# User manual JINHAN JDS2012Q



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### **Exterior:**



- 1. Channel 1/CH1
- 2. Multimeter A/V/ Ω
- 3. Automatic setting /AUTO
- 4. Trigger key/TRIG
- 5. Pause/start
- 6. OK key: Long press to record the waveform. 14. Multimeter negative
- 7. Parameters/long press screenshot
- 8. Power button/PRW

- 9. Time base/HORI: adjust time size
- 10. Menu key/MENU
- 11. Return: return to the main interface
- 12. selection key F1 F2 F3
- 13. Channel 1 interface
- 15. Multimeter is working
- 16. USB interface

### Main interface:



Boot into the main interface, you can use different functions through each submenu.

## ignition:



The main function of the ignition menu is to help customers quickly set the commonly used ignition signal parameters of the oscilloscope.

<b>Button function</b>	under i	gnition	menu:
------------------------	---------	---------	-------

ОК	determine

- ↑ ↓ Select function
- return Return to the previous menu

#### Routine1:

Select the primary ignition, after the OK button is confirmed, there will be corresponding notices:



At this time, press the OK key again to enter the waveform test (you can also press the return key

to return to the previous menu)

📖 🗘 📶	0.000s	1.00ms	1.311KH2
	: : :	E : :	
	: : :		
1.	<u>.</u>		
C1 50. 0V	-100V		

Routine 2 (use of current clamp):

Select primary ignition (current), OK key to confirm after entering the oscilloscope:

<del>سار Auto</del>	0.000s	1.00ms	984. 2Hz
		En en en	
- minnim	inninnin		
		<u></u>	
C1 200mA	-400mA		

Note: At this time, the relevant parameter values of the oscilloscope interface have been adjusted to the current unit A, and all current parameters can be read directly.

#### sensor:

Sensor Accelerator AES wheel speed sensor Oxygen Sensor Throttle position sensor Air flow meter Absolute pressure of intake manifold Knock sensor Crankshaft and camshaft position sensor OK determine

The main function of the sensor menu is to help customers quickly set the commonly used sensor

signal parameters of the oscilloscope.

Button function under sensor menu:

OK determine

↑ ↓ Select function

return Return to the previous menu

#### Routine:

Select the sliding resistance type of the accelerator pedal, after the OK button is confirmed, there will be corresponding notices:

#### Sliding resistance

pay attention: CH1 connect the probe and push the probe to x1. Display as scan mode. If you want two signal, use a dual-channel device. Check the probe clamp is grounded (grounding)!

OK determine

eturn 👘

Note: This is a single-channel device, and the accelerator pedal is a two-wire output. To observe the two-wire, you need to use 2022Q.

At this time, press the OK key again to enter the waveform test (you can also press the return key to return to the previous menu)

💷 Scan	0.000s	500ms	3.488Hz
		1900 (Marine)	
			••••••
tii			
C1 1.00V	-1.00V		

### Actuator:

Actuator
The electromagnetic valve
Variable valve timing (VVT)
Diesel common rail injector
Gasoline, diesel fuel injectors (voltage)
Gasoline, diesel fuel injector (current)
OK determine 🔺 🚽 select return

The main function of the actuator menu is to help customers quickly set the commonly used actuator signal parameters of the oscilloscope.

Button function under the actuator menu:

OK determine

↑ ↓ Select function

Return Return to the previous menu

#### Routine:

Select the solenoid valve, after the OK button is confirmed, there will be corresponding notices:



At this time, press the OK key again to enter the waveform test (you can also press the return key to return to the previous menu)

<u>ատ</u> չ 🙀	uto O	.000s	25.0ms	61.22Hz
C1 5.	. 00V -	-10. OV		

bus:



The main function of the bus menu is to help customers quickly set the commonly used bus signal parameters of the oscilloscope.

Button function under bus menu:

OK determine

Select function	↑↓	Select function
-----------------	----	-----------------

return Return to the previous menu

#### Routine:

After selecting the can bus and OK button to confirm, there will be corresponding notices:



Note: This is a single-channel device, and the accelerator pedal is a two-wire output. To observe the two-wire, you need to use 2022Q.

