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NDM3L系列塑壳断路器 产品说明书 NDM3L Series MCCB Product Manual

Nader 良信

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1. 适用范围与用途/ Application scope

本断路器主要应用于交流 50/60Hz, 额定工作电压至 415V, 额定工作电流至 800A 的电路中作不频繁转换及电动机不频繁起动之用。断路器具有过载、短路和欠电压保护功能, 能保护线路及电源设备不受损坏, 同时还可以对过电流保护不能检测的长期存在的接地故障可能引起的火灾危险和人身触电提供保护。

The breaker is mainly applied to infrequent changeover in a circuit with alternate current of 50/60Hz, rated working voltage of 415V and rated working current to 630A, and to the infrequent start of electric motor. The breaker has overload, short circuit and undervoltage protection functions that can prevent the line and power unit from being damaged while protecting the possible fire danger and electric shock by the long-term failure of ground connection which fails to be detected by overcurrent protection.

2. 型号说明/ Model and implication

ND	M	3	L	-		/			/										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
序号 SN	序号名称 SN name					NDM3L													
1	企业代号 Enterprise code					ND: "Nader" 降低压电器 ND: "Nader" low-voltage apparatus													
2	产品代号 Product code					M: 塑料外壳式断路器 M: Molded case circuit breaker (MCCB)													
3	设计序号 Design SN					3													
4	系列派生代号 Derived code of the series					L: 剩余电流保护 L: Residual current protection													
5	壳架等级 Shell frame level					125、250、400、630、800													
6	操作方式 Operation mode					无代号: 手柄直接操作 No code: Direct handle-operated mode P: 电动操作 P: Motor-operated Z: 转动操作 Z: Rotary operation													
7	功能派生代号 Derived code of the function					无代号: AC 型漏电保护类型 No code: Type AC current leakage protection type A: A 型漏电保护类型 A: Type A current leakage protection type													
8	延时类型 Delay type					X: 非延时 X: Non-time delay Y: 延时 Y: Delay XB: 非延时报警脱扣 XB: Non-time delay and alarm tripping YB: 延时报警脱扣 YB: Delay and alarm tripping XI: 非延时不报警脱扣 XI: Non-time delay and alarm non-tripping YI: 延时报警不脱扣 YI: Delay and alarm non-tripping													

表 1/Table 1

		XY: 非延时、延时可调(仅630/800壳架) XY: Non-time delay, Adjustable delay(only 630/800) XYI: 非延时、延时报警不脱扣(仅630/800) XYI: Non-time delay, Delay alarm non-tripping(only 630/800)
9	剩余电流脱扣器类型 Type of residual current release	U: 30mA V: 30mA, 100mA, 300mA, 500mA, 1000mA W: 1A, 3A, 10A, 30A
10	极数 Number of poles	3, 4
11	脱扣器代号 Release code	0: 无脱扣器 0: Release (none) 2: 仅有瞬时脱扣器 2: Instantaneous tripper only 3: 复式脱扣器 3: Complex tripper
12	附件代号 Accessory code	参见表 1 See Table 1
13	用途代号 Application code	无代号: 配电型 No code: Power distribution type 2: 电动机保护型 2: Motor protection type
14	4极产品中N极(中性极)形式 N-pole (neutral pole) type of the 4P product	A: N极不安装过电流脱扣器, 且N极始终接通 A: The N-pole isn't installed with an overcurrent release, but always connected B: N极不安装过电流脱扣器, 且N极与其他三极一起合分 B: The N-pole isn't installed with an overcurrent release, but on-off with the other three poles C: N极安装过电流脱扣器, 且N极与其他三极一起合分 C: The N-pole is installed with an overcurrent tripper, and on-off with the other three poles D: N极安装过电流脱扣器, 且N极始终接通 D: The N-pole is installed with an overcurrent tripper, but always connected
15	额定电流 Rated current	见表 2 See Table 2
16	接线方式 Cabling type	无代号: 常规产品 No code: Normal product P: 联接排 P: Connection busbar Z1: 板后接线 Z1: Rear plate connection Z2H: 插入式板后接线 Z2H: Plug in rear board wiring
注: 40型仅630、800壳架 Type 4D is only used for 630、800 shell frame Z2H仅用于630/800壳架 Z2H is only used for 630 / 800 shell frame 操作方式为电动操作、手动操作时, 剩余动作电流档位、剩余电流动作时间档位、漏电指示按钮无法调节 Note: When the operation mode is electric operation or manual operation, the residual action current gear, residual current action time gear, and leakage indication button can't be adjusted.		

