YDS631Automobile electrical system detector

YDS631 is a practical auxiliary tool designed for automobile circuit maintenance and detection. The tester has voltage, current, Resistance and Frequency mode.
YDS631 has multiple functions, such as detection circuit polarity, voltage, current, resistance, frequency, connection, break, lighting, ignition plug, sensor measurement, grounding test, component activation and other functions. Press the "power switch", positive/ground can instantly energize electronic components, such as cooling fans, relays, etc. Can be used in cars, motorcycles, bulldozers, rollers, trucks and other transport maintenance operations.

Description:

- Real time digitals voltage display
- Two Clip Supply voltage: 5-60VDC
- 1-75VDC Circuit Test for 6V, 12V, 24V, 48V, 60V System.
- Circuit break, short and trace detect.
- Display polarity with LED, RED for Positive, GREEN for Negative
- Test circuit DC current less than 10A（When the working current is 10A, the working time is less than 10 seconds）
- Test circuit Resistance less than 300KΩ
- Test circuit signal frequency, less than 20KHz.
- With lighting function.
- Overvoltage warning.
- Extended spring line about 196.85in
- Probe protect cover.
- LCD Display with backlight

Specification:

- Supply Voltage Range: 5-60V
- Test Voltage Range: 1-75VDC
- Resolution: 0.1V
- Accuracy:±(1%+3digitals)
- Test DC Current Range:0.1-10A
- Resolution: 0.1A
- Accuracy: ±(1%+3digitals)
- Test Resistance:0-300KΩ
- Resolution:(0-999R)1R
  (1.0K-99.9K)0.1K
  (100K-300K)1K
- Accuracy: 0 ~ 300K ±(5% + 5digitals)
- Test Frequency Range: 1Hz ~ 20KHz
- Resolution: (0-999Hz)1Hz
  (1.0KHz-20.0KHz)0.1KHz
- Accuracy: ±(1%+2digitals)
- Operating Temperature: 0-50ºC
- Storage Temperature: -10-60 ºC
- Operating Humidity: <80%

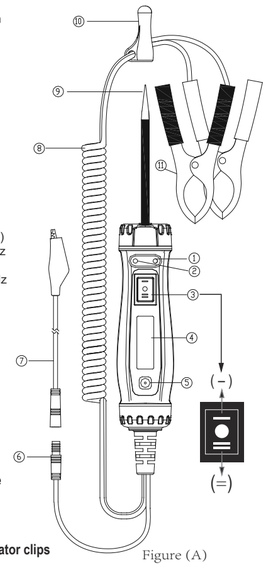


Figure (A)

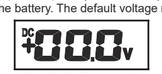
Product Description: Figure (A)

① **Red LED** "+"
② **Green LED** "−"
③ **Power Switch**
④ **LCD Display**
⑤ **Mode button**
⑥ **Ground Lead**
⑦ **Ground Lead Extension clip wire**
⑧ **Extended spring line**
⑨ **Probe**
⑩ **Probe sleeve**
⑪ **Power supply red and black alligator clips**

Functional description:

1.Voltage test

The red clip connects to the positive polarity of the battery and the black clip connects to the negative polarity of the battery. The default voltage mode is used. LCD display as follows:

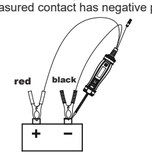


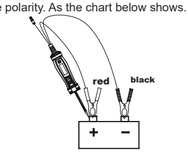
1.1 Self-Check

Press the "power switch" to position (⎓). The indicator LED light on the tester is red, indicating that the probe outputs positive voltage and the LCD displays the current battery voltage.
Press the "power switch" to position (⩵). The indicator LED light on the tester is green, indicating that the probe outputs negative voltage, the LCD displays -0V, and the buzzer alarms.
Release "power switch" and contact the tester probe to the positive polarity of the battery. The indicator LED on the tester lights up red and the LCD displays the current contact point voltage. Contact the tester probe to the negative polarity of the battery. The indicator LED light on the tester is green, the LCD displays -0V, and the buzzer alarms.

1.2 Polarity Detection

For the unknown polarity of the electric connection point on the car, it can be measured by the tester.
Contact the probe of the tester with the unknown polarity of the contact to be measured. If the indicator LED light on the tester is red, the LCD will display the voltage value, indicating that the measured contact has positive polarity. If the indicator LED light on the tester is green, the LCD displays -0V, and the buzzer alarms, it means that the measured contact has negative polarity. As the chart below shows.





