

Dear Client,

Thank you for Purchasing our UHV-410 HV Switch Operating Power. Please read the manual in detail prior to first use, which will help you use the equipment skillfully.



Our aim is to improve and perfect the company's products continually, so there may be slight differences between your purchase equipment and its instruction manual. You can find the changes in the appendix. Sorry for the inconvenience. If you have further questions, welcome to contact with our service department.



The input/output terminals and the test column may bring voltage, when you plug/draw the test wire or power outlet, they will cause electric spark. PLEASE

**CAUTION RISK OF ELECTRICAL SHOCK!**

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## ◆ **SERIOUS COMMITMENT**

All products of our company carry one year limited warranty from the date of shipment. If any such product proves defective during this warranty period we will maintain it for free. Meanwhile we implement lifetime service. Except otherwise agreed by contract.

## **SAFETY REQUIREMENTS**

Please read the following safety precautions carefully to avoid body injury and prevent the product or other relevant subassembly to damage. In order to avoid possible danger, this product can only be used within the prescribed scope.

*Only qualified technician can carry out maintenance or repair work.*

--To avoid fire and personal injury:

### **Use Proper Power Cord**

Only use the power wire supplied by the product or meet the specification of this produce.

### **Connect and Disconnect Correctly**

When the test wire is connected to the live terminal, please do not connect or disconnect the test wire.

### **Grounding**

The product is grounded through the power wire; besides, the ground pole of the shell must be grounded. To prevent electric shock, the grounding conductor must be connected to the

ground.

Make sure the product has been grounded correctly before connecting with the input/output port.

### **Pay Attention to the Ratings of All Terminals**

To prevent the fire hazard or electric shock, please be care of all ratings and labels/marks of this product. Before connecting, please read the instruction manual to acquire information about the ratings.

### **Do Not Operate without Covers**

Do not operate this product when covers or panels removed.

### **Use Proper Fuse**

Only use the fuse with type and rating specified for the product.

### **Avoid Touching Bare Circuit and Charged Metal.**

Do not touch the bare connection points and parts of energized equipment.

### **Do Not Operate with Suspicious Failures**

If you encounter operating failure, do not continue. Please contact with our maintenance staff.

### **Do Not Operate in Wet/Damp Conditions.**

### **Do Not Operate in Explosive Atmospheres.**

### **Ensure Product Surfaces Clean and Dry**

## **—Security Terms**

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Warning: indicates that death or severe personal injury may result if proper precautions are not taken

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Caution: indicates that property damage may result if proper precautions are not taken.

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# Contents

I .Product introduction·····	6
II .Instrument characteristics·····	7
III. Technical parameter·····	7
IV. Panel layout·····	8
V. Operation introduction·····	9
VI. Operating power supply steps·····	错误! 未定义书签。
VII. Matters needing attention·····	错误! 未定义书签。
VIII. Packing list·····	15

## **I .Product introduction**

High voltage switching operation voltage test (commonly known as "Low voltage test") is a basic preventive electrical test to ensure the safe operation of high voltage circuit breakers in power systems. At present, the electric power sector basically adopts the following two ways to test:

i. The DC system of field control cabinet is used as test power source, and the voltage is adjusted by sliding line rheostat. The biggest disadvantage of this method is that if there is short circuit or direct grounding in the field test wiring, the whole DC system will be directly affected. In light of this, the field high voltage equipment will lose its protection and the field DC system will collapse.

ii. By using field AC and voltage regulator, a simple silicon rectifier is used to directly output DC. The disadvantages of this method are as follows:

a. Voltage regulator is bulky, inconvenient to use, and the output DC ripple is very large.

b. The input and output are not isolated, and the shell may be charged, endangering personal safety.

In view of the above situation, our company has developed

and launched a new generation of high-voltage switch closing and closing power supply, which provides test power supply for field high-voltage switch closing and closing operation test, avoids direct use of DC system in field control box, effectively prevents possible harm to the field DC system, and provides conditions for safe operation of field equipment.

## **II .Instrument characteristics**

This product is a special power supply designed for the inspection and maintenance of high voltage circuit breakers and their operating mechanisms. It is an indispensable inspection tool for the maintenance of high voltage switches.