代号 /C d	附件名称/Description of accessories
00	/
10	分励脱扣器/Shunt tripper
20	双辅助触头/Double auxiliary contacts
21	单辅助触头/Single auxiliary contact
30	欠电压脱扣器/Under-voltage tripper
40	分励脱扣器、双辅助触头/Shunt tripper, Double auxiliary contacts
41	分励脱扣器、单辅助触头/Shunt tripper, Single auxiliary contact
60	二组双辅助触头/Two groups of Double auxiliary contacts
61	二组单辅助触头/Two groups of Single auxiliary contact
62	双辅助触头、单辅助触头/Double auxiliary contacts, Single auxiliary contact
70	欠电压脱扣器、双辅助触头/Under-voltage tripper, Double auxiliary contacts
71	欠电压脱扣器、单辅助触头/Under-voltage tripper, Single auxiliary contact
08	报警触头/Alarm contact
28	双辅助触头、报警触头/Double auxiliary contacts, alarm contact
58	辅助与报警触头/Auxiliary and alarm contacts
68	双辅助触头、辅助与报警触头/Double auxiliary contacts /Auxiliary and alarm

4P 产品可以选用单、双附件, 但是只有上表列出的双附件可以同时选择, 选用双附件的产品, N 极型式必须是 B 型或者 C 型。

4P product may select single and double accessories, but only the double accessories listed in the above table can be simultaneously selected. For the product selecting double accessories, N-pole type must be B type or C type.

NDM3L 系列3P产品和漏电报警不脱扣型产品只能选用左装单附件即附件代号为: 10、20、21、30、08、58。

NDM3L series 3P products and leakage alarm non tripping products can only choose left mounted single accessories, that is, the accessory code is: 10、20、21、30、08、58。

3. 技术参数/ Main technical parameters

表 2/ Table 2

型号 Type	NDM3L-125		NDM3L-250		NDM3L-400
	NDM3L-125/AC	NDM3L-125/A	NDM3L-250/AC	NDM3L-250/A	NDM3L-400/AC
极数Number of poles	3P、4P	4P	3P、4P	4P	3P、4P
壳架等级额定电流 Inm (A)	125		250		400
Frame size Inm (A)	16,20,25,32,		100,125,140,		225,250,315,
额定电流 In(A) Rated current In(A)	40,50,63,80, 100,125		160,180,200, 225,250		350,400
额定工作电压 Ue(AC) Rated voltage Ue(AC V)	380/400/415				
额定绝缘电压 Ui(AC V) Rated insulation voltage	1000				
非延时剩余电流 IΔn 档位 (mA) Non-time delay aftercurrent IΔn gear (mA)	30、100、300、500	30、100、300、500、1000	30、100、300、500	30、100、300、500、1000	300、500、1000
延时剩余电流 IΔn 档位 (mA) Delay aftercurrent IΔn gear (mA)	100,300、500	100,300、500,1000	100,300、500	100、300、500、1000	300、500、1000
剩余电流动作时间 Δt 档位(S) Acuation time Δt gear of aftercurrent (S)	0.5` 1.15` 2.15		0.5` 1` 2.15 0.5` 1.15` 2.15		0.5` 1.15` 2.15
额定极限短路分断能力 Icu (kA) Rated ultimate breaking capacity Icu (kA)	70		70		70
额定运行短路分断能力 Ics (kA) Rated operating short circuit breaking capacity Ics (kA)	50		50		70
飞弧距离 Arcing distance(mm)	≤50				
操作性能 Operation performance	电气寿命/Electrical life 8000 免维护机械寿命 maintainable free life 20000 可维护机械寿命 maintainable life 40000				电气寿命 / Electrical life 7500 免维护机械寿命 maintainable free life 10000 可维护机械寿命 maintainable life 20000

注：用于人身保护的剩余电流保护断路器额定剩余电流 IΔn 为 30 mA 时，只能选定非延时。
Note: When the rated residual current IΔn of the residual current protective circuit breaker for physical protection is 30 mA, only non-delay can be selected.

