

Shanghai Liangxin Electrical Co., Ltd.

Product Specification of NDB1T-63

(IPD-ENG-DEV-T22 A0 2016-04-20)

Product Name: Moulded Case Circuit Breaker

Product type: NDB1T-63

Date: 20220720

Prepared	<u>Zhu Tongxiong</u>	Date	<u>2022-07-20</u>
Reviewed	<u>Huo Zhiqiang</u>	Date	<u>2022-07-20</u>
Approved	<u>Duan Hui</u>	Date	<u>2022-07-20</u>

Revision information					
Version	Revised contents and reasons	Date	Prepared	Reviewed	Approved
0	Initial issue	20160420	Wang Fang	Zhang Yang	Duan Hui
1	Upgrade edition	20190416	Zhu Tongxiong	Huo Zhiqiang	Duan Hui
2	Upgrade edition	20200316	Zhu Tongxiong	Huo Zhiqiang	Zhang Yang
3	Upgrade edition	20220720	Zhu Tongxiong	Huo Zhiqiang	Duan Hui

1、Application

- Short -circuit protection
- Over-load protection
- Isolation

NDB1T-63 dedicated to the low voltage power distribution system of industrial, buildings, energy communications and infrastructure.

2、Product Pictures(The picture is for reference only,subject to the actual object)



3、Model and implication

ND	B	1	T	—	63	C	16	/	2
Nader	Breaker	Design code	Standard GB/ T14048.2 IEC60947-2		Frame Rating(A) 63	Trip curve B C D	Rated current(A) 1,2,3,4, 5,6,8,10, 12,13,16,20, 25,32,40,50,63		Pole 1=1P, 1PN=1P+N 2=2P, 3=3P 3PN=3P+N, 4=4P

、 Main technical parameters

4、Main technical parameters

- Electrical parameters
 - Number of Poles: 1P, 1P+N, 2P, 3P, 3P+N, 4P
 - Rated working Voltage: 1P:AC230/240V,DC60V/80V;
1P+N:AC230/240V;2P:AC400/415V,DC60V/80V;
3P:AC400V/415V;3P+N:AC400V/415V; 4P:AC400V/415V
 - Rated Current: 1A,2A,3A,4A,5A,6A,8A,10A,12A,13A,16A,20A,25A,32A,40A,50A,63A
 - Rated Insulation Voltage: 500V
 - Rated Frequency: 50/60Hz
 - Rated Impulse Withstand Voltage: 4kV
 - Ultimate breaking capacity (Icu): 6kA(AC230/240/400/415V,DC80V);10kA(DC60V)
 - Service short-circuit breaking Capacity(Ics): 6kA(AC230/240/400/415V,DC80V);7.5kA(DC60V)
 - 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 $4I_n$ ($1\pm 20\%$)

- C type curve

- Protect normal load and distribution wire cable
 - rated current: 1A~63A
 - tripping characteristic: The instantaneous tripping range $8I_n$ ($1\pm 20\%$)

- D type curve

- Protect starting current big impact load (Such as motor, transformer)
 - rated current: 1A~63A
 - tripping characteristic: The instantaneous tripping rang $12I_n$ ($1\pm 20\%$)

- Product certification and implementation standard.:

- Product certificate: CCC,CE,TUV;
 - Product certification standard: GB/T 14048.2 IEC60947-2.

- Environmental requirements: RoHS

5、Normal Working conditions

- Ambient temperature: $-40^{\circ}\text{C}\sim +70^{\circ}\text{C}$
- Stored ambient temperature: $-40^{\circ}\text{C}\sim +80^{\circ}\text{C}$
- Heat and humidity resistance: The relative air humidity $\leq 95\%$ at the temperature of $+55^{\circ}\text{C}$
- Altitude: $\leq 2000\text{m}$, 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

6、Lower capacity coefficient table above 2000 meters above sealevel

Add: No.2000, South Shenjiang Road, Pudong New Area, Shanghai, 201206, PRC
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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	0.97 In	Ue	0.89	0.89	0.83	
4	0.94In	Ue	0.80	0.80	0.71	
5	0.90In	Ue	0.73	0.73	0.63	