This product has the following characteristics:

- ◆ The input and output are completely isolated, and the output DC is stable and reliable.
- ◆ Small ripple coefficient
- ◆ Overcurrent and Overvoltage Protection
- ◆ Simple wiring and easy operation
- ◆ Beautiful appearance, light volume, easy to carry
- ◆ Double Display of Digital and Pointer

## **III. Technical parameter**

- i. Input power: AC220V  $\pm 10\%$  50HZ
- ii. DC output: 25~250V Continuously adjustable: 15A
- iii. Instantaneous work: 20A

- iv. Ripple coefficient: <2%
- v. Voltage stability: <2%
- vi. Ambient temperature: -20℃ ~ 50℃
- vii. Ambient humidity: <75%RH
- viii. Size: 280mm(L)X210mm(W)X190mm(H)

## IV. Panel layout

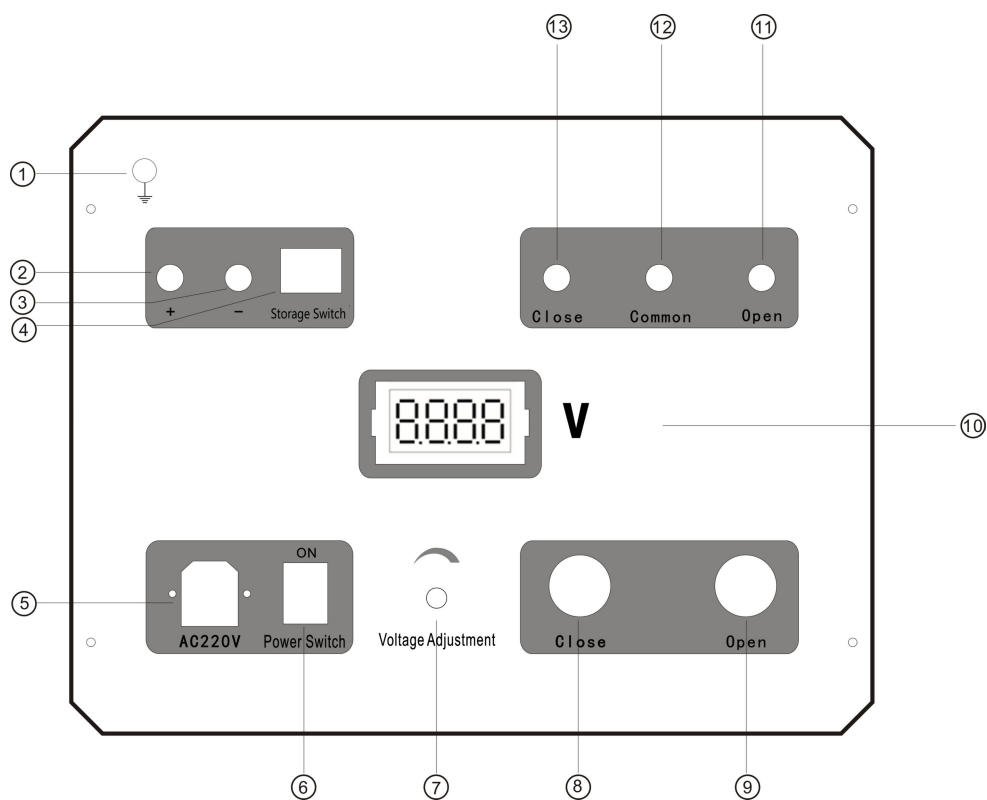


Figure 1



NO	Panel indication	Function description
1	Protective grounding	Connect with the earth
2	Energy storage output+	Connecting switch energy storage+
3	Energy storage output-	Connecting switch energy storage-
4	Energy storage switch	Controlling Energy Storage Output
5	Power supply socket	AC 220V Input
6	Power supply switch	Control power supply
7	voltage adjustment knob	Adjusting Voltage Value
8	Close button	Close power output when pressed
9	Open button	Open power output when pressed
10	Digital display	Indicating output voltage value
11	Opening output interface	Connecting with open coil of switch
12	Output Common Interface	Connecting with common coil of switch
13	Closing output interface	Connecting with close coil of switch

## V. Operation introduction

### i. Testing the minimum closing voltage of high voltage switch:

The wiring is shown in Figure 2. First the instrument is grounded, then the power supply is turned on, the voltage is lowest, the closing button is pressed and the voltage regulating knob is rotated to make the voltage rise slowly. When the switch is closed, the voltage value indicated by the voltmeter is the lowest closing voltage.

**ii. Test the minimum opening voltage of the high voltage switch:**

Press the open button and the other operation steps are the same as the lowest test closing voltage. When the switch is opened, the voltage indicated by the voltmeter is the lowest opening voltage.