表 2/ Table 2

型号 Type	NDM3L-630		NDM3L-800	
	NDM3L-630/A	NDM3L-630/AC	NDM3L-800/AC	NDM3L-800/A
极数Number of poles	3P、4P		3P、4P	
壳架等级额定电流 Inm (A) Frame size Inm (A)	630		800	
额定电流 In(A) Rated current In(A)	400,500,630		500,630,700,800	
额定工作电压 Ue(AC) Rated voltage Ue(AC V)	380/400 /415			
额定绝缘电压 Ui(AC V) Rated insulation voltage	1000			
非延时剩余电流 ΔIn 档位 (mA) Non-time delay aftercurrent IΔn gear (mA)	30、100、300、500、1000		30、100、300、500、1000	
延时剩余电流 IΔn 档位(mA) Delay aftercurrent IΔn gear (A)	1、3、10、30		1、3、10、30	
剩余电流动作时间 Δt 档位(S) Acuation time Δt gear of aftercurrent (S)	0.5` 1.15 ` 2.15		0.5` 1.15 ` 2.15	
额定极限短路分断能力 Icu (kA) Rated ultimate breaking capacity Icu (kA)	70		70	
额定运行短路分断能力 Ics (kA) Rated operating short circuit breaking capacity Ics (kA)	70		70	
飞弧距离 Arcing distance(mm)	≤100			
操作性能 Operation performance	电气寿命/ Electrical life 7500 免维护机械寿命 maintainable free life 10000 可维护机械寿命 maintainable life 20000			

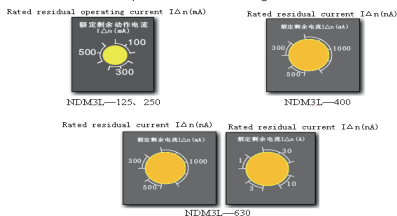
注：用于人身保护的剩余电流保护断路器额定剩余电流 IΔn 为 30 mA 时，只能选定非延时。
Note: When the rated residual current IΔn of the residual current protective circuit breaker for physical protection is 30 mA, only non-delay can be selected.

3.1 剩余电流整定值设置、延时型时间设置开关示意图

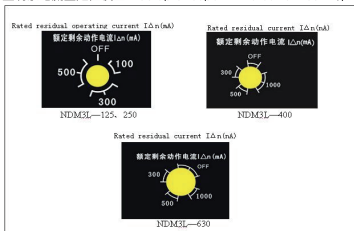
3.1 Diagram of aftercurrent setting value setup and delay type time setup switch

(1)NDM3L-125、250、400、630 AC型 AC type

① 剩余电流整定值设置 Setup of aftercurrent setting value



②特殊型剩余电流整定值设置 Setup of sepcial aftercurrent setting value



注：OFF 档档位表示可以根据实际使用需要，关闭漏电检测功能。

Note: OFF gear means that the electric leakage detection function can be closed based on actual needs.

③延时型时间设置 Delay type time setup

I_{Δn} 最大断开时间设置旋转开关示意图/Diagram of rotary switch for maximum break-up time

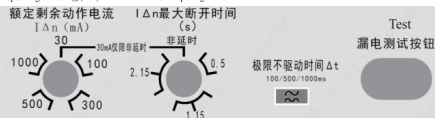
 Δn Maximum opening time (s) Δn Maximum opening time (s)

(2)NDM3L-125、250/A A型 A type

①延时型剩余电流、延时时间整定值设置

Delay type aftercurrent and delay time setting value setup

Rated residual operating current $I_{\Delta n}$ (mA)	$I_{\Delta n}$	Maximum opening time
0.05	0.05	0.05
0.1	0.1	0.1
0.2	0.2	0.2
0.5	0.5	0.5
1	1	1
2	2	2
5	5	5
10	10	10
20	20	20
50	50	50
100	100	100
200	200	200
500	500	500
1000	1000	1000
2000	2000	2000
5000	5000	5000
10000	10000	10000



