

# JRS2

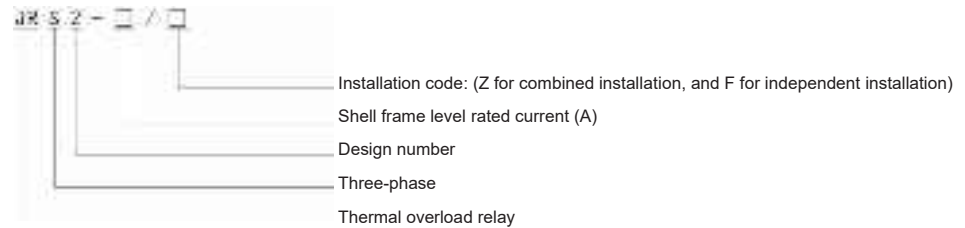
## Series Thermal Overload Relay



### I. Scope of Application

The JRS2 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– 630 A, which is used to start and accelerate the motor to a normal speed, as well as for overload and phase failure protections for circuits and three-phase AC motors, and can form a starter with the adaptive AC contactor. This product complies with GB 14048.4.

### II. Model Description



### III. Normal Operating Conditions

1. Ambient air temperature: -5°C~+40°C. The average temperature within 24 hours shall not exceed +35°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°C. A higher relative humidity is allowed at a lower temperature, e.g. 90% humidity at 20°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 ±5°.
7. In addition to screws, the relay can also be installed with 35 mm standard guide rail.
8. Impact vibration: The relay shall be installed and used in a place free of significant shaking, shock and vibration.
9. 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°C and +55°C, which can reach +70°C in a short time (within 24 h).

### IV. Structural Features

Three-phase bimetal, with the tripping level of 10 A. Differential phase failure protection and temperature compensation device is provided. Combined installation can prevent fingers from getting an electric shock. The setting current is continuously adjustable. Automatic or manual reset button is provided. The normally-closed and normally-open auxiliary contacts are insulated and separated. The detection button and tripping instructor are provided.

### V. Main Technical Parameters

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

Table 1

Model	Rated insulation voltage $U_i$ (V)	Specification of fuse used	Rated current range (A)	Corresponding AC contactor	Model	Rated insulation voltage $U_i$ (V)	Specification of fuse used	Rated current range (A)	Corresponding AC contactor	
JRS2-12.5	690	4	0.1–0.16	CJX1-09, 12	JRS2-25	690	20	8–12.5	CJX1-16, 22	
		4	0.16–0.25							
		4	0.25–0.4							
		4	0.4–0.63					25		10–16
		4	0.63–1							
		4	0.8–1.25							
		4	1–1.6					32		12.5–20
		4	1.25–2							
		6	1.6–2.5							
6	2–3.2	32	16–25							
6	2.5–4									

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Table 1 (continued)

Model	Rated insulation voltage $U_i$ (V)	Specification of fuse used	Rated current range (A)	Corresponding AC contactor	Model	Rated insulation voltage $U_i$ (V)	Specification of fuse used	Rated current range (A)	Corresponding AC contactor
JRS2-12.5	690	6	3.2–5	CJX1-09, 12	JRS2-32	690	10	4–6.3	CJX1-32
		10	4–6.3				20	6.3–10	
		20	5–8				25	10–16	
		20	6.3–10				32	12.5–20	
		20	8–12.5				32	16–25	
		25	10–14.5				50	20–32	
JRS2-45	690	50	25–36	CJX1-32	JRS2-80	690	50	25–36	CJX1-45–85
		50	32–40				25	11–17	
		63	36–45				32	16–25	
JRS2-180	690	125	55–80	CJX1-85–205	JRS2-80	690	50	20–32	CJX1-45–85
		125	63–90				50	25–40	
		200	80–110				63	32–50	
		200	90–120	CJX1-110–205			80	40–57	CJX1-63–85
		200	110–135				100	50–63	
		250	120–150	CJX1-205			100	57–70	CJX1-85
		250	135–160				100	63–80	CJX1-85
		250	150–180				100	70–88	CJX1-85
JRS2-400	690	200	80–125	CJX1-400, 475	JRS2-630	690	630	320–500	CJX1-400, 475
		400	125–200				630	400–630	
		400	160–250						
		500	200–320						
		500	250–400						

### 2. Auxiliary circuit technical parameters

See Table 2 for the technical parameters of the auxiliary circuit of the thermal overload relay.

