Product Specification of NDB1-63

（IPD-ENG-DEV-T22 A0 2016-04-20）

Product Name: Miniature Circuit Breaker

Product type: NDB1-63

Date: 20181115

Prepared	Chen Yanru	Date	2018-11-15
Reviewed	Huo Zhiqiang	Date	2018-11-15
Approved	Duan Hui	Date	2018-11-15

Revision information					
Version	Revised contents and reasons	Date	Prepared	Reviewed	Approved
0	Initial issue	20160420	Wang Fang	Zhang Yang	Duan Hui
1	Delete Rated Current:8A/12A/13A； Add Mounting Class Ⅳ； Change Time-Current curves and Postcode	20160624	Li Xiaozhen	Zhang Yang	Duan Hui
2	Add contents of Accessory	20170914	Li Xiaozhen	Yang Dongmei	Zhang Yang
3	Increase product certification and standards and environmental protection requirements, update the number of poles, rated voltage, rated impact resistance voltage, installation type, and increase the capacity reduction coefficient table	20181115	Chen Yanru	Huo Zhiqiang	Duan Hui

1、Application

●Short -circuit protection

●Over-load protection

●Isolation

NDB1-63 dedicated to the low voltage power distribution system of industrial, buildings, energy communications and infrastructure.

2、Product Pictures

1P 1P+N 2P 3P 3P+N 4P

3、Model and implication

ND	B	1	—	63	□	□	/	□
Nader	Breaker	Design code		Frame Rating 63A	Trip curve B C D	Rated current 1A,2A, 3A, 4A, 5A,6A,10A,16A, 20A, 25A,32A, 40A,50A,63A		Pole 1P, 1P+N 2P, 3P 3P+N, 4P

4、Main technical parameters

● Electrical parameters

○Number of Poles: 1P, 1P+N, 2P, 3P, 3P+N, 4P

○Rated working Voltage: AC230/240/400/415V（1P）; AC230/240V（1P+N）; AC400/415V(2P,3P,3P+N,4P); DC60/80V(1P,2P)

○Rated Current: 1A,2A,3A,4A,5A,6A, 10A, 16A,20A,25A,32A,40A,50A,63A

○Rated Insulation Voltage: 500V

○Rated Frequency: 50/60Hz

○Rated Impulse Withstand Voltage: 4kV

○Breaking Capacity: 6kA

○Instantaneous Tripping Characteristic: B、C、D

●Mechanical and Electrical life

○Mechanical Life: 20000 times

○Electrical Life: 10000 times

● Isolation function

○ Practical breaking instructions

○ View window within the green identification said contact in the off position

● Protection Degree

IP20

●Wire Feeding Mode

Lines in for both up and down ends

● Use Category

A

● Mounting Class

II、III

● Tripping characteristic

B type curve

○ Protection of short circuit current small load

○ rated current：1A～63A

○ tripping characteristic：The instantaneous tripping range 3In~5In

C type curve

○ Protect normal load and distribution wire cable

○ rated current：1A～63A

○ tripping characteristic：The instantaneous tripping range 5In~10In

D type curve

○ Protect starting current big impact load（Such as motor, transformer）

○ rated current：1A～63A

○ tripping characteristic：The instantaneous tripping rang 10In~14In

●Product certification and implementation of national standards

○Product certification：CCC,CE,TUV

○Conform to national standards:GB/T10963.1 、IEC 60898-1

○Environmental requirements:RoHS

5、Normal Working conditions

●Ambient temperature：-40℃～+70℃

●Stored ambient temperature：-40℃～+80℃

●Heat and humidity resistance：The relative air humidity ≤95% at the temperature of +55℃

●Altitude：≤2000m, if you want to apply it more than 2000m, you must refer to Miniature Circuit Breaker's reduced capacity table. Also you can refer to GB/T20645 the technological requirement of the low-voltage electrical equipment when it is used on high altitude.