At this time, press the OK key again to enter the waveform test (you can also press the return key to return to the previous menu)

📖 Auto	0.000s	25. Ous	117.8KHz
			•
		inimim	
C1 2 00	V 2 00V		<u></u>

### Auto repair kit:



Automotive pressure kit
Engine cylinder pressure
Exhaust pressure
Intake pressure
OK determine 🔺 🗼 select return

The main function of the car kit menu is to help customers quickly set the relevant parameters of the oscilloscope when using the specified accessories.

Button functions under the car kit menu:

OK determine

↑ ↓ Select function

return Return to the previous menu

#### Routine:

Select the engine cylinder pressure and confirm with the OK button, there will be corresponding notices:



At this time, press the OK key again to enter the waveform test (you can also press the return key to return to the previous menu)

📖 Auto	0.000s	25. Oms	191.4Hz
		E : :	
****			
14 : : :	: : :	1 1 1	
		<u></u>	iii
C1 689mB	-689mB		

Note: At this time, the relevant parameter values of the oscilloscope interface have been adjusted to the pressure unit Bar, and all pressure parameters can be directly read.

### Load test:



Car load test is mainly to test the car circuit, whether the power supply is sufficient under the condition of heavy load.

Check whether the power supply of the car circuit is normal.



Use the multimeter pen to carry the positive and negative ends of the power cord.

If the power supply meets the current responsible demand, the buzzer will beep for a long time and the green text will be displayed at the same time.

Load test 90W	
Current voltage	12.85V
Current output is normal	
Do not repeat operations for	a long time!

If the power supply cannot meet the current demand, the buzzer will alarm and flash red letters.



### Oscilloscope:

After selecting the oscilloscope in the main menu, you will enter the custom oscilloscope interface.

📖 Auto	0.000s	25.0ms 0.	000Hz				
		•					
←→CH1 move ↑↓CH1 Zoom in							
C1 1.00V -1.00V							
<mark>F1</mark> channel o	n F2 <sup>1X</sup>	F3DC					

The function buttons of the oscilloscope are classified as follows:

### Channel 1:

Press the channel 1 button to enter the channel menu.

📖 Auto	0.000s	25.0ms 0.000	Hz
- minning			
1.			
←→CH1 mo	ve	↑↓CH1 Zoom in	
<u>C1 1.00V</u>	-1.00V		
F1 channel o	n F2 <sup>1X</sup>	F3DC	

Under the channel 1 button, the function keys have the following functions:

- F1 Channel 1 display switch
- F2 Unit number x1, x10, x100 selection
  - AC/DC coupling options
  - Save reference waveform when reference waveform A and B are open
  - CH1 mobile
  - ➤ CH1 mobile

F3

ОК

- † CH1 Gear adjustment
- ↓ CH1 Gear adjustment

Press the channel 1 button again to enter the channel unit display menu:

	IIIII)	Au	to	0	. 00	0s		25.	. On	IS	0.	. 00	10H	Z
													1	3
														-
														4
														3
							÷							Έ.
ł		:					-						:	4
														4
	←→CH1 move					- 1	۱Ý	CH1	Zoo	m in				
	C1 1.00V -1.00V													
F	1 Unit voltage F2								FЗ					

Under the channel 1 button, the function keys have the following functions:

- F1 Channel 1 unit selection (voltage, current, pressure)
- F2 invalid
- F3 invalid
- OK Save reference waveform when reference waveform A and B are open
- ← CH1 mobile
- → CH1 mobile
- ↑ CH1 Gear adjustment
- ↓ CH1 Gear adjustment

#### **TRIG:**

Press the TRIG-MATH key for the first time to enter the trigger menu.



