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NDR2M-38系列
热继电器使用说明书
NDR2M-38 Series
Product Specification of Thermal Overload Relay

Nader 良信电器

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V1.0

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1、适用范围与用途/ Application

NDR2M-38 系列双金属片式热过载继电器适用于交流 50 Hz 或 60Hz、额定工作电压至 690V 额定电流为 0.1~38A 的电路中，用作交流电动机的过载和断相保护。

/NDR2M-38 series bimetal thermal overload relay is applicable to circuits with AC 50 Hz or 60Hz, rated working voltage up to 690V and rated current of 0.1~38A, for overload and phase loss sensitive protection of AC motors.

2、型号说明/ Explain Specifications of the products

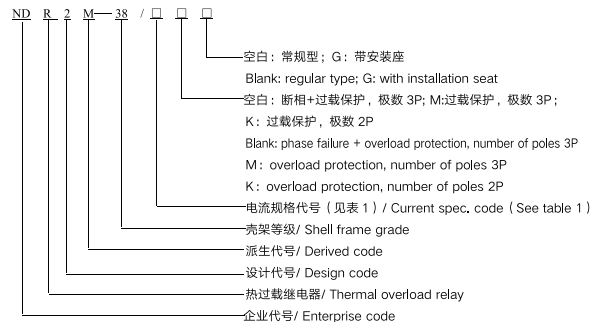


表 1 电流规格基本参数 / Table 1 Basic Parameters of Current Spec

序号 /No.	产品型号/ Product model	整定电流范围 (A) / Setting Current Range (A)	用 (SCP) 熔断器 (A) / Use (SCP) Fuse (A)		壳架等级 / Shell frame grade	安装接触器/ Matching Contactor
			aA	gG		
1	NDR2M-38/0.16	0.1~0.16	1	1	38	NDC1-09~38
2	NDR2M-38/0.25	0.16~0.25	1	1		
3	NDR2M-38/0.4	0.25~0.4	1	1		
4	NDR2M-38/0.5	0.35~0.5	1	1		
5	NDR2M-38/0.63	0.45~0.63	1	1		
6	NDR2M-38/0.8	0.55~0.8	3	2		
7	NDR2M-38/1	0.75~1	3	3		
8	NDR2M-38/1.3	0.9~1.3	3	3		
9	NDR2M-38/1.6	1.1~1.6	6	4		
10	NDR2M-38/2	1.4~2	6	6		

11	NDR2M-38/2.5	1.8~2.5	10	6
12	NDR2M-38/3.2	2.3~3.2	10	10
13	NDR2M-38/4	2.9~4	15	10
14	NDR2M-38/4.8	3.5~4.8	15	10
15	NDR2M-38/6.3	4.5~6.3	25	15
16	NDR2M-38/7.5	5.5~7.5	30	25
17	NDR2M-38/10	7.2~10	40	30
18	NDR2M-38/12.5	9~12.5	50	30
19	NDR2M-38/16	11.3~16	60	40
20	NDR2M-38/20	15~20	80	50
21	NDR2M-38/21.5	17.5~21.5	80	60
22	NDR2M-38/25	21~25	100	60
23	NDR2M-38/30	24.5~30	100	80
24	NDR2M-38/36	29~36	150	100
25	NDR2M-38/38	33~38	150	100

(注：仅适用交流线圈接触器，勿搭配直流线圈接触器使用)

/(Note: Only applicable to AC coil contactors, do not use with DC coil contactors)

3、结构形式/Structural Style

- 双金属片/Bimetallic sheet type
- 三相/Three-phase
- 有整定电流调节装置/Equipped with setting current regulation device
- 有周围空气温度补偿/With ambient air temperature compensation
- 带断相保护/With phase failure protection
- 手动和自动复位/Manual and automatic reset
- 具有脱扣指示/With tripping indication
- 辅助触头为电气上分开的一常开和一常闭触头
/The auxiliary contact is an electrically separated normally open and normally closed contact