7、Side-by-side volume reduction coefficient table

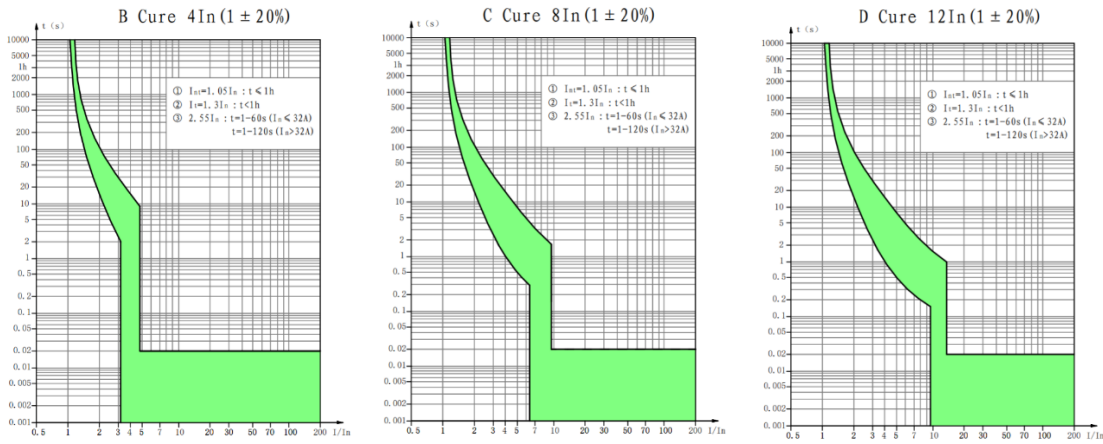
Number of products placed side by side	1	2~3	4~5	6~9	10
Current derated coefficient	1	0.9	0.8	0.7	0.6

