

Product Selection Brochure

Speciality: Thermal Relay, Earth Leakage Circuit Breaker, Electromagnetic Breaker Series

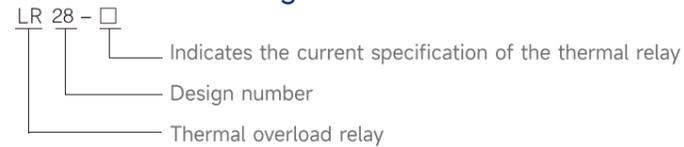


LR28 Series Thermal Relays

1. Scope of application

LR28 series thermal overload relays are used in circuits with AC 50HZ/60Hz, voltage up to 660V, current up to 80A and below, for AC motor overload and phase break protection. It has differential mechanism, temperature compensation and release indication, and can be equipped with CJX2(LC1-D) AC contactor or installed independently. This product conforms to GB14048.4 and IEC60947-4 standards.

2. Model and Meaning



LR28-25



LR28-36



LR28-93

3. Normal operating conditions and installation conditions

3. Normal operating conditions and installation conditions

3.1 Altitude: not more than 2000m.

3.2 Ambient air temperature: -5°C~+40°C, average temperature within 24h: not more than 35°C.

3.3 Atmospheric conditions: Atmospheric relative humidity should not exceed 50% at +40°C, higher relative humidity is possible at lower temperatures, the average monthly minimum temperature of the wettest month should not exceed +25°C, and the average monthly maximum relative humidity of the month should not exceed 90%, taking into account the condensation that occurs on the product due to the temperature change.

3.4 The inclination of the mounting surface to the vertical must not exceed 5°.

3.5 In non-explosive media, where there are no gases or conductive dust in the medium sufficient to corrode metals and destroy insulation.

3.6 In places that are protected against rain and snow and are not filled with water vapour.

3.7 Where there is no significant shaking, shock or vibration.

3.8 Pollution class 3

4. Motion Characteristics

4.1 Action time when three-phase load is balanced

No	Rectification current multiplier	Motion Time	Starting Condition	Environmental Temperature
1	1.05	>2h	Cold state	
2	1.2	<2h	hot state (after test of No 1)	20 ± 5°C
3	1.5	<4min	hot state (after test of No 1)	20 ± 5°C
4	7.2	10A 2s<Tp ≤ 10s ≤ 63A 10 4s<Tp ≤ 10s >63A	Cold state	

4.2 Phase failure characteristics

No	Rectification current multiplier		Motion Time	Starting Condition	Environmental Temperature
	Arbitrary 2-phase	3rd phase			
1	1.0	0.9	>2h	Cold state	20 ± 5°C
2	1.15	0	<2h	hot state (after test of No 1)	20 ± 5°C

LR2-D series thermal overload relays are used for AC motor overload and phase break protection in circuits with AC 50 or 60 HZ, voltage up to 660V, current up to 93A and below. They are equipped with differential mechanism, temperature compensation and release indication. It can be fitted with CJX2(LC1-D) AC contactor or installed independently.



LR28-150/D



LR28-150/F

5. Current specification

Model	NO	Rectification current range	Fuse A		Matching contactor model
			aM	gG	
LR28-25	1301	0.1~0.16	0.25	2	CJX2-9~32
	1302	0.16~0.25	0.5	2	
	1303	0.25~0.4	1	2	
	1304	0.4~0.63	1	2	
	1305	0.63~1	2	4	
	1306	1~1.6	2	4	
	1306X	1.25~2	4	6	
	1307	1.6~2.5	4	6	
	1308	2.5~4	6	10	
	1310	4~6	8	16	
	1312	5.5~8	12	20	
	1314	7~10	12	20	
	1316	9~13	16	25	
1321	12~18	20	35		
1322	17~25	25	50		
1353	23~32	40	63		
LR28-36	2353	23~32	40	63	CJX2-25~32
	2353X	28~36	40	63	
	2355	30~40	40	80	
LR28-93	3322	17~25	25	50	CJX2-40~95
	3353	23~32	40	63	
	3355	30~40	40	100	
	3357	37~50	63	100	
	3359	48~65	63	100	
	3361	55~70	80	125	
	3363	63~80	80	125	
	3365	80~93	100	160	
LR28-150/D	4365	80~104	125	200	LC1-D
	4367	95~120	125	224	
	4369	110~150	160	250	
LR28-150/F	4365	80~104	125	200	CJX2-95
	4367	95~120	125	224	CJX2-115
	4369	110~150	160	250	CJX2-150

