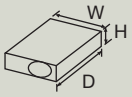
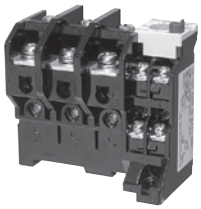
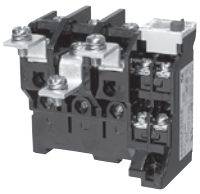
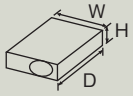
Specification List

Model list

Frame			T18	T25
Appearance				
Model name	with 2-elements	For Magnetic Starters	TH-T18	TH-T25
		For independent mounting	UT-HZ18 + TH-T18	
	with 3-elements	For Magnetic Starters	TH-T18KP	TH-T25KP
		For independent mounting	UT-HZ18 + TH-T18KP	
	Outside dimensions [mm] W×H×D	For Magnetic Starters	46×55×76.5	63×51×79
		For independent mounting	46×63×82.4	
	Product weight [kg]	For Magnetic Starters	0.11	0.16
		For independent mounting	0.16	
Applicable standard			IEC60947-4-1,EN60947-4-1,JIS C8201-4-1,GB14048.4	
Use condition		Ambient temperature [°C]	-10 to +40 (Standard: 20°C; maximum temperature on the board: 55°C)	
		Frequency [Hz]	0(DC) to 400	
Main circuit specifications	Rated insulation voltage [V]		690	
	Rated impulse withstand voltage [kV]		6	
	Pollution degree		3	
	Heater designation (adjustable range of stabilized current) [A] (Rated operational voltage : 550V maximum)		0.12 (0.1 to 0.16) 0.17 (0.14 to 0.22) 0.24 (0.2 to 0.32) 0.35 (0.28 to 0.42) 0.5 (0.4 to 0.6) 0.7 (0.55 to 0.85) 0.9 (0.7 to 1.1) 1.3 (1 to 1.6) 1.7 (1.4 to 2) 2.1 (1.7 to 2.5) 2.5 (2 to 3) 3.6 (2.8 to 4.4) 5 (4 to 6) 6.6 (5.2 to 8) 9 (7 to 11) 11 (9 to 13) 15 (12 to 18)	0.24 (0.2 to 0.32) 0.35 (0.28 to 0.42) 0.5 (0.4 to 0.6) 0.7 (0.55 to 0.85) 0.9 (0.7 to 1.1) 1.3 (1 to 1.6) 1.7 (1.4 to 2) 2.1 (1.7 to 2.5) 2.5 (2 to 3) 3.6 (2.8 to 4.4) 5 (4 to 6) 6.6 (5.2 to 8) 9 (7 to 11) 11 (9 to 13) 15 (12 to 18) 22 (18 to 26)
	Power consumption [VA/element] at minimum/maximum stabilization		0.8 / 1.8	1.5 / 3.0
	Terminal screw size		M3.5	M4
	Compatible with terminal	Electric wire size [mm²]	ϕ1.6, 0.75 to 2.5	ϕ1.6 to 2.6, 1.25 to 6
		Crimp lug size	1.25-3.5 to 2-3.5, 5.5-S3	1.25-4 to 5.5-4
Operation circuit (contact) specifications	Contact arrangement		1a1b	1a1b
	Conventional free air thermal current Ith [A]		2	5
	Rating Operational Current [A] Category AC-15 (AC operated Magnetic Contactors Coil opening and closing) a contact/b contact The value in brackets indicates the rating for automatic reset.	24VAC	2(0.5) / 2(0.5)	2(0.5) / 3(0.5)
		120VAC	2(0.5) / 2(0.5)	2(0.5) / 3(0.5)
		240VAC	1(0.5) / 1(0.5)	1(0.5) / 2(0.5)
		550VAC	0.3(0.3) / 0.3(0.3)	0.3(0.3) / 0.3(0.3)
	Rating Operational Current [A] Category DC-13 (DC operated Magnetic Contactors Coil opening and closing) The value in brackets indicates the rating for automatic reset.	24VDC	0.5(0.3)	1(0.3)
		110VDC	0.2(0.2)	0.2(0.2)
		220VDC	0.1(0.1)	0.1(0.1)
	Minimum applicable load level		20V 5mA	20V 5mA
	Terminal screw size		M3.5	M3.5
	Compatible with terminal	Electric wire size [mm²]	ϕ1.6, 0.75 to 2.5	ϕ1.6, 0.75 to 2.5
		Crimp lug size	1.25-3.5 to 2-3.5	1.25-3.5 to 2-3.5
Characteristics/Functions	Trip class		10A	
	Operating characteristic curve description page		Page 27	
	Vibration resistance (vibration resistance malfunction performance)		10 to 55 Hz, 19.6 m/s²	
	Trip-free		○	○
	Reset method		Manual/Automatic switchable	Manual/Automatic switchable
	Operation indication (lever indication)		○	○
	Manual trip check		○	○
Applied products	With saturable reactor	TH-□SR	○	○
	With 3-element (2E) thermal saturable reactor	TH-□KPSR	○	○
	2-element quick-acting characteristics thermal	TH-□FS	○	○
	With 3-element (2E) thermal quick-acting characteristics	TH-□FSKP	○	○

Note 1: The ambient temperature compensator is mounted on all types.

