




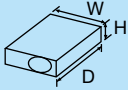







5.1 Model List

Frame			T18	T25	T50	T65	T100	
Appearance								
Model Name	Standard with 2-Element	For Magnetic Starters	TH-T18	TH-T25	TH-T50	TH-T65	TH-T100	
	For Independent Mounting	UT-HZ18 + TH-T18	—					
Outline Drawing [mm] W x H x D	With 3-Element (2E)	For Magnetic Starters	TH-T18KP	TH-T25KP	TH-T50KP	TH-T65KP	TH-T100KP	
	For Independent Mounting	UT-HZ18 + TH-T18KP	—					
	Outline Drawing [mm] W x H x D	For Magnetic Starters	46 x 55 x 76.5	63 x 53 x 80	74.3 x 74 x 88	89 x 57 x 83.5	89 x 68.5 x 83.5	
		For Independent Mounting	46 x 63 x 82.7		—		—	
Applicable Standard			JIS C8201-4-1, IEC60947-4-1, EN60947-4-1, GB14048.4					
Use Conditions			Ambient Temperature [°C] -10 to +40 (Standard is 20°C, Inner Panel Maximum Temperature is 55°C)					
			Frequency [Hz] 0 (DC) to 400					
Rated Insulation Voltage [V]			690					
Rated Impulse Withstand Voltage [kV]			6					
Pollution Degree			3					
Specifications of the Main Circuit	Heater Designation (Adjustment Range of Settling Current) [A]		0.12 (0.1 to 0.16)	0.24 (0.2 to 0.32)	29 (24 to 34)	15 (12 to 18)	67 (54 to 80)	
			0.17 (0.14 to 0.22)	0.35 (0.28 to 0.42)	35 (30 to 40)	22 (18 to 26)	82 (65 to 100)	
			0.24 (0.2 to 0.32)	0.5 (0.4 to 0.6)	42 (34 to 50)	29 (24 to 34)	95 (85 to 105)	
			0.35 (0.28 to 0.42)	0.7 (0.55 to 0.85)	—	35 (30 to 40)	—	
			0.5 (0.4 to 0.6)	0.9 (0.7 to 1.1)	—	42 (34 to 50)	—	
			0.7 (0.55 to 0.85)	1.3 (1 to 1.6)	—	54 (43 to 65)	—	
			0.9 (0.7 to 1.1)	1.7 (1.4 to 2)	—	—	—	
			1.3 (1 to 1.6)	2.1 (1.7 to 2.5)	—	—	—	
			1.7 (1.4 to 2)	2.5 (2 to 3)	—	—	—	
			2.1 (1.7 to 2.5)	3.6 (2.8 to 4.4)	—	—	—	
		2.5 (2 to 3)	5 (4 to 6)	—	—	—		
		3.6 (2.8 to 4.4)	6.6 (5.2 to 8)	—	—	—		
		5 (4 to 6)	9 (7 to 11)	—	—	—		
		6.6 (5.2 to 8)	11 (9 to 13)	—	—	—		
		9 (7 to 11)	15 (12 to 18)	—	—	—		
		11 (9 to 13)	22 (18 to 26)	—	—	—		
		15 (12 to 18)	—	—	—	—		
Power Consumption [VA/Element] Minimum/Maximum Settling			0.8/1.8	1.0/2.1	1.6/3.2	2.4/5.5	2.5/6.0	
Terminal Screw Size			M3.5	M4	M5	M6	M6	
Terminal-Compatible	Wire Size [mm ²]		φ1.6, 0.75 to 2.5	φ1.6 to 2.6, 1.25 to 6	φ2 to 3.6, 4 to 14	—	—	
	Crimp Lug Size		1.25-3.5 to 2-3.5, 5.5-53	1.25-4 to 5.5-4	5.5-5 to 14-5	5.5-6 to 22-6	14-6 to 22-6, 38-S6	
Contact Arrangement			1a1b	1a1b	1a1b	1a1b	1a1b	
Conventional Free Air Thermal Current Ith [A]			2	5	5	5	5	
