

High Voltage Capacitor

TBBZ pole-mounted Auto-switch High-voltage Shunt-capacitor Installation

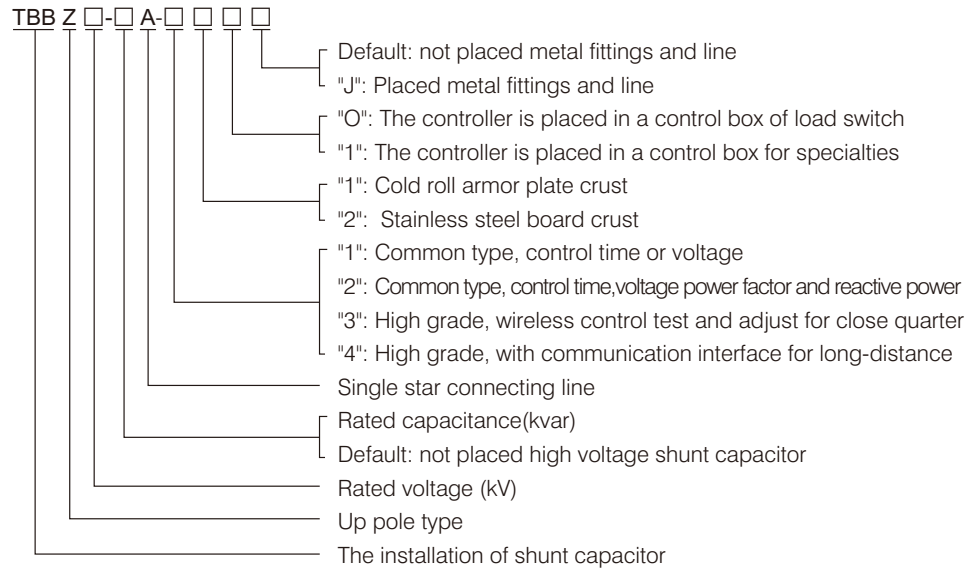


1 General Description

TBBZ series pole-mounted automatic-switching high-voltage shunt-capacitor on and off device are applicable to 10kV and 6kV distribution lines to increase the power factor, reduce circuit losses and improve voltage quality.

The device consists of all-film high-voltage shunt capacitor (have internal fuses and discharge resistances within), outdoor switching capacitor bank on and off specially high voltage SF6 load-switch (install CT within), power transformer PT controlling, outdoor high-voltage current transformer, zinc oxide surge arresters, drop-out fuses, reactive power compensation automatic-controller and so on. Based on circuit requirement and presetting by user, they can carry out auto-switching shunt-capacitors on and off (according to time, voltage, power factor or reactive power) to make power factor achieve prearranged value. At the same time, they have perfect protective functions against short-circuit, over-current, over-voltage, under-voltage, lacking-phase, making capacitors which still accumulate electric charge, and etc. FLW(B) outdoor AC high voltage SF6 load switches have the characteristics of long service time, no bounce at closing and no burn-back at opening. Auto-controllers have excellent ability to anti-interfere. So they can ensure that the device work reliably. The device is simple and compact in structure, convenient to be installed. Executing standards: JB/T7111-1993 , DL/T604-2009, Q/ZT273-2001.

2 Type Meaning and Specification



TBBZ type spec (Table 1)

Table 1

Type spec	Control physics: time, voltage	Time, voltage, power factor, reactive power	Close quarter control , Remote measure Remote adjust	With communication interface, "4 remote"	Cold roll steel board crust	Stainless steel board crust	The controller is placed inside switch	The controller is placed in special control box	The metal fittings and line are placed for match set
TBBZ□-□A-110	✓				✓		✓		
TBBZ□-□A-110J	✓				✓		✓		✓
TBBZ□-□A-111	✓				✓			✓	
TBBZ□-□A-111J	✓				✓			✓	✓
TBBZ□-□A-120	✓					✓	✓		
TBBZ□-□A-120J	✓					✓	✓		✓
TBBZ□-□A-121	✓					✓		✓	
TBBZ□-□A-121J	✓					✓		✓	✓
TBBZ□-□A-210		✓			✓		✓		
TBBZ□-□A-210J		✓			✓		✓		✓
TBBZ□-□A-211		✓			✓			✓	
TBBZ□-□A-211J		✓			✓			✓	✓