Model list

Frame				T50	T65	T100
Appearance						
Model name		with 2-elements	For Magnetic Starters	TH-T50	TH-T65	TH-T100
			For independent mounting	—		—
		with 3-elements	For Magnetic Starters	TH-T50KP	TH-T65KP	TH-T100KP
			For independent mounting	—		—
		Outside dimensions [mm] W×H×D	For Magnetic Starters	74.3×74×88	89×57×83.5	89×68.5×83.5
			For independent mounting	—		—
		Product weight [kg]	For Magnetic Starters	0.2	0.26	0.32
			For independent mounting	—		—
Applicable standard				IEC60947-4-1,EN60947-4-1,JIS C8201-4-1,GB14048.4		
Use condition			Ambient temperature [°C]	-10 to +40 (Standard: 20°C; maximum temperature on the board: 55°C)		
			Frequency [Hz]	0(DC) to 400		
Main circuit specifications	Rated insulation voltage [V]			690		
	Rated impulse withstand voltage [kV]			6		
	Pollution degree			3		
	Heater designation (adjustable range of stabilized current) [A] (Rated operational voltage : 550V maximum)			29 (24 to 34) 35 (30 to 40) 42 (34 to 50)	15 (12 to 18) 22 (18 to 26) 29 (24 to 34) 35 (30 to 40) 42 (34 to 50) 54 (43 to 65)	67 (54 to 80) 82 (65 to 100) 95 (85 to 105)
	Power consumption [VA/element] at minimum/maximum stabilization			1.6/3.2	2.4/5.5	2.5/6.0
	Terminal screw size			M5	M6	M6
	Compatible with terminal		Electric wire size [mm²]	ϕ5.5 to 14	—	—
			Crimp lug size	5.5-5 to 14-5	5.5-6 to 22-6	14-6 to 22-6, 38-S6
Operation circuit (contact) specifications	Contact arrangement			1a1b	1a1b	1a1b
	Conventional free air thermal current Ith [A]			5	5	5
	Rating Operational Current [A]	Category AC-15 (AC operated Magnetic Contactors Coil opening and closing) a contact/b contact The value in brackets indicates the rating for automatic reset.	24VAC	2(0.5) / 3(0.5)	2(0.5) / 3(0.5)	2(0.5) / 3(0.5)
			120VAC	2(0.5) / 3(0.5)	2(0.5) / 3(0.5)	2(0.5) / 3(0.5)
			240VAC	1(0.5) / 2(0.5)	1(0.5) / 2(0.5)	1(0.5) / 2(0.5)
			550VAC	0.3(0.3) / 0.3(0.3)	0.5(0.5) / 1(0.5)	0.5(0.5) / 1(0.5)
		Category DC-13 (DC operated Magnetic Contactors Coil opening and closing) The value in brackets indicates the rating for automatic reset.	24VDC	1(0.3)	1(0.3)	1(0.3)
			110VDC	0.2(0.2)	0.2(0.2)	0.2(0.2)
			220VDC	0.1(0.1)	0.1(0.1)	0.1(0.1)
		Minimum applicable load level		20V 5mA	20V 5mA	20V 5mA
	Terminal screw size			M3.5	M4	M4
	Compatible with terminal		Electric wire size [mm²]	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	1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4
Characteristics/Functions	Trip class			10A	15 to 42A:10 54A:10A	67A:10 82A:10A
	Operating characteristic curve description page			Page 27		
	Vibration resistance (vibration resistance malfunction performance)			10 to 55Hz 19.6m/s²		
	Trip-free			○	○	○
	Reset method			Manual/Automatic switchable	Manual/Automatic switchable	Manual/Automatic switchable
	Operation indication (lever indication)			○	○	○
	Manual trip check			○	○	○
Applied products	With saturable reactor		TH-□SR	○(TH-T50SR)	○(TH-T65SR)	○(TH-T100SR)
	With 3-element (2E) thermal saturable reactor		TH-□KPSR	○(TH-T50KPSR)	○(TH-T65KPSR)	○(TH-T100KPSR)
	2-element quick-acting characteristics thermal		TH-□FS	○(TH-T50FS)	○(TH-T65FS)	○(TH-T100FS)
	With 3-element (2E) thermal quick-acting characteristics		TH-□FSKP	○(TH-T50FSKP)	○(TH-T65FSKP)	○(TH-T100FSKP)

Note 1: The ambient temperature compensator is mounted on all types.

Selection Table

Thermal Overload Relays

Application to standard three-phase motor of Thermal Overload Relays

Thermal Overload Relays					Standard three-phase motor capacity [kW]		Magnetic Contactors that can be combined					
Heater designation(A)	Setting range(A)	Short-circuit protector rating (A) * Fuse gG (IEC60269-1/2) Main circuit	Short-circuit protector rating (A) * Fuse gG (IEC60269-1/2) Auxiliary circuit	Frame	220-240V	380-440V	TH-T18	TH-T25	TH-T50	TH-T65	TH-T100
0.12	0.1-0.16	2	6	T18			S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
0.17	0.14-0.22	2	6	T18			S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
0.24	0.2-0.32	2	6	T18	0.03	0.05	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
0.35	0.28-0.42	2	6	T18	0.05	0.1	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
0.5	0.4-0.6	2	6	T18	0.07		S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
0.7	0.55-0.85	4	6	T18	0.1	0.18, 0.2	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
0.9	0.7-1.1	4	6	T18		0.25	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
1.3	1.0-1.6	4	6	T18	0.2	0.37, 0.55	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
1.7	1.4-2.0	6	6	T18		0.75	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
2.1	1.7-2.5	6	6	T18	0.4		S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
2.5	2.0-3.0	10	6	T18		1.1	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
3.6	2.8-4.4	10	6	T18	0.75	1.5	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
5	4.0-6.0	16	6	T18	1	2.2	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
6.6	5.2-8.0	20	6	T18	1.5	3, 3.7	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
9	7.0-11	20	6	T18	2.2	3, 3.7	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
11	9.0-13	25	6	T18		5.5	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
15	12-18	32	6	T18	3.7	7.5, 9	S-T10	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
22	18-26	50	6	T25	5.5	11	S(D)-T12	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
29	24-34	63	6	T25	7.5	15	S(D)-T12	S-T25	S(D)-T35	S(D)-T65	S(D)-T100
35	30-40	100	6	T25		18.5, 19	S(D)-T20	S(D)-T21	S(D)-T50	S(D)-T80	S(D)-T100
42	34-50	100	6	T25	11	22	S(D)-T20	S(D)-T21	S(D)-T50	S(D)-T80	S(D)-T100
54	43-65	100	6	T25	15	30	S(D)-T20	S(D)-T21	S(D)-T50	S(D)-T80	S(D)-T100
67	54-80	125	6	T50	18.5, 19	37	S(D)-T20	S(D)-T21	S(D)-T50	S(D)-T80	S(D)-T100
82	65-100	160	6	T65	22	45	S(D)-T20	S(D)-T21	S(D)-T50	S(D)-T80	S(D)-T100

Precautions for Use

Thermal Overload Relays

Disassembly

The Thermal Overload Relays are adjusted at the time of assembly. Do not disassemble it.

