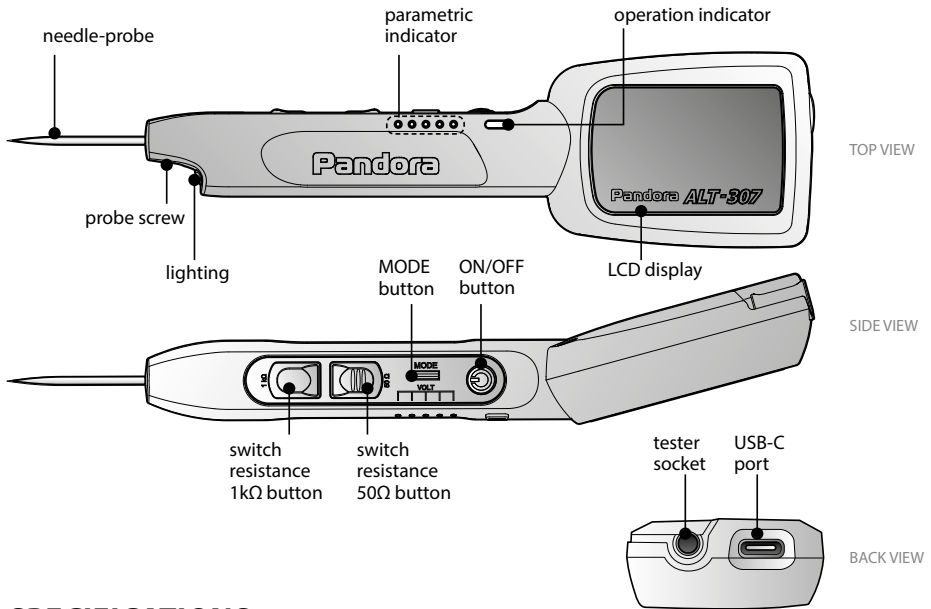


Pandora ALT-307

CAR TESTER

Multifunctional car tester (hereinafter referred to as the tester) is intended for professional use by automotive electronics specialists in the process repair and installations with standard or additional vehicles electronic equipment.



SPECIFICATIONS:

- Display: OLED (128x64)
- Radio interface: 2.4GHz (BT 5.0)
- Battery: Li-Po, 3.7V, 330mAh
- Charge: USB Type-C
- Voltage measurement range: from 0.01 to 50V
- Voltage measurement accuracy: 0.5%
- Features: Sound and light Indication, connection of 1kΩ and 50Ω load, cut-off by accelerometer
- Operating range: from -20° to +60° C
- Protection grade: IP40

SYSTEM SET

Multifunctional car tester	1
Ground probe	1
Additional cable	1
User manual	1
Packaging	1

! THE MANUFACTURER RESERVES THE RIGHT TO CHANGE THE SYSTEM SET AND CONSTRUCTION OF THE PRODUCT TO IMPROVE ITS TECHNOLOGICAL AND OPERATIONAL PARAMETERS WITHOUT A NOTIFICATION.

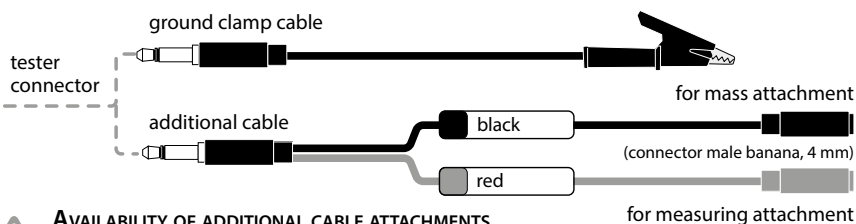
READ BEFORE USING

- The tester is to be used only for the purposes described in this manual
- The tester is a complex technical product, subject to operation in compliance with safety regulations only by a skilled professional

- The tester is not intended for use if it is damaged or malfunctioning in any way.
- The tester is a maintenance-free device. In case of failure, it is necessary to contact specialized service centres immediately
- The tester must be stored and operated in accordance with its technical and operational characteristics
- To avoid the tester from malfunctioning, it is forbidden to exceed the maximum voltage measurement range of 50V
- To avoid from malfunctioning, it is forbidden to connect the ground clamp to the positive polarity circuits

OPERATING DESCRIPTION

The tester is used to identify, detect, measure parametric values and check the operability of vehicle circuits and auxiliary equipment.



