

## 4. RATINGS AND SPECIFICATIONS

### 4.1 Standard Models

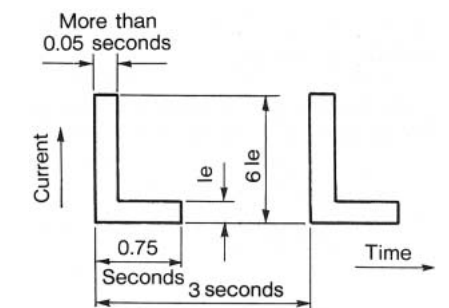
Item			Frame																					
			8C	10C	10B	11	12	20	25	35		50	65C	80C	100C	125C	150C	200C	250C	300C	400C	600C	800C	
Type	Electromagnetic contactor without enclosure	Non-reversible	H8C	H10C		H11	H12	H20	H25	H35		H50	H65C	H80C	H100C	H125C	H150C	H200C	H250C	H300C	H400C	H600C	H800C	
		Reversible			H10B-R	H11-R	H12-R	H20-R	H25-R	H35-R		H50-R	H65C-R	H80C-R	H100C-R	H125C-R	H150C-R	H200C-R	H250C-R	H300C-R	H400C-R	H600C-R	H800C-R	
	Electromagnetic starter	Without enclosure	Non-reversible	B) H8C-T	B) H10C-T		B) H11-T	B) H12-T	B) H20-T	B) H25-T	B) H35-T		B) H50-T	B) H65C-T	B) H80C-T	B) H100C-T	B) H125C-T	B) H150C-T	B) H200C-T	B) H250C-T	B) H300C-T	B) H400C-T	B) H600C-T	
		With enclosure	Non-reversible	B) SH8C-T	B) SH10C-T		B) SH11-T		B) SH20-T	B) SH25-T	B) SH35-T		B) SH50-T	B) SH65C-T	B) SH80C-T	B) SH100C-T	B) SH125C-T	B) SH150C-T	B) SH200C-T	B) SH250C-T	B) SH300C-T	B) SH400C-T	B) SH600C-T	
			Reversible			B) SH10B-RT	B) SH11-RT		B) SH20-RT	B) SH25-RT	B) SH35-RT		B) SH50-RT	B) SH65C-RT	B) SH80C-RT	B) SH100C-RT	B) SH125C-RT	B) SH150C-RT	B) SH200C-RT	B) SH250C-RT	B) SH300C-RT	B) SH400C-RT	B) SH600C-RT	
	Thermal overload relay				TR12B-1E			TR20B-1E	TR25B-1E	TR50B-1E		TR50B-1E	TR80B-1E		TR150B-1E		TR250B-1E		TR400B-1E	TR600B-1E				
Rated insulation	voltage		AC 660V																					
Max. rated capacity of motor	JIS C8201-4-1 and JEM1038	Rated operational current (A) AC3	200 ~ 220V	11	12	12	12	20(18)	26	35		50(48)	65	80	100	125	150	180	240	300	400	600	800(AC2)	
			380 ~ 440V	6	9	9	9	17	24	32		47	65	80	100	125	150	180	240	300	400	600	800(AC2)	
			500 ~ 550V	5	8	6	8	12	12	26		37	52	72	72	72	80	145	145	250	350	500		
		Three-phase motor (kW) AC3 and AC2	200 ~ 220V	2.2	2.5	2.5	2.5	4(3.7)	5.5	7.5		11	15	19	25	30	37	45	60	75	110	150	200	200(AC2)
			380 ~ 440V	2.2	4	4	4	7.5	11	15		22	30	37	50	60	75	90	120	150	200	300	400(AC2)	
			500 ~ 550V	2.2	4	3.7	4	7.5	7.5	15		22	30	45	45	45	55	90	90	160	200	300		
	IEC 60947-4-1	Rated operational current (A) AC3	220 ~ 240V	11	12	12	12	22(20)	27	39		52(48)	65	80	105	126	150	182	240	300	400	600	800(AC2)	
			380 ~ 440V	7	9	9	9	22(20)	24	37		47	65	80	100	125	150	180	240	300	400	600	800(AC2)	
			500 ~ 550V	5	8	6	8	12	12	26		37	52	72	72	72	80	145	145	250	350	500		
		Three-phase motor (kW) AC3	220 ~ 240V	2.5	3	3	3	5.5	7.5	11		15(11)	18.5	22	30	37	45	55	75	90	115	160	200(AC2)	
	380 ~ 440V	3	4	4	4	11	11	18.5		22	30	37	50	60	75	90	120	150	200	300	400(AC2)			
	500 ~ 550V	3	4	3.7	4	7.5	7.5	15		22	30	45	45	45	55	90	90	160	200	300				
Single-phase motor (kW) AC3	100 ~ 110V	0.4	0.4		0.4	0.75																		
JIS, JEM and IEC	200 ~ 220V	0.75	0.75		0.75																			
Inching (kW) AC4 (Inching ratio 50%, electrical life 0.1 million times) JIS, JEM and IEC	200 ~ 240V	0.75	1.5	1.5	1.5	2.2	3.7	5.5			7.5	9	13	13	15	22	30	37	45	45	55			
	380 ~ 440V	1.5	2.2	2.2	2.2	3.7	5.5	7.5			11	15	19	19	22	30	37	45	55	55	75			
Rated capacity for resistance load (A) AC1 (Electrical life 0.5 million times) JIS, JEM and IEC	200 ~ 240V	20	20	18	20	32	35	50			70	80	120	135	150	200	260	300	350	420	600	800 (0.1million times)		
	380 ~ 440V	20	20	18	20	32	35	50			70	80	120	135	150	200	260	300	350	420	600	800 (0.1million times)		
Rated thermal current (Ith) A	Without enclosure	20	20	18	20	32	35	50			70	80	120	135	150	200	260	300	350	420	600	800		
	With enclosure	15	15	15	15	26	35	44			60	65	80	105	125	150	180	240	300	400	600			
Characteristics of operation coil	Coil burden (max.) (VA)	Pick-up	45/40		45/40	45/40		90/80		165/150		165/150	220/190	490/420			400/400	480/480		1600/1600		1800/1800		
	50/60Hz	Hold-in	9/7		9/7	9/7		14/11		16/12		16/12	18/14	50/40			8/8	9/9		10/10		14/14		
	Coil consumption (W) (mean)		2.4		2.4	2.4		3.5		4.5		4.5	6	9.5			7	8		8		13		
	Pick-up voltage (% of rated voltage) (mean)		65		75	68		75		68		73	75	75			70	70		70		70		
	Drop-out voltage (% of rated voltage) (mean)		50		50	50		50		53		53	58	58			45	45		35		35		
Operating time (ms) (reference value)	Pick-up	10 ~ 15		10 ~ 15	10 ~ 15		10 ~ 20		10 ~ 20		10 ~ 20	10 ~ 20	10 ~ 25			30 ~ 50	30 ~ 50		35 ~ 60		40 ~ 70			
	Drop-out	10 ~ 30		10 ~ 30	10 ~ 30		10 ~ 35		10 ~ 25		10 ~ 25	10 ~ 30	10 ~ 30			20 ~ 40	20 ~ 45		20 ~ 45		25 ~ 50			
Auxiliary contact specification	Number	Standard	1NO or 1NC		(2NO1NC)	1NO1NC or 2NO2NC	2NO1NC or 1NO2NC	1NO1NC		2NO2NC	2NO2NC			4NO4NC(3NO3NC...Reversible)		3NO3NC		4NO4NC						
	Rated operational current (A)	Maximum	200 ~ 240V		2(Twin contact)		1(Twin contact)		10(Twin contact)		2(Twin contact)			1(Twin contact)		10(Twin contact)								
	Rated thermal current (A)		200 ~ 240V		2(Twin contact)		1(Twin contact)		10(Twin contact)		2(Twin contact)			1(Twin contact)		10(Twin contact)								
Application models	With mechanical interlock																							
	With 2E thermal overload relay																							
	With three-element thermal overload relay																							
	With latch				(H10-L)																			
	DC operation				(H10-G)																			
DIN rail mounting																								

