

JR28 Series Thermal Overload Relay



1 Overview

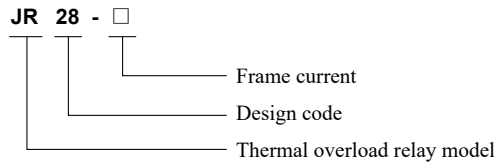
JR28 series thermal overload relay (hereinafter referred to as “thermal relay”) is suitable for AC 50/60Hz AC motor running for long term or intermittently running for long term with working voltage of 690V and below and with current up to 93A for overload protection and open-phase protection.

Thermal relay can be spliced with the contactor, and can be installed separately.

Standard: IEC 60947-4-1, IEC 60947-5-1.



2 Type Designation



3 Main Parameters



Item		JR28-25	JR28-36	JR28-93	
Rated current		25	36	93	
Rated insulation voltage V		690	690	690	
Open-phase protection		Yes	Yes	Yes	
Manual and auto reset		Yes	Yes	Yes	
Temperature compensation		Yes	Yes	Yes	
Trip indicator		Yes	Yes	Yes	
Test button		Yes	Yes	Yes	
Stop button		Yes	Yes	Yes	
Installation method		Plug-in type, standalong type	Plug-in type, standalong type	Plug-in type, standalong type	
Aux. contact		1NO+1NC	1NO+1NC	1NO+1NC	
AC-15 rated working current A	220V	2.73	2.73	2.73	
	380V	1.58	1.58	1.58	
Sectional area of wire mm ²	Main circuit	Single-core or stranded wire	1~4	6~10	6~35
		Wiring screw	M4	M4	M10
	Aux. circuit	Single-core or stranded wire	2×(0.5~1)	2×(0.5~1)	2×(0.5~1)
		Wiring screw	M3.5	M3.5	M3.5

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4 Working Conditions and Installation Conditions

- 4.1 Ambient air temperature: $-5^{\circ}\text{C}\sim+40^{\circ}\text{C}$, the mean measured within 24h does not exceed 35°C .
- 4.2 Altitude: Not exceed 2,000 meters.
- 4.3 Relative humidity: The relative humidity does not exceed 50% at the maximum temperature $+40^{\circ}\text{C}$, and a higher relative humidity is permissible at a lower temperature. The mean monthly minimum temperature of the wettest month does not exceed $+25^{\circ}\text{C}$, and the mean monthly maximum relative humidity of this month does not exceed 90%. Special measures are taken for condensation occurred occasionally due to temperature changes.
- 4.4 Pollution degree: 3.
- 4.5 Installation conditions: The angle between the mounting surface and the vertical surface does not exceed $\pm 5^{\circ}$.
- 4.6 It should be installed in places not full of water vapor with rain- and snow-proof device provided.
- 4.7 There is no obvious shaking, impact, or vibration.
- 4.8 There is no explosive and hazardous medium and the medium does not contain enough gas or conductive dust that can cause corrosion to the metal and damage to the insulation.

5 Structure Features

- 5.1 In addition to overload protection and open-phase protection functions, thermal relay has the following structure features:
- Three-phase bimetal plate type, trip level is 10A
 - With temperature compensation function.
 - With manual and auto reset buttons.
 - With action indicator.
 - With stop button.
 - With test mechanism.
 - With a continuous adjusting device for setting current
 - With an electrically separable normally-open contact and an electrically separable normally-closed contact
- 5.2 Installation method: Plug-in type installation with contactor or standalone type installation.

6 Protection Features

- 6.1 Action characteristics when all phase loads of thermal relay are balanced shall comply with the table below

