1. YB □ 22– □ Series
Pre–fabricated Substation (European Type)

1. General introduction

YB □ series of products are designed for city power network construction. This kind of product is a set of power distribution device, which is assembled with medium voltage switchgear, transformer, low voltage switchgear based on indicated connection.

They are used for 3–phase AC system, 50Hz frequency, and capacity less than 2500kVA in the residential districts, malls, hotels, construction site, industrial & mining enterprise and temporary workplace. Generally, they are suitable for ring network power supply and redial terminal power supply.

2. Model designation

YB □ 22 – □ / □ – □

- Transformer Rated Max Capacity(kVA)
- Rated voltage of LV side (kV)
- Rated voltage of HV side (kV)
- Design No.
- Formation Characteristic (M for 目， P for 品)
- Pre–fabricated Substation

3. Normal sercice condition

a. Ambient temperature:-25℃ -+40℃
b. The altitude should not be over 1000m and if use special transformer and LV components the altitude can up to 3800m.
c. Installation condition should not be severe shake and impact and the vertical lean angle should not be over 5℃
d. The air humidity should not be over 90%(+25 ℃)
e. The speed of outdoor wind should not be over 35m/s

4. Designation characteristics

a.The shell is designed in terms of advanced technology and actual situation. It has advantages of fastness, heat reduction by ventilation, good performance, dust prevention, small animal prevention, moisture prevention, good appearance and convenient maintenance. There are several kinds of material for choosing, for example, aluminum alloy plate, steel plate, composite plate, stainless steel plate, non-metallic material.

b.The HV side usually uses load switch or vacuum circuit breaker, with a completed set of anti-misperation functions. If the ring main unit switchgear (short as RMU) is selected as XGN20-12L SF6 RMU, HXGN15A, HXGN17, KYN28A, the transformer can be oil-immersed, full-sealed or dry type transformer.

c.The substation has perfect protection performance, easy operation, and optional HV&LV measurement. The automatic reactive power compensation device is able to be installed required by customer.

d.The cover of the substation is made of double layers. The gap between the two layers filled with foamed plastics to prevent heat. There are independent separators inside the HV&LV room. In the transformer room, there are condensation prevention device, automatic temperature monitor and heating & cooling devices.

Tank is designed as natural ventilation, also the forced ventilation equipment can be installed. The door and side plate opposite the shutter should be fitted with anti-dust device.

5. Main technical parameters

Name	Unit	HV equipment			Transformer			LV equipment
Rated Voltage	Kv	12	24	35	10/0.4	24/0.4	35/0.4	0.4
Rated Current	A	400,630,1250	400,630,1250	400,630,1250	3/75~150/3750	1.44/75~72/3750		50~4000
Rated Frequency	Hz	50	50	50	50	50	50	50
Power Frequency Withstand Voltage(1min)	kV	Earthing, Phase to phase 42, Port48	Earthing, Phase to phase 60, Port79	Earthing, Phase to phase 95, Port118	35/28	55/28	75/28	2.5
Lighting Impulse Withstand Voltage	Kv	75	125	185	75	125	185	
Crust Protection Grade		IP23	IP23	IP33	Oil type ⩽ 55, Dry type ⩽ 65			
Nosiy Grade	dB	⩽ 50	⩽ 50	⩽ 50				
Appearance Dimentions	mm	According to primary connection scheme						

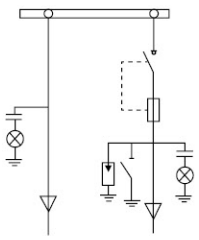
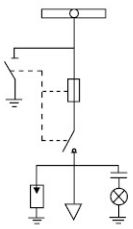
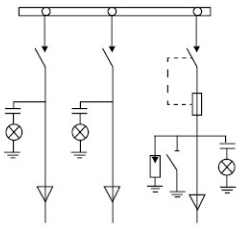
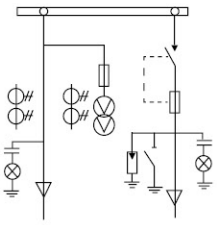
HV Room