或者OR



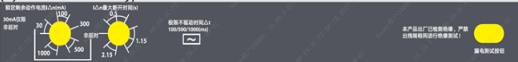
②非延时型剩余电流整定值设置

non-delay type aftercurrent setting value setup



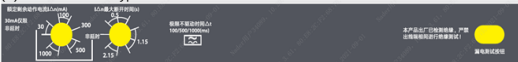
(3) NDM3L-800 AC型 V型剩余电流脱扣器

(3) NDM3L-800 AC V-type residual current release



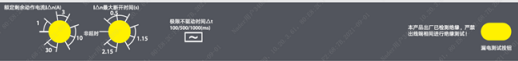
(4) NDM3L-800 A型 V型剩余电流脱扣器

(4) NDM3L-800 A V-type residual current release



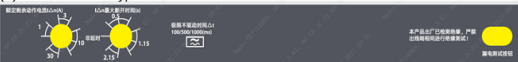
(5) NDM3L-800 AC型 W型剩余电流脱扣器

(5) NDM3L-800 AC W-type residual current release



(6) NDM3L-800 A型 W型剩余电流脱扣器

(6) NDM3L-800 A W-type residual current release



4. 工作环境/ Stand working conditions

- 1)海拔 ≤ 2500m ;
- 2)环境温度-35 ~ +70℃;
- 3)环境温度+40℃时相对湿度不超过 50%，较低温度可以有较高湿度，如：20℃时相对湿度可达 90%；
- 4)对于因温度变化所产生的凝霜应采取相应的措施；
- 5)能耐受潮湿空气的影响；
- 6)能耐受盐雾、油雾的影响；
- 7)能耐受霉菌的影响；
- 8)断路器接至主回路的安装类别为Ⅲ类，断路器不接至主回路的安装类别为：Ⅱ类；
- 9)污染等级：3级；
- 10)防护等级：IP20；
- 11)无爆炸危险的介质中，且介质无足以腐蚀性金属和破坏绝缘的气体与导电尘埃的地方；
- 12)在没有雨雪侵袭的地方；
- 13)当用户使用条件较上述严酷时应与制造商协商；
- 14)储存环境 见表 3；
- 15)产品降容系数表 见表 4；
- 16)海拔降容系数 见表 5；
- 17)导体部分接线端子/安装螺钉拧紧扭矩 见表 6；

- 1) Altitude ≤ 2500m ;
- 2) Ambient temperature: -35 ~ +70℃;
- 3) The relative humidity of the air does not exceed 50% at 40℃. Higher relative humidity is permitted at lower temperature, such as 90% relative humidity at 20℃;
- 4) The protective actions should be taken for frost which formed by variation of temperature;
- 5) Resisting the effects by humid air;
- 6) Resisting effects by salt mist and oil mist;
- 7) Resisting the effects by mould;
- 8) Installation category for the breaker which is connected to main circuit: III, Installation category for the breaker which is not connected to main circuit: II;
- 9) Pollution degree: 3;
- 10) Protection degree: IP20;
- 11) Service place without explosive media, gas and dust which are corrosive and conductive;
- 12) Be mounted free from rain and snow;
- 13) Should consult with the manufacturer when the working conditions are harsher;
- 14) Storage environment table 3;
- 15) Product derating coefficient table table 4;
- 16) Derating coefficient in high altitude place table 5;
- 17) Terminal torsion value for wiring thread hole in conductor section table 6;

表 3/ table3

项目 Item	规范 Description
周围温度 Ambient temperature	-40℃ ~ +75℃
相对湿度 Relative humidity	(Ambient temperature at 25℃) ≤ 95%

表 4/ table4

塑壳式断路器降容系数表 Molded Case Circuit Breaker Derating Coefficient Table

序号 No.	壳架等级 额定电流(A) Frame size rated current(A)	温度对应产品降容系数表 Derating coefficient table						
		40℃	45℃	50℃	55℃	60℃	65℃	70℃
1	125	1	0.977	0.954	0.931	0.907	0.883	0.858
2	250	1	0.982	0.963	0.944	0.924	0.904	0.882
3	400	1	0.981	0.962	0.942	0.922	0.901	0.879
4	630	1	0.979	0.958	0.937	0.915	0.893	0.871
5	800	1	0.979	0.958	0.937	0.915	0.893	0.871

表 5/ table5

塑壳断路器海拔降容系数表

Molded Case Circuit Breaker Derating Coefficient Table in High altitude Place

海拔高度(m) Altitude(m)	2000	2500	3000	3500	4000	4500	5000
工作电流修正系数 Rated working current	1	1	0.98	0.97	0.95	0.94	0.93
工频耐压(V) Power frequency withstand voltage(V)	3500	3500	3150	3000	2800	2650	2500
绝缘电压(V) Isolation voltage(V)	1000	1000	900	850	810	770	730

表 6/ table 6

接线端子/安装螺钉拧紧扭矩 Torsion value for wiring terminal

序号 No.	壳架等级额定电流(A) Frame size rated current	螺纹规格 Thread specification	扭矩(N.m) Torsion value
1	125	M8	12
		M4	1.5
2	250	M8	12
		M4	2.4
3	400	M10	20
		M6	6
4	630	M12	28
		M6	6
5	800	M12	28
		M6	6

5. 接线方式(接线图)/ Wiring Method

表 7/table7

连接导线采用的截面积和相适应的额定电流

sectional areas of connecting wires and corresponding rated current, see the following table

额定电流(A) Rated current(A)	16	20	25	32	40	50	63	80	100	125	140	160	180	200	225	250	315	350	400
导线截面积 Wire sectional area(mm ²)	2.5	4.0	6.0	10	16	25	35	50	70	95	120	185	240						

