

9、外形尺寸和安装尺寸 External Dimensions and Installation Dimensions

产品外形及安装尺寸见图 3~图 5。

See Figures 3~5 for the outline and installation dimensions.

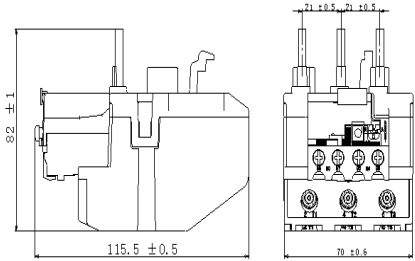


图 3 NDR2-95 外形尺寸与安装尺寸  
Figure 3 NDR2-95 External Dimensions and Installation Dimensions

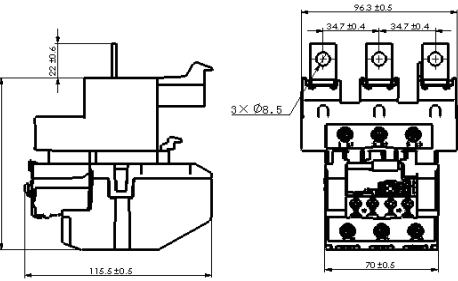


图 4 NDR2-140 外形尺寸与安装尺寸  
Figure 4 NDR2-140 External Dimensions and Installation Dimensions

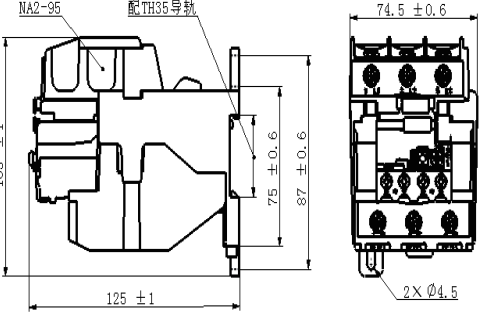


图 5 NDR2-95 带独立安装座外形尺寸与安装尺寸  
Figure 5 NDR2-95 External Dimensions and Installation Dimensions with a Stand-alone Mounting Base

10、安装方式 Installation Mode

- ① 组合式 Modular:
- a) NDR2-95热继电器直接安装在NDC1-40~95系列交流接触器上（见表1）；  
NDR2-95 thermal relay is mounted onto the NDC1-40~95 series of AC contactors directly (see Table 1);
  - b) NDR2-140热继电器直接和NDC2-115~170系列交流接触器安装（见表1）。  
NDR2-140 thermal relay is mounted onto the NDC2-115~170 series of AC contactors directly (see Table 1).
- ② 分立式：NDR2-95热继电器配NA2-95安装座后用螺钉安装或用符合GB/T 19334-2003中的A1 TH35安装轨安装。  
Split type: NDR2-95 thermal relay is installed with screws or A1 TH35 installation rail in accordance with GB/T 19334-2003 after equipped with the NA2-95 mounting base.

11、附件说明 Accessory Description

- 11.1 型号说明 Model Description
- N. A. Z. -95
- ① Nader 牌低压电器；Nader brand low-voltage apparatus;
- ② 独立安装座；Stand-alone mounting base;
- ③ 设计序号；Design sequence number;
- ④ 与之相配的热继电器为 NDR2-95 系列产品（即 NDR2-9522~NDR2-9565）。  
The matching thermal relays are NDR2-95 series products (namely NDR2-9522~NDR2-9565).
- 11.2 使用方法 Use Methods
- 需与 NDR2-95 系列产品配合使用，实现热继电器的螺钉安装或卡装到符合 GB/T19334-2003 中的 A1 TH35 安装轨上。
- The product is required to be used with the NDR2-95 series thermal relays for achieving the screw installation of the thermal relay or the relay shall be clamped on the A1 TH35 installation rail in accordance with GB/T19334-2003.
- 11.3 外形尺寸及安装尺寸 Outline and installation dimensions
- 产品外形见图 6，安装尺寸见图 4。
- See Figure 6 for the outline and Figure 4 for the installation dimension.