Rating Use	Current [A]	Category AC-15 (AC Contactors) (Coil Switching) Make Contact/Break Contact <small>The value in parentheses is the rating during auto reset</small>	AC24 V	2 (0.5)/2 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)
			AC120 V	2 (0.5)/2 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)
			AC240 V	1 (0.5)/1 (0.5)	1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)
		Category DC-13 (DC Contactors) (Coil Switching) <small>The value in parentheses is the rating during auto reset</small>	AC550 V	0.3 (0.3)/0.3 (0.3)	0.3 (0.3)/0.3 (0.3)	0.3 (0.3)/0.3 (0.3)	0.5 (0.5)/1 (0.5)	0.5 (0.5)/1 (0.5)
			DC24 V	0.5 (0.3)	1 (0.3)	1 (0.3)	1 (0.3)	1 (0.3)
			DC110 V	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)
Minimum Applicable Load Level			20 V 5 mA	20 V 5 mA	20 V 5 mA	20 V 5 mA	20 V 5 mA	
Terminal Screw Size			M3.5	M3.5	M3.5	M4	M4	
Terminal-Compatible	Wire Size [mm ²]		φ1.6, 0.75 to 2.5	φ1.6, 0.75 to 2.5	φ1.6, 1.25 to 2	φ1.6, 1.25 to 2	φ1.6, 1.25 to 2	
	Crimp Lug Size		1.25-3.5 to 2-3.5	1.25-3.5 to 2-3.5	1.25-3.5 to 2-3.5	1.25-4 to 2-4,5.5-S4	1.25-4 to 2-4,5.5-S4	
Operating Characteristic Curve Page			153					
Vibration Resistance (Vibration and Malfunction Resistance Performance)			10 to 55Hz 19.6m/s ²					
Trip Free			◎	◎	◎	◎	◎	
Reset Method			Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	
Operation Indicator (Lever Display)			◎	◎	◎	◎	◎	
Manual Tripping Check			◎	◎	◎	◎	◎	
Frame of the Combined Magnetic Contactor			T10, T12, T20 T12, T20 T20	T21, T25, T35, T50	T35, T50 T50	T65, T80, T100	T80, T100 T100	
Applied Products	With Saturable Reactor [See Page 146]	With 2-Element (TH-□SR)	◎ (TH-T18SR)	◎ (TH-T25SR)	◎ (TH-T50SR)	◎ (TH-T65SR)	◎ (TH-T100SR)	
		With 3-Element (2E) (TH-□KPSR)	—	◎ (TH-T25KPSR)	◎ (TH-T50KPSR)	◎ (TH-T65KPSR)	◎ (TH-T100KPSR)	
Quick Trip Type [See Page 147]	With 2-Element (TH-□FS)	With 3-Element (2E) (TH-□FSKP, KF)	△ (TH-T18FSKP)	△ (TH-T25FS)	△ (TH-T50FS)	△ (TH-T65FS)	△ (TH-T100FS)	
		△ (TH-T18FSKP)	△ (TH-T25FSKP)	△ (TH-T50FSKP)	△ (TH-T65FSKP)	△ (TH-T100FSKP)		
Optional	Live Part Protection Cover		(Standard Equipment)	(Standard Equipment)	(Standard Equipment)	◎ (UN-CZ605)	—	
	Reset Release		◎ (UT-RR□5)	◎ (UN-RR□0)	◎ (UN-RR□0)	◎ (UN-RR□6)	◎ (UN-RR□6)	
	Operation Indicator Lamp		◎ (UN-TL12)	◎ (UN-TL20)	◎ (UN-TL20)	◎ (UN-TL60)	◎ (UN-TL60)	
	Independent/IEC 35 mm Rail Mounting Unit		◎ (UT-HZ18)	◎ (UN-RM20)	—	—	—	
Misoperation Prevention Cover			—	◎ (UN-CV203)	◎ (UN-CV203)	◎ (UN-CV603)	◎ (UN-CV603)	

Note 1. All model names come with ambient temperature compensation device.

