



## NB1-63DC DC Circuit Breaker

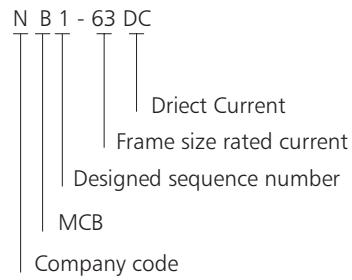
### 1. General

- 1.1 Certificates: CCC,CE,CB,SAA,TUV;
- 1.2 Standard: IEC/EN 60947-2 ,RoHS;
- 1.3 Rated voltage up to 1000V, Rated current up to 63A;
- 1.4 Protection of circuits against overload currents;
- 1.5 Protection of circuits against short-circuit currents;
- 1.6 NB1-63 DC circuit-breakers are used in communication systems and PV DC systems.

### 2. Features

- 2.1 Excellent breaking capacity
- 2.2 Double connection function of lead wire and bus bar
- 2.3 Stored energy operation, fast closing, long service life
- 2.4 Convenient installation, disassembly
- 2.5 Contact on-off indication, higher security
- 2.6 Green environmental protection and energy saving

### 3. Type designation



### 4. Operating conditions

- 4.1 Ambient temperature:-35℃~+70℃(Refer to 4.3)
- 4.2 The atmosphere condition:≤95%
- 4.3 Pollution degree:II
- 4.4 Altitude:≤2000m(if exceed 2000m,Refer to 4.4)

### 5. Technical data

- 5.1 Classification
  - 5.1.1 Rate Current In: 1A,2A,3A,4A,6A,10A,13A,16A,20A,25A,32A,40A,50A,63A
  - 5.1.2 Number of poles: 1P,2P,4P
  - 5.1.3 Tripping curves: C Type,(7~10)In
- 5.2 Parameters
  - 5.2.1 Rated breaking capacity Icn

Rated current $I_n$ (A)	Number of poles	Rated voltage $U_e$ (V)	Rated breaking capacity $I_{cn}$ (A)
1~63	1	250	6000
	2	500	6000
	4	1000	6000

5.2.2 Electrical and mechanical life

a. Electrical life:> 1500

b. Mechanical life:>20,000

5.2.3 Rated impulse withstand voltage  $U_{imp}$ :4KV

5.2.4 (28-32)°C ambient temperature over-current protection features.

Test	Test current	Initial state	Time limit for tripping or not tripping	Expected result	Remarks
a	$1.05I_n$	Cold state a	$t \leq 1h$	Not tripping	
b	$1.30I_n$	Right after test number a	$t < 1h$	Tripping	The current is rising within 5s
c	$7I_n$	Cold state a	$0.2s < t < 15s$ ( $I_n \leq 32A$ ) $0.2s < t \leq 30s$ ( $I_n > 32A$ )	Tripping	
d	$10I_n$	Cold state a	$t < 0.1s$	Tripping	

Note: The terminology "Cold state" means that the test is performed at the base calibration temperature with no load prior to the test.

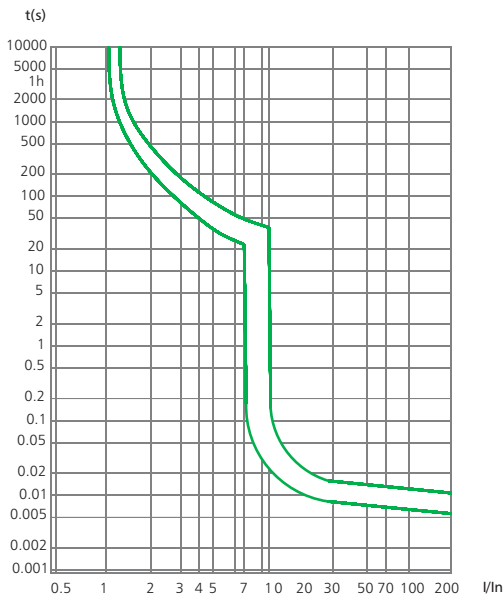
5.3 Temperature derating

Rated current (A)	Temperature compensation coefficient under various operational temperature.											
	-35°C	-30°C	-20°C	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C
1	1.3	1.26	1.23	1.19	1.15	1.11	1.05	1	0.96	0.93	0.88	0.83
2	2.6	2.52	2.46	2.38	2.28	2.2	2.08	2	1.92	1.86	1.76	1.66
3	3.9	3.78	3.69	3.57	3.42	3.3	3.12	3	2.88	2.79	2.64	2.49
4	5.2	5.04	4.92	4.76	4.56	4.4	4.16	4	3.84	3.76	3.52	3.32
6	7.8	7.56	7.38	7.14	6.84	6.6	6.24	6	5.76	5.64	5.28	4.98
10	13.2	12.7	12.5	12	11.5	11.1	10.6	10	9.6	9.3	8.9	8.4
13	17.16	16.51	16.25	15.6	14.95	14.43	13.78	13	12.48	12.09	11.57	10.92
16	21.12	20.48	20	19.2	18.4	17.76	16.96	16	15.36	14.88	14.24	13.44
20	26.4	25.6	25	24	23	22.2	21.2	20	19.2	18.6	17.8	16.8
25	33	32	31.25	30	28.75	27.75	26.5	25	24	23.25	22.25	21
32	42.56	41.28	40	38.72	37.12	35.52	33.93	32	30.72	29.76	28.16	26.88
40	53.2	51.2	50	48	46.4	44.8	42.4	40	38.4	37.2	35.6	33.6
50	67	65.5	63	60.5	58	56	53	50	48	46.5	44	41.5
63	83.79	81.9	80.01	76.86	73.71	70.56	66.78	63	60.48	58.9	55.44	52.29

5.4 Altitude derating

Tripping type	Rated current $I_n$ (A)	Current correction factor			For example
		$\leq 2000$	2000~3000m	$\geq 3000m$	
C	1,2,3,4,6,10, 13,16,20,32, 40,50,63	1	0.9	0.8	Rated current of 10A products rated current derating 2500m: $0.9 \times 10 = 9A$

5.5 Curves shown in Figure 1



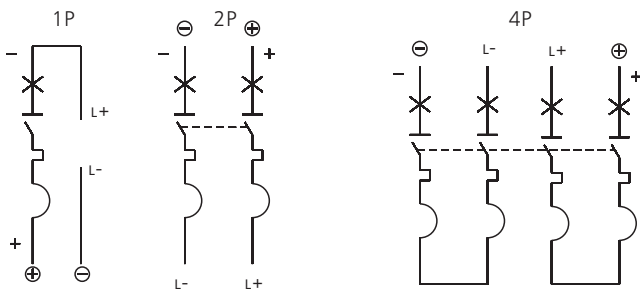
5.6 Wiring: Apply to 25 mm<sup>2</sup> wire connection terminals  
Tightening torque 2.5N·m

Rated current In (A)	Copper wire nominal cross sectional area(mm <sup>2</sup> )
1~6	1
10	1.5
13,16,20	2.5
25	4
32	6
40,50	10
63	16

5.7 Each pole power consumption of the circuit breaker

Rated current In (A)	Each pole maximum power consumption(W)
1~10	2
13~32	3.5
40~63	5

5.8 DC application wiring diagram shown in Figure 2



Wiring diagram description:

1. ⊕ Positive ⊖ Negative
2. L+ Load positive L- Load negative
3. Prohibit power reversed
4. Rated voltage: 1P:250V, 2P:500V, 4P:1000V
5. Strictly forbidden to remove the four poles products of sealing plug wiring operation.

6. Overall and mounting dimensions (mm)

