

NA8G Air Circuit Breaker

1. General

1.1 Application scope

With rated current from 200A to 6300A, and rated service voltage of AC 415V or 690V, NA8G series air circuit breaker is mainly used in the distribution network with the circuit of AC 50HZ/60HZ to distribute electric energy and protect circuits and electric equipment against over-load, under-voltage, short- circuit, single-phase earthing fault.

Having art-oriented appearance, high breaking capacity, zero arcover and varities of intellectualized protection functions, the breaker can be used for selective protection with accurate action, no unnecessary power cut, and better power supply reliability.

That breaker can be widely used for power stations, factories, mines and modern tall buildings, especially the distribution system in the intelligent building, and also widely used in green projects such as wind and solar power generation.

1.2 Standard : IEC/EN 60947-2.

2. Operating conditions

2.1 Temperature condition:

-5℃~40℃; the average value within 24h shall not exceed +35℃ (special situation excluded);

2.2 Altitude:≤2000m;

2.3 Pollution grade: Grade 3;

2.4 Air conditions:

At mounting site, relative humidity not exceed 50% at the max temperature of +40℃, higher relative humidity is allowable under lower temperature, RH could be 90% at +20℃, special measures should be taken to occurrence of dews;

2.5 Note: Without the intelligent controller, the breaker functions as a switch-disconnector.

2.6 Type designation

NA8 G - □-□□/□-□-□-□-□-□

Voltage of secondary circuit
AC230V, AC400V
DC220V, DC110V

Wiring of main circuit:
H:Horizontal wiring of main circuit
V:Vertical wiring of main circuit

Mode of installation:
F:Fixed type
D:Draweout type

Mode of operation:
M:Manual
P: Power-driven

No. of poles:
3:3-pole
4:4-pole

Intelligent controller:
M: Standard type
H: Multifunctional type

Rated current:

Frame size rated current	Rated current
1600A	400A
	630A
	800A
	1000A
	1250A
	1600A
3200A	1600A
	2000A
	2500A
	3200A
4000A	2500A
	3200A
	4000A
6300A	4000A
	5000A
	6300A

Frame size rated current:
1600A, 3200A, 6300A, 4000A

Improved product code

Design sequence number

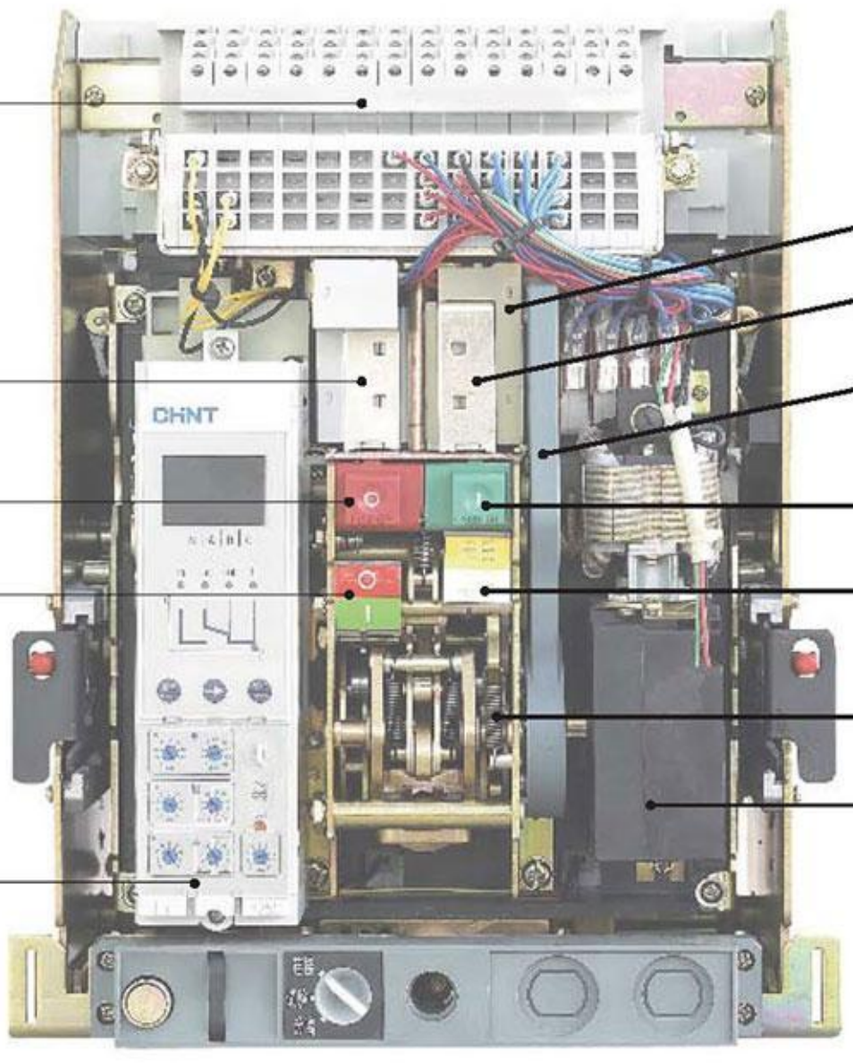
ACB

Company code

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3. Product structure

Body structure





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4. Main technical parameters