1.3 Circuit Test

a.Test the position of wire 1. If the tester shows the voltage value, and RED LED light, it means that the circuit connection is normal. Test the position of wire 2, if the tester has no voltage or is significantly different from the voltage tested at position 1, indicating that the line between 1 and 2 is disconnected or has poor contacted, as the chart (Figure 3) shows.

b. Test the position of wire 1. If the GREEN LED of the tester lighting, the buzzer buzzes, indicating that the circuit connection is normal. Test the position of wire 2, if the GREEN LED of the tester is not on and the buzzer is not ringing, indicating that the ground wire between 1 and 2 is disconnected, as the chart (Figure 4) shows.

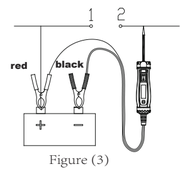


Figure (3)

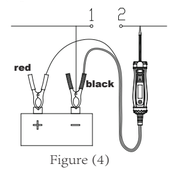


Figure (4)

1.4 Test components (components before installation)

Before replacing components, you can test whether the electrical function is normal operate.
Test the negative electrode of the component by clamping it with the small black grounded alligator clip. Press the tester "power switch" to position (⎓). The indicator LED light on the tester is red and the LCD displays the current battery voltage, use the tester probe to contact the positive electrode of the component for testing, and the component normal operate. If the component is not working normally, check whether the component working condition is good, or the required working current of the component exceeds the tester range (If the current exceeds, the product may be protected by the self-restoring fuse. Please wait for the fuse to recover by few minutes before use.). As the chart (Figure 5) shows.

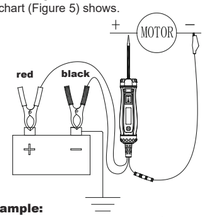


Figure (5)

Test relay for example:
Use the small black grounded crocodile clip clamp to hold pin 85. The probe contacts pin 86. At this time, the buzzer sounds and the green LED is on. Press the tester "power switch" to position(⎓). At this time, the indicator light on the tester will be red, and can feel the sound and vibration of the relay closing. Indicating relay closure. As the chart (Figure 6) shows.

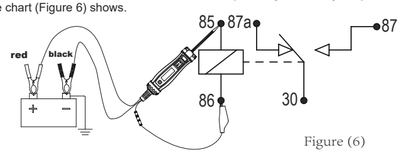


Figure (6)

1.5 Testing components (online testing)

If the control of the tested component is in the positive electrode, press the "power switch" on the tester to the position (⎓). The indicator LED light on the tester is red and the LCD displays the current battery voltage. Use the tester probe to contact the positive electrode of the tested component. As the chart (Figure 7) shows.
If the control of the tested component is in the negative electrode, press the "power supply switch" on the tester to the position (⩵). The indicator LED light on the tester will be green, the buzzer will alarm. Use the tester probe to contact the negative electrode of the tested component. As the chart (Figure 8) shows.
If the component is divided into multiple parts, and it is necessary to test the contact position of each part for the socket or to inspect the component from the contact position, remove the connecting socket, use the auxiliary small black grounded crocodile clip clamp with the tester to clamp the common ground wire of the component, and press the tester "power switch" to position (⎓). The indicator LED light on the tester is red and the LCD displays the current battery voltage, use the probe to touch the metal finger connected to the socket.

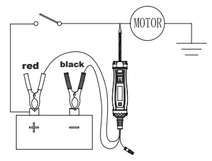


Figure (7)

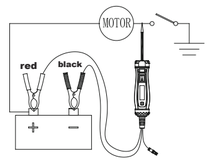


Figure (8)

YDS631Automobile electrical system detector

1.6 Overload Warning

Tester will display overvoltage warning when voltage exceeds 76VDC. The LCD will display "OL", RED led and GREEN led will flash.



2. Current test

The red clip connects to the positive polarity of the battery and the black clip connects to the negative polarity of the battery. Short press MODE button to switch the current mode to be tested. LCD display as follows:



2.1 Test components (components before installation)

Before replacing components, you can test whether the electrical function is normal operate.
Test the negative electrode of the component with a small black grounded alligator clamp. Press the tester "power switch" to position (⎓), The tester probe contacts the positive electrode of the component for testing. If the component normal operate, the indicator LED light on the tester is red, and the LCD displays the operating current of the component. If the LCD displays "OL", disconnect the tester and check whether the working condition of the component is good, or the required working current of the component exceeds the tester range (If the current exceeds, the product may be protected by the self-restoring fuse. Please wait for the fuse to recover by few minutes before use.). As the chart (Figure 5) shows.
Test relay for example:
Use the small black grounded crocodile clip clamp to hold pin 85. The probe contacts pin 86. Press the tester "power switch" to position (⎓). It can feel the sound and vibration of the relay closing. Indicating relay closure. As the chart (Figure 6) shows.