8、Temperature Derating

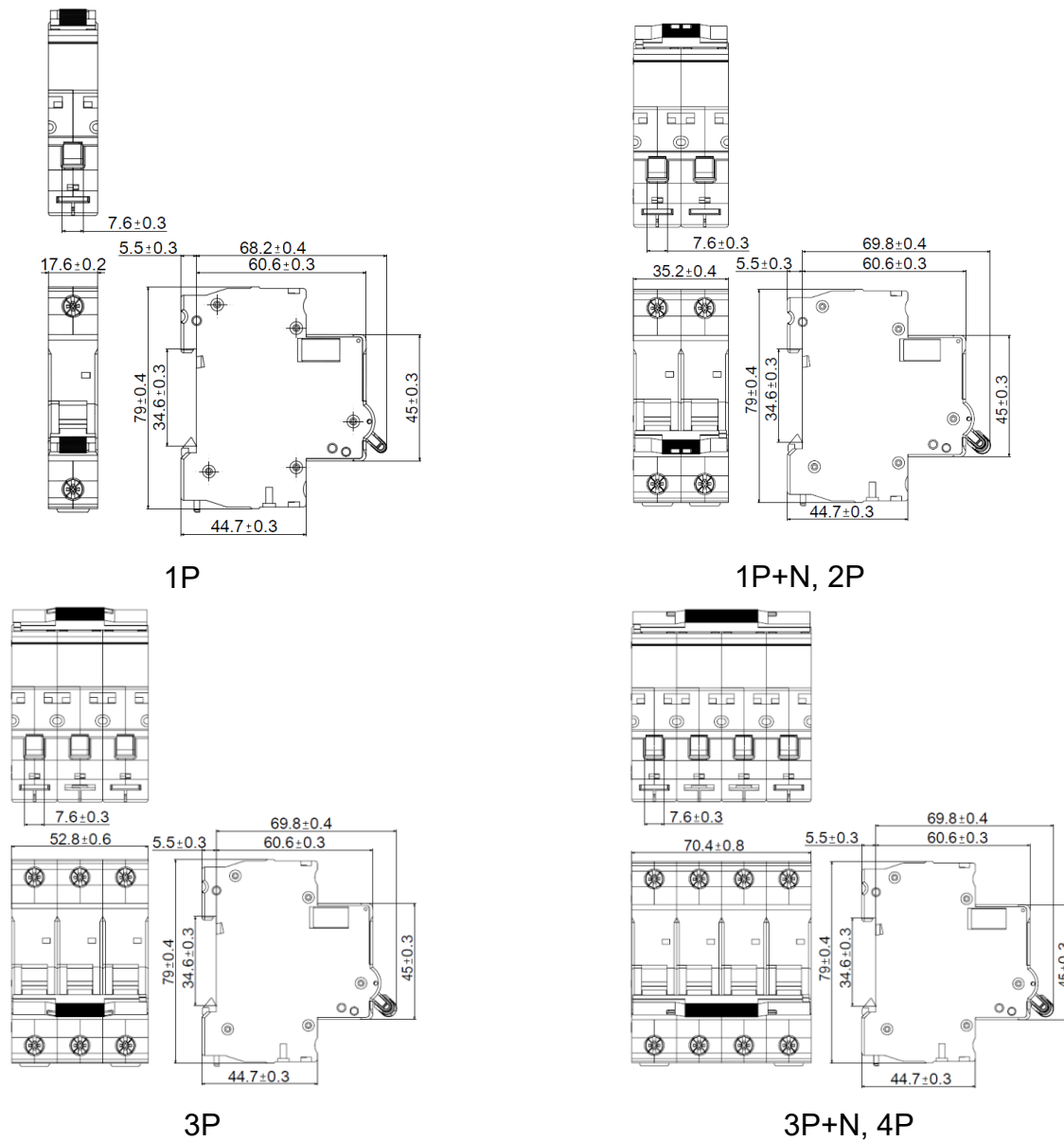
Correcting current (A) Rated current (A) Ambient temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15
1	1.29	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.10	1.08	1.06
3	3.97	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22
6	7.96	7.70	7.58	7.46	7.34	7.21	7.09	6.96	6.83	6.70	6.56	6.42
10	14.15	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	49.21	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

Correcting current (A) Rated current (A) Ambient temperature (°C)	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	12.15
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

9、Time-Current curves



10、Outline and installation dimensions



11、 Installation method

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

12、 Connect line requirements

The wire capacity: 1mm²~25mm² conducting wire

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

13、 Packaging and storage

- Maximum packing quantity

1P: 12 pieces in a box, 12 boxes in an overwrap carton.

1P+N,2P: 6 pieces in a box, 12 boxes in an overwrap carton.

3P: 4 pieces in a box, 12 boxes in an overwrap carton.

3P+N,4P: 3 pieces in a box, 12 boxes in an overwrap carton.

- Products should be stored in the warehouse where there is ventilation. The relative humidity there should not exceed 80%, and the ambient temperature there is between -40℃ to +80℃. In addition, there should not be acidic, alkaline and corrosive gas in the air.

- Products should not be deposited more than 3 years in the above mentioned conditions since the producing date.

14、 Accessory list and installation

- OF1 Auxiliary Contact Be installed to the left side of NDB1T-63 to indicate the tripping status of the breaker.

- SD1 Alarm Contact Be installed to the left side of NDB1T-63 to indicate the fault tripping status of the breaker.

- MX+OF1 Shunt Release Be installed to the left side of NDB1T-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 NDB1T-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 NDB1T-63 to indicate the tripping status of the breaker

- FS1 Auxiliary and Alarm Contact Be installed to the left side of NDB1T-63 to indicate the fault tripping status of the breaker.

- NDH1 series busbar is a kind of modulus accessory for NDB1T-63, which applies to connecting the ends of the same phase incoming line of several breakers. It can also be used as a general standard accessory which connects the electric appliances of the same phase terminal.

15、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 <NDB1TLE-63 Product Specification>.