



Introduction

This instruction manual is related to installation, wiring using and maintenance of Contactor/Starter.

Notes of Safety

Before using this Contactor/Starter, you should first thoroughly read this manual, in order to understand appropriate usage and handling.

 DANGER
<ul style="list-style-type: none"> • Don't touch electric connecting terminal, or you should be damaged by electric-shock. • Check the wire is anenergized at the time of maintenance, or you should be damaged by electric-shock.

 CAUTION
<ul style="list-style-type: none"> • Make sure of clearance written by this manual at the time of installation, or you should be damaged by electric-shock. • Tighten screws by appropriate tightening torque, or there is in danger of fire.

1. Before installation

Before installation, be sure whether Type, Rating current, Coil voltage, Frequency marked on the name plate are agreed with ordered specifications and whether there are no fallen off parts or any damaged portions.

2. Installation

At the time of installation, secure appropriate space shown by this manual.

The Contactor / Starter must be secured on an upright panel or wall arranged to prevent from excessive dust, oil-mist and vibration so that the line end of contactor becomes top.

3. Wiring

Wiring must be used appropriate size of electric wire, and tighten appropriate tightening torque shown by this manual.

Table1 clearances at installation

Frame			Clearance (minimum : mm)					Mounting space	
H series	HS series	RH series	A	B	C	D	E		
	XS4		5	10	0	10	0		
	8~50		5	15	5	10	5		
65C		25N, 50N	※ 1	15	5	10	5		
80C~150C		60N, 120N	※ 1	15	10	10	10		
200C,250C		200N	※ 1	25	10	10	10		
300C,400C			※ 1	30	10	10	10		
600C,800C			※ 1	50	10	10	10		

Note : ※ is allowed for 0. In case of separate mounting for Thermal Relay...A:10 B:15 C:5 D:15 E:5

Table2 Wire size and tightening torque

	Frame(Contactor)			Thermal Relay	screw size	max. wire size (mm ²)	max. width of solderless terminal (mm)	Appropriate tightening torque (N·m)
	H series	HS series	RH series	1E, 2E				
main circuit terminals		XS4, 8, 10		12B	M3.5	2(ϕ 1.6)	7.8	0.8~1.0
				20B	M4	3.5(ϕ 2)	9	1.2~1.5
		20			M4	3.5(ϕ 2)	10.5	1.2~1.5
		25		25B	M5	8(ϕ 2.6)	10	2.5~3.5
				50B	M5	14	13.0	2.5~3.5
		35, 50			M5	14	13.9	2.5~3.5
			25N		M5	22	16.5	2.5~3.5
	65C		50N	80B	M6	22	16.5	4.0~5.0
	80C		60N		M6	60	22	4.0~5.0
	100C,125C			150B	M8 Bolt	60	22	10~14
	150C		120N		M8 Bolt	80	27	10~14
			200N		M8 Bolt	150	37	10~14
	200C,250C			400B(RC240A or lower)	M10 Bolt	150	37	15~25
	300C,400C			400B(RC240A upper)	M12 Bolt	200	44	35~45
	600C				M12 Bolt	325	55	35~45
	800C				M16 Bolt	325	55	35~45
aux. and coil terminals	8C~400C	XS4~50	25N~200N		M3.5	2(ϕ 1.6)	7.8	0.8~1.0
	600C,800C				aux.; M4 coil; M3.5	3.5(ϕ 2) 2(ϕ 1.6)	9 7.8	1.2~1.5 0.8~1.0
aux. terminal of relay	8C~600C	XS4~50		12B~400B	M3.5	2(ϕ 1.6)	7.8	0.8~1.0

Even a terminal screw of the same size is different from Contactor and Thermal Relay.

Please be careful so that screws are not replaced on the occasion of wiring.

When do not use an appropriate screw, it is not tightened, and a case may be damaged.

4. Using

Normal service condition

- (1) Ambient temperature : -5°C to 40°C (usable up to 50°C without enclosure)(HS series is 55°C)
- (2) Relative humidity : 45% to 85%
- (3) Altitude : 2,000m or lower
- (4) Atmosphere : must be free from corrosive gas, combustible gas, dust, vapor, salt, etc.

- Don't touch electric connecting, or you should be damaged by electric-shock.
- Check the wire is anenergized at the time of maintenance, or you should be damaged by electric-shock.
- Don't operate with opening a cover of the contactor, or short circuit should be made.
- At using for reversible type, electrical interlock must be needed.
- A metallic case must be connected to the earth.
- For thermal overload relay, setting current must be adjusted to rating of motor by turning of current adjusting knob. Don't over-turn adjusting knob.

5. Maintenance

- Check whether screw are fully tightened. If a loose, tighten more.
 - Check whether foreign substances such as a washer, wire waste etc., have infiltrated the contactor by manual operation.
 - During trial running, check whether there occurs abnormal noise, abnormal smell or abnormal arcing etc.
 - Check whether contacts are abnormally worn after loosed screws and removed cover of the contactor.
 - Eliminate dropped foreign substances such as dust, chip etc. on each portion.
 - Don't paint oil on cores of the contactor.
 - Even if contacts are somewhat blackened, no trouble occurs.
 - Even if only one contact of three phase is worn, the contacts of all phases must be replaced at the same time.
- At replacing, check the wire is anenergized.
- Dust from worn contact should be eliminated after removed the worn contact.

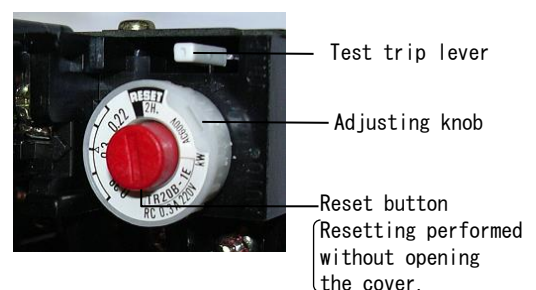


Fig1 Operative portion of Thermal Relay