额定电流(A) Rated current(A)	电缆线截面积 Cable cross-sectional area		铜排尺寸 Copper bar size	
	数量 Quantity	截面积(mm ²) Cross-section area(mm ²)	数量 Quantity	尺寸(mm×mm) Cross-section area(mm×mm)
500	2	150	2	30×5
630	2	185	2	40×5
700	2	240	2	50×5
800	2	240	2	50×5

6. 产品外形及安装尺寸/ Shape dimension & Dimension

6.1外形尺寸与安装尺寸板前接线见表 8、9 External dimensions and installation dimensions of front-panel wire are illustrated in Tables 8, 9

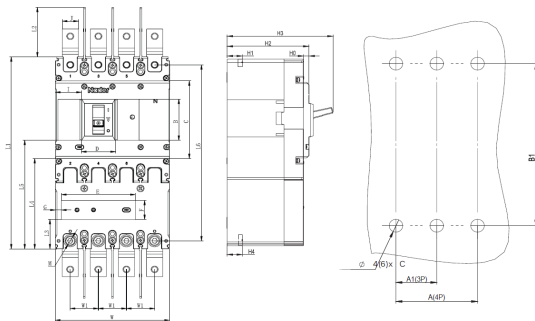


表 8 外形尺寸与安装尺寸
Table 8 External dimensions and installation dimensions

型号	外形尺寸																		
	L1		W		L2		M	H1	H2	H3	H4	A	B1	C	A1	L3	J	L4	L5
	3P	4P	3P	4P	3P	4P													
NDM3L-125	225	92	122	50	8	24	87	118	/	60	204	4.5	30	34.7	15	105.5	126	207.5	7
NDM3L-250	252	107	142	65	8	24	105	139.5	24	70	213	4.5	35	38.5	20	118.6	142.7	231	7
NDM3L-400	257	150	198	110	10	38	107	151	/	94	194	7	44	48	28	/	/	224	10
NDM3L-630	280	210	280	109	12	40	113.5	159	43	140	243	7	70	44	44	/	/	243	10.5
NDM3L-800	280	210	280	109	12	40	113.5	159	43	140	243	7	70	44	44	/	/	243	10.5

表 9 面盖外形尺寸

Table 9 External dimensions of face cover

型号	B	C	D	E	F	I	G
NDM3L-125	45	87.5	31.5	78	23	30.3	7
NDM3L-250	54	102	42.5	92	25	/	7.5
NDM3L-400	83	174	70	124	21	/	13
NDM3L-630/800	94	204	78.5	182	22	63	14

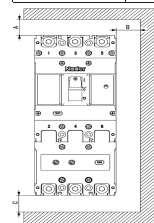
注：未注公差尺寸的极限偏差按 GB/T 1804-c。

Note: The limit deviation not indicated with the tolerance dimensions is as per GB/T 1804-c.

6.2 安装在金属小柜中的绝缘距离(单位：mm)，如下图：

6.2 Insulation distance mounted in the metal cabinet (unit: mm), as shown below:

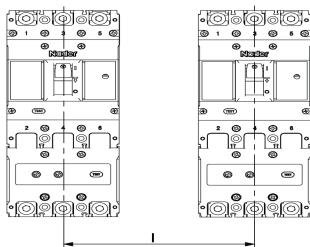
安装距离 Mounting distance	A(进线端到柜面) A(inlet wire end to the cabinet face)		B(侧面到柜面距离) B(distance from side to cabinet)	C(出线端到柜面距离) C(outlet wire end to the cabinet face)
型号 Specification	带端子罩 With a terminal cover	不带端子罩 Without a terminal cover		
NDM3L-125	25	65	30	30
NDM3L-250	25	65	30	30
NDM3L-400	25	120	35	35
NDM3L-630/800	25	120	35	35



6.3 断路器排装之间的最小中心距离

6.3 Minimum center distance between rowed circuit breakers

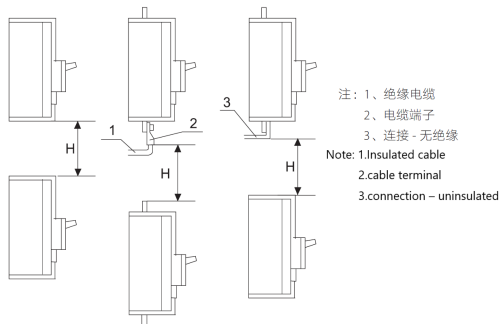
型号 Specification	断路器宽度 (mm) Width of circuit breaker (mm)		中心距离 (mm) Center distance (mm)	
	3极 3P	4极 4P	3极 3P	4极 4P
NDM3L-125	25	65	30	30
NDM3L-250	25	65	30	30
NDM3L-400	25	120	35	35
NDM3L-630/800	25	120	35	35