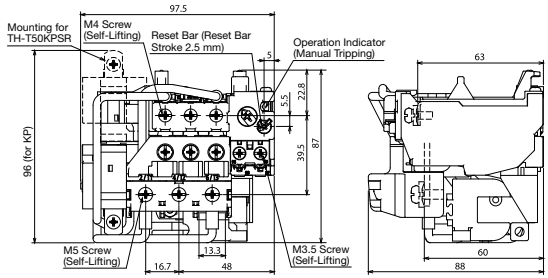
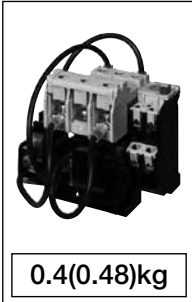
Note 2. ◎ indicates standard type (standard equipment), ○ indicates semi-standard type, △ indicates special products and - indicates products outside production range.

	N120	N120TA	N220	N400	N600
					
	TH-N120	TH-N120TA TH-N120TAHZ	TH-N220RH TH-N220HZ	TH-N400RH TH-N400HZ	— TH-N600(Note 3)
	TH-N120KP	TH-N120TAKP TH-N120TAHZKP	TH-N220RHKP TH-N220HZKP	TH-N400RHKP TH-N400HZKP	— TH-N600KP(Note 3)
	103 x 67 x 105	112 x 87 x 105 112 x 103 x 105	144 x 114 x 179 144 x 104 x 166.5	144 x 160 x 193 144 x 173 x 166.5	— 63 x 42 x 83.5
	JIS, JEM, IEC, VDE, BS, UL, GB				
	-10 to +40 (Standard is 20°C, Inner Panel Maximum Temperature is 55°C)				
	0 (DC) to 400		50 to 60		
	690				
	6				
	3				
	42 (34 to 50) 54 (43 to 65) 67 (54 to 80) 82 (65 to 100)	105 (85 to 125) 125 (100 to 150)	82 (65 to 100) 105 (85 to 125) 125 (100 to 150) 150 (120 to 180) 180 (140 to 220) 210 (170 to 250)	105 (85 to 125) 125 (100 to 150) 150 (120 to 180) 180 (140 to 220) 250 (200 to 300) 330 (260 to 400)	250 (200 to 300) (Current Transformer Ratio: 400/5 A) 330 (260 to 400) (Current Transformer Ratio: 500/5 A) 500 (400 to 600) (Current Transformer Ratio: 750/5 A) 660 (520 to 800) (Current Transformer Ratio: 1000/5 A)
	3.0/7.1	3.8/8.6	1.0/2.3 (Note 4)	1.0/2.3 (Note 4)	1.0/2.3 (Note 4)
	M8	M8	M10	M12	—
	—	—	—	—	—
	8-8 to 38-8	38-8 to 100-8	22-10 to 150-10	22-12 to 200-12	—
	1a1b	1a1b	1a1b	1a1b	1a1b
	5	5	5	5	5
	2(0.5)/3(0.5)	2(0.5)/3(0.5)	2(0.5)/3(0.5)	2(0.5)/3(0.5)	2(0.5)/3(0.5)
	2(0.5)/3(0.5)	2(0.5)/3(0.5)	2(0.5)/3(0.5)	2(0.5)/3(0.5)	2(0.5)/3(0.5)
	1(0.5)/2(0.5)	1(0.5)/2(0.5)	1(0.5)/2(0.5)	1(0.5)/2(0.5)	1(0.5)/2(0.5)
	0.5(0.5)/1(0.5)	0.5(0.5)/1(0.5)	0.5(0.5)/1(0.5)	0.5(0.5)/1(0.5)	0.5(0.5)/1(0.5)
	1(0.3)	1(0.3)	1(0.3)	1(0.3)	1(0.3)
	0.2(0.2)	0.2(0.2)	0.2(0.2)	0.2(0.2)	0.2(0.2)
	0.1(0.1)	0.1(0.1)	0.1(0.1)	0.1(0.1)	0.1(0.1)
	20V 5mA	20V 5mA	20V 5mA	20V 5mA	20V 5mA
	M4	M4	M4	M4	M4
	φ1.6, 1.25 to 2	φ1.6, 1.25 to 2	φ1.6, 1.25 to 2	φ1.6, 1.25 to 2	φ1.6, 1.25 to 2
	1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4
	156		156		156
	10 to 55Hz 19.6m/s ²				
	☉	☉	☉	☉	☉
	Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable
	☉	☉	☉	☉	☉
	☉	☉	☉	☉	☉
	N125, N150	N125, N150 N150	N180, N220 N220	N300, N400 N400	N600, N800
	○ (TH-N120SR)	○ (TH-N120TASR)	○ (TH-N220□SR)	○ (TH-N400□SR)	○ (TH-N600SR)
	○ (TH-N120KPSR)	○ (TH-N120TAKPSR)	○ (TH-N220□KPSR)	○ (TH-N400□KPSR)	○ (TH-N600KPSR)
	—	—	—	—	—
	—	—	—	—	—
	—	—	—	—	—
	☉ (UN-RR□6)	☉ (UN-RR□6)	☉ (UN-RR□6)	☉ (UN-RR□6)	☉ (UN-RR□6)
	☉ (UN-TL60)	☉ (UN-TL60)	☉ (UN-TL60)	☉ (UN-TL60)	☉ (UN-TL60)
	—	—	—	—	—
	☉ (UN-CV603)	☉ (UN-CV603)	☉ (UN-CV603)	☉ (UN-CV603)	☉ (UN-CV603)

