4.4 DC Operated Electromagnetic Contactors

Item \ Frame				10	11	20	25	35	50	65C	80C	100C	125C	150C	200C	250C	300C	400C	600C	800C
Type				H10-G	H11-G	H20-G	H25-G	H35-G	H50-G	H65C-G	H80C-G	H100C-G	H125C-G	H150C-G	H200C-G	H250C-G	H300C-G	H400C-G	H600C-G	H800C-G
Rated insulation voltage				AC 660V							AC 660V									
Max. rated capacity of motor	JIS C8201-4-1 and JEM1038	Rated operational current(A) AC3	200～220V	12	12	20	26	35	50	65	80	100	125	150	180	240	300	400	600	800 (AC2)
			380～440V	9	9	17	24	32	47	65	80	100	125	150	180	240	300	400	600	800 (AC2)
			500～550V	8	8	12	12	26	37	52	72	72	72	80	145	145	250	350	500	—
		Three-phase motor (kW) AC3 and AC2	200～220V	2.5	2.5	4	5.5	7.5	11	15	19	25	30	37	45	60	75	110	150	200 (AC2)
			380～440V	4	4	7.5	11	15	22	30	37	50	60	75	90	120	150	200	300	400 (AC2)
			500～550V	4	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	12	12	22	27	39	52	65	80	105	126	150	182	240	300	400	600	800 (AC2)
			380～440V	9	9	22	24	37	47	65	80	100	125	150	180	240	300	400	600	800 (AC2)
			500～550V	8	8	12	12	26	37	52	72	72	72	80	145	145	250	350	500	—
		Three-phase motor (kW) AC3	220～240V	3	3	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	115	160	200 (AC2)
			380～440V	4	4	11	11	18.5	22	30	37	50	60	75	90	120	150	200	300	400 (AC2)
			500～550V	4	4	7.5	7.5	15	22	30	45	45	45	55	90	90	160	200	300	—
	Single-phase motor (kW)		100～110V	0.4	0.4	0.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	AC3 JIS, JEM and IEC		200～220V	0.75	0.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Inching (kW) AC4 (Inching ratio 50%, electrical life 0.1 million times) JIS, JEM and IEC		200～240V	1.5	1.5	2.2	3.7	5.5	7.5	9	13	13	13	22	30	37	45	45	55	—
			380～440V	2.2	2.2	3.7	5.5	7.5	11	15	19	19	19	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	32	35	50	70	80	120	135	150	200	260	300	350	420	600	800(0.1million times)
			380～440V	20	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	32	35	50	70	80	120	135	150	200	260	300	350	420	600	800
Type of coil				Direct-input coil							Double coil									
Characteristics of operation coil (at 20°C cold start)	Coil burden (W)		Pick-up	11		15		18		22	300			340	380		1400		1400	
			Hold-in	11		15		18		22	4			6	7		9		12	
	Time constant (ms)		Pick-up	28		45		55		60	16			20	30		45		55	
			Hold-in	28		45		55		60	40			65	85		90		105	
	Pick-up voltage (% of rated voltage)(mean)			55	60	60		55		55	68			70	70		70		70	
	Drop-out voltage (% of rated voltage)(mean)			22	23	17		19		20	20			45	45		35		35	
	Operating time DC 100V (ms)		Pick-up	25～30	25～30	35～40		40～45		50～55	25～40			30～40	30～50		35～60		35～60	
	(reference value)		Drop-out	15～20	10～15	20～25		20～25		20～25	40～50			20～40	20～45		20～45		25～50	
Auxiliary contact	Type of contacts			Twin contact							Twin contact									
	Numbers		Standard	1NO	1NO1NC	1NO1NC		2NO2NC			2NO1NC☆			2NO2NC		3NO3NC		4NO4NC		
			Maximum	1NO	1NO1NC	2NO2NC		2NO2NC			4NO3NC☆			4NO4NC		4NO4NC		4NO4NC		
Life (million times)			Mechanical	10							5				5		1		1	
			Electrical (AC3)	1							1				0.5		0.5		0.1 (AC2)	
Available voltage range of operational coil (V)				24～220							24～220			100～220						

Notes:

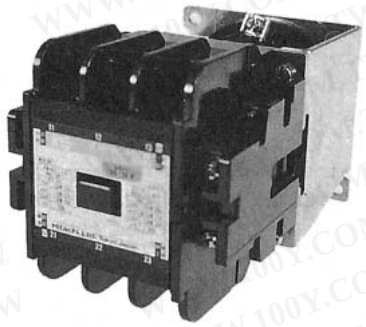
1. Rating of Auxiliary Contact

Rated operational current					Rated thermal current	Minimum rating
AC(AC15)			DC L/R≦40ms			
200～220V	380～440V	500～550V	48V	110V		
2A	1A	0.75A	0.7A	0.3A	10A	24V 10mA

Notes:

1. Since operating time depends on coil voltage etc., the contactor must not be applied for timing use.
2. When rectifier is used in the operating power source circuit, DC side must be interrupted. If AC side of the circuit is interrupted, the drop-out time becomes longer because the rectifier constructs closed circuit with coil.
3. As a NC contact (wrap NC contact) of H80C～H125C-G is used for changing of coil, available numbers of auxiliary contacts are reduced. Where marked (☆) and self-holding NO contact is included in the numbers.