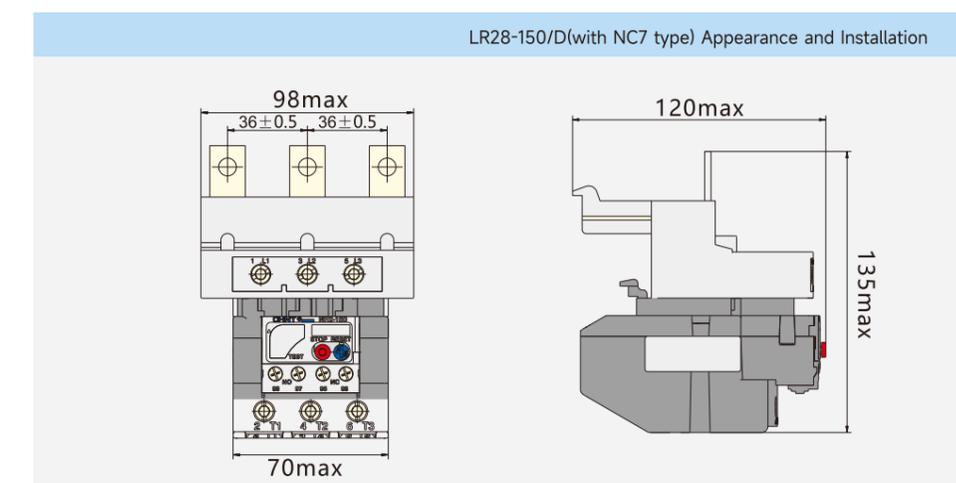
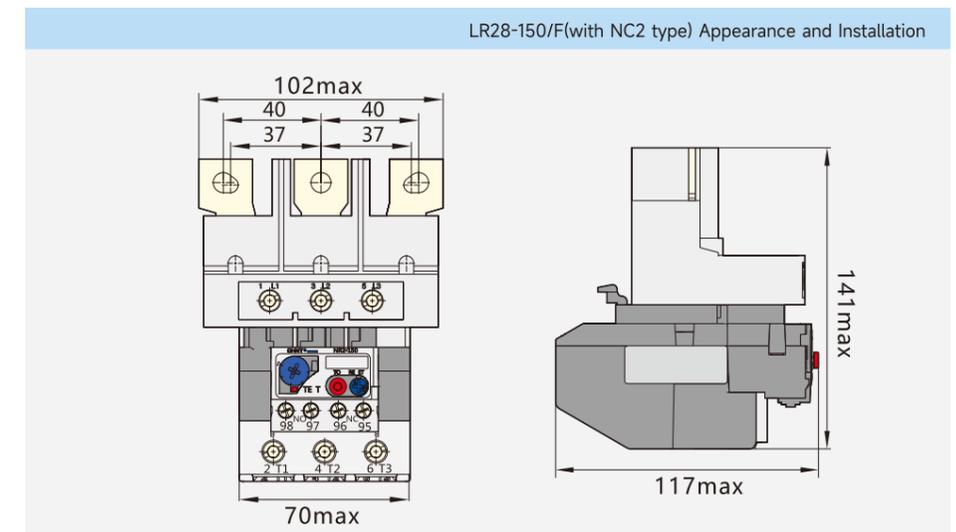
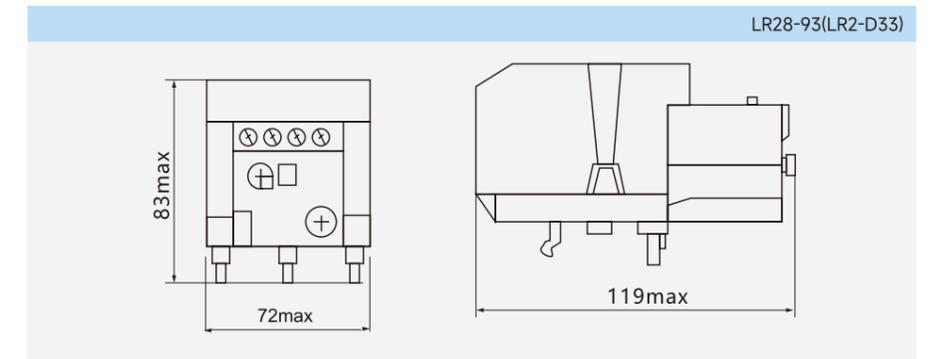
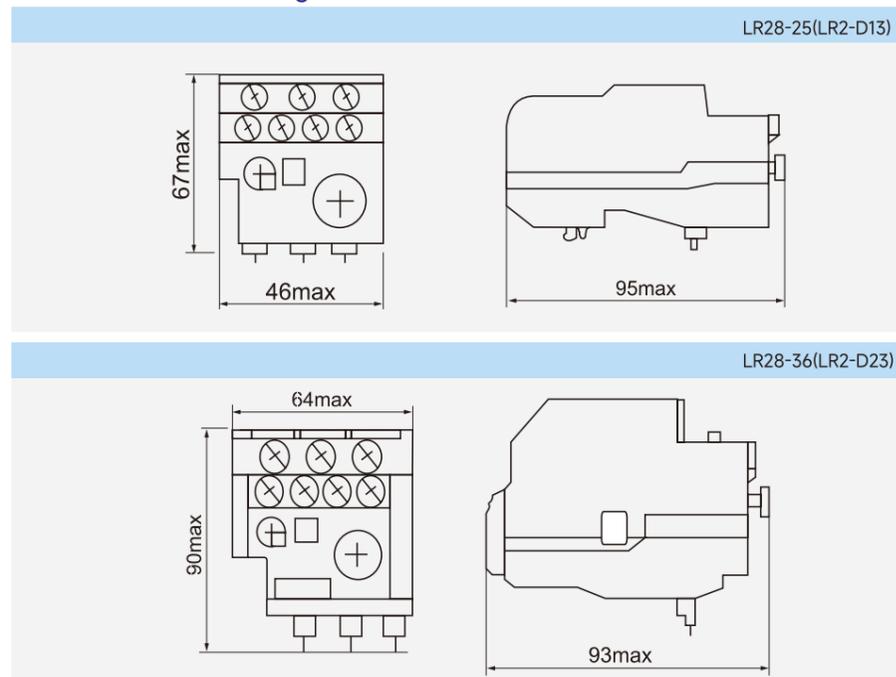
6. Main technical parameters