Note 3. Use TH-N600(KP) in combination with current transformer for measuring instruments (rated secondary load of 15 VA or more). The recommended model names are CW-15LM or CW-15L for 250, 330 and 500 A, and CW-40LM for 660 A. The ratio of current transformation is as shown in the heater designation field in the table.

Note 4. The power consumption indicates the amount consumed by the heater element only. (The current transformer consumption amounts of the N220 to N600 frames are not included.)

TH-T50(BC)(KP)SR

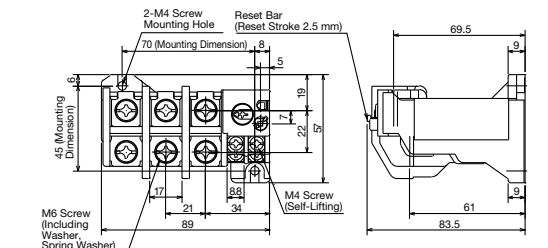


Cannot be used in independent mounting
When combining with a magnetic contactor, the following connecting conductor kit (sold separately) is used
Combination with S-T35/T50(BC) and SD-T35/T50(BC): UT-TH50

Contact Arrangement	
TH-T50(BC)SR	
TH-T50(BC)KPSR	
Model Name	
TH-T50SR	29 A 35 A/42 A

T65 (The diagrams show models without "CW".)

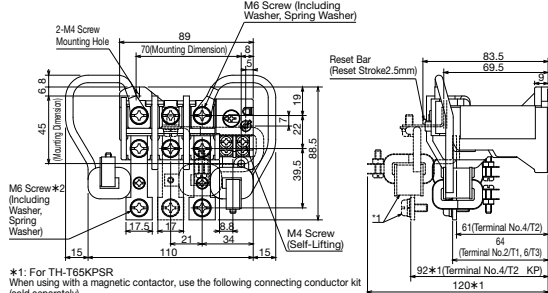
TH-T65(CW)(KP)



When combining with a magnetic contactor, the following connecting conductor kits (sold separately) are used
Combination with S(D)-T65/T80: BH559N350
Combination with S-T100: BH569N350
Combination with SD-T100: BH569N352