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Type spec	Control physics: time, voltage	Time, voltage, power factor, reactive power	Close quarter control , Remote measure Remote adjust	With communication interface, "4 remote"	Cold roll steel board crust	Stainless steel board crust	The controller is placed inside switch	The controller is placed in special control box	The metal fittings and line are placed for match set
TBBZ□-□A-220		✓				✓	✓		
TBBZ□-□A-220J		✓				✓	✓		✓
TBBZ□-□A-221		✓				✓		✓	
TBBZ□-□A-221J		✓				✓		✓	✓
TBBZ□-□A-310			✓		✓		✓		
TBBZ□-□A-310J			✓		✓		✓		✓
TBBZ□-□A-311			✓		✓			✓	
TBBZ□-□A-311J			✓		✓			✓	✓
TBBZ□-□A-320			✓			✓	✓		
TBBZ□-□A-320J			✓			✓	✓		✓
TBBZ□-□A-321			✓			✓		✓	
TBBZ□-□A-321J			✓			✓		✓	✓
TBBZ□-□A-410				✓	✓		✓		
TBBZ□-□A-410J				✓	✓		✓		✓
TBBZ□-□A-411				✓	✓			✓	
TBBZ□-□A-411J				✓	✓			✓	✓
TBBZ□-□A-420				✓		✓	✓		
TBBZ□-□A-420J				✓		✓	✓		✓
TBBZ□-□A-421				✓		✓		✓	
TBBZ□-□A-421J				✓		✓		✓	✓

Remark: " ✓ " means what the type spec product has content in the item

3 Using environment condition

3.1 Environment air temperature

3.2 Altitude : below 2000 m

3.3 Wind speed $\leq 35\text{m/s}$

3.4 Sunlight radiate(most) is 0.1W/cm^2

3.5 Earthquake: intensity is less than 8 degree

3.6 Chemistry condition : there aren't any nocuous air and steam isn't electric and blast dust

Remark : tableland type and special environment product will bargain on another fashion.

4 Main technology parameter

Table 2

Type	Rated voltage (kV)	Rated utensil group rated voltage(kV)	Rated capacitance (kvar)	Rated current (A)	Capacitor warp	Allow steady state over-voltage	Allow steady state current	Shunt capacitor type	Capacitor quantity
TBBZ10-100A	10	10.5	100	5.5				$B_F^A M10.5-100-3WZ$	1
TBBZ10-200A	10	10.5	200	11				$B_F^A M10.5-200-3WZ$	1
TBBZ10-300A	10	10.5 3	300	16.5				$B_F^A M10.5/\sqrt{3}-100-1WZ$	3
TBBZ10-360A	10	10.5 3	360	19.8				$B_F^A M10.5/\sqrt{3}-120-1WZ$	3
TBBZ10-450A	10	10.5 3	450	24.7				$B_F^A M10.5/\sqrt{3}-150-1WZ$	3
TBBZ10-600A	10	10.5 3	600	33				$B_F^A M10.5/\sqrt{3}-200-1WZ$	3
TBBZ10-900A	10	10.5 3	900	49.4	0~5%	1.1Un	1.3In	$B_F^A M10.5/\sqrt{3}-150-1WZ$	6
TBBZ10-1200A	10	10.5 3	1200	65.9				$B_F^A M10.5/\sqrt{3}-200-1WZ$	6
TBBZ6-100A	6	6.3	100	9.2				$B_F^A M6.3-100-3WZ$	1
TBBZ6-200A	6	6.3	200	18.3				$B_F^A M6.3-200-3WZ$	1
TBBZ6-300A	6	6.3 3	300	27.5				$B_F^A M6.3/\sqrt{3}-100-1WZ$	3
TBBZ6-360A	6	6.3 3	360	33				$B_F^A M6.3/\sqrt{3}-120-1WZ$	3
TBBZ6-450A	6	6.3 3	450	41.2				$B_F^A M6.3/\sqrt{3}-150-1WZ$	3
TBBZ6-600A	6	6.3 3	600	54.9				$B_F^A M6.3/\sqrt{3}-200-1WZ$	3

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5 Main electric device

5.1 main electric device collocate

Table 3

The type and name of the installation	Quantity	Remark
BAM BFM high voltage shunt capacitor	Table 2	
FLW(B)-12 special high voltage SF6 load switch to switch on-off capacitor	1	
YBK control power supply transformer	1	
RW10-10 fall off type fuse	3	The ratio is 10000/220 in 10kV line. The ratio is 6000/220 in 6kV line.
YH5WS zinc oxide arrester	3	The type is YH5WS-17/50 in 10kV line. The type is YH5WS-10/30 in 6kV line.
WZK-1 high voltage reactive compensator	1	
LZKW-10 high voltage current transformer outdoor	1	The product of common 1 type isn't used

