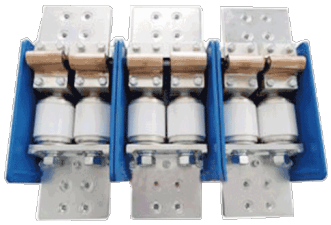
01

General Description

GVC611-2000A, 2600A, 3200A/1500V large-current series AC low voltage vacuum contactor is suitable for the AC electric system, of which the frequency is 50-60 Hz, rated working voltage is up to 1500V, and rated working current is up to 3200A for directly or remotely switching on/off the main circuits. It is applicable to the large-current electric control applications under AC-1 or AC-2. It has such advantages as reliable and safe operation, long lifetime, and less maintenance, etc. It will make apparent economic benefits when using it to substitute the regular electric apparatus.



Long-term Storage Ambient Condition

1. Ambient climate condition:
a. Maximum ambient air temperature not exceeds +40°C/+60°C; minimum ambient temperature to be not lower than +5°C/-20°C.
b. Altitude above sea level: altitude above sea level of the installation place not exceeds 1,000 m.
c. Relative humidity: relative humidity of the atmospheric air not exceeds 85%/95%. Having taken into account the condensation dew on the surface of the product due to the temperature variation.

2.Transportation Ambient Condition
2.1 Ambient Climatic Conditions
a. Relative humidity: 75% (30°C)/95%
2.2 Ambient mechanical conditions
a. Sea transportation to (danger of rolling, pitching) under 2M2/ 2M1: none/ 35° (period: 8s)

3. Working conditions
3.1 Ambient climatic conditions:
a. Low temperature: 5°C/-20°C (-40°C)
b. High temperature: 40°C/60°C (70°C)
c. Relative humidity: 85%/95%
d. Low pressure: 70kPa/79kPa (2000m) 61kPa (4000m)
e. Moisture condensation: Yes, occasionally
f. Freeze: Yes, occasionally
3.2 Chemically active substances
a. The appearance of salt fog: 0.1mg/m^3 is permitted.

Type and specification of the product

GVC 611 – 2500A / 1500V

- 1500V — Rated operating voltage (V)
- 2500A — Rated operating current (A)
- 611 — Design No.
- GVC — Vacuum Contactor

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Structure &working principle

1. Structure and working principle
The main high circuit and control low circuit are arranged in front and rear sections. This arrangement mode looks apparently, safe, reliable and convenient for installing and maintaining. The moving current-conducting rod of vacuum switch tube is connected with the connecting lever by means of adjusting screws; the connecting lever and the moving armature is fixed/secured on the square axle. Attracting and releasing the armature by the electro-magnetic coil drives the making and breaking process of the moving contacts in the vacuum switch tube. As making/breaking process of the contacts is carried out in the vacuum space, therefore, it has excellent switching characteristics, with long lifetime, both safe and reliable. It has control circuits providing the rectifying equipment and the changeover of picking up and holding of the electro-magnetic coil. It also provides the auxiliary switch of 2NO+2NC for the user.

2. Vacuum arc-extinguishing chamber
Inside the vacuum switch tube of glass or ceramic enclosure is installed one pair of contacts, made of wear-resistant and low current-cutting off material, which can satisfy both the breaking performance and reducing the over-voltage caused due to the cutoff current, and raise the lifetime of the vacuum switch tube. Bellows inside the vacuum switch tube has the function of separating the atmospheric air and making the moving contacts to be able to make axial motion, thus cannot twist the moving conducting rod; otherwise the bellow will be damaged due to the twist of the rod. WARNING: Vacuum switch tube is the functional actuating component of the contactor. Do not impact it by the external force; otherwise the complete contactor will be damaged/ wasted.
Installation and maintenance

Installation

1. Installation
a. The contactor should be installed as per the normal working position, of which the inclination angle not exceeds 5°.
b. Correctly make electric wiring; pay attention to that the control power supply voltage to be in compliance with the control voltage of the contactor.

2. The contactor regular maintenance should be determined by the environment of the workplace, operating frequency, run life endures and other factors. For the good environmental and not frequent operational conditions, it is recommended to conduct regular maintenance after one year, and conduct a regular maintenance after 1 or 1.5 years. All equipment maintenance should be recorded. For the poor environmental and particularly frequent operational conditions, appearance inspection and dedusting is needed every six months.