2.2 Testing components (online testing)

If the control of the tested component is in the positive electrode, press the "power switch" on the tester to the position(⎓). Use the tester probe to contact the positive electrode of the tested component. If the component normal operate, the indicator LED light on the tester is red, and the LCD displays the operating current of the component (current over 0.1A).
As the chart (Figure 7) shows.
If the control of the tested component is in the negative electrode, the tester probe contacts the negative electrode of the tested component, press the "power switch" on the tester to the position (⩵), If the component normal operate ,the indicator LED light on the tester is green, and the LCD displays the operating current of the component (current over 0.1A). As the chart (Figure 8) shows.
If the component is divided into multiple parts, and it is necessary to test the contact position of each part for the socket or to inspect the component from the contact position, remove the connecting socket, use the auxiliary small black grounded crocodile clip clamp with the tester to clamp the common ground wire of the component, and press the tester "power switch" to position (⎓), use the probe to touch the metal finger connected to the socket.

2.3 Overload warning

Tester will display overcurrent warning when current exceeds 10A. The LCD will display "OL", RED led and GREEN led will flash.



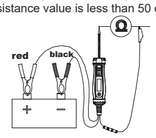
3. Resistance test and continuity test

The red clip connects to the positive polarity of the battery and the black clip connects to the negative polarity of the battery. Short press MODE button to switch the resistance mode. Before testing the component, the power supply to the component must be cut off. LCD display as follows:



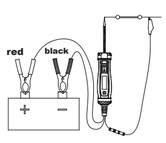
3.1 Resistance test

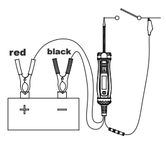
Clamp one end of the test component with a small black grounded alligator clip, contact the other end of the component with the probe. Read the resistance value of the component. If the resistance value is less than 50 ohms, Green LED lights up, the buzzer will alarm.



3.2 Continuity test

Use the small black grounded crocodile clip clamp to hold one end of the wire, and the tester probe contact to the other end of the measured wire. If the resistance value less than 50ohm, Green LED lights up, the buzzer will alarm. It means that the measured wire is continuous. If the LCD display "OL", it means that the measured wire is open.





3.3 Voltage input warning

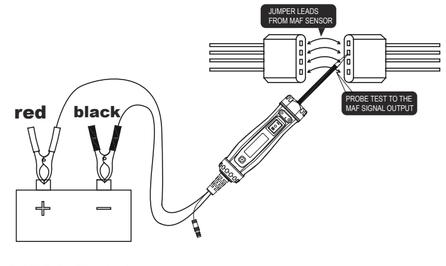
When testing resistance, if the voltage between the probe and the ground auxiliary clamp exceeds 3V, the LCD will display "OL", and the red and green LED lights will flash.

4.Frequency test

The red clip connects to the positive polarity of the battery and the black clip connects to the negative polarity of the battery. The default voltage mode is used. Short press Mode button to switch the Frequency Mode to be tested.

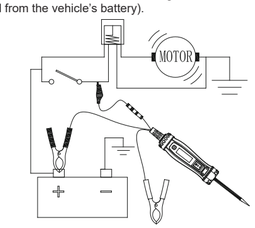


Frequency (Hz) is the number of times a voltage pattern repeats positive compared to negative, on compared to off, during 1 second of time. There are many sensors and signals on a vehicle that have a frequency that can be measured. Wheel Speed sensors, Vehicle Speed sensors, Fuel injector control signals, Cam and Crank outputs and engine reference signals are good examples.
This example measures the frequency output of a digital Mass Air Flow sensor. Depending on the type of MAF sensor, the output can be from several hundred to ten thousand Hz.
NOTE: Although similar in appearance, MAF sensors made by different manufacturers function differently, have different frequency range's square waves and are not Interchangeable, Voltage level of square waves should be consistent. Frequency should change smoothly with engine load and speed.



5. USE As Short wire

The large grounded crocodile black clip in the tester and the auxiliary small black grounded crocodile clip are physically fixed connections. The user can disconnect from the original line connection (such as control switch or open circuit) and use the two black clips on the tester as connections for testing and maintenance (leaving the red clip disconnected from the vehicle's battery).



Warnings

A.The YDS631 tester power supply voltage between 5 to 60VDC, and the probe test voltage from 1 to 75VDC. Do not use the tester for all AC voltage supplies. The tester used only when the power supply is less than 60VDC and the test voltage is less than 75VDC.
B. During the use of YDS631 tester, sparks may appear on the probe. Please do not use it in the surroundings of combustible gas, dust and flammable and explosive environment.
C. The probe of YDS tester is sharp. Please pay attention to safety when using and storing.
D. Do not wipe the product with chemical reagents such as alcohol.
E. Do not disassemble the product by yourself.

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