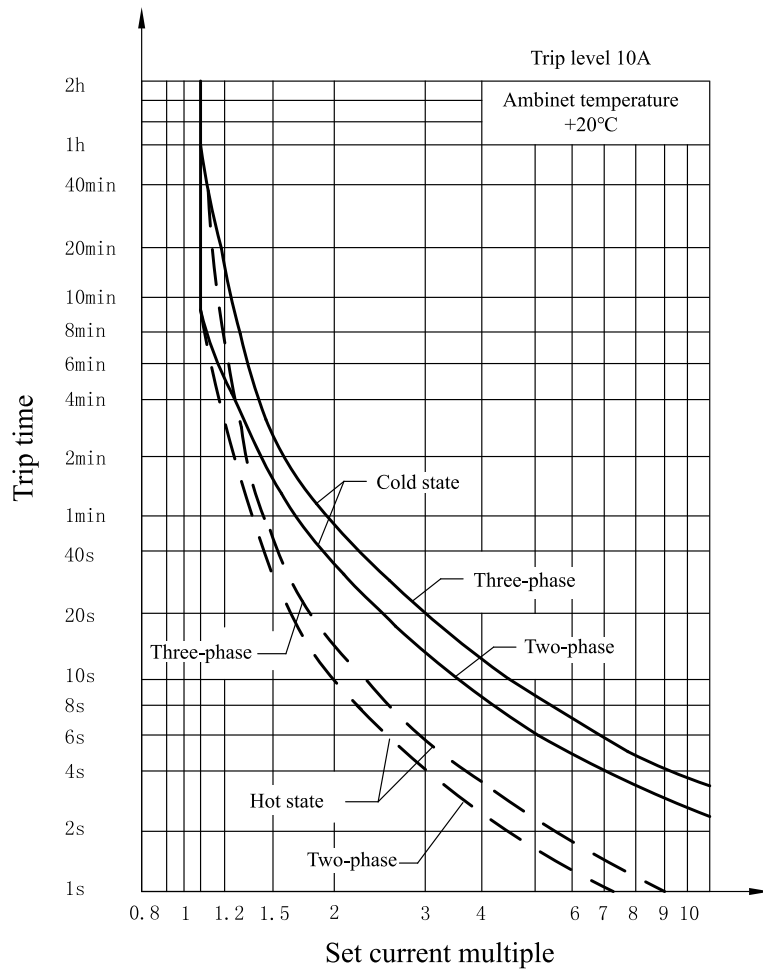
No.	Set current multiple	Action time	Starting condition	Ambient air temperature $^{\circ}\text{C}$
1	1.05	$\geq 2\text{h}$	Cold state starts	20 \pm 5
2	1.2	$< 2\text{h}$	Hot state (after No. 1 test) starts	
3	1.5	$< 2\text{ min}$		
4	7.2	$2\text{s} < T_p \leq 10\text{s}$	Cold state starts	

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6.2 Action characteristics when all phase loads of thermal relay are unbalanced shall comply with the table below

No.	Set current multiple		Action time	Starting condition	Ambient air temperature °C
	Any two phases	Third phase			
1	1.0	0.9	$\geq 2h$	Cold state starts	20±5
2	1.15	0	$< 2h$	Hot state (after No. 1 test) starts	







6.3 The trip characteristic curve of thermal relay sees figure below



Time-current characteristic curve




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7 Selection and Matching Table

Product appearance	Rated current (A)	Specification of matched fuse (RT16)A		Model of matched contactor
		aM	gG	
 JR28-25	0.1~0.16	0.25	2	 Combined installation for CJX2-09, CJX2-12, CJX2-18, CJX2-25, and CJX2-32; standalone installation can be used for base
	0.16~0.25	0.5	2	
	0.25~0.4	1	2	
	0.4~0.63	1	2	
	0.63~1	2	4	
	1~1.6	2	4	
	1.6~2.5	4	6	
	2.5~4	6	10	
	4~6	8	16	
	5.5~8	12	20	
	7~10	12	20	
	9~13	16	25	
 JR28-36	23~32	40	63	 Combined installation for CJX2-32 standalone installation can be used for base
	28~36	40	80	
 JR28-93	23~32	40	63	 Combined installation for CJX2-40, CJX2-50, CJX2-65, CJX2-80, and CJX2-95; standalone installation can be used for base
	30~40	40	80	
	37~50	63	100	
	48~65	80	125	
	55~70	80	160	
	63~80	80	160	
	80~93	100	160	

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8 Accessories

Appearance	Name	Usage
	JR28-25 base	Form an standalone product with JR28-25
	JR28-36 base	Form an standalone product with JR28-36
	JR28-93 base	Form an standalone product with JR28-93

