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ETURBEV ET32C

TOOLTOP ET32C Automotive Signal Generator Multimeter Instruction Manual

Model: ET32C | Brand: ETURBEV

1. Product Overview

The TOOLTOP ET32C is a versatile automotive diagnostic tool combining the functionalities of a signal generator and a multimeter. It is designed for professionals and enthusiasts to perform various tests, including PWM signal generation, crankshaft signal simulation, and ignition coil testing, alongside standard multimeter measurements. This device offers precise control over signal parameters and accurate electrical measurements for vehicle repair and maintenance.

2. Safety Information

Always adhere to the following safety precautions to prevent personal injury or damage to the device or vehicle:

- **Electrical Safety:** This device is rated for 600V CAT II, with a maximum input of 1000V DC and 700V AC. Do not exceed these voltage limits.
- **Proper Connection:** Ensure test leads are correctly connected to the device and the circuit under test before applying power.
- **Insulation:** Always use insulated test leads and wear appropriate personal protective equipment.
- **Environmental Conditions:** Do not operate the device in wet conditions or explosive atmospheres.
- **Inspection:** Before each use, inspect the device and test leads for any damage. Do not use if damaged.

3. Product Components and Layout

The ET32C features a clear digital display and intuitive controls. Familiarize yourself with the device's layout:



Figure 3.1: Front view of the TOOLTOP ET32C Automotive Signal Generator Multimeter. The device features a digital display showing a square wave signal, frequency settings (Freq1: 1000Hz, Freq2: 2000Hz), peak-to-peak voltage (Vp-p: 10V), and line duration (Line:

010s). Below the screen are function buttons labeled 'Scan Func', 'Time Para', 'Save', and 'Output OFF'. The lower part of the device has navigation buttons (Fn1, Fn2, Fn3, Fn4, Power, OK, Arrow keys, MODE) and input terminals (COM, VΩ) OUT) with safety ratings (600V CAT II, MAX: 1000V, MAX: 700V~).

Key Components:

- **Digital Display:** Shows signal waveforms, measurement readings, and menu options.
- **Function Buttons (Fn1-Fn4):** Context-sensitive buttons for various operations.
- **Power Button ( ):** Turns the device on or off.
- **Navigation Buttons (Up, Down, Left, Right, OK):** Used to navigate menus and adjust parameters.
- **MODE Button:** Switches between different operating modes (e.g., Multimeter, Signal Generator).
- **Input Terminals:**
  - **COM:** Common (negative) input for all measurements.
  - **VΩ)) OUT:** Positive input for voltage, resistance, continuity measurements, and signal output.

4. Setup

4.1. Battery Installation/Charging

The ET32C is powered by an internal rechargeable battery. Ensure the device is fully charged before first use. Connect the provided charging cable to the device's charging port and a suitable USB power adapter.

4.2. Connecting Test Leads

Insert the black test lead into the **COM** terminal and the red test lead into the **VΩ)) OUT** terminal. Ensure a secure connection.

4.3. Powering On/Off

Press and hold the **Power Button ( )** for approximately 2 seconds to turn the device on or off.

5. Operating Instructions

5.1. General Navigation

- Use the **Up/Down Arrow Buttons** to scroll through menu options or adjust values.
- Use the **Left/Right Arrow Buttons** to move between parameters or menu screens.
- Press the **OK Button** to confirm a selection or enter a submenu.
- Press the **MODE Button** to switch between the Multimeter and Signal Generator functions.

5.2. Multimeter Mode

In Multimeter mode, the device can measure voltage, resistance, and continuity. Use the **MODE Button** to select the desired measurement function. Connect the test leads to the circuit as appropriate for the measurement type.

5.3. Signal Generator Mode

The ET32C can generate various automotive signals, including PWM, crankshaft, and ignition coil signals. To access this mode, press the **MODE Button** until 'Signal1' or a similar signal generation screen is displayed.

- **Selecting Signal Type:** Use the navigation buttons to select the desired signal type (e.g., square wave, sine wave, specific automotive signals).
- **Setting Frequency:** Navigate to 'Freq1' or 'Freq2' parameters. Use the Up/Down arrows to adjust the frequency (e.g., 1000Hz, 2000Hz). The device supports frequencies up to 9999Hz.

- **Setting Peak-to-Peak Voltage (Vp-p):** Navigate to the 'Vp-p' parameter and adjust the desired voltage output (e.g., 10V).
- **Line Duration:** Adjust the 'Line' parameter for specific signal timing requirements (e.g., 010s).
- **Output Control:** Use the 'Output' button on the screen (often labeled 'OFF' or 'ON') to enable or disable the signal output.
- **Scan Function ('Scan Func'):** Activates a scanning mode for frequency or other parameters.
- **Time Parameters ('Time Para'):** Allows adjustment of time-related signal parameters.
- **Save Function ('Save'):** Stores custom signal configurations for future use.

5.4. Specific Automotive Applications

- **Crankshaft Signal Simulation:** Select the appropriate crankshaft signal type from the menu. Adjust frequency and amplitude to simulate various engine speeds and conditions for ECU testing.
- **Ignition Coil Testing:** Generate specific pulse signals to test ignition coil primary circuits or simulate ignition events.
- **PWM Signal Generation:** Create Pulse Width Modulation signals for testing components like EGR valves, fuel pumps, or variable solenoids.

6. Maintenance

6.1. Cleaning

Wipe the device with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure the device is powered off and disconnected from any power source before cleaning.

6.2. Battery Care

To prolong battery life, avoid fully discharging the battery frequently. Recharge the device regularly, especially if it will be stored for an extended period.

6.3. Storage

Store the device in a cool, dry place, away from direct sunlight and extreme temperatures. Keep it in its protective case (if provided) to prevent physical damage.

7. Troubleshooting

7.1. Device Does Not Power On

- Ensure the battery is sufficiently charged. Connect the device to a charger for at least 30 minutes.
- Verify the power button is pressed and held for the required duration (approx. 2 seconds).

7.2. No Signal Output

- Check if the 'Output' function is enabled on the screen.
- Verify that the test leads are correctly connected to the**VΩ)) OUT** and **COM** terminals.
- Ensure the signal parameters (frequency, voltage) are set to valid ranges.

7.3. Incorrect Multimeter Readings

- Confirm the correct measurement mode (Voltage, Resistance, etc.) is selected.
- Check for proper connection of test leads to the circuit.
- Ensure the test leads are not damaged or frayed.

8. Specifications

Parameter	Value
Model	ET32C
Brand	ETURBEV
Max Voltage Rating	600V CAT II
Max DC Voltage	1000V
Max AC Voltage	700V
Signal Generator Frequency	Up to 9999Hz
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	1.76 ounces (50 Grams)

9. Warranty and Support

This product comes with a standard manufacturer's warranty. For specific warranty terms, duration, or to obtain technical support, please refer to the documentation included with your purchase or contact the manufacturer directly. Protection plans may be available for extended coverage.

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