RGGD

AC (alternating current) Low Voltage Distribution Board



General

RGGD AC low voltage distribution board is applicable to power plants, transformer substations and industrial corporations. It serves as power source, power transformation, distribution and control equipment of illuminationand distribution equipment in AC 50Hz distribution systems which rated voltage is 380V and rated current is not above 3150A. The product has high breaking capacity, and its rated prospective short–circuit withstand current can reach 50kA. Because of its flexible wiring scheme , it provides convenient arrangement, favorable practicability and novel structure. The product is representative product of national assembled and fixable switchboard.

The product is compliant with Low Voltage Unit Switch Equipment and Control Equipment standard IEC439 and Low Voltage Unit Switch Equipment standard GB7251.

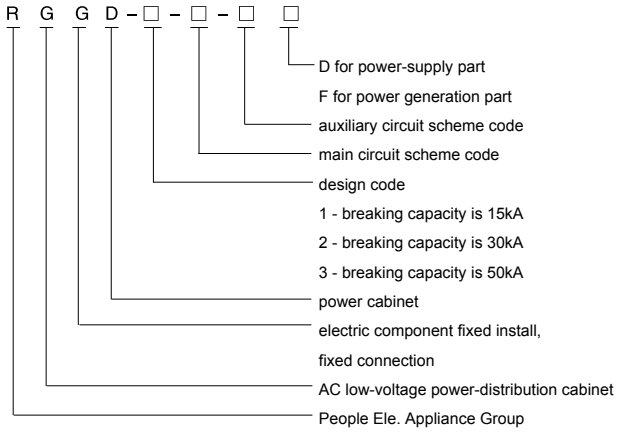
Service condition

2.1 The ambient temperature is between –5℃ and +40℃, and the mean temperature of 24 hours is not above +35℃.
2.2 It has outdoor installation. The altitude is not above 2000m.
2.3 Relative humidity is not above 50% when the ambient temperature is not above +40℃. when the temperature is relatively low, higher relative humidity is allowed (For example, the allowed relative humidity is 90% when the ambient temperature is +20℃). Condensation may occur occasionally due to temperature alternation.
2.4 The lean between equipment and vertical plane should not exceed 5% during installation.
2.5 In order to protect the electric components, the equipment should be mounted in a concussion and corrosion proof site.
2.6 Please consult our company if you have special requirement.

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Model NO.



rated voltage(V) rated current(A) rated short-circuit switch current(kA) rated short-time withstand current(IS)(kA)

Main technical parameters

4.1 The basic electric technical parameters are showed in table 1

Model No.	Rated voltage (V)	Rated current (A)		Rated short-circuit switch current(kA)	Rated short-time withstand current(IS)(kA)	Rated peak value withstand current(kA)
RGGD1	380	A	1000	15	15	30
		B	600(630)			
		C	400			
RGGD2	380	A	1500(1600)	30	30	63
		B	1000			
		C	600			
RGGD3	380	A	3150	50	50	105
		B	2500			
		C	2000			

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4.2 Scheme of the auxiliary circuit
The scheme of the auxiliary circuit is composed of power supply scheme and power generation scheme.
4.3 Main busbars
The main busbars is mono–row copper busbars when the rated current is not above 1500A and is dual–row copper busbars when the rated current is above 1500A. The lap joints of the busbars are tin–coated.
4.4 Electric components choosing
a.The electric components of RGGD board are mainly advanced batch component such as RDW17, DZ20, DW15 etc.
b. HD13BX and HS13BX rotary operating knife switches are special components meeting the requirement of the unique structure of RGDD board which are designed by NLS. They are novel practical components, and they both change the operating pattern of the machine and reserve the advantages of the old product.
c. Because of the flexible installation of the RGGD board, updating electric component causes no difficulties of manufacture and installation when the designer choose components of more excellent performance and more advanced technique according to the requirement of the client.
d. In order to improve the homeostasis of the circuit, the busbars support of the RGGD board introduces special ZMJ combined busbars gripper and insulated support. The grippers are made up of thermo–molding PPO composite which has high intension and high flame retardance. The grippers have good self–quenching performance and unique structure. They can compose mono–gripper and dual–grippers only by adjusting the building blocks. The insulated support is press mold sleeve. It has low cost and high intension and overcome the insufficiency of power delivery distance of the old product.