Table 2

Rated insulation voltage (V)	Conventional thermal current $I_{th}$ (A)	Use category		Rated working voltage $U_e$ (V)				Rated working current $I_e$ (A)				Auxiliary contact type
				AC-15		DC-13		AC-15		DC-13		
380	6	AC-15	DC-13	380	220	220	110	0.26	0.45	0.14	0.27	1 NO + 1 NC contact separated electrically

### 3. Operation characteristics

See Table 3 for the 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				
3	1.5	Trip level	10A	<2min		Thermal state (starting after No.1 test)
			10	<4min		
4	7.2	Trip level	10A	2s<TP≤10s		Cold state starting
			10	4s<TP≤10s		

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4. The operation characteristics during the imbalance of each phase (phase failure) conform to Table 4.

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)	

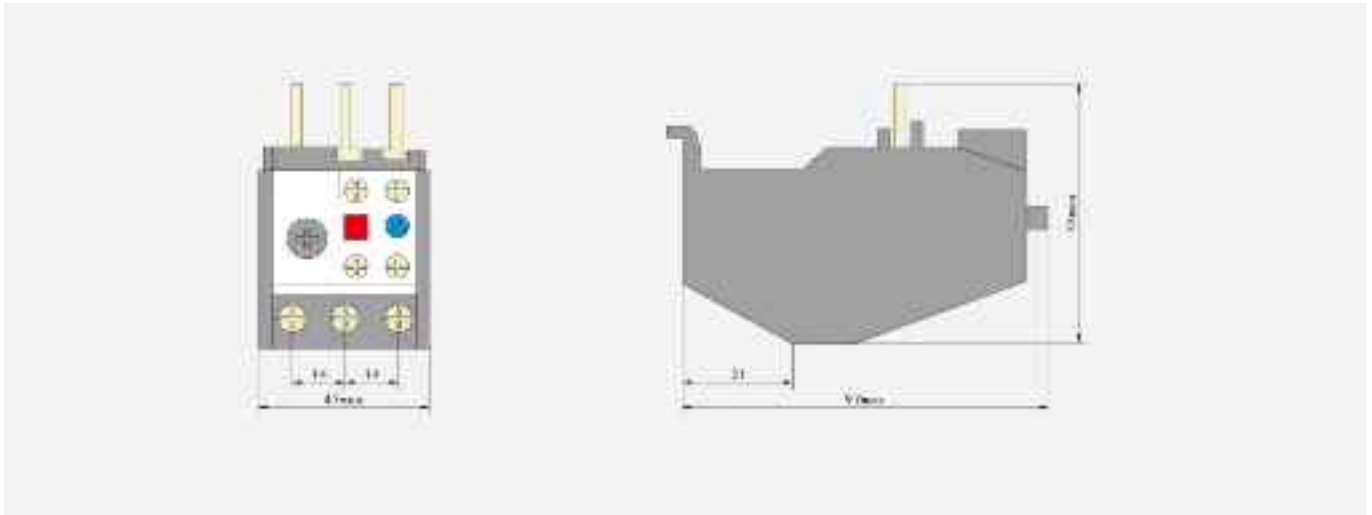
5. See Table 5 for the temperature compensation performance.