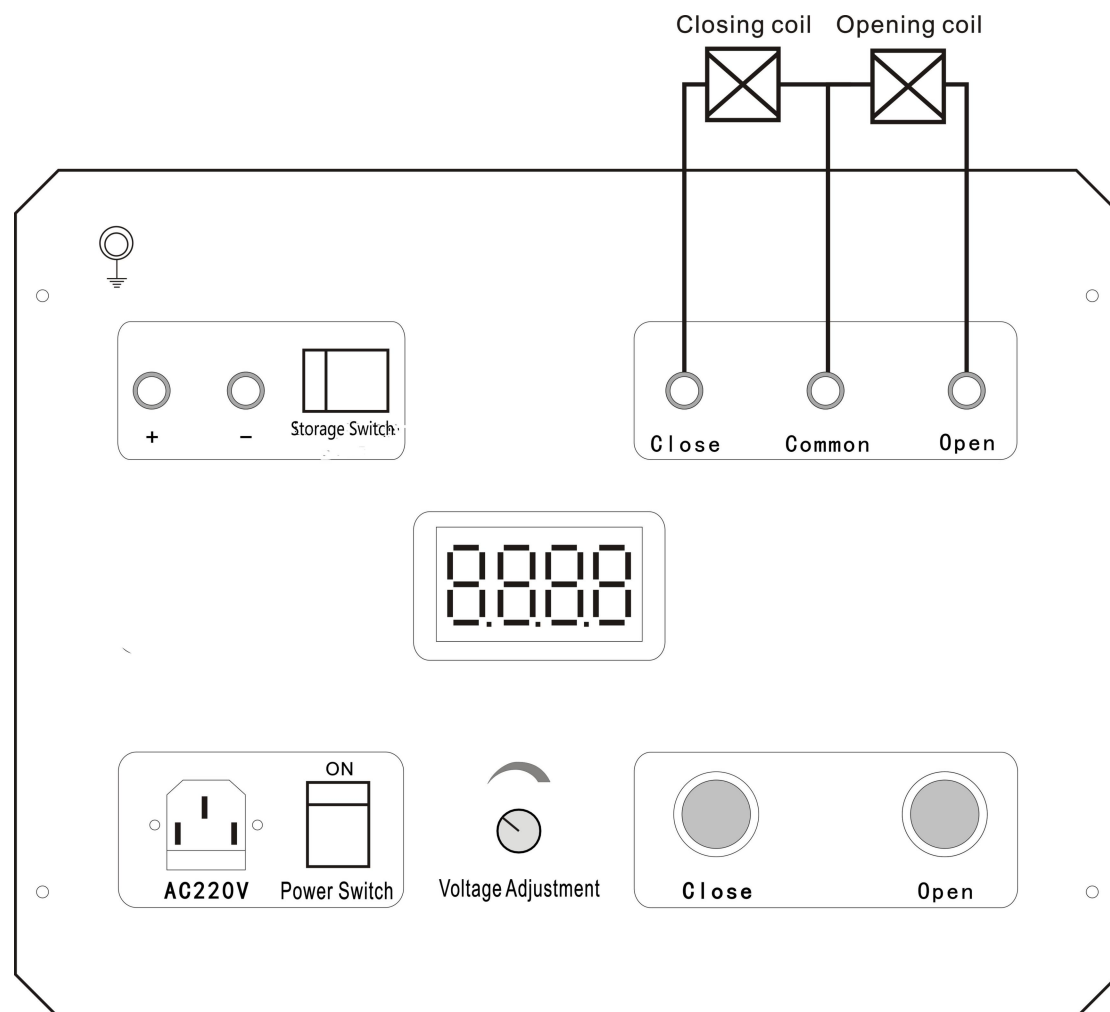


Figure 2

**iii.** When doing the closing test of the output power supply of the high-voltage switch tester, the connection method is shown in Figure 3. The closing, opening and common interface of the tester are respectively connected to the high-voltage switch, and then the two external triggering test wires of the high-voltage switch are

connected to the closing and common interface of the tester respectively. The triggering mode of the high-voltage switch tester is set as external triggering. The specific operation is described by the high-voltage switch tester's manual.