LV Room

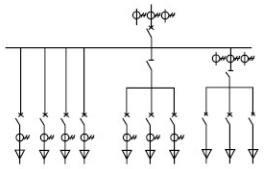
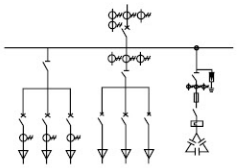
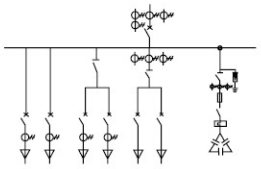
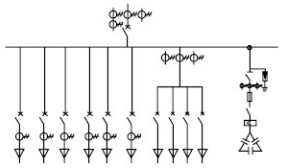
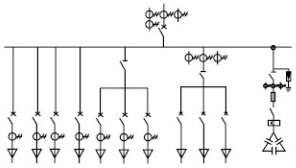
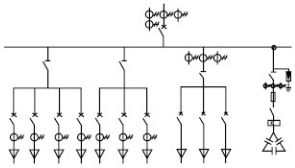
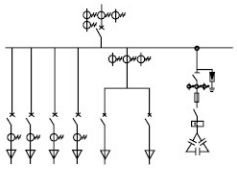
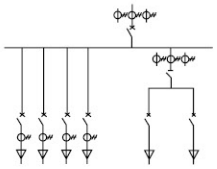
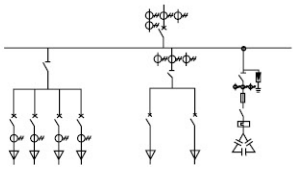
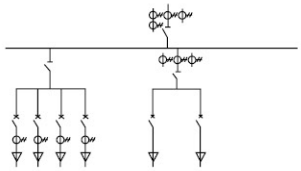
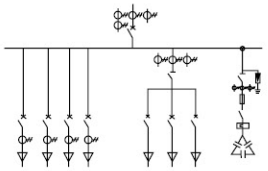
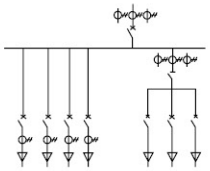
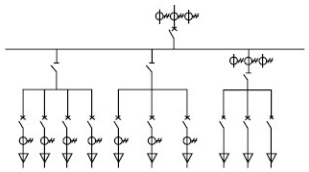
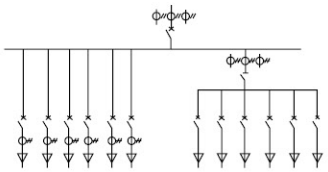
Transformer Room

6. YB □ 22 series pre-fabricated substation disposition scheme

6.1 HV typical single wire diagram

Scheme No.		01	02	03	04
Single wire diagram					
Rated current(A)		630	630	630	630
Main components	Load switch	FN12-12RD Conbination	FN12-12RD Conbination	FN12-12RD Conbination	FN12-12RD Conbination
	Current transformer				
	Voltage transformer				
	HV fuse	XRNT-10	XRNT-10	XRNT-10	XRNT-10
	Arrester	HY5WZ-17/45	HY5WZ-17/45	HY5WZ-17/45	HY5WZ-17/45
	Live Monitor	GSN1-10	GSN1-10	GSN1-10	GSN1-10

6.2 LV wire connection

	01	02	03
Wire connection			
Scheme No.	04	05	06
Wire connection			
Scheme No.	07	08	09
Wire connection			
Scheme No.	10	11	12
Wire connection			
Scheme No.	13	14	15
Wire connection			

1.1 Aluminum-plastic Panel, Color Steel Plate Shell Pre-fabricated Substation

General introduction

This series of products are more and more widely used since they have advantages of good appearance, good heat insulation performance. This pre-fabricated substation uses u-steel as the base, angle steel as the substation framework (the substation employs double-layered color steel plate).

