

ZN65-12 Indoor AC High Voltage Vacuum Circuit Breaker

Summary

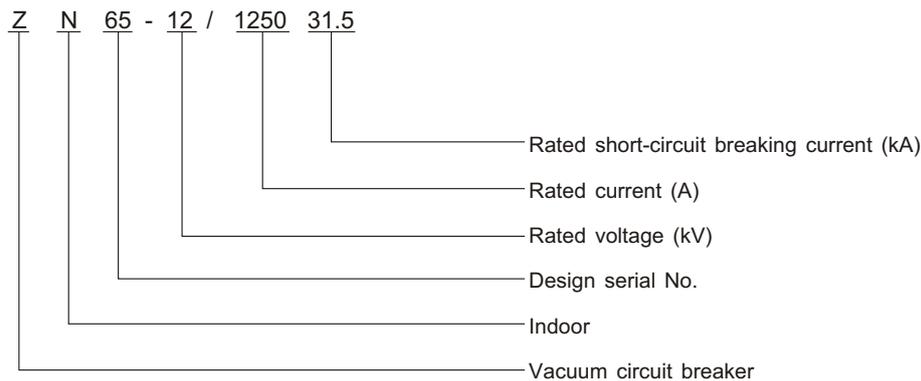
ZN65-12 indoor HV vacuum circuit breaker is an important electric element in distribution system which play functions of connect and disconnect power and fault-protection in power system. It applies to power system of rated voltage 12kV, three-phase AC 50/60Hz with purpose to protect and control electric apparatus in industry like mining, substation and power plant and occasions with frequent operations.



Ambient condition

1. Ambient temperature: $-25^{\circ}\text{C}\sim+40^{\circ}\text{C}$;
2. Relative humidity: daily average $\leq 95\%$, monthly average $\leq 90\%$;
saturated gas pressure: daily average $\leq 2.2 \times 10^{-3}$ Mpa,
monthly average $\leq 1.8 \times 10^{-3}$ MPa;
3. Altitude: $\leq 1000\text{m}$;
4. Earthquake intensity: ≤ 8 degree;
5. Occasions without fire, explosive matter, severe pollution, chemical corrosion and severe vibration.

Model



Technical specification

1. Main technical parameter of ZN65-12 indoor VCB, please refer table 1

Technical parameter

Table 1

No.	Item		Unit	Data			
1	Rated voltage		kV	12			
2	Rated insulating level	1min. PF withstand	kV	42			
		Rated lightning impulse withstand voltage		75			
3	Rated current		A	630 1000 1250	1000 1250	1250 1600 2000 2500	1250 1600 2000 2500 3150
4	Rated short-circuit breaking current		kA	20	25	31.5	40
5	Rated short-circuit making current(peak)		kA	50	63	80	100

Table 1

No.	Item	Unit	Data			
6	Rated thermal stable time	s	4			
7	Rated thermal stable current(virtual value)	kA	20	25	31.5	40
8	Rated dynamic stable current(peak)	kA	50	63	80	100
9	Rated operation sequence		O-0.3s-CO-180s-CO			O-180s- CO-180s -CO
10	Breaking times of rated short-circuit breaking current	Times	50			30
11	Rated breaking current of single capacitor bank	A	630			
12	Rated breaking current of back to back capacitor bank	A	400			
13	Mechanical life	Times	20000			

2. The VCB should accord to the mechanical parameters in table 2 after it is fabricated and adjusted.

Parameters on mechanical character

Table 2

No.	Item	Unit	Data
1	Distance of open contact	mm	11 ± 1
2	Contact travel		3.5 ± 0.5
3	Average opening speed(0~6mm)	m/s	1.1 ~ 1.5
4	Average closing speed		0.4 ~ 0.8
5	Contact closing trip time	ms	≤ 2
6	Three-pole opening asynchronism		≤ 2
7	Closing time		40 ~ 60
8	Opening time		35 ~ 55
9	Central distance between poles	mm	250 ± 1.5
10	Wearing thickness of moving & fixing contacts		3