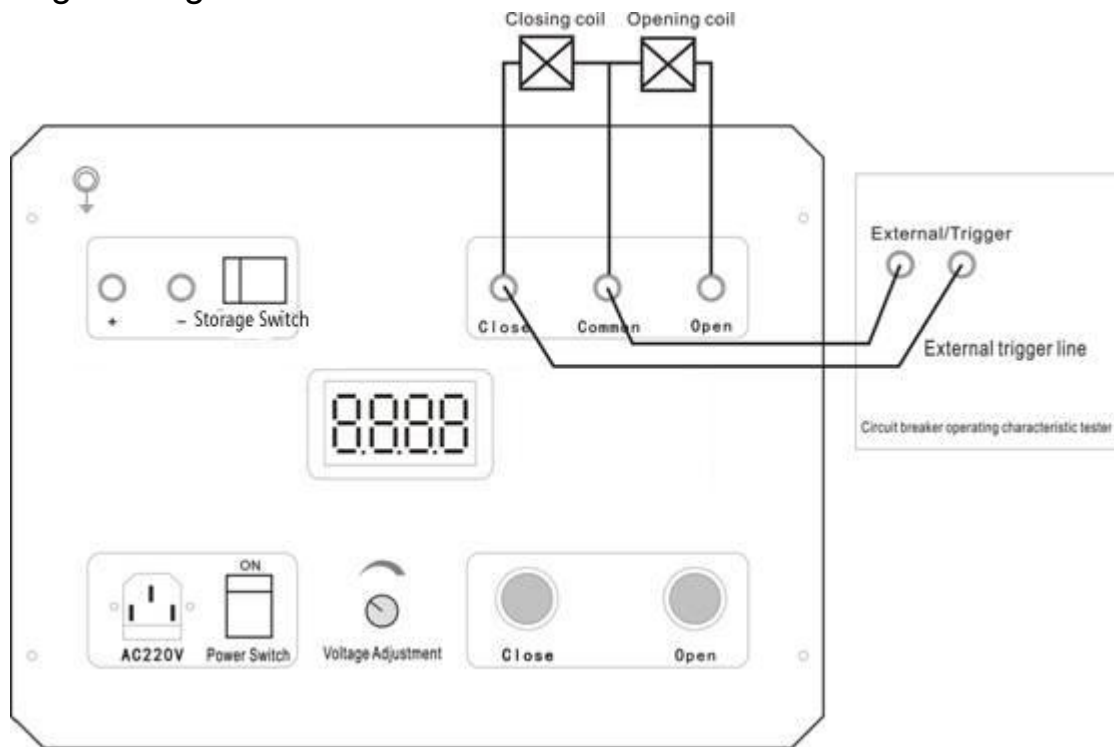


Figure 3

**iv.** When doing the opening test of the output power supply of the high-voltage switch tester, the connection method is shown in Figure 4. The closing, opening and common interface of the tester are respectively connected to the high-voltage switch, and then the two external triggering test wires of the high-voltage switch are connected to the opening and common interface of the tester respectively. The triggering mode of the high-voltage switch tester is set as external triggering. The specific operation is described by the high-voltage switch tester's manual.