Item	LR28-25	LR28-36	LR28-93		
Rated Operation Current A	25	36	93		
Rated insulation voltage V	690	690	690		
Phase failure protection	Yes	Yes	Yes		
Manual and automatic reset	Yes	Yes	Yes		
Temperature compensation	Yes	Yes	Yes		
Motion indication	Yes	Yes	Yes		
Test button	Yes	Yes	Yes		
Mounting	plug-in/Independent type	plug-in/Independent type	plug-in/Independent type		
Auxiliary Contacts	1NO+1NC	1NO+1NC	1NO+1NC		
AC-15 220V Rated current A	2.73	2.73	2.73		
AC-15 380V Rated current A	1.58	1.58	1.58		
DC-13 220V Rated current A	0.2	0.2	0.2		
Cross-sectional area of conductor mm ²	Main circuit	Single core or stranded wire	1~4	4~10	4~35
	Auxiliary circuit	Terminal Screws	M4	M4	M10
mm ²	Main circuit	Single core or stranded wire	0.5~2.5	0.5~2.5	0.5~2.5
	Auxiliary circuit	Terminal Screws	M3.5	M3.5	M3.5

7. Attachment description

Product appearance	Name	Part numbers	Application
	Mounting base	LA7-1064	Independently installation with LR28-25
	Mounting base	LA7-2064	Independently installation with LR28-36
	Mounting base	LA7-3064	Independently installation with LR28-93

8. Outline and mounting dimensions



9. Ordering Information

When ordering, you must specify the product name, model number, rectification current range and quantity.
 For example, thermal relay LR28-25 5.5~8A 100 sets.

LR9-F53, F73 Series Electronic Thermal Relay

1.Scope of application

LR9-F53, F73 series electronic thermal relays are suitable for AC 50/60Hz, rated voltage up to 660V, current up to 30A circuit, as the three-phase AC motor overload and phase break protection. This series of thermal relays have the advantages of wide current adjustment range, high sensitivity, small energy consumption and reliable operation, which can replace the traditional bimetal thermal relays. This product conforms to GB14048.4, IEC60947-4 standard.

2.Model and Meaning



3.Normal operating conditions and installation conditions

- 3.1 Altitude: not more than 2000m.
- 3.2 Ambient air temperature: -5°C~+40°C, average temperature within 24h: not more than 35°C.
- 3.3 Atmospheric conditions: Atmospheric relative humidity should not exceed 50% at +40°C, higher relative humidity is possible at lower temperatures, the average monthly minimum temperature of the wettest month should not exceed +25°C, and the average monthly maximum relative humidity of the month should not exceed 90%, taking into account the condensation that occurs on the product due to the temperature change.
- 3.4 The inclination of the mounting surface to the vertical must not exceed 5°.
- 3.5 In non-explosive media, where there are no gases or conductive dust in the medium sufficient to corrode metals and destroy insulation.
- 3.6 In places that are protected against rain and snow and are not filled with water vapour.
- 3.7 Where there is no significant shaking, shock or vibration.
- 3.8 Pollution class 3

4.Motion Characteristics

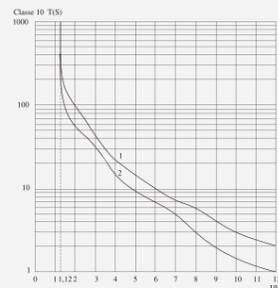
4.1 Action time when three-phase load is balanced

