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› AYJYZHIAG XH300 Auto Signal Generator User Manual

AYJYZHIAG XH-300

XH300 Auto Signal Generator Instruction Manual

Model: XH-300

Brand: AYJYZHIAG

1. INTRODUCTION

The AYJYZHIAG XH300 Auto Signal Generator is a versatile tool designed for simulating various automotive sensor signals. It is primarily used for diagnosing and repairing vehicle electronic control units (ECUs), sensors, and related systems. This device can simulate crankshaft position sensors, camshaft sensors, Hall sensors, magnetolectric sensors, and ABS sensors, providing a wide range of signal outputs for comprehensive testing.

2. SAFETY INFORMATION

- Ensure the power supply is within the specified range (DC 12V-24V). Do not use a power supply lower than 12VDC.
- Avoid exposing the device to moisture, extreme temperatures, or direct sunlight.
- Do not attempt to disassemble or modify the device, as this may void the warranty and cause damage.
- Always connect the device correctly according to the instructions to prevent short circuits or damage to the vehicle's electrical system.
- Use appropriate personal protective equipment when working with vehicle electronics.

3. PACKAGE CONTENTS

Verify that all items listed below are present in your package:

- 1 x XH300 Auto Signal Generator Host
- 1 x Power Cord
- 2 x Alligator Clip Cables
- 2 x Plugs (for terminal connections)
- 1 x User Manual

XH300

XH300 Packing list:



2 plugs



2 alligator clip cables



1 power cord



1 copy of user manual



1 host

Figure 3.1: Contents of the XH300 package, including the main unit, cables, plugs, and manual.

4. PRODUCT OVERVIEW AND FEATURES

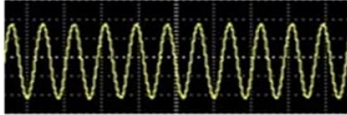
The XH300 is a third-generation auto signal generator designed for comprehensive vehicle sensor simulation. It features an LED display for clear signal selection and output parameters.

Key Features:

- **Versatile Signal Output:** Simulates 9 types of gear missing teeth signals (e.g., 58+2, 58+1, 36+2) and a standard 60+0 signal for crankshaft position sensor testing.
- **Signal Type Flexibility:** Outputs both magnetolectric and Hall signals.
- **Adjustable Amplitude:** Output amplitude/peak voltage equals the power supply input and can be adjusted.
- **Wide Frequency Range:** Offers 9 frequency ranges from 2Hz to 8KHz, ensuring compatibility with various car sensors and ECUs.
- **User-Friendly Operation:** One-button switch between magnetolectric and Hall signals, with an LED display for selection reference.

- **Odometer Simulation:** Can use the 60+0 signal to drive odometers or test speedometers.
- **ABS and Optical Sensor Simulation:** Capable of simulating signals for ABS and optical sensors.
- **Power Supply:** Operates on 12VDC (minimum) to 24VDC, compatible with car batteries or regulated power supplies.

New Original Auto Signal Generator User can edit cranshaft sensor signal



Magnetoelectric signal



Hall signal



Crankshaft signal



XH300

**Analog vehicle speed sensor.
Analog crankshaft position sensor.
Analog magnetoelectric ABS sensor.**

DC 12-24V

Frequency 2-8000 Hz.

Cars, trucks, construction machinery.

XH300 Can modify the crankshaft sensor signal

Figure 4.1: The XH300 displaying various signal types it can generate, including magnetoelectric, Hall, and crankshaft signals.

XH300 Auto signal generator

Six CKP signals and two CMP signals have been stored inside the instrument

The signal frequency is displayed by default (Hz)