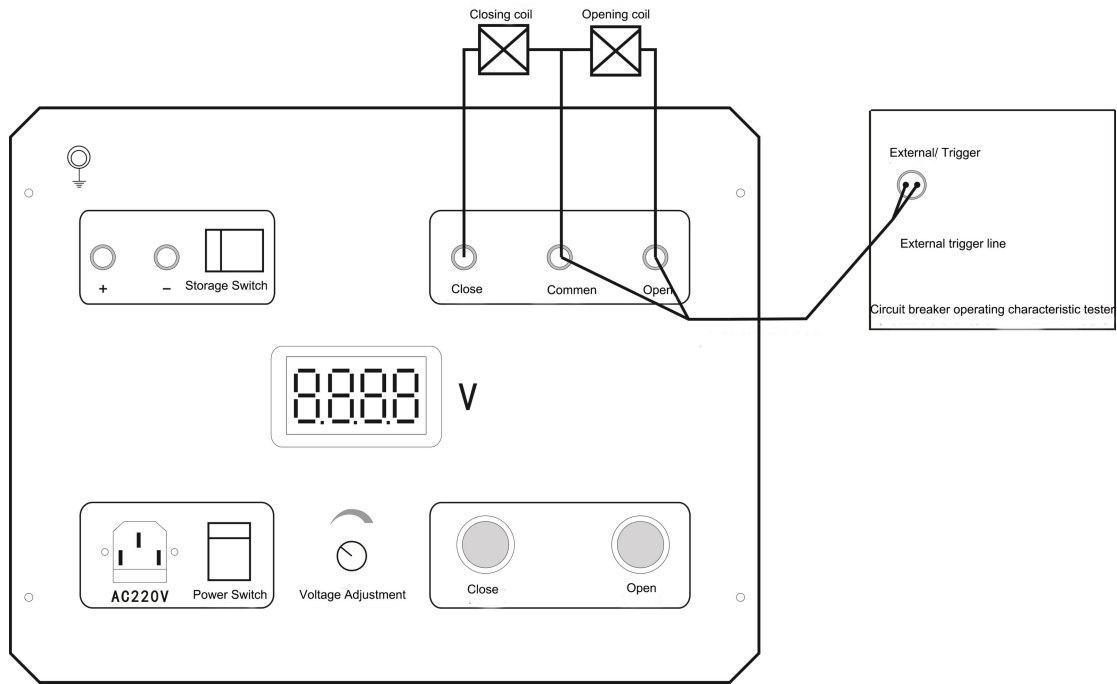


Figure 4

**v.** When used as high-voltage switching energy storage power supply, two test wires are connected to the red and black energy storage terminal of the machine at one end, and the corresponding energy storage terminal of the high-voltage switch at the other end. After wiring, the instrument turns on, adjusts the output voltage to the rated voltage of the high-voltage switching energy storage motor, and then turn on the energy storage switch. When the energy storage motor rotates and the energy storage is marked as another state, that is to say, the energy storage has been finished. Wiring is like the figure 5.

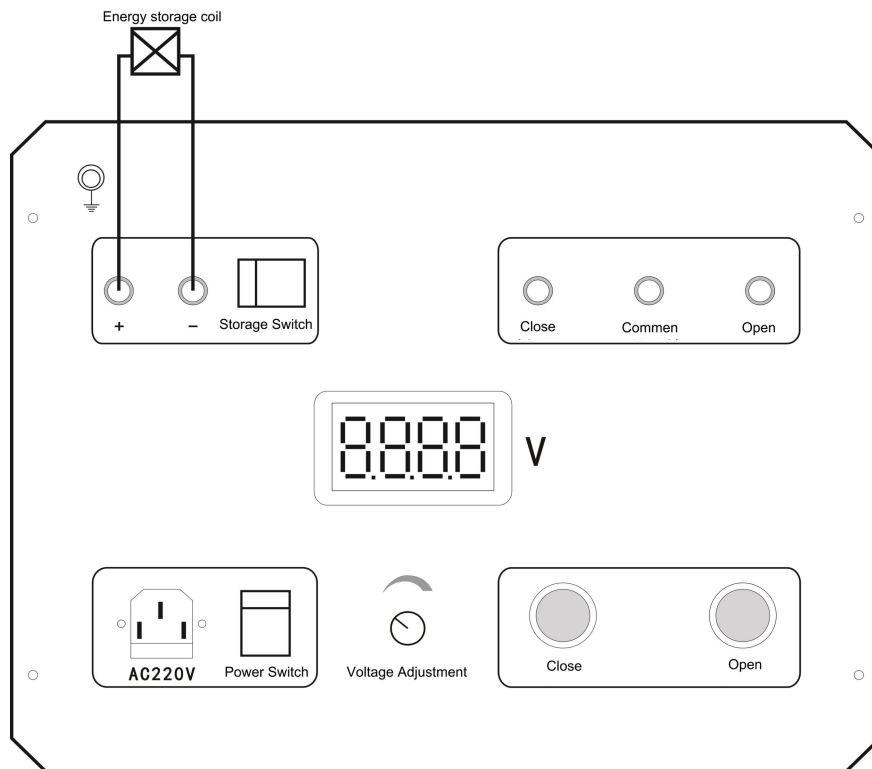


Figure 5

Note: The output of the energy storage power supply is DC voltage. It is suitable for high voltage switch with AC/DC general purpose for energy storage motor. When the high-voltage switching energy storage motor is pure DC input, pay attention to the positive and negative polarity, so as to avoid the burnout of the energy storage motor caused by wiring.

## **VI. Executive standard**

The executive standard of this instrument is part 5.8 of GB / T 11022-2011 "common technical conditions for standards of high voltage switchgear and control equipment"

6.1 combined brake release: the combined brake release shall operate correctly between 85% and 110% of the rated power supply voltage of the closing device and under the rated power supply frequency of the closing device during AC. When the supply voltage is equal to or less than 30% of the rated supply voltage, it shall not trip.

6.2 parallel opening release: the parallel opening release shall operate correctly under 65% (DC) or 85% (AC) to 110% of the rated power supply voltage of the opening device, under the rated power supply frequency of the opening device, and under all operating conditions of the switching device up to its rated short-circuit breaking current. When the supply voltage is equal to or less than 30% of the rated supply voltage, it shall not trip.

## **VII. Matters needing attention**

**i.** Make sure the instrument is grounded reliably before testing.

**ii.** When using this instrument's power supply, it is necessary to disconnect the original switching power supply of the high voltage switch.

**iii.** It is strictly forbidden to short-circuit the output line.

## **VIII. Packing list**

1. Host	1
2.External trigger test line	1
3.Test line	1
4.Clips&Pins	1 set
5. Ground wire	1
6. AC 220V power cord	1
7. 25A fuse	3
8. Product manual	1
9. Inspection report	1
10. Certificate	1