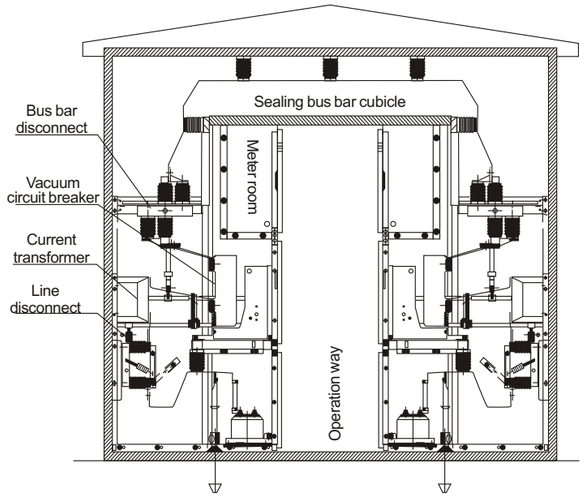
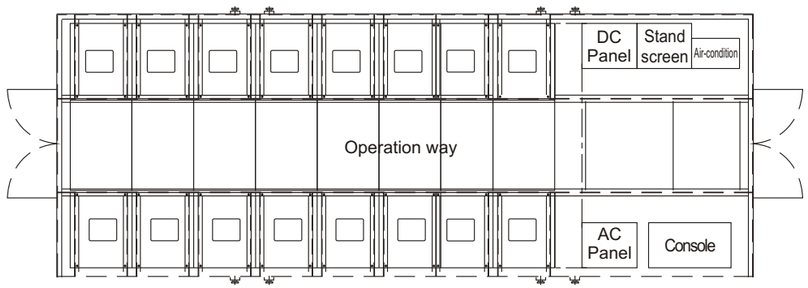
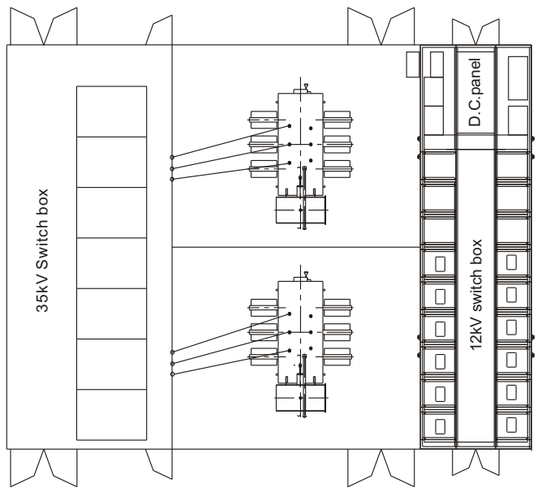


12kV switch cubicle section figure



12kV switch cubicle layout drawing



35kV Combined substation layout

YBZ□-12 Intelligent Compact Substation

Summary

Compared to the traditional power supply, the box type substation has the obvious superiority, but still has some deficiency, not only dozens of simulations indicating instrument, the massive relays, which will bring enormous in convenient for the production organization, the spare storage product debugging and the maintenance, also the difficulty to control the complex logic. Regarding multi box type substations, it can't realize the centralized management and the sequencing operates, which will bring the hidden danger for the movement. Along with development of the modern industry, the integrated management and intellectualized operation become more and more important, use modern electronic technology, sensor technology, communication, computer network technology to manager the monitor, the protection, the control, the electric power measurement, the communication under the normal operation and the accident condition.

Model

YB Z □ - 12 / 0.4 - □

- Rated capacity of transformer (kVA)
- Rated voltage of low voltage side (kV)
- Rated voltage of high voltage side (kV)
- Arrangement
- Intelligent
- Prefabricated substation

Product feature

1. There are automatic temperature control and ventilative box, heat up and dew resistant devices in the box substation.
2. The covering has the features of: Fastness, heat insulation, good performance, against the micro-organism, moisture-proof, good outlooks and the convenience maintenance.
3. The high voltage side always adopts the load break switch and current limited fuse to protect the transformer. When the fuse acting, it can link the three-phase load switches. And the high voltage side also can adopt the vacuum circuit breaker as the circuit protector.
4. The communication network has the features of real time response ability, high reliability, fine electromagnetic compatibility performance, and hierarchical structure.
5. This automatic system adopts the intelligent modulations design, integrated management, so its centrality is good, the installment is simple, as well as the wiring.
6. The integrated protective device with high brightness LED of demonstration menu, it can add the dormancy function with liquid crystal display monitor.
7. It has the strong anti interfere ability and electricity protection function, its parameter and electricity parameter can be set.
8. It can realize the bidirectional communication according the automatic power monitor and control system.

Ambient condition

1. Ambient temperature: -50℃~+50℃;
2. Attitude: ≤2000m;
3. Wind pressure: ≤700Pa;
4. Humidity: daily average ≤95%, monthly average ≤90%;
5. Pollution degree: Ⅳ;
6. Earthquake intensity: 8 degree;
7. Occasions without strong electromagnetic interferences, conductive dust, fiercely shake and corrosiveness, as well as without flaming and explosive matter.

Application

The intellectualized pre-fabricated substation suits to the public city power distribution, industry and mining enterprise, oil field wharf, residential area, construction, especially the heavy power load place, it can improve the power supply quality and strengthen the energy management through the real-time monitoring.

