

RUN/STOP: Press the jog wheel switch to switch between RUN or STOP mode, under STOP mode, the jog wheel switch moves the waveform display left and right.



Note: Please turn off the power test light when using the oscilloscope, do not test the lines connected to the EUC (computer board) and ECU (computer board), as well as ignition coil signals and sensor signals with the power test light turned on, in order to avoid damage to the ECU (computer board) and incorrect waveforms of the test signals.

power test lamp

Power test lamp is mainly used for vehicle line system fault detection, according to the test lamp light off and different degrees of light and dark, can quickly and effectively determine the vehicle line with or without circuit breakage, short circuit and grounding faults. Equipped with 12V and 24V two specifications lamp beads, according to the vehicle voltage to choose the appropriate lamp beads for use, so as not to cause damage to the lamp beads.

Use the test lamp to find out the breaks and false connections of the electrical system.

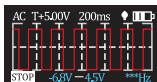
Vehicles in the process of use, due to electrical contacts oxidation, loose or wiring is not secure, resulting in circuit intermittent, electrical work is not normal, in the search for faults can be used alligator clips connected to the vehicle's ground hitch, the probe will contact the positive part of the electrical appliances, such as the test light does not light up, indicating that the positive circuit circuit breaks; such as the test light is bright, but the light is dim, indicating that the positive circuit is in the state of the false connection; such as the test light and the brightness is normal, then prove that the positive circuit is normal. Positive circuit is normal. Then use the crocodile clip auxiliary probe to contact the negative part of the appliance, the probe contact the positive part of the appliance, such as the test light is not bright, indicating that the negative circuit is disconnected; such as the test light is bright, but the light is dark, the negative circuit is in the state of the false connection; such as the test light and the brightness is normal, it proves that the negative circuit is normal, the appliance has been damaged.

Note: The power test lamp is generally used for testing fuses, solenoid valves and injectors. Do not test the lines connected to the EUC (computer board) and ECU (computer board), as well as the ignition coil signals and sensor signals with the power test lamp turned on to avoid damage to the ECU (computer board).



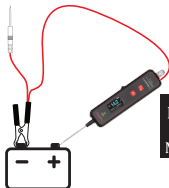
LED Test Light

This function is not limited by the shutdown, LED test light in the battery is dead or shutdown state can also be used normally. Generally used in the detection of signal line failure, such as EUC (computer board) and ECU (computer board) connected to the line, Hall camshaft position sensor and other signal circuits in the diode test light test, the test light should be flashing regularly, otherwise it indicates that the line or related parts failure.



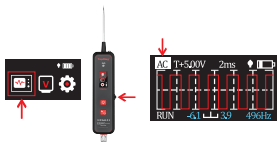
DC Detection

DC detection function can measure the DC voltage of all 0.1 - 45V electrical lines, DC display the real-time voltage detected by the probe, MAX, MIN can record the maximum voltage and minimum voltage during the measurement.



AC Detection

The AC detection function can measure the AC voltage of all 0.1 - $\pm 45V$ electrical lines. Enter the oscilloscope, right and left flick the wheel switch to position the cursor to DC, then press the wheel switch to select DC, when you see the alternating flashing yellow cursor flick the wheel switch to switch to AC detection function.



Flashlights

The flashlight adopts imported LED, high brightness, low power consumption, can illuminate the working area in front of the probe in the dark night or dimly lit place, and easy to find the fault of the line. The flashlight can be turned on and off, according to the actual need to switch.



Recharge Batteries

Built-in 200ma high-capacity lithium battery, operating current 40ma, battery life of about 4-5 hours, such as equipment for a long time did not detect any key operation, the system will automatically enter the hibernation mode, in order to extend the battery's duration. TYPE-C charging interface design, charging should be used with a voltage of 5V, charging current of more than 100ma charger. You can also use the vehicle battery for charging, grounding auxiliary clamps clip the negative terminal, the probe connected to the positive terminal can be charged.



Polarity Indicator

When the grounding aid clamp is connected to the negative terminal and the probe is connected to the positive terminal, the IND will light up green. When the grounding aid clamp is connected to the positive battery terminal and the probe is connected to the negative terminal, the IND will light up red.



Set Up

In the settings, you can switch the language, upgrade the device, and view the version information.

* **Language:** Enter the settings, select the language, select English or Chinese, press to confirm.

* **Device Upgrade:** Enter the settings, select upgrade and press confirm, after entering the upgrade mode, use TYPE-C to connect the device to the computer. Connect to the official website <http://www.jdiagtool.com> to download the latest upgrade firmware, unzip the downloaded firmware, open the unzipped folder [TopDiag-p50pro-X.X.X], find the USB driver folder to install the appropriate driver file, and then open the updatatool software, check the upgrade file, click Refresh serial port, select the correct serial port, then click Upgrade, the device will restart automatically after upgrade.

* **Version information:** Enter the settings, select About and press Confirm to view the current version information.



Reset

The tool has a reset button in the power test light location. Remove the test light and tap it using the probe on the grounding aid clamp, and the unit will return to its factory state and automatically shut down.



Warranty And Service

One Year Warranty

JDiag Technology promises to provide warranty service for 1 year from the date of original purchase, if this product is purchased from an official channel, which must meet the following conditions:

- 1) The warranty are limited to repairing or replacing new equipment, without additional cost, but need to mention for regular sales invoices or copies of invoices.
- 2) The warranty does not cover the unauthorized disassembly of this product due to flooding, lightning strikes, or outside repair shops not authorized by the company ,The personnel have repaired it and considered damage caused by improper use.
- 3) JDiag Technology is not responsible for any damages caused by use, misuse or installation and testing. Some countries limitations on the duration of implied warranties are not allowed, so the above limitations may not apply to you.
- 4) All information in this manual is based on the latest and effective information at the time of publication, and there is no guarantee of its accuracy or completeness. JDiag Technology reserves the right to make changes at any time without notice.

Service Process

If you have any questions about using this product, please contact your local authorized dealer directly or visit our official website for advice.

For repairs or returns, please contact your dealer or contact your sales representative directly.