8. DC OPERATED ELECTROMAGNETIC CONTACTORS



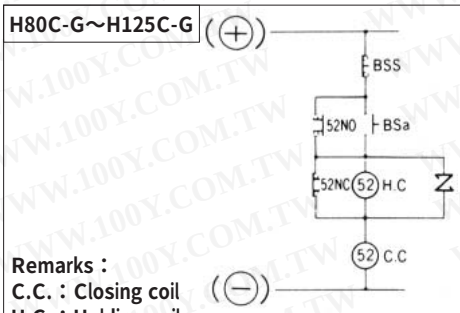
H35-G

〈FEATURES〉

- The compact design drastically reduces the mounting space to the control panel.
- DC exciting type is noiseless.
- Direct input type without external resistors for models up to 65C frame.

8.1 Operating Principle of Double Coil

H80C-G～H125C-G



Remarks：
C.C.：Closing coil
H.C.：Holding coil

The double coil is a coil which has 2 coils, closing coil CC and holding coil HC are wound on the coil bobbin. In explaining the operation by the left diagram circuit, it becomes as below.

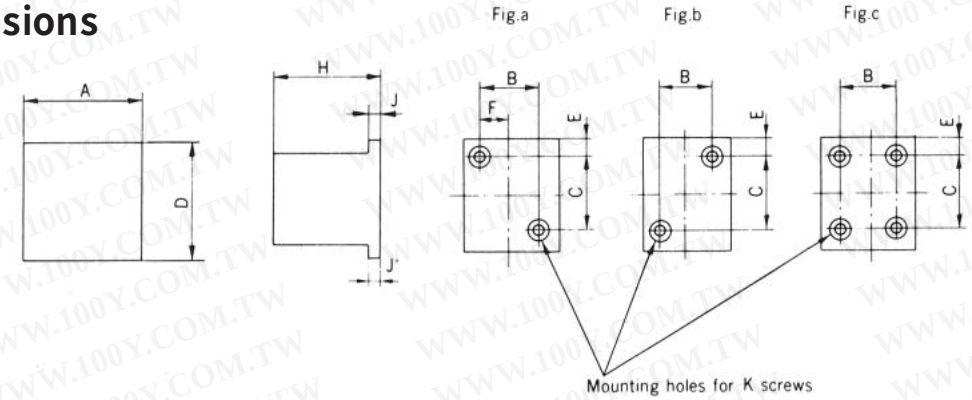
(1) When BSa is closed, current flows as (⊕) → BSS → BSa → 52NC → CC → (⊖) and only CC coil is excited and picked up.

(2) When picked up, the changeover NC contact opens, and current flows as (⊕) → BSS → 52NO → HC → CC → (⊖) and both coils of HC and CC are excited. After pick-up, the internal resistance of HC is large in comparison to that of CC so current decreases and watt loss of the coil is reduced.

H150C-G～H800C-G

Change between closing coil (CC) and holding coil (HC) is controled by the provided control circuit.

8.2 Dimensions



Type	Dimension (mm)				Drilling plan (mm)						Weight
	A	D	H	J (J')	Fig.	B	C	E	F	K	(kg)
H10-G	44	65	108	2.3	a	33	55	5	17	2-M4	0.5
H11-G	53	65	108	2.3	a	33	55	5	17	2-M4	0.58
H20-G	64	70	123	2.3	a	54	59	5.5	—	2-M4	1.02
H25-G	64	100	123	2.3	a	54	59	20.5	—	2-M4	1.08
H35-G H50-G	82	90	128.5	2.3	a	71	65	12.5	—	2-M4	1.7
H65C-G	88	106	147	2.3	a	71	65	20.5	—	2-M4	2.1
H80C-G H100C-G H125C-G	100 *(124)	136	154	17.5	b	84	110	13	—	2-M5	2.2
H150C-G	120 *(144)	153	165	17	b	100	130	11.5	—	2-M6	3.3
H200C-G H250C-G	138 *(162)	230	191	2.3	c	50	210	10	—	4-M8	5.5
H300C-G H400C-G	187 **(199)	240	225	3.2	c	60	220	10	—	4-M8	9.7
H600C-G	284	316	232	3.2	c	170	222	46	—	4-M10	22

* Auxiliary contacts 4NO3NC ** Auxiliary contacts 4NO4NC