Table 5

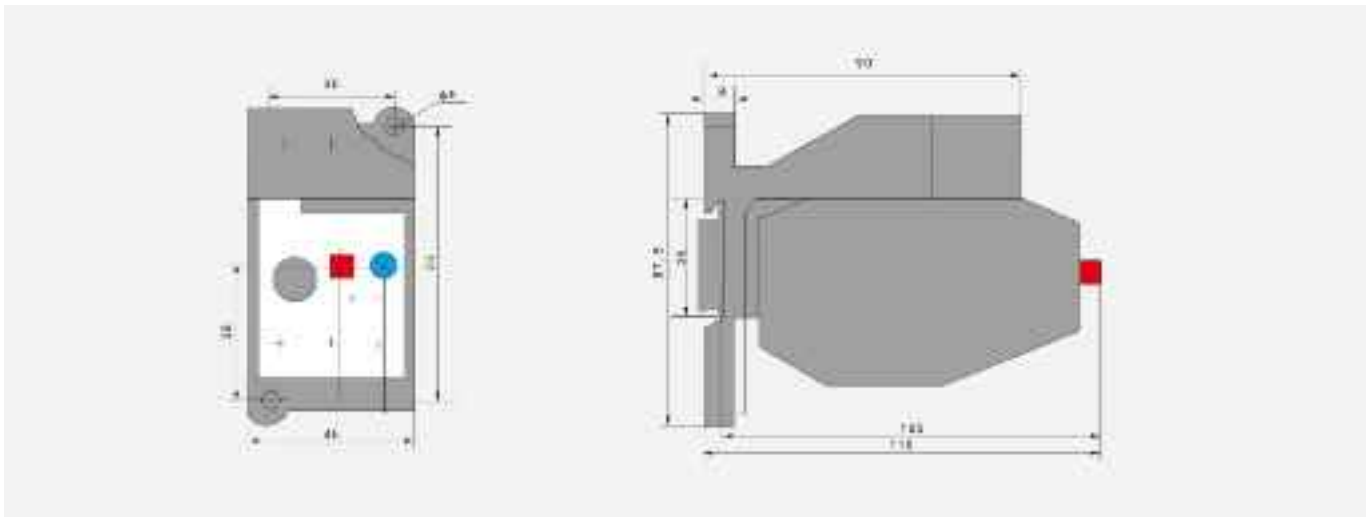
Serial number	Set current multiple	Operating time	Initial condition	Ambient air temperature
1	1.0	>2h	Cold state starting	+40°C
2	1.2	<2h	Thermal state (starting after No.1 test)	
3	1.05	<2h	Cold state starting	-5°C
4	1.30	<2h	Thermal state (starting after No.3 test)	

## VI. Outline and Installation Dimensions

1. Outline and installation dimensions (mm) of JRS2-12.5/Z



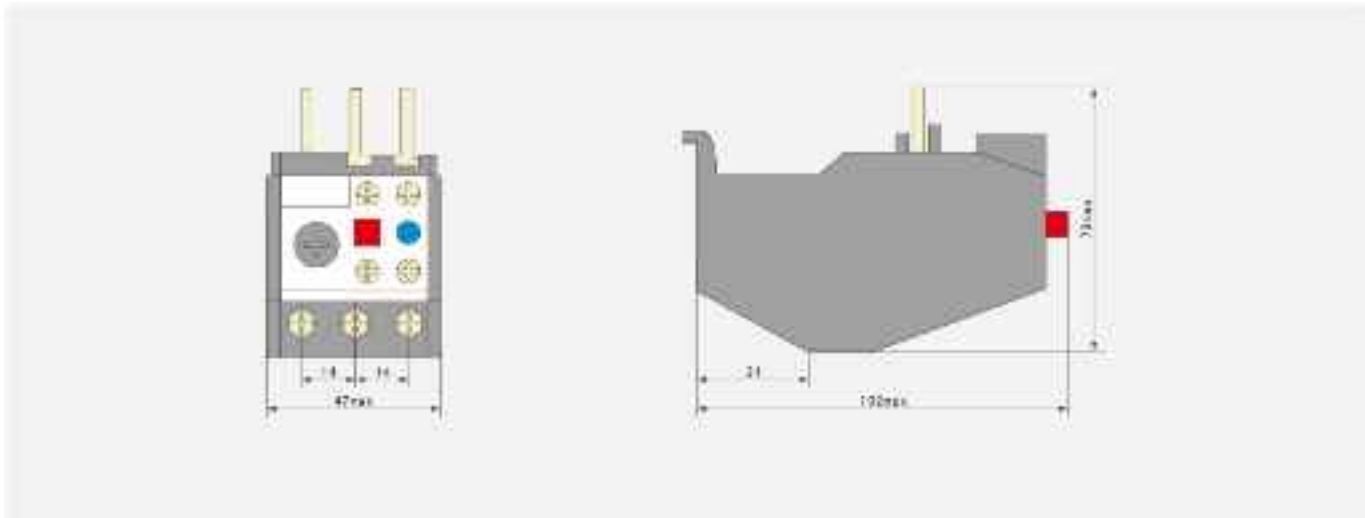
2. Outline and installation dimensions (mm) of JRS2-12.5/F, 25/F, 32/F, and 45/F