**AVAILABILITY OF ADDITIONAL CABLE ATTACHMENTS
DEPENDS ON PACKAGE SET**

Before getting started:

- switch on the tester; if the tester does not switch on, charge it (see «CHARGING»);
- ensure that the tester is not damaged or malfunctioning;
- install the cable with the ground clamp or additional cable into the tester socket;
- select the desired operating mode and connect the clamp or ground terminal according to the selected mode;
- to work with circuits, use a measuring probe or an attachment from an additional cable, while monitoring the display of parameters using the tester indicator.



IT IS PROHIBITED TO CONNECT THE CLAMP/GROUND ATTACHMENT TO POSITIVE VOLTAGE CIRCUITS.

TURN ON / OFF

To turn the tester on or off, press and hold the **ON/OFF** button for 3 or more seconds. Quick power on by double clicking **ON/OFF** button. Automatic switch-off after 5 minutes, if there is no movement and no signal at the moment of measurement.



IF THE TESTER DOES NOT SWITCH ON, CHARGE IT (SEE «CHARGING»).

BACKLIGHT

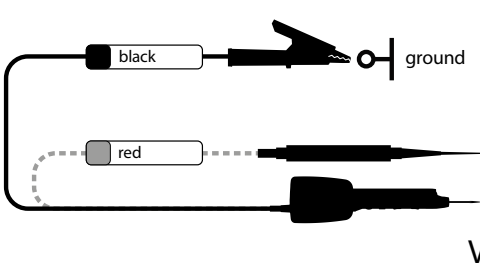
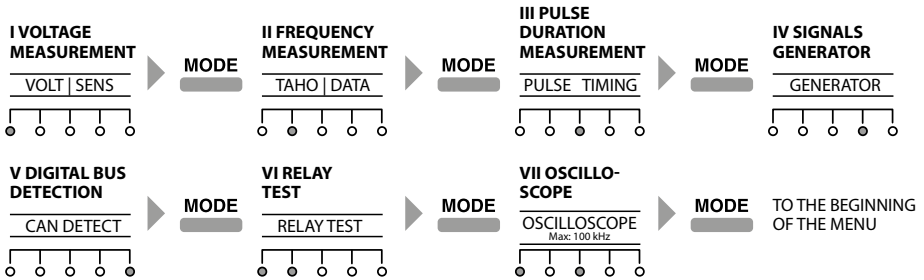
To switch the measuring area backlighting on or off, briefly press the **ON/OFF** button. The tester also has ability to automatically turn off the backlight after 60 seconds.

RESISTIVE LOAD 1 kΩ 50 Ω

In the voltage and frequency measurement modes, the function of sequentially connecting a 1 kOhm and 50 Ohm load into the measurement circuit is available. To turn on the load, press and hold or press twice on the corresponding tester button **1 kΩ** or **50 Ω**. To turn off the load, release or press the button twice again (the tester provides automatic shutdown of the load after 60 seconds after turning it on by double pressing).

SWITCHING MODES MODE

The tester has several measurement and diagnostic modes. When the tester is turned on, the last selected mode is activated. To switch between modes, briefly press the **MODE** button. Mode switching is displayed on the display screen and the parameter indicator.



I. VOLTAGE MEASUREMENT

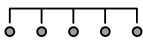
VOLT | SENS

The mode is designed to measure voltage in DC circuits in the range from 0.01 to 50 V. Provide the possibility: measure voltage level, determine circuit polarity, connect 1 kOhm or 50 Ohm load (see section «RESISTIVE LOAD 1 kΩ | 50 Ω»). To operate in this mode: connect

the tester ground clamp/attachment to the negative contact of the “vehicle ground”, fix the measuring probe/attachment on the required conductor, control the display of parameters using the tester indication.

DISPLAY  50V
23.94 24.06 V
24.00 V

- — display of voltage scale
- — display of minimum and maximum voltage values
- — display of average voltage values

PARAMETER INDICATOR 

- — Indication of five levels of average voltage value (● 3-6 V, ●● 6-9 V, ●●● 9-12 V, ●●●● 12-15 V, ●●●●● 15-50 V)




OPERATION INDICATOR 

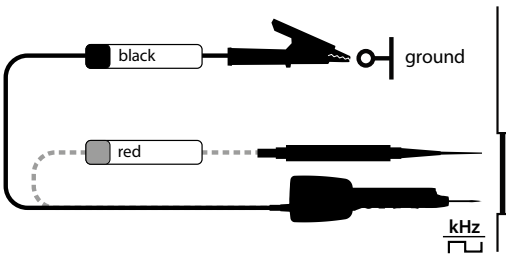
- — potential display (green “ground, short to needle-probe” - less - 1 V; orange - 2-6 V; red 6-50 V)



CALCULATION OF THE AVERAGE VALUE OF THE CIRCUIT MEASUREMENT IS CARRIED OUT OVER 5 SECONDS OF CONTINUOUS MEASUREMENT.

