

# H8R

## Series Thermal Overload Relay

## Motor Control and Protection



### I. Scope of Application

The H8R Series Thermal Overload Relay is mainly used in circuits with AC 50 Hz, rated working voltage up to 660 V and rated working current of 0.1-93 A, which is used to start and accelerate the motor to a normal speed, as well as for overload and phase failure protections of circuits and three-phase AC motors, and can form a starter with the adaptive AC contactor. Models of the same type: LR2, JR28 and JRS1. This product complies with GB14048.4.

### II. Model Description

H	8	R	□	/	□
Enterprise code					
Design number					
Thermal overload relay					
Shell frame level rated current (A)					
Installation code (Z for combined installation, and F for independent installation)					

Note: H8R is installed independently, and an additional mounting base is required.

### III. Work and Installation Conditions

1. Ambient air temperature:  $-5^{\circ}\text{C}$ — $+40^{\circ}\text{C}$ . The average temperature within 24 hours shall not exceed  $+35^{\circ}\text{C}$ .
2. Altitude: Not higher than 2,000 m.
3. Atmospheric conditions: The relative atmospheric humidity at the installation site shall not exceed 50% at  $+40^{\circ}\text{C}$ . A higher relative humidity is allowed at a lower temperature, e.g. 90% humidity at  $20^{\circ}\text{C}$ . Special measures shall be taken for the occasional condensation due to temperature change.
4. Contamination grade: Grade 3.
5. Installation category: III.
6. Installation conditions: The inclination between the installation surface and the vertical plane shall not be more than  $\pm 5^{\circ}$ .
7. Impact vibration: The relay shall be installed and used in a place free of significant shaking, shock and vibration.
8. Transportation and storage: The relay shall not be subjected to severe collision and vibration during the transportation, and shall not be attacked by rain and snow during the transportation and storage. The relay is suitable for the transportation and storage at a temperature between  $-25^{\circ}\text{C}$  and  $+55^{\circ}\text{C}$ , which can reach  $+70^{\circ}\text{C}$  in a short time (within 24 h).

### IV. Main Parameters and Technical Performance

#### 4.1 Main circuit technical parameters

See Table 1 for the technical parameters of main circuit of the thermal overload relay.

Table 1

Product model	Rated insulation voltage $U_i$ (V)	Set current range (A)	Specification of fuse used	Contactor model	Cross-section area of connecting conductor ( $\text{mm}^2$ )	Accessories
H8R-25	660	0.1-0.16	4	H8C/CJX2-09-32	1	H8R-25 mounting base
		0.16-0.25	4		1	
		0.25-0.4	4		1	
		0.4-0.63	4		1	
		0.63-1	4		1	
		1-1.6	4		1	
		1.6-2.5	6		1	
		2.5-4	10		1	
		4-6	16		1	
		5.5-8	20		1	
7-10	20	1.5				

Table (continued)

Product model	Rated insulation voltage $U_i$ (V)	Set current range (A)	Specification of fuse used	Contact model	Cross-section area of connecting conductor ( $\text{mm}^2$ )	Accessories
H8R-25	660	9-13	25	H8C/CJX2-12-32	2.5	H8R-25 mounting base
		12-18	35	H8C/CJX2-18-32	2.5	
		17-25	50	H8C/CJX2-25-32	4	
H8R-36	660	23-32	63		H8C/CJX2-32	6
		30-40	80	10		
H8R-93	660	23-32	63	H8C/CJX2-40-95	6	H8R-93 mounting base
		30-40	80		10	
		37-50	100	H8C/CJX2-50-95	10	
		48-65	100		16	
		55-70	125	H8C/CJX2-65-95	25	
		63-80	125	H8C/CJX2-80-95	25	
		80-93	160	H8C/CJX2-95	35	

Note: The recommended fuse model for this thermal overload relay is RT16 or NT00

### 4.2 Auxiliary circuit technical parameters

Technical parameters of the auxiliary circuit of the thermal overload relay

Table 2

Rated insulation voltage $U_i$ (V)	500			
Conventional thermal current $I_{th}$ (A)	6			
Use category	AC-15		DC-13	
Rated working voltage $U_e$ (V)	220	380	220	110
Rated working current $I_e$ (A)	1.64	0.95	0.15	0.3
Auxiliary contact type	1 NO + 1 NC contact separated electrically			

### 4.3 Operation characteristics

4.3.1 Operation characteristics during the load balance of each phase

Table 3

Serial number	Set current multiple	Operating time		Initial condition	Ambient air temperature
1	1.05	>2h		Cold state starting	+20°C
2	1.2	<2h		Thermal state (starting after No.1 test)	
3	1.5	Trip level	10A		
			10	<4min	
4	7.2	Trip level	10A	2s<Tp≤10s	
			10	4s<Tp≤10s	

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4.3.2 The operation characteristics during the imbalance of each phase (phase failure) conform to

Table 4

Serial number	Set current multiple		Operating time	Initial condition	Ambient air temperature
	Any two phases	The other phase			
1	1.0	0.9	>2h	Cold state starting	+ 20°C
2	1.15	0	<2h	Thermal state (starting after No.1 test)	

