



Introduction

RDR5 series bimetal thermal overload relay (hereinafter referred to as thermal relay) is mainly used for AC 50, 60Hz, rated operating voltage U_e : 690V, rated impulse withstand voltage U_{imp} (kV): 8. In rated current 0.1 ~ 93 (A) circuit, for circuit and motor overload, phase breaking, protection. The thermal relay has the features of phase breaking protection, temperature compensation, rectification current adjustment, automatic reset and manual reset arbitrary selection, action indication signal, dynamic closing, dynamic breaking auxiliary contact insulation separation, small installation area, various installation methods, etc. It has test button and stop button for action flexibility check. There is a finger touch guard to prevent the use of safety, there is also a latching device to prevent misoperation, etc.

The product conforms to: GB/T 14048.4 standard.

Type Selection

RDR5	38A	Z
Model No.	Rated Operating Current	Install Type
Thermal Relay	25A 38A 93A	Z: combined install F: seperated install

Normal operating condition and installation condition

1. The surrounding air temperature: $+40^{\circ}\text{C} \sim -5^{\circ}\text{C}$, and the average value of 24 hours does not exceed $+35^{\circ}\text{C}$.
2. The altitude of the installation site does not exceed 2000m.
3. Humidity of atmospheric conditions: relative humidity of the air is not more than 50% at $+40^{\circ}\text{C}$, and can have higher relative humidity at lower temperatures, for example, up to 90% at $+20^{\circ}\text{C}$, and special measures should be taken for occasional condensation due to temperature changes.
4. Pollution class: 3.
5. Installation category: III.
6. Installation position: installed in the normal position, with a slope of not more than 5° between the installation surface and the vertical surface, and without significant vibration and shock.
7. Thermal relay protection class RDR5-25, 38, 93 for IP20B.

RDR5 series Thermal Relay

Structure and Operating Principle

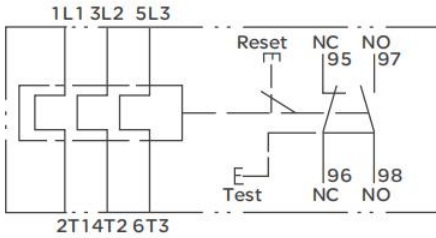


Figure 1 Electrical diagram of internal structure

Functional Structure

1. With phase break protection;
2. With setting current continuous adjustable device;
3. With temperature compensation;
4. With action indication;
5. It has a testing mechanism;
6. With a stop button;
7. With manual and automatic reset button;
8. Having an electrically separable normally open and normally closed contact.

Operating Principle

The bimetallic components of the thermal relay are in series in the main circuit. When the line current increases, the bimetal element is heated and bent to a certain extent to push the slide, and the bimetal element and the push rod will be constant by compensating Close contact separate. Ensure motor phase break and overload are effectively protected.

Table 1

序号	型号	额定电流A	整定电流调节范围A	适配的接触器型号	推荐熔断器型号	连接导线的截面积mm ²	
1	RDR5-25	25	0.1-0.16	RDC5-09-38	RDT1600-2	1	
2			0.16-0.25				
3			0.25-0.4				
4			0.4-0.63				
5			0.63-1				
6			1-1.6		RDT1600-4		
7			1.25-2				
8			1.6-2.5				
9			2.5-4				
10			4-6				
11			5.5-8		RDT16-10		
12			7-10				
13			9-13				RDT16-16
14			12-18				
15			17-25		RDT16-20		
16	RDR5-38	38	23-32	RDC5-18-32	RTD16-25	2.5	
17			28-36	RDC5-38	RTD16-40		
18			30-40		RTD16-50	4	
19	RDR5-93	93	23-32	RDC5-25 RDC5-38	RTD16-63	6	
20			30-40		RDC5-40-95		RTD16-80
21			48-65	50-95	RTD16-125	25	
22			55-70	RDC5-65-95	RTD16-160		
23			63-80	RDC5-80-90	RTD16-200		
24			80-93	RDC5-95	RTD16-200		35

Technical Parameter

The rated working current, adjusting range of setting current, type of adaptive AC contactor and recommended fuse type of thermal relay are shown in Table 1.

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Table 2

Category of use	AC-15	DC-15
Rated working voltage V	380	220
Rated working current A	1.5	0.2
Specify heating current A	5	

The operation characteristics of the thermal relay in load balancing of each phase conform to the provisions of Table 3.