6.4 断路器叠装之间最小距离

6.4 Minimum center distance between stacked circuit breakers

型号 Specification	H(断路器上下距离) H (distance of circuit breaker from bottom)	
	带端子罩 With a terminal cover	不带端子罩 Without a terminal cover
NDM3L-125	90	91
NDM3L-250	90	93
NDM3L-400	155	155
NDM3L-630/800	155	155



7. 安装方式/ Mounting Method

7.1 绝缘测试

本断路器出厂前已按标准规定绝缘测试。因断路器带有电子线路板, 安装前如进行复测, 必须按如下步骤:

- ① 用 500VDC 兆欧表
- ② 在断路器处于断开状态, 对进出连接板 1-2、3-4、5-6 之间, 和 1、3、5 连接板与外壳之间(外壳用金属箔覆盖)分别进行。
- ③ 对接至主电路的欠电压脱扣器, 在进线于断路器外壳间。
- ④ 绝缘电阻不小于 20MΩ。

注:也可分离电子线路板后进行绝缘测试

7.1 Insulation test

Insulation test has been already carried out on the breaker according to standard before leaving factory. Due to wire circuit, the following steps should be operated if insulation test is carried out on the breaker again.

- ① 500VDC tramegger
- ② When breaker is broken up, insulation test is conducted separately between connecting panels 1-2, 3-4, 5-6, connecting panels 1, 3, 5 and shell.
- ③ Undervoltage tripper connected to the main circuit is arranged between intake wire and breaker shell.
- ④ Insulation resistance is not less than 20MΩ.

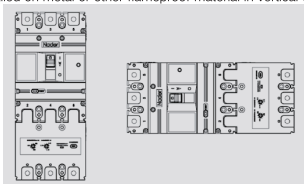
Notes: Insulation test could be operated after wire circuit is separated.

7.2 安装

请安装在金属阻燃物上，断路器可垂直安装，也可以水平安装。

7.2.1 Install

Installed on metal or other flameproof material in vertical or horizontal mode.



垂直安装

Vertical

水平安装

Horizontal

8. 附件说明书/ Accessory

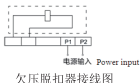
8.1 欠压脱扣器

断路器带有欠压脱扣器时，应使欠电脱扣器先通电，断路器才允许合闸。

根据外挂欠电压模块上的接线端子编号接入电源(直流电源不必区分正负极)

当电源电压下降到欠压脱扣器额定工作电压的 70% ~ 35%

范围内时，欠压脱扣器能可靠的分断断路器；当电源电压低于欠压脱扣器额定工作电压的 35%时，欠压脱扣器能防止断路器闭合；当电源电压高于欠压脱扣器额定工作电压的 85%时，欠压脱扣器能保证断路器可靠闭合。



欠压脱扣器接线图

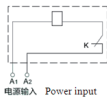
Wiring diagram of under-voltage release

8.1.1 Undervoltage tripper

When the breaker has an undervoltage tripper, the undervoltage tripper should be electrified, and then the breaker allows switch on.

Power supply is accessed according to wiring connector number on the external undervoltage module (anode and cathode of DC power supply are not differentiated).

When power voltage declines to 70% ~ 35% of the rated working Voltage of undervoltage tripper, the undervoltage tripper can reliably break the breaker up; when power voltage is lower than the rated working voltage of undervoltage tripper by 35%, the undervoltage tripper can prevent the breaker from closing; when power voltage is higher than the rated working voltage of undervoltage tripper by 85%, the undervoltage tripper can guarantee the reliable closure of breaker.



分励脱扣器接线图

Wiring diagram of shunt tripper

8.2 分励脱扣器

根据引出的导线编号接入电源(直流电源不必区分正

负极)。当分励脱扣器的外加电压介于额定控制电源电压的 70%~110% 之间时，能可靠分断断路器。

8.2 Shunt tripper

Power supply is accessed according to wiring connector number on the external undervoltage module (anode and cathode of DC power supply are not differentiated).When impressed voltage of shunt tripper is between 70% and 110% of rated control power voltage, the breaker can be reliably broken.