Under the trigger menu, the function keys have the following functions:

F1 Rising edge and falling edge trigger selection

F2 Select triggerCH1

- F3 Select automatic trigger, normal trigger or single trigger
- OK Save reference waveform when reference waveform A and B are open
- Trigger movement (when smart trigger is off)
- → Trigger movement (when smart trigger is off)
- † invalid
- ↓ invalid

#### HORI

Press the time base key to enter the following menu:

💷 Auto	0.000s	25. Oms	0.000Hz					
		E : :						
<b>.</b>			<b>•</b>					
$\leftrightarrow$ Time base move $\uparrow$ $\downarrow$ Time base scaling								
C1 1.00V -1.00V								
ricursor off <mark>po</mark> source CH1 <mark>ra</mark> cursor time								

Under the time base menu, the function keys have the following functions:

- F1 Whether the ruler is displayed
- F2 The object of the ruler isCH1
- F3 The unit of the ruler (time, voltage or current or pressure)
- OK Save reference waveform when reference waveform A and B are open
  - Trigger reference point movement
  - Trigger reference point movement
  - Time base adjustment
- ↓ Time base adjustment

#### **Ruler:**

In the time base menu, choose to open the cursor, and you will enter the ruler menu:

The upper foot of the interface will display the parameters of scale 1, 2

	ım	Auto	)	0.0	000	S	25	5. 01	DS	0.	. 00	0Hz
	<u>S1</u> S2	<u>-75.0</u> 25.0	lms Ims									
	S12	100m	S									
		-										
		: :										
	←→S1 move ↑↓S2 move											
	C1 1. 00V -1. 00V											
F	p <sub>1</sub> cursor on <sub>F2</sub> source CH1 <sub>F3</sub> cursor time											

Under the time base menu, the function keys have the following functions:

- F1 Whether the ruler is displayed
- F2 The object of the ruler isCH1
- F3 The unit of the ruler (time, voltage or current or pressure)
- OK Save reference waveform when reference waveform A and B are open
- Ruler 1 moves
- → Ruler 1 moves
- ↑ Ruler 2 moves
- ↓ Ruler 2 moves

#### MENU

Press the menu key for the first time to enter the following interface.



Under the menu, the function key functions are as follows:

F1 Reference waveform A or B

- F2 Reference waveform saveCH1
- F3 Whether reference waveform A or B is open
- OK Save reference waveform when reference waveform A and B are open
- 🕶 invalid
- → invalid
- † invalid
- ↓ invalid

Press the menu button for the second time to enter the following interface.

📖 Auto	0.000s	25. Oms	0.000Hz						
		•							
←→invalid ↑↓invalid									
C1 1.00V -1.00V									
n Reset facto	ry <mark>F2</mark> CHiph	ase off 🔢							

Under the menu, the function key functions are as follows:

- F1 Enter the factory reset menu
- F2 CH1 Whether the waveform is inverted
- F3 invalid
- OK Save reference waveform when reference waveform A and B are open
  - invalid
  - invalid
  - invalid
  - invalid

#### Factory reset and self-calibration:

Select factory reset in the menu and enter the following menu.

📖 Auto	0.000s	25. Oms	0.000Hz				
←→invalid ↑↓invalid							
C1 1. 00V -1. 00V							
F1Reset factory F2selfcalibrationF3OK							

Under the menu, the function key functions are as follows:

- F1 invalid
- F2 Self-calibration
- F3 Confirm factory reset
- OK Save reference waveform when reference waveform A and B are open
- ← invalid
- → invalid
- † invalid
- ↓ invalid

(Note: Do not connect to any external equipment during self-calibration to ensure that the channel is disconnected!)

### Parameter display:

Press the parameter key, the parameters of each channel will be displayed in the upper right corner of the screen:

	ιIIII)	Auto	D	0.0	000:	5	- 25	5. Oı	0S	- 4'	76.	1 Hz
									/mir	1 -4	l <b>0.</b> 0	mV
									/max	r ()	). 00	V
	F								<b>/PP</b>	- 4	0.0	mV
		::						••••	<b>WI</b>		?	
	E .											: :
	E	ii										
	F											
1												
	E	:										
												ليتبي
	C1	1.0	OV -	-1	. 00	V						

Vmin Minimum voltage (will be displayed as the unit of the relevant channel changes, current, pressure)

Vmax Maximum voltage (will be displayed as the unit of the relevant channel changes, current, pressure)

VPP Amplitude value (will be displayed as the unit of the relevant channel changes, current, pressure)

PWM Duty cycle

### multimeter:



- F1 Select DC voltage or AC voltage
- F2 Choose resistor or diode
- F3 Choose on-off or capacitance
- ← invalid
  - invalid
    - invalid
      - invalid