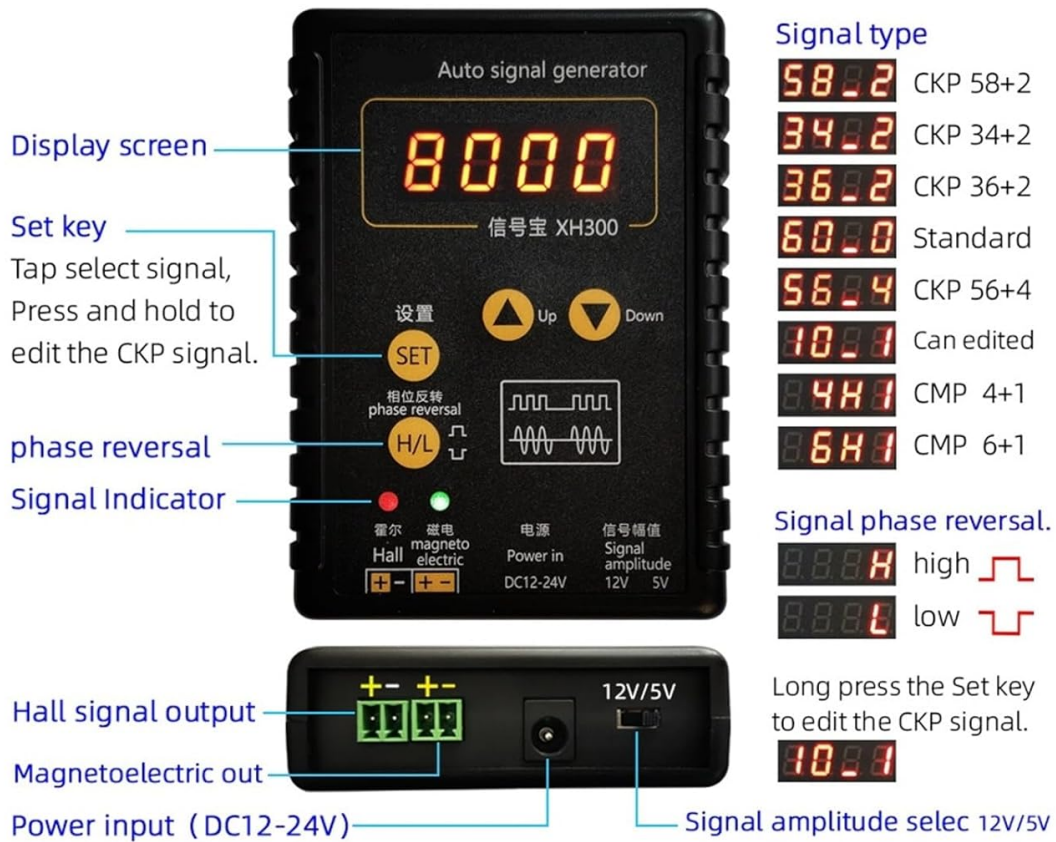


Figure 4.2: Overview of XH300 capabilities, including CKP, engine speed, vehicle speed, CMP signals, phase reversal, and adjustable amplitude.

5. DEVICE LAYOUT AND CONTROLS

Familiarize yourself with the main components and controls of the XH300 Auto Signal Generator:

XH300

Auto Signal Generator.

Third-generation

CKP signal.
Engine speed signal.

Vehicle speed signal.
4+1/6+1 CMP signal.

Signal phase reversal.
Adjustable signal amplitude.

Hall and magnetolectric signal.
Users can edit their own CKP signal.



Support 12V and 24V:
Cars, trucks, motorcycles, construction machinery.

Figure 5.1: Labeled diagram of the XH300 unit, showing the display screen, control buttons, signal indicators, and connection ports.

- **Display Screen:** Shows the selected signal type and frequency.
- **SET Key:** Used to tap select signals and long-press to edit CKP signals.
- **Up/Down Buttons:** Used to navigate through options or adjust values.
- **H/L (Phase Reversal) Button:** Toggles signal phase reversal.
- **Signal Indicators (Hall/Magnetolectric):** LEDs indicating the currently active signal type.
- **Hall Signal Output:** Terminal for Hall signal output.
- **Magnetolectric Output:** Terminal for magnetolectric signal output.
- **Power Input (DC12-24V):** Port for connecting the power supply.
- **Signal Amplitude Select (12V/5V):** Switch or setting for output signal amplitude.

6. SETUP

Follow these steps to set up your XH300 Auto Signal Generator:

1. **Connect Power:** Connect the provided power cord to the Power Input port (DC12-24V) on the XH300.

Ensure the power source is stable and within the specified voltage range.

2. **Connect Output Cables:** Depending on the signal type you wish to simulate, connect the alligator clip cables or plugs to the Hall Signal Output or Magnetoelectric Output terminals.
3. **Connect to Device Under Test:** Connect the other end of the output cables to the corresponding input of the vehicle's ECU or sensor system you intend to test. Ensure correct polarity.



Figure 6.1: Angled view of the XH300, illustrating the power input and signal output terminals for connection.

7. OPERATING INSTRUCTIONS

This section details how to operate the XH300 to generate desired signals.

7.1 Power On/Off

Once the power supply is connected, the device will automatically power on, and the LED display will illuminate.