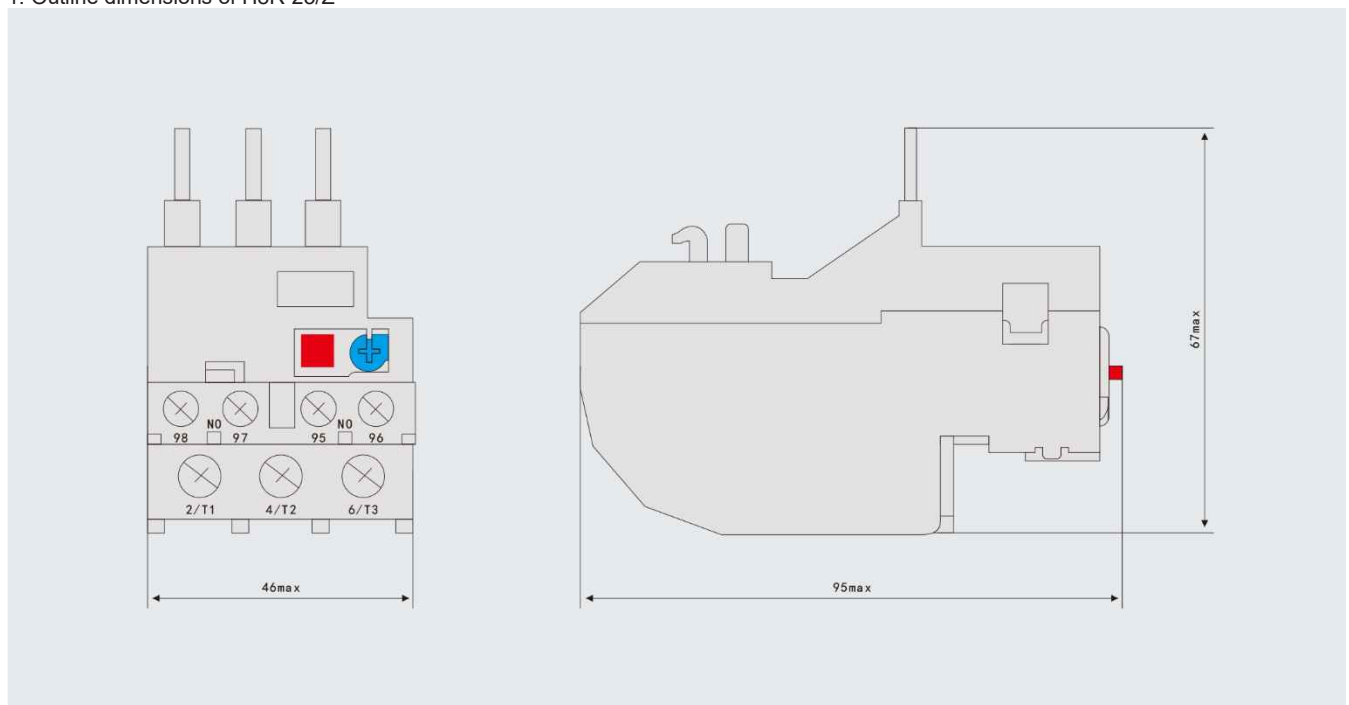
4.3.3 Temperature compensation performance

Table 5

Serial number	Set current multiple	Operating time	Initial condition	Ambient air temperature
1	1.0	>2h	Cold state starting	+40°C
2	1.2	<2h	Thermal state (starting after No.1 test)	
3	1.05	>2h	Cold state starting	-5°C
4	1.30	<2h	Thermal state (starting after No.1 test)	