The appearance materials are imported composite plate and aluminum-plastic plate, with has a strong ability of corrosion resistance, no rust, and fastness, with a simple structure, good rigidity, light weight and good heat insulation performance.

This substation is widely used in residential area, malls, streetlight project, scenic place and wind power generation.

The color of shell is optional by customer.

Aluminium Alloy Composite Shell C-1

Aluminium Alloy Composite Shell C-2

Aluminium Alloy Composite Shell C-3

Aluminium Alloy Composite Shell C-4

Aluminium-plastic Shell L-1

1.2 Metal Shell
Pre-fabricated Substation

General introduction

This series of products are made of base, side plate, separate board, door and top roof. Inside the substation, there are HV room, transformer room and LV room. The protection level of the substation is IP33. The close board, separate board, door and top roof above the base, all of them are processed by cold-roll steel sheets, connected together by welding or fasteners. Each face of components is covered by durable protective layer after spraying.

Container Box With Steel Shell G-1

Container Box With Steel Shell G-1-1

Aluminium Sheet Shell G-2

Package System With Steel Shell G-3

Package System With Steel Shell G-4

Package System With Steel Shell G-5

1.3 Non-metal Shell Pre-fabricated Substation

General introduction

This series of products are suitable for single-transformer or double-transformer pre-fabricated substation. There are two types of substatios, such as above the ground and under the ground.

The shell are made of glass fiber cement, it has,

a.Strong mechanical shock resistance and change resistance.

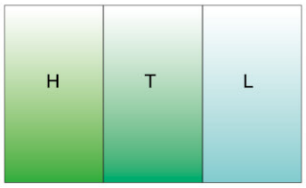
b.Strong sun resistance, crack resistance, radiation resistance and heat insulation characteristic.

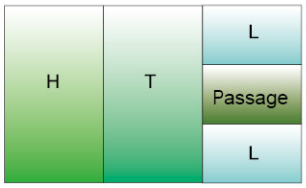
c.Good ability of antifreeze, anti-cracking, anti-corrosion, moisture proof and anti-flaming.

d.Can be used for the whole year.

(The color of the shell is optional by customer)

" 目 "structure





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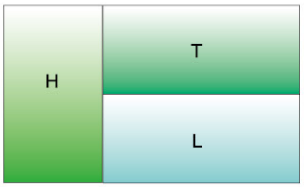
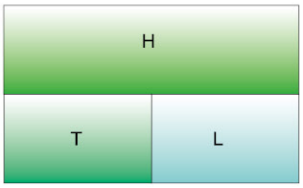




Non-metal shell F-1

Non-metal shell F-2

Non-metal shell F-3

Non-metal shell F-4

1.4 Underground Pre-fbricated Substation

General introduction

For the underground type substation, the HV equipment, LV equipment and transformer are placed underground. During the maintenance, the top roof can be removed, then the staff can access to the inner substation through the entrance. Generally, they are used for square grass area, park, which will not destroy the beautiful environment.

Customers can choose half-underground or whole-underground substation according to different places.