●Pollution degree: 3

●Free from obvious vibration or shock

●Altitude derated coefficient

Height above sea level（km）	Rated current	Rated voltage	Rated frequency voltage tolerance	Breaking Capacity	Breaking Capacity and Electrical life	Remarks
2	In	Ue	1.00	1.00	1.00	
3	0.99In	Ue	0.89	0.89	0.83	
4	0.96In	Ue	0.80	0.80	0.71	
5	0.94In	Ue	0.73	0.73	0.63	

●Temperature reduction coefficient

额定电流(A) \ 环境温度修正电流(A) (℃)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15
1	1.29	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.10	1.08	1.06
3	3.97	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22
6	7.96	7.70	7.58	7.46	7.34	7.21	7.09	6.96	6.83	6.70	6.56	6.42
10	14.15	13.89	13.62	13.35	13.07	12.81	12.53	12.23	11.93	11.63	11.33	11.01
16	21.10	20.78	20.43	20.08	19.75	19.40	19.05	18.70	18.33	17.96	17.58	17.20
20	26.04	25.67	25.28	24.88	24.47	24.06	23.64	23.22	22.78	22.34	21.89	21.43
25	32.91	32.21	31.72	31.22	30.70	30.18	29.65	29.10	28.55	27.98	27.41	26.82
32	41.67	41.04	40.46	39.82	39.17	38.51	37.84	37.15	36.47	35.75	35.03	34.30
40	52.43	51.63	50.86	50.04	40.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95
50	66.10	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81
63	84.40	83.48	82.06	80.64	79.19	77.72	76.22	74.70	73.14	71.54	69.91	68.24

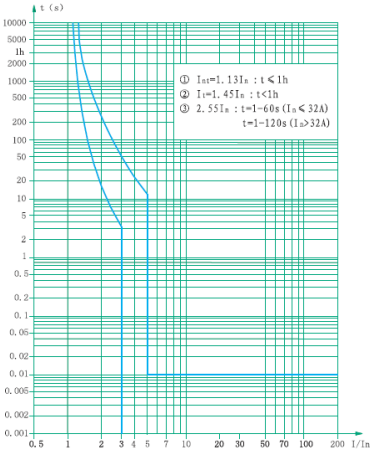
额定电流(A) \ 环境温度修正电流(A) (℃)	20	25	30	35	40	45	50	55	60	65	70
1	1.05	1.02	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64
10	10.67	10.34	10.00	9.63	9.24	8.85	8.45	8.01	7.55	7.06	6.55
16	16.80	16.40	16.00	15.55	15.11	14.66	14.20	13.71	13.21	12.70	12.75
20	20.96	20.47	20.00	19.47	18.95	18.42	17.87	17.30	16.71	16.10	15.47
25	26.22	25.61	25.00	24.33	23.67	23.00	22.28	21.56	20.80	20.02	19.21
32	33.54	32.77	32.00	31.17	30.34	29.48	28.60	27.69	26.75	25.78	24.77
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63
50	52.56	51.28	50.00	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77
63	66.53	64.78	63.00	60.11	58.19	56.21	54.16	52.03	49.81	47.50	43.05

●Reduction coefficient table

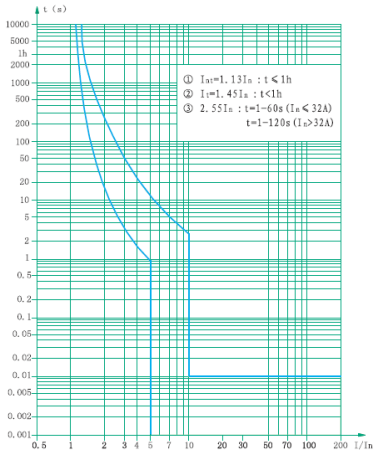
Number of circuit breakers abreast	1	2～3	4～5	6～9	10
Reduced capacity coefficient	1	0.9	0.8	0.7	0.6