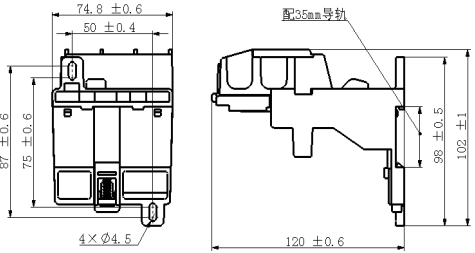


图 6 NA2-95 外形尺寸  
Figure 6 NA2-95 External Dimensions

12、使用和维护 Use and Maintenance

连接导线需要定期拧紧。Connecting wires require to be tightened regularly.

13、注意事项 Precautions

- ① 因私自拆开产品而引起的质量问题，责任自负：  
A user must be responsible for addressing a product issue because the user disassembles the product without approval;
- ② 请不要随意对热继电器的特性进行调试，由此引起的产品质量问题厂方不予负责：  
Do not commission the characteristics of the thermal relay randomly; the manufacturer shall not be responsible for any quality problem caused;
- ③ 接线可靠，防止因接线端出现异常热引起热继电器误动作或造成接线端烧毁。  
Wiring must be reliable to prevent the malfunction of the thermal relay or terminal burning due to the abnormal heat generation on the terminal.

14、订货须知 Order Note

在订货时应指明下列事项：

The following matters shall be indicated when ordering:

- a) 热继电器的全型号及名称；All models and name of the thermal relay;
- b) 订货数量。Order quantity.

例如：

NDR2-9522 热继电器 10 台

表示：NDR2 热继电器，可与 NDC1-40~95 交流接触器配合，整定电流为 17~25A，订货数量为 10 台。

For example:

NDR2-9522 thermal relay 10 pcs

representing: NDR2 thermal relay can be used with the NDC1-40~95 AC contactor with the setting current of 17~25A and the order quantity of 10 pcs.



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NDR2-95/140系列  
NDR2-95/140 series  
热过载继电器使用说明书  
Thermal overload relay operation instruction

1.适用范围与用途 Application Scope and Purpose

NDR2-95/140 系列热过载继电器（以下简称热继电器），在交流 50Hz（60Hz）、额定电压至 690V、电流 17A~140A 的电路中，作三相交流电动机的过载和断相保护之用。

The NDR2-95/140 series of thermal overload relays (here in after referred to as thermal relays) apply to the circuit of AC 50Hz (60Hz), the rated voltage to 690V and current of 17A~140A for the overload and phase failure of three-phase AC motors.

2.型号说明 Model Description



表 1 热继电器的电流规格代号及其整定电流范围  
Table 1 Current Specification Code and Current Setting Range of the Thermal Relay

| 序号<br>No | 电流规格代号<br>Current<br>specification<br>code | 整定电流范围<br>Current setting<br>range (A) | 配用熔断器<br>Supporting<br>SCPD ( A ) | 产品基型代号<br>Product<br>basic-type<br>code | 安装接触器<br>Mounting<br>contactor |
|----------|--------------------------------------------|----------------------------------------|-----------------------------------|-----------------------------------------|--------------------------------|
| 1        | 22                                         | 17~25                                  | 25                                | 50                                      |                                |
| 2        | 53                                         | 23~32                                  | 40                                | 63                                      |                                |
| 3        | 55                                         | 30~40                                  | 40                                | 100                                     |                                |
| 4        | 57                                         | 37~50                                  | 63                                | 100                                     |                                |
| 5        | 59                                         | 48~65                                  | 63                                | 100                                     |                                |
| 6        | 61                                         | 55~70                                  | 80                                | 125                                     |                                |
| 7        | 63                                         | 63~80                                  | 80                                | 125                                     |                                |
| 8        | 65                                         | 80~104                                 | 100                               | 160                                     |                                |
| 9        | 65                                         | 80~104                                 | 125                               | 200                                     |                                |
| 10       | 67                                         | 95~120                                 | 125                               | 224                                     |                                |
| 11       | 69                                         | 110~140                                | 160                               | 250                                     |                                |

3、技术参数 Technical Parameters

3.1 主电路 Main circuit:

- a) 额定绝缘电压 Rated insulation voltage U<sub>i</sub>: 690V ;
- b) 额定工作电压 Rated operational voltage U<sub>e</sub>: 690V ;

3.2 辅助电路 Auxiliary circuit

- a) 额定绝缘电压 Rated insulation voltage U<sub>i</sub> : 400V ;
- b) 额定工作电压 Rated operational voltage U<sub>e</sub>: AC220V、AC380V、DC110V、DC220V ;
- c) 约定发热电流 Agreed thermal current I<sub>th</sub> : 5A ;
- d) 辅助触头为电气上分开的一常开和一常闭触头 Auxiliary contacts with 1 NO +1 NC ;
- e) 使用类别为 Utilization category: AC-15、DC-13
- f) 辅助触头在不同额定工作电压（U<sub>e</sub>）下的额定工作电流（I<sub>e</sub>）见表 2。

See Table 2 for the rated operational current (I<sub>e</sub>) of the auxiliary contacts at the different rated operational voltage.