4、技术参数/Main Technical Parameters

表 2 技术参数 / Table 2 Technical Parameters

型号/ Model	NDR2M-38	
整定电流范围 Ie A/ Setting current range Ie A	0.1~30	36, 38
主回路端子形式 (电源侧) / Main circuit terminal form (power supply side)	插头插入式/ Plug-in type	
主回路端子形式 (负载侧) / Main circuit terminal form (load side)	M4 螺钉/ screw M5 螺钉/ screw	
额定绝缘电压 Ui V/ Rated insulation voltage Ui V	690	
额定冲击耐受电压 Uimp kV/ Rated impulse withstand voltage Uimp kV	6	
脱扣等级/ Trip level	10A	

补偿温度 °C/ Compensation temperature °C		-5 ~ +40	
外壳防护等级/ Enclosure rating		IP20	
辅助触头 /Auxiliary contact	类型/ Type	1NO+1NC	
	约定发热电流 I _{th} A /Conventional free-air thermal current I _{th} A	10	
	AC-15	额定工作电压 U _e V /Rated operational voltage U _e V	240/380
		额定工作电流 I _e A / Rated operational current I _e A	3/1,9
	DC-13	额定工作电压 U _e V / Rated operational voltage U _e V	125/250
		额定工作电流 I _e A / Rated operational current I _e A	0,55/0,27

表 3 动作特性/ Table 3 Operation Characteristics

动作特性 /Operation characteristics	序号 /No.	整定电流倍数 / Setting current multiple 任意两相 / Any two phases		另一相 / The other phase	动作时间 / Operation time	起始条件 / Starting condition	周围空气温 度 °C / Ambient air temperature °C
各相负载不平衡时 /When the loads of the phases are unbalanced	1	1.00		0.90	> 2h	冷态/Cold condition	20 ± 5
	2	1.35		0	< 2h	接序 1 试验后 / After test No.1	
各相负载平衡时 /When the loads of the phases are balanced	1		1.05		> 2h	冷态/Cold condition	20 ± 5
	2		1.20 min ¹⁾		< 2h	接序 1 试验后 /After test No.1	
	3		1.50		< 4min	接序 1 试验后 / After test No.1	
	4		7.20		2s < T _p ≤ 10s	冷 态 /Cold condition	
备注 / remark :							
1) 各相负载平衡时，整定电流倍数为脱扣阈值的最小值，脱扣阈值范围 1.2In ~ 1.35In; /When the load is balanced in each phase, the setting current multiple is the minimum value of the trip threshold, and the trip threshold range 1.2In ~ 1.35In;							
2) 极限温度 40℃下，脱扣特性需要进行补偿，补偿系数 0.9。 /At the limit temperature of 40 °C, the tripping characteristics need to be compensated with a compensation factor of 0.9.							

脱扣特性曲线/Tripping characteristic curve

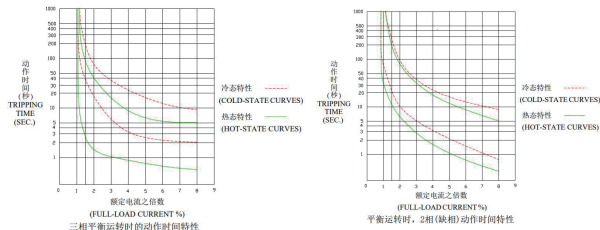


表 4 接线端子连接导线的能力/ Table 4 Connection Capacity of Connection Terminal

产品基型	NDR2- Product type	NDR2-	3801~3821	3822~3835
接线能力 (min/max) mm ² Connection capacity (min/max) mm ²	主回路 Main circuit	软线 (无预剥端) 1 根 Cord (without precast end) 1 pc	1.5/10	1.5/10
		软线 (预剥端) 1 根 Cord (with precast end) 1pc	1/4	1/6
		硬线 1 根 Hard wire 1pc	1/6	1.5/10
		紧固力矩 N.m/ Tightening torque N.m	1 ~ 1.2	1 ~ 1.2
	辅助回路 Auxiliary circuit	软线 (无预剥端) 1 根或 2 根 Cord (without precast end) 1 or 2 pcs	1/2.5	
		软线 (预剥端) 1 根或 2 根 Cord (with precast end) 1 or 2 pcs		
		硬线 1 根或 2 根 Hard wire 1 or 2 pcs		
		紧固力矩 N.m/ Tightening torque N.m		