Ambient temperature compensation

The TH-T type Thermal Overload Relays are adjusted with the Magnetic Starters in the standard box (the MS type) relative to the ambient temperature of 20°C (The temperature on the control board of the MSO type Magnetic Starters is 35°C). The ambient temperature compensator is mounted on the TH-T type Thermal Overload Relays. Therefore, the ambient temperature less affects the operational characteristic change. The minimum operating current change according to the ambient temperature change relative to the ambient temperature of 20°C (the temperature on the control board of 35°C) generally depends on the characteristics in the diagrams 1 and 2.
The Thermal Overload Relays have a characteristic that the operating current becomes high when the ambient temperature is low and becomes low when the ambient temperature is high. If the ambient temperature of the installation site is significantly different from 20°C (the temperature on the control board of 35°C), the setting current of the Thermal Overload Relays needs to be corrected as shown in diagrams 1 and 2. In addition, note that the compensation factor has a characteristic to be the minimum scale>middle scale>maximum scale at the adjustment knob location. (Note that the Thermal Overload Relays may operate at a current of less than 100% stabilized current if in use at temperatures exceeding the allowable working temperature of 40°C (55°C).)

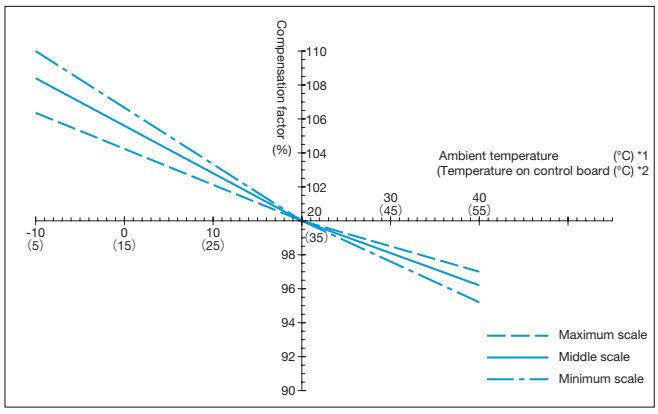


Diagram 1. Ambient temperature compensation curve (T18 frame)

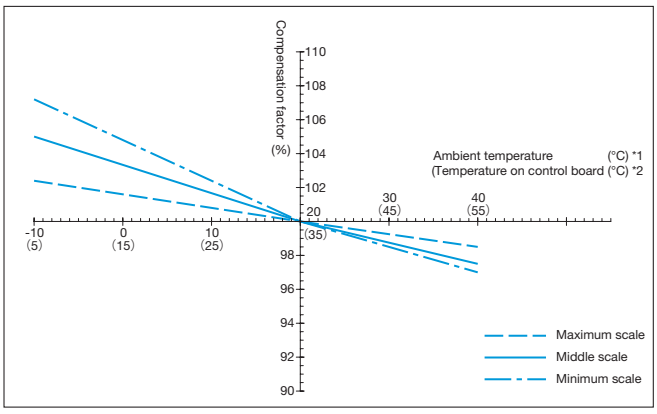


Diagram 2. Ambient temperature compensation curve (T25,T50,T65,T100 frame)

Compensation factor: Percentage of the minimum operating current at the ambient temperature of 20°C(the temperature on the control board of 35°C)
<Compensation procedure of setting current>
Determine the compensation factor of the working ambient temperature according to the curves in diagrams 1 and 2 and use the value of all load currents of the motor divided by the determined compensation factor as the stabilization value.
Example: The ambient temperature compensation factor for TH-T25 at the ambient temperature of 40°C (the temperature on the control board of 55°C) is 97% at the minimum scale according to diagram 2. If the motor rated current is 15A, the stabilization value is 15.5A (=15/0.97).)

Note 1: [*1] The ambient temperature applied to the MS type indicates the outside temperature of the box.
[*2] The temperature including temperature increase on the control board applied to the MSO type is indicated.

Connecting electric wire size and operating current

The TH-T type adjusts the minimum operating current with the standard electric wire size shown in the following table. If the electric wire is thicker or thinner than this standard electric wire size, the operating current becomes high or low, respectively. Therefore, correct the stabilized current (divide it by the change rate of the minimum operating current) to use a size different from the standard connecting electric wire size.

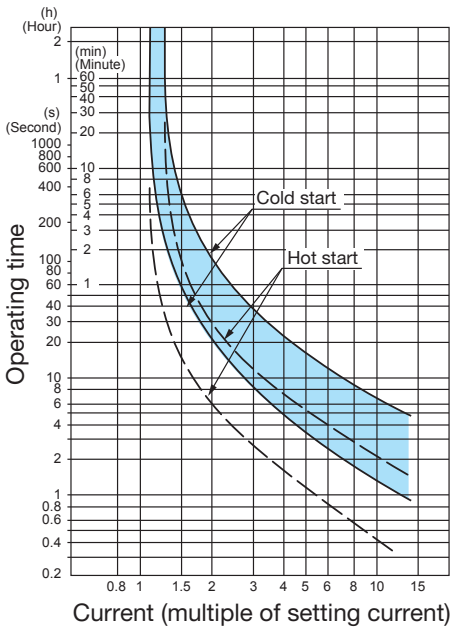
Model name	Heater designation [A]	Standard electric wire size [mm²]	Connecting electric wire size [mm²]		Change rate of minimum operating current [%]	
TH-T18(KP)	0.12 to 15	2	1.25	2.5	98	103
TH-T25(KP)	0.24 to 11					
TH-T25(KP)	15, 22	3.5	2	6	97	104
TH-T50(KP)	29	8	5.5	14	96	104
	35					
	42	14	8		95	
TH-T65(KP)	15	3.5	2	5.5	95	105
	22, 29	5.5	3.5	8	96	105
	35	8	5.5	14	95	105
	42	14	8	22	95	104
	54	22	14	30	96	104
TH-T100(KP)	67	22	14	30	97	103
	82	38	30		97	

Operating Characteristic of Thermal Overload Relays (Ambient Temperature of 20°C)

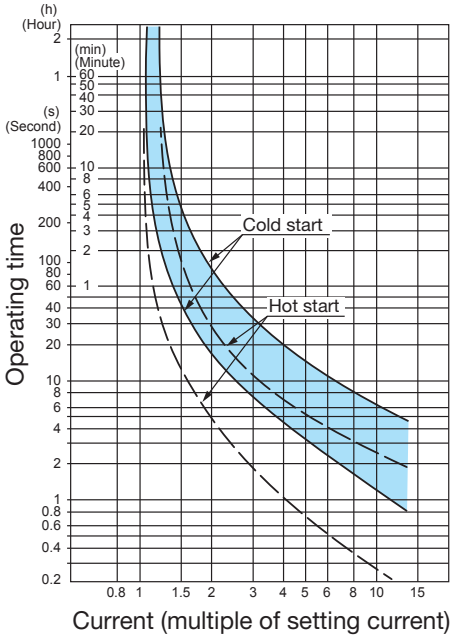
Thermal Overload Relays

For the information on the connecting electric wire size, refer to page 16.