9 Outline and Installation Dimensions

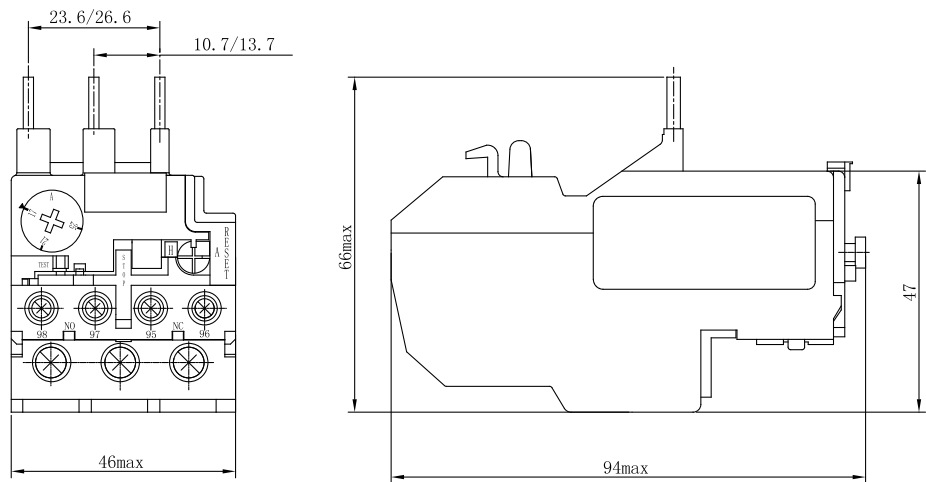


Fig. 1 JR28-25 combined installation

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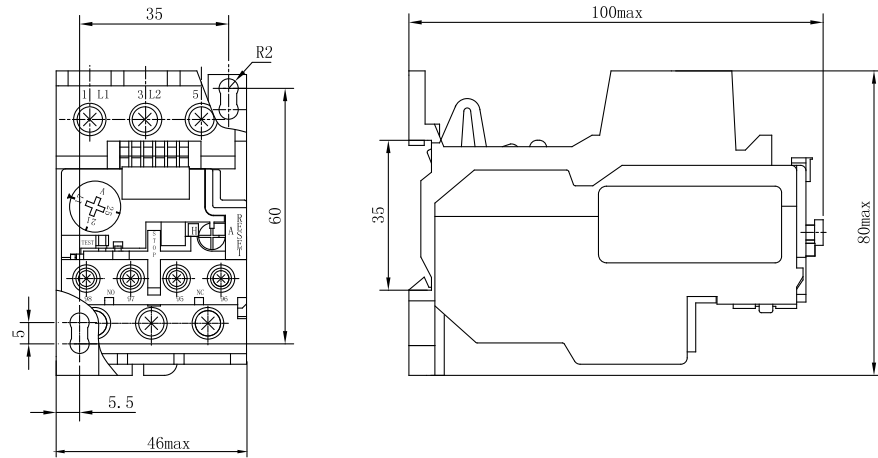


