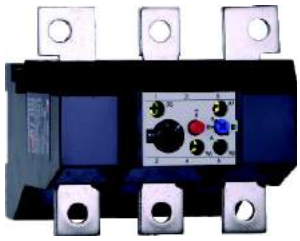
Usage and its scope of application

JR20 series thermal over-load relay is suitable for the power system of AC 50 Hz/60Hz, rated operating voltage Ue: 660V, current 0.1~630A, as the use of over-load and break phase protection for AC motor.

Thermal relay has the functions of break phase protection, temperature compensation, optional selection of manual reset and auto-reset, the check of action releasing flexibility, and manually break NC contacts, etc.

This product confirms to: GB14048.4, IEC60947-4-1 etc. standards.



Model and its implication

JR 20 -□/□

- Installation mode: Z for combined type, L for separated type
- Code for specification: to be indicated as rated current A
- Design serial No.
- Thermal Over-load Relay

Normal operating condition and installation condition

3.1 Ambient temperature: -5℃~+40℃, and the average value within 24h does not exceed +35℃；

3.2 Altitude of the installation place does not exceed 2000m;

3.3 Atmosphere condition: The relative humidity does not exceed 50% when it is at +40℃, it allowed relatively high humidity at the relatively low temperature, for example, the relative humidity reaches 90% when +20℃, and it should take special measurements when there produced the condensation on the product due to the temperature variation.

3.4 It should be at the no explosion danger medium, and the medium without the gas that cannot corrode the metal and damage the insulation as well as the places that without conductive dust.

3.5 Grade of pollution: 3

3.6 Installation category: III

3.7 Installation position: installed at the normal position, the gradient between the installation side and the vertical side does not exceed ±5°, and without obvious vibration and impact.

3.8 Protection grade: IP 00

3.9 Installation mode:

JR20-25 has two kinds of installation modes: combined type, screw installation;

JR20-63 has four kinds of installation modes: combined type, screw installation, 35mm standard rail combined installation and separated installation.

JR20-160 has screw installation mode.

Main technique parameter

4.1 Setting current adjusting scope of thermal relay to see table 1

Table 1

Model	Code for thermal part	Setting current adjusting scope A	Suited contactor	Model	Code for thermal part	Setting current adjusting scope A	Suited contactor
JR20-10	1R	0.1~0.13~0.15	CJ20-10	JR20-63	1U	16~20~24	CJ20-40 CJ20-63
	2R	0.15~0.19~0.23			2U	24~30~36	
	3R	0.23~0.29~0.35			3U	32~40~47	
	4R	0.35~0.44~0.53			4U	40~47~55	
	5R	0.53~0.67~0.8			5U	47~55~62	
	6R	0.8~1~1.2			6U	55~63~71	
	7R	1.2~1.5~1.8		JR20-160	1W	33~40~47	CJ20-100 CJ20-160
	8R	1.8~2.2~2.6			2W	47~55~63	
	9R	2.6~3.2~3.8			3W	63~74~84	
	10R	3.2~4~4.8			4W	74~86~98	
	11R	4~5~6			5W	85~100~115	
	12R	5~6~7			6W	100~115~130	
	13R	6~7.2~8.4			7W	115~132~150	
	14R	7~8.6~10			8W	130~150~170	
	15R	8.6~10~11.6			9W	144~160~176	
JR20-16	1S	3.6~4.5~5.4	CJ20-16	JR20-250	1X	130~160~195	CJ20-250
	2S	5.4~6.7~8			2X	167~200~250	
	3S	8~10~12		JR20-400	1Y	200~250~300	CJ20-400
	4S	10~12~14			2Y	267~335~400	
	5S	12~14~16		JR20-630	1Z	320~400~480	CJ20-630
	6S	14~16~18			2Z	420~525~630	
JR20-25	1T	7.8~9.7~11.6	CJ20-25				
	2T	11.6~14.3~17					
	3T	17~21~25					
	4T	21~25~29					

4.2 Action scope of thermal relay when each pole is electrified to see table 2

Table 2

No.	Multiple of setting current	Action time tp			Predict results	Initial status	Ambient temperature ℃
1	1.05	> 2h			No action	Cool status	20±5
2	1.20	< 2h			Action	Thermal status (after serial No.1)	
3	1.5	Releasing grade	10A	< 2min	Action		
			10	< 4min	Action		
4	7.2		10A	2S < tp≤10S	Action	Cool status	
			10	4S < tp≤10S	Action		

Releasing grade: JR20-10, JR20-16, JR20-25, JR20-63 is 10A grade, JR20-160, JR20-250, JR20-400, JR20-630 is 10 grade.