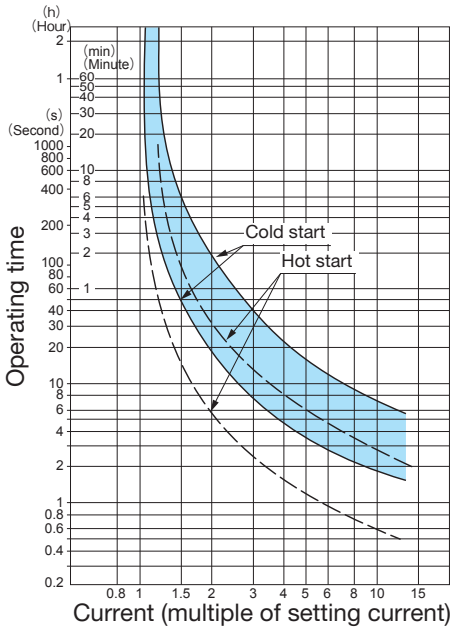
●TH-T18,T18KP



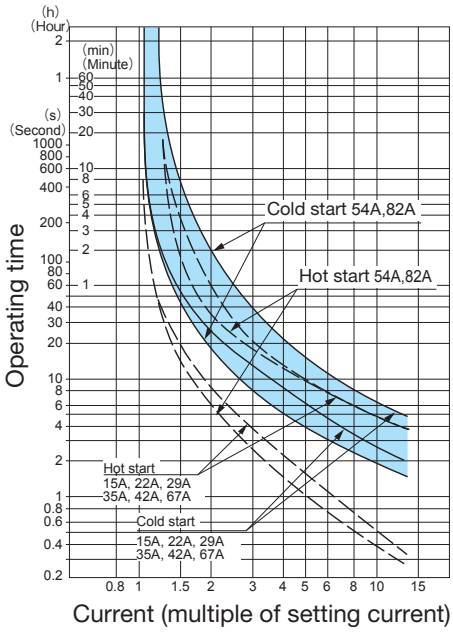
●TH-T25,T25KP



●TH-T50,T50KP

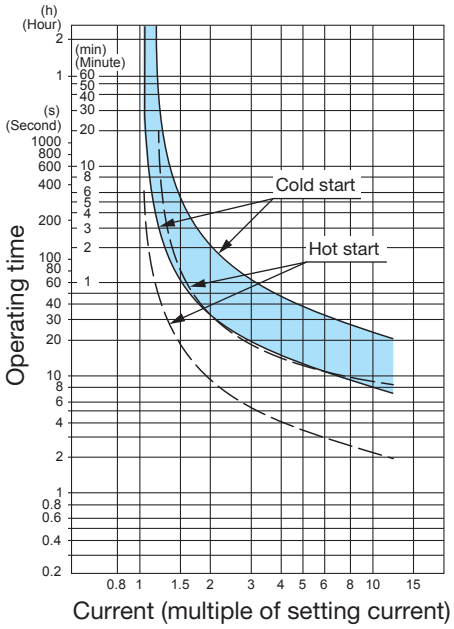


●TH-T65,T65KP ●TH-T100,T100KP

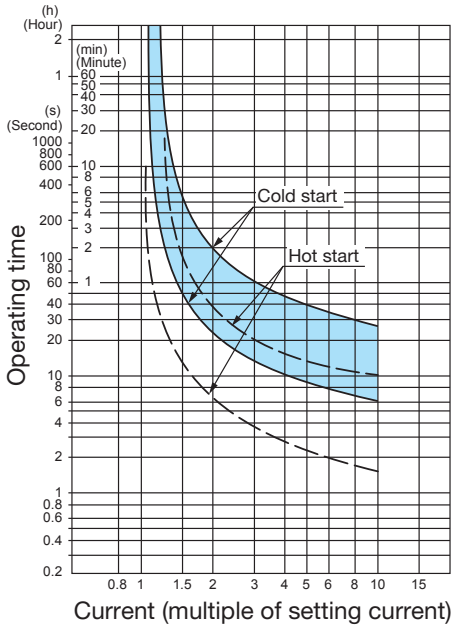


Operating Characteristic of Thermal Overload Relays (Ambient Temperature of 20°C)

