

## ZN85-40.5 Indoor AC High Voltage Vacuum Circuit Breaker

### Summary

ZN85-40.5(3AV3) indoor vacuum circuit breaker is a product designed and produced by our company and Xi'an High-voltage Electric Apparatus Institute. The VCB is of rated voltage 40.5kV, three-phase and AC 50/60Hz. It applies to mining firms, power house and substation acting as protection and control electric apparatus. It is also applicable in occasions with frequent operation.

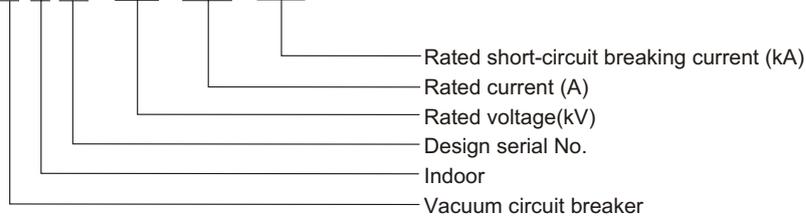


### Ambient condition

1. Altitude:  $\leq 1000\text{m}$ ;
2. Ambient temperature:  $-25^{\circ}\text{C}\sim+40^{\circ}\text{C}$ ;
3. Relative humidity: daily average  $\leq 95\%$ , monthly average  $\leq 90\%$ ;
4. Earthquake intensity:  $\leq 8$  degree;
5. Applicable occasions should free from inflammables, explosives, corrosives and severe vibration.

### Model

Z N 85 - 40.5 / 1250 - 31.5



### Structure feature

1. The arc-extinguish chamber is on the upper part and the mechanism is on the lower part. This structure is convenient for debug.
2. Complex insulating structure using air and organic material; Compactable dimension and small weight.
3. Vacuum arc-extinguish chamber of Cutler-Hammer Company (USA) and domestic ZMD are both applicable for the VCB. Both two kinds of chambers extinguish arc by vertical magnetic field and featuring with low cut-off and good on-off capability with asymmetry.
4. Simple spring operation mechanism is free from maintenance within 10000 times of operations.
5. Lead-screw propeller, easy and stable operation and good self-locking capability.

### Technical specification

No.	Item	Unit	Data
1	Rated voltage	kV	40.5
2	1min. PF withstand voltage		95
3	Lightning impulse withstand voltage(peak)		185
4	Rated current	A	630,1250,1600,2000
5	Rated short-circuit breaking current	kA	25,31.5
6	Rated short-circuit making current(peak)		63,80
7	4s rated short-time withstand current		25,31.5
8	Rated peak withstand current		63,80
9	Rated operation sequence		O-0.3s-CO -180s-CO
10	Breaking times of rated short circuit breaking current	Times	20
11	Mechanical life		10000
12	Rated frequency	Hz	50/60
13	Rated breaking current of capacitor bank	A	630

## Technical specification of storage motor of operating mechanism

No.	Rated voltage		Rated output power	Normal operate voltage
	DC110V AC110V	DC220V AC220V		
HDZ-22301B			≤230W	85%-110% rated voltage

