

	文件名称 Document Name	使用说明书 Operating Manual	文件编号 Document No.	NDT2920093
	产品型号及名称 Product Model and Name	NDK1 系列切换电容器接触器 NDK1 Series Switching Capacitor Contactor	版次 Version	第 0 版 Version 0
			实施日期 Implementation Date	20160422

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ND K1 系列切换电容器接触器 ND K1 Series Switching Capacitor Contactors

使用说明书 Operating Manual

Nader 良信电器

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修订记录
Revision History

版次 Version	修订内容 Revision Description	修订日期 Revision Date	修订人员 Revised by
0	新增 Add	20160422	白亚亚 Bai Yaya

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一、产品特点

I. Product Features

1、适用范围与用途

1. Applicable Scope and Purpose

NDK1系列切换电容器接触器(以下简称接触器)主要用于交流50HZ(或60HZ)，额定绝缘电压为690V，在AC-6b使用类别下，额定工作电压为415V时额定工作电流至87A的电路中。

The NDK1 series capacitor switching contactor (hereinafter referred to as the contactor) is mainly used in AC 50HZ (or 60HZ) circuits with a rated insulation voltage of 690V. When operated within the AC-6b utilization category at a rated operating voltage of 415V, it has a maximum rated operating current of 87A.

2、设计特点

2. Product Features

动作机构为直动式，触点为双断点；

Direct action type for the action mechanism and double breakpoints for the contact;

组合功能强

Strong combination function

两侧可加装辅助触头组(NF2);

The auxiliary contact set (NF2) can be installed on both sides;

线圈接线端可加装浪涌抑制模块(NG1);

The surge suppression module (NG1) can be installed at the coil wiring end;

注：一台NDC1系列交流接触器,一台转换触头组和六根电阻线等零部件组成；转换触头组挂接在NDC1接触器的上方；触头系统分上、下两层分布，分别为上触头和下触头。

Note: An NDC1 series AC contactor, is composed of a conversion contact set and six resistor wires, among other components; the conversion contact set is hung above the NDC1 contactor; The contact system is divided into two layers, an upper layer and a lower layer, which are respectively referred to as the upper contact and the lower contact.

二、应用范围

II. Scope of Application

1、适用环境

1. Applicable environment

使用环境温度/存储温度

Operating ambient temperature/storage temperature

标准使用环境温度：-5℃~+40℃

Standard operating ambient temperature: -5℃~+40℃

极限使用环境温度：-25℃~+70℃；

Extreme operating ambient temperature: -25℃~+70℃；

存储温度：-60℃~+80℃；

Storage temperature: -60℃~+80℃；

使用海拔

Operating altitude

正常使用海拔高度：≤3000m；

Normal operating altitude: ≤3,000m；

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极限使用海拔高度: $\leq 5000\text{m}$;
Ultimate operating altitude: $\leq 5,000\text{m}$;

环境湿度要求
Ambient humidity requirements

安装地点的相对湿度超过 5% ~95%，在较低的温度下可以允许有较高的相对湿度，对由于温度变化偶尔产生凝露应采取特殊的措施。

Relative humidity levels at installation sites should fall within the range of 5% to 95%, and higher humidity may be acceptable at lower temperatures. To guard against occasional condensation resulting from temperature fluctuations, special precautions must be implemented.

2、污染等级

2. Pollution level

3级
Level 3

3、防护等级

3. Protection class

产品防护等级: IP20
Protection class: IP20

4、安装类别

4. Installation category

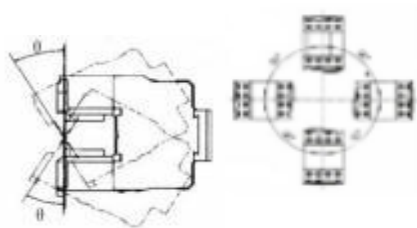
III类(配电及控制水平级),
Category III (power distribution and control level)

5、安装方向

5. Installation direction

产品垂直安装, 安装面与垂直面的倾斜度: θ 标准安装 $\pm 5^\circ$, θ 极限安装 $\pm 30^\circ$

For vertical installation of the product, the gradient θ between the installation surface and the vertical plane: $\pm 5^\circ$ for the standard installation, $\pm 30^\circ$ for the ultimate installation