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Common trouble shooting

Symptom	Cause	Solution
Remain open after giving power	1. power supply circuit or coil closing circuit is disconnection	1. check the line to find a breakpoint and reconnect it
	2. coil is disconnection	2. replace the coil
	3. normally closed contact of auxiliary switch contacts poorly	3. repair or replace auxiliary switch to reconnect
	4. rectifier bridge is broken	4. replace the rectifier bridge
	5. something sticks armature	5. remove foreign objects
	6. chamber damaged and leaked	6. change the chamber
Contact cannot be held	1. power supply voltage is too low	1. adjust it to the rated voltage
	2. holding coil burnout or coil is disconnection	2. replace the coil or find a breakpoint and reconnect it
	3. contact of auxiliary switch changes incorrectly	3. move the auxiliary switch slightly backward
	4. mechanical locking is adjusted incorrectly	4. adjust the device
Contactor operator is too slow	1. power supply voltage is too low	1. adjust it to the rated voltage
	2. fastening screw of iron core looses	2. tighten bolts
	3. square shaft rotation is not flexible	3. inject lubricating oil into shaft parts
	4. friction of moving conductive board of chamber is too much	4. paint lubricating oil at friction part
	5. The opening spring reaction is incorrect	5. adjust opening spring reaction
	6. friction between crank arm and adjusting nut is too much	6. paint lubricating oil
Coil burned	1. voltage is wrong	1. check coil voltage and take appropriate measures
	2. coil is damaged by moisture or corrosive gases for a long time	2. replace the coil and improve the environment
	3. normally closed contact of auxiliary switch opens after contactor closes	3. move the auxiliary switch forward or repair the contact

Unpack & inspection

1. Inspect the package for its completeness, and check it for damage.
2. Check the contactor if comply with the purchase order, and check the sparearts and attached document if comply with the packing list.
3. Make corresponding inspection to the contactor.

Documents going with the contactor

a. Operating instruction
b. Test record

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Notice when placing the order

Please state the following when placing the order:
a. Title, model/specification of the product;
b. Rated voltage, rated current and rated control voltage;
c. Quantity of product and spare parts;
d. Other special requirements.

Main technical data

1. Rated data to see table 1
2. Technical requirement to see table 2

Table 1 Rated data

Name			Unit	Data
Main circuit	Rated working voltage (Ue)		V	1500
	Rated working current (Ie)		A	2000、2500、3200
	Rated thermal current (Ith)		A	2000、2500、3200
	Rated frequency (fr)		Hz	50～60
	Rated making capacity (I)		A	4Ie（AC-2）
	Rated breaking capacity (Ic)		A	4Ie（AC-2）
Control circuit	Rated voltage (Us)		V	AC or DC 110/230
	Rated power (Ps)	Electric holding	VA	⩽1600/50 (absorbing/holding)
Auxiliary circuit		Form		2NO+2NC
		Rated value		AC 380V/5A；DC380V/1A
Rated operating frequency		Long-term	time/h	300
		Short-term		600
Electrical life			10000 times	10
Mechanical life			10000 times	30
Remark: rated control voltage can be made according to customer's requirements				

Table 2 Rated data

Technical requirement			Unit	Data
Power frequency withstand voltage	Main circuit	Between phases, phase to earth	KV	4.2
		Vacuum breaks	KV	10
	auxiliary circuit to earth		KV	2
Mechanical characteristics	opening travel		mm	3±0.5
	excess of stroke		mm	1.5±0.5
	Closing time		ms	⩽120
	Original opening time		ms	⩽50
	3-phase synchronism		ms	⩽3
	Closing tripping		ms	⩽10