Table 3

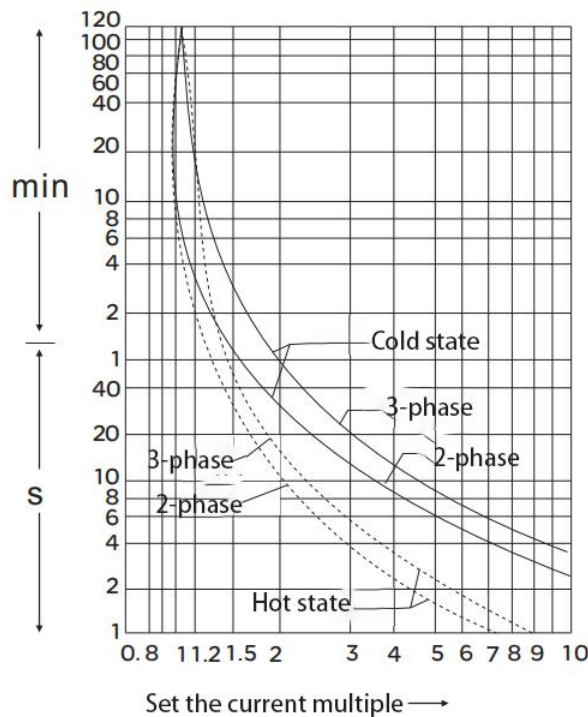
No.	Setting Current Multiple	Operation time	Start State	Ambient air temperature °C
1	1.05	>2h	Cold start	20A ± 5
2	1.20	<2h	Hot state (after serial number 1) starts	
3	1.50	Trip level 10A <2min	Cold start	
4	7.2	Trip level 10A 2s < Tp < 10s	Hot state (after serial number 1) starts	

Trip levels: RDR5-25, RDR5-36, RDR5-93 are 10A.

The operation characteristics of the thermal relay when the load of each phase is unbalanced conform to the provisions of Table 4.

Table 4

No.	Set the current multiple		Operation time	Start State	Ambient air temperature °C
	Arbitrary two-phase	Another phase			
1	1.00	0.90	>2h	Cold start	20 ± 5
2	1.15	0	<2h	Hot state (after serial number 1) starts	



RDR5 series Thermal Relay

Shape and mounting dimensions

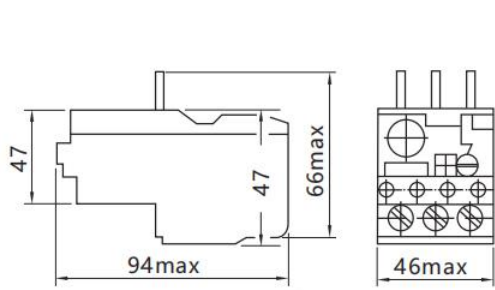


Figure 3 RDR5-25/Z dimensions

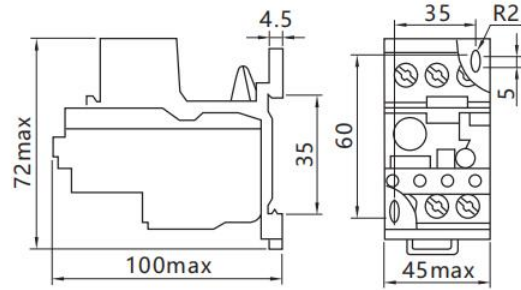


Figure 4 RDR5-25/F Dimensions

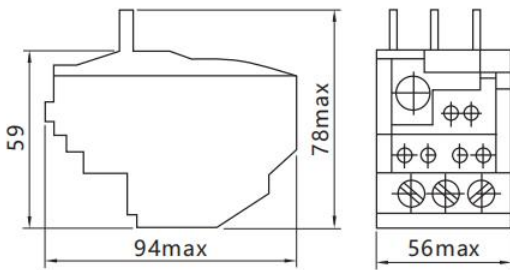


Figure 5 RDR5-38/Z dimensions

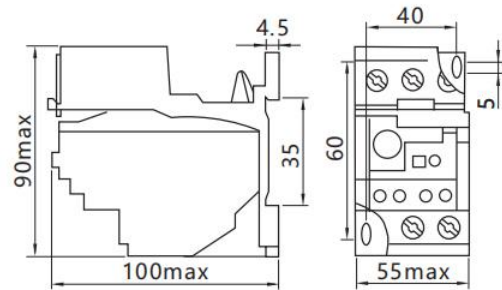


Figure 6 RDR5-38/F dimensions

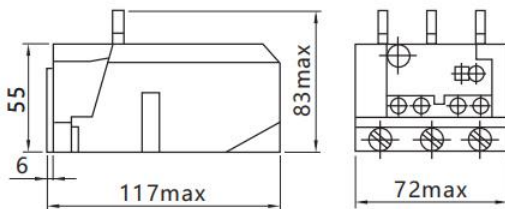


Figure 7 RDR5-93/Z dimensions

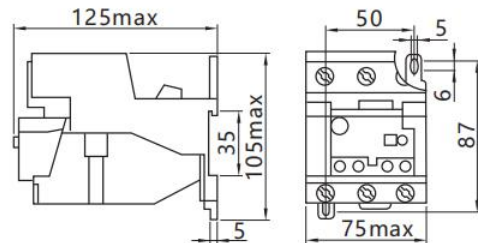


Figure 8 RDR5-93/F Dimensions

Order instructions

When ordering thermal relays, customers must specify: product model, specification, setting current range and order quantity.

Example: Order RDR5-93, 80~93A, 100 PCS.