Contact Arrangement	
TH-T65	
TH-T65KP	
Model Name	
TH-T65	15A to 54A

TH-T65(KP)SR

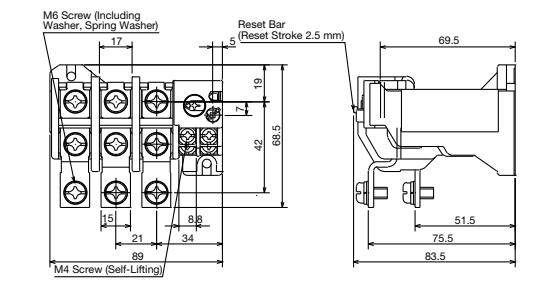
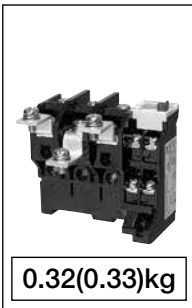


*1: For TH-T65KPSR
When using with a magnetic contactor, use the following connecting conductor kit (sold separately).
Combination with S(D)-T65/T80: BH559N350
Combination with S-T100: BH569N350
Combination with SD-T100: BH569N352

Contact Arrangement	
TH-T65SR	
TH-T65KPSR	
Model Name	
TH-T65SR	15A to 54A

T100

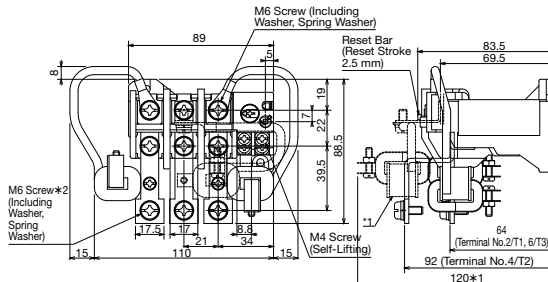
TH-T100(KP)



Cannot be used in independent mounting
When combining with a magnetic contactor, the following connecting conductor kits (sold separately) are used
Combination with S(D)-T80: BH559N350
Combination with S-T100: BH569N350
Combination with SD-T100: BH569N352

Contact Arrangement	
TH-T100	
TH-T100KP	
Model Name	
TH-T100	67A/82A

TH-T100(KP)SR



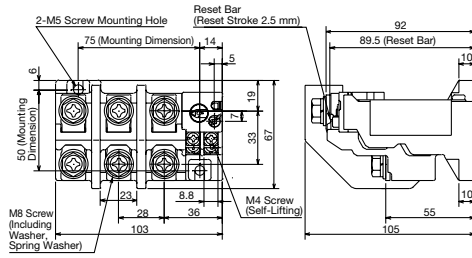
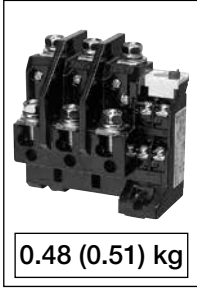
*1 is for TH-T100KPSR
When combining with a magnetic contactor, the following connecting conductor kits (sold separately) are used
Combination with S(D)-T80: BH559N350
Combination with S-T100: BH569N350
Combination with SD-T100: BH569N352

Contact Arrangement	
TH-T100SR	
TH-T100KPSR	
Model Name	
TH-T100SR	67A/82A

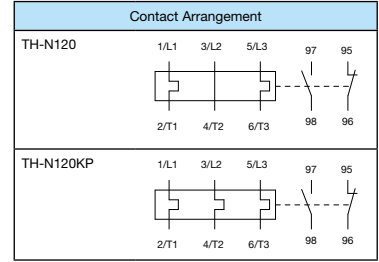
5 TH-T/N Type Thermal Overload Relays

N120/N120TA

TH-N120(KP)