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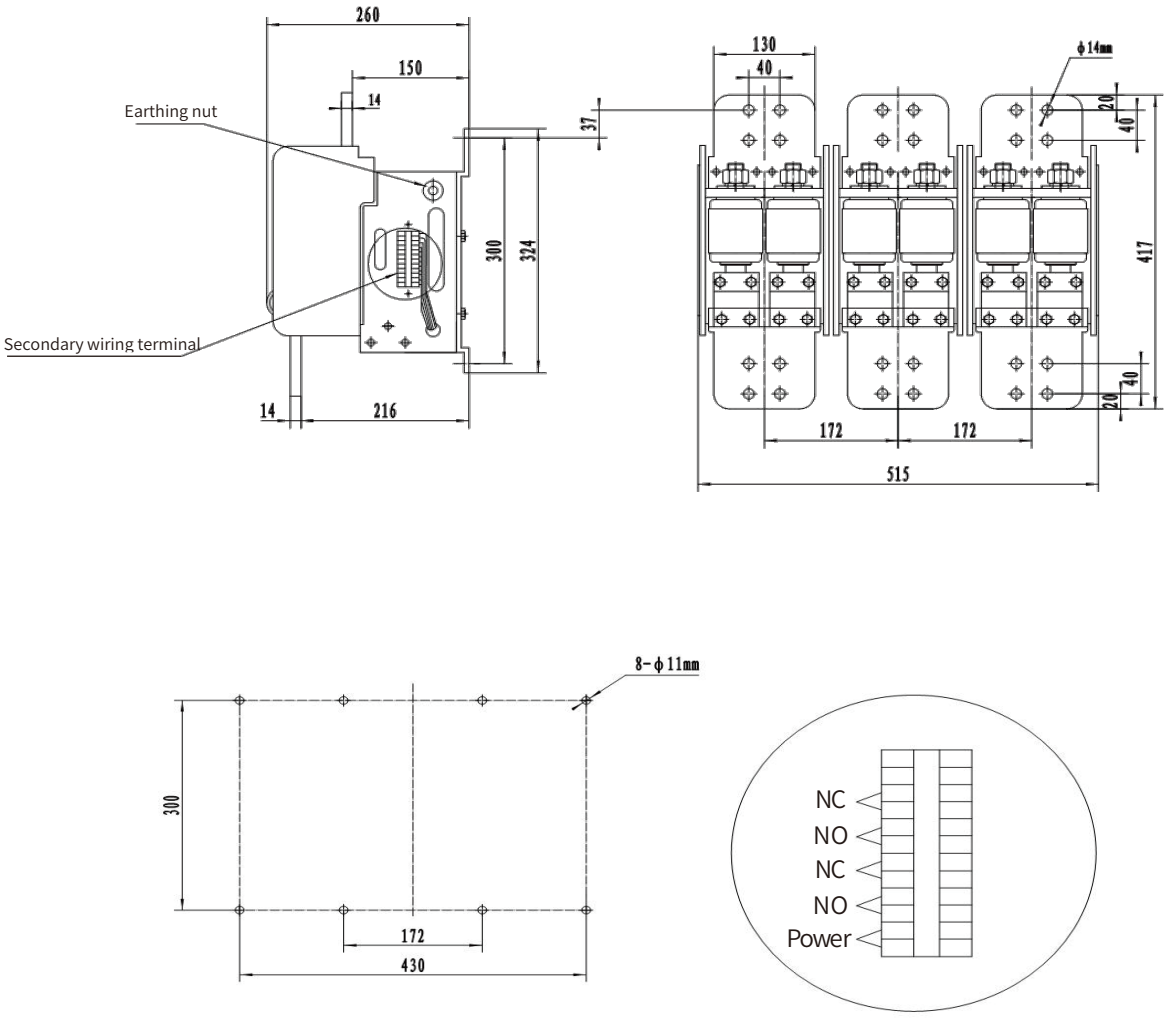
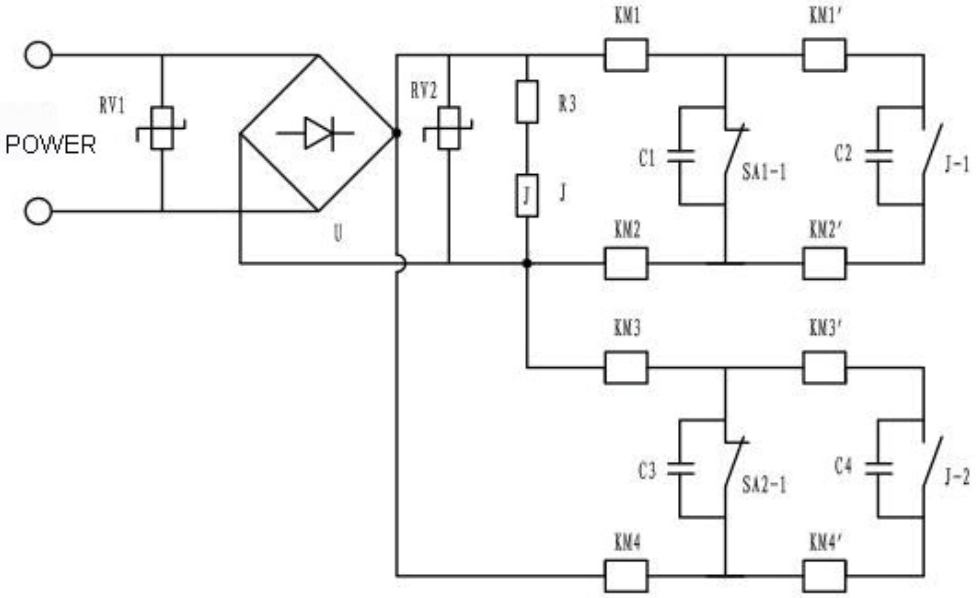
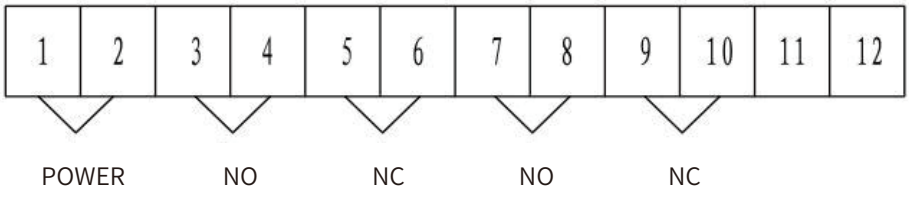


GVC611 series vacuum contactor outline drawing



GVC611 series vacuum contactor schematic diagram



GVC611 series vacuum contactor wiring diagram