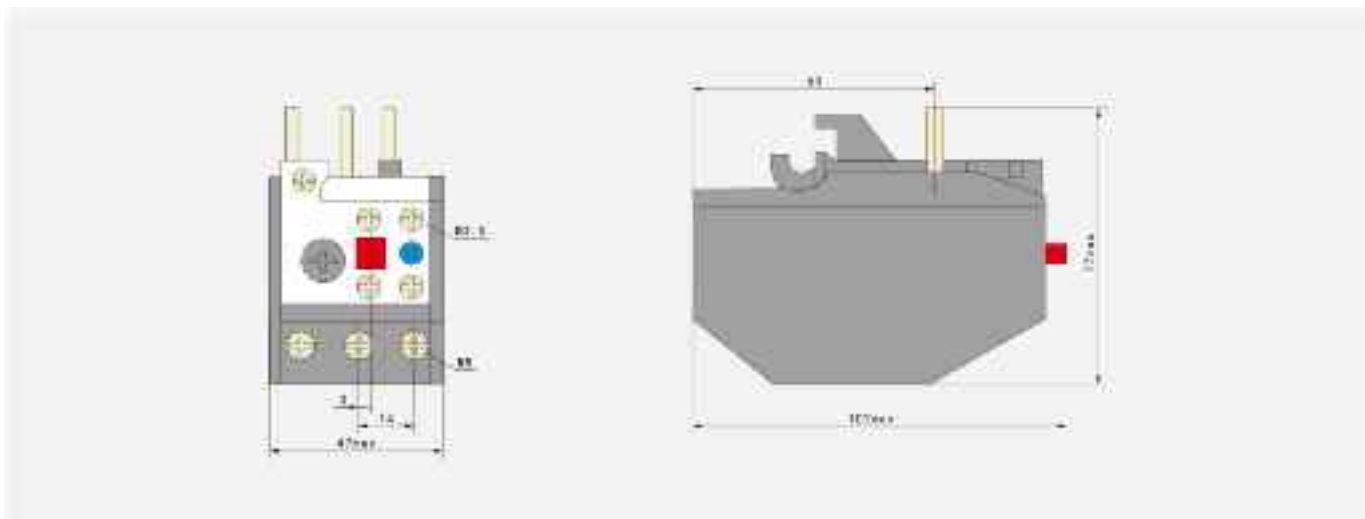
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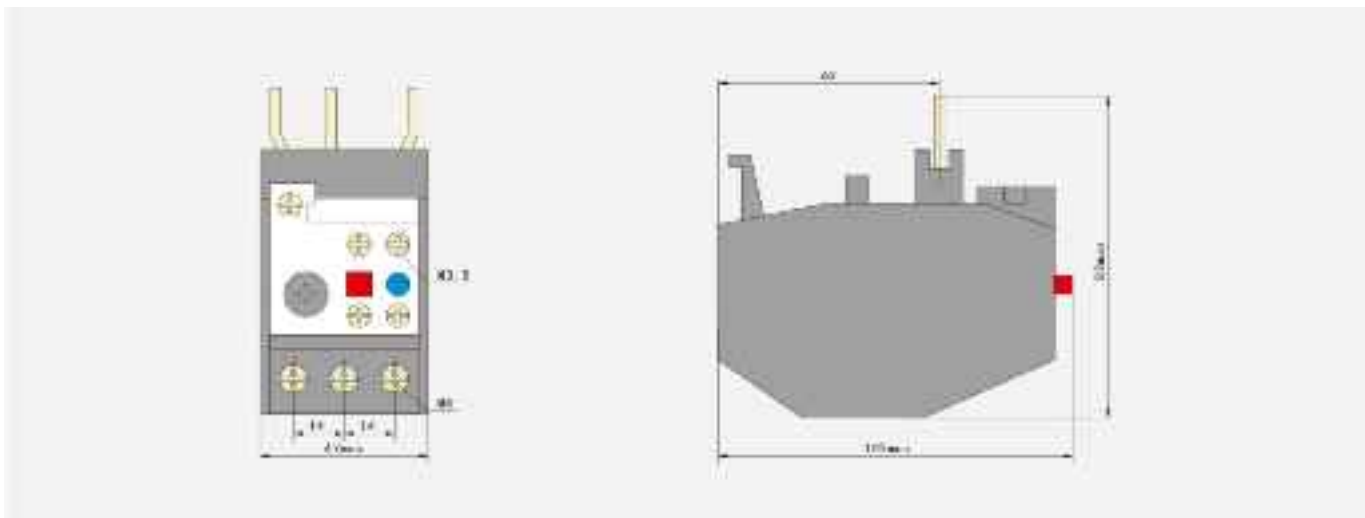
3. Outline and installation dimensions (mm) of JRS2-25/Z