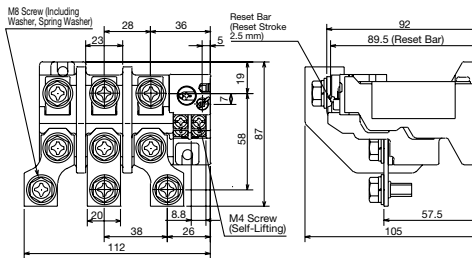


When combining with a magnetic contactor, the following connecting conductor kit (sold separately) is used
 Combination with S(D)-N125, SL(D)-N125: BH579N355
 Combination with S(D)-N150, SL(D)-N150: BH589N355
 TH-N120 and TH-N120KP can be used for both magnetic starter (MSO) or independent mounting

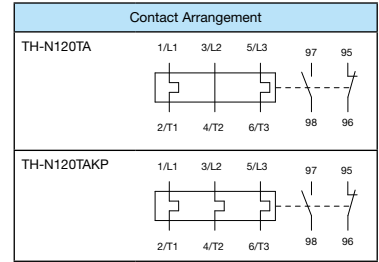


Model Name	Model Number
TH-N120	THN65 □ □

TH-N120TA(KP)

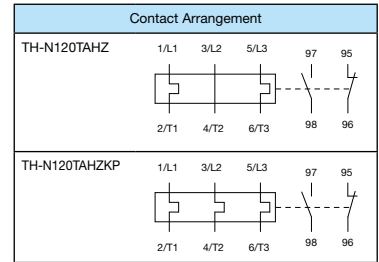
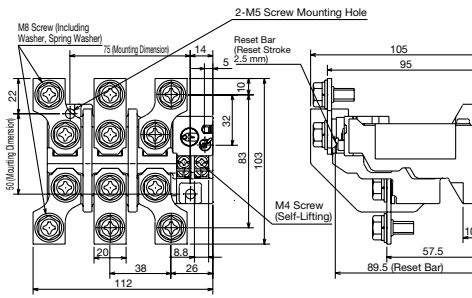


Cannot be used in independent mounting When combining with a magnetic contactor, the following connecting conductor kits (sold separately) are used
 Combination with S(D)-N125, SL(D)-N125: BH579N355
 Combination with S(D)-N150, SL(D)-N150: BH589N355



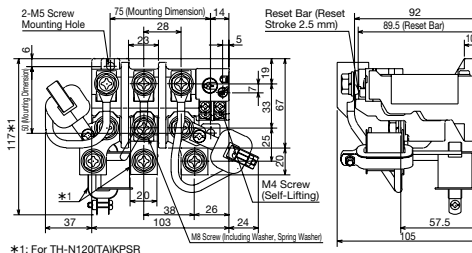
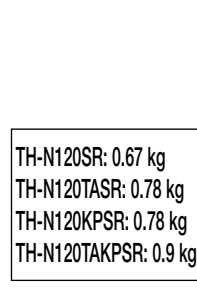
Model Name	Model Number
TH-N120TA	THN65 □ □

TH-N120TAHZ(KP)

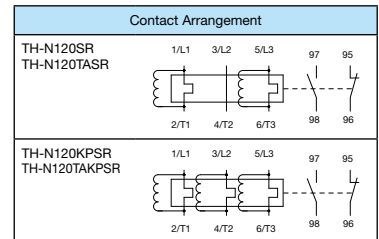


Model Name
TH-N120TAHZ

TH-N120(TA)(KP)SR



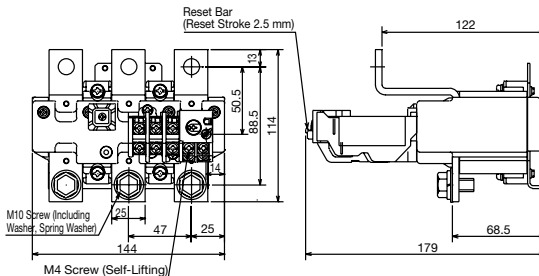
*1: For TH-N120TAKPSR
 TH-N120TAKPSR cannot be used in independent mounting
 When combining with a magnetic contactor, the following connecting conductor kit (sold separately) is used
 Combination with S(D)-N125, SL(D)-N125: BH579N355
 Combination with S(D)-N150, SL(D)-N150: BH589N355