Technical specification

Technical specification of box

No.	Performance standard	Unit	High voltage element	Transformer	Low voltage unit
1	Rated voltage	kV	12	11/0.4	0.4
2	Rated capacity	kVA		100~1600	
3	Rated current	A	630		144~2309
4	Rated breaking current	kA	20~31.5(circuit breaker)		15~63
5	Rated short circuit withstand current	kA/s	20~31.5(circuit breaker)		30/1
6	Rated peak withstand current	kA(peak)	50~80(circuit breaker)		63
7	Rated closing current	kA	50~80(circuit breaker)		
8	Power frequency withstand voltage		Phase-earth and phase-phase: 42/1	35/1	2.5/1
		kV/min	Across open contacts:48/1		
			10k Connection cable DC withstand phase-earth / phase-phase		
9	Lightning impulse withstand voltage	kV(peak)	Phase-earth and phase-phase:75	75	
			Across open contacts:85		
10	Protective accuracy		IP33	IP33	IP33
11	Noise class	dB		≤55	

The capacity of the transformer: The S9(11)-M fully sealing transformer and SC9 dry transformer, and the capacity data as below: 50, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600kVA.

Integrated protective device BZBH-5000 parameter

	Item	Parameter
Rated parameter	Rated power voltage (V)	220(AC)
	Rated current (A)	1(AC)
	Rated voltage (V)	220
	Frequency (Hz)	50
Measurement accuracy	Current and voltage accuracy (class)	0.5
	DC voltage, frequency sampling accuracy (class)	0.5
	Active power, reactive power, apparent power, power factor (class)	0.5
	Contact site (V)	220(AC)
	Software anti shock time (ms)	20
	Contact capacity	5A(AC)
Remote control	Analogue input	Total: 36 ways (extensible)
	Digital input	Total: 30 ways (extensible)
	Digital output	Total: 32 ways (extensible)
	Communication interface	RS485GSM
Ambient condition	Temperature scope (℃)	-20~+70
	Relative humidity (%)	50~90
	Air pressure (kPa)	66~108
Communication channel	Transmit speed (bit/s)	9600
	Communication rule	User-defined
	Communication medium	Wireless and wire
Power consumption	Whole power consumption under normal work time (VA)	<10
Reliability	Average no fault work time (h)	≥10000

ZXB Series Intelligent Railway Signal Double Power Compact Substation

Summary

To meet the requirements of the fast development of the railway, the realization of the distance monitor and self control of the railway information, the reliability power supply, the HEAG company had develop the ZXB intelligent railway information bi-power substation, which can resolve the problems of disperse power supply of railway information, difficult of operation and maintenance, bad environment of the installation site, the difficult of distance control and monitor. Consider the railway's self closed and electrical run-through circuit, this product combined the high voltage ring main unit, transformer, low voltage switchgear, double power monitor, power circuit fault self cut off system and low voltage control and so on to a double-deck, sealing and antisepsis box, which can suit to the power supply of primary load of the concentrating control, large substation electric concentrating linkage, automatic closedown and hump signal.

Standard

IEC62271-202 & GB/T17467-1998	High / low voltage prefabricated substation
IEC62271-102	High AC disconnecting switch and earthed switch
GB/T3309-1989	Cold mechanical test of high voltage device
GB3906-1991	3~35kV DC metal sealing switching plant
GB/T11022-1999	General standard technical specification of high voltage switching plant and control device
GB/T7251.1-1997	The first part of High voltage complete switching plant and control device: formal test and partial formal test of complete equipment
IEC60529 & Protection grade	Part 1 of high voltage test technology: general test requirement
GB4208-1993	Covering grade (IP code)
DL/T537-2002	High / low voltage prefabricated substation use index

Product feature

1. The intelligent railway signal double power substation pole adopts the 3mm cold rolling steel plate, and the double-decked shutter which has good features of high mechanical strength, good heat insulation, dustproof, against the micro-organism, moisture-proof, good outlook, convenience maintenance.
2. Accord to the requirement of the railway power supply, the substation can be divided into three parts: high voltage room, transformer room and low voltage room.
3. To assure the quality of the communication and avoid the signal power fault, there are clapboards between the low voltage room and transformer room, as well as there are heat insulation clapboards between the double-decked shutter.
4. To maintenance the temperature in a permission scope, it uses natural and compulsive wind to release the temperature for the railway signal double power substation.
5. The high voltage distribution unit and the high voltage ring main unit are made up by the import spread aluminum zinc plate, and it has three parts of wiring incoming and outgoing unit, signal PT unit and signal transformer wiring outgoing unit.
6. The low panel combined by standard network panels, it has self close low voltage panel, link up low voltage panel, automatic panel, self close terminal box and link up terminal box.
7. The transformer is S11-M series fully sealing oil distribution transformer and dry transformer.
8. Other characteristics:
   - 8.1 The cable hole of incoming and outgoing wiring of high voltage and low voltage room is made by dismountable steel plate and protected by the cable sheath.
   - 8.2 There are two steel channels for the transformer's pass in the transformer room, so the transformer can be maintained and replaced by demolishing the bolt.
   - 8.3 There is a inter door inside the transformer door, so the running status of transformer can be observed by it.
   - 8.4 The top of the substation is a incline design, the gradient is bigger than 5 degree, in order to avoid the accumulating of rain water.
   - 8.5 There is a limit switch on the each transformer door, when the door was opened, the light will turn on. Otherwise, it will turn off.
   - 8.6 The low voltage outgoing loops are link to the terminal bus, so every operation of the outgoing cable connecting is operated on the terminal bus.
   - 8.7 When the angle of the door open is at the 90 degree, at the same time, the wind-proof tension will fix up the door.
   - 8.8 There is pate on the door of each room, there is high voltage danger marking on the each side and also there is wiring marking on the low voltage loop switch and DC measuring meter.
   - 8.9 There is lightning arrester and surge absorber in the substation for the light avoiding.