5.2 Main electric device element parameter

5.2.1 FLW(B)-12 special SF6 load switch to switch on-off shunt capacitor

Table 4

Rated voltage (kV)	Rated current (A)	1 min power frequency patience voltage (kV)	Patience voltage under thunder(kV)	Rated short time patience current avall ability value (kA)	Rated patience current peak value(kA)	Rated short circuit by switch current (kA)	Machine life (times)	Operating supply voltage	SF6 air rated press	Control box protecting grand
12	100 200	42	75	12.5kA, 4s	31.5	31.5	30000	AC220V	0.05MPa (20°C)	IP33

5.2.2 YBK control supply transformer

Table 5

Rated voltage	Rated capacitance	1 min power frequency patience voltage	Patience voltage under thunder strike	The most allow warp of secondary voltage
10/0.22kV	1kVA (Transient)	High voltage side42kV	Low voltage side3kV	75kV
6/0.22kV	150VA (Transient)	High voltage side25kV	Low voltage side3kV	60kV

5.2.3 WZK-1 high voltage reactive compensator

Table 6

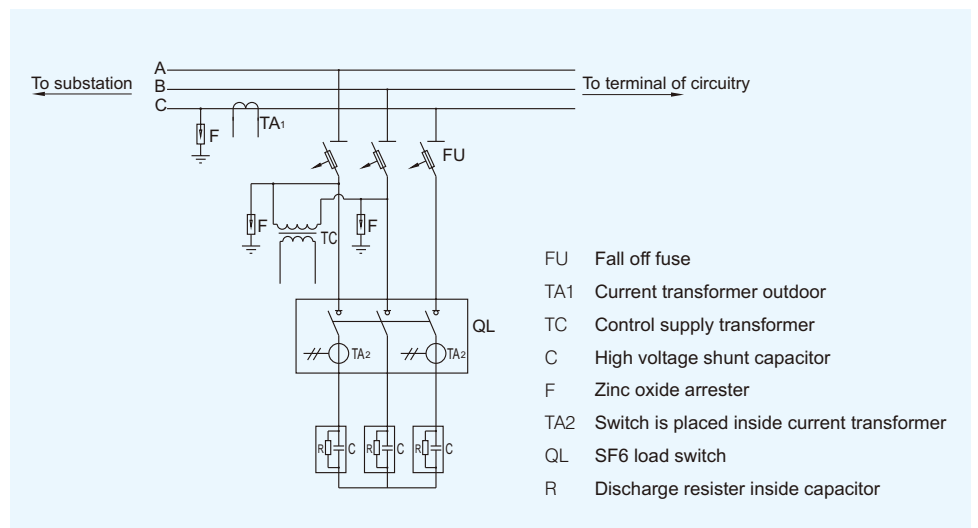
Rated voltage	Rated current	Power consume	Contact point rated current	Power frequency patience voltage for 1 min	Measure precision of voltage and current	Measure precision of reactive power	Clock warp
220V	5A	<5W	10A, AC220V	2500V	±0.5%	±0.3%	1s/d

5.2.4 LZKW-10 high voltage current transformer outdoor

Table 7

The highest work voltage	Rated frequency	Rated primary current	Rated secondary current	Rated insulation level	Rated capacitance	The most output capacitance	Nicety grand
12kV	50Hz	100~400A	5A	12/42/75kV	5VA	10VA	0.5