6、Time-Current curves

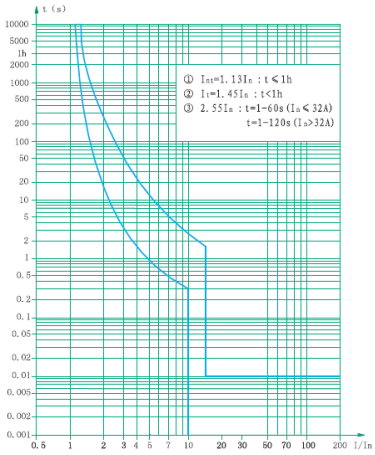
B （3～5 In）



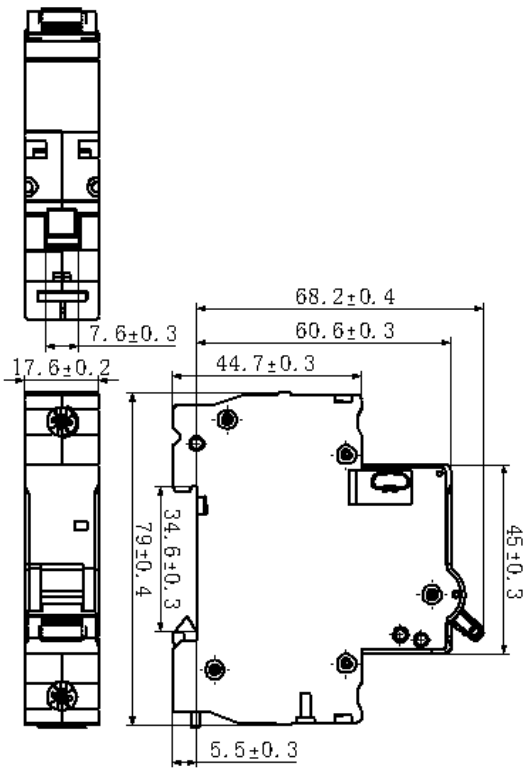
C （5～10 In）



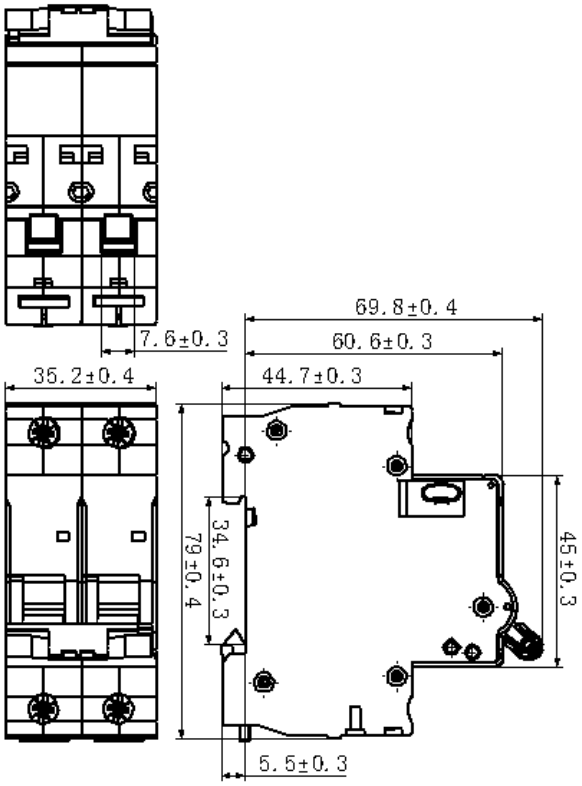
D （10～14 In）



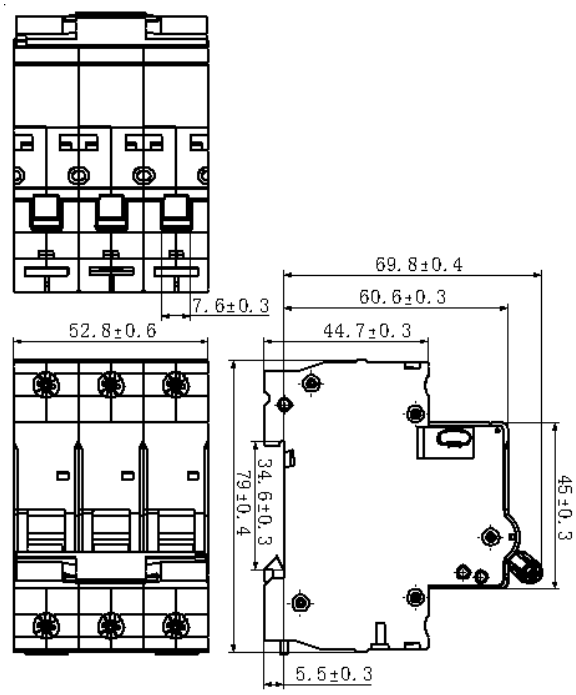
7、Outline and installation dimensions



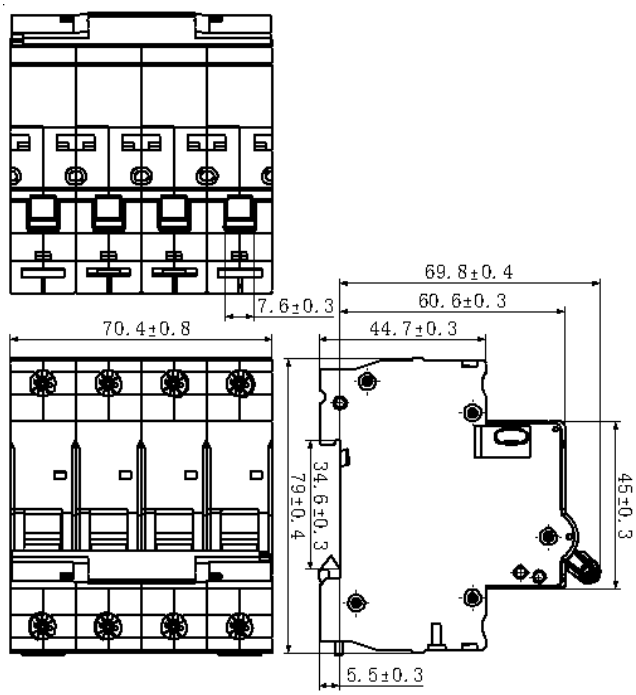
1P



1PN, 2P



3P



3PN, 4P

8、Installation method

Modular construction，can be installed in TH35mm x 7.5 standard guide rail.

9、Connect line requirements

The wire capacity: 1mm²～25mm² conducting wire

Terminal screw: M5; Maximum ultimate torque : 2.0N.m

10、Packaging and storage

Quantity（1P product：12PCS/box，1PN/2P product：6PCS/box，3P product：4 PCS/box，3PN/4P product：3PCS/box），Packing boxes of products should be stored in the air circulation and relative humidity is not more than 80% and the temperature is not higher than + 80 ℃，Not less than - 40 ℃ in the air around without acid, alkali or other corrosive gases stored in the warehouse. In the above conditions, the storage period since the production date not more than three years.

11、Accessory list and installation

●OF1 Auxiliary Contact Be installed to the left side of NDB1-63 to indicate the t ripping status of the breaker.

●SD1 Alarm Contact Be installed to the left side of NDB1-63 to indicate the fault tripping status of the breaker.

●MX+OF1 Shunt Release Be installed to the left side of NDB1-63, remotely controls the breaker opening and indicates the breaker tripping status.

●GQ1A Over&Under Voltage Tripping Device Be installed to the left side of NDB1-63, used for circuit of work voltage less than AV230V,which has defensive function such as over-voltage protection（G1A）、

low-voltage protection（Q1A）、over&low-voltage protection（GQ1A）,at the same time,no-tripping when power down；

●FF1 Double Auxiliary Contact Be installed to the left side of NDB1-63 to indicate the tripping status of the breaker

●FS1 Auxiliary and Alarm Contact Be installed to the left side of NDB1-63 to indicate the fault tripping status of the breaker.

●NDB1LE-63 residual current operated protective module Be installed on the right of NDB1-63 miniature circuit breaker, is applied to protect direct or indirect earth leakage faults.

12、Notices

1、The user should responsible for the quality problem caused by taking the products apart or adjust the tripping parameters without permission.

2、Touch the uninsulated bare part is not allowed when breaker is energized state.

3、Make sure reliable connection to prevent the abnormal heating of terminals. That can cause fault operation of breakers or terminal damage.

4、Please remove the cover before installation, details please refer to Product Specification.