表 2 辅助触头额定工作电压及额定工作电流

| 使用类别<br>Utilization category | 额定工作电压<br>Rated operational voltage<br>U <sub>e</sub> V | 额定工作电流 I <sub>e</sub> A |
|------------------------------|---------------------------------------------------------|-------------------------|
| AC-15                        | 380                                                     | 1.58                    |
|                              | 220                                                     | 2.73                    |
|                              | 220                                                     | 0.21                    |
| DC-13                        | 110                                                     | 0.46                    |

4、工作环境 Working Environment

4.1 周围空气温度 Ambient air temperature

- a) 周围空气温度上限为+40℃，且其 24h 内的平均温度值不超过+35℃；  
The upper limit of the ambient air temperature is +40℃, and its average temperature within 24h shall not exceed +35℃;
- b) 周围空气温度的下限为-5℃。 The lower limit of the ambient air temperature is -5℃.

4.2 海拔 Altitude

安装地点的海拔不超过 2000m。  
Altitude of the installation site above sea shall not exceed 2,000m.

4.3 大气条件 Atmospheric conditions

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%。对于温度变化偶尔产生的凝露应采取特殊的措施。

When the highest temperature is +40℃, the relative humidity of air should not exceed 50%; a high relative humidity is allowed under a low temperature, e.g.90% under 20℃, Special measures should be taken to address occasional condensing due to temperature fluctuation.

4.4 污染等级 Pollution level

安装地点的污染等级为 3 级。

The pollution level of the installation site is Level 3.

4.5 安装类别（过电压类别） Installation category (over-voltage category)

安装类别为 III 类。

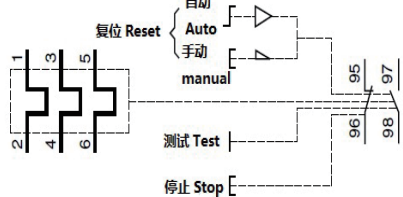
Installation category of III.

4.6 冲击和振动 Impact and shock

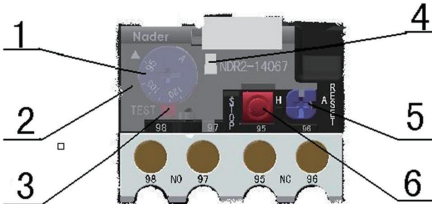
有关冲击与振动的条件由用户与本公司协商。

Conditions about impact and shock shall be negotiated between users and the company.

5.接线方式（接线图） Wiring Mode (Diagrams)



6.热继电器的使用 Use of the Thermal Relay



6.1 电流整定 Current setting

- ① 抬起透明盖 2；Lift the transparent cover 2;
- ② 顺时针转动以安培为单位的电流调整旋钮 1，进行电流调节；  
Turn the current adjustment knob (in ampere) clockwise to adjust the current;
- ③ 将透明盖 2 盖上。Cover the transparent cover 2.

6.2 手动-自动复位选择 Manual-automatic reset mode selection

6.2.1 抬起透明盖 2，通过旋转紫色旋钮 5，实现手动复位模式或自动复位模式的转换；

Lift the transparent cover 2 and turn the purple knob 5 for switching of the manual or automatic reset mode:

- ① 用螺丝刀将旋钮 5 逆时针转动 90°后释放，复位模式为手动复位；  
Turn the knob 5 90° anticlockwise and release through a screwdriver with the reset mode changed to the manual reset mode;

- ② 按下旋钮 5 再顺时针转动 90°后释放，产品即切换为自动复位模式；

Press the knob 5, turn it 90° clockwise and release; the reset mode will change to automatic reset mode;

- ③ 放下透明盖，完成复位模式的切换。

Drop the transparent cover to accomplish the switching of reset mode.