4. Outline and installation dimensions (mm) of JRS2-32Z



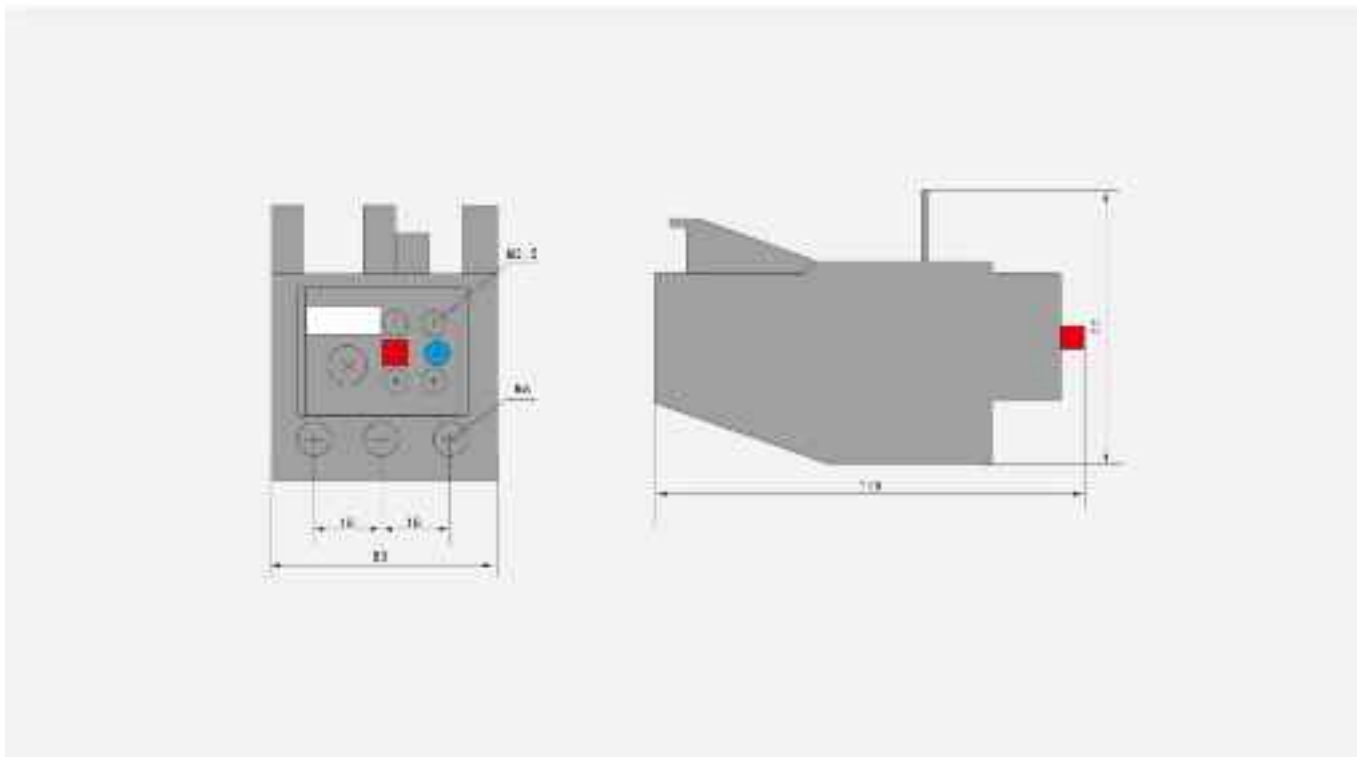
5. Outline and installation dimensions (mm) of JRS2-45Z