Fig. 2 JR28-25 standalone installation

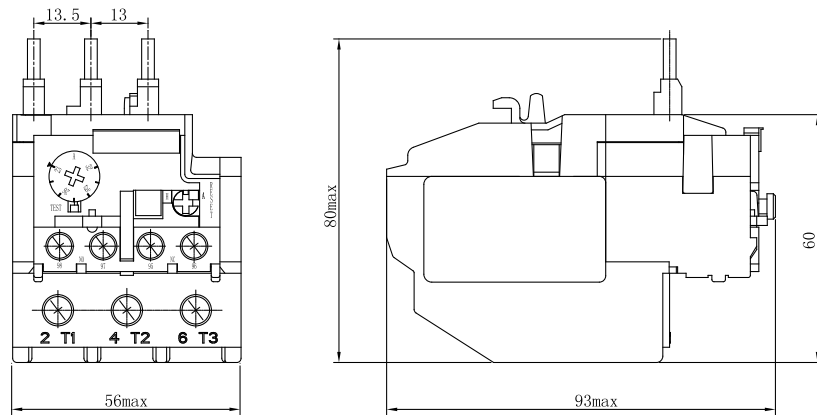


Fig. 3 JR28-36 combined installation

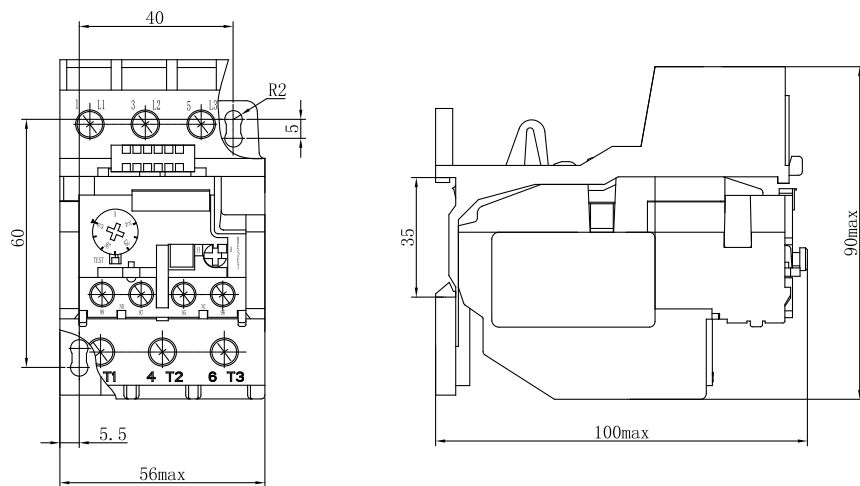


Fig. 4 JR28-36 standalone installation

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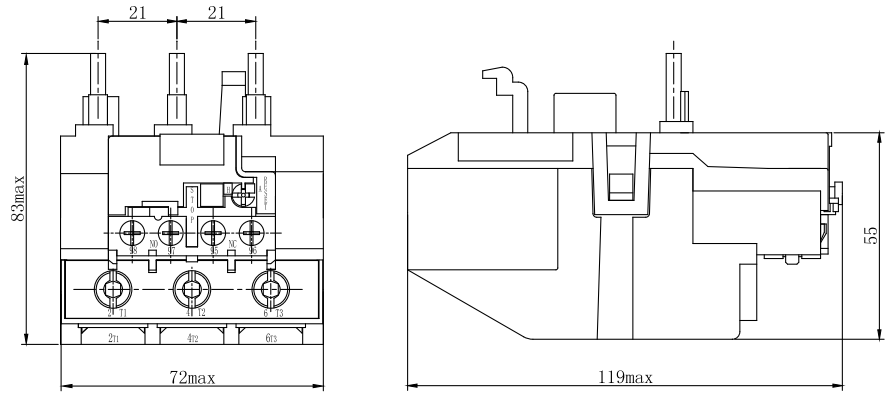


Fig. 5 JR28-93 combined installation

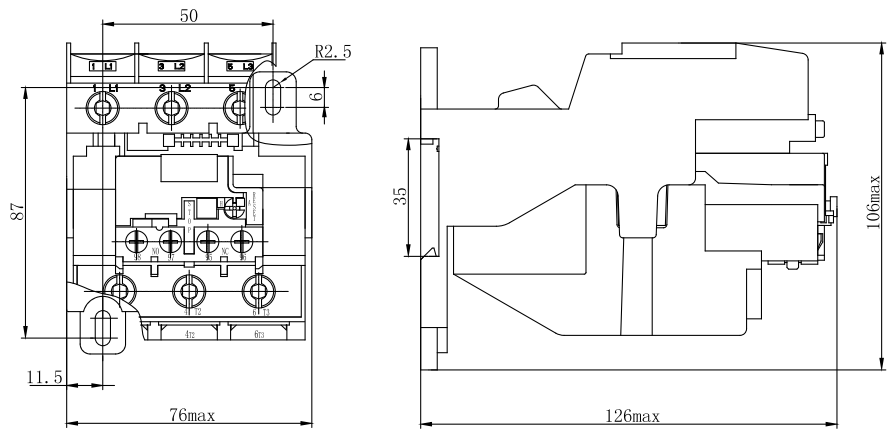


Fig. 6 JR28-93 standalone installation

10 Ordering Notice

Please specify the model, rated working current, setting current range of thermal element, and order quantity of thermal relay; if standalone installation is required, the corresponding mounting base shall be ordered.

For example: Combined installation; thermal relay JR28-25 2.5~4A 20 pcs.

Standalone installation: Thermal relay JR28-25 2.5~4A 10 pcs, JR28-25 10 pcs.