注：产品出厂时设置为手动复位。

Note: The product is set to manual reset mode when delivery.

6.2.2 产品在手动复位模式下脱扣约 5min 后，按下旋钮 5 可实现产品的复位，在自动复位模式下脱扣 8min 内，产品自动复位。

After the product tripping about 5min in the manual reset mode, press the knob 5 for resetting the product; the product achieves the automatic reset within 8min after tripping in the automatic reset mode.

6.3 停止功能 Stop functions

按下停止按钮 6，可实现下述功能

The following functions can be realized by pressing the stop button 6:

- ① 95-96 常闭触头断开；95-96 NC contacts off;
- ② 97-98 常开触头无影响；97-98 NO contacts not affected.

6.4 测试功能 Testing functions

按下测试按钮 3，可实现下述功能：

The following functions can be realized by pressing the test button 3:

- ① 95-96 常闭触头断开；95-96 NC contacts off;
- ② 97-98 常开触头接通；97-98 NO contacts on;
- ③ 视窗窗 4 内显示橘黄色指示件。The orange indicator displays in the inspection window 4.

7.脱扣特性 Tripping Characteristics

产品的脱扣级别为 10A 级，脱扣特性曲线参见图 2。

The tripping level of the product is Level 10A with the tripping characteristic curve shown in Figure 2.

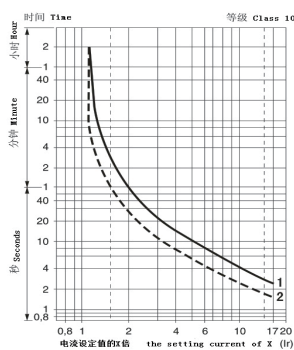


图 2 脱扣特性曲线  
Figure 2 Tripping Characteristic Curve

- 1、平衡运转，3 相，从冷态开始  
Balanced operation, 3-phase, starting from the cold state
- 2、平衡运转，3 相，长期处于设置电流（热态）之后  
Balanced operation, 3-phase, following the setting current (warm state) for a long time

8.接线能力 Connection Capacity

产品接线能力见表 3

See Table 3 for the connection capacity of the product

表 3 接线端子接线能力

Table 3 Connection Capacity of Terminals

| 导线类型<br>Conductor<br>type                         | 接线位置<br>Wiring<br>position   | 导线根数<br>Piece(s) of<br>conductors  | NDR2-9522 ~ NDR2-9565<br>最小截面积/最大截面(mm²)<br>Min/max cross section (mm²) | NDR2-14065 ~<br>NDR2-14069<br>最小截面积/最大截面(mm²)<br>Min/max cross section (mm²) |
|---------------------------------------------------|------------------------------|------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 无接线端                                              | 主 电 路<br>Main circuit        | 1 根<br>1 piece                     | 4/35                                                                    | 4/50                                                                         |
| 子软线<br>Flexible<br>wire<br>without<br>terminals   | 辅助电路<br>Auxiliary<br>circuit | 1 根或 2 根<br>1 piece or 2<br>pieces | 1/2.5                                                                   | 1/2.5                                                                        |
| 有接线端<br>子软线<br>Flexible<br>wire with<br>terminals | 主电路<br>Main circuit          | 1 根<br>1 piece                     | 4/35                                                                    | 4/55                                                                         |
|                                                   | 辅助电路<br>Auxiliary<br>circuit | 1 根或 2 根<br>1 piece or 2<br>pieces | 1/2.5                                                                   | 1/2.5                                                                        |
| 无接线端<br>子硬线<br>Hard wire<br>without<br>terminals  | 主电路<br>Main circuit          | 1 根<br>1 piece                     | 4/35                                                                    | 4/50                                                                         |
|                                                   | 辅助电路<br>Auxiliary<br>circuit | 1 根或 2 根<br>1 piece or 2<br>pieces | 1/2.5                                                                   | 1/2.5                                                                        |
| 拧紧力矩<br>Tightening<br>torque                      | 主 电 路<br>Main circuit        |                                    | 6~7 N·m                                                                 |                                                                              |
|                                                   | 辅助电路<br>Auxiliary circuit    |                                    | 0.6~0.8 N·m                                                             |                                                                              |