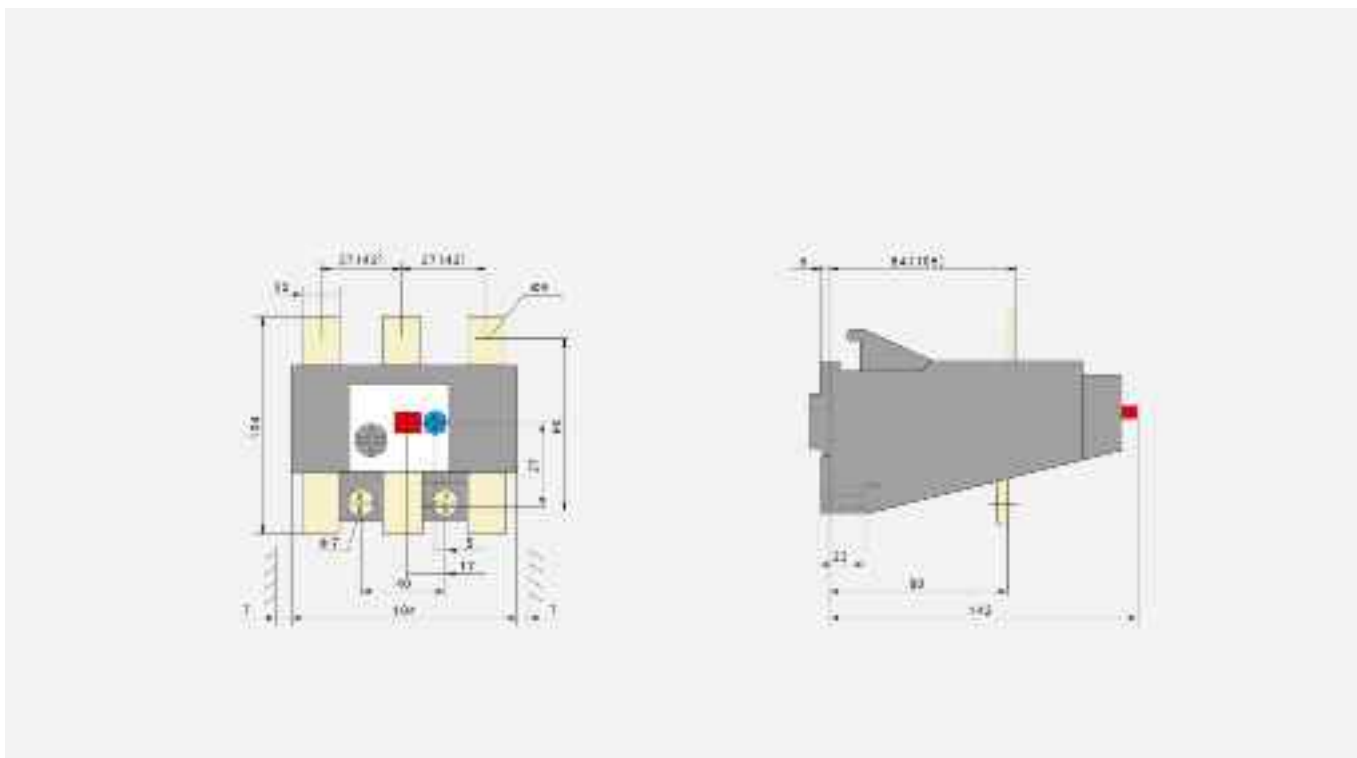
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6. Outline and installation dimensions (mm) of JRS2-80Z