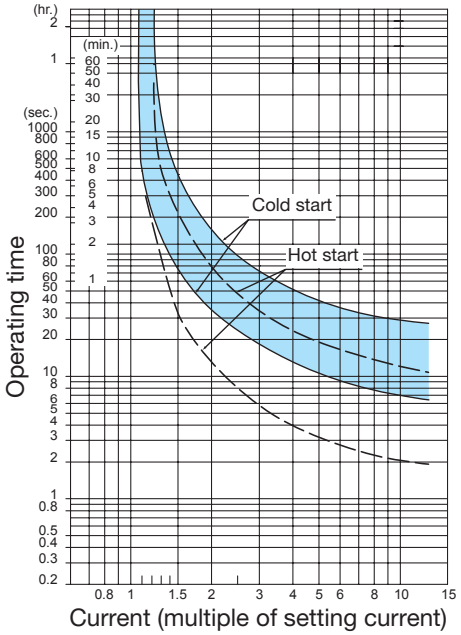
TH-T18SR



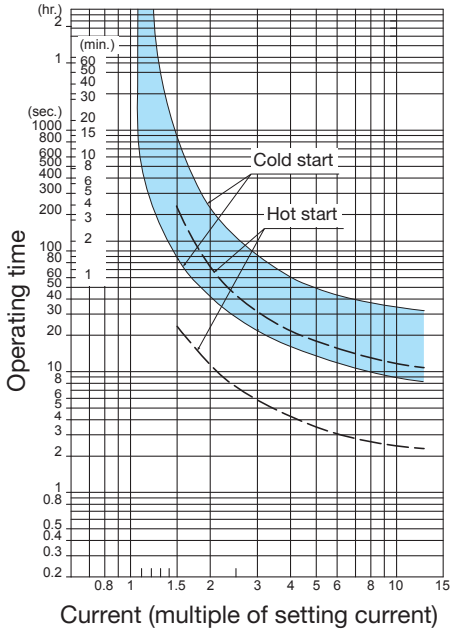
TH-T25SR,T25KPSR



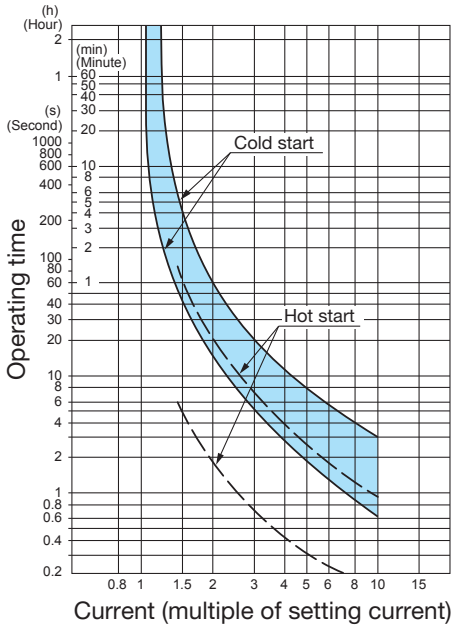
TH-T50SR,T50KPSR



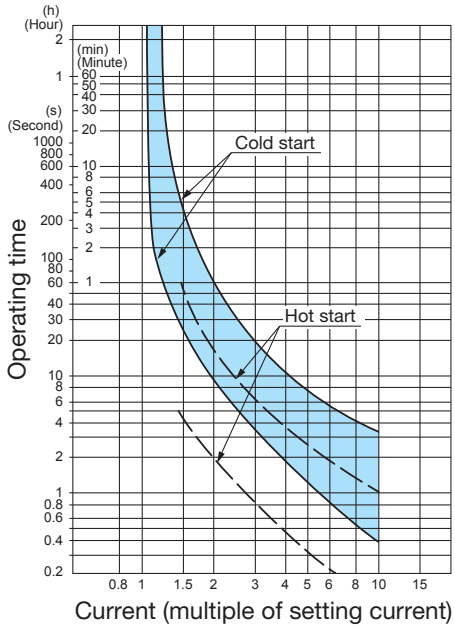
TH-T65SR,T65KPSR
TH-T100SR,T100KPSR



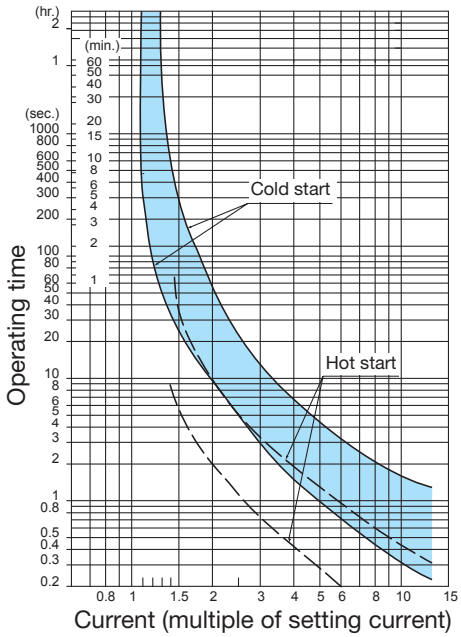
TH-T18FSKP



TH-T25FS,TH-T25FSKP
TH-T50FS,T50FSKP

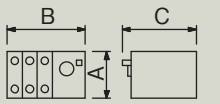


TH-T65FS,T65FSKP
TH-T100FS,T100FSKP



Thermal Overload Relays

TH-T series

Model name		TH-T18	TH-T25	TH-T50	TH-T65	TH-T100
Application		MSO-T10 MSOD-T12 -T12 -T20 -T20	MSO-T21 MSOD-T21 -T25 -T35 -T35 -T50 -T50	MSO-T35 MSOD-T35 -T50 -T50	MSO-T65 MSOD-T65 -T80 -T80 -T100 -T100	MSO-T80 MSOD-T80 -T100 -T100
Standard heater rating (designation) (A)		0.12, 0.17, 0.24, 0.35, 0.5, 0.7, 0.9,1.3, 1.7, 2.1, 2.5, 3.6, 5, 6.6, 9, 11, 15	0.24, 0.35, 0.5, 0.7, 0.9, 1.3, 1.7, 2.1, 2.5, 3.6, 5, 6.6, 9, 11, 15, 22	29, 35, 42	15, 22, 29 35, 42, 54	67, 82, 95
Contact arrangement		1a1b	1a1b	1a1b	1a1b	1a1b
 (unit: mm)	A	55	53	74	57	68.5
	B	46	63	74.3	89	89
	C	76.5	80	88	83.5	83.5