To set up sound notification, press and hold the **MODE** button until the desired indication appears:

-  ● sound notification is enabled when there is a short to ground
-  ● sound notification is off
-  ● tone sound notification is on (the tone of the signal depends on the voltage on the probe)



II. FREQUENCY MEASUREMENT



TAHO | DATA

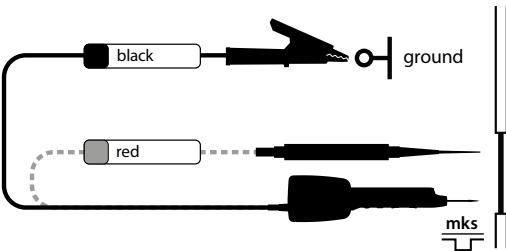
The mode is designed to work with sinusoidal and square-wave signals, initial detection of data transmission lines. This mode is used to detect tachometric signals and pulse circuits of sensors, connection of a 1 kOhm or 50 Ohm load.

To operate in this mode: connect the tester ground clamp/attachment to the negative contact of the "vehicle ground", fix the measuring probe/attachment on the required conductor, control the display of parameters using the tester indication.

DISPLAY 00.00 12.63 v ● display of minimum and maximum voltage values
 90.0 $\frac{\text{kHz}}{\square}$ ● frequency display and signal recognition

To set up sound notification, press and hold the **MODE** button until the desired indication appears:

-  ● tone sound notification is on (signal tone depends on signal level frequency)
-  ● sound notification is off



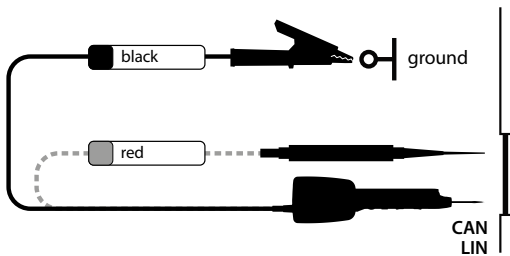
III. PULSE TIMING MODE

PULSE TIMING

The mode is designed to measure the duration and polarity of a single pulse in the range from 0.01 to 50 V and duration from 1 microsecond to 60 seconds.

To operate in this mode:

- connect the tester ground clamp/attachment to the negative contact of the "vehicle ground", fix the measuring probe/attachment on the required conductor;



V. DIGITAL BUS DETECTION

CAN DETECT

This mode is used to identify digital CAN and LIN buses.

To operate in this mode:

- connect the tester ground clamp/attachment to the negative contact of the "vehicle ground", fix the measuring probe/attachment on the required conductor;

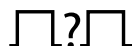
- when "WAIT" is displayed, briefly press any of the **1 k Ω** or **50 Ω** buttons, the tester will switch to digital bus recognition mode– **READY**;
- control the display of parameters using the tester indication..

CAN^{HI}_{5V} ● — digital CAN-bus, high level


CAN_{Lo} ● — digital CAN-bus, low level

LIN ● — digital LIN-bus


NONE ● — signal is not detected


 ● — digital bus of unique format

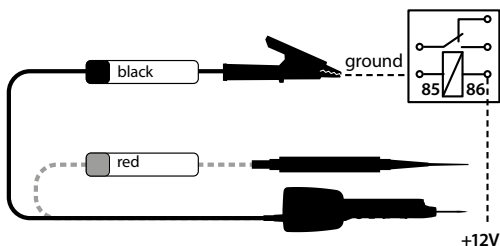
TAHO ● — tachometric signal

 ● — periodic rectangular signal "meander"

To set up sound notification, press and hold the **MODE** button until the desired indication appears:

 ● — sound notification when recognition is complete

 ● — sound notification is off



VI. RELAY TEST RELAY TEST

The mode is used to check the serviceability of the relay winding by applying a positive polarity signal of +12V (250mA) to the probe/attachment relative to the negative polarity clamp/attachment of «ground».