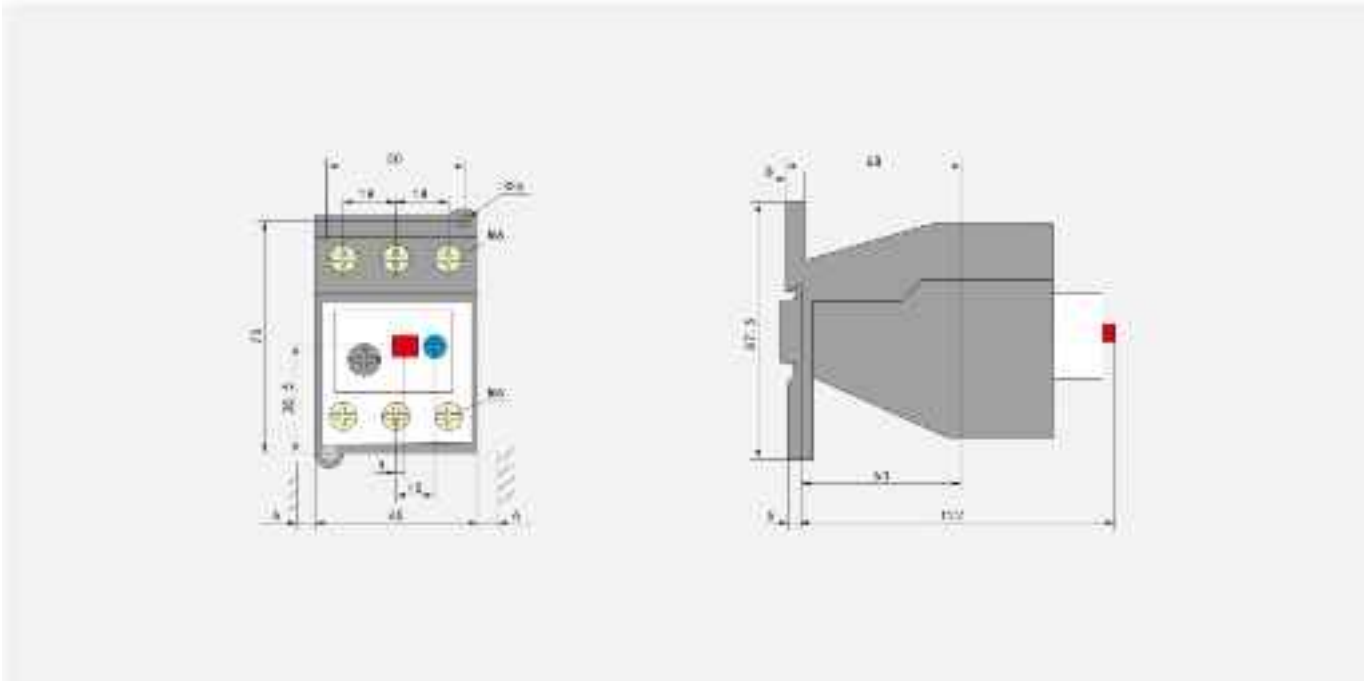


7. Outline and installation dimensions (mm) of JRS2-180F

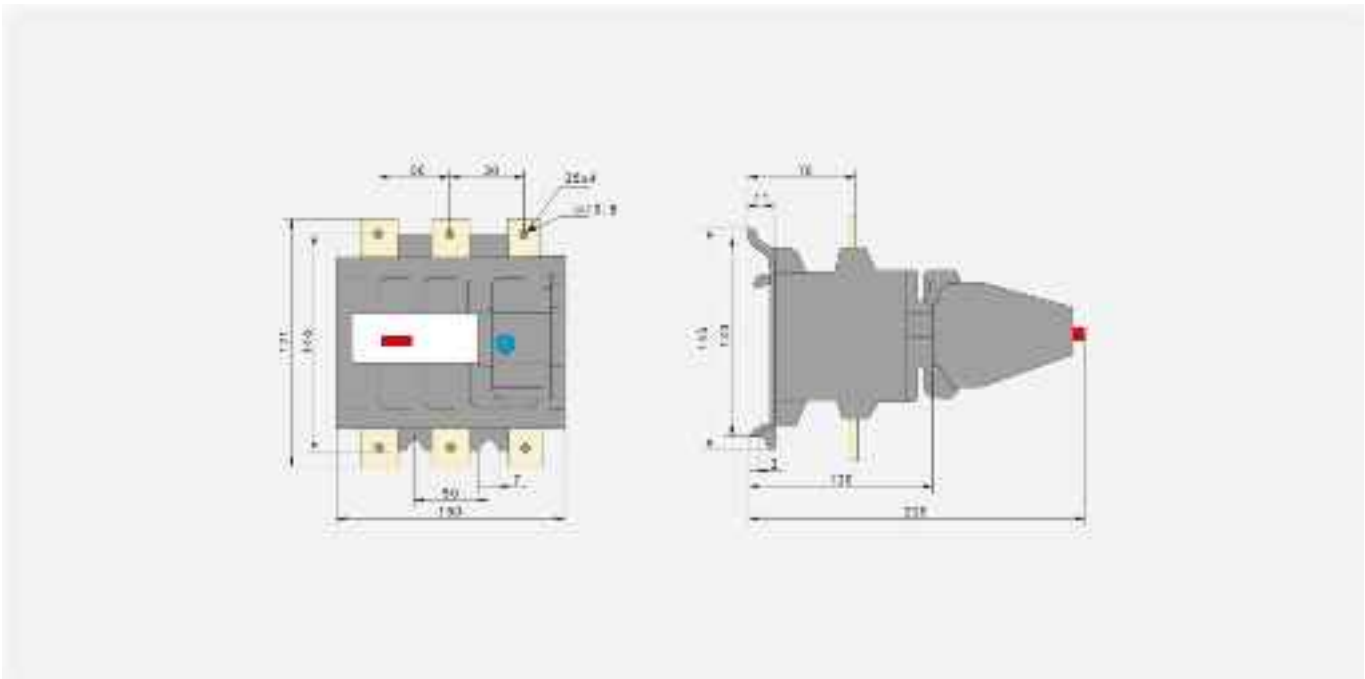


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### 8. Outline and installation dimensions (mm) of JRS2-80F



### 9. Outline and installation dimensions (mm) of JRS2-400 and 630F



## VII. 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, JRS2-25, 16– 25 A, 50 sets.