No	Rectification current multiplier	Motion Time	Environmental Temperature
1	1.05	>2h	20 ± 5°C
2	1.2	<2h	
3	1.5	<4min	
4	7.2	10A 2s<Tp < 10s < 63A 10 4s<Tp < 10s >63A	

4.2 When the load of each phase is unbalanced, the operating characteristics are in accordance with the table

No	Rectification current multiplier		Motion Time	Environmental Temperature
	Arbitrary 2-phase	3rd phase		
1	1.0	0.9	>2h	20 ± 5°C
2	1.15	0	<2h	

4.3 Time-current characteristic curve



LR9-F53



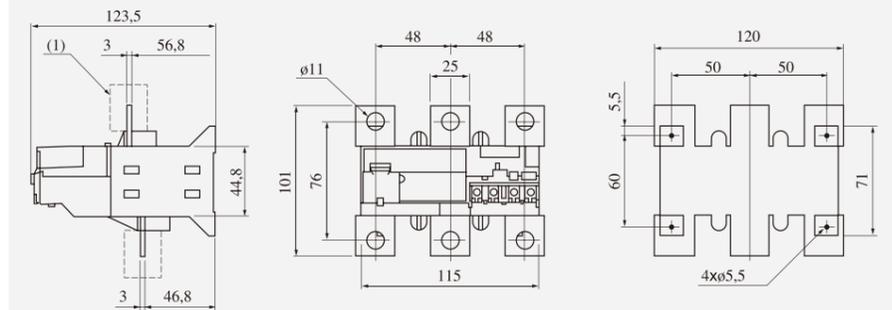
LR9-F73

5.Specification

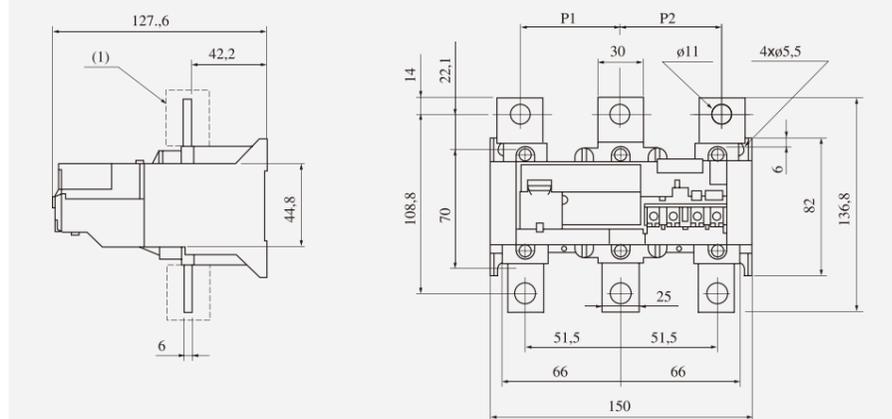
Model	NO	Rectification current range	Matching contactor model
LR9-F53	F5357	30~50	F115-F185
	F5363	48~80	F115-F185
	F5367	60~100	F115-F185
	F5369	90~150	F115-F185
	F5371	132~220	F225-F265
LR9-F73	F7375	200~330	F225-F500
	F7379	300~500	F225-F500
	F7381	380~630	F400-F630

6.Outline and mounting dimensions

LR9-F53



LR9-F73



5.Current specification

Model	No	Rectification current range(A)	Fuse A Type "1" fit	Type "2" fit	Matching contactor model
LRS2-12.5/Z	0A	0.1~0.16	35	0.5	CJX1-9 CJX1-12
	0C	0.16~0.25	35	1	
	0E	0.25~0.4	35	1.6	
	0G	0.4~0.63	35	2	
	0J	0.63~1	35	2	
	0K	0.8~1.25	35	4	
	1A	1~1.6	35	6	
	1B	1.25~2	35	6	
	1C	1.6~2.5	35	6	
	1D	2~3.2	35	10	
	1E	2.5~4	35	10	
	1F	3.2~5	35	16	
	1G	4~6.3	35	16	
	1H	5~8	35	20	
1J	6.3~10	35	20		
1K	8~12.5	35	25		
2S	10~14.5	35	25		
LRS2-25/Z	0A	0.1~0.16	63	0.5	CJX1-16 CJX1-22
	0C	0.16~0.25	63	1	
	0E	0.25~0.4	63	1.5	
	0G	0.4~0.63	63	2	
	0J	0.63~1	63	4	
	0K	0.8~1.25	63	4	
	1A	1~1.6	63	6	
	1B	1.25~2	63	6	
	1C	1.6~2.5	63	6	
	1D	2~3.2	63	10	
	1E	2.5~4	63	10	
	1F	3.2~5	63	16	
	1G	4~6.3	63	16	
	1H	5~8	63	20	
1J	6.3~10	63	25		
1K	8~12.5	63	25		
2A	10~16	63	35		
2B	12.5~20	63	35		
2C	16~25	63	50		
LRS2-32/Z	1G	4~6.3	100	16	CJX1-32
	1J	6.3~10	100	25	
	2A	10~16	100	35	
	2B	12.5~20	100	50	
	2C	16~25	100	50	
	2D	20~32	100	80	
LRS2-45/Z	0A	0.1~0.16	100	0.5	CJX1F-32 CJX1F-38
	0C	0.16~0.25	100	1	
	0E	0.25~0.4	100	1.6	
	0G	0.4~0.63	100	2	
	0J	0.63~1	100	4	
	0K	0.8~1.25	100	4	
	1A	1~1.6	100	6	
	1B	1.25~2	100	6	
	1C	1.6~2.5	100	6	
	1D	2~3.2	100	10	