6、安装方式

6. Installation method

1、NDK1-25 ~ 40: 螺钉安装或安装在35mm标准导轨上

1. NDK1-25 ~ 40: Screw installation or to be installed on the 35mm standard guide

2、NDK1-50 ~ 125 : 螺钉安装或安装在35mm、75mm标准导轨上。

2. NDK1-50 ~ 125: Screw installation or to be installed on the 35mm or 75mm standard guide.

7、适用的工作制

7. Applicable working system

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1、八小时工作制:

1. Eight-hour day:

2、不间断工作制

2. Intermittent duty:

3、持续工作制

3. Continuous duty

负载因数: 40%

Load factor: 40%

操作频率: NDK1-25 ~ 40 300次/小时;

NDK1-50 ~ 125 120 次/小时。

Operation frequency: NDK1-25 ~ 40 300 times/hour;

NDK1-50 ~ 125 120 times/hour.

三、技术参数

III. Technical Parameters

1、线圈特性

1. Coil characteristics

型号 Model			NDK1 - 25	NDK1-32 NDK1-40	NDK1 - 50	NDK1-60	NDK1 - 80	NDK1125
线圈功率 VA Coil power VA	50HZ	吸合 Pull-in	70	110	200			
		保持 Hold	8	11	20			
	60HZ	吸合 Pull-in	80	115	220			
		保持 Hold	8	11	20			
额定控制电源电压 US V Rated control supply voltage US V			24、36、48、110、220、380、400、415					
吸合时间 ms Pull-in time ms			12 ~ 22	15 ~ 24	20 ~ 26			20 ~ 35
释放时间 ms Discharge time ms			4 ~ 12	5 ~ 19	8 ~ 12			6 ~ 20
动作电压 US V Operating voltage US V			0.85 ~ 1.1					
释放电压 US V Discharge voltage US V			0.3 ~ 0.55		0.3 ~ 0.60			

2、由于电压波动和谐波的原因，电容器回路工作一般达到电容器额定电流的1.3倍

2. Due to voltage fluctuations and harmonics, the capacitor circuit generally operates at 1.3 times the rated current of the capacitor

3、电容器制造误差一般为-5% ~ +10%，所以回路实际电流可能达到 $I=1.3 \times 1.1 \times I_n=1.43I_n$ ，因此在选用接触器时必须考虑此种情况。

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3. The manufacturing error of the capacitor is generally $-5\% \sim +10\%$, so that the actual circuit current can reach $I=1.3 \times 1.1 \times I_n = 1.43I_n$. Therefore, it's important to consider this situation for selection of the contactor.