5、工作环境/Normal Operational Temperature

5.1 使用环境/Use environment

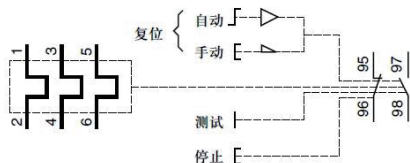
- 周围环境温度：储存温度-25 ~ +55℃；工作温度-5 ~ +40℃；/Ambient temperature: storage temperature -25 ~ +55℃; working temperature-5 ~ +40℃;
- 海拔：安装地点的海拔不超过 2000m；/Altitude: the altitude of the installation site should not exceed 2000m;
- 湿度：最高温度为+40℃时，空气的相对湿度不超过 50%，在较低的温度下可以允许有较高的相对湿度，例如 20℃时达 90%，对应于温度变化偶尔产生的凝露应采取特殊的措施。/Humidity: When the max temperature is +40℃, the relative air humidity cannot exceed 50%; higher relative humidity is allowed at lower temperature, for example humidity can be 90% at 20℃.
- 污染等级：安装地点的污染等级为 3 级；/Pollution level: the pollution level at the installation site is level 3;
- 安装类别（过电压类别）：安装类别为 III 类；/Installation category (overvoltage category): installation category is Class III;

f 冲击和振动:有冲击和振动使用要求的,用户和本公司协商。/Shock and vibration: The user and the company should negotiate with us if they have the requirements for shock and vibration

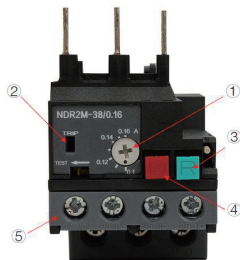
5.2 额定工作制/Rated work system

- a 八小时工作制; /Eight-hour work system;
- b 不间断工作制; /Uninterrupted work system;
- c 断续周期工作制(操作频率 $n \leq 12$ 次 h⁻¹, 负载因数 40%)。/Intermittent cycle work system(operation frequency ≤ 12 times h⁻¹, Load factor 40%)。

6、接线方式 (接线图) /Wiring method(wiring diagram)



7、使用说明/Instructions for use



- ① 整定电流调节钮
- ② 脱扣指示
- ③ (手动) 复位按钮
- ④ 常闭触头断开钮
- ⑤ 95、96为常闭触头, 97、98为常开触头

/① Setting current adjustment knob;
② Tripping indication;
③ (Manual) reset button;
④ Normally closed contact disconnect button;
⑤ 95、96 are normally closed contacts while 97、98 are normally open contacts;

注: 产品出厂时整定在手动复位状态/Note:The product is set to manual reset state when leaving the factory

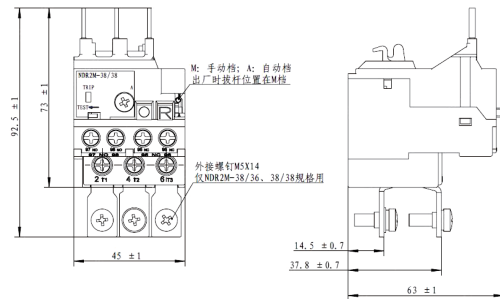


如上图, 在需要自动复位时, 将白色拨杆切换到下方 (A 档) 即可

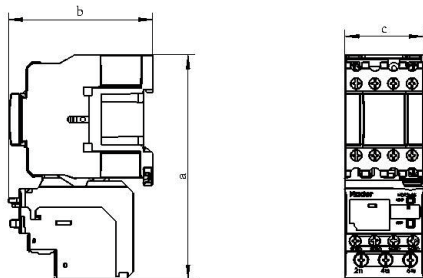
/ As shown in the above figure, when automatic reset is required, switch the white lever to the low position (A gear)