Model	No	Rectification current range(A)	Fuse SA Type "1" fit	Type "2" fit	Matching contactor model
LRS2-45/Z	1D	2~3.2	100	10	CJX1F-32 CJX1F-38
	1E	2.5~4	100	10	
	1F	3.2~5	100	16	
	1G	4~6.3	100	16	
	1H	5~8	100	20	
	1J	6.3~10	100	25	
	1K	8~12.5	100	25	
	2A	10~16	100	35	
	2B	12.5~20	100	50	
	2C	16~25	100	50	
	2D	20~32	100	80	
	2Q	25~36	100	80	
	2R	32~40	100	80	
	8M	36~45	100	80	
LRS2-63/F	0A	0.1~0.16	25	0.5	Independent installation
	0C	0.16~0.25	25	1	
	0E	0.25~0.4	25	1.6	
	0G	0.4~0.63	25	2	
	0J	0.63~1	25	4	
	0K	0.8~1.25	25	4	
	1A	1~1.6	25	6	
	1B	1.25~2	25	6	
	1C	1.6~2.5	25	6	
	1D	2~3.2	25	10	
	1E	2.5~4	25	10	
	1F	3.2~5	25	16	
	1G	4~6.3	25	16	
	1H	5~8	25	16	
	1J	6.3~10	25	16	
	1K	8~12.5	35	25	
	2A	10~16	63	35	
	2B	12.5~20	63	50	
	2C	16~25	63	50	
	2D	20~32	80	63	
2E	25~40	125	80		
2M	32~45	160	100		
2T	40~57	160	125		
2P	50~63	160	125		
LRS2-80/Z	2C	16~25	160	50	CJX1-45 CJX1-63
	2D	20~32	160	63	
	2E	25~40	160	100	
	2F	32~50	160	100	
	2T	40~57	160	100	
	2P	50~63	160	100	
	2V	57~70	160	125	
	2U	63~80	160	160	
	8W	70~88	250	160	
	2H	55~80	250	160	
LRS2-135	2W	63~90	250	160	CJX1-75 CJX1-85 CJX1-110
	2X	80~110	250	160	
	3H	90~120	315	224	
	3J	110~135	315	224	

LR9-F53, F73 Series Electronic Thermal Relay



LR2-F200
(LR28-F200)

1.Scope of application

LR2-F series thermal relays are suitable for AC 50/60HZ rated current up to 630A, voltage up to 690V circuit, used for long time continuous operation of motor protection overload and phase separation. Than the relay has temperature compensation, action indication, manual and automatic reset and other functions.