Heater types

Heater types of TH type Thermal Overload Relays

Model	For Magnetic Starters 2-element	For Magnetic Starters 3-element	For single mounting 2-element	For single mounting 3-element	Heater designation (adjustable range of stabilized current) (A)
Standard	T18	T18KP	— Note 1	— Note 1	0.12(0.1 to 0.16) 0.17(0.14 to 0.22) 0.24(0.2 to 0.32) 0.35(0.28 to 0.42) 0.5(0.4 to 0.6) 0.7(0.55 to 0.85) 0.9(0.7 to 1.1) 1.3(1 to 1.6) 1.7(1.4 to 2) 2.1(1.7 to 2.5) 2.5(2 to 3) 3.6(2.8 to 4.4) 5(4 to 6) 6.6(5.2 to 8) 9(7 to 11) 11(9 to 13) 15(12 to 18)
	T25	T25KP	T25 Note 1	T25KP Note 1	0.24(0.2 to 0.32) 0.35(0.28 to 0.42) 0.5(0.4 to 0.6) 0.7(0.55 to 0.85) 0.9(0.7 to 1.1) 1.3(1 to 1.6) 1.7(1.4 to 2) 2.1(1.7 to 2.5) 2.5(2 to 3) 3.6(2.8 to 4.4) 5(4 to 6) 6.6(5.2 to 8) 9(7 to 11) 11(9 to 13) 15(12 to 18) 22(18 to 26)
	T50	T50KP	—	—	29(24 to 34) 35(30 to 40) 42(34 to 50)
	T65	T65KP	T65	T65KP	15(12 to 18) 22(18 to 26) 29(24 to 34) 35(30 to 40) 42(34 to 50) 54(43 to 65)
	T100	T100KP	—	—	67(54 to 80) 82(65 to 100) 95(85 to 105)
Quick trip type	—	T18FSKP	— Note 1	— Note 1	2.1(1.7 to 2.5) 3.6(2.8 to 4.4) 5(4 to 6) 6.6(5.2 to 8) 9(7 to 11) 11(9 to 13) 15(12 to 18)
	T25FS	T25FSKP	T25FS	T25FSKP	2.1(1.7 to 2.5) 3.6(2.8 to 4.4) 5(4 to 6) 6.6(5.2 to 8) 9(7 to 11) 11(9 to 13) 15(12 to 18) 22(18 to 26)
	T50FS	T50FSKP	—	—	29(24 to 34) 35(30 to 40) 42(34 to 50)
	T65FS	T65FSKP	T65FS	T65FSKP	42(34 to 50) 54(43 to 65)
	T100FS	T100FSKP	—	—	67(54 to 80) 82(65 to 93)
Delay trip type	T18SR	—	— Note 1	— Note 1	0.24(0.2 to 0.32) 0.35(0.28 to 0.42) 0.5(0.4 to 0.6) 0.7(0.55 to 0.85) 0.9(0.7 to 1.1) 1.3(1 to 1.6) 1.7(1.4 to 2) 2.1(1.7 to 2.5) 2.5(2 to 3) 3.6(2.8 to 4.4) 5(4 to 6) 6.6(5.2 to 8) 9(7 to 11) 11(9 to 13) 15(12 to 18)
	T25SR	T25KPSR	T25SR Note 1	T25KPSR Note 1	0.24(0.2 to 0.32) 0.35(0.28 to 0.42) 0.5(0.4 to 0.6) 0.7(0.55 to 0.85) 0.9(0.7 to 1.1) 1.3(1 to 1.6) 1.7(1.4 to 2) 2.1(1.7 to 2.5) 2.5(2 to 3) 3.6(2.8 to 4.4) 5(4 to 6) 6.6(5.2 to 8) 9(7 to 11) 11(9 to 13) 15(12 to 18) 22(18 to 26)
	T50SR	T50KPSR	—	—	29(24 to 34) 35(30 to 40) 42(34 to 50)
	T65SR	T65KPSR	T65SR	T65KPSR	15(12 to 18) 22(18 to 26) 29(24 to 34) 35(30 to 40) 42(34 to 50) 54(43 to 65)
	T100SR	T100KPSR	—	—	67(54 to 80) 82(65 to 100) 95(85 to 105)

Note 1: Combining UT-HZ18 allows the T18 frame to be used singly (screw mounting or IEC 35 mm rail mounting).
Combining UN-RM20 allows the T25 frame for single mounting to have the IEC 35mm rail mounted.

Thermal Overload Relays Model		Main circuit voltage:600VAC maximum		Main circuit voltage:240VAC maximum				Main circuit voltage:480VAC maximum			
		Short Circuit Current Rating (SCCR)	Maximum Rated Current of Fuse (Class K5)	Short Circuit Current Rating (SCCR)	circuit breakers			Short Circuit Current Rating (SCCR)	circuit breakers		
	Heater nominal				Maximum Rated	Minimum Breaking Current	Recommended Model Name (Note 1)		Maximum Rated	Minimum Breaking Current	Recommended Model Name (Note 1)
TH-T18KP	0.12A	5kA	15A	10kA / 25kA	15A	10kA / 25kA	NF50-SMU NF50-SVFU, NV50-SVFU / NF100-SRU, NV100-SRU	10kA	15A	10kA	NF100-HRU NV100-HRU NF125-SVU NV125-SVU
	0.17A										
	0.24A										
	0.35A										
	0.5A										
	0.7A										
	0.9A										
	1.3A										
	1.7A										
	2.1A										
	2.5A										
	3.6A										
	5A		20A								
	6.6A		30A		30A	10kA / 35kA			30A	18kA	
	9A										
	11A										
	15A		40A		50A				50A		
TH-T25KP	0.24A	5kA	15A	10kA / 35kA	15A	10kA / 50kA	NF50-SMU NF50-SVFU, NV50-SVFU / NF100-HRU, NV100-HRU NF125-SVU, NV125-SVU	35kA	15A	50kA	NF125-HVU NV125-HVU
	0.35A										
	0.5A										
	0.7A										
	0.9A										
	1.3A										
	1.7A										
	2.1A										
	2.5A										
	3.6A										
	5A		20A								
	6.6A		30A		30A				30A		
	9A		40A								
	11A		50A								
	15A		70A		50A				50A		
	22A		100A		75A	14kA / 50kA	NF100-CVFU, NV100-CVFU / NF100-HRU, NV100-HRU NF125-SVU, NV125-SVU		75A		
TH-T50KP	29A	5kA	125A	10kA	50A	10kA	NF50-SMU, NF50-SVFU, NV50-SVFU	18kA	75A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				14kA	40A	14kA	NF50-SVFU, NV50-SVFU				
				18kA	75A	18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU	35kA		50kA	NF125-HVU, NV125-HVU
				25kA		35kA					
				35kA		50kA	NF100-HRU, NV100-HRU NF125-SVU, NV125-SVU				
	35A		150A	10kA	50A	10kA	NF50-SMU, NF50-SVFU, NV50-SVFU	18kA	100A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				14kA	75A	14kA	NF50-SVFU, NV50-SVFU				
				18kA	100A	18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU	35kA		50kA	NF125-HVU, NV125-HVU
				25kA		35kA					
				35kA		50kA	NF100-HRU, NV100-HRU NF125-SVU, NV125-SVU				
	42A		200A	10kA	50A	10kA	NF50-SMU, NF50-SVFU, NV50-SVFU	18kA		18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				14kA	75A	14kA	NF50-SVFU, NV50-SVFU				
				18kA	100A	18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU	35kA		50kA	NF125-HVU, NV125-HVU
				25kA		35kA					
				35kA		50kA	NF100-HRU, NV100-HRU NF125-SVU, NV125-SVU				