To operate in this mode:

- completely disconnect the relay;
- connect the ground clamp/attachment to the negative contact of the relay winding (Pin 86), fix the measuring probe/attachment to the positive contact of the winding (Pin 85);

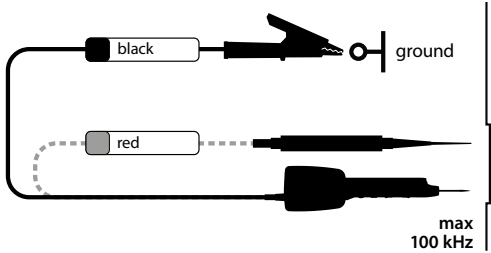
- press and hold or press twice on any **1 k Ω** and **50 Ω** button - the tester will apply voltage to the relay winding.



IT IS FORBIDDEN TO USE THIS MODE ON A RELAY OR OTHER UNIT THAT IS UNDER LOAD.

To set up sound notification, press and hold the **MODE** button until the desired indication appears:

- — sound notification ON when power is applied
- — sound notification OFF

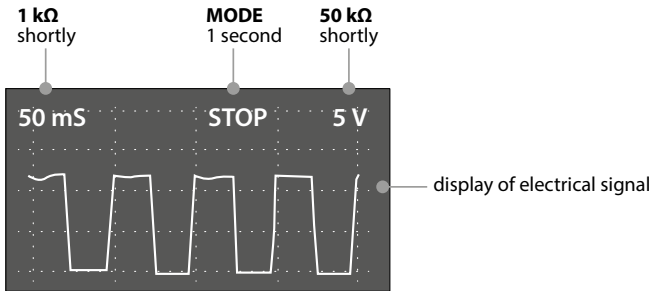


VII. OSCILLOSCOPE OSCILLOSCOPE

The mode is intended for graphic display of amplitude and time parameters of an electrical signal. It is used for visual diagnostics of sensor circuits.

To operate in this mode:

- connect the tester ground clamp/ attachment to the negative contact of the “vehicle ground”, fix the measuring probe/ attachment on the required conductor.
- control the graphical display of parameters using the display indication;
- to change the division value of the voltage amplitude along the vertical axis, shortly press the **1 k Ω** button (from 1 to 5 V), to change the sweep time along the horizontal axis (from 0.02 to 500 μ s), briefly press the **50 Ω** button;
- to fix the current reading, press and hold the **MODE** button for one second.



CHARGING

The tester's battery is recharged using a standard USB Type-C cable:

- connect the USB-C cable connector to the tester and the other end to the charger;
- charge the battery until the charge indicator scale is full and disconnect the cable.



THE CABLE AND CHARGER ARE NOT INCLUDED WITH THE TESTER. **OBSERVE THE TEMPERATURE RANGE FOR CHARGING THE BUILT-IN BATTERY. CHARGING IS CARRIED OUT AT A TEMPERATURE OF BETWEEN +10° AND +45°C.**

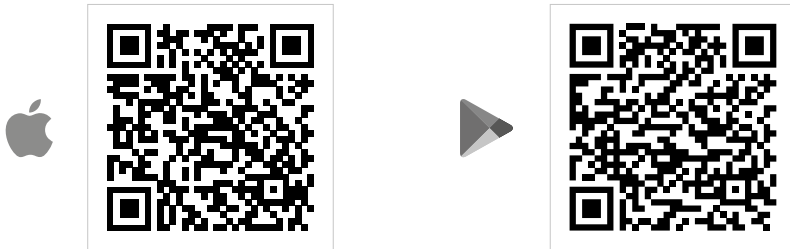
REPLACEMENT AND ADJUSTMENT OF THE NEEDLE-PROBE OF THE TESTER

To install or replace the tester's measuring probe, carefully follow the steps below:

- untight the screw using a «HEX 1.5» Allen wrench and remove the probe;
- If necessary, shorten the probe to the required length;
- install a new probe and tighten the screw.

FIRMWARE UPDATE

- open the Pandora Specialist mobile app (Android / iOS) and go to the «Advanced Installation» or «Quick Installation».
- press and hold the ON/OFF and MODE tester buttons for three seconds.
- use the application, establish a connection with the tester and select one of the download options ("Download firmware" – downloads the current software from the server, "File manager" – downloads previously downloaded software).
- once you have selected the required option, start the download.



SCAN QR CODE TO DOWNLOAD THE PANDORA SPECIAL APP!

Web-service: <https://pandora-on.com>.

Customer support: support@pandorainfo.com

Product is in conformity with Electromagnetic Compatibility Directive EMC 2004/108/EC and R&TTE Directive 1999/5/E

The quality management system of the manufacturer is certified in accordance with IATF 16949: 2016, ISO 9001:2015



v 1.1