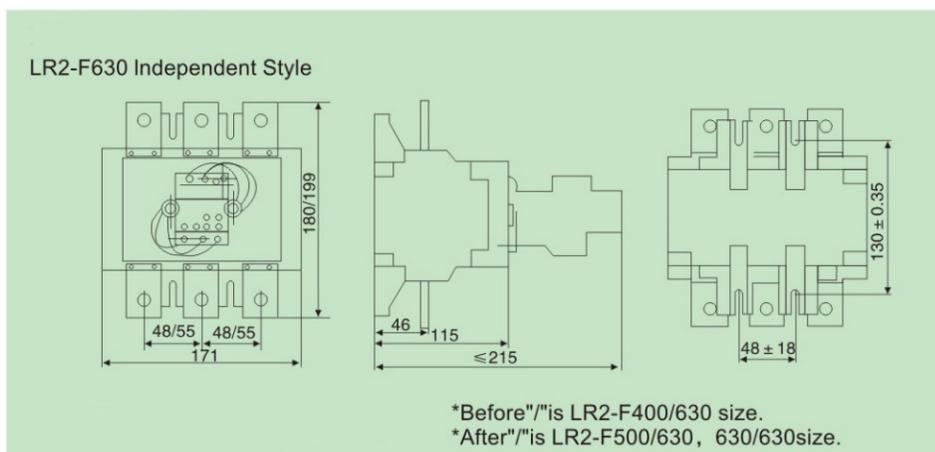
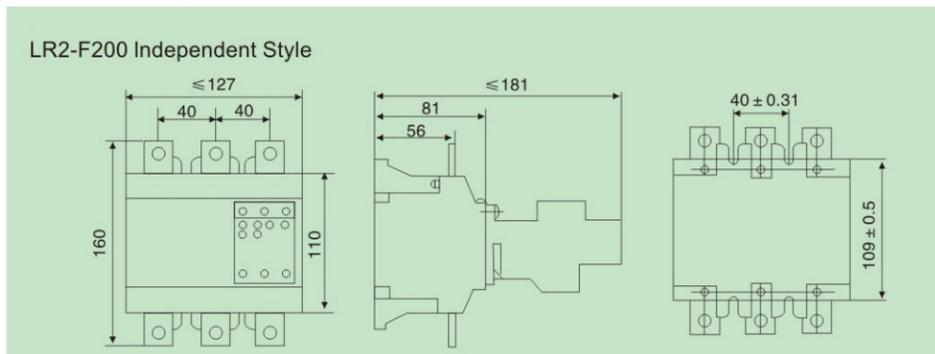
2.Technical parameters

Model	Rated working current A	Rated working voltage V	Rated insulation voltage V	Matching contactor model
LR2-F200	80-125	380	690	LC1-Y115
	100-160	380	690	LC1-Y150
	125-200	380	690	LC1-Y185
LR2-F400	160-250	380	690	LC1-Y225
	200-315	380	690	LC1-Y265
	250-400	380	690	LC1-Y330/440
LR2-F630	315-500	380	690	LC1-Y500
	400-630	380	690	LC1-Y630



LR2-F630
(LR28-F630)

3.Outline and mounting dimensions



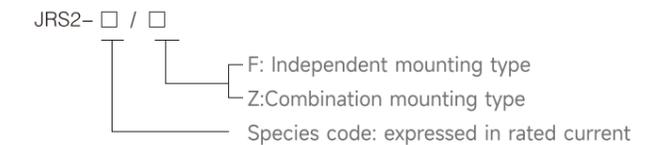
LRS2 Series Thermal Relay



1.Scope of application

LRS2 series thermal relays are suitable for AC 50/60HZ, rated voltage up to 690, current up to 630A long-term work or intermittent long-term work of the general AC motor overload and phase breaking protection, with phase breaking protection, temperature compensation, release indication function, and can be automatically and manually reset, and can be connected with the contactor installation, can also be installed independently. The product complies with GB14048.4, IEC60947-4, VDE0660 standards.

2.Model and Meaning



3.Normal operating conditions and installation conditions

3.1 Altitude: not more than 2000m.

3.2 Ambient air temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$, average temperature within 24h: not more than 35°C .

3.3 Atmospheric conditions: Atmospheric relative humidity should not exceed 50% at $+40^{\circ}\text{C}$, higher relative humidity is possible at lower temperatures, the average monthly minimum temperature of the wettest month should not exceed $+25^{\circ}\text{C}$, and the average monthly maximum relative humidity of the month should not exceed 90%, taking into account the condensation that occurs on the product due to the temperature change.

3.4 The inclination of the mounting surface to the vertical must not exceed 5° .

3.5 In non-explosive media, where there are no gases or conductive dust in the medium sufficient to corrode metals and destroy insulation.

3.6 In places that are protected against rain and snow and are not filled with water vapour.

3.7 Where there is no significant shaking, shock or vibration.

3.8 Pollution class 3

4.Motion Characteristics

4.1 Action time when three-phase load is balanced

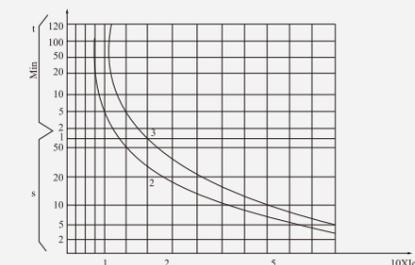
No	Rectification current multiplier	Motion Time	Starting Condition	Environmental Temperature
1	1.05	$>2\text{h}$	Cold state	$20 \pm 5^{\circ}\text{C}$
2	1.2	$<2\text{h}$	hot state (after test of No 1)	
3	1.5	$<4\text{min}$		
4	7.2	10A $2\text{s} < T_p \leq 10\text{s} \leq 63\text{A}$ 10 $4\text{s} < T_p \leq 10\text{s} > 63\text{A}$	Cold state	

4.2 Phase failure characteristics

No	Rectification current multiplier	Motion Time	Starting Condition	Environmental Temperature	
	Arbitrary 2-phase	3rd phase			
1	1.0	0.9	$>2\text{h}$	Cold state	$20 \pm 5^{\circ}\text{C}$
2	1.15	0	$<2\text{h}$	hot state (after test of No 1)	

4.3 Tripping characteristics

The manual reset time of the thermal relay should be no more than 2min, rated current 63A and below, the automatic reset time is no more than 5min, rated current more than 63A, the automatic reset time is no more than 8min.





