ELECAL

ZN

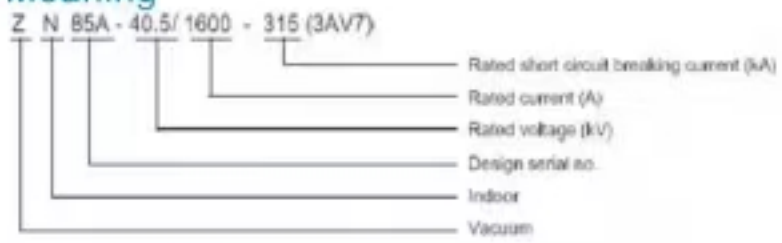
ZN85A-40.5(3AV7)

General

ZN85A-40.5(30AV7)indoor high voltage AC vacuum circuit breaker is applied to the systems of 3-phase AC 50HZ,35KV in industrial and mineral enterprises,power plant and substations for cutting and closing load current,overload current and failure current.It is also suitable for the sites where frequent operations are required.

The breaker conforms to the requirements of the standards of GB1984-1989"High voltage AC breaker",JB/T3855-1996"3.6-40.5KV voltage AC vacuum circuit breaker"and"vacuum circuit breaker" of IEC 62271-100:2001.

Type and Meaning



Normal use condition

a.The ambient temperature is between 40oC and -15oC;daily average temperature isn't over 35oC

b.The average value of daily relative humidity isn't exceed 95%;average value of daily vapor pressure isn't exceed 2.2 kPa;average value of monthly relative humidity isn't exceed 90%;average value of monthly vapor pressure isn't over 1.8kPa;

c.Altitude isn't over than 1000m.

d.The ambient air is free from any pollution from dust,smoke,corrosive of flammable gas,vapor;

e.The vibration or quake can be neglected from outside of the switchgear and control equipment.

f.The magnetic interference inducted in the secondary system should be not over 1.6KV.

ZN85A-40.5(3AV7)

Main Technical Data

Table 1 Main technical parameters

No.	Item		Unit	Value
1	Rated voltage		KV	24
2	Rated insulation level	1 min power frequency withstand voltage(effective value)	KV	65
		Lighting impact withstand voltage(peak value)		125
3	Rated frequency		HZ	50
4	Rated current		A	630,1250,1600,2000
5	Rated instantaneous withstand current		KA	25 31.5
6	Rated peak value withstand current		KA	63 80
7	Rated short circuit lasting time		s	4
8	Rated short circuit breaking current		KA	25 31.5
9	Rated short circuit making current		KA	63 80
10	Rated operating sequence			O-0.3S-CO-180s-CO
11	Breaking time		ms	<80
12	Breaking times of rated short circuit breaking current		Time	20
13	Rated capacitor group breaking current		A	50
14	Rated capacitors breaking current		A	630
15	Dreaking current of phase to earth malfunction		A	27.4
16	Rated operating voltage		V	-110/~110,-220/~220
17	Mechanical life		Time	10000

ELECAL

ZN

ZN85A-40.5(3AV7)

Table 2 mechanical feature data

No.	Item	Unit	Value
1	Opening distance between contact-head	mm	20±2
2	Over travel	mm	$3.5^{+1}_{-0.5}$
3	Allowed wearing thickness of contact	mm	3
4	Average switch-on speed	m/s	0.65±0.15
5	Average switch-off speed(separation of contact-head 10mm)	m/s	1.8±0.2
6	Bounce time of contact-head during switch-on	s	≤0.002
7	Different time of switch-on of 3 phases	s	≤0.002
8	Different time of switch-off of 3 phases	s	≤0.002
9	Rebound amplitude of contacts when switch-off	mm	2
10	Con ductive circuit resistance of various phases(without including contact-arm/including contact-arm)	μΩ	≤40/55

Structure of Products and Working Principle

1.Structure

ZN85A-40.5(3AV7)indoor high voltage AC vacuum circuit breaker is of upper and lower layer structure to effectively reduce the depth of breaker.

The breaker adopts the compound insulation structure to meet the air gap and creepage requirement under normal operating condition,and to effectively reduce the volume of the breaker.The main conductive circuit vacuum interrupter and moving,static conductive connection are installed in the insulation canister to make the phase distance only 300mm.The main circuit is installed fixed with high reliability.

The specially designed spring operating mechanism is used for this new type breaker,which is installed in the frame of the breaker.Its structure features is more suitable for the upper and lower layer arrangement of the breaker and the operating mechanism has become an integral part of the breaker.

2.Working Principle

2.1 Working principle of switch-on of breaker

When the breaker is the station of switch-off and energy storage,the mecanism quickly switches on once receiving the instruction.The oscillating output arm of the mechanism pushes the macro-axis system of the breaker to act,then drive the transmission insulator and the moving end of the interrupter to move towards the switch-on direction;the contact spring is driven to produce over travel after the moving and static contacts are touched.

When the oscillating arm on the macro-axis pushes the transmission insulator,the other end of the oscillating phase arm on both ends stretch the switch-off spring to make it accomplish energy storage;the oscillating arm of the middle phase presses the breaker cutting and closing indicator to let it be in switch-on status.The break accomplishes the switch-on operation.

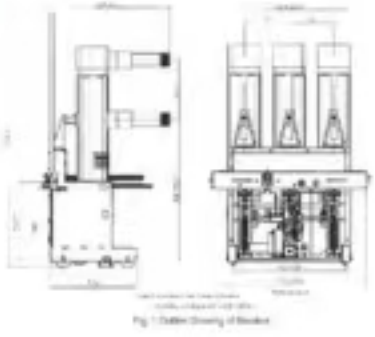
2.2 Switch-off principle of breaker

When the breaker is in energy storage status or non-energy storage status under switch-on,the mechanism relieves the switch-on status,and carries out switch-off after receiving the switch-off instruction,Under the action of switch-off force,the fracture of the breaker opens,the cut current of interrupter becomes an open circuit.The oscillating arm,transmission insulation,macro-axis,cutting and closing indicator recover to the switch-off position,The break accomplishes the switch-off operation.

2.3 Working principle of hand trolley of breaker

This kind of breaker can be installed on the hand trolley,where lead screw propelling mechanism is equipped for easy operation,allowing the trolley move between the cutting,test and working position,Relying on the self-locking of the lead screw,the hand trolley can be reliably locked in the working position so as to prevent any accident due to axial slinginger of hand trolley under the action of electrodynamic control.

ZN85A-40.5(3AV7)



Notes for placing order

The customer should specify the following:

1.Model,name and quantity of product;

2.Operating voltage;

3.Name and quantity spare parts.