4.1 Main technical parameters

Shell grade rated current Inm (A)		1600	3200	4000	6300	
Rated current In (A)		400,630,800, 1000,1250,1600	1600,2000, 2500,3200	2500,3200,4000	4000,5000	6300
Nominal insulation voltage Ui (V)		690	1000	1000	1000	
Rated operational voltage Ue (V)		415 690	415 690	415 690	415	
Rated ultimate short circuit breaking capacity Icu (kA)		50 25	100 65	100 65	120	
Rated service short circuit breaking capacity Ics (kA)		40 20	80 65	100 65	100	
Rated short time withstand current Icw, 1s (kA)		40 20	80 65	85 65	100	
Number of poles		3P 4P	3P 4P	3P 4P	3P 4P	3P
Frequency of operation (number of times/hour)		20	10	10	10	
Number of operations	Mechanical life	3000	3000	3000	2000	
	Electrical Life	1000	1000	1000	500	
Flashover distance mm		0	0	0	0	
Wire incoming pattern		Wire to enter from the upper or lower port	Wire to enter from the upper or lower port	Wire to enter from the upper or lower port	Wire to enter from the upper or lower port	
Net weight (3 poles/4 poles)	fixed type (kg)	22/26.5	52.5/66.5	58/75	-	
	draw-out type (kg)	42.5/55	98/121	110/145	210/233	233
Size(3 poles/4 poles) Height × width × depth	fixed type	320×(254/324)×258	406×(422/537)×329	402×(432.5/547.5)×330	-	
	draw-out type	351×(282/352)×352	439.5×(435/550)×445	439.5×(435/550)×445	439×(813/928)×501	439×928×501

4.2 Capacity-reducing usage

4.2.1 Capacity-reducing at different temperatures

The following table shows the continual current-loading capacity of the circuit breakers and buses in each wiring mode at the corresponding ambient environment temperatures and under the conditions of the satisfaction of conventional heating with a similarity in capacity reducing between the breaker connected in a mixed way and the breaker connected horizontally.

Style wiring mode ambient temperature℃	Draw-out type									
	Front/rear horizontal wiring mode					Rear vertical wiring mode				
	-5~40	45	50	55	60	-5~40	45	50	55	60
1600	400	400	400	400	400	400	400	400	400	400
	630	630	630	630	550	630	630	630	630	580
	800	800	800	800	700	800	800	800	800	700
	1000	1000	1000	950	900	1000	1000	1000	950	900
	1250	1250	1250	1150	1050	1250	1250	1250	1200	1100
	1600	1550	1500	1450	1350	1600	1600	1550	1500	1450
3200	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
	2000	2000	2000	2000	1900	2000	2000	2000	2000	1950
	2500	2500	2500	2450	2350	2500	2500	2500	2500	2400
	3200	3200	3100	3000	2900	3200	3200	3200	3050	2900
4000	2500	2500	2500	2450	2350	2500	2500	2500	2500	2400
	3200	3200	3100	3000	2900	3200	3200	3200	3050	2900
	4000	3800	3600	3400	3200	4000	3800	3600	3400	3200
6300	4000	4000	4000	3900	3800	4000	4000	4000	3900	3800
	5000	5000	4700	4600	4400	5000	5000	4800	4650	4500
	6300	6100	6000	5500	5200	6300	6100	6000	5500	5200

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4.2.2 Capacity-reducing at different altitudes

When the altitude is higher than 2000m, there will appear changes in insulation property, cooling performance, pressure,and the performance can be modified in reference to the following table.

Altitude(m)	2000	3000	4000	5000
Insulation withstand voltage(V)	3500	3000	2500	2000
Insulation voltage(V)	1000	800	700	600
Rated operational voltage(V)	690	580	500	400
Rated operational current(A)	1×In	0.96×In	0.92×In -	0.87×In

4.3 Power loss

Power loss is the loss at each pole which is measured when the breaker is charged with the rated current.

Power loss			
Breaker type	**Rated current**	**Draw-out type**	**Fixed type**
NA8G-1600	400	140	80
	630	161	100
	800	215	110
	1000	230	120
	1250	250	130
	1600	460	220
NA8G-3200	1600	390	170
	2000	470	250
	2500	600	260
	3200	670	420
NA8G-4000	2500	600	260
	3200	670	420
	4000	1047	656
NA8G-6300	4000	550	-
	5000	590	-
	6300	950	-

Note: The data and parameters in the above technical documentation results from tests and theoretical calculation, and can only be used as a general type selection guide.They cannot replace industrial practical experience or proof test.

5.4 Recommended bus for the breaker and recommendation for users to install the buses

Inm(A)		**NA8G-1600**						**NA8G-3200**				**NA8G-4000**			**NA8G-6300**		
In(A)		400	630	800	1000	1250	1600	1600	2000	2500	3200	250	3200	4000	4000	5000	6300
Busbar	Thickness(mm)	5	5	5	5	8	10	6	6	5	10	6	10	10	10	10	10
	Width(mm)	50	40	50	60	60	60	100	100	100	100	80	100	100	100	100	100
	Number of buses	1	2	2	2	2	2	2	3	4	4	4	4	5	5	7	8

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