## V. Outline and Installation Dimensions

1. Outline dimensions of H8R-25/Z

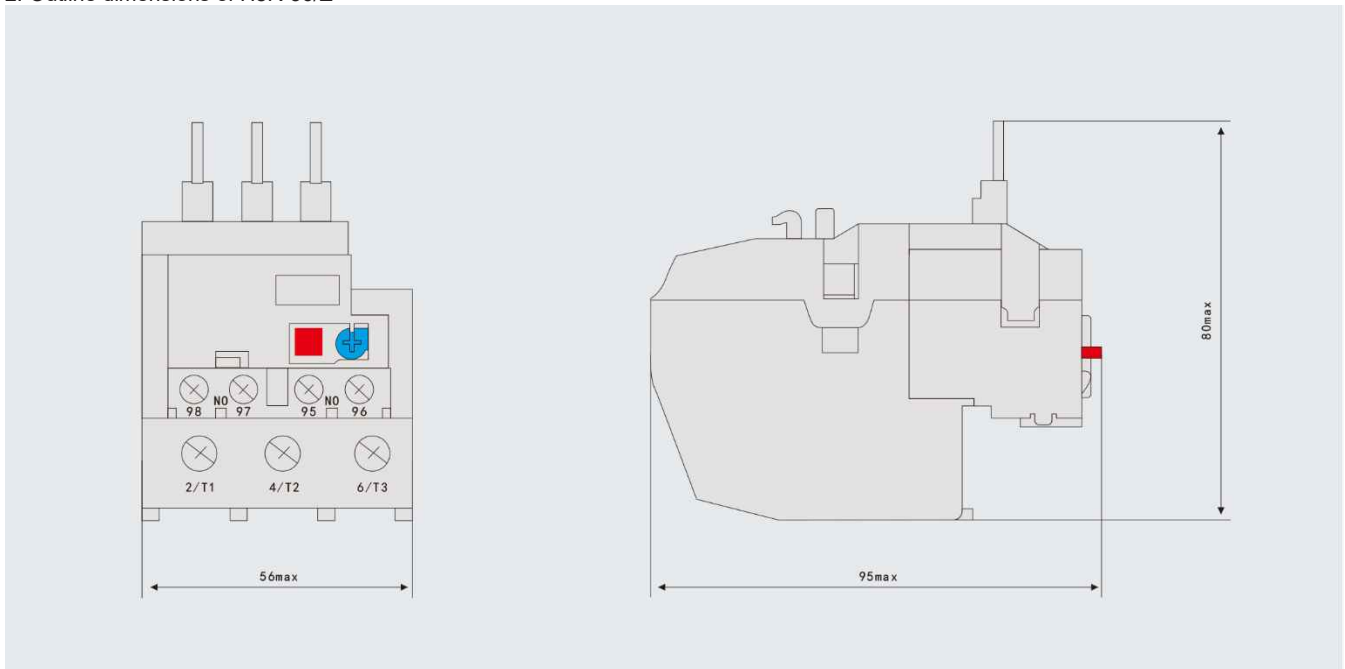


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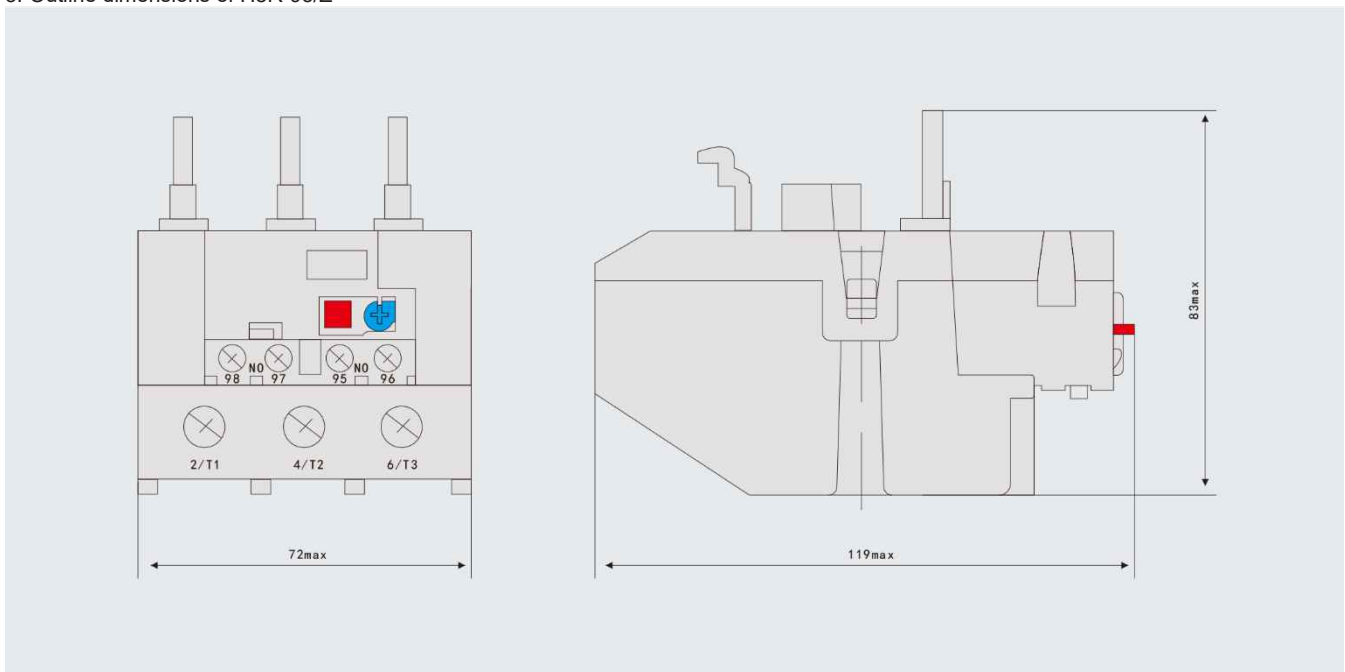
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### 2. Outline dimensions of H8R-36/Z



### 3. Outline dimensions of H8R-93/Z



## VI. Ordering Information

1. When ordering, the product name, model, setting current range and quantity must be indicated.
2. The mounting base (if required) shall be specified separately. Example of ordering: Thermal overload relay, H8R-25, 7–10 A, 50 sets.