8.3 辅助触头、报警触头

8.3.1 辅助、报警触头接入相应外围控制电路

8.3 Auxiliary contact, alarm contact

8.3.1 Auxiliary and alarm contacts accessed into relative external control circuit/

分类 Category	壳架电流(A) Frame current (A)	约定发热电流 I _{th} (A)Conventional thermal current I _{th} (A)	交流 400V 时额定工作电流 I _e (A) Rated working current I _e (A) for AC 400V
辅助触头 Auxiliary contact	125-250 400-800	3	0.3 0.4
报警触头 Alarm contact	125-250 400-800	3	0.3 0.4

8.3.2 辅助、报警触头状态指示图

8.3.2 Status indicator diagrams of auxiliary and alarm contacts

附件名称 Accessory Name	断路器状态 Status of breaker	线路接通状态 Connection status of circuits
辅助触头 Auxiliary contact	“分”或“自由脱扣” Breaking or free tripping	
	“合” Closing	“接通”与“断开”相互转换 Switchover between closing and opening
报警触头 Alarm contact	“分”或“合” Breaking or closing	
	“自由脱扣” Free tripping	“接通”与“断开”相互转换 Switchover between closing and opening

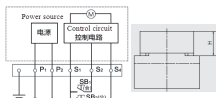
8.4 电动操作机构

在外加电源情况下，可通过电动操作机构对断路器进行合、分操作。

8.4 Motor-operated mechanism

The breaker can be closed and opened by an motor-operated mechanism in the condition of external power supply.

额定电压 (V)	额定电流 (A)	额定短路分断能力 (kA)	额定短路分断能力 (kA)	额定短路分断能力 (kA)	额定短路分断能力 (kA)	额定短路分断能力 (kA)	额定短路分断能力 (kA)
AC3000V	AC1200V	AC1000V	AC800V	AC600V	AC400V	AC200V	AC100V
NDM3-125	≤125	≤100	≤100	≤100	80	20000	90
NDM3-250	≤250	≤100	≤100	≤100	100	20000	92
NDM3-400	≤400	≤100	≤100	≤100	160	10000	140
NDM3-630/800	≤630	≤100	≤100	≤100	160	10000	151



电动机操作机构接线图
Wiring diagram of motor-operated mechanism

8.5 手动操作机构

8.5.1 安装前，安装操作手柄的开关柜门按图开孔，开孔

中心离铰链距离大于 200 mm。

8.5.2 把已在盖面上固定好操作机构的断路器安装于安装板上，并稍作固定。

8.5.3 把操纵杆方轴固定于操作机构上安置方轴的方孔内。

8.5.4 关上开好孔的盖板，调整断路器的位置，使方轴中心与手柄开孔中心一致。

8.5.5 打开开关柜门板，当转动手柄“OFF”指示在水平位置时固定好手柄。

8.5.6 合上安装好转动手柄的开关柜门板，试着操作手柄，转动应灵活自如，并且手柄在水平位置时，断路器应分闸，手柄在垂直位置时，断路器应合闸。

8.5 Manual operating mechanism

8.5.1 Before installation, a switch cabinet door for installing operating handle is holed in accordance with the diagram.

Distance between the holed part and the hinge is greater than 100 mm.

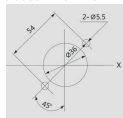
8.5.2 The breaker with an operating mechanism fixed on cover is installed on the installation panel and slightly fixed then.

8.5.3 The square shaft of an operating rod is fixed in a square hole on the operating mechanism.

8.5.4 The holed door plank is closed and position of the breaker is adjusted so that centers of the square shaft and the handle hole are aligned.

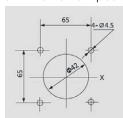
8.5.5 The switch cabinet door is opened. The rotary handle is fixed until “OFF” is at the horizontal position.

8.5.6 The switch cabinet door equipped with rotary handle is closed. The handle should be operated freely. The breaker should be opened when the handle is at the horizontal position, and it should be closed when the handle is at the vertical position.



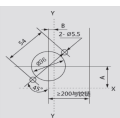
CS1-A 型手柄开孔图

CS1-A type holed diagram of handle



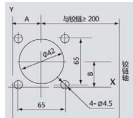
CS1-F 型手柄开孔图

CS1-F type holed diagram of handle



CS2-A 型手柄开孔图

CS2-A type holed diagram of handle



CS2-F 型手柄开孔图

CS2-F type holed diagram of handle

9. 使用和维护 / Application & Maintenance

1) 断路器各特性及附件由制造厂鉴定，在使用过程中不可随意调节

onfigured by the manufacturer, all characteristics and accessories of the breaker are not adjustable.