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Structural features

5.1The cabinet of RGGD AC low voltage distribution board is of general form. The frame of it is composed of 8MF cold bending steel through welding and assembling. The parts of the frame and the special fittings should be supplied by our company in order to ensure the precision and the quality of the cabinet.
The parts of the general form cabinet are designed according to modularization principle. Furthermore, the cabinet has 20 modulus mounting holes. This improves the compatible coefficient of the cabinet and enables the factory to realize beforehand production. Therefore, the period of manufacture is reduced and the productivity is improved.

5.2 The heat dispersion problem is fully considered when designing the cabinet. There are various numbers of holes for heat dispersion at both the top and the bottom of the cabinet. When the electric components emit heat, the heat rises and disperses from the holes at the top. Simultaneously, cold air comes into the cabinet from the holes at the bottom. Thus a natural venting path is formed from bottom to top in the closed cabinet and the heat can be dispersed.
5.3The RGGD board is designed according to the requirement of modern formal designing of industrial product. The figure of the cabinet and the size each parts of the cabinet are compliant with golden section, so the whole cabinet is graceful.

5.4The door is connected with the frame by rotatory active gemels. It can be assembled and disassembled conveniently. Each edge of the door has hill–shape elastomer strip. The strip can be compressed when the door is opened and closed. Therefore, the collision between the door and the cabinet is avoided and the protecting degree of the door is improved.

5.5 The instrument door on which the electric components installed is connected with the frame by multi soft copper strings. The fittings in the cabinet are connected with the frame by gridding washers. The whole cabinet forms complete protecting earth system.

5.6 The surface of the cabinet is painted with orange polyester baking paint or is processed with spray–plastic procedure. The features of this painting procedure are high adherence, fine texture etc. The whole cabinet is in a subdued hue. It avoids the dizzy hue effect and creates a comfortable visual environment for the operators.

5.7The cover of the cabinet can be disassembled if necessary, so that the main busbuars assembly and adjustment can be executed on the spot. There are hoisting rings at each top corner of the cabinet in order to hoist and handle the equipment.

5.8The protecting degree of the cabinet is IP30. Other protecting degrees between IP20 and IP40 are available according to the service condition.

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Installation and Operation

On receiving the product, examine the packing immediately to check that no signs of damage are apparent. If the product is visibly damaged, inform the corresponding department to determine the cause. If the product is not installed immediately, it should be sited in proper place according to the proper operating regulations.

6.1Figure and installation

a. Structure of the figure (see fig. 1)

b.The product installation should be held according to the installation sketch map (see fig.2). You should prepare the basis channel steel and bolts, then smooth and clean the joint surface for the main busbars installation and tighten the assembly by bolts.

6.2After installation, you should carry commissioning and check the following before operation:

a.Whether the paint of the cabinet surface has flaked and whether it is dry and clean in the cabinet.

b.Whether the operating machine of the electric components is flexible and whether blockage or excessive operating force occurs.

c.Whether mainly electric components work reliably and perfectly and the auxiliary contacts switch reliably and perfectly.

d.Whether the instruments indicate correctly and the transformers transform properly.

e.Whether the busbars connection is perfect and the assembly of the insulated support, fittings and accessories is tightened.

f.Whether the auxiliary contacts are in accordance with requirement, the specifications of the fuses are proper and the relays are tuned according to the designing parameters and work properly.

g.Whether the connections of the circuit is compliant with the circuit diagram.

h.Whether the protecting system of the circuit meets the requirement.

i.Whether the insulated resistance measured by 500VA multimeter is not below 1 million ohm.