Model	No	Rectification current range(A)	Fuse A Type "1" fit	Type "2" fit	Matching contactor model
LRS2-150	2H	55~80	250	160	CJX1-140
	2W	63~90	250	160	
	2X	80~110	250	200	
	3H	90~120	315	224	
	3J	110~135	315	224	
LRS2-180/F	3K	120~150	315	224	CJX1-170
	2H	55~80	250	160	
	2W	63~90	250	160	
	2X	80~110	315	200	
	3H	90~120	315	224	
	3J	110~135	315	224	
LRS2-400	3K	120~150	315	224	CJX1-205
	3L	135~160	315	224	
	3M	150~180	315	224	
	2K	80~125	125	200	
	3B	125~200	200	315	
LRS2-630	3C	160~250	250	400	CJX1-250
	3D	200~320	315	500	CJX1-300
	3E	250~400	400	630	CJX1-400
	3F	320~500	500	800	CJX1-475
	3G	400~630	630	800	CJX1-630

Independent installation: Wires are necessary for matching with contactors

6. Main technical parameters

Item	LRS2-12.5	LRS2-25	LRS2-32	LRS2-45	LRS2-63	LRS2-80	
Rated Operation Current A	12.5	25	32	45	63	80	
Rated insulation voltage V	690	690	690	690	690	1000	
Phase failure protection	Yes						
Manual and automatic reset	Yes						
Temperature compensation	Yes						
Motion indication	Yes						
Test button	Yes						
Mounting	plug-in/Independent type						
Auxiliary Contacts	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC	
AC-15 220V Rated current A1.15	1.15	1.15	1.15	1.15	1.15	1.15	
AC-15 380V Rated current A1.1	1.1	1.1	1.1	1.1	1.1	1.1	
DC-13 220V Rated current A0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Cross-sectional area of conductor mm ²	Main circuit	Single core or stranded wire	2.5~6	2.5~6	1.5~25	1.5~25	1.5~25
		Thin stranded wire with terminal	1.5~2.5	1.5~4	1~10	1~10	1~16
		Terminal Screws	M4	M4	M5	M5	M5
mm ²	Auxiliary circuit	Single core or stranded wire	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)
		Thin stranded wire with terminal	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)
		Terminal Screws	M3.5	M3.5	M3.5	M3.5	M3.5

Item	LRS2-135	LRS2-150	LRS2-180	LRS2-400	LRS2-630		
Rated Operation Current A	135	150	180	400	630		
Rated insulation voltage V	1000	1000	1000	1000	1000		
Phase failure protection	Yes	Yes	Yes	Yes	Yes		
Manual and automatic reset	Yes	Yes	Yes	Yes	Yes		
Temperature compensation	Yes	Yes	Yes	Yes	Yes		
Motion indication	Yes	Yes	Yes	Yes	Yes		
Test button	Yes	Yes	Yes	Yes	Yes		
Mounting	plug-in	Independent	Independent	Independent	Independent		
	/Independent type	type	type	type	type		
Auxiliary Contacts	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC		
AC-15 220V Rated current A1.15	1.15	1.15	1.15	1.15	1.15		
AC-15 380V Rated current A1.1	1.1	1.1	1.1	1.1	1.1		
DC-13 220V Rated current A0.2	0.2	0.2	0.2	0.2	0.2		
Cross-sectional area of conductor mm ²	Main circuit	Single core or stranded wire	25~70	50~120	50~120	50~240	
		Thin stranded wire with terminal	25~50	25~95 or copper busbar 20x3	25~95 or copper busbar 20x3	—	copper busbar 20x3, 40x5
		Terminal Screws	M6	M8	M8	M8	M8
mm ²	Auxiliary circuit	Single core or stranded wire	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	
		Thin stranded wire with terminal	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)
		Terminal Screws	M3.5	M3.5	M3.5	M3.5	M3.5

7. Attachment description

Product appearance	Name	Order No	Application
	Mounting block	3UX1418	Individually mounted with LRS2-12.5/F
	Mounting block	3UX1420	Individually mounted with LRS2-25 and LRS2-32
	Mounting block	3UX1421	Individually mounted with LRS2-80
	Wiring terminal block	3UX1424	Individually mounted with LRS2-135

