

Automobile Actuator Drive Detector

QDB-4A



Shenzhen Kawish Technology Co., Ltd



Introduction

The QDB - 4A is an exquisitely engineered driver tailored explicitly for automotive maintenance applications. It is integrated with a diagnostic apparatus renowned for its streamlined operation, comprehensive functionality, and high degree of user - accessibility. This diagnostic instrument is capable of expeditiously pinpointing component malfunctions.

Its core functional capabilities include fuel injector driving (actuation), ignition coil driving (actuation), fuel metering valve measurement, PWM (Pulse - Width Modulation) drive output, stepper motor driving (actuation), PWM signal output, and the measurement of voltage and resistance.

The specific components it is compatible with are as follows: (Compatibility is limited to select models; users are solely accountable for determining its applicability to their specific requirements.)

PWM Drive

- Solenoid valves
- Ignition coil
- Solenoid Injector

Step motor drive

- Idle motor
- Instrument panel motor
- Urea pump step motor

PWM Signal Drive

- 4-wire Urea pump motor
- 4-wire ignition coil
- Electronic fan

Signal output simulation

- Air conditioner pressure sensor
- Rail pressure sensors
- Flow sensors

Multimeter Function

- Resistance measurement
- Voltage measurement

Function of the panel



☆ **Test parameter settings** (Please read the following content carefully)

Num.	Item	Specification
1	Power In	DC 12-24V MAX DCV < 26V
2	Power Out	Current: Max 2A Voltage: Power In
3	VADJ Out	Voltage: 1.25V~11.5V Current: Max 1.5A
4	DMM	DCV: 0~36V DCR: 0~1MΩ
5	PWM Signal	Frequency: 1~100KHz Duty: 0.0~100% VPP: 1V~11.4V
6	PWM Drive	Frequency: 1~100KHz Duty: 0.0~100% Current: Max 2A
7	Step Motor	Max 1.5A
8	3-wire Urea pump motor	Frequency: 150~1KHZ, Duty: 1~99%
9	Solenoid valve	Frequency: 1~500HZ, Duty: 1~70%
10	Solenoid Injector	Frequency: 1~20HZ, Width: 0~3000US
11	Ignition coil	Frequency: 1~20HZ, Width: 0~1000US
12	OTR	0~55℃

Note: The adjustment of frequency, duty cycle, and pulse width increases by 1 each time by default. After pressing the rotary button, the value increases to the tens place. Pressing the button again, the value increases to the hundreds place.

Detailed Instructions for Test Connection

A. Step Motor Connector Measurement

1. Power the QDB-4 A according to the measured parts, 12V, VIN+ RED Light Continuously On .
2. Stepper Motor Drive Wiring Schematic Diagram.
3. Mode: Pick Step Motor TEST
4. Step Motor run left(The side light turns on when it is pressed)
5. Step Motor run right(The side light turns on when it is pressed)



B. PWM Signal Measurement

1. Power the QDB-4 A according to the measured parts, 12V, VIN+ RED Light Continuously On .
2. Mode: Pick PWM OUT
3. Press the start button, and the PWM Signal will start to run./Press the stop button, and the PWM Signal will stop running
4. Adjust the frequency of the PWM signal:1-100KHZ.
5. Adjust the duty cycle of the PWM signal:0-100%.
6. Use an oscilloscope to check the PWM signal./Determine the duration during which the green light

is constantly on.



C. Fuel Metering Valve Measurement

1. Power the QDB-4 A according to the measured parts, 12V or 24V, VIN+ RED Light Continuously On .
2. Wiring Schematic of Fuel Metering Valve
3. Mode: Pick Vale TEST.
4. Press the start button, and the Solenoid valve will start to run./Press the stop button, and the Solenoid valve will stop running
5. Frequency: 1~500HZ.
6. Duty: 1~70%.



D. Resistance/Voltage Measurement

1. Power the QDB-4 A
2. DCV <36V, Positive and negative cannot be reversed
- 3..Mode: Pick Voltage/Resistance.



E. Fuel Injector Measurement

1. Power the QDB-4 A according to the measured parts, 12V, VIN+ RED Light Continuously On .
2. Wiring of Fuel Injector.
3. Mode: Pick Injector TEST.
4. Press the start button, and the Solenoid Injector will start to run./Press the stop button, and the Solenoid Injector will stop running
5. Frequency: 1~20HZ.
6. Width: 0~3000US.



F. Ignition coil Measurement 2-wire (Connect an additional one GND)

1. Power the QDB-4 A according to the measured parts, 12V, VIN+ RED Light Continuously On .
2. Wiring of Ignition coil.
3. Mode: Pick Ignition Coil TEST
4. Press the start button, and the Ignition coil will start to run./Press the stop button, and the Ignition coil will stop running
5. Frequency: 1~20HZ.
6. Width: 0~1000US.



G.Ignition coil Measurement 4-wire

Connect the measured parts according to the diagram.

- 1.Power the QDB-4 A according to the measured parts, 12V, VIN+ RED Light Continuously On .
- 2.Wiring of Ignition coil.
- 3.Mode: Pick PWM OUT.
- 4.Press the start button, and the PWM OUT will start to run./Press the stop button, and the PWM OUT will stop running
- 5.Frequency:1~20HZ.
- 6.Width:0~1000US.



Warranty Service

A. Product Warranty Period

The main device is covered by a 1-year warranty, while vulnerable accessories are covered by a 3-month warranty.

B. Supported Warranty Certificates

Valid proof of purchase and the product's serial number are required.

C. Product Warranty Policy

Within the warranty period, if the product's main unit experiences a performance failure that is not due to human error, you are entitled to free repair service.

D. Shipping Instructions

Only the one-way return freight will be covered, and the delivery scope is limited to the address listed on the purchase order.

E. Scenarios Not Covered by Free Replacement or Warranty

The warranty period has expired.

Damage resulting from improper installation, use, maintenance, or failure to comply with the product's usage instructions.

Damage caused by unauthorized disassembly of the main unit.

The absence of a valid warranty certificate (except for those that can demonstrate the product is

within the valid warranty period).

The SN barcode is torn off, damaged, or blurred to the point of being unrecognizable.

Damage resulting from force majeure (such as fire, earthquake, flood, etc.).

Damage incurred during transportation, loading, unloading, or during repairs.

Damage to the product caused by accidental factors or human actions.

Commitment to maintenance quality

A. The whole machine is replaced

The warranty validity period after the replacement of the whole machine is recalculated from the date of replacement.

B. Repairs covered by the warranty

Replacement of host parts: If a part is replaced, the original warranty period of the host will be extended after replacement, and the warranty period of the host is less than 60 days shall be calculated as 60 days.

Disclaimer and warning

The content mentioned in this article is related to your safety, legitimate rights and responsibilities. Before using this product, please read this article carefully to ensure that the product has been set up correctly. Failure to follow and follow the instructions and warnings herein may result in injury to you and those around you, damage to the product or other surrounding items.

Once you use this product, it is deemed that you have carefully read the disclaimer and warning, and understand, recognize and accept all the terms and contents of this statement. You undertake to be fully responsible for the use of this product and the consequences that may arise.

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