6.3 Operating precaution

a.The product should not be installed near the wall. It has one side (front side) for operating and dual doors for maintaining. All maintenance of the cabinet should be carried by trained and qualified personnel through opening the maintaining door.

b.Air breaker may create partial burns of the main contact and generate carbonic matter after many times of switching. This causes the increase of the contact resistance. You should carry periodic inspection and maintenance of the air breaker according to its manuala.

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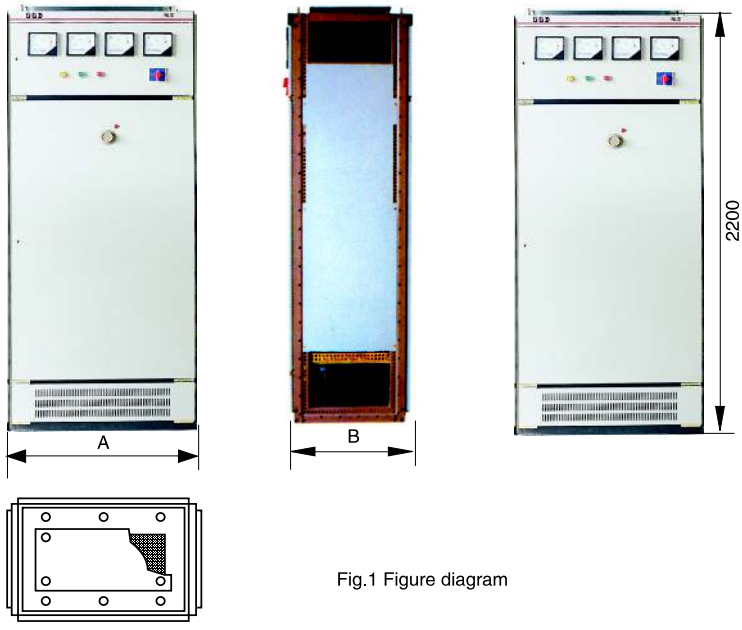


Fig.1 Figure diagram

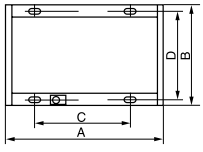
product code	A	B
TGGD 06	600	600
TGGD 06A	600	800
TGGD 08	800	600
TGGD 08A	800	800
TGGD 10	1000	600
TGGD 10A	1000	800
TGGD 12	1200	800

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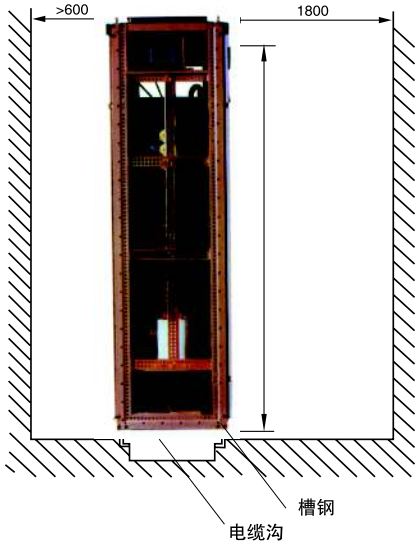


Fig.2 Installation diagram

product code	A	B	C	D
TGGD 06	600	600	450	556
TGGD 06A	600	800	450	756
TGGD 08	800	600	650	556
TGGD 08A	800	800	650	756
TGGD 10	1000	600	850	556
TGGD 10A	1000	800	850	756
TGGD 12	1200	800	1050	756

Ordering notice

a:The whole model of the product(including the scheme number of the lead circuit and the assistant circuit).
b:The compose photo in turn of the lead circuit system.
c:The electricity principle photo for the assistant circuit.
d:The detailed list of the component in the case.
e:Other special request that is unsuitable for normal using condition of the product.