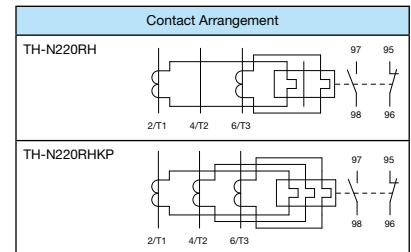
Model Name
TH-N120SR
TH-N120TASR

N220RH/N220HZ

TH-N220RH(KP)

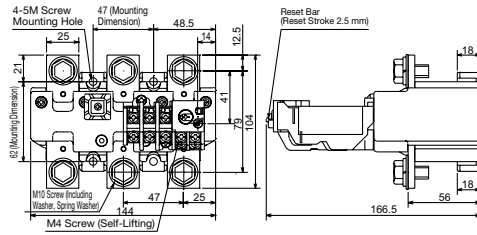


Cannot be used in independent mounting
 Attached 2 M4 screws and wiring screws for magnetic contactor are used when combining with S-N180/N220, SD-N220 and SL(D)-N220



Model Name	Model Number
TH-N220RH	THN70 □ □

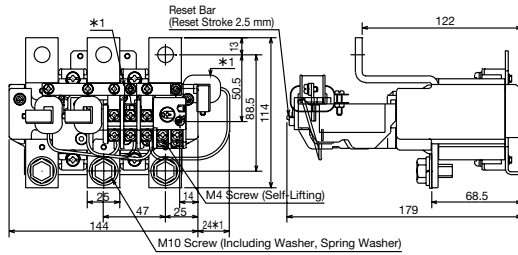
TH-N220HZ(KP)



Contact Arrangement	
TH-N220HZ	
TH-N220HZKP	
Model Name	Model Number
TH-N220HZ	THN72□□

TH-N220RH(KP)SR

2.0 (2.3) kg

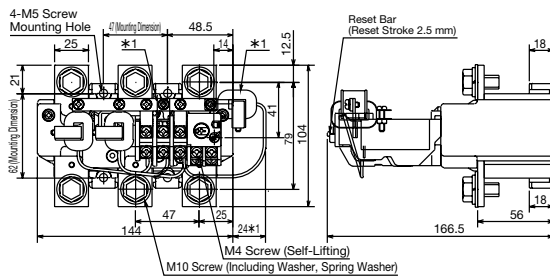


*1: For TH-N220RH(KP)SR
Cannot be used in independent mounting
The attached 2 M4 screws and wiring screws for magnetic contactor are used when combining with S-N180/N220, SD-N220 and SL(D)-N220

Contact Arrangement	
TH-N220RHSR	
TH-N220RH(KP)SR	
Model Name	Model Number
TH-N220RHSR	

TH-N220HZ(KP)SR

1.6 (2.0) kg

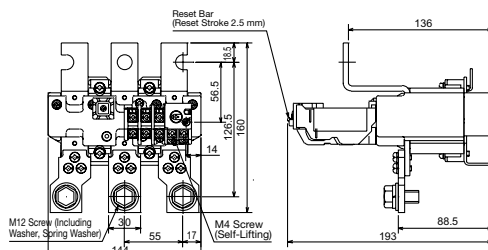
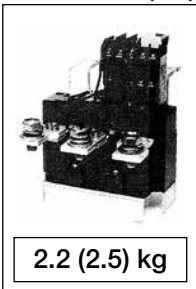


*1: TH-N220HZ(KP)SR

Contact Arrangement	
TH-N220HZSR	
TH-N220HZ(KP)SR	
Model Name	Model Number
TH-N220HZSR	

N400RH/N400HZ

TH-N400RH(KP)



Cannot be used in independent mounting
Attached M5 screw and wiring screws for magnetic contactor are used when combining with S(D)-N300/N400 and SL(D)-N300/N400

Contact Arrangement	
TH-N400RH	
TH-N400RH(KP)	
Model Name	Model Number
TH-N400RH	THN75 □□

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