BOERSTN®
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Outdoor prefabricated substation
(For wind power/solar photovoltaic)

YBW F/G-11~40.5/0.69~0.8KV

Product Description

Currently, global energy scarcity and a growing emphasis on environmental protection have made improving energy efficiency and developing renewable energy two critical aspects of sustainable energy advancement. Renewable energy sources such as wind and solar power have garnered increasing attention and are considered the most promising avenues for large-scale development and application of "green energy." Roughly 20% of the solar radiation received by the Earth is converted into wind energy. If just 1% of the total global wind energy is harnessed for power generation, it would be sufficient to meet the world's entire energy consumption. Consequently, wind power generation, the predominant form of wind energy utilization, and photovoltaic power abundant wind power resources and solar energy reserves. As the government continues

In China, for the purpose of transmitting power over long distances, it is necessary to boost the outlet voltage of wind or photovoltaic generator sets from 690V. Typically, cables are used to connect the generators to specialized box-type boost transformers. These transformers elevate the voltage to 40.5 kV or 12kV before transmitting it to the central substation of wind farms or photovoltaic electric fields. Further boosting is then performed to integrate the power into the grid. Our company has designed and developed 40.5kV and 12kV wind power booster transformers and photovoltaic booster transformers to fulfill these requirements and achieve optimal performance in wind turbine and photovoltaic generator set applications.

Standard:IEC 62271-202:2006

Outdoor preinstalled substation (special for wind power/photovoltaic)

Model and its meaning

YB W □ – 11~40.5 / 0.69~0.8 – □

- Rated capacity of transformer (kVA)
- Low Voltage Side System Voltage (kV)
- High voltage side voltage (kV)
- F is wind power
- Outdoor
- Pre-installed substation

Environmental conditions of use

△ The altitude is not more than 1000m.

△ The ambient air temperature is not higher than + 50 C and not lower than-25 C.

△ Relative humidity: The daily average is not more than 95%, and the monthly average is not more than 90%.

△ Outdoor wind speed shall not exceed 35m/s.

△ The installation site is free from fire and explosion hazards, serious pollution, chemical corrosion and violent vibration. A small amount of dust, smoke, salt spray and corrosive gas pollution are allowed, and the pollution level does not exceed Class II.

△ Earthquake intensity: VII degree;

Horizontal acceleration of ground ≤ 0. 2m/s; The vertical acceleration is less than 0. 1 m/s and the safety factor is 1. 67.

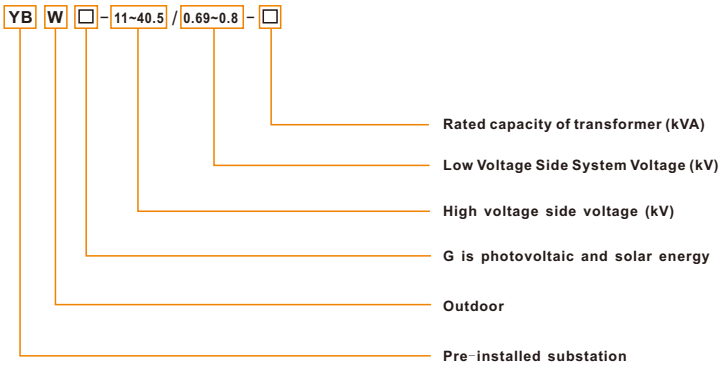
Note: Under special use environment, when the use place exceeds the requirements of normal use environment conditions, the user needs to negotiate with the manufacturer.

The main technical parameters

△ Main technical parameters of transformer

Serial Number	Projects	Unit	Parameters	
1	Rated frequency	Hz	50~60	
2	System voltage	KV	11、13.8、15	30、33、36
3	Maximum operating voltage	KV	15	40.5
4	Rated current of switch	A	630, 1250,1600,2000,2500	
5	Switch transfer current	A	1000-3150	
6	Rated short-time withstand current	KA	12.5 (2s or 4s), 16 (2s or 4s), 20 (2s or 4s)	
7	Rated peak withstand current	KA	25,31.5, 40	
8	Power frequency withstand voltage (ground and phase-to-phase isolation fracture)	KV	42/48	95/115
9	Lightning impulse withstand voltage (ground and phase-to-phase isolation fracture)	KV	75/85	185/215
10	Rated short circuit breaking current (current limiting fuse)	KA	31.5	
11	Capacity of no-load transformer	KVA	1000~20000	

Model and its meaning



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△ Earthquake intensity: VII degree;

Horizontal acceleration of ground is less than or equal to 0.2 m/s2; Vertical acceleration < 0.1 m/s2, safety factor 1.67.

Note: Under special usage environments, if the operating conditions of a particular location exceed the requirements of standard environmental conditions, it is necessary for the user to engagein discussions with the manufacturer for appropriate solutions.

The main technical parameters

Model	Rated voltage (kV)	Rated capacity (kVA)	Variable ratio (kV/kV)
S11	40.5	1000~20000	11~40.5/0.69~0.8
S13	40.5	1000~20000	11~40.5/0.69~0.8
Frequency			
50~60Hz			
Insulation level table			
Rated voltage level	The highest voltage of the device	Rated short-time power frequency withstand voltage	Rated lightning impulse toleranceVoltage full wave
(KV)	(Valid value kV)	(Valid value kV)/min	Peak value (kV)
≤1	≤1.1	5	
11	15	42	75
36	40.5	85	185

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Product acceptance, installation and commissioning

△ Users are advised to carefully inspect the received goods in accordance with applicable regulations. In the case of immediate installation, the items should be stored in suitable locations that conform to normal usage conditions. Additionally, it is important to ensure the proper preservation of the box transformer.

△ The foundation of installation shall be made in strict accordance with the foundation drawing provided by the manufacturer or jointly formulated by both parties. The installation site shall have sufficient loading and unloading space, and the unloading shall also run according to the loading requirements.

△ The installation foundation should be constructed strictly according to the manufacturer's provided foundation drawing or a mutually formulated plan. Sufficient space should be available at the installation site for loading and unloading equipment, and the unloading process should adhere to the specified loading requirements.

The gap between the base and the foundation of the box transformer shall be sealed with cement mortar to prevent rainwater from entering the cable room.

△ To prevent rainwater from infiltrating the cable room, it is imperative to seal the gap between the base and the foundation of the box transformer using cement mortar. This will effectively create a barrier, safeguarding the cable room against water ingress.

Description of basic drawing of box transformer

1. The actual size of the basic drawing should be determined based on the specific requirements of the project,

as they may vary depending on the project's specifications.

2. The foundation plane should be chiseled flat.

3. The cables in the foundation shall be fixed with brackets, and all embedded iron parts and supporting parts shall be grounded.

4. The orientation of embedded steel pipes in the foundation can be adjusted according to the actual situation of users.

5. The number of grounding rods is determined by soil conditions, and the grounding resistance must be less than 1 Ω.

6. When making the foundation, please check whether the dimensions of the base of the box transformer are consistent.

7. The size and location of the wellhead can be determined according to the field conditions.

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Instructions for Ordering

△ **Users should provide the following data to our company when ordering**

1. Product name, model, quantity and delivery date;
2. Material and color of box change shell;
3. Primary system diagram and technical specification of box transformer;
4. We are responsible for the installation and debugging of the components provided by the user or please explain in advance if we need to reserve positions;
5. Consult with the manufacturer for special requirements (e.g. ambient temperature exceeding standard, operating corridor or maintenance channel size).