8.Outline and mounting dimensions

Figure 1 LRS2-12.5 Model

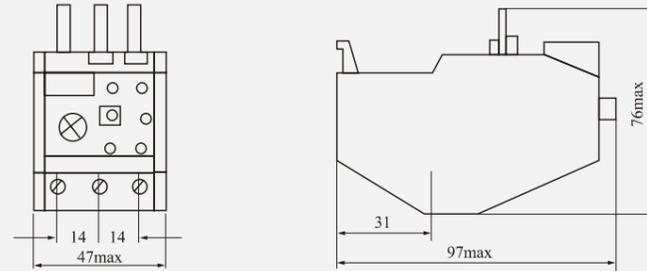


Figure 2 LRS2-25 Model

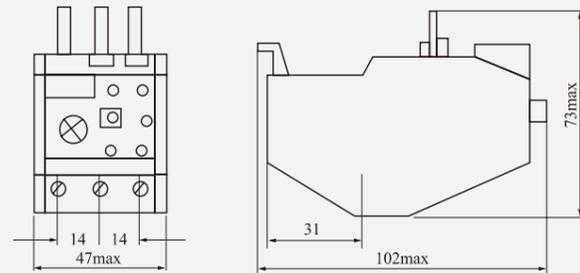


Figure 3 LRS2-32 Model

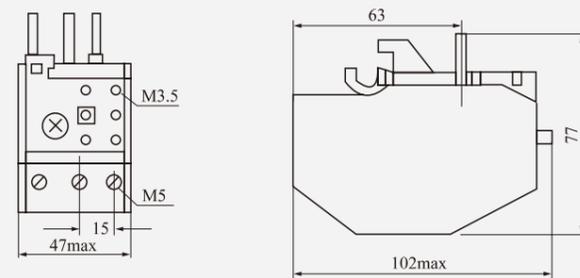


Figure 4 LRS2-63 Model

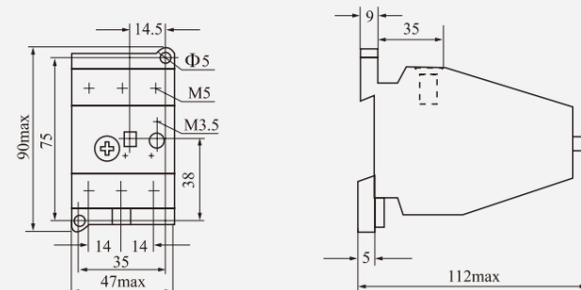


Figure 5 LRS2-80 Model

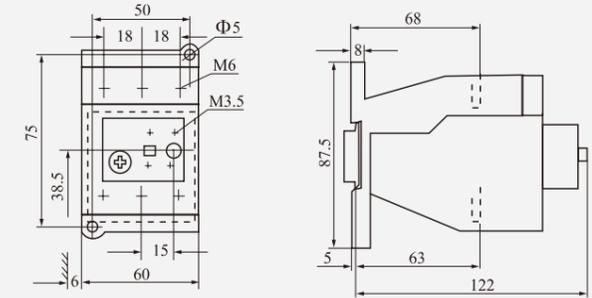


Figure 6 LRS2-180 Model

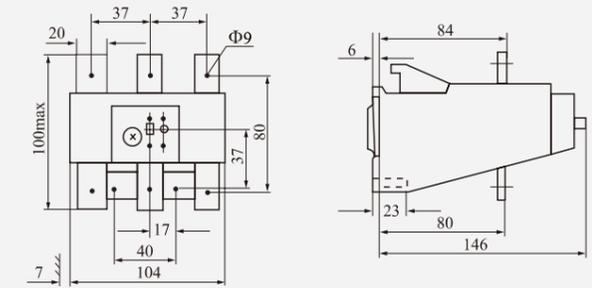
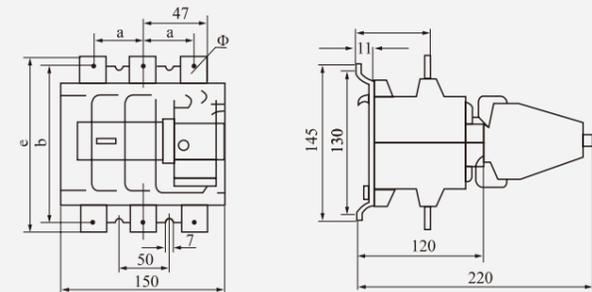


Figure 7 LRS2-400-630 Model



Model	JRS2-400	JRS2-630
a	50	52
b	146	156
c	70	71
e	11	11
e	171	186
f	25 × 4	30 × 5

9.Ordering Information

When ordering, you must specify the product name, model number, rectification current range and quantity.
For example, thermal relay LRS2-63 5~8A 50 sets.