2) 断路器手柄可以处于三个位置，分别表示闭合、脱扣、断开三种状态，当手柄处于脱扣位置时，要使断路器闭合就必须先向分闸方向扳动手柄使断路器再扣，然后合闸

Breaker handle can be put in three positions: closed, tripped and broken states. When the handle is in tripped position, the breaker can be closed only by pulling the handle in opening direction to fasten the breaker and then closing.

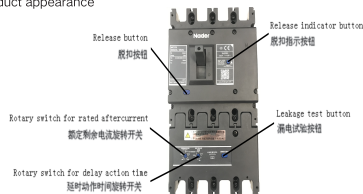
3) 维护检查必须有专业技术人员负责

Maintenance and check should be finished by professional technicians.

4) 用户如需选用内、外附件，按所订型号由本公司提供，以保证质量。如用户自行选购或改装，本公司不能负责

To guarantee quality, the company provide internal and external accessories to customer according to the subscribed type. The company is free from responsibility if the customer purchases or refits internal and external accessories by himself.

5) 产品外观 Product appearance



注意：NDM3L 系列产品须在漏电脱扣后，需要按下漏电指示钮，产品才能再扣及合闸

Note: NDM3L series product can be fastened and closed by pressing leakage indication button in leakage tripping condition

6) 当产品带剩余电流保护报警单元模块时，按剩余电流试验按钮，断路器只报警不脱扣，或报警又脱扣。When the product is equipped with the aftercurrent protection alarm unit module, press the aftercurrent test button, the breaker will give an alarm but not strip, or not only give an alarm but strip

10. 注意事项/ Notices

10.1 安装注意事项

(1) 断路器本体、底板(板后接线用)、底座(插入式接线用)固定在安装板上。

(2) 与主电路连接

2.1. 必须由具有专业资格的人员进行配线作业。

2.2. 确认输入电源处在完全断开的情况下，才能进行配线作业。

2.3. 必须安装本体后再进行配线。

2.4. 断路器配线必须符合上进下出，即 1,3,5 端子接电源线，2,4,6 端子接负载线，不允许倒进线

10.1 Installation precautions

(1) Main body, baseboard (for back-panel wire connection), base (for insertion wire connection) of the breaker are fixed on an installation panel.

(3) Connected to main circuit.

2.1. Wiring operation should be carried out by professional technicians.

2.2. Wiring operation should be carried out only when input power supply is assured completely broken.

2.3. Wiring operation should be carried out after the main body is installed.

2.4. In wiring operation of the breaker, wire should be inserted from the top and pulled out from the bottom; that is to say, terminals 1,3,5 are connected to power wire, and terminals 2,4,6 are connected to load wire; wiring sequence is not allowed to be exchanged.

10.2 运行注意事项

(1) 湿手不能操作断路器，否则可能发生电击事故。

(2) 断路器不能频繁操作，否则会缩短断路器的使用寿命。

(3) 带电动操作机构的断路器脱扣跳闸后，电操机构必须使断路器再扣，然后才能合闸。

10.2 Running precautions

(1) Wet hand is forbidden to operate the breaker, otherwise there is electric shock hazard.

(2) The breaker cannot be operated frequently, otherwise its service life is shortened.

(3) If there are release and tripping operation occurred on the breaker with an motor-operated mechanism, the breaker only can be closed after the motor-operated mechanism fastened it again.

10.3 Warranty period and after-sales service

This product is manufactured in a fine quality management system. In case of error, warranty period and after-sales service are explained in the followings:

Warranty period

The company is responsible for free maintenance or exchange within 18 months from the delivery date at the following premises: the user abides by preservation and use rules; seal on the breaker is complete; the product is damaged or cannot be used normally by reason of quality problem. However, maintenance or exchange should be paid in warranty period if the error is caused by any one of the following reasons:

(1) Improper use, self refit, improper maintenance and so on.

(2) Use out of the standard specification.

(3) Damage caused by falling off or installation after purchase.

(4) Earthquake, fire disaster, lightning stroke, abnormal voltage, other natural disaster, second disaster and so on.

After-sales service

(1) Please contact the supplier or the after-sales service department of company if there is an error.

(2) Maintenance or exchange in warranty period: free maintenance or exchange is allowed if the error is up to manufacture technique.

(3) Maintenance or exchange out of warranty period: paid maintenance is operated if the function can be recovered, otherwise paid exchange is operated.

11. 订货须知/ Accessory list and installation

用户务必确认对本产品技术资料已有详细了解，并应根据断路器将来使用的场合，按“订货规范”表订货。

Customer should have a knowledge of technical documents of this product and maker order by an “Ordering rule” table in accordance with the future practical use of breaker