#### Notes:

- The ratings of the 200V class in the parenthesis when frames 20 and 50 are provided with an enclosure.
- The rated thermal current applies to electromagnetic contactors.
- The pick-up and drop-out voltages apply to 200V 60Hz power source. In case of 50Hz, the figures for frame 8C ~ 125C are about 10% smaller and for frame 150C ~ 800C are about the same.
- Application of Category AC3 and AC2 to the reversible electromagnetic contactors and starters shall be limited to regular reversible operation in which a motor starts reverse rotation after it has once stopped. Category AC4 is applicable when the motor starts reverse rotation before it has completely stopped.
- The mark ( ) in the application indicates that they are standard.
- Operating time is a reference value where 200V 50Hz is applied to AC


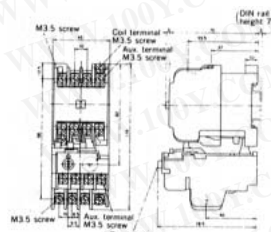
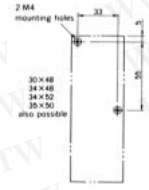
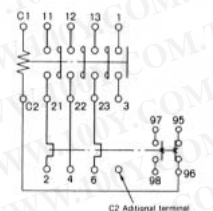

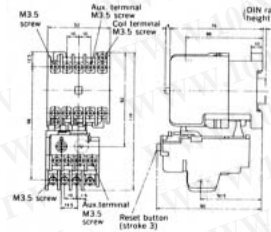
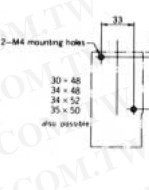
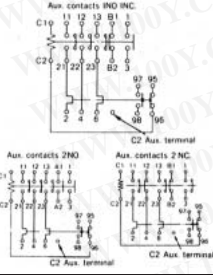