7.2 Signal Type Selection

The device can output either magnetoelectric or Hall signals. Use the dedicated button (often labeled 'SET' or a specific toggle) to switch between these two signal types. The corresponding LED indicator (Hall or Magnetoelectric) will light up.

7.3 Frequency Range Selection

The XH300 offers 9 frequency ranges. Use the 'Up' and 'Down' buttons to cycle through the available frequency ranges. The selected range will be displayed on the LED screen.

- 01: 2Hz - 1KHz
- 02: 2Hz - 2KHz
- 03: 2Hz - 3KHz
- 04: 2Hz - 4KHz
- 05: 2Hz - 5KHz
- 06: 2Hz - 6KHz
- 07: 2Hz - 7KHz
- 08: 2Hz - 8KHz
- 09: 2Hz - 100Hz

7.4 Crankshaft Position Sensor Signal Simulation

The device has 9 types of gear missing teeth signals and one standard 60+0 signal pre-embedded. These can be selected for crankshaft position sensor simulation.

- **Select Signal:** Tap the 'SET' key to cycle through the available crankshaft signals (e.g., 58+2, 60+0). The current signal type will be shown on the display.
- **Edit CKP Signal:** To edit a CKP signal, long-press the 'SET' key. Use the 'Up' and 'Down' buttons to adjust parameters if editable.

7.5 Phase Reversal

Press the 'H/L' button to toggle the phase reversal of the output signal. This is useful for testing sensors that require specific signal phase characteristics.

7.6 Signal Amplitude Adjustment

The output amplitude (peak voltage) of the signal is generally equal to the power supply input. Some models may feature a potentiometer or switch (e.g., 12V/5V) to adjust the output amplitude. Refer to the device's specific markings for this function.

8. APPLICATIONS

The XH300 Auto Signal Generator can be used for various automotive diagnostic and repair tasks:

- **Crankshaft Position Sensor Testing:** Simulate various missing teeth signals to test ECU response.
- **Camshaft Position Sensor Testing:** Simulate camshaft signals to verify engine timing and sensor functionality.

- **Vehicle Speed Sensor (VSS) Simulation:** Use the 60+0 signal to simulate vehicle speed for testing speedometers and related systems.
- **ABS Sensor Testing:** Simulate ABS sensor signals to diagnose anti-lock braking system issues.
- **Odometer/Speedometer Drive:** Drive odometers or speedometers directly for testing or calibration.
- **ECU and Meter Error Analysis:** Analyze and inspect sensor errors, car ECU malfunctions, and meter inaccuracies by providing controlled input signals.

9. SPECIFICATIONS

Parameter	Value
Model Number	XH-300
DIY Supplies	Electrical
Display Size	3.0 - 4.9 Inches (LED Display)
Output Frequency Range	2Hz to 8KHz (9 selectable ranges)
Output Signal Types	Hall Signal, Magnetoelectric Signal, Falling Edge Signal
Operating Power Supply	12VDC - 24VDC (Minimum 12VDC)
Output Amplitude Voltage	Approximately 12VDC (Adjustable)
Simulated Sensors	Hall Sensor, Magnetoelectric Sensor, Speed Sensor
Dimensions (Packaging)	1 x 1 x 1 cm
Weight (Packaging)	300 g

10. MAINTENANCE

To ensure the longevity and proper functioning of your XH300 Auto Signal Generator, 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.
- **Cable Care:** Inspect cables and connectors regularly for any signs of wear or damage. Replace damaged cables immediately.
- **Avoid Drops:** Handle the device with care to prevent physical damage from drops or impacts.

11. TROUBLESHOOTING

If you encounter issues with your XH300 Auto Signal Generator, consider the following common troubleshooting steps:

- **No Power:** Ensure the power supply is correctly connected and providing the specified voltage (12VDC-24VDC). Check the power cord and connections.
- **No Signal Output:** Verify that the output cables are securely connected to both the XH300 and the device under test. Check the selected signal type and frequency range on the display.

- **Incorrect Signal:** Confirm that the correct signal type (Hall or Magnetolectric) and crankshaft pattern are selected for your application. Check for proper phase setting.
- **Display Issues:** If the display is dim or flickering, check the power supply. If the issue persists, contact support.

12. WARRANTY AND SUPPORT

Specific warranty information for the AYJYZHIAG XH300 Auto Signal Generator is not provided in this manual. Please refer to your purchase documentation or contact the seller/manufacturee directly for details regarding warranty coverage and technical support.