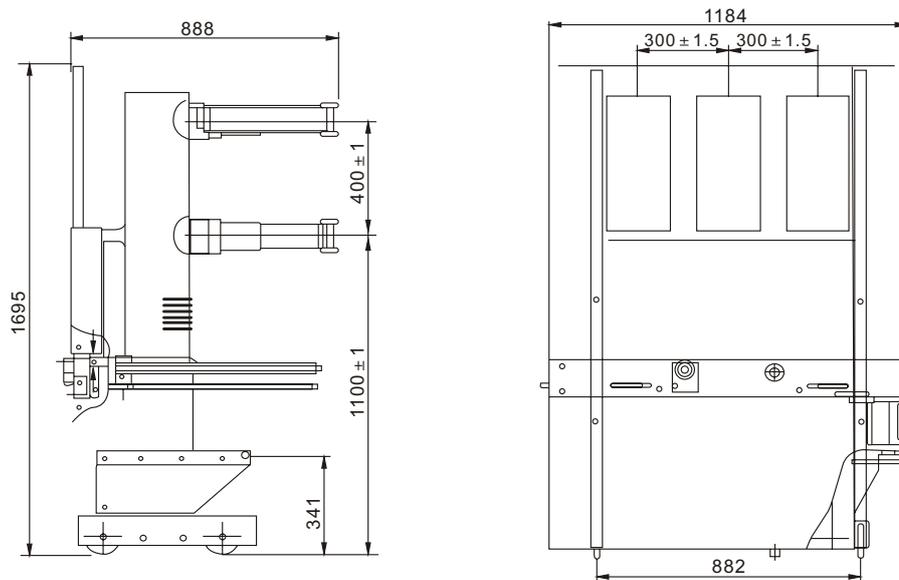
## Mechanical parameters

No.	Item	Unit	Data
1	Contact clearance	mm	22 ± 2
2	Over-travel	mm	7.5 ± 1.5
3	Permissible abrasion of contact	mm	3
4	Average closing speed	m/s	0.65 ± 0.15
5	Average opening speed(contact open at 12mm)	m/s	1.8 ± 0.2
6	Contact closing trip time	ms	≤2
7	Closing simultaneity of three pole	ms	≤2
8	Opening simultaneity of three pole	ms	≤2
9	Buffer travel	mm	13 ± 1
10	Rebound of opening contact	mm	≤2
11	Loop resistance	μ Ω	≤50(630A)
			≤65(1250A,1600A,2000A)

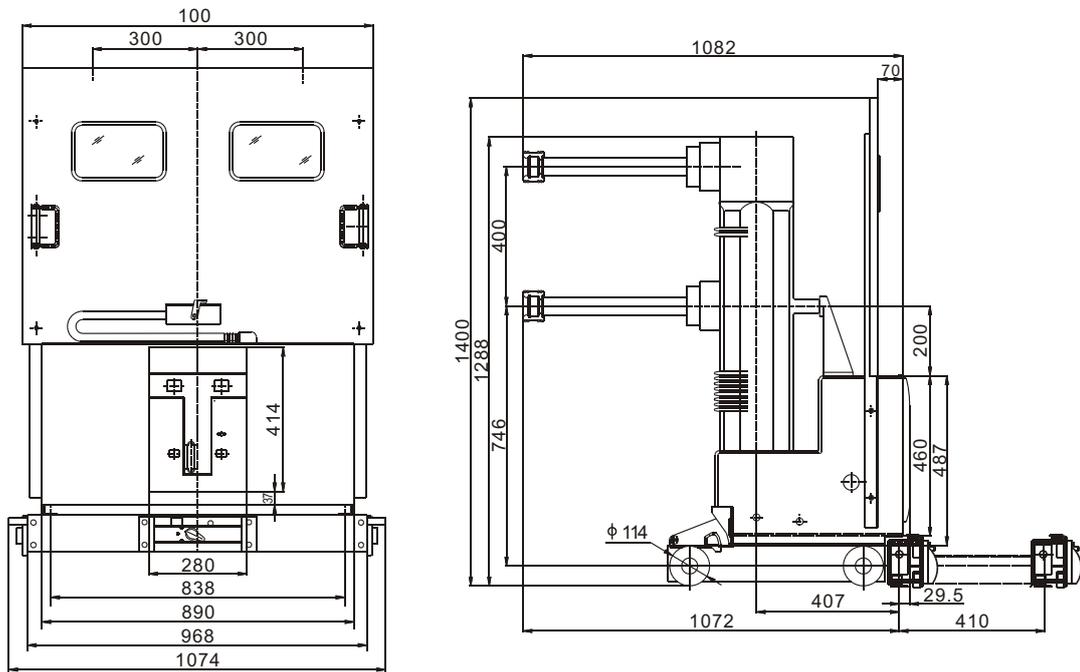
## Technical specification of C/O release

Rated operate voltage(V)	DC 110	DC220
Rated operating current(A)	<115	<210
Rated electric power (W)	1.05	0.96
Coil resistance at 20°C(Ω)	105 ± 3	230 ± 5
Normal operate voltage	Opening on 65%-120% of rated operate voltage, can not opening when less than 30% of rated voltage	

## Outline and dimension of installation



ZN85-40.5(3AV3) VCB handcart outline dimension



ZN85-40.5/2000-31.5 miniaturization vacuum circuit breaker