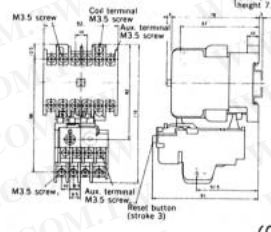
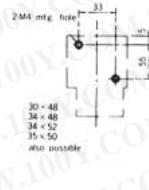
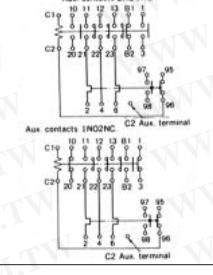

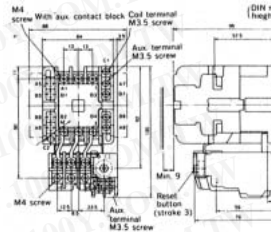
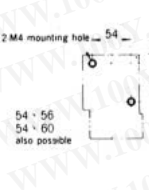
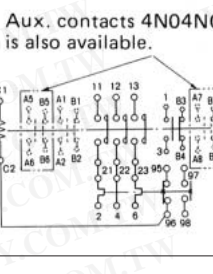

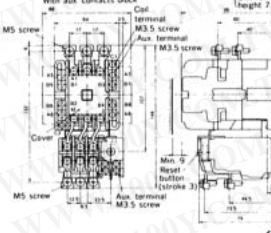
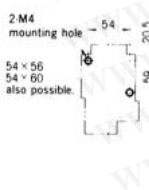
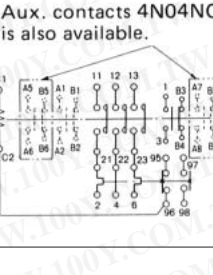
200V coil. Operating time varies with coil voltage, frequency and phase so it is unsuitable for timing use.

- Testing conditions of electrical life (Category AC3):  
The making and breaking currents and operating frequency of the electrical life are tested as shown in the right drawing according to test conditions of JIS C8201-4-1, JEM 1038 and IEC 60947-4-1.
- \*Thermal overload relay for 220 ~ 240V 7.5kW is TR50B-1E.
- The minimum rating of auxiliary contact is 48V 10mA for the single contact and 24V 10mA for the twin contact.



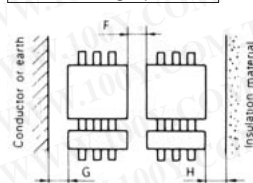
le:Rated operational current

Non-Reversible Electromagnetic Starters without Enclosure

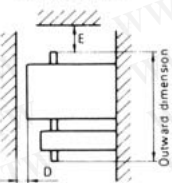
Appearance	Dimensions (mm) (Product weight)	Drilling plan	Contact arrangement	Terminal section dimensions (mm)			
				Electro-magnetic contactor	Thermal overload relay		
 B) H8-T B) H10C-T	 (0.34kg)			Main circuit	Terminal screw	M3.5	M3.5
					Terminal dimensions	A	7.8
				Operating circuit	Terminal screw	M3.5	M3.5
					Terminal dimensions	A	7.8
					B	5	4
					C	4.8	4.5
 B) H11-T	 (0.41kg)			Main circuit	Terminal screw	M3.5	M3.5
					Terminal dimensions	A	7.8
				Operating circuit	Terminal screw	M3.5	M3.5
					Terminal dimensions	A	7.8
					B	5.5	4
					C	4.8	4.5
 B) H12-T	 (0.65kg)			Main circuit	Terminal screw	M3.5	M3.5
					Terminal dimensions	A	7.8
				Operating circuit	Terminal screw	M3.5	M3.5
					Terminal dimensions	A	7.8
					B	5.5	4
					C	4.8	4.5
 B) H20-T	 (0.65kg)			Main circuit	Terminal screw	M4	M4
					Terminal dimensions	A	9
				Operating circuit	Terminal screw	M3.5	M3.5
					Terminal dimensions	A	7.8
					B	5.5	4
					C	4.8	4.5
 B) H25-T	 (0.69kg)			Main circuit	Terminal screw	M5	M5
					Terminal dimensions	A	10
				Operating circuit	Terminal screw	M3.5	M3.5
					Terminal dimensions	A	7.8
					B	5.5	4
					C	4.8	4.5

Type	Minimum mounting space (mm)				
	D	E	F	G	H
B) H8C-T	10	15	5	10	5
B) H10C-T	10	15	5	10	5
B) H11-T	10	15	5	10	5
B) H12-T	10	15	5	10	5
B) H20-T	9	15	5	10	5
B) H25-T	9	15	5	10	5

Mounting space



Conductor or earth



Terminal section dimensions