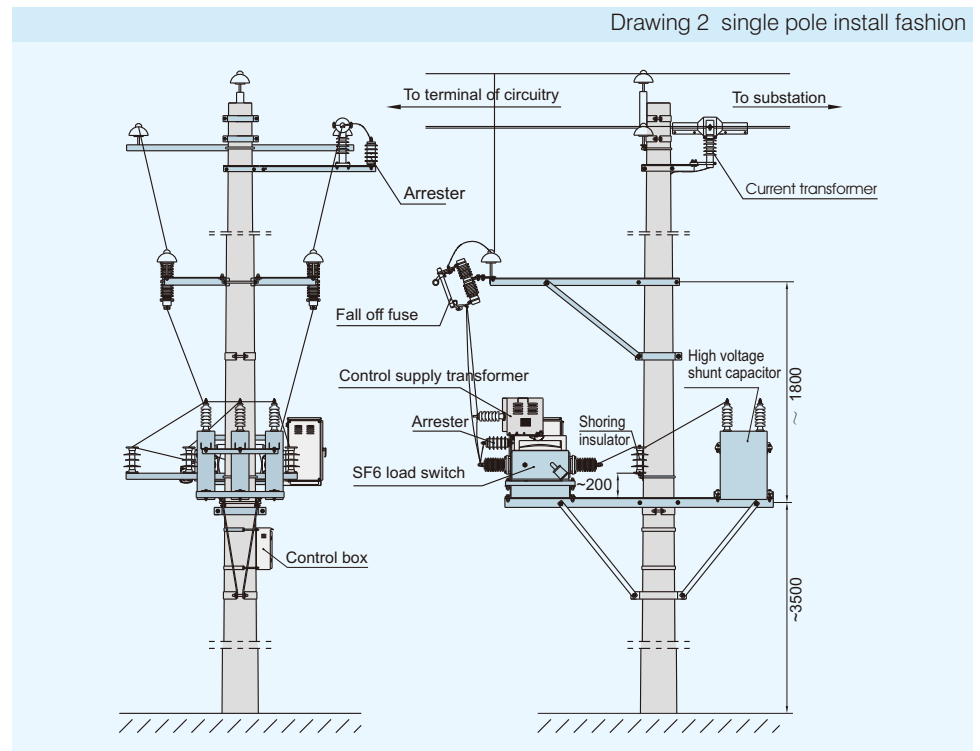
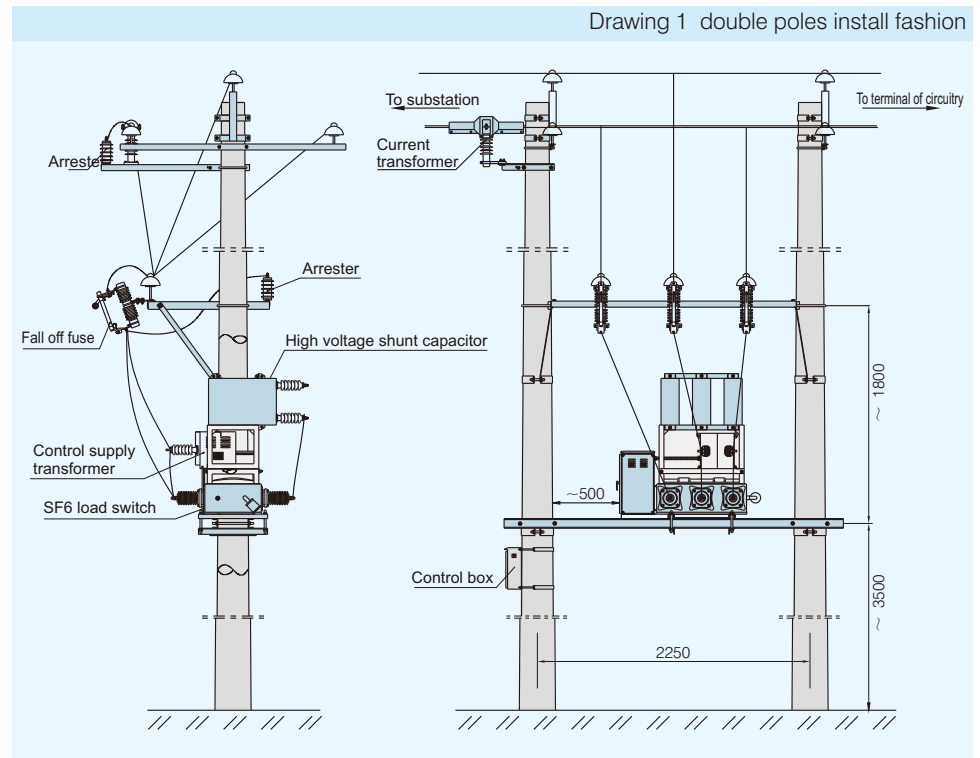
6 Primary principle drawing



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7 Outline and placed dimension

There are two install fashion in 600 kvar of the installation which are double pole and single pole .
The double pole fashion is used on up 600 kvar (drawing 1 and 2)



8 subscribe goods notice

When subscribe goods, please offer hereinafter information:

- | | |
|---|---|
| 8.1 According to item 2, please give clear indication of type and spec. | 8.4 Install fashion. |
| 8.2 There is special demand element and parameter. | 8.5 The spec of pole (include length and tip diameter of the pole). |
| 8.3 The ratio of current transformer. | 8.6 The name and quantity of spare part. |
| | 8.7 The time of deliver the goods and transport fashion. |