4.3 Action scope of thermal relay when two poles are electrified to see table 3

Table 3

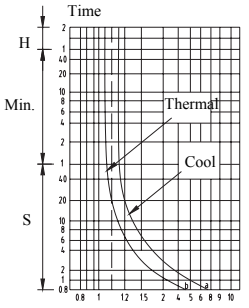
No.	Multiple of setting current		Action time	Initial status	Ambient temperature ℃
	Any two phases	Another phase			
1	1.0	0.9	> 2h	Cool status	20±5
2	1.15	0	< 2h	Thermal status (after serial No.1)	

4.4 Basic parameter of auxiliary circuit to see table 4

Table 4

Rated insulation voltage Ui (V)	660		
Setting thermal current Ith (A)	6		
Usage category	AC-15		AC-13
Rated operating voltage Ue (V)	220	380	220
Rated operating current Ie (A)	1.9	1.1	0.2
Fuse (RDT16 type) specification A	6		

4.5 Releasing grade of thermal relay is 10 grade, its action scope curve to see map 1

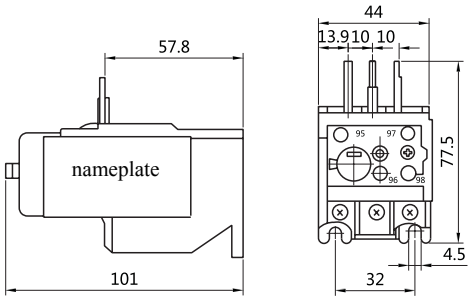


A. Three phase balance, unbalance, starting by cool status;
B. Three phase balance, break phase, starting by thermal status

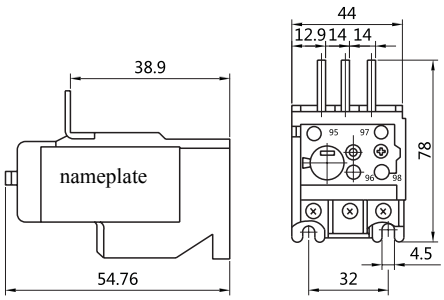
Map 1 Action scope curve

External and installation dimension

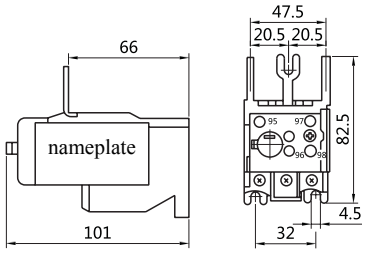
External and installation dimension of thermal relay to see map 2~9



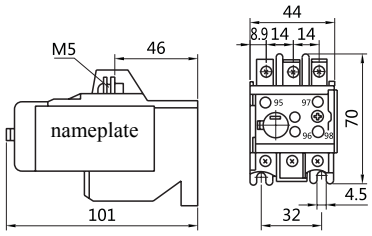
Map 2 External and installation dimension for JR20-10/Z



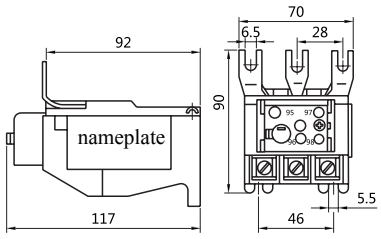
Map 3 External and installation dimension for JR20-16/Z



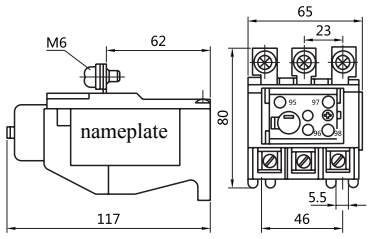
Map 4 External and installation dimension for JR20-25/Z



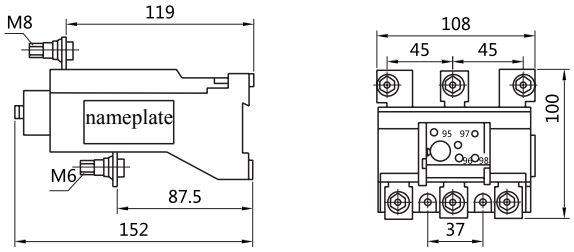
Map 5 External and installation dimension for JR20-10/L, 16/L, 25/L



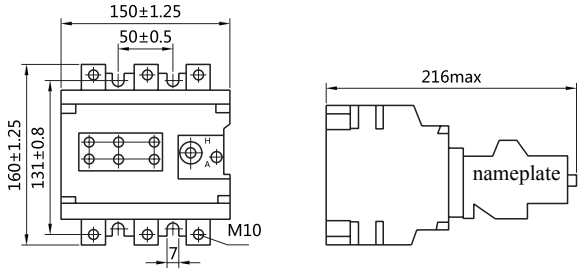
Map 6 External and installation dimension for JR20-63/Z



Map 7 External and installation dimension for JR20-63/L



Map 8 External and installation dimension for JR20-160/L



Map 9 External and installation dimension for JR20-250/L, 400/L, 630/L

Ordering Notice

It required to be noted: Product model, specification, setting current adjusting scope and required quantity.

For example: JR20-10/L, 1.2~1.5A, 200 pcs