四、电气线路图

IV. Electric Circuit Diagram

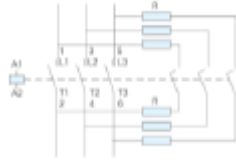


图1主电路接线图

Fig. 1 Main Circuit Wiring Diagram

五、外形与安装尺寸

V. Outline and Installation Dimensions

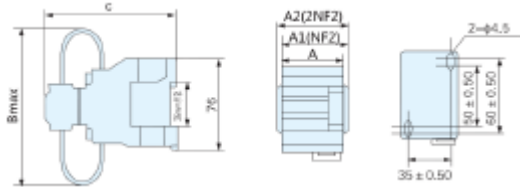


图 2 NDK1-25 外形与安装尺寸

Fig. 2 NDK1-25 Overall Dimensions and Installation Dimensions

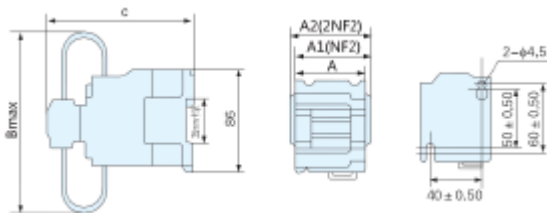


图 3 NDK1-32 ~ 40 外形与安装尺寸

Fig. 3 NDK1-32~40 Overall Dimensions and Installation Dimensions

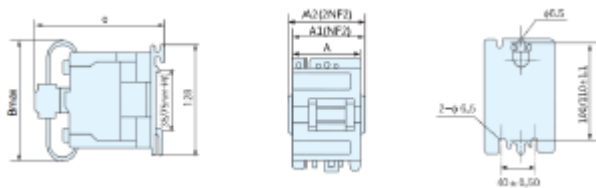


图 4 NDK1-50 125 外形与安装尺寸

Fig. 4 NDK1-50 125 Overall Dimensions and Installation Dimensions

表1

Table 1

单位: mm

Unit: mm

接触器型号 Contactor model	A	A1	A2	Bmax	C
NDK1-25	45	60	72	130	122
NDK1-32	56	71	84	145	130
NDK1-40	56	71	84	145	135.5

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NDK1-50、60、80		75	90	102	170	151
NDK1-125		85	100	110	178	158.5

六、接线端子连接导线能力

VI. Connecting Wire Capacity of Terminals

表2
Table 1

单位: mm²
Unit: mm²

接触器型号 Contactor model		NDK1-25、32		NDK1-40		NDK1-50、60、80		NDK1-125		辅助电路 Auxiliary circuit	
导线根数 Piece(s) of conductors		1	2	1	2	1	2	1	2	1	2
接线端子 Wiring terminal 可接线 Connectable wire	软线m m ² Flexible wire m m ²	4	4	6	6	16	16	50	25	2.5	2.5
	硬线m m ² Hard wire m m ²	6	6	10	10	25	16	50	25	4	4
接线螺钉扭力矩 N • m max Torsion moment of terminal screw N • m max	主电路 Main circuit	1.2	2.5	2.5		2.5~5		4.5~9.0		-	-
	辅助电路 Auxiliary circuit	0.8~1.2									

注: 为保证接线端子的紧固性不建议使用经搪锡处理的软线。

Note: To ensure the fastness of the terminals, it is not recommended to use tinned flexible wires.

七、安装使用与维护

VII. Installation, Use and Maintenance

1、安装前应检查线圈的技术数据（如额定电压、频率等是否与电源相符）

1. Before installation, check the technical data of coil (for example, whether the rated voltage and frequency are in accordance with the power supply)

2、接线螺钉拧紧做好标记，检查接线正确无误，给接触器通电分合，试验动作可靠后，才能投入使用；

2. Tighten and mark the terminal screws, check the proper cabling, turn on and off the contactor with power on, and then put it into use after reliable test action:

3、要求可动部分不卡住，紧固件无松脱，连接导线无松动，产品使用一个月后，接线螺钉须紧固一次，之后每年紧固一次，并检查产品各部件是否可靠；

3. The movable parts shall not be jammed, and fasteners or connecting conductors shall not be loosened. After one month's use of the product, the terminal screws shall be fastened once, and then fastened once a year thereafter, and each part of the product shall be checked for reliability;

4、应保证接触的使用环境，若发生有害气体或尘埃等情况，应给予可靠的防护、保证接触的工作可靠性。

4. Ensure the operating environment of contact. If harmful gas or dust is found, reliable protection should be given to ensure the operation reliability of contact.

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八、订货须知

VIII. Ordering Instructions

订货是必须写明以下内容

The following must be stated in the order

- 1、切换电容器的型号和名称；
1. Model number and name of the switching capacitor;
- 2、控制线圈电压及频率；
2. Voltage and frequency of the control coil;
- 3、订货数量
3. Order quantity

例如：NDK1-2511 220V50HZ 切换电容器接触器；表示为额定工作电流18A,带有一对常开及一对常闭辅助触头，控制电源电压为220V，频率为50HZ，订货数量10台。

Example: NDK1-251 1 220V50HZ switching capacitor contactor; indicating a rated operating current of 18A, with one pair of normally open and one pair of normally closed auxiliary contacts; the control supply voltage being 220V and the frequency being 50 HZ, 10 sets are ordered.

- 4、特殊电压规格产品，如客户需要可特殊订货。
4. Products with the special voltage specifications can be specially ordered upon customers' requests.

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