

ZBW Type Prefabricated electrical Substation

Product Introduction

ZBW packaged substation, also known as prefabricated substation. It meets GB17467-1998 "high and low voltage prefabricated substation" and IEC1330 standards etc. As a new type of power supply and distribution device, it has more advantages than traditional civil substation. Such as smaller size, smaller floor area, compact structure, flexible movement, which greatly reduce period and area for construction in site, also the construction cost. Meanwhile, prefabricated substation is easy to be installed at site, can realize rapid power supply, almost maintenance free. Most particularly, it is placed at load center so that it can reduce power loss effectively to improve power quality, enhance the reliability of power supply and also is significant for distribution network transformation.

This substation fulfills the functions such as transformation of energy, distribution, transmission, metering, compensation, system control, protection and communication.

The ZBW prefabricated substation is composed by the high-voltage switchgear, low-voltage distribution panel, distribution transformer and enclosure. The high-voltage switchgear adopts air load switch and the transformer is dry-type or oil immersed type. The substation adopts good ventilation structure with elegant appearance and good heat-insulating performance. The temperature rise of the compartments caused by the outdoor solar radiation can be reduced to within the lowest limits on account of the upper and lower ventilation windows. The forced ventilation device and the temperature auto-controlled device should be installed in the substation. The systems of control, protection, live display and the lighting are equipped in each separate unit.

Technical Parameter of ZBW Prefabricated Substation

	Description	Unit	Data		
HV compartment	Rated Frequency	Hz	50		
	Rated voltage	kV	6	10	35
	Max operating voltage	kV	6.9	11.5	40.5
	Power frequency withstand voltage (phase to ground and between phases)/ disconnecter fracture	kV	32/36 42/48 95/118		
	lightning impulse withstand voltage (phase to ground and between phases)/ disconnecter fracture	kV	60/70	75/85	185/215
	Rated current	A	400	630	
	Rated short-time withstand current	kA	12.5(2S)	16(2S)	20(2S)
	Rated peak withstand current	kA	32.5	40	50

LV compartment	Rated voltage	V	380 200
	Rated current of main circuit	A	100~3200
	Rated short-time withstand current	kA	15 30 50
	Rated peak withstand current	kA	30 63 110
	Branch current	A	10 ~ 800
	Number of branch circuits	/	1 ~ 12
	Compensation capacity	kVA R	0 ~ 360
Transformer	Rated capacity	kVA	50~2000
	hort-circuit impedance	%	4 6
	Tapping range	/	$\pm 2 \times 2.5\% \pm 5\%$
	Connection group symbol	/	Yyn0 Dyn11

Application

The type of small unattended substation is applicable for voltage up to 35KV, with main transformer capacity up to 5000KVA, is widely used in urban industrial substation, 10KV ring network system, rural power grid 35KV substation and other occasions.

Main Function

This substation fulfills the functions such as transformation of energy, distribution, transmission, metering, compensation, system control, protection and communication.

Main Characters

The primary and secondary equipments are pre-installed in the cabinet which is removable, full-sealed, automatic temperature controlled, antiseptic, damp proof and rustproof. It only needs to be installed on the cement foundation after arriving at the site. This kind of substation have the advantages of low investment, short construction period, small occupation area and easy environmental coordination.

Notes to the ordering of the Prefabricated Substation

1.High voltage:

Way of incoming: terminal type, ring type or double power in.

Whether there is high voltage metering or not. If yes, the position of the meter(front of the switch or behind the switch), the requirement of the meter gauge and its supplier is designated or not.

Type of the HV switch, one way is using the combination with high voltage vacuum load switch and the fuse, which is mainly used and economical; the other is adopting the disconnecter switch and the vacuum breaker, which is used for the high capacity transformer and with higher price.

2.Transformer: the transformer type, the connection group symbol, capacity and the impedance voltage of the transformer.

3.Low voltage:

Switch Supplier.

The number of the outgoing ways and the rated current value of each outgoing switch.

Whether there is the compensation or not, if yes, the capacity of the compensation.

Whether with the metering or not. If yes, the position is necessary.

4.Type of the busbar(copper or aluminum)

5.Layout of the substation(whether with the operation corridor or not)

6.The material of transformer enclosure: composite board (commonly used), steel plate, stainless board or cement.

7.Delivery Period for prefabricated substation.