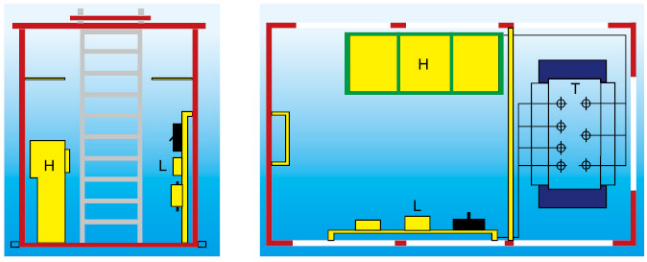


Diagram of half-burried substation

Half-burried pre-fabricated substation

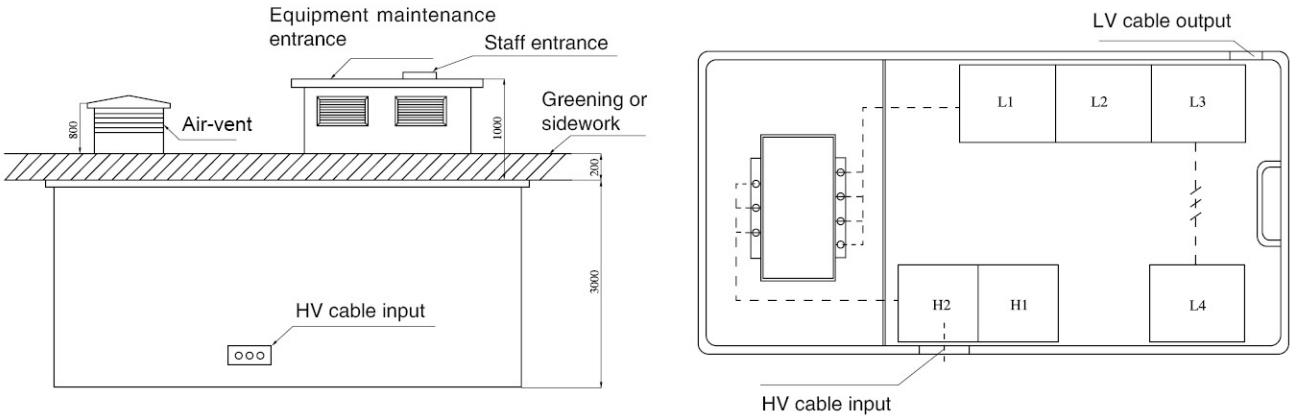


Diagram of whole-burried substation

1.5 Stainless Shell Pre-fabricated Substation

General introduction

For the stainless shell type substation, the shells are made of high quality stainless sheets. The substation has a good designation and exquisite workmanship. With special honey comb structure, solid shell, heat insulation, heat dissipation, good appearance and high protective grade, the substation shows advantage of the stainless material.

Stainless steel shell Substation T-1

Vehicle type substation T-2
Suitable for frequent mobile site

Sledge-type T-3 (Switching station)
Suitable for mobile site in the alpine region or
12kV network switching station

1.6 Minimized Intelligent Pre-fabricated Substation

General introduction

Since the series of the substation fitting with the imported FLUSARC SF6 ring main unit as the HV income, the network power supply can be achieved easily. Also, the fault site can be indicated easier, power cutting area is minimized, which make it convenient for maintenance. Micro electronics technology makes it possible to monitor intensively, test periodically, operate remotely and communicate easily.

This substation adopts automatic system. These functions are called five remotes, including remote test, remote communication, remote control, remote adjust and remote monitor. It gathers protection, test, monitor, condensation prevention, and communication, to achieve working without human in attendance.

The volume of the substation is quite small (Length2500 x Width1600 x Height1700), with nice appearance, which is suitable for public place.

M-1

HV Room

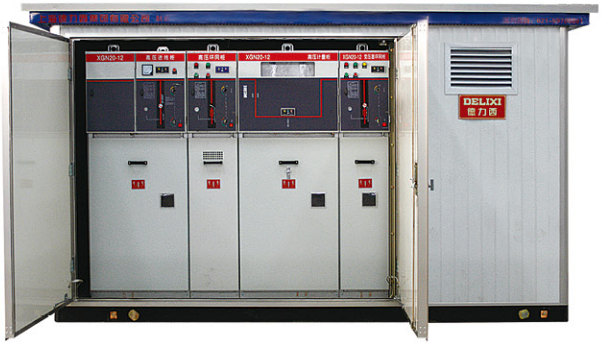
LV Room

1.7 Economy Pre-fabricated Substation

General introduction

This type substation uses steel or aluminum alloys composite sheets.

The inner and outer surfaces of the substation are sprayed to form a durable protective layer. The HV side adopts frame structure with reliable "five-defence" functions. It makes convenient to install electric devices.



HV Room

LV Room