8、外形尺寸和安装尺寸/Product Outline and Installing Dimensions

a、NDR2M-38 外形尺寸/NDR2M-38 Product Outline



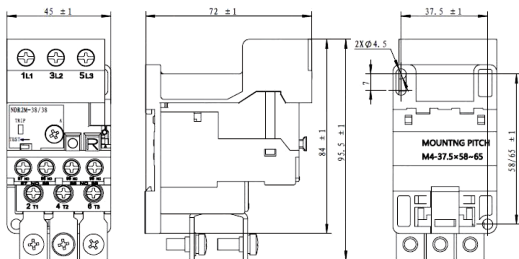
b、NDR2M-38 配接触器组合安装尺寸/NDR2M-38 Installation dimensions of contactor combination



所配接触器型号 /Model of contactor equipped	a	b	c
NDC1-09/12	128 ± 1	83.5 ± 1	45 ± 1
NDC1-18		88.5 ± 1	
NDC1-25	138 ± 1	97.5 ± 1	57 ± 1
NDC1-32/38		102.5 ± 1	

C、NDR2M-38 配安装座使用卡轨或螺钉分立安装/NDR2M-38 Equipped with a mounting base and installed separately using clamp rails or screws

9、安装方式/Installation Methods



a、组合安装：直接插在 NDC1 接触器上/ Stack mounting: directly plug onto NDC1 contactor

b、分立安装：用螺钉或 TH35 导轨安装。/ Concrete installation: use screw or TH35 guide rail

10、注意事项/Note

a、用户使用时不得打开产品调整动作机构；

/Users are not allowed to open the product to adjust the action mechanism during use

b、正常工作位置为垂直安装；/The normal working position is vertical installation；

c、选用热继电器时应注意被保护电动机的型号、容量、工作场合、启动及负载情况，然后选用与被保护电动机额定电流值相适应的热继电器，并调整电流调节装置，使热继电器的整定电流值与被保护的电动机的额定电流值相适应；

/When selecting a thermal relay, attention should be paid to the model, capacity, working environment, starting and load conditions of the protected motor. Then a thermal relay that matches the rated current value of the protected motor should be selected, and the current adjustment device should be adjusted to make the setting current value of the thermal relay match the rated current value of the protected motor；

d、热继电器的进出线接螺钉要拧紧，否则会影接触器的动作特性或者受震动时可能脱落；

/The inlet and outlet wiring screws of the thermal relay should be tightened, otherwise it may affect the operating characteristics of the contactor or may fall off when subjected to vibration；

e、热继电器出厂时均设置在手动复位状态；

/The thermal relay is set to manual reset state at the factory；

f、产品在手动复位模式下脱扣约 8 分钟后按下手动复位按钮复位。

/After the product trips in manual reset mode for about 8 minutes, press the manual reset button to reset.

11、订货须知/Ordering Instructions

用户订货需注明下列事项：/The following items should be noted when ordering by the user:

a、产品的全型号及名称、额定电流规格、订货数量

/Full model and name of the product, rated current specifications, and order quantity

b、安装座不单独供货/The installation seat is not supplied separately

例：不带安装座：NDR2M-3835 30 ~ 38A 热过载继电器 200 台。

For example: Without mounting base: NDR2M-3835 30 ~ 38A 200 thermal overload relays.

带安装座：NDR2M-3835G 30 ~ 38A 热过载继电器（分立安装）200 台

With mounting base: NDR2M-3835G 30 ~ 38A 200 thermal overload relays (installed separately)