3. Storage motor applies single-phase series motor, please refer to table 3 for technical data.

Technical data for storage motor

Table 3

No.	Rated voltage (V)	Rated input power(W)	Normal operate voltage(V)	Energy-storage time under rated voltage(s)
HDZ-22080B	DC 220 AC 220	200	85%~110%rated voltage	≤ 15

4. Technical data of C/O electromagnet

Table 4

Item	Closing coil		Opening coil	
	DC220 AC220	DC110 AC110	DC220 AC220	DC110 AC110
Constant operation voltage (V)	DC220 AC220	DC110 AC110	DC220 AC220	DC110 AC110
AC resistance of loop at 20°C (Ω)	247	57.7	247	57.7
Normal operate voltage range(V)	85%~110% of rated voltage		65%~120% of rated voltage	

Outline dimension

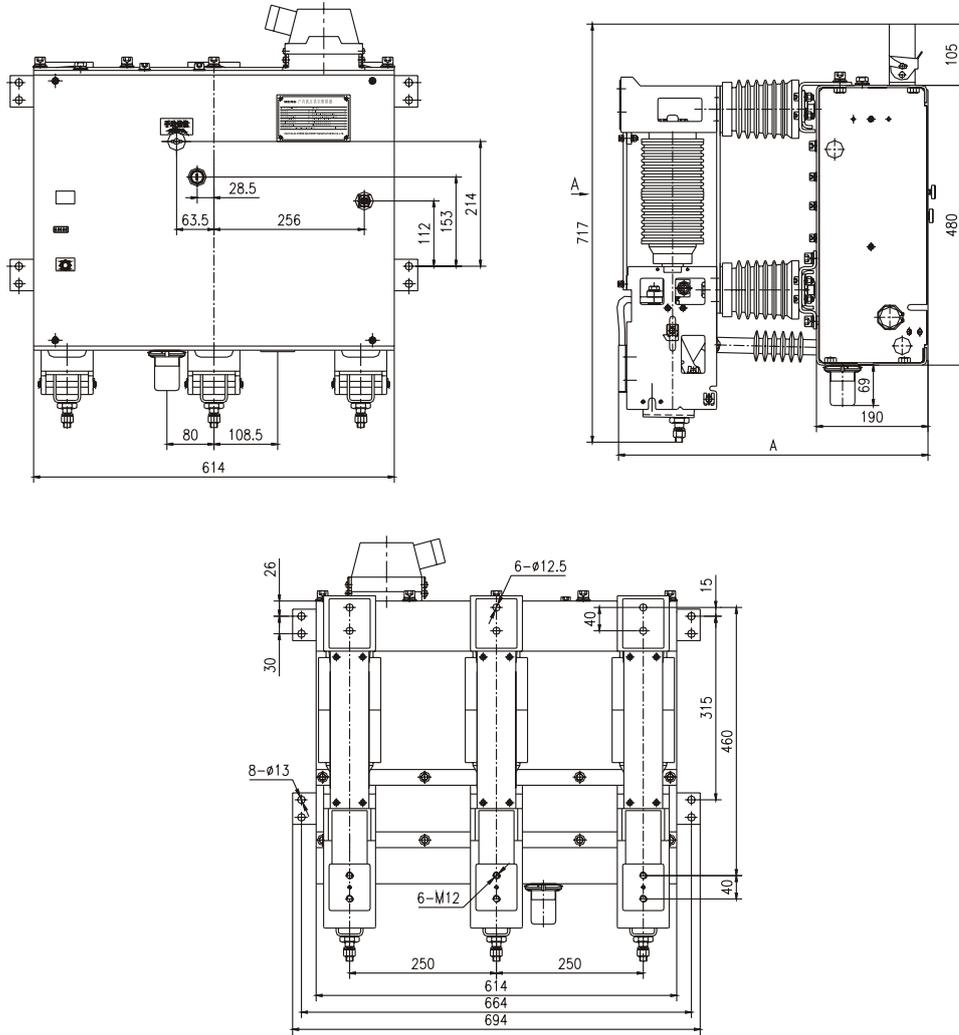


Diagram 1 ZN65-12 indoor vacuum circuit breaker outline dimension