#### Set up:

Set up	
Language	English
Keep	
sound	ON
Backlight	3
Smart trigger	ON
Screenshot preview	enter
Keep	
system version	ER. 00. 6032. 0006
OK determine 🛛 🔺 🕌	select return

Setting options description:

Language Portuguese)	Currently supports 5 languages (Chinese, English, Russian, Spanish,					
sound	Choose to turn on or off the key sound					
Backlight	Screen brightness adjustment 1-5 levels					
Smart trigger	Turn smart trigger on or off					
Screenshot preview	View the previous screenshot locally					
Waveform browsing	View the previously saved waveform locally					

### Smart trigger:

When the smart trigger is turned on, in the oscilloscope, when the waveform meets the trigger condition, the trigger arrow will automatically find the appropriate trigger point and trigger. It saves the manual adjustment step.

This function is only valid in automatic trigger mode, normal trigger and single trigger do not support this function!

#### Screenshot preview:

This device supports one-click capture of the current screen.

Press and hold the parameter key for 2 seconds, you will hear 2 beeps, and the screenshot will start in the background. After the screenshot is completed, a dialog box for customizing the screenshot number will pop up.



After editing the number (currently supports 0-7 up to 8 pictures), press ok to save.

After the screenshot is completed, select the screenshot preview in the settings, and enter to see the current screenshot.

Screenshot pre	view	F1 Delete
~ .		
UU.bmp		
01.bmp		
02.bmp		
03.bmp		
04.bmp		
OK determine	$\uparrow\downarrow$ select	return

In this interface, you can use the ok key to view the screenshots locally, or use the F1 key to delete the pictures.

### Waveform browsing:

In oscilloscope mode, this device supports the function of saving the current waveform with one key.

Long press the OK button for 2 seconds, a dialog box for customizing the waveform number will pop up.

📖 Trig	0.000s	1.00ms	1.000KHz
		-	
A A A	A. A.	A A A	0 0 0
Wav	e number	(Max 29)	AA
1	⇒select	01	
	↓ number	<b>V</b>	VV
OK .	confirm	returi	۰
C1 2. 00V	0.00V	C2 Off	

After editing the number (currently supports up to 30 groups of waveforms from 0-29), press ok to save.

After the waveform is saved, you can view the currently saved waveform in the set waveform browser.

Keep	F2 last	F3 next	F1 Delete
03. jhq 07. ih-			
01. jhq 08. jhq			
14. jhq		$\mathcal{M}$	$\sim$
			1/1
OK determine	∳ se	lect	return

In this interface, you can see the preview of the saved waveform, and at the same time, you can choose to view the waveform with the OK key.

All the data of the waveform will be copied to the oscilloscope, and the oscilloscope can perform arbitrary operations on the waveform.

### **Parameter Description:**

Oscilloscope parameters	
Number of channels	1
Maximum real-time sampling rate	Single channel CH1 200MSa/s
Bandwidth	Single channel 50M
Vertical resolution	8Bit
Vertical gear	10mV - 5V (Probex1), 100mV - 50V (Probex10)
	1,2,5 stepping
Impedance	1M Ω , 25pF

Coupling	DC, AC	
Display mode	Y-T	
Input voltage	40V (Probex1); 400V(Probex10);	
	Use high-voltage probes, the maximum voltage	
	is determined by the quality of the probe.	
Time base range	12.5ns - 5s, 100ms - 5s, scan mode(scan)	
Storage depth	Per channel 3K	
Trigger mode	Automatic, normal and single	
Trigger type	Rising edge, falling edge	
Automatic detection	50Hz - 20MHz	
Cursor measurement	Time, voltage, current, pressure (manual	
	mode)	
Can record contrast waveform	2	
Screenshot function	stand by	
Self-calibration	stand by	
Number of screenshots available	7	
Number of waveforms that can be saved	30	
Multimeter parameters		
Count value	4000 count	
DC voltage	0 - 1000V (CAT II area)	
AC voltage	0 - 750V (CAT II area)	
Resistance	0 - 40Μ Ω	
Capacitance	0 - 100 $\mu$ F, (At 100 $\mu$ F, the charging time is	
55	more than 30 seconds)	
Diode	0 - 1.5V	
On-off detection	Sound when lower than 30 $\Omega$	