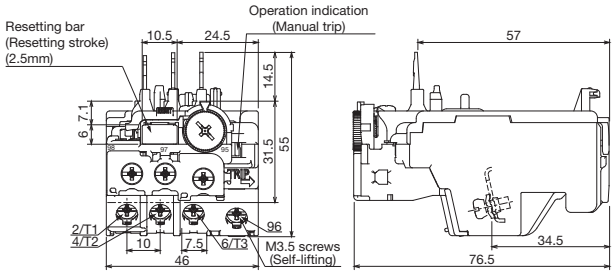
Thermal Overload Relays Model		Main circuit voltage:600VAC maximum		Main circuit voltage:240VAC maximum				Main circuit voltage:480VAC maximum			
		Short Circuit Current Rating (SCCR)	Maximum Rated Current of Fuse (Class K5)	Short Circuit Current Rating (SCCR)	circuit breakers			Short Circuit Current Rating (SCCR)	circuit breakers		
	Heater nominal				Maximum Rated	Minimum Breaking Current	Recommended Model Name (Note 1)		Maximum Rated	Minimum Breaking Current	Recommended Model Name (Note 1)
TH-T65KP	15A	5kA	70A	14kA	75A	14kA	NF100-CVFU	18kA	50A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				18kA	50A	18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU				
				25kA		30kA		25kA		30kA	NF125-SVU, NF125-HVU
	22A		100A	14kA	75A	14kA	NF100-CVFU	18kA	60A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				18kA	60A	18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU				
				25kA		30kA		25kA		30kA	NF125-SVU, NF125-HVU
	29A		125A	14kA	75A	14kA	NF100-CVFU	18kA	75A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				18kA		18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU				
				25kA		30kA		25kA		30kA	NF125-SVU, NF125-HVU
	35A		150A	14kA	100A	14kA	NF100-CVFU	18kA	75A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				18kA	75A	18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU				
				25kA		30kA		25kA		30kA	NF125-SVU, NF125-HVU
	42A		200A	14kA	100A	14kA	NF100-CVFU	18kA	100A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				18kA		18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU				
				25kA		30kA		25kA		30kA	NF125-SVU, NF125-HVU
	54A		250A	14kA	100A	14kA	NF100-CVFU	18kA	100A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				18kA		18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU				
		10kA	225A	25kA		30kA		25kA		30kA	NF125-SVU, NF125-HVU
					150A	35kA	NF250-SVU		150A	35kA	NF250-SVU
TH-T100KP	67A	5kA	300A	18kA	100A	18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU	18kA	100A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
		10kA	225A	25kA	225A	35kA	NF250-SVU, NV250-SVU	25kA	225A	35kA	NF250-SVU, NV250-SVU
	82A	10kA	225A	18kA	100A	18kA	NF100-SRU, NV100-SRU, NF100-HRU, NV100-HRU	18kA	100A	18kA	NF100-HRU, NV100-HRU, NF125-SVU, NV125-SVU
				25kA	225A	35kA	NF250-SVU, NV250-SVU	25kA	225A	35kA	NF250-SVU, NV250-SVU

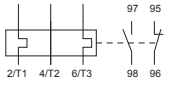
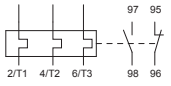
Note 1: Examples of the recommended low-voltage breakers are given. Use a UL489-listed low-voltage breaker (3-pole part) that satisfies the ratings given above.

Outline Drawing, Contact Arrangement

Thermal Overload Relays

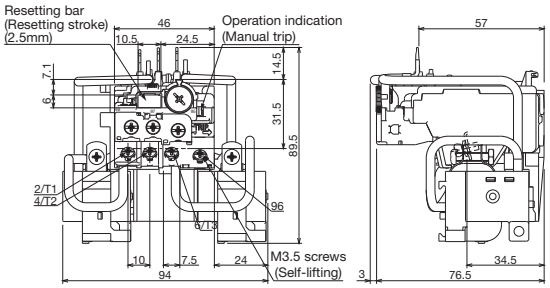
TH-T18(BC)(KP)

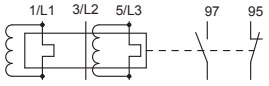


Model name	Contact arrangement
TH-T18	
TH-T18KP	

For combination with the following magnetic contactors
TH-T18: S-T10, T12, T20 SD-T12, T20
Independent use is possible by combining with the independent mounting unit UT-HZ18

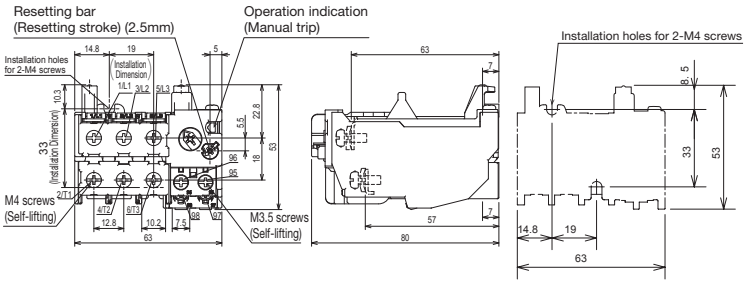
TH-T18SR

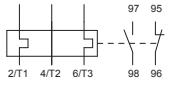
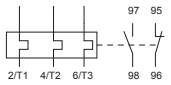


Model name	Contact arrangement
TH-18SR	

For combination with the following magnetic contactors
TH-T18SR: S-T10, T12, T20 SD-T12, T20
Independent use is possible by combining with the independent mounting unit UT-HZ18

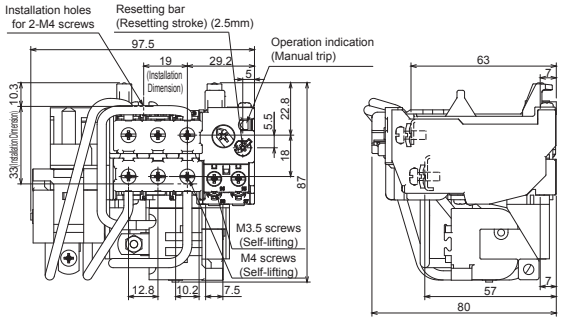
TH-T25(BC)(KP)

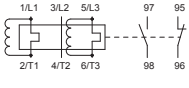
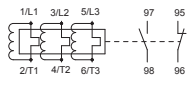


Model name	Contact arrangement
TH-T25	
TH-T25KP	

When combining with the Magnetic Contactor, use the following connection conductor kit (optional).
Combination with S-T35/T50(BC), SD-T35/T50(BC), SL(D)-T35/T50(BC): UT-TH50
DIN rail independent mounting possible when used in combination with independent mounting unit UN-RM20

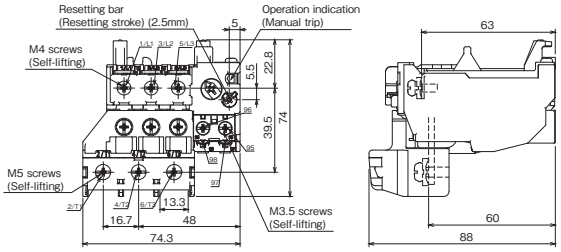
TH-T25(BC)(KP)SR



Model name	Contact arrangement
TH-T25 (BC)SR	
TH-T25 (BC)KPSR	

When combining with the Magnetic Contactor, use the following connection conductor kit (optional).
Combination with S-T35/T50(BC), SD-T35/T50(BC), SL(D)-T35/T50(BC): UT-TH50
* The reversing Magnetic Contactor with wiring streamlining terminal cannot be combined with TH-T25BC(KP)SR.

