CHNT

Empower the World

Modular Din Rail Products

Perfect Reliable choice

NB1-63DC
DC Circuit Breaker

1. General

1.1 Certificates: CCC,CE,CB,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

N B 1 - 63 DC

- DC — Direct Current
- 63 — Frame size rated current
- 1 — Designed sequence number
- B — MCB
- N — Company code

4. Operating conditions

4.1 Ambient temperature:-35℃ ~+70℃ (Refer to 5.3)
4.2 The atmosphere condition: ≤ 95%
4.3 Pollution degree: Ⅱ
4.4 Altitude: ≤ 2000m(if exceed 2000m,Refer to 5.4)

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 Icu

A

Rated current In (A)	Number of poles	Rated voltage Ue (V)	Rated breaking capacity Icu (A)
1~63	1	250	6000
	2	500	6000
	4	1000	6000

5.2.2 Electrical and mechancial life

a. Electrical life: > 1500 cycles

b. Mechancial life: > 20,000 cycles

5.2.3 Rated impulse withstand voltage Uimp:4KV

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

Test	Test current	Initial state	Time limit for tripping or not tripping	Expected result	Remarks
a	1.05In	Cold state	t ≤ 1h	Not tripping	
b	1.30In	Right after test number a	t ≤ 1h	Tripping	The current is rising within 5s
c	7In	Cold state	t ≤ 0.2s	Not tripping	
d	10In	Cold state	t < 0.2s	Tripping	

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

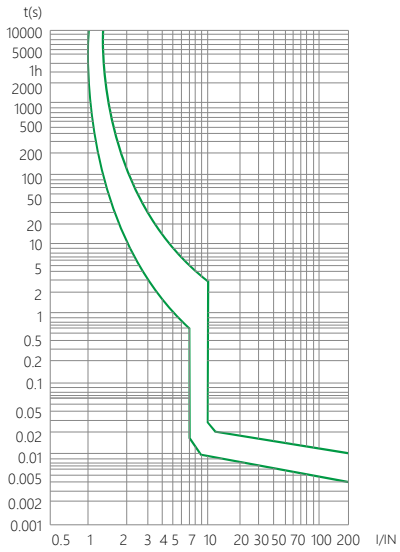
5.3 Temperature derating

Rated current (A)	Temperature compensation coefficient under various operational temperature.											
	-35℃	-30℃	-20℃	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃	70℃
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 In (A)	Current correction factor			For example
		≤ 2000	2000~3000m	≥ 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:0.9×10=9A

5.5 Curves shown in Figure 1



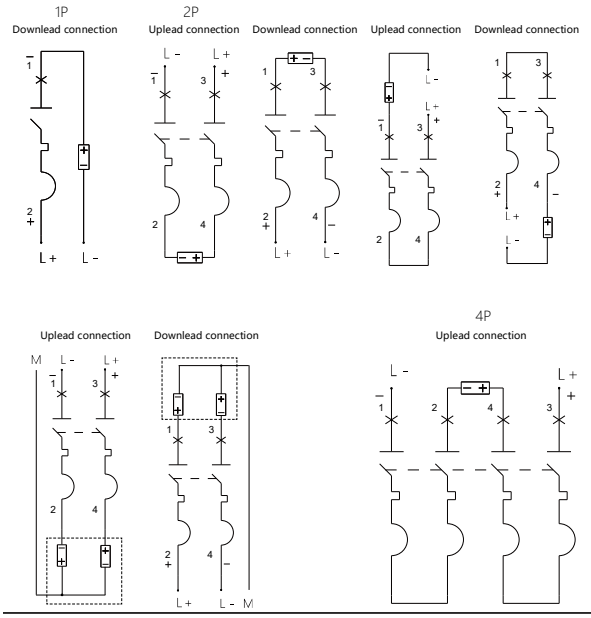
5.6 Wiring: Apply to 25 mm² wire connection terminals
Tightening torque 2N·m

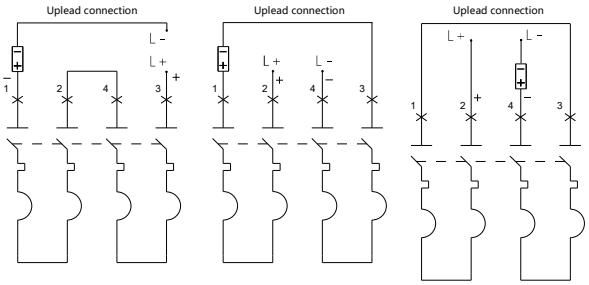
Rated current In (A)	Copper wire nominal cross sectional area(mm²)
1~6	1
10	1.5
13,16,20	2.5
25	4
32	6
40,50	10
63	16

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.L+:Positive pole of power supply,L-:Negative pole of power supply;
2.+:Positive pole of circuit breaker,-:Negative pole of circuit breaker;
3. —[+ -]— :Load;
4.The DC power supply is usually 'L-' grounded.The neutral pole 'M' of the positive and negative power supply system is grounded.