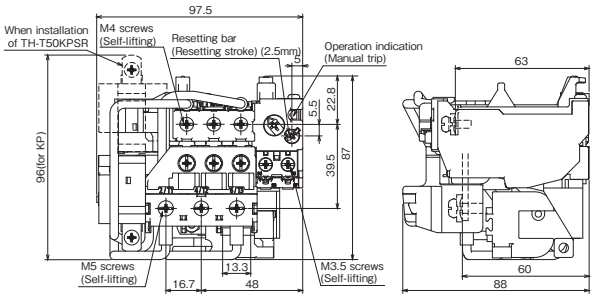
TH-T50(BC)(KP)



Model name	Contact arrangement
TH-T50(FS) TH-T50BC(FS)	1/L1 3/L2 5/L3 97 95 2/T1 4/T2 6/T3 98 96
TH-T50(FS)KP TH-T50BC(FS)KP	1/L1 3/L2 5/L3 97 95 2/T1 4/T2 6/T3 98 96

Use as an independent unit is not possible.
When combining with the Magnetic Contactor, use the following connection conductor kit (optional).
Combination with S-T35/T50(BC), SD-T35/T50(BC): UT-TH50

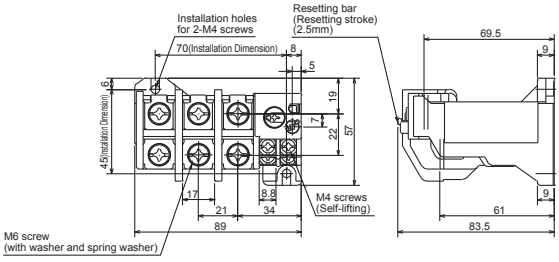
TH-T50(BC)(KP)SR



Model name	Contact arrangement
TH-T50SR	1/L1 3/L2 5/L3 97 95 2/T1 4/T2 6/T3 98 96
TH-T50KPSR	1/L1 3/L2 5/L3 97 95 2/T1 4/T2 6/T3 98 96

Use as an independent unit is not possible.
When combining with the Magnetic Contactor, use the following connection conductor kit (optional).
Combination with S-T35/T50(BC), SD-T35/T50(BC): UT-TH50

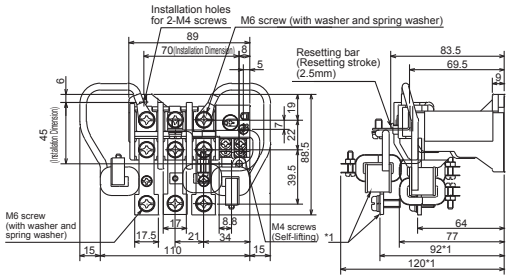
TH-T65(KP)



Model name	Contact arrangement
TH-T65(FS)	1/L1 3/L2 5/L3 97 95 2/T1 4/T2 6/T3 98 96
TH-T65(FS)KP	1/L1 3/L2 5/L3 97 95 2/T1 4/T2 6/T3 98 96

When combining with the Magnetic Contactor, use the following connection conductor kit (optional).
Combination with S(D)-T65/T80: BH559N350
Combination with S-T100: BH569N350
Combination with SD-T100: BH569N352

TH-T65(KP)SR



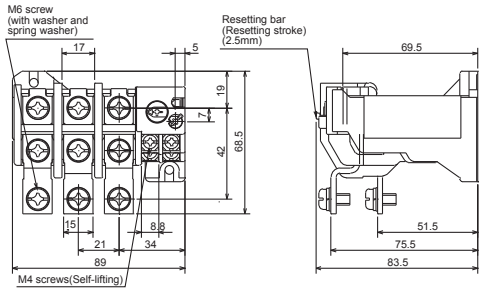
Model name	Contact arrangement
TH-T65SR	1/L1 3/L2 5/L3 97 95 2/T1 4/T2 6/T3 98 96
TH-T65KPSR	1/L1 3/L2 5/L3 97 95 2/T1 4/T2 6/T3 98 96

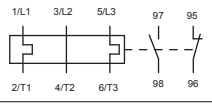
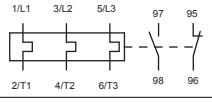
*1 applies for TH-T65KPSR.
When combining with the Magnetic Contactor, use the following connection conductor kit (optional).
Combination with S(D)-T65/T80: BH559N350
Combination with S-T100: BH569N350
Combination with SD-T100: BH569N352

Outline Drawing, Contact Arrangement

Thermal Overload Relays

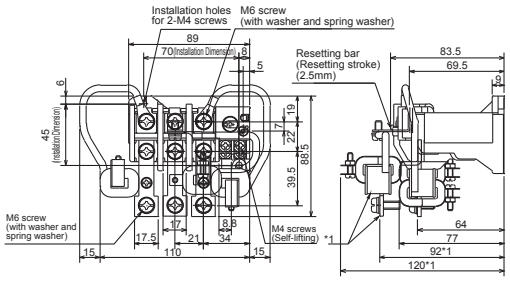
TH-T100(KP)

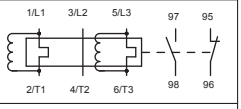
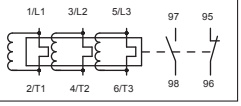


Model name	Contact arrangement
TH-T100(FS)	
TH-T100(FS)KP	

Use with independent mounting is not possible.
When combining with the Magnetic Contactor, use the following connection conductor kit (optional).
Use the connection conductor kit (optional, type: BH569N350)
Combination with S(D)-T80: BH559N350
Combination with S-T100: BH569N350
Combination with SD-T100: BH569N352

TH-T100(KP)SR



Model name	Contact arrangement
TH-T100SR	
TH-T100KPSR	

*1 applies for TH-T100KPSR.
When combining with the Magnetic Contactor, use the following connection conductor kit (optional).
Combination with S(D)-T80: BH559N350
Combination with S-T100: BH569N350
Combination with SD-T100: BH569N352